

**LATUR CITY MUNICIPAL CORPORATION
WATER SUPPLY DEPARTMENT**



e-TENDER NOTICE NO: 09 FOR 2023-24

**Name of Work:
Augmentation of Latur Water Supply Scheme
for Latur City Municipal Corporation under
AMRUT 2.0**

PHASE-1 HEAD WORKS

TENDER DOCUMENT

**MUNICIPAL COMMISSIONER
LATUR CITY MUNICIPAL CORPORATION
LATUR**

Contractor

No. of correction

Executive Engineer

Contractor

No. of correction

Executive Engineer

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PRESS TENDER NOTICE

LATUR CITY MUNICIPAL CORPORATION

e-Tender Notice No. 09 for 2023-24

LCMC invites e-Tender for the work of **Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, PHASE-1, HEAD WORKS** at Latur , Tal. Latur, Dist. Latur in the State of Maharashtra, valued at Rs. 217.82 Cr. Please visit website www.mahatenders.gov.in for detailed information.

Date: 05/01/2024

Sd/-

Municipal Commissioner

DETAILED TENDER NOTICE

DETAILED TENDER NOTICE NO. 09 OF 2023-24

Online percentage rate basis Tender in B-1 Form in two envelopes system are invited for the following works from the contractors registered with MJP in class-I.(civil) or registered in CIDCO/MIDC OR ANY GOVERNMENT DEPARTMENT IN INDIA in equivalent class of MJP, by the Municipal Commissioner Latur City Municipal Corporation on the Government of Maharashtra e-Tendering Portal: <http://mahatenders.gov.in>

Note: In order to participate in e-tendering process, it is mandatory for new contractors (first time users of this website) to complete the Online Registration Process for the e-Tendering website. For guidelines, kindly refer to Bidders Manual Kit documents provided on the website.

- a) **NAME OF WORK:** Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Head Works at Latur, Tal. Latur, Dist. Latur.
- b) **ESTIMATED TENDER COST:** Rs. 217,82,79,400.00
- c) **EARNEST MONEY DEPOSIT:** Rs. 1,08,91,397.00
- d) **DOWNLOADING COST OF TENDER DOCUMENTS:** Rs. 2,18,000.00
(Including GST) **(Non-refundable).**
- e) **CLASS OF CONTRACTOR: Class-1**

1. EARNEST MONEY DEPOSIT/TENDER FEES:

Tender fee and EMD shall be paid by

- 1. SBI Net Banking or
- 2. Other Bank Internet Bank MOPS.

For any assistance, please contact help desk. Details are available online.

The online payment procedure can be seen on <https://mahatenders.gov.in>
Announcement online payment procedure.

Online payment requires 48 hours in Bank working days for clearance and

hence, payment should have been made accordingly.

The EMD will be retained in the pooling account and will be refunded to the unqualified / unsuccessful bidders after award of tender to the successful lowest bidder. The EMD of successful bidder will be ultimately refunded or will be adjusted against the security deposit after selection of the successful bidder at the time of execution of the contract. In case, the Municipal Commissioner decided to forfeit / adjust the EMD amount of the bidder, the EMD amount in such cases shall be credited to the bank account of the Municipal Corporation. The mandate for EMD refunds / forfeit / adjustment against security deposit shall trigger from e- tender application of NIC portal."

NOTE - The bidder should make the payment well in advance to ensure that the payment reaches to Bank 4 (four) days before date and time for submission of tender.

2. SECURITY DEPOSIT

- 4% of the Estimated cost or Accepted Tender cost whichever is higher.

- **Initial Security Deposit.**

2% of estimated cost or accepted tender cost whichever is higher in the form of Fixed Receipt OR Bank Guarantee from Nationalized / Scheduled Bank in the name of Municipal Commissioner, Latur City Municipal Corporation, Latur for initial minimum period of 24 months (time limit) and shall be extended suitably if the work is not completed within the time limit.

- **Deductions through R.A. Bills.**

Balance 2% amount will be recovered through each running bill at 5% of the gross amount of R.A. Bill to the extent that total required security deposit is to be recovered.

2.1 Additional Security Deposit. (Performance security)

- If the tenderer has quoted the offer below than the estimated rates put to the tender, the tenderer shall have to submit Additional Security Deposit (ASD) (Performance security) in the form of bank guarantee of any nationalise or scheduled Bank in favour of the "The Municipal Commissioner, Latur City Municipal Corporation, Latur."
- The tenderer shall submit the Bank Guarantee of Additional Security Deposit (ASD) within 8 days from opening of Financial Bid to the office of "The Executive Engineer, Water Supply Department, Latur City Municipal Corporation, Latur."

- If the first lowest (L-1) tenderer failed to submit the Additional Performance Security Deposit within eight days then his tender shall be liable for rejection and his EMD will be forfeited. In such case, if the second lowest (L-2) tenderer agree to execute the work at less than the rates of first lowest tenderer, then his tender will be accepted. The 2nd lowest tenderer will have to submit the Additional Performance Security Deposit in form of Bank Guarantee / Demand Draft.
- The amount of the (ASD) Bank Guarantee shall be calculated by the tenderer in accordance with this following manner.
- If the tenderer has quoted below the estimated rates, the ASD (Performance security) shall be paid additionally as mentioned below.

Rate quoted to Estimated Rate	Additional Security Deposit (Performance security)
Below 0% to below 1%	NIL
Lower than below 1% to below 10%	1% of estimated cost put to tender
Lower than below 10% to below 15%	1% + (% rate quoted -10%) For example: If 15% below is quoted the amount of performance security (Additional Security Deposit) shall be 1+ (15-10) = 6% Performance Security of estimated cost put to tender. If the amount is less than Rs. 1000/-, then minimum to be Rs. 1000/-
Lower than 15% below	% as per Sr. No. 3 + (% rate quoted -15%) x 2 For example: If 19% below is quoted the amount of performance security (Additional Security Deposit) shall be 6+(19-15) x 2 = 6%+8% = 14% Performance Security of estimated cost put to tender. If the amount is less than Rs. 1000/-, then minimum to be Rs. 1000/-.

- The bank Guarantee shall be valid upto defect liability period of the tender. It should bear MICR and IFC code.
- In case it is found that documents / Bank Guarantees submitted by the tenderer are false or misleading his earnest money shall be suspended for the period of 1 year. Additionally legal action may be initiated against the tenderer.
- The work order shall be given to the concerned tenderer after the clearance of the Bank Guarantee submitted by him.

REFUND OF PERFORMANCE SECURITY

- The amount of the performance security in the form of Bank Guarantee shall be released after completion of defect liability period of the tender.
- Non submission of additional security deposit in the form of Bank Guarantee shall be liable to summarily rejection of his tender.

The initial Security Deposit and additional security deposit may be in the form of Fixed Deposit Receipt (FDR) OR Bank Guarantee by a Nationalized/Scheduled Bank in the name of "Municipal Commissioner, Latur City Municipal Corporation, Latur and shall be for a minimum period of 24 months (time limit) and shall be extended suitably if the work is not completed within the time limit. The tenderer shall have to furnish this security deposit with initial security deposit.

3. STAMP DUTY

The contractor shall bear the revenue stamp duty on total security deposit of the agreement and/or Additional Security Deposit (payable as per tender condition), as per the Indian Stamp Duty (1985) (latest revision) provision applicable during contract period.

4. TIME OF COMPLETION

24 (Twenty-Four) calendar months, including Monsoon. This will be counted from the date of issue of the work order.

5. DETAILED TENDER SCHEDULE

Sr. No.	Activities	Date & Time
1	Tender publishing date	05/01/2024
2	Documents download start date	05/01/2024 at 12 noon
3	Documents download end date	04/02/2024 at 12 noon
4	Pre-bid meeting date	12/02/2024 at 12 noon
5	Bid submission start date	05/01/2024 at 12 noon
6	Bid submission closing date	04/02/2024 at 17 pm
7	Bid opening date (Technical Bid)	06/02/2024 at 11 am
8	Bid opening date (Commercial Bid)	Will be intimated to the qualified bidders.

6. PRE-QUALIFICATION CRITERIA

- The firm / contractor should be registered with MJP in class-1/MIDC/CIDCO OR ANY GOVERNMENT DEPARTMENT IN INDIA in class-1 & above (Civil) (equivalent class of MJP). The validity of registration should be at

least upto the last date for submission of tender, then only pre-qualification will be considered. It is necessary to renew the registration before issue of work order. Bidders need to submit online copy of registration.

- The agency shall have experience successful completion and commissioning of the works listed below with any Govt/Semi Govt./ corporation or equivalent organization. The experience of each work should be under single agreement.

Sr. No	Components in Project	Experience required for
I.	Rising mains pipelines/ gravity mains (for single dia.) Rising mains pipelines/ Gravity mains (for multiple dia.)	a) 50% of diameter rounded off to higher side b) 25% of total length a) For Dia. According to Weighted Average a) The dia. should be rounded off to available higher side. b) For Length $\sum L_i / 4$
12002	Jack-well/intake well etc.	Experience of similar nature of work successfully carried out in the submergence of dam/bank of major river.

Sr. No.	Description	Total Tendered Quantity
1	Raw Water Raising Main 1000 MM dia DI K-9	3615 M
2	Raw Water Gravity Main 1200 MM dia DI K-7	26200 M
3	Raw Water Gravity Main 1100 MM dia DI K-7	20500 M

- The bidder shall submit online, required experience certificate. The certificate of experience shall have to be issued by the officer not below the rank of Executive Engineer and counter signed by the City/Hydraulic/Superintending Engineer or equivalent officer or head of Govt/Semi Govt./, Corporation or councils. Except Automation work, the certificate issued by Private Individuals/ Private Organization will not be considered.
- In case LT installation the certificate of experience shall have to be issued by the officer not below the rank of Executive Engineer or equivalent officer or Head of Govt/Semi Govt./, Corporation or councils.
- For the work of Automation experience certificate issued by private organization can be considered if supported by company registration certificate, TAN, VAT, PAN and contact details.
- The firm shall have valid GST registration No or TIN No.
- The firm shall have valid PAN No.

All the documents pertaining to pre-qualification criteria shall be

BID CAPACITY (For the tender costing above Rs.5 Crs.)

The bidder shall have a bid capacity more than the value of this bid. Bidding capacity of contractor for completion of work will be decided by following formula.

$$\text{BIDDING CAPACITY} = (2 \times N \times A) - B$$

Where...

A =	Average of engineering works of maximum value executed by the contractor in anythree years of last five years, upgraded to the present year (i.e. tender accepted year)by the formula given below; $1 + \frac{(\text{WPI Present} - \text{WPI Max Value years})}{\text{engineeringWPI Max. value years}} \times \text{Maximum value of works executed in a year.}$ WPI Present: - Wholesale price index of the month and year in which tender is invited. WPI Max. value years: - Average wholesale price index of the year in which themax value of engineering works executed.
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N = Number of years prescribed for completion of the work for which present bids invited.

B = Value of existing commitment & ongoing works to be completed during the periodcompletion of the work (i.e. work in hand)

Bid capacity calculation ठेकेदाराने सादर करताना

1. प्रगतीप्रथावरील तसेच ठेकेदाराने न्यूनतम देकार भरलेल्या निविदाव निविदा स्वीकृत झालेल्या तथापि कार्यादेश देणे बाकी निविदा इ. कामांची माहिती दर्शविणारा Annexure-A मधील सर्व विवरणपत्रांमध्ये किमान कार्यकारी अभियंता पेक्षा कमी नसलेल्या पदावरील अधिकाऱ्यांची स्वाक्षरी असणे आवश्यक आहे किंवा सनदी लेखापालामार्फत प्रमाणित करणे आवश्यक आहे . या सर्व विवरणपत्रांमध्ये ठेकेदारांची साक्षरी अनिवार्य राहिल तसेच नगरपालिका/ महानगरपालिका इ. स्थानिक स्वराज्य संस्थांच्या कामाच्या बाबतीत संस्थेतील प्रशासकीय प्रमुखांची स्वाक्षरी असणे आवश्यक आहे किंवा सनदी लेखापाला मार्फत प्रमाणित करणे आवश्यक आहे. या सर्व विवरण पत्रांमध्ये ठेकेदारांची स्वाक्षरी अनिवार्य राहिल.
 2. वर्ष निहाय Turnover त्याच प्रमाणे Bid Capacity Calculations चार्टर्ड अकाउंटंटचे कडून तपासून घेऊन CA आणि ठेकेदारांच्या स्वाक्षरीसह ठेकेदारांच्या लेटर हेड वर असणे आवश्यक आहे.
 3. Bid Capacity Calculations सोबत ठेकेदाराने द्यावयाच्या प्रगतीप्रथावरील कामे व त्याचप्रमाणे न्यूनतम देकार भरण्यात येऊन Letter of Indent प्राप्त झालेल्या कामांच्या बाबतीतील विवरण पत्राचा नमुना Annexure-XIV नुसार संलग्न केला आहे.
 4. ठेकेदाराने त्यांच्याकडील प्रगतीप्रथावरील कामे व त्याच प्रमाणे न्यूनतम देकार भरण्यात आलेल्या निविदांच्या बाबतीत Letter of Indent मिळालेल्या कामाचा समावेश करावा मात्र, निविदा प्रक्रियेत भाग घेऊन, केवळ न्यूनतम देकार भाकल्लेल्या कामांचा समावेश करण्यात येऊ नये.
5. Contractor should submit Bid Capacity calculations with works in hand also lowest Bid and letter of indent in Annexure-XIV.
 6. Contractor should submit Statement of work in hand or incomplete work duly signed by not less than Executive Engineer, in case of Municipal Council or Municipal Corporation statement should be signed by Chief Officer Hydraulic Engineer respectively.
 7. Contractor should submit year wise turnover and Bid capacity calculation on his/her letterhead duly signed by Chartered accountant.
 8. Consolidated Average Last three years Annual turnover of the Bidder shall be equal to or greater than 30% of the cost put to tender in three preceding financial years.
 9. With Bid capacity calculation contractor should submit affidavit as per (Annexure-XIV).
 10. Contractor should submit list of works in hand and list of tenders with lowest also letter of for which he is L1 (lowest 1) and also submit list of tenders for which letter of Indent or letter of acceptance issue to him.
 11. Net worth = PRE-QUALIFICATIONS CRITERIA (FINANCIAL)
 1. The net worth is applicable to tenders costing more than 25 crores.
 2. The net worth calculations should be certified by Chartered Accountants.
 3. The Bidder should have net worth 8% of tender cost of continues 3 years from the financial year. In which he desires to take work.

7 COLLABORATION & JOINT VENTURE

- No Collaboration & Joint Venture Allowed

8. COST OF BLANK TENDER FORM

- Rs. 5,900.00 per set (including GST).
- Blank Tender documents will not be sold by this office. Interested

Contractor

No. of correction

Executive Engineer

contractors have to download tender documents from the website.

- Cost of blank tender form shall not be accepted in the form of cash or cheque. The cost of the tender documents will not be refunded under any circumstances.

9. **ISSUE OF BLANK TENDER FORM**

The blank tender forms will have to be downloaded from the website <http://mahatenders.gov.in> as per online schedule.

10. **PRE-TENDER CONFERENCE**

Pre-Tender conference is open to all prospective tenderers and will be held on **12/01/2024 at 12.00 hours** in the office of the Municipal Commissioner, Latur City Municipal Corporation, Latur, wherein the prospective tenderers will have opportunity to obtain clarifications regarding the work and the tender conditions.

The prospective tenderers are free to ask for any additional information or clarification either in writing or orally and the reply to the same will be given in writing and this clarification referred to as common set of conditions, shall also be common and applicable to all tenderers. The minutes of this meeting along with the letters of tenderers will form part and parcel of the tender documents. Bidders need to submit online signed copy of pre bid minutes in a technical bid.

11. **VALIDITY OF THE OFFER**

120 days from the date opening of tender.

12. **LAST DATE & TIME OF ONLINE SUBMISSION OF TENDER FORM** **04/02/2024 up to 17:00 Hrs.**

13. **DATE & TIME OF ONLINE OPENING OF TENDER** **06/02/2024 at 11:00 am** in the office of the Municipal Commissioner Latur City Municipal Corporation, Latur.

14. **SUBMISSION OF TENDER**

Bids must be accompanied with:

- a) Copy of online payment receipt of Tender documents.
- b) Copy of online payment receipt of EMD.
- c) Scanned copy of all documents, certificates specified in Pre- qualification Criteria in Point No.6.
- d) Scanned copy of duly signed declaration of contractor in prescribed format filled in agency's letter head attached with the tender (**Annexure-A**).

- e) Scanned copy of minutes of Pre-bid meeting duly signed by Contractor.
- f) Bidder should visit the site locations to understand the local conditions of work, get the GPS photos done at site and same shall be certified from Executive Engineer, Latur City Municipal Corporation. The certified copies of GPS Photos shall be uploaded along with technical envelope during submission of bid. Bid shall be treated as invalid if scanned copies as mentioned above are not submitted online along with the bid.

The guidelines, "to download the tender document and online submission of bids procedure of tender opening" can be downloaded from website "<http://mahatenders.gov.in>".

- 14.1 The two envelopes No. 1 & 2 shall be digitally sealed and signed and submitted online as per the online tender schedule.

The date and time for online submission of envelopes shall strictly apply in all cases. The tenderers should ensure that their tender is prepared online before the expiry of the scheduled date and time and then submitted online before the expiry of the scheduled date and time. Offers not submitted online will not be entertained.

- 14.2 If for any reason, any interested bidder fails to complete any of online stages during the complete tender cycle, department shall not be responsible and any grievance regarding that shall not be entertained.

15. OPENING OF TENDER

The tenders will be opened on the date specified in the tender notice or on the date intimated to prospective bidders, in the presence of the intending bidders or their authorized representative to whom they may choose to remain present along with the copy of the original documents submitted for Pre-Qualification. Following procedure will be adopted for opening of the tender.

Envelope No. 1 (Technical Bid)

First of all, Envelope No. 1 of the tenderer will be opened online through e-Tendering procedure to verify its contents as per requirements. Scanned copies of following documents shall be in Envelope No. 1.

- a) Copy of online payment receipt of Tender documents.
- b) Copy of online payment receipt of EMD.
- c) Scanned copy of all documents, certificates specified in Pre-qualification Criteria in Point No.6.
- d) Scanned copy of duly signed declaration of contractor in prescribed format filled in agency's letter head attached with the tender (**Annexure-A**).
- e) Scanned copy of minutes of Pre-bid meeting duly signed by Contractor.

If the various documents contained in this Envelope do not meet the requirements as stated above, a note will be recorded accordingly by the tender opening authority and the envelope No. II of such tenderers will not be considered for further action and the same will be rejected. Also, tender will be liable for rejection if bidder mention his commercial offer anywhere in envelop No.1.

Envelope No. II (Commercial Bid)

This envelope shall be opened online through e-Tendering procedure after opening of envelope No. 1 only if the contents of Envelope No. 1 are found to be acceptable to the Corporation. The tendered rate shall then be read out by the tender opening authority.

16. RIGHT RESERVED

- a) Right to reject any or all tenders without assigning any reason thereof is reserved by the competent authority, whose decision will be final and legally binding on all the tenderers.
- b) Tender with stipulations for settlement of a dispute by reference to Arbitration will not be entertained.

17. SPECIAL CONDITION ON GST

The rate quoted by contractor must be inclusive of all other and relevant taxes except GST, no extra payment of this account will be made to the contractor.

- a) The bidder should quote rates excluding GST.
- b) GST should be paid on amount of bill of the work done as per prevailing guidelines, rate of GST during the period of work done as applicable.
- c) The rates quoted by contractor shall be deemed to be inclusive of labour welfare cess & other taxes (other than GST) that the contractor will have to pay for the performance of his contract. The employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.
- d) The bidder shall quote his rate considering the provisions counted under GST ACT 2017.
- e) Amount of GST 2% i.e., CGST & MGST each 1% will be deducted at source. (TDS) form 01-10-2018.
- f) If contractor delay for the executing of work from his side, no extra GST will be paid even after GST rate is increased.

18. RIGHTS RESERVED

- a) Right to reject any or all tenders without assigning any reason thereof is reserved by the competent authority, whose decision will be final and legally binding on all the tenderers.
- b) Tender will stipulations of settlement of a dispute by reference to Arbitration will not be entertained.

Sd/
MUNICIPAL COMMISSIONER

**GENERAL CONDITIONS OF
CONTRACT**

**Name of work: Augmentation of Latur Water Supply Scheme for Latur City
Municipal Corporation under AMRUT 2.0, Phase-1, Head Works at Latur, Tal.
Latur, Dist. Latur.**

GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS

- 1.1** In the contract, the following terms shall be interpreted as indicated.
- a) "UDD" means Urban development department.
 - b) "AMRUT" means Atal mission for rejuvenation and urban transformation.
 - c) "The Contract" means the agreement entered between the owner and the contractor as recorded in the contract form signed by the parties, includes all attachments and appendices there to and all documents incorporated by references therein. Contract is the deed of contract together with all its original accompaniments and those later incorporated in it by internal consent.
 - d) "The Contract Price" means the price payable to the contractor under the contract for the full and proper performance of its contractual obligations.
 - e) "The Goods" means all the equipment's, machinery and/or other materials which the contractor is required to supply to the owner under the contract.
 - f) "Services" means services ancillary to the contract such as transportation and insurance and any other incidental services, such as Provision of Technical Assistance, Trial Runs, Commissioning, Training to staff and other such obligations of the contractor covered under the contract.
 - g) "The Owner" means, the Municipal Commissioner, Latur City Municipal corporation, Latur the person, for the time being holding that Office and his successors and shall include any Engineer authorized by him.
 - h) The "Contractor" means successful tenderer, that is the tenderer, whose tender has been accepted and who has been authorized to proceed with the work.
 - i) "The LCMC" shall mean the Latur City Municipal Corporation,
a LCMC designated by the LCMC or any other Engineer who is for the time being entrusted with his functions, duties and powers and so notified.
 - j) "Tender" means the proposal of the contractor submitted in prescribed form setting forth the prices for the goods to be supplied and other related services to be rendered and setting forth his acceptance of the

terms and obligations of the conditions of contract and specifications.

- k) "Contract Time" means period specified in the document for the entire execution of contracted works and other services to be rendered commencing from the date of notification of award including monsoon period.
 - l) "Month" means calendar month.
 - m) "Site" means location at which the contractor will have to execute the contracted work.
 - n) "The Engineer or Engineer-in-charge" shall mean the City Engineer /Hydraulic Engineer / water supply Engineer authorized by the Municipal Corporation.
 - o) PMC means Project Management Consultant appointed by the Latur City Municipal Corporation.
2. The contractor shall erect temporary sheds for storage for material supplied by Corporation and brought by him on site. Also, at each construction site contractor shall have separate storage space for cement and other material.
 3. All the water retaining structures shall be designed in M25 and constructed in M30.
 4. Contractor shall take trial pits and trial bores at site at his own cost to ascertain the bearing capacity of the strata and accordingly submit the designs.
 5. Contractor shall submit designs and drawings for all structures such as Balancing Tank, Intake well, Jack well, Pump House (Hydraulic and structural), Sump, thrust blocks/anchor blocks, and its layout, as directed by Executive Engineer/Engineer in charge. These designs and drawings shall be got checked from Government Engineering College or IIT at contractor's own cost.
 6. The contractor shall maintain the record of these materials in the prescribed proforma, and registers as directed by the Executive Engineer/Engineer in charge. The sample of prescribed proforma is attached herewith. These registers shall be signed by both contractors and representative of Engineer-in-Charge. These registers shall be made available for inspection, verification for the department as and when required. These registers shall be in the custody of department and shall be maintained by the department.
 7. Contractor shall take photographs and videos of all sub-works during construction and submit two copies in hard and soft along with final bill.
 8. Contractor shall prepare record drawings of all sub-works as per execution in details by using Auto Cad programme as directed by Executive Engineer/Engineer in charge. He should submit 3 Nos. Pen drive along with three hard copies during the submission of final bill. Final bill will not be passed unless and until this is submitted. No extra payment will be made for submission of pen drives.
 9. Contractor shall maintain register for dewatering having details such as BHP of pumps, start and stop of dewatering pumps, Fuel consumed etc.
 10. The material i.e. cement, steel, sand, metal, bricks, alum pipes valves etc.

brought on the work site shall be accompanied with the necessary company/manufacturing firm's test certificate. In addition, these materials shall be tested as per frequency prescribed by the department and the cost of such testing shall be borne by the contractor. If the test results are satisfactory, then and then only the material shall be allowed to be used on the work. If the test results are not as per standards, these materials shall be immediately removed from the work site at contractor's cost. In case of cement, if so, requested by the contractor in writing, material will be allowed to be used before receipt of test results, but this will be entirely at the risk and cost of the contractor.

11. All the formwork used for construction shall be of steel or with lining of steel. Wooden shutters may be allowed at the discretion of the Executive Engineer/Engineer in charge for minor works.
12. Contractor shall have Cube Testing machine on site. Test cubes shall be tested in front of Executive Engineer/Engineer in charge or his representative and a register for it shall also be maintained.
13. RCC designer appointed by the Contractor shall visit and inspect the work at various stages of construction and comply with the query of the department without any extra cost.

14. **SCOPE AND MEANING OF CONTRACT:**

The term contract hereinafter used means and includes the notice for invitation of tender, schedule 'A' i.e. schedule for departmental supply of materials, schedule 'B' i.e. schedule of Items to be executed under this contract, general conditions, schedule of obligatory requirements, general and detailed specifications all appendices drawing and any other documents attached to the blank tender form issued to the contractor firm. These are subject to any alterations and modifications carried out and agreed to before the contract is finally decided and accepted by the Executive Engineer, Municipal Commissioner. The term contract and firms mean the agency entering into contract with the Municipal Commissioner.

The LCMC, an Government undertaking /urban local body of Government of Maharashtra, has proposed to execute the following work under sanctioned scheme Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur."

This tender includes-

1	Working Survey
2	Intake Well (6.00 M Dia)
3	Inspection Well (5.00 M Dia)
4	Connecting Main (1400 MM Dia L = 80 M) TWO ROWS
5	Jack well & Pump House (15.00 M Dia)

6	Approach Bund (Length 70 m)
7	Meter Room At Head Work
8	Raw Water Rising Main (HW To M.S. Shaft) (1000 MM DIA D.I.K- 9 PIPES. L - 3615 M)
9	M.S. Shaft
10	Raw Water Gravity Main (M.S. Shaft to WTP) (1200MM Dia = 25390 M, 1100 MM Dia.=20500 & 700 MM Dia=800M D.I.K-7 PIPES)

15. IMPORT LICENSE AND FOREIGN EXCHANGE:

In respect of the work on contractors own design, the contractor shall quote for the indigenous equipment only. Foreign exchange and import license required by the contractor if any shall have to be arranged by the contractor independently. Department shall not take any responsibility in this regard. Delay in getting any materials shall not be entertained for extension of time limit of the contract.

16. ACQUITANCE WITH WORKS AND SITE CONDITIONS:

The contractor shall be deemed to have carefully examined the scope of work, location and alignment of various components under this tender, site conditions, the general conditions, the specifications, drawing availability of material required etc. and has fully acquainted himself regarding all aspects of works, if he shall have any doubt as to the meaning of any portion of the tender papers. He shall set forth the particulars of the tender to the notice of Executive Engineer, Municipal Commissioner, before submission of tender and get the doubts cleared. Once the tender is submitted duly filled, he shall be supposed to have accepted the conditions and specifications full and interpretation of the conditions be entirely at the discretion of the competent authority of the department.

17. OBSTRUCTIONS IN THE WORK:

All obstructions such as electric cables, telephone line, water and sewer mains, manholes, natural drainage, culverts, storm water drains etc. coming in the way shall be carefully looked after against any damages which otherwise will have to be made good by the contractor at his own cost. Any work of removing, repairing or remaking etc will be carried out by the contractor without any extra claims for the same in contractor with the respective departments.

18. LAND FOR THE USE BY THE CONTRACTOR FOR STORING MATERIALS ETC.:

As far as possible the contractor shall be allowed to use the Municipal Land without any charge, in possession of concern LCMC for stacking his materials, stores, erection of temporary structures, sheds etc with prior written permission of Executive Engineer /Municipal Commissioner. The location of the temporary structures to be erected shall be got approved from the Executive Engineer /

Municipal Commissioner and all the products obtained after cutting the same shall be stacked at suitable place as directed by Engineer in charge. All concern LCMC land occupied by the contractor for temporary use shall be handed over back in good conditions to the entire satisfactions of the concern LCMC as and when demanded by him. Any damage or alterations made in the area shall be made good by the contractor. If the departmental land is not available, the contractor has to make his own arrangements of land on hire or otherwise at his own cost.

19. **LABOUR CAMPS:**

The contractor shall at his own expenses make all necessary provisions for land, housing grains, water supply and sanitary arrangements etc for employees and shall pay direct to the authorized concerned all rents, taxes and other charges. The contractor shall also comply with all requirements of health department in regard to maintenance of anti-epidemic conditions.

20. **WORK THROUGH OTHER AGENCY IN THE SAME AREA:**

The Executive Engineer / Municipal Commissioner shall have the right to execute the works, not included in this contract, but within the premises occupied by the contractor for the purpose of this contract, through any other agency.

21. **SPECIFICATIONS**

The wording of items in Schedule 'B' shall be taken as guidelines for general provisions and coverage under the item. The detailed specifications for relevant items shall be as per detailed specifications enclosed and as per P.W.D. Handbook, Standard Specifications, Relevant and latest editions of IS. Code. The other standard, wherever quoted, shall be applicable. If the standard specifications fall short for the items quoted in the Schedule of this contract, reference shall be made to the latest Indian Standard Specifications, IRC codes. If any of the items of the contract do not fall in reference quoted above, the decision and specification as directed by the Executive Engineer/Engineer in charge shall be final.

It is presumed that the Contractor has gone carefully through the standard specification (Vol. I & II, 1981 edition) and the Schedule of rate of the Division and has also studied site conditions before arriving at rates quoted by him. The special provisions and detailed specification of wording of any item shall gain precedence over the corresponding contrary provisions (if any) in the standard specification given without reproduction the details in contract. Decision of Executive Engineer/Engineer in charge shall be final in case of interpretation of specifications.

22. WATER AND ELECTRICITY

The contractor shall make his own arrangements at his own cost for water required for construction and hydraulic testing as well as for labour camp. The Latur City Municipal Corporation does not take any responsibility for supply of water to contractor for construction or testing purposes during the entire work. If water is supplied by Latur City Corporation, Contractor shall take connection at his cost and provide water meter on it. Water charges shall be paid by contractor as per prevailing water rates to Latur City Municipal Corporation regularly every month. Power supply from MSEDCL if required for construction of work as well as for labour camp will have to be arranged by the contractor at his cost. LCMC does not take guarantee for continuous power supply at site.

23. LINE OUT

The contractor shall himself carry out the line out of works in the presence of the representative of the LCMC and the contractor shall be responsible for accuracy of it. He shall employ a qualified Engineer for this purpose as well as for supervision of works.

24. PROGRAMME AND PROGRESS SCHEDULE

The contractor shall furnish within 15 days from the date of work order a progress schedule indicating the date of starting, quarterly progress expected to be achieved and anticipated date of completion of each major item of the work. The schedule should be capable of achievement towards completion of whole work in the stipulated time.

- i. The Contractor shall submit his own programme as per time limit stipulated in the tender, in the form of Bar Chart which should give details of milestones of physical stages of each sub work. Simultaneously with the execution of the Contract Agreement, the Contractor shall submit to The Engineer his item-wise monthly programme, which shall be nothing but detailing of the programme,
- ii. The programme shall also state the milestones of part commissioning and part completion of the sub-work included in the tender. The programme shall also provide the information as to required approvals to drawings, samples, materials, equipment's and their time of submissions to the LCMC. The progress shall be submitted by the Contractor visa-a-vis programme every month. The works team of the Contractor shall be so motivated to know the balance work at the end of each week and the rate required in the balance period to complete the work and therefore, shall endeavour to complete the task assigned for each week timely. In case, where the updated and revised schedule is required, the same shall be submitted to the owner for approval.

If deviation exceeds 10% in scheduled programme, competent authority has right to reject the tender of successful tenderer.

In the event of contractor failing to execute the work as per scheduled programme submitted by him or in the event of unreasonable delay in the part of contractor, he shall be liable to as compensation an amount at the fixed rate subject to maximum amounting to 10% of the tender cost.

25. CHECKING QUALITY OF THE WORK:

The Engineer in charge should consider it necessary to satisfy himself to the quality of work, the contractor shall at any time during continuance of the contract period produce sample of work done or if necessary, pull down a responsible part of the work enough for such inspection and testing as the Engineer in charge may direct. The contractor shall make good the same at his cost and to the satisfaction of the Engineer in charge without extra cost.

26. CHANGES:

Any marginal and minor changes as may be found necessary by the Engineer in charge during execution shall have to be carried out by the contractor without extra cost.

27. INSURANCE OF WORKERS:

The successful tenderer should get the labour insurance done, on account of risk involved within a month from the date of work order, failing which 1% will be withheld from the R. A. bills of the work and it will not be refunded till labour insurance is done and a documentary evidence to this effect is produced by the contractor. The successful contractor tenderer should purchase insurance policy identifying the Municipal Commissioner therein.

28. ARBITRATION

In case any dispute arises out during execution of works, no arbitrator shall be appointed for redressal of the dispute. In this regard, decision of the Municipal Commissioner, Latur City Municipal Corporation shall be final and remain binding on both parties.

29. INTENT AND INTERPRETATION OF CONTRACT DOCUMENTS

- 29.1** The contract documents are complementary and what is called for by one is as binding as if called for by all. Any work that may be reasonably inferred from the drawings or specifications as being required to produce the intended result shall be provided by the contractor whether or not it is specifically called for, in Schedule- 'B'. The contractor shall furnish and pay for all labour, supervision, materials, equipment, transportation, construction, equipment and machinery tools, appliances, water, fuel, power, energy, light, heat, utilities, telephone, storage,

protections, safety provisions, and all other facilities like service, incidentals, approaches to site etc any nature whatsoever necessary for the satisfactory and acceptable execution, testing and completion of the work in accordance with the contract documents, ready for use and operation by the owner. The cost of all these arrangements shall be deemed to be included in the contract offer and no separate payment shall be admissible thereof.

29.2 Interpretations

Written clarifications or interpretations necessary for the proper execution or progress of the work, in the form of drawings or otherwise, will be issued with reasonable promptness by the Engineer and in accordance with any schedule agreed upon.

29.3 Drawings

Figured dimensions on drawings shall govern over scaled dimensions and detailed drawings shall govern over general drawings. The Contractor shall submit six sets of drawings according to the design.

29.4 Signed Drawings

Signed drawings alone shall not be deemed to be in order for work unless it is entered in the agreement or schedule or drawings under proper attestation of the Contractor and the Engineer or unless it has been sent to the contractor by the Engineer with a covering letter confirming that the drawing is an authority for work in the contract.

29.5 Technical Words

Work, materials or equipment described in words which so applied have a well-known trade or technical meaning shall be deemed to refer to such recognized meanings.

30. LAND, CONDITION AND LAYOUT

30.1 Line out of the Work

30.2 Surveys and Measurements

The contractor shall carefully preserve all surveys as also setting out stakes, reference points, benchmarks and monuments. If any stakes, points or benches be removed or destroyed by any act of the contractor or his employees, they may be reset at the contractor's expense. The contractor shall supply without charge the requisite number of persons with the means and materials necessary for the purpose of working survey, setting out works, and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work or materials.

30.3 Contractor's Verification

The Contractor will establish at the work site a substantial B.M. and connect it to a permanent B.M. available in the area with known value. The contractor will then carry out necessary surveys and levelling, covering his work, in verification of the survey data on the working drawings furnished by the Engineer and he will be responsible for establishing the correct lines and levels and verification of the lines and level furnished on the working drawings. If any error has occurred in the work due to non-observance of this clause, the contractor will be responsible for the error and bear the cost of corrective work.

30.4 Site Office

The Contractor shall construct at his cost a semi-permanent nature site office with minimum of 20 Sq. m area and shall be provided with minimum two tables, two almirahs, six Nos of chairs. The office and the furniture shall be provided and maintained by the contractor throughout the contract period at his cost. The use of the site offices shall be adequate size to accommodate the inspecting Engineers of PMC/any other inspection committee/agency appointed by the Government of India/Maharashtra/Collector/Municipal Administration to discuss and review progress of work. No extra payment will be made on this account.

The site office shall be provided at all the conspicuous structures to be constructed/components to be executed.

31. SECURITY DEPOSIT AND INDEMNITY BOND

31.1 Security Deposit

The security deposit shall be returned to the contractor without any interest when the contractor ceases to be under any obligation under the contract. This shall be read with Clause No.1 and 20 of B-1 Form for Security Deposit and Defect Liability Clause respectively.

31.2 Loss or Damage Indemnity Bond

The contractor shall be responsible during the progress as well as maintenance for any liability imposed by law for any damage to the work or any part thereof or to any of the materials or other things used in performing the work or for injury to any person or persons or for any property damaged in or outside the work limit. The contractor shall indemnify and hold the owner and the Engineer harmless against any and all liability, claims, loss or injury, including costs, expenses, and attorney's fees incurred in the defence of same, arising from any allegation, whether groundless or not, of damage or injury to any person or property resulting from the performance of the work or from any material used in the work or from any condition of the work or work site, or from any cause

whatsoever during the progress and maintenance of the work.

32. SUPERVISION AND SUPERINTENDENCE

32.1 SUPERVISORY STAFF:

The contractor shall have experienced technical qualified general supervisor for the work, who is capable of managing and guiding the work and also capable of understanding the instructions given to him by the Engineer in charge from time to time and shall be responsible to carry them out promptly. The contractor shall have during working hours, supervisor of sufficient training and experience to supervise the various items and operations of the work. Further, the Engineer in charge may notice, desire contractor high ranking member to be present on any specified date, the contractor shall comply with such directions Contractor's Supervision.

The contractor shall supervise and direct the works efficiently and with his best skill and attention. He shall be solely responsible for means, methods, techniques, procedures and sequences of construction. The contractor shall co-ordinate all parts of the work and shall be responsible to see that the finished work complies fully with the contract documents, and such instructions and variation orders as the Engineer may issue during the progress of the works.

32.2 Agent

The Contractor shall keep on the work at all times during its progress a competent resident agent preferably a qualified and experienced Engineer, capable of managing and guiding the work and understanding the specifications and contract conditions. For this purpose, the contractor shall communicate to the Department, name, qualification and experience of such Engineer to be appointed for execution of this work. The agent appointed by the contractor shall not be replaced without ten (10) days written notice to the Engineer except under extra-ordinary circumstances. The agent shall be the Contractor's representative at the site and shall have authority to act on behalf of the contractor. All communications, instructions and directions given to the agent shall be binding as if given to the Contractor by the Engineer not otherwise required to be in writing will be given or confirmed in writing upon request of the Contractor. or in work- order book

33. CARE AND USE OF SITE

The Contractor shall not commence operations on land allotted for work without prior approval of the Engineer. If these lands are not adequate the Contractor may have to make his own arrangements for additional lands required for his use. The contractor shall not demolish, remove or alter any of the structures,

trees or other facilities on the site without prior approval of the Engineer. All the area of Contractor's operations shall be cleared before returning them to the Engineer.

34. OVERLOADING

No part of the work or new and existing structures, scaffolding, shoring, sheeting, construction machinery and equipment, or other permanent and temporary facilities shall be loaded more than its capacity. The Contractor shall bear the cost of correcting damage caused by loading or abnormal stresses or pressures.

35. USE OF EXPLOSIVES

The Contractor shall comply with the laws, ordinances, regulations, codes, orders, other governing the transportation, storage and use of explosives, shall exercise extreme care not to endanger life or property and shall be responsible for all injury or damage resulting from the use of explosives for or on the work.

36. MANUFACTURER'S INSTRUCTIONS

The Contractor shall compare the requirements of the various manufacturer's instructions with requirements of the contract documents, shall promptly notify to the Engineer in writing of any difference between such requirements and shall not proceed with any of the works affected by such difference shall until an interpretation or clarification is issued pursuant to article.

The contractor shall bear all costs for any error in the work resulting from his failure to the various requirements and notify the owner of any such difference.

37. PROTECTION

The contractor shall take all precautions and furnish and maintain protection to prevent damage, injury or loss to other persons who may be affected thereby. All the works and all materials and equipment to be incorporated therein whether in storage or on the site, under the care, custody or control of the contractor or any of his sub-contractors and other improvements and property at the site or where work is to be performed including building, tools and plants, pole lines, fences, guard rails, guide posts, culvert and works markers, sign structures, conduits, pipelines and improvements within or adjacent to streets, right-of-way, or easements, except those items required to be removed by the Contractor in the contract documents. The Contractor's protection shall include all the safety precautions and other necessary forms of protection, and the notification of the owners of utilities and adjacent property.

The contractor shall protect adjoining site against structural, decorative and other damages that could be caused by the execution of works and make good at his cost any such damages that could be caused by the execution of works and make good at his cost any such damages.

38. UTILITIES AND SUB-STRUCTURES

Before commencing any excavations, the Contractor shall investigate, determine the actual locations, and protect the indicated utilities and structures, shall determine the existence, position and ownership of other utilities and substructures in the site or before the work is performed by communication with such property owners, search of records, or otherwise and shall protect all such utilities and substructures.

38.1 Restoration and Repair

Except for those improvements and facilities required to be permanently removed by the contractor, the contractor shall make satisfactory and acceptable arrangements with the appropriate owners, and shall repair, restore all improvements, structures, private and public roads, property, utilities and facilities disturbed, disconnected, or damaged as a result or consequence of his work or the operations of those for whom he is responsible or liable, including that caused by trespass of any of them, with or without his knowledge or consent, or by the transporting of workmen, material or equipment to or from the site.

39. WORKMEN

The contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the works any unfit person or anyone not skilled and experienced in the assigned task. The Contractor shall in respect of labour employed by him comply with or cause to be complied with the provisions of various labour law and rules and regulations as applicable to them in regard to all matters provided therein and shall indemnify the owner in respect of all claims that may be made against the owner for non-compliance thereof by the Contractor.

In the event of the contractor committing a default or breach of any provisions of labour laws and rules and regulations, the Contractor shall without prejudice to any other liability under the acts pay the owner a sum as decided by the engineer.

39.1 Work during Night or On Sundays and Holidays

Unless otherwise provided, none of the permanent works shall be carried out during night, Sunday or authorized holidays without permission in writing. However, when work is unavoidable or necessary for the safety of life, priority of works, the Contractor shall take necessary action immediately and intimate the Engineer accordingly.

39.2 Workmanship

The quality of workmanship produced by skilled knowledgeable and experienced workmen, machines and artisans shall be excellent. Particular attention shall be given to the strength appearance and finish of exposed work.

40. MATERIALS AND EQUIPMENT

All materials and equipment incorporated in the work shall be new. Materials and equipment not covered by detailed requirements in the contract documents shall be of the best commercial quality suitable for the purpose intended and approved by the owner prior to use in the work.

40.1 Optional Materials

Only one brand, kind or make of material or equipment shall be used for each specific purpose through-out the works, notwithstanding that similar material or equipment of two or more manufacturers or proprietary items may be specified for the same purpose.

41. USE OF APPROVED SUBSTITUTIONS OR EQUALS

The contractor shall bear all extra expenses resulting from providing or using approved substitutions or equals where they affect the adjoining or related work, including the expenses of required engineering, redesigning, drafting and permits where necessary, whether the Engineer's approval is given after receipt of tenders.

42. LAWS AND REGULATIONS**43. Governing Law**

The contract documents shall be governed by the laws and by-laws of India, the State of Maharashtra and the local bodies in this region.

44. Resolving the disputes:

In case of disputes, between a Contractor and LCMC, the decision of the Municipal Commissioner shall be final and binding.

45. BURIED AND CONCEALED WORK

The contractor shall help in recording the precise location of all piping, conduits, ducts cables and like work that is buried, embedded in concrete or masonry, or concealed in wood or metal frame walls and structures at the time such work is installed and prior to concealment. Should the contractor cover such buried or work before such recording takes place, he shall uncover the unrecorded work to the extent required by the Engineer and shall satisfactorily restore and reconstruct the removed work with no change in the contract price or the contract time.

46. SAFETY PRECAUTIONS AND EMERGENCIES**Contractor's Responsibility for Safety**

The contractor shall be solely responsible notwithstanding any stipulations by owner or Engineer for initiating, maintaining and supervising all safety precautions and programmes, in connection with the work and shall comply with all laws, ordinance, code rules regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damages, injury or loss during the entire contract period including non-working hours.

On the occurrence of an accident arising out of the works which result in death, or which is so serious as to be likely to result in death, the contractor shall within one hour of such accident intimate in writing to the Engineer the facts stating clearly and with sufficient details the circumstances of such accidents and subsequent action taken by him. All other accidents on the works involving injuries to the persons or property other than that of the contractor shall be promptly reported to the Engineer clearly and with sufficient details the facts of such accidents and the action taken by the contractor. In all cases, the contractor shall indemnify the Engineer against all losses or damages, resulting directly from the contractor's failure to report in the manner aforesaid.

This includes the penalties or fines, if any payable by the owner as a consequence of failure to give notice under Workmen's Compensation Act or otherwise to conform to the provisions of the said Act in regard to such accidents. In the event of an accident in respect of which compensation may become payable by the contractor, such sum of money as may, in the opinion of the Engineer, be sufficient to meet such liability will be kept in deposit. On the receipt of award from the Labour Commissioner in regard to the quantum of compensation, the difference in the amount will be adjusted.

It is obligatory that the contractor shall take an all-Risk Insurance Policy for the works and keep it in force throughout the work period.

47. WARNINGS AND BARRICADES

The contractor shall provide and maintain barricades, guards, guard rails, temporary bridges and walkways, watchmen, headlights and danger signals illuminated from sunset to sunrise and all other necessary appliances and safeguards to protect the work, life, property, the public, excavations, equipment and materials. Barricades shall be substantial construction and shall be painted such as to increase their visibility at night. For any accident arising out of the neglect of above instructions, the contractor shall be bound to bear the expenses of defence of every suit, action or other legal proceedings, at law, that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay all damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the contractor be paid in compromising any claim by any such person.

48. ENGINEER'S STATUS DURING CONSTRUCTION, AUTHORITY OF THE ENGINEER

The Engineer shall have the authority to enforce compliance with the contract documents. On all questions relating to quantities, the acceptability of materials, equipment, or works, the adequacy of the performance of the work and the interpretation of the drawings and specifications, the decision of the Engineer shall be final and binding and shall be precedent to any payment under the contract agreement unless otherwise provided in the contract documents. The Engineer shall have the authority to stop the work or any part thereof as may be necessary to ensure the proper execution of the work, disapprove or reject the works which is defective, to require the uncovering and inspection or testing of the works to require re-examination of the works, to issue interpretations and clarifications, to order changes or alterations in the works, and other authority as provided elsewhere in the contract documents.

The Engineer shall not be liable for the results of any ruling, interpretation or decision rendered, or request, demand, instruction, or order issued by him in good faith. The contractor shall promptly comply with requests, demands, instructions and order from the Engineer.

The whole of the works shall be under the directions of the Engineer, whose decision shall be final, conclusive and binding on all parties to the contract, on all questions relating to the construction and meaning of plans, working drawings, sections and specifications connected with the work. The Engineer shall have the power and authority from time to time and at all times make an issue such further instructions and directions as

may appear to him necessary or proper for the guidance of the contractor

and the good and sufficient execution of the works according to the terms of specifications and the contractor shall receive, execute, obey and be bound by the same according to the true intent and meaning thereof; fully and effectually. Engineer may order any of the works contemplated thereby to be omitted, with or without the substitution of any other works in lieu thereof, or may order any works or any portion of works executed or partially executed, to be removed, changed or altered and if needful, may order that other works shall be substituted instead thereof and the difference of expenses occasioned by any such diminution or alteration so ordered and directed shall be deducted from or added to the amount of this contract.

49. DUTIES OF ENGINEER'S REPRESENTATIVE

The duties of the representative of the Engineer are to check, inspect and continuously supervise the work and to test any materials to be used or workmanship employed in connection with the works. He shall furnish the drawings and information to the contractor, approve the contractor's drawings subject to post-facto approval and signature of the Engineer-in-Charge, recommend and approve the interim certificates and taking over certificates after thorough checking and inspection and recommend extra work required and extension of time.

Approval for or acceptance of any work or material or failure to disapprove any work or material by the representative of the Engineer shall not prejudice the power of the Engineer thereafter to disapprove such work of material and to order removal or modification thereof. If the contractor shall be dissatisfied with any decision of the representative of the Engineer, he shall be entitled to refer the matter to the Engineer, who shall thereupon confirm, reserve or vary such decision only in genuine cases.

The representative of the Engineer shall be liable to inform the Engineer about the daily progress and compare it with the programme. He shall also inform the contractor immediately about the lag or lead in the progress than the programme.

50. DEFECTS AND RECTIFICATION

For period specified in the Clause 20 of B.1 form for the defect liability period for the individual type of work from the date of issuance of the completion certificate in accordance with Condition "Final Inspection and Acceptance" mentioned herein after, contractor shall remain liable for any of the works or parts thereof or equipment and fittings supplied which in the opinion of the Engineer fail to comply with the requirements of the contract or are in any way unsatisfactory or defective except fair wear and tear. The process of the assembly commissioning of all sections of pipelines, tested hydraulically in

patches, will involve some additional measures such as shaft of suitable height, fixing of air valves at more number of places on the alignment and all such measures shall be done by the contractor.

To the intent that the works and each part thereof shall at or as soon practicable after the expiry of the above period be taken over by the Engineer in the condition required by the contract to the satisfaction of the Engineer, the contractor shall finish the work (if any) outstanding at the date of completion as soon as may be practicable after such date and shall execute all such work of repair, amendment, reconstruction, rectification and making good of defects imperfections, shrinkages or other faults as may during the period of maintenance or after its expiry be required of the contractor in writing by the Engineer as a result of an inspection made by or on behalf of the Engineer prior to the expiry of the period. The contractor at his own expenses shall carry out all such work if the necessity thereof shall in the opinion of the Engineer and due to the use of materials or to neglect or failure on the part of the contractor to comply with any obligation expressed or implied on the contractors part under the contract. If the contractor fails to do any such work as entitled to carry out such work in which the contractor should have carried out at the contractor's own cost, the Engineer shall be entitled to recover from the contractor the cost thereof or may deduct the same from the moneys that become due to the contractor. Notwithstanding the aforesaid, if the contractor remains in default, one calendar month after the Engineer has given written instructions in writing, the Security Deposit shall become payable to the LCMC who will deduct the cost plus overhead expenses of such works as have been necessary to rectify the contractor's default and the balance, if any, shall be disbursed. The Contractor shall submit the operation and maintenance manual for the fruitful operation of the works. The Contractor will have a liberty to visit the operating works during the defect liability period and satisfy himself about the on-going operations in case he does not visit and a defect is observed then the Engineer's opinion shall be final and binding as to the application of defect liability.

51. RIGHT TO WITHHOLD

The Engineer may refuse to approve to any payment, or because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously approved and paid to such extent as may be necessary in the opinion of the Engineer to protect him from loss because (a). The work is defective, (b) Third party claims have been filed or there is reasonable evidence indicating probable filing of such claims, (c) of the Contractor's failure to make payment properly to sub-contractors or for labour, materials or equipment, (d) of damage to another Contractor, or to the property of other caused by the Contractor, (e) of reasonable doubt that the

work cannot be completed for the unpaid balance of the contract price, (f) of reasonable indication that the work will not be completed within the contract time, (g) of the Contractor's neglect or unsatisfactory prosecution of the work including failure to clean up. Once the provisions of law that enables or require the Engineer to withhold such payments are removed, payment will be made for amounts withheld because of them to the extent the contractor is entitled to payment.

52. FINAL INSPECTION AND ACCEPTANCE

Upon written notice from the contractor, that the entire work required by the contract documents is complete and that all submittals required by him are made, and after the Contractor has delivered the bonds, certificates of inspection, guarantees, warranties, releases and other documents, as required by the contract documents or by law, the Engineer will make a final inspection, and he will notify the Contractor in writing of any particulars in which this inspection reveals that the work is defective, and will also notify the Contractor in writing of any deficiencies in the submittals and the document required from him.

The Contractor shall promptly make such corrections as are necessary to remedy all defects or deficiencies. After the Contractor has completed any such corrections to the satisfaction of the owner, the Engineer will issue a written completion certificate of the work and file any notice and completion required by law or otherwise.

53. CONTINUING OBLIGATION OF THE CONTRACTOR

The Contractor's obligation to perform and complete the work in accordance with the contract documents is and shall be absolute. Neither the observation during construction and final inspection of the work by the Engineer, nor any payment to the Contractor under the Contract documents, nor any use or occupancy of the work or any part thereof by the Engineer, nor any act of acceptance by the defective work by the Engineer shall constitute acceptance of work not in accordance with the contract documents.

54. TAXES TO BE DEDUCTED AT SOURCE

During the course of contract period the deduction of Income Tax/Work Contract Tax or any other Central/State or local tax required to be deducted at source, will be made as per prevailing rules from the contractor's bills and will be remitted to the concerned Departments. Certificate for such deductions will be issued by the Executive Engineer.

55. RECORDS AND MEASUREMENTS

The Engineer shall except or otherwise stated therein, determine by

measurement the value in accordance with the contract of works done in accordance therewith.

All items having a financial value shall be entered in a measurement book, level book etc. as prescribed by the Engineer so that a complete record is obtained of all work performed under the contract.

The Engineer OR his authorized representative shall take measurements jointly with the Contractor or his authorized representative. Before taking measurement of any work the Engineer or the person deputed by him for the purpose shall give reasonable notice to the contractor. If the contractor fails to attend or send an authorized representative for measurement after such notice or fails to countersign or record the objection within a week from the date of measurement, then in any such event measurements will be taken by the Engineer, or by the person deputed by him shall be taken to be correct measurements of the works and shall be binding on the contractor.

There shall be absolutely no doubt regarding the measurements and hence the contractor shall first arrange the exact branding of the alignment length on site, and mark distinctly. All hidden measurements shall be measured by steel tape, on the exact section as marked previously and depth by the regular staff generally at an average interval of 30 m or suitable interval decided by Engineer-in-Charge.

In case of difference of opinion in the measured quantity and the payable quantity of any particular measurements, the contractor must know the departmental practices developed as per the manuals and standard specifications.

Normally only excavation will not be measured. When the pipes and specials are laid in position, then only the excavation and other items will be measured.

The Contractor shall, without any extra charge, provide assistance with every appliance and other things necessary for measurements, such as levelling instruments (Auto setting), tapes, staffs, camera, paints, brushes and required labour.

Measurements shall be signed and dated by both the parties each day (for taking measurement) on the site on completion of measurements. The Contractor shall take up still colour photographs at intervals during the execution of works so that a history of development of the works is maintained.

The dated photographs, in two copies, shall be submitted to the Engineer-in-charge every time. No extra cost will be paid for this. This generation of record

shall provide the used methodology of working and highlight the quality of material and workmanship. The cost of the said work shall be borne by the Contractor. It shall be the property of the LCMC. and shall not be used for campaigning, advertising without permission of the LCMC.

56. WRITTEN NOTICE

Written notice shall be deemed to have been duly served or delivered in person to the individual or member of the firm or to an Engineer of the contractor for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to him who gives the notice. The notice on the Hard copy/E-Mail shall be deemed to have been duly served. The address given in the contractor's tender on which all notices, letters and other communications to the contractor shall be mailed or delivered, except that said address may be changed by the Contractor by notifying the owner in writing. This shall not preclude the service of any notice, letter or other communication upon the Contractor personally.

57. USE OF COMPLETED PORTIONS

The owner shall have the right, upon written notice to the Contractor, to take possession or occupancy of, and use any completed or partially completed portions of the work, notwithstanding that the time for completing the entire work or such portions may not have expired but such taking possession or occupancy and use shall not be deemed to waive of any requirement of the contract documents or a waiver or acceptance of any work not completed in accordance with the contract documents.

58. CLEANING UP

The contractor shall at all times during the work keep the site and premises, adjoining property and public property free from accumulations of waste materials, rubbish, and other debris resulting from the works, and at the completion of the work shall remove all waste materials, rubbish and debris from and about the site and premises as well as all tools, construction equipment and machinery and surplus materials, and shall leave the site and premises, clean, tidy and ready for occupancy by the owner. The Contractor shall restore to their original condition those portions of the site not designated for alteration by the contract documents paved ways, parking areas and roadways disturbed by the construction shall be redone by filling the excavation, if any, by sand compacted material and bringing it to its original shape as directed and approved by the Engineer. No waste material shall be buried or disposed off on the owner's property unless so approved in writing by the Engineer-in-Charge. Before the Contractor applies for final inspection and acceptance of the work, all items of work shall be complete, ready to operate,

and in a clean condition as determined by the Engineer.

59. OWNER'S RIGHT TO CLEAN UP

If the Contractor fails to satisfactorily clean up or if a dispute arises between the Contractor or in several Contractors as to their responsibility for cleaning up, the Engineer may clean up and charge the cost thereof to the Contractor for his failure, or to the several contractors as the Engineer shall determine to be just.

60. FOSSILS ETC.

All fossils, coins, articles of value of antiquity and structures or other remains or things of geological or archaeological interest discovered on the site shall be deemed to be the property of the owner and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the Engineer of such discovery and carry out at the expenses of the Engineer's order as to the disposal of the same.

61. LABOUR RULES

If demanded by Municipal Authorities, the contractor will have to produce to the satisfaction of the accepting authority a valid and current license issued in his favour under the provision of Contract Labour (Regulation and Abolition) Act 1970, before starting the work, otherwise the Contractor shall have to face the further consequences. The contractor shall have to comply with the Apprentices Act 1961, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be breach of contract and the Superintending Engineer, may in his discretion, cancel the contract, the Contractor shall also be liable, for any pecuniary liability arising on account of any violation of the provisions of this act, by him.

Salient features of some major labour laws/ Acts applicable to establishment engaged will be as below.

- a. Workman compensation Act 1923.
- b. Payment of Gratuity Act 1972.
- c. Employees PF and miscellaneous provisions Act 1952.
- d. Maternity Benefit Act 1951.
- e. Contract Labour (Regulations and Abolition) Act 1970.
- f. Minimum Wages Act 1948.
- g. Payment of Wages Act 1936.
- h. Equal Remuneration Act 1979.

- i. Payment of Bonus Act 1965.
 - j. Industrial Disputes Act 1947.
 - k. Industrial Employment (Standing orders) Act 1946.
 - l. Trade Union Act 1926.
 - m. Child labour act 1926.
 - n. Interstate Migrant Workmen's (Regulation of Employment and Conditioned of Services) Act 1979.
 - o. The building and other construction works (Regulation of employment and conditions of Services Act 1946 and the cess Act of 1996).
 - p. Factories Act 1948.
- All the relevant law and act will be applicable for this work.

62. STATUTORY INCREASE IN DUTIES, TAXES ETC.

All the taxes including GST and duties levied by the Central Govt., State Govt and by Local Bodies at the prevailing rates applicable on the date of receipt of tender, considering this contractor should quote his offer. Any increase in tax rates till completion of work shall be fully borne by the Contractor and shall not be reimbursed to him on any account.

63. INSPECTION, TESTING & FEES.

All material & equipment, irrespective whether specified or not, shall be tested at manufacturer's works laboratory and the Test Certificate thereof shall be furnished. The test shall be witnessed by the Engineer-in-charge as well as the third party designated by the LCMC.

64. MACHINERY REQUIRED

All machinery required for erection/execution purposes such as cranes, trucks, etc. shall be arranged by the Contractor. Department shall not take any responsibility for providing such machinery even on rental basis. No concreting shall be permitted unless centering and reinforcement is approved by the Engineer-in-Charge.

65. WORK ORDER BOOK

A well bound work order book shall be maintained on site and it shall be the property of Latur City Municipal Corporation and the Contractor/ his agent shall promptly sign orders given therein by the Engineer in charge of Municipal Commissioner. officials or his superior officer, in token of having received them and comply them. This will be a permanent record The compliance shall be reported by the contractor to the Engineer in good time so that it can be checked. The blank work order book with machine numbered pages will be provided by the LCMC free of charge for this purpose. The Contractor will be allowed to copy out the instruction therein from time to time. Hewill not record any remarks in the order book but may take up the matter recorded therein.

66. DISCREPANCIES AND OMISSIONS

The tender drawings and specifications, shall be considered as explanatory, of each other and together shall form the technical requirements and stipulations of tender documents. Detailed drawings shall have preference over small scale drawings. Similarly, detailed specifications shall have preference over general specifications. Should any discrepancy arise as to the meaning, intent or interpretation of any specification or drawing the decision of the Engineer- in-charge shall be final and binding on the Contractor.

**67. PRICE VARIATION - AUTHORITY
NO PRICE VARIATION****68. NO INTEREST ON DUES**

No interest shall be payable by the LCMC on amounts, due to contractors pending final settlement of claim. Further, no interest shall be payable by Latur City Municipal Corporation on any amount/payment.

69. Any recovery advised by the LCMC shall be recovered from any bill or money retained from this contract. All the recoveries either outstanding or dues under the contract or incidental there to as determined may be, stand recoverable. Secured Advance will be granted as per provisions made in MPW Manual and MPW Account Code.

70. Mobilization Advance will not be granted.

71. The tenderer is entitled to avail exemption from central excise tax, to all items of machinery, including instruments, apparatus and appliances, auxiliary equipment and their components/parts required for setting up a water treatment plants intended to treat water to make it fit for consumption of humans or animals. Central excise duty will also be exempted on pipes of sizes 100 mm and above required for obtaining untreated (raw) water from its source to the plant and for supplying the treated (potable drinking) water to the storage place from which it would be further supplied for consumption of humans or animals. The concession would be subject to the certification by the Collector/District Magistrate/Deputy Commissioner of the District in which the water treatment plant is to be set-up. To avail exemption on duty the tenderer himself shall pursue the matter with different Government Departments. Any co-operation in this regard will be extended to the tenderer. The tenderer shall quote his offer taking into account above exemption which he may avail.

**DESCRIPTION OF WORKS AND
LOCATION**

LATUR CITY

Latur city is a district head quarter located in the Marathwada region covering an area of @ 32.00 Sq. kms and present population of 3.82 lakhs (2011 census) The city is anticipated to witness a significant decadal growth in population of about 52%.

The Latur Municipal Corporation (LCMC) is responsible for water supply to Latur City. Being the district headquarters, the city is an important administrative centre that houses many regional offices of the Govt. a majority of the working population in Latur is employed in the tertiary sector. In addition, Latur City Municipal Corporation (LCMC) estimates that Latur has a floating population of about 15,000 that visit the city for various trade and commerce related activities.

Latur acts as an important centre of trade, commerce, and services for the surrounding villages of not only the Latur district, but also those of the neighbouring district of Osmanabad in Maharashtra and Bidar district of the Karnataka state. In comparison with cities in Marathwada and comparable cities in Maharashtra Latur appears to be on high growth trajectory as it has been consistently attracting investments as well as immigration of people.

In the last decade Latur's economy was primarily driven by investments in infrastructure, employment in Govt. sector, trade and commerce and construction activities. The presence of educational institutes of repute, coupled with quality health care facilities and infrastructure services makes the city an attractive destination.

Topography: Latur town is situated on a plateau with a ridgeline running west east trough the centre of the town. The town is sloping towards south. The range of ground levels is from R.L. 610 RL 637 with an average R.L. of 615 Mtr. Above MSL. The town is spread to a large extend in the east – west direction on compared to the north-south direction.

The maximum and minimum rainfall is 1313 mm and 527 mm respectively.

GEOGRAPHY AND CLIMATE

Latur is situated 636 meters above mean sea level, on the Balaghat plateau, near the Maharashtra–Karnataka state boundary.

Temperature

Temperatures in Latur range from 13 to 41 °C, with the most comfortable time to visit in the winter, which is October to February. The highest temperature ever recorded was 45.6 °C. The lowest recorded temperature was 2.2 °C. In the cold season the district is sometimes affected by cold waves in association with the eastward passage of western disturbances across north India.

Rainfall

Most of the rainfall occurs in the monsoon season from June to September. Rainfall varies from 9.0 to 693 millimetres per month. Average annual rainfall is 725 millimetres.

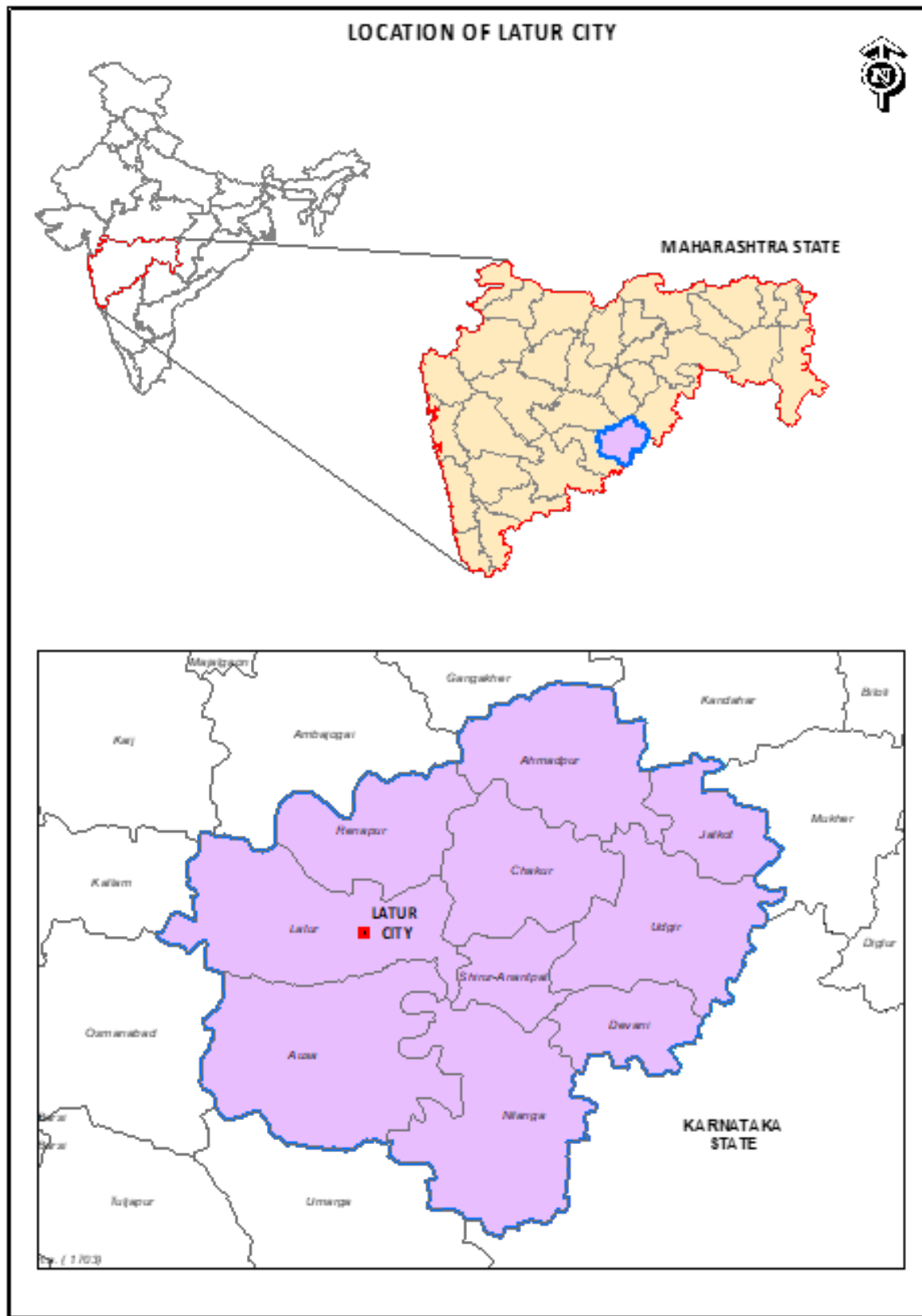
TOPOGRAPHY

Latur is in the Marathwada region, the southeast part of Maharashtra State. Parbhani is located towards the north of the district, Nanded on its northeast, Bidar (Karnataka State) on the east and northeast, Osmanabad towards its south and west and Beed district towards its southeast.

DEMOGRAPHY**Overview**

The Latur City Municipal Corporation is divided into 62 Ward for which elections held every 5 years. As per the Population Census 2011, the total population of LMC is 3,82,940 of which 1,97,737 are males while 1,85,203 are females with total 74,557 families residing.

In 2011, literacy rate of LMC was 84.22 %, Male literacy stands at 88.96 % while female literacy rate was 79.20 %.



SPECIAL CONDITIONS

Name of work: **Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur.**

SPECIAL CONDITIONS

1) Payment against Excess quantities of various items.

Before making payment of excess quantities as per rules, the concerned Executive Engineer, Latur City Municipal Corporation shall get himself satisfied regarding genuineness of the claim and he should also exercise a compulsory check of minimum 10 % of measurements for a particular item. Responsibility of informing the excess quantities as per Schedule „B’ of the tender for approval of Competent authority of Latur City Municipal Corporation and also for correctness of claim to be submitted in future shall rest with Junior Engineer, an auditor and divisional Accountant also. While submitting the proposal for approval, concerned authorities should consider the exact position of the revised estimates, if necessary due to this excess.

For executing any quantity, the excess over the quantity specified in the tender, the contractor should be authorized by the Executive Engineer, Latur City Municipal Corporation in writing.

While asking the contractor to execute such excess quantity, the concerned Executive Engineer, Latur Municipal Corporation should inform the Contractor in writing specifically that the payment in excess of quantities specified in the tender will be made after following concerned prescribed rules.

2) General

The quoted rate shall be total rate for the completed item of work as per the specification, and shall be inclusive of all incidental charges such as lifts, leads for materials, water for construction etc. The rates for excavation are inclusive of the edge of the excavation pit beyond foundation.

The tenderer must obtain on his own responsibility and his own expenses all the information which may be necessary for the purpose of making a tender and entering into a contract and must consider and satisfy himself with all local conditions, sites and quarries means of accesses, the nature of rock, material to be met with in all execution and all materials pertaining to work.

Specifications of item stipulated for other sub works shall be made applicable, where relevant.

3) Outline of works

The work will be on the lines of plans attached to the tender documents. The plans are, however, liable to change and strata as shown there is approximate.

The item of work and their approximate quantities are given in schedule „B' of the tender. The quantities are approximate and are liable to vary on plus or minus side.

4) Unit

The rates quoted for each item are for units mentioned in Schedule „B' against each item.

5) Site conditions

1. It shall be presumed that the Contractor has satisfied himself as to the nature of the works, general and local conditions, particularly on those bearings on transport handling, storage of materials, availability of labour, weather conditions and has estimated the cost and quoted his rates accordingly. Executive Engineer, Latur City Municipal Corporation will bear no responsibility for lack of such acquaintance with site conditions and consequences thereof.
2. Set of tender documents and conditions (up to a maximum of three sets) at the discretion of the Executive Engineer, Latur City Municipal Corporation will be supplied to the contractor after acceptance of tender.

6) Extras, Omissions and Discrepancies.

- a) In all the cases of the omissions, doubts or discrepancies in the dimension in the drawing and items of works, reference shall be made to the Executive Engineer, Latur City Municipal Corporation whose elucidation and elaboration shall be considered final.

7) Supply of material by the contractor.

- 7.1 The contractor should supply all the material mentioned in Schedule „B'. This shall be conforming to relevant IS & approved MJP vendors. All types of pipes, valve and specials will be accepted only after due third-party inspection and satisfactory inspection by the third-party inspection agencies appointed by the LCMC. (List of third-party inspection agencies appointed is periodically circulated by the MJP central office). The charges for the same shall be borne by the contractor.
- 7.2 Other material such as cement, tor steel etc. shall be conforming to relevant ISS testing charges for cement, steel shall be borne by the contractor. Ultra

- Tech cement (Ultra tech) shall preferably be used for water retaining structures.
- 7.3 1) For supply of pipes, valves, specials etc. -80% payment shall be released after supply, 10% after lowering, laying & jointing, and 10 % after satisfactory hydraulic testing.
2) 10% cost total sub work of pipeline work shall be retained till hydraulic testing is given as per IS code of as per tender condition.
- 7.4 The contractor shall provide, at the site of work, satisfactory storage for not less than one month's average consumption of works and shall keep the cement of storage and utilization of cement in the order of its arrival at the stores and the contractor shall maintain satisfactory records, which would at any time show the dates of receipt and proposed utilization of cement lying in the storage.
- 7.5 The Executive Engineer, Latur City Municipal Corporation shall at all the times have access to the stores and sites, method of storage, records and securities provided by the contractor. The contractor shall comply with instruction that will be given by Executive Engineer, Latur City Municipal Corporation, in this behalf.
- 7.6 The contractor shall further at all times satisfy the Executive Engineer, Latur City Municipal Corporation on demand any production of books, of submissions of returns in Performance as directed, other proofs, that, the cement supplied is being used for the purpose for which it is supplied and available to the Executive Engineer, Latur City Municipal Corporation.

8 TIME OF COMPLETION OF WORK: -

If at any stage of work, it is found that the execution of work is not as per the programme given in the Bar Chart, a fine shall be imposed on the contractor as mentioned in the agreement form.

9. APPOINTMENT OF ARBITRATOR:-

In case of any disputes raised between contractor and Executive Engineer/Engineer in charge during the course of contract regarding work, there shall be no provision for the appointment of an Arbitrator. The decision of the Municipal Commissioner, Latur City Municipal Corporation shall be held as valid and final. If the contractor files a case in appropriate court, the action of withdrawing the work and allotting it to any other agency shall be deemed to be continued as per the practice in vogue in the larger interest of implementation of work in time and as per original time schedule.

10. STRATA:

Strata for excavation are shown approximate based on trial pits and the Contractor shall have no right to claim extra if there are variations in the strata. The contractor will also have no claim if extra excavation is required to be done due to boulders and the Contractor will have to make such extra excavation

good by filling the same by C.C. 1:3:6 (M-100) or by plumconcrete with 60% plum in C.C.1:3:6 maximum

11. CHANGE IN SITE:

No claims shall be paid on account of reasonable change in site, alignment or orientation of the proposed work, within the work site marked on plan attached to the tender as the circumstances may call for.

12. TOOLS AND PLANT:

All tools, instruments and machinery and all other materials (not included in the Material Schedule 'A') shall be acquired by the Contractor. It is, however, open to the Engineer to lend or supply to the Contractor implements, machinery or other service not covered by the tender document which he can be and may consider desirable. For such tools, instruments, machinery and service provided, the Contractor will have to sign an agreement and pay Security Deposit and rental charges as may be fixed by the Engineer.

13. EXCAVATED MATERIALS:

All excavated stuff shall be LCMC's property and shall be disposed of at lead and lift by the Contractor in a manner as directed by the Engineer.

14. DAMAGES TO UNDER/ABOVE GROUND UTILITY

During the course of excavation and laying of the pipeline utmost care of existing main, electrical and telephone cables and private water connections/sewage connections shall be taken. Any damage to existing main electrical and telephone cable and private water/ sewage connection, etc, occurs during the course of execution, same shall be restored at the cost of the contractor. In case the repairs are done by owner, the cost of such repair will be recovered from the contractor.

Rates for all type of materials are inclusive of VAT and all taxes levied by Central Government, State Government or local bodies.

Rates for supply of specials and valves are inclusive of excise duty (Central), VAT, third party inspection charges, storage charges, overhead charges and transportation of materials up to site and stacking. Rates mentioned in the tender are inclusive of all Central Govt, State Govt. and Local taxes, duties and cess etc.

- 15.** Though the contractor is required to do refilling before hydraulic testing to avoid traffic hurdle, no payment for refilling of the trenches of pipeline shall be payable

till satisfactory hydraulic testing is given. Re-excavation required if any during testing shall be done by contractor at his own cost.

16. The works of cross connections to existing lines are to be arranged in such a way as no major shutdowns are required to be taken and work should be completed within minimum period of time, without interrupting the major water supply in the area.
17. Activity in Bar chart and network diagram (CPM / PERT) shall be modified regularly in case any activity could not be done in time due to some extraordinary reason. The same modified Bar Chart/Network diagram should be submitted for approval of Engineer-in-Charge or competent authority of Corporation, who will give approval after consultation with PMC.
18. Work shall be executed in stages as mentioned in the Government Resolution issued by the Urban Development department on dated 15/12/2023
19. **INCENTIVE BONUS**
DELETED.
20. All the bills in R A bill format shall be submitted to the Project Management Consultant by the contractor. The bills will be checked and scrutinized by Project Management Consultant and will be submitted to the ULB for Recording, Passing and Payment by the ULB.
21. The bills vetted and submitted by the PMC will be normally cleared and payment will be released within a period of 15 days from the receipt of suchvetted bills by the ULB or executing agency as the case may be. Such payment will be subject to availability of funds with the ULB or executing agency.
22. Extension of time limit will be granted by Executive Engineer after obtaining approval/ consent of competent authority of Municipal Commissioner of Latur City Municipal Corporation.

INSTRUCTIONS TO TENDERER

Name of work: **Augmentation of Latur Water Supply Scheme for Latur City
Municipal Corporation undue AMRUT 2.0, Phase-1,
Headworks at Latur, Tal. Latur, Dist. Latur.**

INSTRUCTIONS TO TENDERER

1. AWARD CRITERIA

The Owner will award the contract to the successful bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily. The tender will be awarded after bid evaluation report approved by the appropriate competent authority.

2. ACCEPTANCE OF THE TENDER

- 2.1 The acceptance of the tender rests with the appropriate competent authority. The right to reject any or all the tenders without assigning any reason thereof is reserved by appropriate competent authority. The tenderer whose tender is accepted will have to enter into regular agreement in the type and form prescribed in the tender and abides by all the rules embodied therein, cost of agreement etc. should also be borne by the tenderer.
- 2.2 No corrections, additions or alterations in the tender document shall be made. No special stipulations in the tender document shall be permitted.
- 2.3 The tender shall be liable to be rejected outright if while submitting the same.
- i) The Tender is not submitted on E-tendering portal specified in the Tender Notice.
 - ii) The Tenderer proposes any conditions and alterations in the obligatory conditions of the tender.
 - iii) Any of the pages of the tender is removed/replaced or spoiled badly.
 - iv) If the offer in words and in figures is not filled in appropriate place of B.1 Form.
 - v) If the specified Earnest Money in specified form is not paid.
 - vi) Any erasures are made in the tender documents.
 - vii) The tenderer or in case of firm or company authorized person does not sign the tender documents in the place provided for the purpose, in B.1 Tender form.
- 2.4 If the tendering contractors are a firm or company, they shall in their forwarding letter should mention the names of all the partners of the firm or the company as the case may be and the names of the partners who hold the power of attorney authorizing him to conduct transactions on behalf of the Company/Firm.

2.5 Rules and conditions of the contract are subject to amendment till the time of acceptance of tender.

2.6 The notes and conditions stipulated in this notice will form a part of the agreement.

3.0 **SIGNING OF CONTRACT**

At the same time as the Owner notifies the successful Bidder that the bid has been accepted, the Owner will send the Bidder an acceptance letter informing the Bidder, the further necessary line of action including signing of contract etc.

4.0 **FOR SPECIAL ATTENTION OF TENDERER**

The tenderer is expected to visit the site before quoting the tender and get himself acquainted with the site conditions and site requirements. The contracting firm shall study the site and general conditions in respect of approaches, labour, water supply, climate, quarries and the data included in the tender papers and get verified from the actual inspection of site etc. before submitting the tender. In case of any doubt about any item or data included in the tender or otherwise, it shall be got clarified by applying in writing to the tender inviting authority at least 3 days before the date of pre-tender conference. Once the tender is submitted, it shall be concluded with all the details required for completing the work as per tender conditions and specifications.

Responsibility of Departmental staff will be nominal and limited to extending all possible help in solving local problems for obtaining permission, obtaining power supply etc.

5.0 **LOCAL ROADS**

The existing public roads that are near the site of work are shown in Drawing accompanying the Tender documents. The contractor may construct and maintain additional roads as required at his own expenses.

6.0 **MEDICAL AND SANITARY ARRANGEMENT TO BE PROVIDED FOR LABOUR EMPLOYED IN THE CONSTRUCTION BY THE CONTRACTOR**

- a) The contractor shall provide an adequate supply of pure and wholesome water for the use of labourers on works and in camps.
- b) The contractor shall construct trenches, semi-permanent latrines for the use of labourers, Separate latrine shall be provided for men and women.
- c) The contractor shall construct sufficient number of huts on a suitable plot of land for use of the labourers according to the following specifications.
 - i) Hut of Bamboos and Grass may be constructed.

- ii) A good site not liable to submergence shall be selected on high ground remote from jungle but well provided with trees shall be chosen wherever it is available. The neighbourhood of land, jungle s trees or woods should be particularly avoided. Camp should not be established close to large cutting of earth work.
- iii) The lines of huts shall have open space of at least 10 meters between rows. When a good natural site is not available in this case. Particular attention should be given to the drainage.
- iv) There should be no overcrowding, floor space at the rate of 3 sqm. (30 sq.ft) per head shall be provided . Care should be taken to see that the huts are kept clean and in good order.
- v) The contractor must find his own land and if he wants Govt. land he should apply for it. Assessment for it if demanded will be payable by contractor. However, the department does not bind itself for making available the required land.
- d) The contractor shall construct a sufficient number of bathing places. Washing places should also be provided for the purpose of washing clothes.
- e) The contractor shall make sufficient arrangement for draining away the surface and sullage water as well as water from the bathing and washing places and shall dispose of this wastewater in such a way as not to cause any nuisance.
- f) The contractor shall engage a medical officer with a traveling dispensary for a camp containing 500 or more persons, If there is no Govt. Or other private dispensary situated within 8 kilometres from the camp. In case of emergency the contractor shall arrange at his cost-free transport for quick medical help to his sick workers.
- g) The contractor shall provide the necessary staff for erecting the satisfactory conservancy and cleanliness of the camp to the satisfaction of the Engineer-In-Charge. At least one sweeper per 200 persons should be engaged.
- h) The Assistant Director of Public Health shall be consulted before opening a labour camp and his instructions on matters such as Water Supply, sanitary, convenience for the camp site accommodation and food supply be followed by the contractor etc.
- i) The contractor shall make arrangement for all antimalarial measures to be provided for the labours employed on the work. The anti-measures shall be as directed by Assistant Director of public health.
- j) In addition to above all provisions of the relevant labour Act pertaining to basic amenities to be provided to the labourer shall be applicable which will be arranged by the contractor.

7. MISCELLANEOUS

- 7.1 For providing electric wiring or water ling etc. Recesses shall be provided if necessary, through walls, slabs, beams, etc. and later-on refilled it who out any extra cost.

- 7.2 In case it becomes necessary for the due fulfilment of contractor for the contractor to occupy land outside the department, limits the contractor will have to make his own arrangements with the land owners and pay such rents if any, which are payable as mutually/agreed between them.
- 7.3 The contractor shall duly comply with provisions of the Apprentices Act 1961 (III of 1961) and the rules and order made there under from time to time under the said rules and on this failure or neglect to do so he shall be subject to all the liabilities and penalties provided by the said Act and Said Rules.
- 7.4 It is presumed that the contractor has gone carefully through the standard specification (Vol I and II 1981 edition) and the schedule of rates of the Division, and studies of site condition before arriving at rates quoted by him. The special provisions and detailed specification of wording of any item shall gain precedence over the corresponding contrary provisions (if any) in the standard specification given without reproducing the details in contract. Decision of Engineer in charge shall be final in case of interpretation of specification.
- 7.5 If the standard specifications fall short for the items quoted in the schedule of this contract, reference shall be made to the latest Indian standard specifications, I.R.C. code, if any of the item of this contract do not fill in reference quoted above the decision and specification as directed by the Engineer-In –Charge. Shall be final.
- 7.6 The stacking and storage of building materials at site shall be in such a manner as to prevent deterioration or inclusion of foreign material and to ensure the preservation of the quality. Properties and fitness of the work. Suitable precautions shall be taken by contractor to protect the materials against atmospheric action, fire and other hazards. The materials likely to be carried away by wind shall be stored, in suitable stores or with suitable barricades and where there is likelihood of subsidence of soil, heavy, materials shall be stored on paved platforms. Suitable separation barricades and enclosure as directed shall be provided to separate materials brought by contractor and material issued by Govt. To contractor under Schedule- A. Same applies for the materials obtained from different source of supply.

8. HANDING OVER OF WORK

All work and material before taken over by Latur City Municipal Corporation will be entire responsibility of the contractor for guarding, maintaining and making good, any damage of any magnitude. Interim payments made for such work will not alter this position. The handing over by the contractor and taking over by the Executive Engineer/Engineer in charge or his authorized agent will be always in writing, copies of which will go to the Executive Engineer, signed by authorized representative of Latur City Municipal Corporation and the contractor. It is however understood that before taking over of such work Latur City Municipal Corporation will not put the system into its regular use, casual or incidental one, except as specifically mentioned elsewhere in this contract or mutually agreed to.

ACQUAINTANCE WITH SITE CONDITIONS AND WORK CONDITIONS

Contractor

No. of correction

Executive Engineer

**NAME OF WORK: Augmentation of Latur Water Supply Scheme for Latur City
Municipal Corporation under AMRUT 2.0, Phase-1,
Headworks at Latur, Tal. Latur, Dist. Latur.**

ACQUAINTANCE WITH SITE CONDITIONS AND WORK CONDITIONS

1. The Contractor shall study the site conditions, general conditions and data included in the tender papers and get it verified from actual inspection of the site etc. before submitting the tender. In case of doubts about any items or data included in this tender or otherwise, it shall be got clarified by applying in writing to the Executive Engineer/Engineer in charge/Municipal Commissioner, 15 days in advance before date of submission of the tender. Once the tender is submitted, it shall be considered that the Contractor has verified and made himself conversant with all the details as required for quoting the rates and completing the work as per tender conditions and specifications.
2. Contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract, the rubble, stone metal, sand or other material which may be obtained from any excavation made for the purpose of the contract. All such materials shall be Latur City Municipal Corporation's property and shall be disposed of in the manner and at place as may be directed by the Engineer-in-charge. Contractor may with the permission of the Engineer-in-charge in writing and when directed by him, use any of the materials free of cost.
3. Other unforeseen items to be done in the course of work will have to be done by the Contractor as per specifications in P.W.D. Handbook volume I and II and will be paid at mutually agreed rates, ISS and standard practice in vogue. Extra charge of claims in respect of extra work shall not be allowed unless the work to which they relate are in the spirit and meaning of the specifications or unless such works are ordered in writing by the Engineer-in-charge and claimed for in the specified manner before the work is taken in hand.

MATERIALS:

4. The Contractor shall make his own arrangements for obtaining rubble, khandki, headers, metal, sand, murum etc. from Latur City Municipal Corporation or private quarry. Applications of the Contractor for reasonable area of Government land required for this purpose can be recommended to Revenue Authorities without any guarantee of making the land for quarry available.

All the materials involved in the construction shall be of best quality and

specifications and shall be got approved from the Engineer-in-charge before use. If necessary, materials shall be got tested from the Laboratory at his cost. Samples requiring approval shall be submitted by the Contractor to the Engineer-in-charge in good time before the use of each material. The samples shall be properly marked to show the name of the materials place.

5. The Contractor shall provide all labour, skilled as well as unskilled, lime, strings, site-rails (wooden as well as Steel etc.) as and when required as per approved design and make available such other materials for surveying, lining out, setting out, checking of work, taking measurements, testing of hydraulic and other structures, without any payment by the Latur City Municipal Corporation to him. He will also provide proper approach and access to all his works and stores without any extra cost over tendered rates for the items to be inspected.
6. Rates quoted include clearance of site (prior to commencement of work and its closure) in all respects and hold good for work under all conditions of sites, moisture, weather etc.
7. Failure to comply with any of the above instructions will result in the Latur City Municipal Corporation's doing the needful at the risk and cost of the contractor. These conditions are for all items and as such no extra payment shall be made for observing these conditions.
8. The contractor shall make his own arrangements for quarrying of rubble, stone, murum, sand, lime, metal etc.
9. Overburden in a quarry will have to be removed by the contractor at his own cost.
10. Unless a separate item is provided in Schedule 'B' minor dewatering of foundations in excavation and during the construction of foundation Masonry if required shall be done by the Contractor without claiming extra cost.
11. Masonry shall be kept wet for atleast 15 days and concrete work shall be kept wet for atleast 21 days commencing from the date of its final laying in position. In case during execution curing is found inadequate it will be carried out Latur City Municipal Corporation's and the cost thereof shall be recovered from the contractor. The contractor shall make his own arrangements for getting water at site at his own cost.
12. The proportions of cement concrete specified in the Schedule „B' are nominal and are only an indication of approximate proportion of cement, fine aggregate and coarse aggregate which may have to be altered suitably at site to obtain the desired strength and workability. However, quantity of cement shall not be less than the one specified below.

NOMINAL MIX:

1:1 1/2:1 (M-300) 9.00 bags/one cum of cement concrete

1:1:5: 3	(M-200)	7.90 bags/one cum of cement concrete
1:2:4	(M-150)	6.30 bags/one cum of cement concrete
1:3:6	(M-100)	4.40 bags/one cum of cement concrete
1:4:8	(M-80)	3.40 bags/one cum of cement concrete

In case of major items of concrete for R.C.C. works, the Contractor shall prepare test blocks as per I.S. specifications for testing its tensile and compressive strength at his own cost. These blocks will be tested in any of the Government Test Laboratories at the cost of the Contractor. The number of test blocks, frequency etc. shall be directed by Engineer-In-Charge.

13. DAMAGE BY FLOODS OR ACCIDENT:

The Contractor shall take all precautions against damage by floods and from accidents. No compensation will be allowed to the contractor for his plant, material and work etc. Lost or damaged by floods or from other causes. The Contractor shall be liable to make good any part of material which is in charge of the Contractor, and which is lost or damaged by floods or from any other cause. If the work executed is damaged, trenches filled due to any reason, Contractor shall have to make it good at his cost only.

14. SUPPLY OF RATE-ANALYSIS IN CASE OF EXTRA ITEMS

In case of the EIRL the Contractor shall supply Rate Analysis based on labour and material in case he is called upon to do so.

15. WATER REQUIRED FOR CONSTRUCTION: -

The Contractor has to make his own arrangements at his cost for water required for construction, testing, filling, structures, etc. either from local bodies or from elsewhere, by paying the charges directly and arranging tankers etc. as per necessity. No claim for extra payment on account of non-availability of water nearby, or extra lead for bringing water shall be entertained. All required piping arrangements and pumping if required for water shall be made by the Contractor at his cost.

If Contractor fails to pay the water charges to local bodies or private parties these shall be recovered by the Latur City Municipal Corporation from his bills. In case Latur City Municipal Corporation's water supply is available, a connection at a suitable place may be sanctioned but all further arrangements of pumping if required, piping etc. shall be done by the Contractor at his cost, and water charges in such a case, shall be paid by the Contractor at the rates as decided by the Executive Engineer/Engineer in charge /Municipal Commissioner, which shall be final and binding on the Contractor.

Whenever Schedule „B“ provides for any dewatering item, payment shall be

admissible under that item, but apart from that item no extra claims for dewatering required for executing various tender items, and for executing such items in wet condition shall be entertained as all these expenses are deemed to be included in the dewatering item.

16. LEADS AND LIFTS: -

Unless otherwise specifically mentioned in the tender item, the tendered rate for all items in tender shall cover all lifts and leads encountered for the executions of the work as directed.

17. Unless otherwise specifically provided for in the tender or a separate item is provided in Schedule 'B', all the sides of excavated trenches after the work is completed or in progress are to be filled by the Contractor to the original ground level from excavated stuff at no extra cost to the Latur City Municipal Corporation.
18. Unless otherwise specifically mentioned in tender items, the net dimensions of RCC or CC members actually cast are only admissible for payment under RCC or Plain CC items. No increase in dimensions due to plastering or finishing shall be admissible for payment under RCC or plain CC items.
19. No claims for any desilting of trenches, foundation etc. filled due to floods, untimely rains, or any other reasons whatsoever shall be entertained, and Contractor shall have to do this desilting operation together with dewatering operations entirely at his cost.
20. Electricity supply required for construction of work/labour camp, etc. shall be arranged by the contractor at his own cost.

FORM-B.1

Contractor

No. of correction

Executive Engineer

FORM B.1**PERCENTAGE RATE TENDER AND CONTRACT FOR WORKS**

NATURE OF WORK: Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur.

GENERAL RULES AND DIRECTIONS FOR THE GUIDANCE OF CONTRACTORS

1. All works proposed to be executed by contractor shall be notified in a form of invitation to tender pasted on a Board hung up in the office of the Executive Engineer/Engineer in charge/Chief Officer/Commissioner and signed by the Executive Engineer / Engineer in charge/ Municipal Commissioner.

This form will state the works to be carried out as well as the date of submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender and the amount of the security deposit to be deposited by the successful tenderer and the percentage, if any to be deducted from bills. It will also state whether a refund of quarry fees, royalties and ground rents will be granted. Copies of the specifications, designs and drawings and estimated rates, schedule rates and any other documents required in connection with the work which will be signed by the Executive Engineer/Engineer in charge/ Municipal Commissioner for the propose of identification shall also be open for Inspection by contractors at the office of the Executive Engineer/Engineer in charge/ Municipal Commissioner during office hours.

Where the works are proposed to be executed by the contractor according to the specifications recommended and approved by a competent authority on behalf of the Latur City Municipal Corporation, such specification with designs drawings shall form part of the accepted tender.

2. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof, and in the event of the absence of any partner, it shall be signed on his behalf by a person holding a power – of – attorney authorizing him to do so.
 - i) The contractor shall pay along with the tender the sum, of (Rs. 1,08,91,397.00)

Contractor

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Executive Engineer

LATUR CITY MUNICIPAL CORPORATION, WATER SUPPLY DEPARTMENT

(Rupees One Crore Eight Lakhs Ninety-One thousand Three hundred and ⁶³Ninety Seven only) as and by way of earnest money. The EMD shall be paid online. The said amount of earnest money shall not carry any interest whatsoever.

ii) In the event of his tender being accepted, to the provision of sub- clause(iii), below,

a) the said amount of earnest money shall be appropriated towards the amount of security deposit payable by him under conditions of General conditions of contract.

i) If, after, submitting the tender, the contractor withdraws his offer or modifies the same, or if after the acceptance of his Tender, the contractor fails or neglects to furnish the balance security deposit without prejudice to any other right and powers of the Latur City Municipal Corporation hereunder, or in law, Latur City Municipal Corporation shall be entitled to forfeit the full amount of the earnest money deposited by him.

ii) In the event of his Tender not being accepted, the amount of earnest money deposited by the contractor shall, unless it is prior thereto forfeited under the provision of sub-clause (iii) above, be refunded to him on his passing receipt, therefore.

3. Receipts for payments made on account of any work, when executed by a firm should also be signed by all the partners except where the contractors are described in their tender as a firm. In which case the receipt shall be signed in the name of the firm by one of the partners or by some other persons have authority to give effectual receipts of the firm.
4. Any person who submits tender shall fill up the usual printed form stating at what percentage above or below the rates specified in Schedule – B (memorandum showing items of work to be carried out) he is willing to undertake the work. Only one rate or such percentage on all the Estimated rates/ Schedule rates shall be named. Tenders which propose any alteration in the work specified in the said form of invitation of tender, or in the time allowed for carrying out the work, or which contain separate percentage over estimated rates / schedule rates for different sub work or item, or which any other conditions of any sort which are not filled with the percentage as the space provided for the purpose and not signed at proper place in the printed B-1 Tender Form will be liable to rejection. No printed form of tender shall include a tender for more than one work. But, if contractors who wish to tender for more works, shall submit a separate tender for each work. Tenders shall have the name and the number of work to which they refer, written outside the envelopes.

5. The competent authority shall open tenders in the presence of any intending contractors who have submitted tenders or their representatives who may be present at the time, and he will enter the amount of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted, the contractor shall for the purpose of identification, sign copies of the specifications and other documents mentioned in Rule 1. In the events of a tender being rejected, the Executive Engineer / Engineer in charge / Municipal Commissioner shall arrange / authorize to refund the amount of the earnest money deposited to the tenderer, on his giving a receipt for the return of the money.
6. Competent authority is the final authority to reject all or any of the tenders.
7. No receipt for any payment alleged to have been made by a contractor in regard to any matter relating to this tender or the contract shall be valid and binding on LCMC unless it is signed by the Executive Engineer.
8. The memorandum of the work to be tendered for and the schedule of materials to be supplied by the Latur City Municipal Corporation (herein before and after called as LCMC) and their rates shall be filled in and completed by the office of the Executive Engineer/Engineer in charge/ Municipal Commissioner before the tender form is issued. If a form issued to an intending Tender has not been so filled in and completed, he shall request the said office to have this done before he completes and delivers his tender.
9. All work shall be measured net by standard measure and according to the rules and customs of the LCMC/PWD/MJP and without reference to any local custom.
10. Under no circumstances shall any contractor be entitled to claim enhanced rates for items in this contract.
11. Every registered contractor should produce along with his tender certificate of registration, as approved contractor in the appropriate class and renewal of such registration with date of expiry.
12. Corrections and additions should be initialled.
13. The measurements of work will be taken according to the usual methods in use in the LCMC/PWD/MJP and no proposals to adopt alternative methods will be accepted. The Engineer's decision as to what is the usual method in

Contractor

No. of correction

Executive Engineer

use will be final.

14. A tendering contractor shall furnish a declaration along with the tender showing all works for which he has already entered into contract, and the value of work that remains to be executed in each case on the date of submitting the tender. Such certificate shall be in the proforma attached in the tender documents.
15. In view of the difficult position regarding the availability of foreign exchange no foreign exchange would be released by the LCMC for the purchase of plant and machinery or any other purpose for the execution of the work contracted for.
16. The contractor will have to construct shed, for storing controlled and valuable material issued to him under Schedule "A" of the agreement or brought him on work site, at work site having double locking arrangement. The materials will be taken for use in the presence of the department person. No. materials will be allowed to be removed from the site of works without written permission of the Engineer-in-charge.
17. The tenderer will have to produce to the satisfaction of the accepting authority a valid and current license issued in his favour under the provision of Contractor Labour Regulation and Abolition Act. 1973 before starting work, failing with acceptance of the tender will be liable for withdrawal and Earnest money / Security Deposit will be forfeited to the Corporation.
18. The contractor shall comply with the provision of the Apprentices Act. 1961 and the rules and orders issued there under from time to time. The contract shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the Act.
19. In this tender sub-works are included. As per Government resolution the work will be taken up in three phases. The work order will be issued accordingly by fixing time limit. Contractor has to complete the work within stipulated time for each phase. If he fails, action as per clause 2 will be initiated against the contractor.
20. As per clause 6 of B-1 form, extension of time limit will be governed. If contractor fails to apply for extension of time limit as per clause 6 to keep the tender alive, LCMC will grant the extension considering the progress of work and in the light of clause 2.

As per Government Resolution Price Variation Clause is not applicable to tender.

21. The tender Rates are inclusive of all taxes such as VAT, Service Tax, Cess, and General Tax etc. Contractor shall be deemed to have examined the work and site conditions including labour, the general and special conditions, specifications and drawings and shall be deemed to have visited the work site and to have fully informed himself regarding the local conditions and carried out his own investigations to arrive at rates quoted in the tender.
22. There shall be no corrections or overwriting and if any that shall be dully initialled by Contractor himself.

Note: The commercial offer must be filled online using individuals digital certificate. (An online form will be provided for this during online bid preparation stage).

I / We hereby, tender for the execution for the Latur City Municipal Corporation (hereinbefore and hereinafter referred to as LCMC) for the work specified in the underwritten memorandum within the time specified in such memorandum at----- (-----) in figures as well as in words percent below/above the estimated rates entered in schedule „B“ memorandum showing items of work to be carried out and in accordance with all respects with the specifications, designs, drawings, and instructions in writing referred to in Rule hereof and in clause 12 of the annexed conditions of the contract and agree that what materials for the work are provided by the LCMC such materials are at the rates to be paid for them shall be as provided in schedule “A” here to.

Memorandum

a).....**Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur.**

b).....Estimated Cost.
Rs. 217,82,79,400.00

c).....Earnest Money.
Rs. 1,08,91,397.00

a) if several sub works are included, they should be detailed in a separate list.

c) The amount of earnest money to be deposited shall be in accordance with the provision of paras 206 and 207 of the M.P.W. Manual.

d) This deposit shall, be in accordance with paras 213 and 214 of the M.P.W. Manual.

b) Security Deposit.

Total 4% of estimated cost put to tender or accepted tender cost whichever is higher.

c) Initial Security Deposit

2% of estimated cost put to tender or accepted tender cost whichever is higher shall be in form of FDR from any Nationalized / Scheduled Bank or Bank Guarantee

ii) Balance 2% amount of Security deposit, will be recovered through each Running Bill at the rate of 5% of the gross amount of running bill till the required total amount of Security Deposit is recovered

e) This percentage where no security deposit is taken, will vary from 5 % to 10 % according to therequirement of case where security deposit is taken see note to clause 1 these conditions of contractor.

e) Percentage, if any, to be deducted from bills so as to make up the total amount required as security deposit by the time, half the work as measured by the cost is done. 5% (Five) Percent

d) Additional Security Deposit.

If the tender is proposed to be accepted at the rates quoted less than estimated cost put to tender security deposit over and above 4% in (d) at the below rate shall have to be paid by Tender.

- i) For offer upto 10% below 2% Initial + 2% through R.A. Bill.
- ii) For 10% to 15% below 4% Initial + 2% through R.A. Bill.

For offer more than 6% Initial + 2% through R.A. Bill. 15% below
Additional security is to be paid by the successful bidder initially only in addition to 2% original Security Deposit.

(Security Deposit shall be based on estimated cost put to Tender or tendered cost whichever is higher)

g) Time allowed for the work from date of written order to commence. **24 (Twenty-Four)** Calendar Months. (Including monsoon)

I/We agree that the offer shall remain open for acceptance for a minimum period of 180 days from the date fixed for opening for the same and thereafter until it is withdrawn by me/ us notice in writing duly addressed to the authority opening the tenders and sent by registered post A.D. or otherwise delivered at the office of such authority. Term deposit Receipt No./Demand draft No. dated and date in respect of the sum of `.....(in wards) is herewith forwarded. The amount of earnest money shall not bear interest and shall be liable to be forfeited to the Latur City Municipal Corporation should I/We fail to

(i) abide by the stipulation to keep the offer open for the period mentioned above of (ii) sign and complete the contract documents as required by the Engineer and furnish the security deposit as specified in item. (d) of the memorandum contained in paragraph (1) above within the time limit laid down in clause

of the annexed General Conditions of contract, the amount of earnest money may be adjusted towards the security deposit or refunded to me/us in writing unless the same or any part thereof has been forfeited as aforesaid.

I/We have secured exemption from payment of earnest money after executing the necessary bond in favour of the Latur City Municipal Corporation a true copy of which is enclosed herewith should any occasion for forfeiture of earnest money for this work arise due to failure on my/our part to abide by the stipulations to keep the offer open for the period mentioned above or to sign and complete the contract documents and furnish to security deposit as specified in item (d) of the Memorandum contained in paragraph (1) above within the time limit laid down in clause (i) of the annexed General Conditions of contract, the amount payable by me/us at the option of the Engineer, be recovered out of the amount deposited in lump sum for securing exemption in so far as the same may be extend in terms of the said bond and in the event of the deficiency out of any other moneys which are due to payable to me/ us by the Latur City Municipal Corporation under any other contract or transaction of any nature whatsoever otherwise.

Should this tender be accepted I/We hereby agree to abide by and fulfil all the terms and provisions of the conditions of

Strike out (a) such security

LATUR CITY MUNICIPAL CORPORATION, WATER SUPPLY DEPARTMENT

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contract annexed hereto so far as applicable and in default thereof to forfeit and pay Latur City Municipal Corporation the sum of money mentioned in the said conditions. Term Deposit Receipt No. Dated from The Bank..... at in respect of sum of Rs.is herewith forwarded representing the earnest money (a) the full value which is to be absolutely forfeited to the Latur City Municipal Corporation should I/We not deposit in the full amount of security deposit specified in the above memorandum in Accordance with (d) of clause (i) of the tender for works shall be refunded.

Contractor

deposit is to be taken.

*Signature of the Contractor
Before submission of
tender.*

Address

Date of _____2024

Witness

Signature of witness to

Contractor's Signature.

The above tender is hereby accepted by me for and one behalf of the **Latur City Municipal Corporation.**

Date

**Municipal Commissioner
Latur City Municipal Corporation**

CONDITIONS OF CONTRACT**(Modification as per the GR PWD NO. CAT-1087/ CR- 94/Bldg-2, dated 14.6.1989)**

Clause 1 : The person / person whose tender may be accepted **Security Deposit** (hereinafter called the Contractor, which expression shall unless excluded by or repugnant to the context include his heirs, executors, administrators and assigns) shall (A) within ten days (which may be extended by the Municipal Commissioner concerned upto 15 days if the Municipal Commissioner thinks fit to do so) of the receipt by him of the notification of the acceptance of his tender deposit with the Engineer in-charge in Cash or Government securities endorsed to the Engineer in charge (if deposited for more than 12 months) of sum sufficient which will make up the full security deposit specified in the tender or (B) (permit Latur City Municipal Corporation at the time of making any payment to him for work done under the contract to deduct such sum as will amount to 4% of all moneys so payable; such deduction to be held by Latur City Municipal Corporation by way of security deposit). Provided always that in the event of the Contractor depositing a lumpsum by way of security deposit as contemplated at (A) above, then and in such case, if the sum so deposited shall not to 4% of the total estimated cost of work or tendered cost whichever is higher, it shall be lawful for Latur City Municipal Corporation at the time of making any payment to the contractor for work done under the contract to make-up the full amount of Four (4) percent by deducting a sufficient sum from every such payment as last aforesaid until the full amount to the security deposit is made up. All compensation or other sums of moneys payable the contractor to Latur City Municipal Corporation under the terms of his contract may be deducted from or paid by the sale of sufficient part of his security deposit or from the interest arising there from, or from any sums which may become due by Latur City Municipal Corporation to the contractor under any other contract or transaction on any account whatsoever and in the event of his security deposit being reduced by reason of any such deduction or sale as aforesaid, the contractor shall, within ten days thereafter, make good in cash or Government securities endorsed as aforesaid or Bank Guarantee issued by bank for any sum or sums which may have been deducted from or raised by sale of his security deposited or any part thereof. The Security deposit referred to, when paid in cash may, at the cost of the depositor, be converted into interest bearing securities provided that the depositor has expressly desired this in writing.

Contractor

No. of correction

Executive Engineer

If the amount of the security deposit to be paid in a lump sum within the period specified at (A) above is not paid the tender/contract already accepted shall be considered as cancelled and legal steps taken against the Contractor for recovery of the amounts. The amount of security deposit lodged by Contractor shall be refunded along with the payment of the final bill, if the date upto, which the Contractor has agreed to maintain the work in good order, is over. If such date is not over only 90% amount of the security deposit shall be refunded along with the payment of the final bill. The amount of security deposit retained by Latur City Municipal Corporation shall be released after expiry of period upto, which the Contractor has agreed to maintain the work in good order, is over. In the event of Contractor failing or neglecting to complete rectification work within the period upto, which the Contractor has agreed to maintain the work in good order then subject to provisions of Clause 17 and 20 hereof, the amount of security deposit retained by Latur City Municipal Corporation shall be adjusted towards the excess cost incurred by the Latur City Municipal Corporation on rectification work.

Clause 2: The time allowed for carrying out the work as entered in the agreement shall be strictly observed by the Contractor and shall be reckoned from the date on which the order to commence work is given to the Contractor. The work shall throughout the stipulated period of the contract be proceeded with, all due diligence (time being deemed to be essence of the contract on the part of the Contractor) and the Contractor shall pay as compensation an amount equal to one percent or such smaller amount as the Municipal Commissioner (whose decision in writing shall be final) may decide of the amount of the estimated cost of the whole work as shown by the tender for everyday that the work remains uncompleted or unfinished after the proper dates. And further to ensure good progress during execution of the work, the Contractor shall be bound in all cases in which the time allowed for any work exceeds one month to complete, for complete minimum quantum of work as compared to accepted tender cost as stated below.

**Compensation
Delay**

1/4 of the work in 1/4 of the time.

1/2 of the work in 1/2 of the time.

3/4 of the work in 3/4 of the time.

Full work in months including monsoon.

Note: The quantity of the work to be done within a particular time to be specified above shall be fixed by an Officer competent to accept the contracts after taking into consideration the circumstances of each case .and insert in the blank space kept for the purpose

Contractor

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In the event of the contractor failing to comply with these conditions he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as Municipal Commissioner (whose decision in writing shall be final) may decide of the said estimated cost of the whole work for everyday that the due quantity of work remains incomplete provided always that the total amount of compensation to be paid under the provisions of this clause shall not exceed 10% of the estimated cost of the work as shown in the tender. Municipal Commissioner should be the final authority in this respect, irrespective of the fact that tender is accepted by State level technical Committee. However, Municipal Commissioner shall seek the consent of the MJP and/or approval of the State level technical committee.

Clause 3: If any clause in which under any clause of this contract the Contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit (whether paid in one sum or deducted by instalment) or in the case of abandonment of the work owing to serious illness or death of the Contractor or any other cause, the Engineer in charge on behalf of the Latur City Municipal Corporation shall have power to adopt any of the following courses, as he may deem best suited to the interest of the Latur City Municipal Corporation.

Action when whole of security deposit is forfeited.

- a) To rescind the contract (for which rescission notice in writing to the Contractor under the hands of Engineer in-charge shall be conclusive evidence) and in that case the security deposit of the Contractor shall stand forfeited and be absolutely at the disposal of the Latur City Municipal Corporation.
- b) To carry out the work or any part of the work departmentally debiting the Contractor with the cost of the work, expenditure incurred on tools, plant and charges on additional supervisory staff including the cost of work-charged establishment employed for getting unexecuted part of the work completed and crediting him with the value of the work done departmentally in all respects in the same manner and at the same rates as if it has been carried out by the Contractor under the terms of his contract. The certificate of the Engineer in-charge as to the cost and other allied expenses so incurred and as to the value of the work so done departmentally shall be final and conclusive against the Contractor.

- c) The order that work of the Contractor be measured up and take such part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete in which case all expenses incurred on advertisement for fixing a new contracting agency, additional supervisory staff including the cost of work- charged establishment and the cost of the work executed by the new contract agency will be debited to other contractors and the value of the work done or executed through the new contractor shall be credited to the Contractor in all respects and in the same manner and at the same rates as if it had been carried out by the Contractor under the terms of his contract. The certificate of the Engineer in-charge as to all the costs of the work and other expenses incurred as aforesaid for getting the unexecuted Work done by the new contractor and as to the value of the work so done shall be final and conclusive against the Contractor.

In case the contractor shall be rescinded under clause (a) above, the contractor shall not be entitled to recover or to be paid, any sum for any work therefore actually performed by him under this contract unless and until the Municipal Commissioner shall have certified in writing the performance of such work and the amount payable to him in respect thereof and he shall only be entitled to be paid the amount so certified. In the event of either the courses referred to in clause (b) or (c) being adopted and the cost of the work executed departmentally or through a new contractor and other allied expenses exceeding the value of such work credited to the contractors, the amount of excess shall be deducted from any money due to the contractor by LCMC under the contract or otherwise however or from his security deposit or the sale proceeds thereof provided however that the contractor shall have to claim against LCMC event if the certified value of the work done departmentally or through a new contractor exceeds the certified cost of such work and allied expenses, provided always that whichever of the three courses mentioned in clauses (a), (b) and (c) is adopted by the LCMC, the contractor shall have no claim to compensation for any loss sustained by him by reason of not having purchased or procured any materials, or entered into any engagements, or made any advance on account of or with a view to the execution of the work or the performance of the contract. The extra cost involved in the completion of the balance work carried out through the other contractor under

Amount of 3 l shall be recoverable from the contractor over and above the compensation levied under Clause 2 and the Security Deposit shall be apportioned against the total recoveries for this purpose also.

Clause 4: If the progress of the any particular portion of the work is unsatisfactory, the LCMC shall notwithstanding that the general progress of the work is in accordance with the condition mentioned in clause 2 be entitled to take action under clause 3(b) after giving the contractor 10 days notice in writing. The contractor will have no claim for compensation, for any loss sustained by him owing to such action.

Action when the Progress of any particular portion of the work is unsatisfactory.

Clause 5: In any case in which any of the powers conferred upon LCMC by Clause 3 and 4 hereof shall have become exercisable and the same shall not have been exercised the non-exercise thereof shall not constitute waiving of any of the

Contractor liable to pay compensation if action not taken under clause 3 and 4.

Conditions hereof such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor for under any clauses hereof he is declared liable to pay compensation amounting to the whole of his security deposit and the liability of the contractor for past and future compensation shall remain unaffected. In the event of the Latur City Municipal Corporation taking action under Sub-Clause (a) or (c) of clause 3, he may, if he so desires, take possession of all or any tools and plants, materials and stores, in or upon the work or the site thereof or belonging to the contractor, or procured by him and intended to be used for the execution of the work or any part thereof paying or allowing for the same in account at the contract rates or in the case of contract rates not being applicable at current market rates to be certified by the Latur City Municipal Corporation whose certificate thereof shall be final. In the alternative the Latur City Municipal Corporation may after giving notice in writing to the contractor or his clerk of the work, foreman or other authorized agent require him to remove such tools, plant, materials or stores from the premises within a time to do specified in such notice, and in the event of the contractor failing to comply with any such requisition, the Latur City Municipal Corporation may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk in all respects, and the certificate of the Latur City Municipal Corporation as to the expenses of any such removal and the amount of the proceeds and expense of any such shall be final and conclusive against the contractor.

Clause 6 : If the contractor shall desire an extension of the time for completion of work on the ground of his having been unavoidably hindered in its execution or on any other ground, he shall apply in writing to the Latur City Municipal Corporation before the expiration of the period stipulated in the tender on before the expiration of 30days from the date on which he was hindered as aforesaid or on which the cause for asking extension occurred, whichever is earlier and the LCMC or in the opinion of Municipal Commissioner, as the case may be, if in his opinion, there were reasonable grounds for granting the extension, grant such extension as he think necessary or proper. The decision of the Latur City Municipal Corporation in this matter shall be final.

Extension of time

Clause 7: On the completion of the work the contractor shall be furnished with a certificate by the Latur City Municipal Corporation (hereinafter and hereinbefore called the Engineer-in-charge) of such completion but neither such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall have been executed, all scaffolding surplus materials and rubbish , tools, plants and equipment's and shall have cleaned off the dirt from all woodwork, doors, windows, walls, floor or other parts of any building in or upon which the work has been executed or of which he may have had possession for the purpose of executingthe work nor until the work shall have been measured by the Engineer-in-charge or where the measurements have been takenby his subordinate until they have received approval of the Engineer-in-charge the said measurements being binding and conclusive against the contractor, if the contractor shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials and rubbish and cleaning off the dirt on or before the date fixed for the completion of the work, the Engineer-in-charge may at the expense of the contractor, remove and rubbish and dispose of the same as the thinks fit and clean offsuch dirt as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred but shall have no claim in respect of any such scaffolding tools and plants equipment's or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

Final Certificate.

Clause 8: No payment shall be made for any work estimated to cost less than Rupees one thousand till the whole of work shall have been completed and a certificate of completion given. But in the case of works estimated to cost more than Rupees one thousand the contractor shall on submitting a monthly bill therefore be entitled to receive payment proportionate to the part of the work then approved recommended by the Engineer-in-charge, whose certificate of such recommended and passing of the sum of payable shall be final and conclusive against the contractor. All such intermediate payments shall be regarded as payment by way of advance against the final payments only and not as payments for work actually done and completed and shall not preclude the Engineer-in-charge for requiring any bad. Unsound, imperfect or unskilful work to be removed or taken away and reconstructed or re- erected nor shall any such payment be considered as an admission of the due performance of the contract or any part thereof in any respect or the occurring of any claim nor shall it conclude determine or affect in any other way the powers of the Engineer-in-charge as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract. The final bill shall be submitted by the contractor within one month of the date fixed for the completion of the work otherwise the Engineer-in-charge certificate of the measurements and of the total amount payable for the work shall be final and binding on all parties.

Payment on intermediate certificate to be regarded as advance.

Clause 9: The rates for several items of works estimated to cost more than Rs. 1000/- agreed to within, shall be valid only when the item concerned is accepted as having been completed fully in accordance with the sanctioned specification. In cases where the items of our work not accepted as so completed by the Engineer- in-charge may make payment on account of such items at such reduced rates as he may consider reasonable in the preparation of final or on account bills.

Payment at reduced rates on account of items of work not accepted as completed, to be at the discretion of the Engineer-in-charge.

LATUR CITY MUNICIPAL CORPORATION, WATER SUPPLY DEPARTMENT

Clause 10 : A bill shall be submitted by the contractor in each month on or before the date fixed by the Engineer-in-charge for all work executed in the previous month and the Engineer-in-charge shall take or cause to be taken the requisite measurements for the purpose of having the same verified and the claim, so far as it is admissible shall be adjusted and paid if possible within ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer-in-charge may depute a subordinate to measure up the said work in the presence of the contractor or his duly authorized agent whose counter signature to the measurement list shall be sufficient warrant and the Engineer-in-charge may prepare a bill from such list which shall be binding on the contractor in all respects

⁷⁷
*Bills to be submitted
monthly*

Clause 11: The contractor shall submit all bills on the printed forms to be had on application at the office of the Engineer-in-charge. The charges to be made in the bills shall always be entered at the rates specified in the tender or in the case of any extra work ordered in pursuance of these conditions and not mentioned or provided for in the tender at the rates hereinafter provided for such work

*Bills to be on printed
form.*

Clause 12: If the specification or estimate of the work provides for the use of any special description of materials to be supplied from the store of the Latur City Municipal Corporation or if it is required that the contractor shall use certain stores to be provided by the Engineer-in-charge (such material and stores and the prices to be charged therefore as hereinafter mentioned being so far as practicable for the convenience of the contractor but not so as in any way to control the meaning or effect of this contract specified in the schedule or memorandum hereto annexed) the contractor shall be supplied with such materials and stores as may be required from time to time to be used by him for the purposes of the contract only and value of the full quantity of the materials and stores so supplied shall be set off or deducted from any sums then due, or thereafter to become due to the contractor under the contract or otherwise or from the security deposit or the proceeds of sale thereof if the security deposit is held in Government Securities, the same or a sufficient portion thereof shall in that case be sold for the purpose. All materials supplied to the contractor shall remain the absolute property of Latur City Municipal Corporation and shall not be removed from the site of the work and shall at all times be open to inspection by the Engineer-in-charge. Any such materials issued at cost but remained unused and in perfectly good condition at the time of completion or termination of the contract shall be returned to the Latur City Municipal Corporation, store if the Engineer-in-charge so required by a notice in writing given under his hand, but the contractor shall not be entitled to return any such material supplied to him as aforesaid but remaining unused by

*Stores supplied by
LCMC*

Contractor

No. of correction

Executive Engineer

him or for any wastage in or, damage to any such materials. The contractor shall, however return all unused material at the time of completion, which was issued to him free of cost by the Engineer in charge and which has remained surplus with the contractor after accounting for the actual utilization of such material from the total quantity that was issued by the Engineer in charge. Cost of any material issued free of cost by the engineer and which has remained surplus with the Engineer from the contractor as mentioned in Schedule – „A“

Clause 12 (A): All stores of materials such as cement, steel etc. supplied to the contractor by Latur City Municipal Corporation should be kept by the contractor in a separate store near the work site under lock and key and will be accessible for inspection by the Latur City Municipal Corporation or his agent at all the times.

Storage of Controller Material

Clause 13: The contractor shall execute the whole and every part of the work in the most substantial and workman like manner and both as regards materials and every other respect in strict order accordance. The contractor shall also conform exactly fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer-in-charge and lodged in his office and to which the contractor shall be entitled to have access for the purpose of inspection at such office or on the site of the work, during office hours. The contractor will be entitled to receive one sets of contract drawing and working drawings as well as one certified copy of the accepted tender along with the work order free of cost. Further, copies of the contract drawings and working drawings if requires by him shall supplied at the rate of ` 2000/- per set of contract drawings and ` 100/- per workingdrawing except where otherwise specified.

Works to be executed in accordance with specifications drawings.

Clause 14: The Engineer-in-charge shall have power to make any alterations in or additions to the original specifications, drawing, design and instructions that may appear to him to be necessary or contracts, advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instructions in this connection which may be given to him in writing signed by the Engineer-in-charge and such alterations shall not invalidate the contract and any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the Contractor on the same conditions in all respects on which he agreed to do the main work and at the same rates as are specified in the tender for the main work. And if the additional and altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out at the rates entered in the Schedule of Rates of the Division with due consideration for leads and lifts involved for materials and labour or at the rates mutually agreed

Alteration in

Specifications & designs not to invalidate

upon between the Engineer-in-charge and the contractor, whichever are lower however, If the Engineer-in-charge is not empowered by Latur City Municipal Corporation to approve the rates of such additional or altered work then as far as possible he shall obtain prior approval to the changes and to the rates payable for such changes from competent authority of Latur City Municipal Corporation not entered in before ordering the contractor to take up the alteration / additional work. If the additional or altered work for which no rate is in the schedule or rates of the Division, is ordered to be carried out before the rates are agreed upon then the contractor shall within seven days of the date of receipt by him of the order to carry out the work, inform the Engineer-in-Charge of the rate which it is his intention to charge for such class of work, and if the Engineer-in-charge does not agree to this rate he shall by notice in writing be at liberty to change his order carry out such class of work and arrange to carry out in such manner as he may consider advisable provided always that if the contractor shall commence the work or incur any expenditure in regard thereto before the rates shall have been determined as lastly hereinbefore mentioned then in such case he shall only be entitled to be paid in respect of the work or incur any expenditure in regard there to before the rates shall have been determined as lastly hereinbefore mentioned then in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rate or rates as shall be fixed by the Engineer-in-charge. In the event of a dispute the decision of the Chief Engineer will be final.

Where, however, the work is to be executed according to the designs, drawings and specifications recommended by the contractor and accepted by the competent authority the alterations above referred to shall be within the scope of such designs, drawings and specifications appended to the tender. The time limit for the completion of the work shall be extended in the proportion that the increase in its cost occasioned by alterations or additions bears to the cost of the original contract work and the certificate of the Engineer-in-charge as to such proportion shall be conclusive.

Extension of time in consequences additions or alterations

Clause 15 :

i) If at any time after the execution of the contract documents the engineer shall for any reason what so ever (other than default on the part of the contractor for which the LCMC is entitled to rescind the contract) desires that the whole or any part of the work specified in the tender should be suspended for any period of that the whole or part of the work should not be carried at all, he shall give to the contractor a notice in writing of such desire and upon the receipt of such notice the contractor shall forthwith suspend or stop the work wholly or in part as required after having due regard to the appropriate stage at

No claim to any payment or compensation for alteration in or restriction of work except specified in this clause.

which the work should be stopped or suspended so as not to cause any damage or injury to the work or any part of it could be or could have been safely stopped or suspended shall be final and conclusive against the Contractor. The Contractor shall have no claim to any payment or compensation whatsoever by reason of or in pursuance of any notice as aforesaid on account of any suspension, stoppage or curtailment except to the extent specified hereinafter.

ii) Where the total suspension of work ordered as aforesaid continued for a continuous period exceeding 90 days the contractor shall be at liberty to withdraw from the contractual obligations under the contract so far as it pertains to the unexecuted part of the work by giving a 10 days prior notice in writing to the Engineer within 30 days of the expiry of the said period of 90 days of such intention and requiring the Engineer to record the final measurements of the work already done and to pay final bill. Upon giving such notice the Contractor shall be deemed to have been discharged from his obligation to complete the remaining unexecuted work under his contract. On receipt of such notice the Engineer shall proceed to complete the measurement and make such payment as may be finally due to the Contractor within a period of 90 days from the receipt of such notice in respect of the work already done by the Contractor. Such payment shall not in any manner prejudice the right of the Contractor to any further compensation under the remaining provisions of this clause.

iii) Where the Engineer in-charge requires the Contractor to suspend the work for a period in excess of 30 days at any time or 60 days in the aggregate, the contractor shall be entitled to apply to the Engineer within 30 days of the resumption of work after such suspension for payment of compensation to the extent of pecuniary loss suffered by him in respect of working machinery rendered idle on the site or on the account of his having had to pay the salary or wages to labour engaged by him during the said period of suspension, provided always that the Contractor shall not be entitled to any claim in respect of any such working machinery, salary or wages for the first 30 days whether consecutive or in the aggregate of any suspension whatsoever occasioned by unsatisfactory work or other default on his part. The decision of the Engineer-in-charge in this regard shall be final and conclusive against the Contractor.

iv) In the event of

- a) any total stoppage of work on notice from the Engineer under sub-clause (1) in that behalf.
- b) Withdrawal by the Contractor from the contractual obligation to complete the remaining un-executed work under sub-clause (2) on account of continued suspension of work for a period exceeding 90 days.
- c) Curtailment in the quantity of item or items originally tendered on account of any alteration, omission or substitutions in the specifications, drawings, designs or

instructions under Clause 14 where such curtailment exceeds 25% in quantity and the value of the quantity curtailed beyond 25% at the rates for the items specified in the tender is more than Rs. 5,000/-

It shall be open to the Contractor within 90 days from the service of

- i) the notice of stoppage of work or
 - a) the notice of withdrawal from the contractual obligations under the contract on account of the continued suspension of work or

b) notice under Clause 14(i) resulting in such curtailment to produce to the Engineer satisfactory documentary evidence that he had purchased or agreed to purchase material for use in the contracted work before receipt by him of the notice of stoppage, suspension or curtailment and required the LCMC to take over on payment such material at the rates determined by the Engineer, provided, however, that such rates shall in no case exceed the rates at which the same was acquired by the Contractor. The LCMC shall thereafter take over the material so offered, provided the quantities offered are not in excess of the requirements of the unexecuted work as specified in the accepted tender and are of quality and specifications approved by the Engineer.

Clause 15 A: The Contractor shall not be entitled to claim any compensation from LCMC for the loss suffered by him on account of delay by LCMC in the supply of materials entered in Schedule „A“ where such delay is caused by.

No. claim to compensation on account of loss due to delay in supply of material by LCMC.

- i) Difficulties relating to the supply of railway wagons.
- ii) Force majeure.
- iii) Act of God.
- iv) Act of enemies of the State or any other reasonable cause beyond the control of LCMC.

Clause 16 : Under no circumstances whatsoever shall the Contractor be entitled to any compensation from LCMC on any account unless the Contractor shall have submitted claim in writing to the Engineer-in-charge within one month of the case of such claim occurring.

Time limit for unforeseen claims.

Clause 17 : If at any time before the security deposit or any part of thereof is refunded to the Contractor it shall appear to the Engineer-in-charge or his subordinate –in-charge of the work that any work has Been executed with unsound, imperfect or unskilled workmanship or with materials of inferior quality, or that any materials or articles provided by him for the execution of the work are unsound or quality is inferior to that contracted for, or are otherwise not in accordance with the contract, it shall be lawful for the Engineer-in-charge to intimate this fact in writing to the Contractor and then notwithstanding the fact that the work, materials or articles complained of may have been inadvertently passed, certified and paid for, the Contractor shall be bound forthwith to rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or if so required shall remove the materials or articles at his own charge and cost and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in the written intimation aforesaid, the Contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate for everyday not exceeding 10 days during which the failure so continues and in the event of any such failure the Engineer-in-charge may rectify or remove and re execute the work or remove and replace the materials or articles complained of as the case may be at the risk and expense in all respects of the Contractor. Should the Engineer in charge consider that any such inferior work or materials as prescribed above may be accepted or made use of, it shall be within his discretion to accept the same reduced rates as he may fix therefore.

Action and compensation payable in case of bad work.

Clause 18 : All work under or in course of execution or executed in pursuance of the contract shall at all times be open to inspection and supervision of the Engineer-in-charge and his subordinates and the Contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Engineer-in-charge and his subordinates to visit the works shall have been given to the Contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the Contractor's duly authorized agent shall be considered to have the same force and effect as if they had been given to the Contractor himself.

Work to be open to inspection.

Contractor or responsible agent to be present

Clause 19 : The Contractor shall give not less than five days' notice in writing to the Engineer-in-charge or his subordinate in-charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Engineer-in-charge or his subordinate in-charge of the work, and if any work shall be covered up or placed beyond the reach of measurement, without such notice having been given or consent obtained, the same shall be uncovered at the Contractor's expense, and in default thereof no payment or allowance shall be made for such work or for the materials with which the same was executed.

*Notice to be given
before work is covered
up*

Clause 20: If during the period as listed below, from the date of completion as certified by the Engineer-in-charge pursuant to Clause 7 of the Contract or for the period as mentioned below after whatsoever the contractor, shall forthwith on receipt of notice in that behalf from the LCMC, duly commence execution and completely carry out at his cost in every respect all the work that may be necessary for rectifying and setting right the defects specified therein including dismantling and reconstruction of unsafe portion strictly in accordance with and in the manner prescribed and under the supervision of the LCMC . In the event of the Contractor failing or neglecting to commence execution of the said rectification work within the period prescribed therefore in the said notice and/ or to complete the same as aforesaid as required by the same notice, the LCMC may get the same executed and carried out departmentally or by any other agency at the risk, on account and at the cost of the Contractor. The Contractor shall forthwith on demand pay to the LCMC the amount of such costs, charges and expenses sustained or incurred by the LCMC of which the certification of the LCMC shall be final and binding on the Contractor, Such costs, charges and expenses shall be deemed to be arrears of land revenue and in the event of the Contractor failing or neglecting to pay the same no demand as aforesaid without prejudice to any other rights and remedies of the LCMC, the same may be recovered from the Contractor as arrears of land revenue. The LCMC ,shall also be entitled to deduct the same from any amount which may then be payable or which may thereafter become payable by the LCMC to the contractor either in respect of the said work or any other work whatsoever or from the amount of security deposit retained by the LCMC . During defect liability period, the work of daily maintenance and general repairs and expenses thereon would be out of scope of the tender. However, if any defects in the sub work or in the

*Contractor liable for
damage done and for
imperfections*

material are found, the same will be rectified by the Contractor at his cost and will be binding on him, failing to which legal action would be taken as per tender clauses. Ten percent amount will be withheld from security deposit depending upon the nature of work, till the defect liability period is over.

1. Pumping Machinery.

a) Pumping machinery and other allied mechanical, electrical installation (excluding those in the treatment plant contract), surge arrestors, water hammer control devices, chlorinators (excluding those provided in the treatment plant contract) **Five Years**

Repairs to the works at (a) above. **Five Years**

2. WTP/ESR/GSR/BPT, Sump and Pump House, Balancing Tank Etc. head works, approach bridge

a) Based on Contractor's own design. **Five Years**

b) Based on Departmental design. **Five Years**

c) Special repairs to ESR/ GSR/ BPT **Five Years**

d) Ordinary repairs to ESR/GSR/BPT Sump and Pump House, etc. **Five Years**

3. Pipelines.

c) Pumping Mains, Gravity Mains, Leading Mains including all the fixtures **Five Years**

d) Distribution system, laterals, branch sewers of sewerage system, etc. **Five Years**

iii) Repairs to pipelines under the works at (a) and (b) above. **Five Years**

The instructions contained in the Government of Maharashtra (Public

Works Department) Resolution dated 14th June, 1989 shall henceforth be applicable to all the works for which defect liability periods have been specified as above

Clause 21 : The Contractor shall supply at his own cost all material (except such special materials, if any, as may in accordance with the contract be supplied from the LCMC stores), plant, tools, appliances, implements, ladders, tackles, scaffolding and temporary works requisite or proper execution of the work, in the original, altered or substituted from the whether included in the specification or other documents forming part of the contract of referred to in these conditions or not and which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer in charge as to any matter as to which under these conditions he is entitled to as satisfied or which he is entitled to require together with the carriage therefore to and from the work

Contractor to supply plant, ladders, scaffoldings, etc.

Contractor

No. of correction

Executive Engineer

The Contractor shall also supply without charge the requisite number of persons with the means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work or the materials, Failing which the same may be provided by the Engineer-in-charge at the expense of the Contractor and expenses may be deducted from any money due to the Contractor under the contract or from his security deposit or the proceeds of sale thereof or a sufficient portion thereof. The Contractor shall provide all necessary fencing and lights required to protect the public from accident and shall also be bound to bear the expenses of defence of every suit, action or other legal proceedings that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit action or other legal proceedings that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit action or proceedings to any such person, or which may with consent of the Contractor be paid for compromising any claim by any such person.

And is liable for damages arising from non-provisions of lights, fencing, etc

List of machinery in contractors possession and which he proposes to use on the work should be submitted along with the tender.

Clause 21 A : The Contractor shall provide suitable scaffolds and working platforms, gangways and stairways and shall comply with the following regulations in connection herewith.

- a) Suitable scaffolds shall be provided for workmen for all works that cannot be safely done from a ladder or by other means.
- b) A scaffolds shall not be constructed, taken down or substantially allowed except
 - i) Under the supervision of a competent and responsible person, and
 - ii) As far as possible by competent workers possessing adequate experience in this kind of work.
- c) All scaffolds and appliances connected herewith and ladders shall.
 - i) be of sound material
 - ii) Be of adequate strength having regard to the loads and strains to which they will be subjected, and
 - iii) Be maintained in proper condition.

- d) Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
- e) Scaffolds shall not be over – loaded and so far as practicable the load in consequence of normal use
- f) Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
- g) Scaffolds shall be periodically inspected by a competent person.
- h) Before allowing a scaffold to be used by his workmen the Contractor shall whether the scaffold has been erected by his workmen or not, take steps to ensure that it complies fully with the regulations herein specified.
- I Working platform, gangway, stairways shall:-
 - 1) be so constructed that no part thereof can sag unduly or unequally.
 - 2) be so constructed and maintained, having regard to the prevailing conditions as to reduce as far as practicable risks of persons tripping or slipping, and
 - 3) kept free from any unnecessary obstruction.
- a) In the case of working platform, gangways, working places and stairways at a height exceeding 2 meters (to be specified).
- b) every working platform, gangways shall be closely boarded unless other adequate measures are taken to ensure safety,
- c) every working platform, gangway shall have adequate width, and
- d) every working platform, gangway, working place and stairway shall be provided with railing/ barricading
- e) Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of material be provided with suitable means to prevent the fall of persons or material.
- I) When persons are employed on a roof where there is a danger of falling from the height exceeding 3 meters (to be specified) suitable precautions shall be taken to prevent the fall of persons or material.
- m) Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

LATUR CITY MUNICIPAL CORPORATION, WATER SUPPLY DEPARTMENT

n) Safe means of access shall be provided to all working platforms and other working places.

*Liability of contractor⁸⁷
for any damage done in
or outside the work
area*

o) The Contractor will have to make payments to laborers as per Minimum Wages Act.

Clause 21 B : The Contractor shall comply with the following regulations as regards the Hoisting appliances to be used by him.

- a) Hoisting machines and tackles, including their attachments, anchorages and supports shall.
- b) be of good mechanical construction, sound material and adequate strength and free from patent defect, and
- ii) be kept in good repairs and in good working order.
- c) Every rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free from patent defect.
- d) Hoisting machines and shackles shall be examined and adequately tested after erection on the site and before use and be re-examined in position at intervals to be prescribed by the LCMC.
- e) Every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering materials or as means of suspension shall be periodically examined.
- f) Every crane driver or hoisting appliance operator shall be properly qualified.
- g) No person who is below the age of 18 years shall be in control of any hoisting machine, including any scaffold, which gives signals to the operator.
- h) In case of every machine and every chain, ring, hook, Shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
- i) Every hoisting machine and all gear referred to in proceeding regulation shall be plainly marked with the safe working load.
- i) In case of hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated.
- j) No part of any hoisting machine or any gear referred to in regulation above shall be loaded beyond the safe working load except for the purpose of testing.

*Employment of female
labor work on Sunday*

- k) Motors, gearing, transmissions, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards.
- j) Hoisting appliances shall be provided with such means, which will reduce to minimum, and the risks of the accidental descend of load.
- m) Adequate precaution shall be taken to reduce to a minimum the risk of any part of suspended load becoming accidentally displaced.

Clause 22 : The Contractor shall not set fire to any standing jungle, trees, brushwood or grass without a written permission from the LCMC. When such permission is given and also in all cases when destroying, cut or dug up trees, brushwood, grass, etc. by fire, the Contractor shall take necessary measures to prevent such fire spreading to or otherwise damaging surrounding property. The Contractor shall make his own arrangements for drinking water for the labor employed by him.

Measures For prevention of fire.

Clause 23 : Compensation for all damages done intentionally or unintentionally by Contractor's labour whether in or beyond the limits of the LCMC property including any Damage caused by the spreading of fire mentioned Clause 22 shall be estimated by the Engineer-in-charge or such other officer as he may appoint and the estimate of the Engineer-in-charge subject to the decision of the Municipal Commissioner on appeal shall be final and the Contractor shall be bound to pay the amount of the assessed compensation on demand, failing which the same will be recovered from the Contractor as damage in the manner prescribed in Clause 1 or deducted by the Engineer-in-charge from any sums that may be due or become due from LCMC to Contractor under this contract or otherwise.

Liability of Contractor for any damage done in or outside work area.

The Contractor shall bear the expenses of defending any action or other legal proceedings that may be brought by any person for injury sustained by him owing to neglect of precautions to prevent the spread of fire and he shall pay any damages and cost that may be awarded by the court in consequence.

Clause 24 : The employment of female laborers on works in neighbourhood of soldiers barracks should be avoided as far as possible. *Employment of female labor*

Clause 25 : No work shall be done on Sunday without the sanction in writing of the Engineer-in-charge. *Work on Sunday.*

Clause 26 : The contract shall not be assigned or sublet without the written approval of the Engineer-in-charge, and if the Contractor shall assign or sublet his contract or attempt to do so, or become insolvent or commence any proceedings to get himself adjudicated and insolvent or make any composition with his creditors or attempt so to do so or if bribe, gratuity, gift, loan, perquisite, reward of advantage, pecuniary or otherwise shall either directly or indirectly be given, promised or offered by the Contractor or any of his servants or agents to any public officer or person in the employment of LCMC in any relating to his office or employment or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Engineer-in-charge may thereupon by notice in writing rescind the contract, and the security deposit of the Contractor shall thereupon stand forfeited and be absolutely at the disposal of LCMC and the same consequences shall ensure as if the contract had been rescinded under Clause 3 hereof and in addition the Contractor shall not be entitled to recover or be paid for any work thereof actually performed under the contract. *Work not to be sublet.. Contract may be rescinded and security deposit forfeited for subletting it without approval or for bribing a Public Officer or if Contractor becomes insolvent.*

Clause 27 : All sums payable by a Contractor by way of compensation under any of these conditions shall be considered as a reasonable compensation to be applied to the use of LCMC without reference to the actual loss or damage sustained, and whether any damage has or has not been sustained *Sum payable by way of compensation to be considered as reasonable without reference to actual loss*

Clause 28 : In the case of tender by partners, any change in the constitution of a firm shall be forthwith notified by the Contractor to the Engineer-in-charge for his information. *Changes in the constitution of the firm to be notified.*

Clause 29 : All works to be executed under the contract shall be *Directions and control*

executed under the direction and subject to the approval in all respects of the Executive Engineer /Municipal Commissioner, for the time being, who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried out.

Of the Engineer in charge

Clause 30.1 : Except where otherwise specified in the contract and subject to the powers delegated to him by LCMC under the code, rules then in force, the decision of the Executive

Directions and control of the Engineer in charge .

Engineer/ Municipal Commissioner for the time being shall be final, conclusive and binding on all parties of the contract, upon all questions relating to the meaning of the specifications, designs, drawings and instruction hereinbefore mentioned and as to the quality of workmanship, or materials used on the work or as to any other question, claim, right, matter or thing whatsoever, in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders, or these conditions, or otherwise concerning the works, or the execution, or failure to execute the same, whether arising during the progress of work, or after the completion or abandonment thereof.

Clause 30.2 : The Contractor may within thirty days of receipt by him of any order passed by the Executive Engineer as aforesaid appeal against it to the Municipal Commissioner with the contract work or project provided that.

- a) The accepted value of the contract exceeds ` 10 lakhs
(`Ten lakhs)
- b) Amount of claim is not less than ` 1.00 lakh (`One Lakh).

Clause 30: If the contractor is not satisfied with the order passed by the Executive Engineer as aforesaid, the contractor may, within thirty days of receipt by him of any such order, appeal against it to the Municipal Commissioner, LCMC who if convinced that prima facie, the contractors, claim rejected by Executive Engineer is not frivolous and that there is some substance in the claim of the contractor as would merit a detailed examination in the claim of the contractor and decision by Municipal Commissioner for suitable decision. The decision of the Municipal Commissioner shall be final and binding on the contractor and the Engineer-in-charge.

Clause 31 : Deleted

- Clause 32 :** When the estimate on which a tender is made includes lump sums in respect of parts of the work, the Contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for each item, or if the part of the work in question is not in the opinion of the engineer-in-charge capable of measurement, the Engineer-in-charge may at his discretion pay the lump sum amount entered in the estimate and the certificate in writing of the Engineer-in-charge shall be final and conclusive against the Contractor with regard to any sum or sums payable to him under the provisions of this clause. *Lump sums in estimates*
- Clause 33 :** In the case of any class of work for which there is no such specification as is mentioned in Rule I of Form B-1, such work shall be carried out in accordance with the Divisional specifications and in the event of there being no Divisional specifications, the work shall be carried out in all respect in accordance with all instructions and requirements of the Engineer-in-charge. *Action where no specifications*
- Clause 34 :** The expression „Work' or „Works' where used in these conditions, shall unless there be something in the subject or context repugnant to such construction, be constructed to mean the work or works contracted to be executed under or in virtue of the contract, whether temporary or permanent and whether original, altered, substituted or additional. *Definition of work*
- Clause 35 :** The percentage referred to in the tender shall be deducted from/ added to the gross amount of the bill before deducting the value of any stock issued. *Contractor's Percentage whether applied to net or gross amount of bill.*
- Clause 36 :** All quarry fees, royalties, octroi duties and ground rent for stacking materials, if any should be paid by Contractor, which will not be entitled to a refund of such charges from the LCMC. (Please see special clause for royalty). *Quarry fees and royalties*
- Clause 37 :** The Contractor shall be responsible for and shall pay any compensation to his workmen payable under the Workmen's Compensation Act., 1923 (VIII of 1923), (hereinafter called the said Act) for injuries caused to the workmen. If such compensation is payable/ paid by the LCMC as principal under sub-section (1) of Section 12 of the said Act on behalf of the Contractor, it shall be recoverable by the LCMC from the Contractor under the sub-section (2) of the said section. *Compensation under Workmen's Compensation Act.*

Clause 37 A : The Contractor shall be responsible for and shall pay the expenses of providing medical aid to any workman who may suffer a bodily injury as a result of an accident. If such expenses are incurred by LCMC, the same shall be recoverable from the Contractor forthwith and be deducted without prejudice to any other remedy of the LCMC from any amount due or that may become due to the Contractor.

Clause 37 B : The Contractor shall provide all necessary personal safety equipment and first aid apparatus available for the use of the persons employed on the site and shall maintain the same in condition suitable for immediate use at any time and shall comply with the following regulations in connection herewith.

- A) The workers shall be required to use the equipments so provided by the Contractor and the Contractor shall take adequate steps to ensure proper use of the equipment by those concerned
- a) When work is carried on in proximity to any place where there is a risk of drowning, all necessary equipment shall be provided and kept ready for use and all necessary steps shall be taken for the prompt rescue of any person in danger.
 - b) Adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work.

Clause 37 C : The Contractor shall duly comply with the provisions of „The Apprentices Act, 1961' (III of 1961), the rules made thereunder and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subjected to all the liabilities and penalties provided by said Act and said Rules.

Clause 38 : I) Quantities in respect of the several items shown in the tender are approximate and no revision in the tendered rate shall be permitted in respect of any of the items so long as subject to any special provision contained in the specifications prescribing a different percentage of permissible variation in the quantity of the item does not exceed the tender quantity to more than 25% and so long as the value of the excess quantity beyond this limit at the rate of the item specified in the tender, is not more than ` 5,000/- (Whichever is more)

*Quantities put to tender are approximate.
Excess quantity beyond quantity put to tender will be governed as per Cl.38*

- a) the Contractor shall, if ordered in writing by the Engineer so to Such compensation shall be recovered in the manner laid down in Clause 1 above.

Do, also carry out any quantities in excess of the limit mentioned above in sub –clause (1) hereof on the same conditions and in accordance with the specifications in the tender and the rates

- a) derived from the rates entered in Current Schedule of Rates and in the absence of such rates
- b) At the rates prevailing in the market.

The said rates being increased or decreased as the case may be by the percentage which the total tendered amount upon the schedule of rates applicable to the year in which the tender were accepted

For the purpose of operation of this clause ,this cost shall be worked out from the DSR prevailing at the time of inviting of tender. The cost of Clause 38 is Rs ----- (Rs.----- Only)

- i) This clause is not applicable to extra items.
- ii) Claims arising out of reduction in the tendered quantity of any item beyond 25% will be governed by the provision of Clause 15 only when the amount of such reduction beyond 25% at the rate of the item specified in the tender is more than `5,000/- This reduction is exclusively the reduction in Clause Nos. 14 & 15 of the work and site conditions.
- iii) There is no change in the rate if the excess is less than or equal to 25%. Also there is no change in the rate if the quantity of work done is more than 25% of the tendered quantity, but the value of the excess work at the tendered rates does not exceed ` 5,000/-
- iv) The quantities to be paid at the tendered rates shall include,
 - a) tendered quantity plus 25% excess of tendered quantity or the excess quantity of the value of ` 5,000/- at tendered rate whichever is more

Clause 38 A : The Executive Engineer /Engineer in charge of LCMC shall see that claim towards excess quantity under this clause 38 is submitted to higher authority immediately on its cropping up. The Executive Engineer/Engineer in charge of LCMC while making such payment shall see that the total expenditure shall not exceed sanctioned cost of the scheme. If the proposal of Clause 38 is submitted to competent authority for payment then interim 50% payment will be released as under *Interim payment for excess quantity*

- a) At accepted tender rate or current schedule rate whichever is less subject to condition that total expenditure on the tender shall not exceed sanctioned cost of the scheme

Clause 38-B : If the rate entered in to schedule B for the work of excavation of pipeline is a combined rate for different strata then the rate entered in Schedule-B will be applicable for quantity 25% in addition to the quantity mentioned in schedule-B of all items of excavation for pipe line trenches and for excess over 25% of Schedule-B quantity ,the rate payable to the contractor shall be worked out from the CSR by considering following percentage of excavation in different strata irrespective of actual strata met at the site for the increased quantity.

Payment for average rate of excavation

- 1) Excavation in all types of soils,. Sand, gravel and soft murum with lead up to 50 meter and lift as involved. Including dewatering, shoring and strutting etc. excluding refilling etc. % of average rate for lift 0.00 to 1.50 meter and _% for lift_
- 2) Excavation in hard murum and boulders with lead up to 50 m and lead and lift as involved including dewatering, shoring and strutting etc. excluding refilling etc._% of average rate for lift _____meter and % ____for lift ____.
- 3) Excavation in soft rock and old cement and lime masonry with lead upto 50 m and lift as involved, including dewatering, shoring and strutting, excluding refilling etc._% of average rate for lift _____and ____% for lift_____.
- 4) Excavation in hard rock and concrete road by chiseling wedging line drilling by mechanical means or by all means other than blasting with lead upto 50m and lift as involved, including dewatering, shoring and strutting etc. excluding refilling_% of average rate for lift 0.00 to 1.590 m_% and 1.50 to 3.00 m.

(Note-Sheet is attached separately)

Clause 39 : The Contractor shall employ any famine, convict or other labour of a particular kind or class if ordered in writing to do so by the Engineer-in-charge.

Employment of famine labour, etc

Clause 40: No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or, in the case of clearance works, on account of any delay in accordance to sanction of estimates.

Claim for compensation for delay in starting the work.

Clause 41: No compensation shall be allowed for any delays in the execution of the work on account of water standing in borrow pits or compartments. The rates are inclusive for hard or cracked soil, execution in mud, sub-soil, water standing in borrow pits and no claim for an extra rate shall be entertained unless otherwise expressly specified.

Claims for compensation for delay in execution of the work.

Clause 42 : The Contractor shall not enter upon or commence any portion of work except with written authority and instructions of the Engineer-in-charge of his subordinate in charge of the work. Failing such authority the Contractor shall have no claim to ask for measurements of or payment for work.

Entering upon or commencing any portion of work

Clause 43 :

- i) No Contractor shall employ any person who is under the age of 18 years.
- ii) No Contractor shall employ donkeys or other animals withbreaching of string or thin rope. The breaching must be at least three inches wide and should be of tape (Nawar).
- iii) No animal suffering from sores, lameness or emaciation or which is immature shall be employed on the work.
- iv) The Engineer-in-charge or his agent is authorized to remove from the work, any person or animal found working which doesnot satisfy these conditions and no responsibility shall be accepted by the LCMC for any delay caused in the completion of the work by such removal.
- v) The Contractor shall pay fair and reasonable wages to the workmen employed by him in the contract undertaken by him, In the event of the dispute arising between the Contractor and his workmen on the grounds that the wages paid are not fairand reasonable, the dispute shall be referred without delay to the Engineer in charge who shall decide the same. The decision of the Executive engineer shall be conclusive and binding on the Contractor but such decision shall not in any way affect the conditions in the contract regarding the payment to be made bythe LCMC at the sanctioned tender rates.
- vi) Contractor shall provide drinking water facilities to the workers. Similar amenities shall be provided to the workers engaged on large work in urban areas
- vii) Contractor to take precautions against accidents which taken place on account of labour using loose garments while working near machinery.

Minimum age of persons employed, the employment of donkeys and other animals and the payment of fair wages.

Clause 44: Payment to Contractors shall be made by cheque drawn on Municipal Commissioner, LCMC account provided the amount exceeds ` 1000/- Amounts not exceeding 1000/- will be paid in cash. *Method of payment*

Clause 45: Any Contractor who does not accept these conditions shall not be allowed to tender for work. *Acceptance of conditions compulsory before tendering for work.*

Clause 46 : If Government declares a site of scarcity or famine to exist in any village situated within 16 Kms of the work, the Contractor shall employ upon such parts of the work, as are suitable for unskilled labour, any person certified to him by the Executive Engineer/Engineer in charge of LCMC, or by any person to whom the Executive Engineer/Engineer in charge of LCMC may have delegated this duty in writing to be in need on relief and shall be bound to pay to such person wages not below the minimum wages which Government may have fixed in this behalf. Any disputes which may arise in connection with the implementation of this clause shall be decided by the Engineer in charge whose decision shall be final and binding on the Contractor. *Employment of scarcity labour*

Clause 47: The price quoted by the Contractor shall not in any case exceed the control price, if any, fixed by Government or reasonable price which is permissible for him to charge a private purchaser for the same class and description, the control price or the price permissible under the provisions of Hoarding and Profiteering Preventing Ordinance, 1948 as amended from time to time. If the price quoted exceeds the controlled price or the price permissible under Hoarding and Profiteering Prevention Ordinance, the Contractor will specifically mention this fact in his tender along with the reasons for quoting such higher prices. The purchaser at his discretion will in such case exercise the right of revising the price at any stage so as to conform to the controlled price as permissible under the Hoarding and Profiteering Prevention Ordinance. This discretion will be exercised without prejudice to any other action that may be taken against the Contractor. *Price not to exceed controlled price fixed by Govt.*

Clause 47 A : *Rate inclusive of all taxes*
 1) The rates to be quoted by the contractor must be inclusive of all other relevant taxes except GST. No. extra payment

will be made to the **contractor**

i) Bidder shall quote his rate excluding GST.

ii) GST shall be paid on the amount of bill of the work done as per prevailing guidelines rate of GST during the period of work done as applicable.

iii) The rates quoted by the contractor shall be deemed to be inclusive of the labour welfare cess and other taxes (other than GST) that the contractor will have to pay for the performance of his contract. The employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

2) a) Bidder shall quote his rate considering the provisions counted under GST Act 2017.

b) Amount of GST 2% I.E. CGST and SGST each 1% will be deducted at source (T.D.S.) from 01.10.2018.

Clause 48 : In case of materials that may remain surplus with the Contractor from those issued, the date of ascertainment of the materials being surplus will be taken as the date of sale for the purpose of C will be recovered on such date.

Sale tax on surplus material

Clause 50 : The Contractor shall employ at least 80 percent of the total number of unskilled labour to be employed by him on the said work from out of the persons ordinarily residing in the district in which site of the said work is located. Provided, however, that if required number of unskilled labour from that district is not available, the Contractor shall in the first instance employ such number of persons as is available and thereafter may with the previous permission in writing of the Engineer-in-charge of the said work obtain the rest of the requirement of unskilled labour from outside of district.

Employment of local labour

Clause 51 : The Contractor shall pay the labourers – skilled and unskilled according to the wages prescribed by Minimum Wages Act applicable to the area in which the work of the Contractor is located. The Contractor shall comply with the provision of the Apprentices Act, 1961 and the Rules and Orders issued there under from time to time.. The Contractor shall be liable for any pecuniary liability arising on account of any violation by him of the provisions of the Act. The Contractor shall pay the labourers – skilled and unskilled- according to wages prescribed by Minimum Wages Act applicable to the area in which the work lies.

Wages to be paid to the skilled and unskilled labours employed by contractor.

Clause 52 : All amounts whatsoever which the Contractor is liable to pay to the LCMC in connection with the execution of the work including the amount payable in respect of
i) materials and/ or stores supplied/ issued hereunder by the LCMC to the Contractor,

ii) hire charges in respect of heavy plant, machinery and equipment given on hire by the LCMC to the Contractor for execution by him of the work and/ or for which advances have been given by the LCMC to the Contractor shall be deemed to be arrears of the land revenue and LCMC without prejudice to any other rights and remedies of the LCMC recover the same from the contractor as a arrears of land revenue

Clause 53 : The Contractor shall duly comply with all the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) and the Maharashtra Contract Labour (Regulation and Abolition) Rules 1971 as amended from time to time and all other relevant statutes and statutory provisions concerning payment of wages particularly to workmen employed by the contractor and working on the site of the work. In particular and contractor shall pay wages to each worker employed by him on the site of the work at the rates prescribed under the Maharashtra Contract Labour (Regulation and Abolition) Rules 1971. If the contractor fails or neglect to pay wages at the said rates or makes short payment and the LCMC makes such payment of wages in full or part thereof less paid by the contractor, as the case may be, the amount so paid by the LCMC to such workers shall be deemed to be debt payable by the Contractor and the LCMC shall be entitled to recover the same as such from the contractor or deduct same from the amount payable by the LCMC to the contractor hereunder or from any other amounts payable to him by the LCMC.

Clause 54 : Where the work are required to work near Machine and are liable to accident they should not be allowed to wear loose clothes like Dhoti, Jhabba etc.

Clause 55 : The Contractor shall comply with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued there under from time to time.

Clause 56 : In view of the difficult position regarding the availability of the Foreign exchange, no foreign exchange, will be released by the Department for the purchase of the Plant and Machinery required for the execution for the work concernedwork.

Clause 58 (A) : Conditions of Malaria Eradication.

Anti-Malaria and other health measures.

- a) The anti malaria and the health measures shall be as directed by the Joint Director (Malaria and Filarial) of Health Service, Pune.
- b) Contractor shall see that most autogenic conditions are not created so as to keep vector population to minimum level
- c) Contractor shall carry out anti malaria measures in the area as per guidelines prescribed under National Malaria Eradication Programme and as directed by the Joint Director (M & F) of Health Services, Latur.
- iv) In case of default in carrying out prescribed anti malaria measures resulting in increase in malaria incidence contractor shall be liable to pay to Government the amount spent by Government on anti malaria measures to control the situation in addition to fine

v) Relations with Public Authorities.

The contractor shall make sufficient arrangements for draining away the sullage water as well as water coming from thebathing and washing places and shall dispose of this water in such a way as not to cause, any nuisance. He shall also keep thepremises clean by employing sufficient number of sweepers.

The contractor shall comply with all rules, regulations, bye-laws and directions given from time to time by any local or public authority in connection with this work and shall pay fees orcharge which are leviable on him without any extra cost to Government

Clause 58 (B) : The successful contractor will have to enter into agreement in form specified by LCMC on a stamp of required amount as per rules in force. The stamp charges shall be borne by the contractor

Clause 59: PRICE VARIATION CLAUSE:

NO PRICE VARIATION ALLOWED

Clause 60: The contractor shall provide and maintain barricades, guards, guard rails, temporary bridges and walkways, watchmen, headlights and danger signals illuminated from sunset to sunrise and all other necessary appliances and safeguards to protect the work, life, property, the public excavations, equipment and materials. Barricades shall be substantial construction and shall be painted such as to increase their visibility at night. For any accident arising out of the neglect of above instructions, the contractor shall be bound to bear the expenses of defence of every suit, action or other legal proceedings, at law, that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay all damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the contractor be paid in compromising any claim by any such person.

Clause 61 : The contractor shall take out necessary insurance policy /policies so as to provide adequate insurance cover for execution of the awarded work from the Director of insurance Maharashtra State Mumbai. However if contractor desire to effect insurance with local office of any insurance company same should be under the Co-insurance-come- servicing arrangement approved by the director of insurance if the policy taken out by the contractor is not Co – Insurance basis(GIF- 60% and insurance company -40%) the same will not be accepted and the amount of the premium calculated by director of insurance will be recovered directly from the amount payable to the contractors for the executed contract work.

- 1 Loss of or damage to the Civil and Mechanical and Electrical equipment's supplied/installed including the materials such as pipes, valves, specials etc. brought on site

Loss of or damage to contractor's equipment's including his vehicles.

Loss of or damage to property (except the works, Plant material and Equipment) in connection with the contractor, and :

Personal injury or death due to vehicles of the contractor and or due to any accident that may arise at or around the site to the Contractor personnel or to the LCMC staff or to any other person not connected with LCMC.

- 2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the date of actual starting of work. All such insurance shall provide for compensation to be payable in the types of proportions of currencies required to rectify the loss or damage incurred
- 3 If the contractor did not produce any of the policies and certificates required the Engineer may effect the Insurance for which the contractor should have produced the policies certificates and recover the premium it has paid from payment otherwise due to the contractor or, if no payments due topayment of the premiums shall be of debt due.
- 4 Alternations to the terms of an insurance shall not be made without the approval of the Engineer
- 5 The minimum insurance cover for loss damages to physical property, injury and death shall be 10% of the contract cost per occurrence with number of occurrences as 3(Three). After each occurrence the contractor shall pay additional premium necessary so as to keep the insurance police valid always till the defect liability period is over.
- 6 No payment will be released to the contractor until the insurance coverage with the Govt. Insurance fund, Maharashtra State is provided and unless the proof of insurance coverage is produced by the Contractor to the Engineer-in-Charge.

Clause 62: During execution of work excavation is required to be carried out for various sub-works for which royalty is required is to be paid by the contractor.

During execution of work and till completion if point of royalty is raised by collector office it will be sole responsibility of the contractor to pay royalty charges/compensation if any to concern. Until the certificate from the collector office regarding royalty charges is not submitted by the contractor, final bill and security deposit for such work will not be payable to the contractor.

**Executive Engineer / Municipal Commissioner
Latur City Municipal Corporation.**

GENERAL SCOPE OF WORK

**NAME OF WORK: AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR
LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0, PHASE-1,
HEADWORKS AT LATUR, TAL. LATUR, DIST. LATUR.**

SCHEDULE-A

**NAME OF WORK: AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR
LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0
AT LATUR, TAL. LATUR, DIST. LATUR.**

MATERIAL TO BE ISSUED UNDER SCHEDULE 'A'

Statement showing the material to be supplied from the store for the work contracted to be executed and preliminary and ancillary works and the rate at which they are to be charged.

<i>Sr. No.</i>	<i>Particulars of Material</i>	<i>Approx. Quantity & Unit</i>	<i>Rate at which the material will be charged for</i>	<i>Place of delivery</i>
1	2	3	4	5
1				
2				
3				

**NAME OF WORK: AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR
LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0, PHASE-1,
HEADWORKS, AT LATUR, TAL. LATUR, DIST. LATUR.**

CONDITIONS FOR MATERIAL SCHEDULE „A'

1. Other materials except as shown in Schedule „A' required for the work shall be procured and supplied by the contractor at his cost. In such cases the test certificate for their quality shall have to be produced by the contractor.
2. Material shall be available for delivery on any working day from 11.00 A.M. to 05.00 P.M. with at least week's intimation in advance.
3. The contractor shall maintain proper account of consumption of all material supplied to him by the department as per Schedule „A' in the register which may be if required, modified as prescribed by LCMC and shall submit the extract of the same monthly to the Executive Engineer/Engineer in charge. The Executive Engineer/Engineer in charge shall reserve the right to stop further issue of material to the contractor, if monthly account of the previously issued material is not submitted by the contractor. He shall be fully responsible for the consequence arising out of this.

The contractor shall be responsible for proper handling and safe custody of material issued to him by LCMC, for use on the work and shall return to Government all surplus material after completion of work, if and as ordered by the Executive Engineer vide Clause 12 of B.1 Form. The cost of damages or unserviceable material as would be fixed by the Engineer-in-charge shall be recovered from the contractor. The material, which is not found, accounted properly after considering reasonable percentage of wastage shall be charged at panel rates or determined by the Engineer-in-charge.

4. The contractor shall at his own cost make arrangement for storing cement brought by him by constructing a pakka shed and platform, etc. with double locking arrangements. Any damage to the cement due to inadequate provision of store theft, etc. will to the account of the contractor.

5. If there is delay in supplying the materials due to reasons outside the control of the Department or due to the materials being out of stock, no claim for compensation will be considered on the ground of delay in the supply of materials.
6. All the materials mentioned in Schedule „A' required for the work shall be obtained from the Department's store only where otherwise provided. The material obtained from other sources shall not be allowed to be used except under written permission of the Engineer-in-charge and after producing necessary test certificate.
7. The contractor shall inspect the material thoroughly before taking delivery of the same and shall take the delivery in good and sound condition and sign the unstamped receipt in token of receipt. Damages to the material noticed afterwards will be to the account of the contractor.
8. Quantities in Schedule 'A' are approximate and shall vary according to actual and Bonafede use.
9. All the materials remaining unused after the completion of the work are to be returned to LCMC at their store at the cost of the contractor and the credit if due will be given as per rules enforce.
10. Once the materials are issued to the contractor at the LCMC"s store, he shall remove the same immediately to his stores, failing which rent as decided by Engineer-in-charge shall be recovered from the contractor.
11. The contractor shall submit account of all the materials issued to him previously before demand for any fresh materials is made. Materials that cannot be accounted for shall be recovered from him at the rates decided by the Executive Engineer/Engineer in charge.
12. The contractor will have to provide the manufacturer test report from Government Laboratory regarding steel to be provided by the contractor.
13. If the contractor fails to return the balance materials with the firm, the same shall be recovered at two times the issue rate or at the prevailing market rate, whichever is higher.
14. C.I. flanged and S/s specials required other than that not available with the

department for the work will be supplied by contractor as per necessity of the work.

- 15. The contractor shall be responsible for safety of materials (even if it is laid in ground) till satisfactory Hydraulic Test is completed and work is finally handed over to the LCMC.
- 16. If the material supplied to the contractor at the place other than mentioned in Schedule „A“, the transport charges will be paid as per prevailing DSR for the shortest between stipulated place of delivery and actual place of delivery. In addition Octroi on such a material, if paid by the contractor, same shall be reimbursed to the contractor on production of proof of payment of such charges to LCMC.

SCHEDULE-B

INFORMATION ABOUT WORK IN HAND

(To be supported with certificate signed by concerned Executive Engineer) in case Col. 8 shows the cost of completed work as more than 80%)

Sr. No.	Name of Works	Name of Division /MC	Accepted Tender Cost.	Cost of supply of pipes	Balance cost (4-5)	Cost of work completed as on (Excluding supply of pipe)	Proportion of Col.7 to Col.6 %	Reason for delay (if any) for completion of balance work.
1	2	3	4	5	6	7	8	9

Contractor

No. of correction

Executive Engineer

ANNEXURE-2

DETAILS OF MACHINERY AVAILABLE WITH THE TENDERERFOR THE USE ON THIS
WORK

Sr. No	Name of Equipment	No. of unit	Name of Make	Capacity	Age and Condition	Remark

Contractor

No. of correction

Executive Engineer

**FORM OF BANK
GUARANTEE BANK
GUARANTEE
(Security for Performance)**

In consideration of the Municipal Commissioner (hereinafter called "Latur City Municipal Corporation" (LCMC) having agreed to exempt hereafter called "The said contractor") from the demand, under the terms and conditions of an Agreement dated (hereafter called "the said Agreement") made between the Municipal Commissioner LCMC and the said contractor for the Security Deposit for the due fulfilment by the said contractor of the terms and conditions contained in the said Agreement, on production of the Bank Guarantee for Rs _____ (In words Rs _____) we, (hereinafter referred to as "the Bank" at the request of the said contractor do hereby undertake to pay to the LCMC an amount not exceeding the above said amount of Guarantee against any loss or damage caused to or would be caused to or suffered by the LCMC by reason of any breach by the said contractor or any of the terms or conditions.

2. We, _____ do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, in hereby on a demand from the LCMC stating that the amount claimed is due by way of loss or damage caused to or would be to or suffered by the LCMC by reason of breach of the said contractor of any of the terms or condition contained in the said agreement or any reason of the contractor's failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding the above said amount Guarantee.

3. WE undertake to pay to the LCMC any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor shall have no claim against us for making such payment.

4. We _____ further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continued to be enforceable till all the dues of the LCMC under or by virtue of the

said Agreement have been fully paid and its claims satisfied or discharged till LCMC certified that the terms and conditions of the said Agreement have been duly and properly carried out by the said contractor and accordingly discharges this guarantee unless a demand or claim under this guarantee is made on us in writing on or before we shall be discharged from all liability under this guarantee thereafter.

5. We _____ further agree with the LCMC that the LCMC shall have the fullest liberty without our consent and without affecting in any manner our obligations here under to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the LCMC against the said contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement, and we shall not be relieved from any liability by reason of any such variation, or extension being granted to the said contractor, or for any forbearance act or omission on the part of the LCMC any indulgence by the LCMC to the said contractor or by any such matter or thing whatsoever which under the law to sureties would, but for this provisions, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or of the Contractor.

7. We, lastly undertake not revoke this guarantee during its currency except with the previous consent of the LCMC in writing.

Dated the _____ day of _____ 2022-23

For _____
(Indicate the name of the Bank)

Note: However, these forms will be as per the current practices of LCMC and Banks.

ANNEXURE-4

UNDERTAKING FOR GUARANTEE

I/We Guarantee that :

- 1 I/We will replace repair and adjust free of all charges to the employer any part of the work which fails to comply with the Specifications or amendment to such specifications as referred to in our specifications attached to tender, fair wear and tear except until the completion and for a period mentioned under clause 20 from the date of completion of contract.
- 2 All the work will be reliable.
- 3 All the work will be of a type which has been proved in service to be suitable for the duty required by the specifications and will be manufactured and tested in accordance with the appropriate standard specifications approved by the Engineer-in-charge.
- 4 I/We accept to abide by the clause relating to quality and guarantee of work.

DATE :

CONTRACTOR

Contractor

No. of correction

Executive Engineer

ANNEXURE-5

DECLARATION BY CONTRACTOR

Contractor

No. of correction

Executive Engineer

**Name of work :- AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR
LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0,
PHASE-1, HEDWORKS AT LATUR, TAL. LATUR, DIST. LATUR.**

DECLARATION

I hereby declare that I have made myself thoroughly conversant with the local conditions regarding all materials such as stones, murum, sand, availability of water etc. and labour on which I have based my rates for this work. The specifications and requirements of lead for this work have been carefully studied and understood by me before submitting the tender. I undertake to use only the best materials, to be approved by the Municipal Commissioner / Engineer in charge of the work or his duly authorized representative, before starting the work and also to abide by his decision.

I hereby undertake to pay the labours engaged on the work as per Minimum Wages Act 1984 applicable to the zone concerned.

Contractor's Signature

COLLABORATION AGREEMENT

DELETED

Annexure-VII

Details of audited turnover executed by the contractor in last five years and existing commitment of ongoing work.

Sr. No	Name of Works	Name of Division /MC	Accepted Tender Cost.	Amount of work completed					Amount of balance work	Remark
				2018-19	2019-20	2020-21	2021-22	2022-23		

(in Rs. Cr.)

Abstract for BID Capacity Calculation

Details of audited turnover executed by the contractor in last five years and existing commitment of ongoing work.

Year	Max. value of engineering works executed in the year	Maximum value of engineering works executed by the contractor in any one year, during the last five years		Remarks
		Value	Year	
1	2	3	4	5
2018-19		Write the max value here	Write concerned year here	
2019-20				
2020-21				
2021-22				
2022-23				

(Rs. In Crore)

<u>Year</u>	Value of existing commitment of ongoing work to be completed during next N years	Total value of existing commitment of ongoing work to be completed during next N years. (B)
1	2	3
2022-23		
2023-24		
2024-25		

Contractor

No. of correction

Executive Engineer

Average of engineering works of a maximum value executed in any three years during last five years upgrade to present year (i.e. Tender submission year) by increasing the cost as per rise in wholesale price index between the year of maximum value and month and year of tender submission (A) =.....

No. of year prescribed for completion of work for which present tender are invited (N) =

Total value of existing commitment of ongoing work to be completed during next N years (B) =

Note :-

- Since all the data is pertaining to the contractors own performance, the contractors are requested to provide its bidding capacity for this work by furnishing the calculations and supporting documents duly certified by chartered accountant to prove its contentions
- Ongoing works and works where contractor is lowest and for which letter intent has been issued to the contractor shall be considered in the calculation of value of existing commitment and ongoing works. (B)
- The statement showing the value of existing commitments of ongoing works during next N years for each of works in the list should be counter signed by Engineer-in-charge not below the rank of Executive Engineer or equivalent officer or head of any other Govt/semi Govt. organization.
- Submission of false information results in blacklisting of the contracting agency.
- Bidder shall submit the affidavit as per the format provided in the Annexure 14.
- Bidder shall submit the self- declaration as per the format provided in Annexure 15.
- Annual turnovers and Bid capacity calculations shall be submitted in contractors letter head with signature of contractor. Same shall be submitted due verified certification of the Chartered Accountant.
- If support documents are not found uploaded, bid capacity will not be taken into account which will result in disqualification for this tender.

BAR CHART

Sr. No.	Name of Sub work	Month																			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8

Contractor

No. of correction

Executive Engineer

ANNEXURE-XIII

SELF DECLARATION

Iage.....years occupation
businessresiding at
.....do hereby state on oath as under :-

That I am proprietor / Director / Partner / Power of Attorney Holder of the company
name and style as M/s.....having its address at
.....

That I further say that M/s ----- is **not black listed** by any
Government / Semi Government Organization / any Local Bodies and any other
Private Bodies.

Whatever information of documents submitted for registration are true and correct as
per my knowledge. I take full responsibility regarding genuineness of documents
submitted by me.

Date :-

Place :-

Signature of Contractor

Annexure - XIV

Name of work :- **Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation Under Amrut 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur.**

Date :-

Draft Affidavit Regarding**The work in hand & work where bids have been submitted**

I / We hereby declare that, I / We have bided for the work of ____ and at the date of bided in the below given Table – I (A). The following works amounting to Rs. ____ Crores are the balance works. Which are yet to be executed by my / our firm.

Table I (A) During the next ____ Years

Sr. No.	Description of works	Place & State	Contract No. & Date of W.O.	Name & Address of Department	Accepted Tender Cost Rs. (In Lakhs)	Sanction date of Completion
1	2	3	4	5	6	7
Ongoing works						

Details of ongoing works			Value of works remaining to be completed (Rs. In Lakhs)	Reasons for delay
Expenditure	Expected progress in % & Amount	Actual progress % & Amount		
8	9	10	11	12
To be certified by CA.				

Similarly in the works mentioned in the table 1 (b) , my / our firm is lowest and the tender list approved and work order is yet to issued. The cost of such work in is Rs. _____ cr.

Contractor

No. of correction

Executive Engineer

Table 1 (B)

Sr. No.	Description of works	Place & State	Contract No. & Date of W.O.	Name & Address of Department	Accepted Tender Cost Rs. (In Lakhs)	Sanction date of Completion
1	2	3	4	5	6	7
Tender where bidder is lowest and tender is approved, work order to be issued.						

Details of ongoing works			Value of works remaining to be Completed (Rs. In Lakhs)	Reasons for delay
Expenditure	Expected progress in % & Amount	Actual progress % & Amount		
8	9	10	11	12
To be certified by CA.				

I / We here by declare that, the above given information is true as on _____the day of month____year____. No any information is false and misleading, I have not abandoned any work or action under clause 3 (c) is not executed against me / our firm. I am not black listed for any of the work.

If information is above table is found to be false or in complete or the department finds that any information is hidden by me / our firm, the department will have all the liability to debar my firm from this binding or any further binding and department can black listed my / our firm for the period as it may find suitable for such action.

Date :-	Signature
Place :-	Name of the firm

Contractor

No. of correction

Executive Engineer

Self Declaration

- All the information provide in the forms, statements and attachments submitted in proof of the qualification requirements are correct. No any misleading or false information provided.
- I have not abandoned the works and I have properly completed all the contractor in time.
- I have / have not participated in the previous biddings for the same work and had/ hadnot quoted unreasonably high bid prices and could not furnish rational justification
- The details of litigation history is as below.

Name of Other party(s)	Cause of dispute	Litigation where (Court/arbitration)	Amount involved
------------------------	------------------	--------------------------------------	-----------------

- I am not financially failure.

GENERAL SPECIFICATION**GS-1**

- 1) All the materials used in the work shall be of best quality and the material rejected shall be removed from the site by the contractor within 36 hours in the presence of the Engineer in charge at his own cost.
- 2) All other rules regarding workmen compensations etc will be binding on the contractor.
Unwanted persons shall be dispensed with if called upon by the Engineer in charge.
- 3) Other unforeseen items to be executed in course of work will have to be done by the contractor as per specifications, in P.W.D. Hand book volume I and II (Latest Edition) I.S. code of practice and as per standard specifications book of latest edition.
- 4) The contractor shall be responsible and liable to pay for the damages caused by him to public property etc.
- 5) All T and P machinery shall be provided by the contractor. Non availability of the same shall not be an excuse for application for extension of time limit.
- 6) Water of good quality for labour, construction, washing and such other purposes shall be provided by the contractor without any claim for extra cost.
- 7) Materials belonging to contractor if not removed from site of works after completion of the work within a period of 15 days shall be taken over by LCMC department at contractors' risk and cost and then shall be auctioned at the contractor's risk and cost. The amount so recovered shall be credited to contractor's account after recovery of any dues or over payments etc.
- 8) The final bill and deposits will not be paid unless the site is cleared off all rubbish materials and contractor's stores etc from the site of the work.
- 9) The contractor will have to pay the royalties and municipal taxes, if charged by the Latur City Municipal Corporation. The same will not be refunded.
- 10) Specifications given for relevant nature and type of work, for any particular item of the tender shall also be applicable to the other item of work when similar work is repeated or carried out in part or full although the item numbers may not have been mentioned especially against the particular specifications.

Contractor

No. of correction

Executive Engineer

- 11) The contractor shall be responsible for obtaining permission from Government local bodies, private party for storing, stacking of materials required for execution of work.
- 12) Necessary sign board, danger flags, red lamps shall be provided by the contractor to avoid accidents. Necessary guarding will also have to be provided.
- 13) Before entering any land, the contractor shall make independent enquiry regarding ownership of land. Any action regarding trespassing will be at the risk of contractor.
- 14) Materials remaining unsold or unserviceable as per discretion of the Executive Engineer shall be confiscated destroyed or disposed of without any compensation to the contractor, who will be responsible for all legal disputes at his own cost and consequences without reference to the department.
- 15) In case of legal disputes for materials brought and stores at site without permission of the Executive Engineer, the contractor will be responsible for all legal disputes at his own cost and consequences without reference to the department.

GS 2: SPECIFICATION OF WORK :

The work shall be carried out as per practices and procedures laid down in P.W.D. Hand book Volume - I & II Latest Edition and Public Works Departments standard specifications (Latest Publication of Government of Maharashtra) with amendments from time to time and as per I. S. applicable for respective items of works, as directed by the Engineer in charge.

GS 3: MOTIVE POWER :

No electric power supply shall be entered by the LCMC during construction and testing of various structures under different sub-works. The contractor shall have to make his own arrangement for the same at his cost. During trial period of the plant, power supply shall be made available by the department. The firm should inform within one month from the date of receipt of work order, the total electrical load required for successful operation of the treatment plant. This electrical load shall also include lighting load for inside and outside light points etc. attached to the buildings in proper as well as premises of the plant.

GS 4: FOUNDATION CONDITIONS AND PRESCRIBED BEARING CAPACITIES

The tenderer shall acquaint himself for results of S.B.C. by taking actual trial pits on site and refilling them afterwards at his cost. The foundation depth shall be considered as minimum 3.00 m below G.L. for the construction of BPT, MBR & E.S.R.. The bearing capacities of the actual strata met with the foundation levels shall wherever be required got tested from reputed institution, at contractor's cost and in the presence of Engineer-in-charge. Detailed design shall be prepared and submitted by the contractor and got approved from the department after actual confirmation of S.B.C.

GS 5: WATER TIGHTNESS TEST

All the water retaining and carrying structures will have to be tested for their water tightness by filling them with water up to their designed F.S.L. Similarly the pipe line will have to be tested hydraulically. Structures will be considered water tight when the reductions in filled up level is not more than 6 mm in 48 hours with outer surface dry. As regards pipe line, they should hold pressure as directed by Engineer in charge without reduction for thirty minutes. The contractor will have to give all such hydraulic tests by making his own arrangements for water supply, filling and disposing off water after the test. He shall repeat this test if necessary until the above results are achieved and certified by the Engineer-in-charge without any claim for extra cost. The contractor shall carry out the rectification of the structures or pipe lines to achieve the above tests at his own cost. The structures and pipe lines shall be kept filled with water upto F.S.L. after the above test are over at his own cost.

GS 6: SATISFACTORY COMPLETION OF VARIOUS ITEMS :

The sub works included in the schedule of works for BPT MBR WTP & ESR on Lump sum basis.

The various items of the sub work are to fit in perfectly in the whole system physically, hydraulically, architecturally and mechanically.

GS 7: DISPOSAL OF EXCAVATED STUFF :

All materials obtained from any excavation carried out under this contract will be the property of LCMC and the contractor shall not have any claim on it. It will not be used by the contractor for any other purpose than the legitimate use on the work itself. Stuff still remaining surplus shall be spread over the different site of work or disposed off as directed by the Engineer in charge without extra cost.

GS 8: SUBMISSION OF DETAILED DESIGNS AND DRAWINGS AFTER ACCEPTANCE OF TENDER :

For Lump sum job works the contractor shall submit complete detailed designs and drawings within one month from the date of issue of work order for approval to the department. Piecemeal submission of designs and drawings shall not be permitted to commence the actual work at site unless detailed structural designs and working drawings are approved by the department. If called upon, the contractor shall also submit within reasonable time relevant books and other literature which have been referred to by him in working out the design for civil, mechanical or electrical works involved in the construction. Such books and literature will be returned to him. Reason of secrecy in regard to details of designs, materials, equipments etc shall not be placed by the contractor in the name of „TRADE SECRET“ for not furnishing the requisite details called for by the LCMC. The design, once approved by Govt. Engineering College structural consultants approved and listed in LCMC shall be subjected to modifications if found necessary and such modification shall not violate the contract. The contractor shall be responsible for the correctness and soundness of the designs submitted by him. The structures shall be as per recognized engineering practices and if any provisions, are found inadequate or faulty, necessary modifications will have to be carried out by him at any stage up to the expiry of guarantee period and no extra payment will be made on the account.

Six copies of all the approved designs and drawings should be furnished by the contractor to the department free of cost.

GS-9: REQUIREMENT OF STRENGTH OF CONCRETE

The contractor shall make field arrangements for testing of all materials for cement concrete i.e. slumps test, compression test etc. The concrete cube moulds 3 Nos. of 15 x 15 x 15 cm size shall be kept during concreting operation. Three cubes shall be prepared from at site during concreting to be used in work for compression test, for each concreting to be used in work for compression test, for each concreting of the structures. One cube shall be tested for test at 7 days age and two at 28 days in Regional Testing Laboratory at Govt. Polytechnic/Engineering college / Vishveshvarayya National Institute of Technology, Nagpur or at any approved laboratory, by Engineer –In-Charge. ALL THE TESTING CHARGES SHALL BE PAID BY CONTRACTOR. The entire responsibility of the testing of materials will be borne by the contractor.

Mixing of concrete shall be done with Concrete Mixers.

- a) The contractor will make his own arrangement for receiving all materials, tools, etc. required for the work.
- b) No extra charges for the carriages of water will be allowed.
- c) The rates for all items are inclusive of all charges such as carting, lifting etc. No extra payment for any lead and lifts will be paid for any item.
- d) The contractor should not be subletted without written permission of the Engineer-In-Charge.
- e) The conditions in the tender notice will be binding on the contractor and the Tender Notice will form a part of agreement.
- f) The material required for carrying out the work for which the tender is offered shall be brought by the tenderer.

GS-10 ORDINARY CONCRETE

Full payment shall be made when 75% of the result are equal and above the specified strength and the remaining 25% of the result are above 75% of specified strength.

Cases failing outside the above limit shall be examined by the Engineer-In-Charge on merits in each case.

- 1) The charges for preliminary design of concrete mix shall be entirely borne by the contractor.
- 2) For grades of concrete M-20 and above where cement is to be used by weight, the cost of extra cement required to make up under weight bags shall be borne by the contractor.
- 3) For the item of concrete and other items in the agreement where cement is not to be used by weight the cement bags are received from the manufacturer shall be assumed to contain cement of 50 kg. net weight. The work shall be carried out as per this method of reckoning.

TECHNICAL SPECIFICATIONS

DETAILED SPECIFICATION

All material such as sand, metal, rubble, steel, bricks, cement etc. shall be get checked from laboratory of Government Polytechnique or Engineering College. Then it should be allowed to use. Charges for this shall have to be borne by the contractor.

1. EXCAVATION IN ALL SOFT AND HARD STRATA MATERIAL**1.0 GENERAL**

The specifications contained in the standard specification volume IInd published by Public Works and Housing Department, Govt. of Maharashtra, Chapter Bd. A shall apply. In addition to above following specification shall apply. In case of any discrepancy between the two the below given specifications shall govern.

1.1 SITE CLEARANCE

The area to be excavated shall be cleared off. All trees and bushes and rubbish and other objectionable materials removed shall be burnt or disposed of as directed by the Engineer-in-Charge. The cost of such clearing shall be deemed to have been included in the rates accepted for different items under excavation.

1.2 DEWATERING

No distinction shall be made as to whether the materials being excavated is dry, moist or wet. The item also includes bailing out of water by manually or pumps to keep the trenches reasonable dry for all further works of lowering, laying, jointing and testing of the pipeline till the completion of the work.

1.3 SHORING AND STRUTTING

The item includes all shoring and strutting that may be required. On no account the width of trenches more than these mentioned here in aftershall be measured. If excavation width more than the specified is required for the purpose of keeping machinery, steeping due to loose material or for any other reasons the same shall be at the Contractors cost.

1.4 LIGHTING, BARRICADING AND GUARDING

The items of excavation are including necessary lighting at night at suitable intervals, but not more than 15 meter along the excavated trenches and at all crossing and barricading the same by fencing so as to avoid the accident. Chowkidars shall be employed at place where the trenches cross over any traffic road to caution the vehicles and pedestrians etc. The arrangements shall be maintained till completion of work and at the cost of the Contractor.

1.5 ALIGNMENT AND LEVELS

Before the trenches excavation is commenced, sight rails shall be erected at every 30 meters and at all points of change of direction, gradient and at ends. The excavation work shall be preceded by a detailed survey along the alignment of the main to obtain ground levels at every 30 meters or less distance. Temporary bench mark shall be constructed at every 30 meters distance along the alignment and shall be maintained till the completion of work. All labour and materials required for the survey work of fixing bench mark etc. shall be provided by the Contractor at his own cost. For any mistakes in survey the Contractor is fully responsible. He should not lay the pipes, unless the alignment is thoroughly checked by the Engineer-in-Charge or his authorized representative who is empowered to sign the work order book in token of checking the exact grade and level of the trenches excavation.

Excavation at random places shall not be measured by the LCMC Engineer. Any non-technical practices during the excavation of the contracted work shall be viewed very seriously by the LCMC and a note to that effect will be recorded against the Contractor in his name.

1.6 DEPTH AND GRADES OF TRENCHES

The trenches shall be excavated to the required grades and depth in all types of strata and on the lines as shown on approved drawings or as directed by the Engineer-in-Charge. If not so, the payment for the item will not be paid to the Contractor. The depth of excavation and the levels of the pipe inverts shall be checked by means of boning rods of suitable lengths. Additional depths if required to be excavated for pipes, for sockets, collars, specials, joints and for any other working facility and shall not be measured and paid. The minimum cover above the pipe shall be 0.90 m.

The Contractor shall notify the Engineer when the trenches are ready for bedding so that the Engineer can inspect and record the depth. Only on explicit approval by Engineer, the bedding shall be provided by the Contractor. If any public utility i.e. electrical cable, telephone cable, water connections, sewer connections, gutter damage etc. then same will be rectified by contractor at his own cost.

1.7 WIDTH OF TRENCHES

The maximum width of the trenches admissible for payment shall be as under

Sr. No.	Internal dia of pipe	Width of excavation of trenches	Nature of strata
1.	80 mm and below	0.70 M	In soft and hard material
2.	100 mm	0.75 M	In soft and hard material
3.	150 mm	0.75 M	In soft and hard material
4.	200 mm	0.85 M	In soft and hard material
5.	250 mm	0.85 M	In soft and hard material
6.	300 mm	0.90 M	In soft and hard material
7.	350 mm	0.95 M	In soft and hard material
8.	400 mm	1.10 M	In soft and hard material
9.	450 mm	1.15 M	In soft and hard material
10.	500 mm	1.20 M	In soft and hard material
11.	550 mm	1.25 M	In soft and hard material
12.	600 mm	1.25 M	In soft and hard material
13.	700 mm	1.30 M	In soft and hard material
14.	750 mm	1.40 M	In soft and hard material
15.	More than 750 mm	OD + 0.60 M	In soft and hard material

For excavated width whichever is less shall be recorded and paid for. Extra widths for pits at sockets, collars, specials, joints, construction and also for working liabilities shall neither be measured nor paid for. However, excavation required for providing and casting fixity block, thrust blocks, encasing etc. will be measured and paid for under relevant item of excavation. The pits for welding joints will also be paid under relevant item of excavation.

1.8 PRESSING AND CONSOLIDATING OF THE TRENCHES

The bed of the trenches shall be well rammed before laying of the murum or sand for bedding hollows, if any, shall be filled with murum duly rammed and watered to required level and grade at cost of the Contractor.

1.9 CLASSIFICATION OF MATERIALS IN TRENCHES

The exact classification of the strata met with during the excavation shall be done by the representative of Engineer-in-Charge and accordingly measurement shall be recorded under different items of excavation provided under Annexure to Clause-38 of tender for the purpose of excess quantity. In case of any, dispute regarding classification of strata, the decision of Engineer-in-Charge shall be final and binding. The strata classifications and its quantity shown are indicative only. The Contractor therefore, shall carry out his own assessment regarding the strata at different depth along the alignment, before submission of the tender.

1.10 EXCAVATION BY CHISELLING**MECHANICAL MEANS(In Hard Strata)**

Excavation in hard strata shall be done by chiselling, wedging or line drilling as specified any mechanical all means or ordered by the Engineer. The excavation refers to excavation generally for foundation, wet or dry, in hard rock by chiselling, wedging or line drilling and shall comply with the specifications.

1.11 MODE OF MEASUREMENT AND PAYMENT

The excavation shall be measured in Cubic meters only. Dimensions shall be measured correct to two decimal of meter and quantity shall be calculated to two places of Decimal of Cubic meters. The item mentioned in Schedule-B in which includes disposing excess excavated material remained after refilling will not be paid separately for disposing excavated material.

2. PLAIN/REINFORCED CEMENT CONCRETE**a) PLAIN CEMENT CONCRETE****b) REINFORCED CEMENT CONCRETE****2.1 (a) Proportions of concrete for types of work**

- i) M-100 – For levelling course and foundation of chairs and thrust blocks etc.
- ii) M-150 PCC with temperature nominal 0.15% reinforcement for footing thrust blocks, anchor blocks, chairs and encasing of pipes etc.
- iii) M-200 PCC for water retaining structure.
- iv) M-300 for Construction of Jack well, Pump House & Water Retaining Structure. Such as ESR, WTP, MBR, BPT.
- v) M-250 Pump house and bridges (excluding sub-merged portion).
- b) General specifications of this work shall be as per standard specification of Public Works Department, latest edition, for PCC Bd.-E1 to E-7 and for RCC Bd.F2 to F16.
- c) Whenever concrete is to be laid in trenches, the trench shall be cleaned, and watered before placing. The sub-soil water which is met shall be removed and the trench shall be kept dry during and after 2 hours of placing concrete.
- d) Pedestal pier shall be perpendiculars to center line of pipe.
- e) Proper seat shall be left on top of pedestal pier to construct saddle. Seat shall be strictly done within 24 hours, failing which LCMC will not accept it for payment.

- f) RCC saddle shall be constructed as per detailed drawing. The top of saddle where pipe rests shall be provided with wearing plate fixed in CM 1.3 smoothly and CM grouting may be done after pipe is placed and no extra payment will be made for this.

2.2 MODE OF MEASUREMENT AND PAYMENT.

The tender rate shall be for one cubic meter of concrete. The concrete shall be measured for its length, breadth and depth limiting dimensions to those specified in drawing or as per direction of Engineer-in-Charge.

The damages to concrete during laying of pipe line shall be rectified free of cost. The rate for the concrete includes all labour, material centering shuttering securing etc. all leads and lifts.

Mixing of concrete shall be done with concrete mixer.

For providing Electric wiring duct tubes of the required diameter and length shall be provided through walls beams and floors, slabs as and when directed without any extra cost.

- a) The contractor will make his own arrangement for receiving all material tools etc. required for the work.
 - b) No extra charges for the carriages of water will be allowed.
 - c) The rates for all items are inclusive of all charges such as carting, lifting, etc. No extra payment for any lead and lifts will be paid for any item.
 - d) The contractor should not be Sublette without written permission of the Engineer-in-Charge
- a. The conditions in the tender notice will be binding on the contractor and the Tender Notice will form a part of agreement.

Cement cubes of size 15 cm x 15 cm x 15 cm are taken during the concreting of important structure like RCC well, water treatment plant, elevated service reservoirs, bridge etc. to check the strength of the concrete and its acceptability it is observed that while taking cubes the requirement specified in the relevant Indian Standard specification are not observed properly and cubes are not cast in the required numbers. Due to this the acceptability of the concrete can not be decided correctly. Similarly, proper care is also not taken for curing of the cubes the requirements specified in the ISS in respect of casting of concrete cubes and curing thereof, with acceptability criteria of concrete are reproduced below, which shall be following scrupulously.

2.3 FREQUENCY OF SAMPLING (IS:456:2000 (Clause 15.2)

- a) Number of samples to be taken during concreting based on the quantum of concrete cast shall be as below.

Quantity of concrete in Cum No. of samples

01 to 05	1				
06 to 15	2				
16 to 30	3				
31 to 50	4				
50 and above	4+1		for	every	50
			Cum part thereof		

At least one sample shall be taken from each shift of concrete and three test specimens (cubes of size (15 x 15 x 15 cm) shall be cast from each such sample for testing of the compressive strength additional three cubes will also have to be taken for 7 days test.

The test strength of the sample shall be the average the strength of the three specimen.

2.4 ACCEPTANCE CRITERIA (IS:456:2000 Clause 16)

The concrete cost shall be supposed to be acceptable in the compressive strength (i.e. average strength of the three specimen) of the samples fulfil the following requirements.

- a) Every sample has a test strength not less then characteristic value.

OR

- b) The strength of one or more samples, though less the characteristic value is in each case, not less then the greater of following.

- i) The characteristic strength minus 1.35 times the standard deviation.

and

- ii) 0.80 times the characteristics strength.

- c) And the average strength of all the samples is not less than the characteristic strength plus

$$1.65 \times \frac{1.65}{\text{No. of samples}} = \text{times the standard deviation}$$

- d) However, it should be noted that individual variation should not be more then percent of average.

STANDARD DEVIATION VALUES

Grade of Concrete	Assumed Standard deviation in Kg/Cm ²
M-100	35.00
M-200	46.00
M-250	53.00
M-300	80.00

2.5 CURING OF CONCRETE CUBES (IS:516:1959, CLAUSE 3.3)

The test specimen (cubes) shall be stored on the site at place free from vibration, under damp matting, sacks or other similar material for 24 hours + ½ hour from the time of adding the water to the other ingredients. The temperature of the place of storage shall be within the range of 22° to 32°C. After the period of 24 hours, stored in clean water at temperature of 24° to 30°C until those are transported to the testing laboratory. Samples shall be sent to the testing laboratory well packed in damp sand, damp sacks or other suitable material as to arrive there in a damp condition, not less than 24 hours before the time of test.

On arrival at the testing laboratory, the specimen shall be stored in water at a temperature of 27° + 2° C until the time of test. Record of the daily minimum and maximum temperature shall be kept, both during the period specimen remain on the site and in the laboratory.

2.6 TEST PROCEDURE (IS:516:1959 CLAUSE 5.5)

Specimen stored in water shall be tested immediately on removal from water and while those are still in the wet condition. Surface water and grit shall be wiped off the specimens and any projecting fins removed. Specimen, when received dry, shall be kept in water for 24 hours before taken for testing. The dimensions of the specimens to the nearest 0.2 mm and also weight shall be noted before testing.

2.7 OTHER THINGS

Here, it should be specifically noted that age of concrete cube will be age as on the date of testing i.e. time difference between addition of water to dry ingredient and actual testing.

2.8 MIX DESIGN

The following instructions shall be followed as regards preliminary design of mix and methods of batching of plain cement and reinforced cement concrete. These instructions should be treated as supplementary to the relevant provision in the specifications for the respective items contained in the book of standard specification and will be carried the provisions contained therein, wherever they are contrary to the following instructions.

The preliminary design and batching for various grades of concrete shall be governed by the following guidelines.

No.	Concrete Grade	Guidelines
1	Upto M-150	This should only be ordinary concrete. No change may be prescribed in the present practice as regards preliminary design of mix and permitting volume batching.
2.	M-200 to M-250	Preliminary mix design must be carried out for these mixes. However, weigh batching shall be insisted for cement, fine aggregate and coarse aggregate.
3.	Above M-250	Preliminary mix design must be prepare for such mixes weigh batching should be for cement fine aggregate and coarse aggregate.

For the grades of concrete M-200 and above the preliminary mix design shall be carried out from the approved laboratory. The rate quoted by the contractor in the agreement for these items shall be final and binding on him, irrespective of content of cement required as per preliminary mix design and there shall be no adjustment in the agreement rate for these item on this account.

The charges for preliminary design of concrete mix shall be entirely borneby the contractor.

For grades of concrete M-200 and above where cement is to be used by weightment, the cost of extra cement required to make up the under weightbags shall be borne by the contractor.

For the items of concrete of grades lower than M-200 and other items in the agreement where cement is not to be used by weightment the cement bags as received from the manufacturer and shall be assumed to contain cement of 50 kg net weight.

This shall be as per specification of P.W.D. (Hand Book) and as directed by Engineer-in-charge. Only trap stone shall be used other than the specification for this item in Standard Specification Book.

1. SPECIFICATIONS FOR MILD STEEL AND TOR STEEL REINFORCEMENT FOR RCCWORKS

- 3.1 The item provides for supply of mild steel, tor steel bars, cutting, bending with G.I. wire and placing in position, welding for reinforcement in the RCC.
- 3.2 Mild steel and tor steel bars shall confirm to Specification A-10 of Standard Specification of Public Works Department, Latest Edition.
- 3.3 The binding wire shall confirm to Specification A-15 of Standard Specification of Public Works Department, Latest Edition.
- 3.4 During contractor's supply, if any, the steel bars shall be supplied directly to the site of work.
- 3.5 Bending reinforcement confirm accurately to the dimensions and shapes in the details drawings (approved) or as directed by the Engineer-in-charge.
- 3.6 Bars shall be bend cold only. In no way bending by heat will be allowed.
- 3.7 Bars with kinks, bends or cracks shall not be used.
- 3.8 Details of length, size, laps and bending diagram shall be got approved by the Engineer-in-charge.
- 3.9 As far as possible full length of bars shall be placed as per drawing details. When full lengths are not available, bars be supplies only after written permission of the Engineer-in-charge. Supplies shall be staggered and in tension zone shall be avoided strictly. Bars shall be lapped as specified in IS:456-2000 with due regards to the grade of concrete. Welding may be used for large diameter of bar only after permission of Engineer-in-charge.
- 3.10 Welding, if permitted shall conform to specification B.10.7 of Standard Specification of Public Works Department.
- 3.11 All reinforcement shall be accurately placed in position with spacing and cover shown in detailed drawing and firmly held during the placing and setting of concrete. Bars shall be ties at all intersections. Binding wire of 1.63 mm or 1.22 mm diameter (about 16 or 18 gauge) shall be used. Spacing of the bars shall be maintained by means of stays, blocks ties, spacers, hangers or other approved supports at sufficient close intervals so that bars will not be displaced. During placing vibrating or compacting concrete, placing bars for reinforcement on a layer of fresh concrete as the work progress will not be permitted. The use of pieces of broken stones or bricks or wooden blocks for maintaining spacing or cover shall not be permitted. Layers of bars shall be separated by precast cement blocks, spacer bars or other devices.

- 3.12 Full details of numbers, sizes, lengths, weights, laps, welds, spacing of bars placed in position in different parts of the work shall be recorded by the contractor and certified and signed by the Engineer-in-charge or his representative to show that all reinforcement has been placed correctly as per sanctioned drawing or as directed by the Engineer-in-charge in writing, before placing concrete. No concrete shall be placed in position until the certified the correctness of reinforcement, recording the steel measurements and has given permission in writing to place concrete. After approval of reinforcement as above, it will be the contractor's responsibility to seal that the spacing of reinforcement and arrangements are not tampered with in any way before or during concreting.
- 3.13 Any steel is required to be procured by Contractor. He shall produce the test certificate. In addition, actual test shall be carried out according to IS:432- 1982, in a Government laboratory and the cost of test shall be borne by the contractor, including all transport, etc.
- 3.14 This item includes,**
- a) Cost of labour, materials, use of tools, plant and tackle and other incidental items to complete the work satisfactorily.
 - b) Supplying, conveying, cleaning, cutting, bending, binding with (1.63 mm or 1.22 mm diameter – 16 to 18 gauge) wire on spot, welding and placing reinforcement in position and maintaining it clean and in position till the concrete is laid.
 - c) Cost of sampling and testing, as required.
- 3.15 In no case, any foreign material e.g. oil, grease, etc. which prevent bonding between steel and concrete shall remain on steel on steel bars during placing of concrete.
- 3.16 MODE OF MEASUREMENT AND PAYMENT**
- The tender rate shall be on weight basis for MT of MS/tor steel reinforcement. The weight of steel reinforcement used for the item of concrete will be measured in tonnes based on total compacted weight for the sizes and lengths of bars as shown in drawing or as directed by Engineer-in-charge.
- 3.16.1 The lengths of the bars shall be measured correct to 2 places of decimals of Meters. The weights for payments shall be calculated according to standard weights mentioned in the ISI Hand Book correct upto 0.10 Kg.

4. BURNED BRICK MASONRY SECOND CLASS**4.1 GENERAL**

This specification lays down the requirements for B.B. Masonry 1st class in cement mortar of specified proportion required for various structures, including necessary scaffolding, watering etc. The specifications shall conform to IS:2212-1991 its latest revision.

4.2 MATERIALS

BRICKS : Bricks shall be first class and shall conform IS:1077- 1992.

4.3 MORTAR

The quantity of mortar to be used per Cum of B.B. masonry shall be about 30 to 32% or 300 to 320 liters for conventional bricks and 32 to 33% or 320 to 330 liters for ISI bricks. The proportion of mortar shall be as specified in the item of the tender.

Mode of Measurement :

The contract rate shall be for a unit of one cubic meter of Masonry. The concrete shall be measured for its length, breadth and depth limiting dimensions to those specified on the plan or as directed by Engineer-in- Charge. No deduction shall be made for reinforcement in concrete in RCC work. Individual dimension shall be measured in Cum. And quantities shall be worked out correct upto three places of decimal of a cubic meter.

4.4 CONSTRUCTION

JOINTS : Joints shall not exceed 12 mm (about ½") in thickness and shall be uniform throughout.

All other specifications of KB-1 for B.B. masonry first class shall apply to this class of masonry also.

4.5 HALF BRICK MASONRY

The half brick masonry shall be in cement mortar specified in the item but not weaker than 1:4.

Mode of measurement : Per Sq. mt.

The half brick masonry shall be reinforced by 2 No. of 6 mm dia M.S. longitudinal bars or 2 No. of hoop iron strips of 25 x 1.6 mm size, at even third course properly bent and bounded in vertical joints of the brick work or to main walls as directed by the Engineer-in-charge, if continuous strip is not available, strips shall be rivet jointed with a minimum overlap of 8 cm. All the bricks shall be laid stretch wise breaking joint with the upper and lower courses. Fixtures, plugs, hold, fasts, frame down, windows shall be based into brick work while laying only and of the correct levels and positions.

Holes of required size and stage shall be left in the brick work during laying for fixing pipes or service lines, passage of water etc. After the pipeline work is completed, extra hollow left around the hole shall be plugged with 1:3 cement mortar or 1:3:6 cement concrete. Hold fasts for frames of doors and windows shall be accommodated in the joints of the brick which laying. The joints in the courses where reinforcements is placed shall admit of a mortar cover at least 5 mm for the brick work with 15 bricks and not more than 12 mm for conventional brick work. A set of mason's tools shall be maintained on work for each group of 3 masons or less for frequent use and checking. The ends of walls shall be bonded into the side walls where necessary.

The joints shall be raked out to depth not less than the thickness of the joints.

This item shall include:

- a) Providing and fixing mild steel reinforcement bars or hoop iron strips as mentioned above.
- b) Leaving holes for fixtures or pipes and making them good after completion of the work.
- c) Building in frames, hold fasts etc. and forming chassis and grooves.

Mode of measurement

The contract rate shall be for a unit of one square meter and quantities shall be worked out correct upto three places of decimal of a Sq.mt.

5. CEMENT PLASTER: Internal Neeru finish

5.1 GENERAL

This specification lays down the requirement of cement plaster to be applied to concrete or brick masonry surface. In cement mortar of specific proportion and thickness.

5.2 PREPARATION

For masonry all joints in the frame work that is to be plastered shall be raked out to a depth not less than the width of the joints or as directed by the Engineer-in-charge. The raking shall be done taking care not to allow any chipping of masonry. In new work the raking out shall be done while the mortar in the joints is still green. Smooth surface of concrete or plaster etc. must be suitably roughened to provide necessary bond for the plaster all dirt, soot oil paint or any other materials that might interfere with satisfactory bond shall be removed and surface wetted before plastering is started.

5.2.1 **General** : The item shall comply with specification B.11.b subject to the additional clauses Bd.L 1.2, Bd.L 1.3, Bd.L 1.4 and the following.

5.2.2 **Finishing** : When no finish is specified the plastered surface shall be rubbed well to an even plane with a wooden float for external surfaces and finished smooth with a steel trowel for internal surfaces.

- When cement finish is specified, coat of pure Portland cement slurry 1.5 mm (1/6") thick shall be applied to the plastered surface while the second coat is still fresh. If neeru finish is specified, then the surface shall be finished as per specification for Item Bd.L-10.

The thickness of the cement plaster shall be 12 mm excluding cement or neeru finish.

5.2.4 Mode of measurement

As per NdL-1.7 on square meter basis

5.3 MATERIALS

Cement mortar shall be prepared from cement and as specified for RCC work and mixed in the proportion specified. Sand shall be screened and washed if called upon to do so. Water proofing compound of directed make in directed quantities shall be added where it is water proof plaster, scaffolding shall be prepared from sound materials and shall be provided, where ever situation demands for facility of proper working.

5.4 GAUGES

Patch of plaster 15 x 15 cm shall be put on about 3 m apart as gauges to ensure even plastering in one place.

5.5 FINISHING

In any continuous face of wall, finishing treatment of any type shall be carried out continuously and day to day breaks made to coincide with architectural breaks in order to avoid unsightly junctions. All mouldings shall be worked true to template and drawn neat, clean and level. All exposed angles, junctions and openings shall be carefully finished.

5.6 WATERING

All pointing work shall be kept damp continuously for a period of 14 days. To prevent excessive evaporation of the sunny and wind ward side of the building in hot, dry weather matting or gunny bags may be hung over on the outside of the plaster in the beginning and kept moist. If the contractor fails to water the work to the satisfaction of the Engineer-in-charge, the requisite labour,

materials and equipment to water the work properly shall be engaged departmentally at the cost of the contractor.

5.7 Cost all scaffolding is included in the tender rate.

6. SAND FACED CEMENT PLASTER

6.1 GENERAL

The item shall comply with the specification B.11 in all pertinent particulars. In addition Bd.L.1.2, Bd.L 1.3, Bd.L 1.4 and the following specifications shall also be complied with.

Base Coat : The base coat plaster shall be of cement mortar 1:4. Water proofing compound of approved make like Pudlo, Sika, Accor proof shall be added according to the maker's instruction in Bd.L 2 which a thickness of 15 mm for brick work and concrete surfaces and 20 mm for rubble stone masonry. Keys shall be formed on the surface by thoroughly combing it with wavy horizontal lines about 12 mm apart and about 3 mm deep when the mortar is still plastic.

Sand Faced Treatment : The cement mortar for sand faced plaster shall have washed Kharsalia or Kasaba or similar type of approved sand with slightly larger proportion of coarse material The proportion of cement to sand shall be 1:4. The water is added gradually to make the mixture homogeneous. The thickness of finishing coat shall not exceed 8 mm. After applications the surface should be finished with a wooden float lined with cork and tapped gently to retain a coarse surface texture. When the finishing coat has hardened the surface shall be kept moist continuously for 14 days.

Item to include relevant portion of Bd.L 1.6. it shall also be include the base coat and sand face treatment of above.

Mode of Measurement and payment per Bd.L 1.7 on square meter basis.

The specification lays down the requirements of applying sand faced plaster in specified thickness with cement mortar to concrete or masonry surface in specified coats. This shall conform to specification for ordinary cement plaster where ever it is not irrelevant and in addition following shall also be applicable.

Tools and accessories used in plastering work be thoroughly cleaned before plastering is done.

The programming of other building operations before during and after plastering shall be according to the instructions contained in Clause 4 of IS:1661-1960 or its latest revision. The item shall be executed as per Red book specification BdL-7 to 7.50 page No. 351).

Care shall be taken that other parts of work of adjacent work are not damaged while plastering.

The base coat plaster shall be of cement mortar of specified proportion 1:4 and thickness as mentioned in the item or otherwise, it shall be of cement mortar 1:3 and thickness 15 mm to 20 mm. The base coat shall be laid in a similar manner as stipulated in. However, instead of finishing the top surface smooth keys shall be formed on the surface thoroughly combined in with wavy horizontal lines about 12 mm apart and about 3 mm deep when the mortar is still plastic. The base coat shall be cured for suitable period as per relevant code.

7. DOORS, WINDOWS AND ROLLING SHUTTERS

The specification for this work are as per Standard Specification BD-T-2 and T-7 and as directed by Engineer-in-Charge. (The item shall be executed as per Red book specification)

8. PAINTING WHITE WASH

This item is to be executed as per Standard Specification and as directed by Engineer-in-Charge. (The item shall be executed as per Red book Specification)

9. WATER PROOFCEMENT PAINTING

9.1 GENERAL

This specification lays down the requirement of applying cement based paint in specified coats to concrete or masonry surface.

9.2 MATERIALS

Cement paint with a base of white portland cement of approved manufacture. Colour and shade shall be used. Approved quality cement based paint shall be brought to site in original air tight containers with seal intact.

Scaffolding wherever necessary shall be provided to the entire satisfaction of the Engineer-in-Charge.

9.3 PREPARATION

The surface to be painted shall be cleaned of all loose dust, and dirt paints and all cracks, holes and surface defects shall be repaired with cement plaster cured and allowed to set hard. Before the painting is commenced the surface is wetted well and water is allowed to run off. Any grease, oil paint, shall be removed by approved methods.

9.4 APPLICATION OF PAINT

Mixing of paint and procedure of painting shall be as specified by the manufacturer when no specification are following specification shall generally apply.

9.5 PREPARATION

The surface to be painted shall be cleaned of all loose dust, and dirt paints and all cracks, holes and surface defects shall be repaired with cement plaster cured and allowed to set hard. Before the painting is commenced the surface is wetted well and water is allowed to run off. Any grease, oil paint, shall be removed by approved methods.

9.6 APPLICATION OF PAINT

Mixing of paint and procedure of painting shall be as specified by the manufacturer when no specification are following specification shall generally apply.

The dry cement shall be thoroughly mixed with clean fresh water to produce paint of required consistency (normally that of ordinary paints). The paint shall be kept stirred and used within one hour of mixing hardened ordamaged paint shall not be used. The paint shall be applied by brushes in the manner specified by the manufacturer.

The number of coats shall be specified in the wording of the item. When more than one coat is to be given the subsequent coats shall be appliedafter the preceding coat has thoroughly hardened, inspected and approved.

9.7 CURING

Each application of paint should be wetted at the end of the day with a fine water spray, depending on climatic conditions. Wetting shall be done only after an interval of at least 6 to 8 hours after the applications. In dry weather the painted surfaces shall be kept dump for at least two days and protected from direct sun.

9.8 MODE OF MEASUREMENT AND PAYMENT

The item includes,

- a) All materials and labour for painting.
- b) All equipment and scaffolding.
- c) Curing as per specification
- d) Non uniform colour or shade shall be rectified without any extra cost.

The item shall measured and paid in per Sqmt basis of area painted.

10. STEEL ROLLING SUTTERS

10.1 The specifications lays down requirements of providing and fixing steel rolling

shutters with accessories locking arrangement top hood cover and painting in three coats of synthetic enamel paint of approved quality and shade. The specification for this work as per standard specification of Red Book - and as directed by Engineer-in-Charge.

10.2 MATERIALS

The rolling shutters shall conform to IS:6248:1979. Rolling shutter shall be supplied of specified type with accessories. The size of the rolling shutters shall be as specified in the drawings. The shutters shall be constructed with interlocking lathe sections foamed from cold rolled steel strips not less than 0.9 mm thick and 80 mm wide for shutters upto 3.5 m width and not less than 1.25 mm thick and 80 mm wide for shutters 3.5 m width and above unless otherwise specified. Guide channels shall be of mild steel deep channel section and or rolled pressed or built up (fabricated) jointless construction. The thickness of sheet used shall not be less than 3.15 mm.

Head cover shall be made of M.S. sheet not less than 0.9 mm thick for shutters upto 3.5 m width. For shutters having width 3.5 mm and above the thickness of M.S. sheet for the hood cover shall not be less than 1.25 mm.

The spring shall be of best quality and shall be manufactured from tested high tensile spring steel wire or strip of adequate strength to balance the shutters in all positions. The spring pipe shaft etc. shall be supported on strong M.S. or Malleable C.I. brackets the brackets shall be fixed on or under the lintel as specified with raw plugs and screws bolts etc.

The rolling shutters shall be self rolling type upto 8 Sq.mt clear area without ball bearing and upto 12 Sqm.. Clear area with ball bearing. If the rolling shutters are of larger size, then gear operated type shutters shall be used.

The locking arrangement shall be provided at the bottom of shutters at bottom ends. The shutters shall be opened from outside.

The shutters shall be complete with door suspension shafts, locking arrangements, pulling hooks, handles and other accessories.

10.3 WORKMANSHIP

Rolling shutters and top hood with all accessories shall be supplied of specified type and shall be got approved before fixing by the Engineer-in-Charge. The fixing shall be done in true line and level. The damaged work shall be made good to the level of original works. The fixing work shall be done to the entire satisfaction of the Engineer-in-Charge. After the erection and fixing the rolling shutters with hood shall be painted with synthetic enamel paint in three coats. The paint shall be of approved quality and shade.

10.4 MODE OF MEASUREMENT AND PAYMENT The item shall include –

- a) Providing and fixing the rolling shutters of specified size, material with all accessories, locking arrangement and top hood cover.
- b) Painting the same with approved synthetic enamel paint in three coats.
- c) Redoing the damaged works

The item will be measured and paid in Sq. mt. Basis of the shutter area.

11. PROVIDING, FIXING RSJ AND OTHER STRUCTURAL STEEL WORK FOR JACKWELL / WTP

The specification of the work as per standard specification Bd.C2 and the item cover fixing MS/RS girders, M.S. angle, channels, flats, base plate gusset plates, cleat, bracket etc. and other accessories as per requirement and as directed and fabricating the assembly by cutting, drilling holes etc and erecting and fixing item as site with necessary riveted or welded joints fixtures with nuts and bolts etc. wherever necessary together with their proper fixing and embedding in masonry or slabs of concrete as directed. Structural steel works materials shall be procured by the Contractor from open market at his cost. The item includes 3 coats of oil paint of shade as directed to all structural work.

All above operations including cost of materials and labour thereof are included in the tender item. The measurement and payment shall be on the weigh basis in the unit as mentioned in Schedule-B actually erected at site as directed shall be admissible for payment. RSJ channels, angles, flats, gusset plates, brackets base plate, cleats, packing pieces actual used as directed shall be admissible for payment but not the rivets, nuts and bolts etc.. the riveted or welded joints or fixing with nuts are included in the tendered rates. The specifications for this item given in Standard Specification (Red Book) published by B&C Department will be followed.

12. STRUCTURAL STEEL WORK (for pipe line, outlet arrangement and weir work only)

- 12.1 Requirements specified in this section will form a part of detailed specifications for items of works falling under this category. Indian Standard shall apply as if included herein. Design of structure shall be compliance with Indian Standard (IS) viz. Rivet IS:1148-1964 for bolts IS:1148-1964 and IS:800-1962 for structural fabrication IS:800-1962, etc.

PRINCIPAL ITEMS

- 1) Structural steel members
- 2) Steel joints
- 3) Plates and connection
- 4) Steel chair assembly
- 5) Pipe supports and hangers for piping in all locations
- 6) Pipe railing

- 7) Ladders and stairs
- 8) Misc. metal work for water supply and sewerage disposal installations.

12.2 QUALITY ASSURANCE

Unless otherwise specified all work specified herein and shown on the drawings shall conform to the applicable requirements of the following specifications and codes.

- A) Fabrication and erection of structural steel shall be in accordance with IS:800-1962. (latest edition)

B) WELDING INSPECTION

The contractor shall perform all structural field welding under continuous inspection of a representative of the LCMC. Notice will be given at least 24 hours in advance of needed inspection.

12.3 SUB METALS SHOP DRAWINGS

The contractor shall submit shop drawings for approval before fabrication of any of the work. Complete fabrication details with material and specification lists showing all welds, fabrication and finish details, and shop painting will be shown with the drawing. In approving shop drawings, the owner does not assume responsibility for accuracy of the work relative to other components as constructed.

12.4 SHOP FABRICATION GENERAL

- A) The maximum possible fabrication on structural steel work shall be manufactured off-site in a fabrication shop.
- B) Shop connections shall be welded or bolted, unless otherwise indicated.
- C) In so far as possible all work shall be fitted and assembled in shop ready for erection.

12.5 MEMBERS

- A) All members shall be free from twists, kinks, buckness or open joints.
- B) All members, holes and their spacing shall be so accurately made that when assembled the parts shall come together and bolt without distortion.
- C) Parts assembled with bolts shall be in close contact, except where separators are required where unlike metals are in contact, to insulate as necessary to prevent corrosion.
- D) Bolt holes will be provided to secure special items, if any, to structural members.
- E) Bearing surface shall be planned to true beds. Abutting surface shall be closely fitted. Steel requiring accurate alignment shall be provided with slotted holes and/or washers for aligning the steel.
- F) All materials shall be delivered in the order, in which they will be required so

as to avoid all delay in completion of the project.

12.6 WELDING

- A) Welding in shop and field shall be done by qualified operators who have experience of similar work. The standard for welders will be as required by IS:817-1966.
- B) All steel before being fabricated shall be thoroughly wire brushed, cleaned of all scale and rust and thoroughly straightened by approved methods, that will not injure the materials being worked on. Weldings shall be continuous along the entire line of contact except where tack or intermittent welding is permitted. Where exposed welds shall be cleaned of flux and slag and ground smooth.

12.7 ERECTION

- A) Erection shall include the installation and erection of all steel as called for in this section. The contractor shall verify correctness before starting erection.
- B) As erection progresses, the work shall be securely bolted up to take care of all dead-load, wind and erection stresses.
- C) No final bolting or welding shall be done until each portion of the structure has been properly aligned and plumbed.
- D) Bolts shall be drawn up tight and threads set so that nuts cannot become loose.

E) DAMAGED MEMBERS

During erection, members which are bent, twisted or damaged shall be straightened or replaced as directed. If heating is required in straightening, a heat method shall be used, which will ensure uniform temperature throughout the entire members. Members which in the opinion of the LCMC are damaged to an extent impairing appearance, strength or service ability, shall be removed and replaced with new members.

F) ANCHOR BOLTS AND ANCHORS

Anchor bolts and anchors shall be properly located and built into connection work. Bolts and nuts shall be preset by the use of templates or such other methods as may be required to locate the anchors and anchor bolts accurately. Embedded anchor bolts that are submerged in process, water or pump room floors, or are in enclosed tanks or spaces exposed to process gas or moisture shall be of stainless steel with nuts of same material. To such stainless steel bolts, a non-oxidizing lubricant grease will be applied before bolting.

G) ANCHOR BOLTS AND ANCHORS

Anchor bolts and anchors shall be properly located and built into

connection work. Bolts and nuts shall be preset by the use of templates or such other methods as may be required to locate the anchors and anchor bolts accurately. Embedded anchor bolts that are submerged in process, water or pump room floors, or are in enclosed tanks or spaces exposed to process gas or moisture shall be of stainless steel with nuts of same material. To such stainless steel bolts, a non-oxidizing lubricant grease will be applied before bolting.

H) BEARING PLATES

Bearing plates shall be provided under beams and columns resting on walls or footings. Bearing plates may be attached or loose and aligned on steel wedges or shims. After the supported members have been plumbed and properly positioned and the anchor nuts tightened, the entire bearing area under the plate shall be dry packed solidly with bedding mortar. Wedges and shims shall be cut off flush with edge of bearing plate and shall be left in place.

I) SUBSTITUTIONS

Unless otherwise directed, the exact sections, shapes, thickness, sizes, weights and the details of construction shown for the structural steel work, shall be furnished. However the contractor, because of his stock or shop practices, may suggest change of the net area of section is not thereby reduced, if the section properties are at least equivalent and if the overall dimensions are not exceeded. All substitutions or otherwise deviations from drawings and/or specifications shall be specifically noted or 'clouded' on the shop drawing submittals.

J) FLAME CUTTING

Flame cutting by the use of a gas cutting torch in the field for correcting fabrication errors will not be permitted on any major member in the structural framing. The use of a flame cutting torch will be permitted only on minor members, when the members is not under stress, and only after the approval of the LCMC has been obtained.

K) STORAGE OF MATERIALS

Structural materials, either plain or fabricated shall be stored above ground upon platforms, skids, or other supports. Materials shall be kept free from dirt, grease and other foreign matter and shall be protected for corrosion.

L) TEST REPORTS

Certified physical and chemical mill test reports for material used for major structural members shall be furnished. All tests shall be performed in accordance with applicable Indian Specification Standards.

kept free from dirt, grease and other foreign matter and shall be

protected for corrosion.

M) TEST REPORTS

Certified physical and chemical mill test reports for material used for major structural members shall be furnished. All tests shall be performed in accordance with applicable Indian Specification Standards.

12.8 MATERIALS AND WORKMANSHIP

A) STRUCTURAL STEEL AND MISCELLANEOUS METAL WORKS

i) GENERAL

This work shall include the furnishing and installation of all structural steel and miscellaneous metal work and related work including grating and grating supports, pipe hangers and supports, tanks, manhole steps, equipment guards, anchors and other appurtenances and any other shown on the drawings or herein specified. All materials shall be new, sound and of the best quality available.

ii) MATERIAL

Steel rolled sections, plates and bars shall conform to the latest editions of IS:226, 808, 1730, 1731, 1732 and 3954. Pipe used for columns or other structural purposes shall conform to IS:1161-1968. Iron for castings shall conform to IS:210.

B) STEEL JOINTS

These shall be fabricated true to size and details shown on drawings in strict conformance with requirements of reference standards.

C) COMMON BOLTS

Bolts and nuts shall conform to IS:1363-1967.

D) WELDING ELECTRODES

The electrodes shall conform to the requirements of IS:814, latest edition.

E) SHOP PAINTING

Structural steel not designated to be galvanized shall be shop coated, using priming coat of red lead as specified in painting section, of these specifications. The portion of steel to be embedded in concrete shall not be painted.

F) GALVANIZING

All metal work shown or specified to be galvanized, shall be zinc coated, as per IS:2629-1966. The zinc coating should be free from defects and shall have uniform thickness of coating.

Galvanizing coating marred or damaged during erection or fabrication

shall be repaired by any approved process as directed by the Engineer.

G) SHOP PAINTING

Before leaving the shop all steel not shown or specified to be galvanized shall be given one coat of primer red lead. Final painting shall be in specified coats of approved and approved brand oil paint. The portion of steel to be embedded in concrete shall not be painted.

H) TEST REPORTS

Certified physical and chemical mill test reports for material used for major structural members shall be furnished by the contractor.

I) SHOP DRAWINGS

Five sets of shop drawings shall be submitted to the Engineer, for approval before fabrications of any of the work. In approving shop drawings, the Engineer does not assume responsibility for accuracy of the work relative to other plant components, as constructed.

J) ANCHOR BOLTS

Anchor bolts shall be galvanized and shall be fabricated as shown or as specified by the equipment manufacturer.

Suitable expansion bolts may be used in lieu of anchor bolts, at certain locations. It shall be the responsibility of the contractor to request the substitution and obtain the Engineer's approval, regarding type and location of expansion and bolts proposed to be used prior to pouring concrete.

K) STEEL GRATING

Seat angles and anchors shall be of steel, grating and support shall be galvanized. Gratings to be supplied and installed as detailed in the drawings.

L) MECHANICAL EQUIPMENT GUARDS

All rotating belts, pulleys and shafting shall be covered and guarded in conformity with applicable safety requirements or as directed by the Engineer.

MODE OF MEASUREMENT

This item will be calculated as per Metric Tone basis.

13. CHEQUERED PLATE

Plate shall be of regular quality carbon steel of the thickness shown on the drawings. The raised lugs shall be diamond shaped and have an angled and opposed pattern.

This item will be calculated as per Square meter basis.

**14. PROVIDING & FIXING SLUICE VALVES & BUTTERFLY VALVES, AIR VALVES SPECIFICATION FOR MANUFACTURE, SUPPLY AND DELIVERY OF SLUICE VALVES, BUTTERFLY VALVES
SLUICE VALVES**

These specifications cover general provisions and requirements and are

supplementary to the General conditions of contract.

GENERAL

The Sluice Valves proposed to be procured through this tender are to be used for drinking water supply schemes under execution.

WORK UNDER THIS CONTRACT

The work entitled manufacture, supply and delivery of Sluice valves for transmission mains shall comprise the manufacture, supply and delivery of the goods as mentioned in the Bill of Quantities.

a)	Sluice Valves	PN 1.0 of IS: 2906:1984. of various sizes, ranging from 350 mm to 1200 mm.
b)	Sluice Valves	PN 1.0 of IS:780:1980, of various sizes, ranging from 200 mm to 300 mm.

The manufacturer of sluice valves should be from MJPs approved list

NOTE :

The above goods to be used for conveyance of potable water at temperatures varying from 10 degree centigrade to 40 degree centigrade.

The tender price shall include all labour and machinery and all materials necessary for the proper, manufacture of the goods, for tests at the contractor's works for the insurance and for delivery to works for the proper maintenance and for discharging every obligations and requirement of the contract, in accordance with the intent of the contract documents, as stated in the General Conditions of Contract.

STANDARDS

Where reference is made to a particular standard, it shall be the latest revision of the Indian Standard Institution. Unless otherwise specified, the sluice valves shall be in accordance with the provisions of IS:780:1980 and IS:2906:1984 or sizes of the sluice valves covered under relevant standards.

MARKING OF SLUICE VALVES

Each sluice valve shall be marked as per IS:780:1980, Para-II for sizes (50 mm to 300 mm) and IS:2906:1984, page: 11.1 (for sizes 350 mm to 1200 mm).

PACKING AND HANDLING

The contractor shall dispatch from the manufacturer's works goods adequately protected to prevent damage and deterioration during transportation and storage, etc. The packing is to be quite robust to withstanding rough handling during the transit by road/ rail/ sea and storage.

Each package / create will contain sluice valve of one size only in relevant class.

The packing procedure followed shall be in accordance with para 12 of IS:780:1980 and para 12.1 of IS:2906:1984

The contractor shall use proper handling equipment or follow suitable handling method as approved by the Engineer to unload the materials at the delivery site to prevent damage to the goods and equipment's.

Third party inspection from agency approved by MJP should be carried out at contractor's cost only.

The contractor should produce manufacturer's test certificate conforming that the valves have been tested in accordance with I.S. specifications, stating the actual pressure and the medium used in the test. The design workmanship, material, strength and dimensions of all parts shall be as per I.S.S. The product shall be of proven quality rendering reliable service during maintenance and requirement.

THIRD PARTY INSPECTION

Third party inspection shall be carried from 1) M/s Central Institute of Plastic Engineering & Technology, Aurangabad. 2) M/s Dr. Amin Controller Pvt. Ltd, Mumbai 3) M/s WAPCOS Ltd., Gandhi Nagar.

The valve shall be tested in factory by third party in presence of LCMC representative at least for

- a. Review of material of construction
- b Overall dimension of all component
- c. Hydraulic testing.

Mode of Measurement

This item will be measured and paid as per unit basis. 10% amount of this item will be withheld for hydraulic testing respectively and will be released after satisfactory hydraulic test.

PROVIDING AIR VALVES OF ALL CLASSES AND DIAMETERS.

This item includes Air valves (with IS make) and firm approved by MWSSB's

letter No. 1091/33/Store/5284 dated 17.07.1992. The cost of valves should be including all taxes (Central & Local) railway freight, transportation upto site of work or departmental store.

Mode of Measurement

This item will be measured and paid as per unit basis. 10% amount of this item will be withheld for hydraulic test and will be released after satisfactory hydraulic test.

15. HYDRAULIC TESTING OF PIPELINE:

After the work of laying pipeline is completed and before it is commissioned, the pipeline shall be tested in the field both for its strength and leakage in the following manner.

NOTE

Whether stated specifically elsewhere or not, the testing in section of 1 km shall have to be completed within 3 months of laying and jointing.

The pipeline laid length will be divided into sections specified by Engineer-in-Charge. The contractor shall recheck pipe and valves for cleanliness and shall recheck operations of the valves. The open ends of the pipeline or sections thereof shall normally be stopped off by blank flanges or capends additionally secured where necessary by temporary struts and wedges. All anchor and thrust blocks must have been completed and all pipe straps and other devices intended to prevent movement of pipe must have been securely fastened. The contractor shall clean out the whole pipeline and flush it with water, so as to remove dust, dirt and any foreign matter laying in the pipeline. No separate payment for the work of cleaning will be made and the rates under various items of work include thereof.

Each valves section of the pipeline shall be subjected to hydraulic test in section. For this test, the pipe shall be slowly filled with clean water by opening cross connection with the existing mains or otherwise by pumping water into the line (water and pumping arrangement is to be arranged by contractor) as directed and all air shall be expelled from the pipeline through hydrants, air valves and blow off fixed on the pipeline. Once the pipe is full, the cross connection or pumping shall be closed. The pressure in the pipeline should then be raised in stages and built up and maintained by means of suitable approved pumps, to the specified test pressure based on the elevation of the lowest point on the line or per section under test.

The pipe line should be tested hydraulically upto required pressure as per IS specification or as per detailed specification for the Sub-Work. Before starting

the pressure test, the expansion joint shall be tightened the test pressure shall be maintained for at least 24 hours. The drop in pressure shall not exceed 0.7 kg/cm² within a period of 2 hours after the full test pressure is built-up. Under this pressure no leak or sweating shall be visible at the joints. During the test, the pipe shall be struck sharp blows with 1.5 kg hammer. Water shall not spout, ooze or sweat through any part. In case of any leak observed anywhere in the field joints whether welded or bolted, the same shall be repaired entirely at the contractor's cost which shall include repairs to welding and regunitting etc. The repaired joint shall be subjected to retest. No section shall be accepted unless it is perfectly water tight.

The entire cost of testing, retesting including cost of water taken together shall be paid under relevant item or Bill of Quantities. The contractor shall make all the arrangements for all labour, pumps, pressure gauge equipment etc. The gauges should be got tested if insisted by the Engineer-in-Charge. The contractor shall arrange for labour required for operating air valves, scour valves etc. Any labour of LCMC employed for the above activities of the test other than supervision shall be charged to the contractor as per rules.

The hydraulic testing of the water main will be carried out for entire length as directed by Engineer-in-Charge. If any leakages are observed even during defects liability period due to defective workmanship, the same shall be rectified immediately. The charges of repairs if done departmentally will be recovered from the amount of retention money. Repairs on live water mains are to be carried out immediately to avoid wastage of water and other problems such as disruption of water supply and traffic etc. In view of this, it will be very difficult to give prior intimation to concerned contractor. As such the cost of repairs, being the expenditure will be recovered from the contractor's retention money withheld in deposit without giving any prior intimation. The contractor will not challenge or claim any extra for such action on the part of the Department.

Generally the contractor shall be required to test the pipe line sections of 2 km using necessary equipment. However, if the Engineer-in-Charge directs, to test full pipeline lengths in further suitable sections in the interest of the work, the tenderers will have to carry out the test in such sections as directed by Engineer-in-Charge.

Mode of Measurement

This item will be measured and paid as per km basis measured up to 3 digits.

- 16. REFILLING OF TRENCHES OF PIPELINE (Sub Work No....., Item No),**
After lowering, laying, jointing and welding of pipe line, site gunnitting and concreting work, refilling of trenches with available excavated stuff shall be done.

The available excavated stuff shall be laid in layers of 15 cm to 20 cm. Each layer shall be watered and compacted before the upper layer is laid till the required level is reached. First 2 layers of 15 to 20 cms shall be free from stones or chips or any harmful material, to protect the pipe from damage.

Only soil or soft murum shall be used for filling.

Originally filling shall be done 30 to 40 cms above natural ground or road level.

Sinking below the road or ground level, if noticed till the completion of work, the contractor shall have to make it level at his cost.

This item includes,..

- a) Clearing useful excavated material of rubbish bracking clods, stone, etc.
- b) Conveying the useful excavated material upto 500 M and filling in layers, watering and compacting.
- c) All labour, equipment and other arrangements necessary for the satisfactory completion and completion of the item.

Mode of measurement and payment of the rate shall be for a unit of 1 Cum of compacted trench filling with approved excavated material. The measurement shall be net for the compacted filing and no deduction for shrinkage or voids shall be made. However, deduction for pipe volume will be made. Depth of filling for measurement will be limited from natural ground level only. No payment will be made for filling for 30 to 40 cms above natural ground level, if so insisted by the Engineer-in-charge.

Surplus excavated material is the property of LCMC. So contractor is not empowered to sell this excavated material to any other agency.

This disposal will not be considered for initial 500 M lead from edge of pipe line trenches and so will not be paid for.

The material shall be conveyed by means of suitable devices/manner.

The material conveyed to the place of disposal shall either be stocked or spread as directed by Engineer-in-charge or his representative.

The route opening and maintenance, payment of any royalties, compensation to land owners and for damaged of any etc. during the process of conveyance etc. shall be the entire responsibility of the contractor.

10% amount will be withheld till satisfactory hydraulic testing of pipe line.

17. DEWATERING (Sub Work No... Item No.)

The rate of the items requiring dewatering viz. excluding foundation concrete RCC or masonry shall be deemed to be inclusive of provision of dewatering and no separate claim shall be entertained. The amount is restricted. In any case no extra will be paid for dewatering. The specifications hereunder shall cover diversion of steams, providing coffer dams, bunds, etc. as necessary for carrying out work and bailing out and pumping work as per requirement of work. The foundation trenches shall kept dry by resort to pumping alone or pumping in combination with diversion, channels, cofferdams, bunds, diversion weirs, drainage channels, or other method suitable for the local conditions at the choice of the contractor. The responsibility of adequacy of dewatering arrangements and quality and safety of work rests solely with the contractor. Though the method to be adopted is the choice of the contractor, the scheduled programme shall have to be strictly adhered to.

The contractor shall plan, construct and maintain necessary diversion and protective works, so as to keep the work safe at all stages. The coffer dams where required shall be carried out to required depths and heights and safety designed and constructed with suitable dimensions and protections and shall be made enough water tight for facility of construction inside it. The coffer dam shall leave sufficient clearance for construction and inspection facility and permit installation of pumping machinery as required.

The item includes the entire dewatering operation from start of work till its completion in all respect.

The measurement under RCC works for net dimension cast as directed without allowance for rendering finishing etc.

MODE OF PAYMENT

The provision for this item is made in lump sum basis. There shall not be excess in any case for all season till completion of work.

- After completion of construction of jack well 80%
- After satisfactory completion of all work 20%

18. PROVIDING AND FILLING BAGS FOR COFFER DAM (Sub Work No., Item No),

The item provides for constructing temporary coffer dam for river dam providing barricade, signs, signals, watchman and red light, maintaining the diversion, etc. a condition satisfactory for the use of construction work till the completion and dismantling on complete completion of the work. During the execution of this item photographs shall be taken at various stages such as construction, after completion, during removal and after complete removal of coffer dam. The photographs may be produce during the submission of bill otherwise payment will not be made.

This item shall be carried out as directed by Engineer-in-Charge.

ALIGNMENT

If the alignment of cofferdam is specified on the drawing, the same shall be adopted without any deviations unless found necessary and permitted and directed by the Engineer-in-Charge, or as directed by the Engineer. In the absence of such specified alignment, the contractor shall align the cofferdam suitably and obtained approval of the Engineer before construction the same.

LANDS

The contractor shall be allowed if possible and convenient to the Department, to make use of the Department land free or royalties, rents, etc. complete.

CONSTRUCTION

The cofferdam shall be constructed to the satisfaction of the Engineer on the approved alignment with and eye to the safety and convenience for the construction at all times and shall,....

- a. not have a gradient
- b. have a specified width and specified height.
- c. have a two lane of filled empty cement bags of murum and in between black cotton soil for stopping seepage of flow for construction purpose.

The Engineer may permit in writing deviation in the above, if circumstances justify.

The coffer dam shall be formed in layers as directed. Two lane of filled empty cement bags by murum or sand shall be used as directed and then in between the lane of bags of hearting material should be laid and should be consolidated to required strength and condition or as directed by the Engineer.

MAINTENANCE

The contractor shall maintain the coffer dam in a reasonable good condition till the work is over. He shall also be responsible to reconstruct it or parts of it if damaged due to floods, or any other cause without extra claims for the same.

If the contractor fails to repair the coffer dam in a satisfactory manner, even after being required by the Engineer to do so within a specified period in writing, the Engineer will be free thereafter to repair and keep the cofferdam in satisfactory condition at the cost of the contractor.

Special points

The Contractor shall be responsible thus for,

- i) suitable alignment of the coffer dam.
- ii) construction of the coffer dam as directed by the Engineer.
- iii) providing adequate and necessary barricades, sign boards, signals and watchmen.

- iv) maintenance of the coffer dam in good condition.
- v) accident over or due to the coffer dam cause by etc. bad condition and compensation, if any on that connection.
- vi) reconstruction of the coffer dam when damaged.

Item to Include

- i) All the labour, material use of equipment's, tools and plants necessary for lighting constructing, maintaining the coffer dam satisfactory.
- ii) All sorts of compensation and responsibilities arising out of the coffer dam.
- iii) After completion of work the constructed coffer dam will be dismantled and all material should be lifted from river bridge.

MODE OF MEASUREMENT AND PAYMENT

The cofferdam shall be measured in cubic meter only. Dimensions shall be measured correct to two decimal of meter and quantity shall be calculated to two places of decimal of cubic meter.

Break-up of payment

- 50% on physical completion of coffer dam as per approved design and drawing
- 40% proportionate to progress of civil works affected by the coffer dam
- 10% on removal and disposal of coffer dam material as directed by Engineer-in-Charge.

19 G.I. HAND RAILING (Sub Work No., Item No.)

The item shall be executed as specified in the tender item and as shown on drawing. The vertical supports shall be properly fixed at base either in masonry or concrete by nuts and bolts duly embedded in the form, right anchorage holes in the vertical support to pass G.I. piping in it or welding to fix the G.I. pipes to supports together with M.S. cleats, etc. are included in this item. The G.I. piping shall be provided along with required specials, fixtures, fastening, etc. and G.I. piping shall be bent in circular or spiral railing pipes and shall be jointed by G.I. collar or welded as per necessity. The diameter of G.I. piping, number of rows size and type to vertical posts together with its centre to centre distance height, etc. shall be as specified in the tender item and in absence thereof as per the LCMCs type design in force. The rate shall also include two coats of approved shade oil paint. Cost of all the materials which shall be procured by the Contractor, labor involved for executing this item is included in tender item. The measurements and the payment shall be on the basis of lengths in running meters occupied by the complete railing assembly in plan.

The agency should provide G.I. pipe railing having one meter height consisting 50 x 50 x 6 mm thick MS angles and vertical at 1.50 m c/c and additional post

at every corner bends or curved point with three rows of 25 mm G.I. pipe of medium class variety of horizontal at 3 coats of oil paints over one coat of anti corrosive paint approved colour including cost of labour, transport, materials etc. complete

Mode of payment

The payment shall be made on running meter basis

20. TRIAL RUN OF THE SCHEME (DELETED)

22. E PIECES (Sub Work No....., Item No)

The rose pieces shall be fabricated out of 10 mm thick M.S. plates. The strength diameter shall be 1% times the diameter specified in the Schedule-B. The holes to be drilled in strainer portion shall be of 12 mm diameter at 50 cm center to center and shall be staggered. The inside and outside surfaces of the rose piece shall be applied with three coats of anticorrosive oil paint. The item includes cost of all material and labor required for the work, and this item will be executed as directed by the Engineer-in-Charge. The mode of payment shall be on weight.

23. PROVIDING AND FIXING MANHOLES FRAME AND COVER COWL TYPE VENTILATORS

The cost of providing the above item is included in tender item. These are to be properly fixed at place and manner as directed, painting with two coats of anti-corrosive black paint is also included in this item. If locking arrangement are required they shall be done by Contractor as directed without any extra cost.

Mode of Measurement

This item will be measured and paid as per unit basis.

24. LIGHTING CONDUCTOR

(Sub Work No.3, Item No.5)

The contractor shall ensure that any structure. Must or other installation provided by him is adequately designed to minimize damage to the works from lighting strike.

Any lighting conductors shall be design in accordance with the edition of the appropriate Indian Standard Code of Practice IS:2903:1969.

Mode of measurement : Per No.

25. PENSTOCKS

Penstocks shall be of cast iron with scrapped non-ferrous sealing faces. Each penstocks shall be provided with a suitable hand wheel of adequate diameter for the easy operation and gearing shall be supplied where necessary.

Hand wheels shall have engraved on it the direction of closing which shall be

„Clockwise“

Spindles shall have machine cut trapezoidal or square form threads. They shall be of stainless steel or manganese steel with the exception of non-threaded sections of extended spindle installations which may be of mild steel.

Head stocks and foot brackets shall be provided for non-rising spindle penstocks where necessary. Guide bracket shall be provided where necessary. Headstocks with non-rising spindle installation shall have a penstock position indicator.

Penstocks shall be watertight under the conditions of head and direction of maximum design flow.

The frames and door of cast iron penstocks shall be made from close grained grey iron. The penstocks shall be designed so as to ensure tight closure while maintaining freedom of door movement during operation and minimizing sliding wear of the sealing faces.

Mode of Measurement

This item will be measured and paid as perbasis.

26. DETAILED SPECIFICATIONS FOR MS PIPELINE (Sub work No..... Item No) THE PIPES TO BE SUPPLIED WITH INTERNAL CLEAR DIAMETER WITH INSIDE MORTAR LINING.

1. Pipes to be supplied under this contract shall conform to IS:3589- 2001, (latest version) and IS:5504 (Latest version) Indian Standard for Electric Resistance welded or seamless or spirally welded steel pipes for water, gas and sewage (subject to specific requirements given below).
2. In case supplier proposes to supply pipes to the standards superior to the above standards no weightage will be given while evaluating the bid and for payment.

Method of Manufacture	Electric resistance welded (ERW)
Applicable Standards (with latest edition)	
Welded or seamless steel tubes for water, gas and sewage	ISO-1977
Steel pipes and tubes for pressure purposes, carbon steel, ordinary duties	BS:3601 (Latest version)

Specification for gas line Pipe	API 5L-1980
Specification for electrically welded steelpipes for water, gas and sewage.	IS:3589-2001IS:5504 (Latest version)
Methods of sampling of steel pipes, tubes and fittings	IS:5711- (latest version)
Methods of tensile testing of steel tubes	IS:1984 (latest version)
Code of practice for laying and jointing MS pipes	IS:5822- (latest version)

26.1 INSPECTION

Inspection of MS pipe is divided in 2 parts.

Inspection during manufacturing.

- Identification of plate/strip material for manufacturing.
- Qualification of welding process to be used for manufacturing of pipes.
- Qualification of welders.
- Dimensional check before start of welding to avoid rejection at a later stage.

Inspection of ready built pipes.

26.2 SPECIFICATION FOR LAYING OF MS PIPELINE

Warped or deformed timber shall not be used for shoring. Shoring shall project atleast 150 cms above ground and shall extended the trench as approved by the Engineer. Planks shall be placed close enough to avoid any running in of sand or earth through the joints.

For walling pieces round timber shall not be allowed.

Spacing of struts shall be as per the requirements of the design of shoring. The shoring material shall be of the minimum sizes as specified below unless steel sheet piling is used.

- | | |
|-------------------|--------------|
| a) Planks | 5 cms thick. |
| b) Walling Pieces | 20 x 10 cms |
| c) Struts | 20 x 15 cms |

Shoring shall be removed only after the approval of the Engineer-in-Charge. In case shoring may be required to be left in trenches after confirmation that its removal is likely to cause damage to the structure or utilities etc. the same shall be left therein permanently

with all accessories without any compensation or extra cost. Payment for providing shoring in square meter of area shored and leaving it in the trench in cubic meter of timber left is included in the item of excavation. Projection

above ground level after attaining final depth, however, shall not be retained in any circumstances.

26.3 UNDERGROUND PIPE LAYING GENERAL

Pipe laying shall be done as shown on the drawings or as directed by Engineer, to the correct line and level. The Engineer, at his discretion, may change the alignment and/or levels depending on the site conditions. The minimum cover under roadway etc. where traffic is expected over the pipeline shall be 120 cm as specified in IS: 5822 (latest version). The minimum cover for pipeline along the major district road and State Highway shall generally be 1.0 m, where traffic is not expected over the pipeline. Pipes and specials to be laid underground shall be provided either with C.M. gunnitting Coal tar wrapping or cement concrete encasing as specified separately as per requirement. Care shall be taken to see that while handling these pipes, the pipe and unjitted portion is not damaged. The rate includes all expenses on account of labour, machinery, material etc. required for complete process of laying. No extra rate for any reason for this job will be admissible even if the process of lowering and laying of these pipes requires additional labour, machinery, materials etc. From safety point of view.

26.3.1 LAYING PROCEDURE

The contractor shall lower the pipes of standard lengths. Short length pipes shall be lowered only if found necessary and only after obtaining the permission of Engineer-in-Charge. The pipes shall be lowered in the trench on prepared bedding or concrete bedding as per the decision of Engineer-in-Charge. Pipes shall not be laid on the open rock bottom as it may damage the pipe shell on account of point loads.

The alignment and levels shall be checked by the theodolite. Cutting of pipes shall not be allowed for matching the sides of trenches excavated. While assembling the pipes the ends shall be brought close enough to leave a uniform gap not exceeding 3 mm. Marginal cutting and grinding shall be done if found necessary, for which no extra payment shall be made. There shall be no lateral displacement between pipe faces to be jointed.

When the pipe is properly assembled and checked by Engineer-in-Charge for correct line and level, it shall be firmly supported on wooden beams and wedges and then tack welded.

In the trenches where shoring is provided, care shall be taken to see that during lowering of pipes, only required struts are removed at a time with additional precautions to keep the shoring in position if necessary.

26.3.2 SPECIAL PRECAUTIONS FOR MAINTAINING CIRCULAR SHAPE OF

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PIPE Special attention of the tenderer is drawn to the fact that the proposed pipeline is to be provided with cement mortar lining. It is therefore very necessary that the circular shape of the pipes be maintained till these pipes are mortars lined. The contractor shall provide adjustable steel struts of the approved design for this purpose. Minimum three sets of struts shall be provided per pipe length of 6 meter. They shall be retained till complete refilling is done and properly consolidated or till concrete encasing is set. Any diametric variation beyond + 2% shall have to be rectified by the contractor at his cost, which may include, removing the section of the pipeline and relaying it along with all other ancillary operations. Providing required number of adjustable struts and all other operations involved as above shall be deemed to have been included in the item of laying and no separate payment on this account will be admissible.

26.3.3 MODE OF MEASUREMENT

The payment for MS pipe, the measurement of this will be taken on running meter basis and paid on running meter basis at the rate specified in Schedule-B. The break-up of payment shall be as under

Supply of MS pipe with inside mortar lining and third party inspection report	75% of cost mentioned in
Laying of pipes & outside wrapping of pipes	15% -- do --
Hydraulic testing of pipe line -And 'C' value test of 140	10% -- do -

26.4.0 SPECIFICATIONS FOR LAYING SPECIALS

26.4.1 GENERAL

All specials like distance pieces, straps, tapers, saddles, branches, tees etc. shall be generally fabricated in the factory. Only small kinks or bends or saddles may be fabricated on site, care being taken to see that the length of the fabricated fitting is at least equal to the diameter of the pipe to which it is being fixed. Such fabrication of specials on site shall be done only on approval of the Engineer and as his direction. As specified earlier, only kinks or bends shall be fabricated on site by cutting the pipe faces and then welding shall be carried out as specified hereinafter and shall be paid separately.

All specials shall necessarily be in steel and shall be laid in the same manner specified in pipes section.

26.4.2 STRAPS

Whenever the pipe laying work proceeds from two ends and if gap between two faces is less than 30 cms., this gap shall be bridged by providing a strap. Strap shall also be provided during fixing of expansion joints as has been specified earlier. Such strap shall be fabricated on site by cutting a piece from the pipe. This piece shall be split longitudinal and stepped over the gap. A minimum gap of 8 cm shall be kept on both the pipes to be connected and strap shall be welded with required number of fillet welds from inside and outside. The gap between the ends of straps shall be welded longitudinally butt welded.

26.4.3 DISTANCE PIECES

Distance piece shall be provided with the gap between the pipe faces to be jointed is more than 30 cms measured in the evening. Distance pieces shall be cut from the pipe pieces on site or can be cut in factory. These will be measured and paid for laying as specials.

26.4.4 TAPERS AND BENDS ETC.

These shall be fabricated in the factory and shall be welded on site as per requirements. Laying of tapers shall be paid for laying as specials for the diameter in the larger size. Bends shall be measured along the mean length and paid for in the respective items of Bill of Quantities.

26.4.5 MODE OF MEASUREMENT

The MS specials including all above described will be paid on weight basis in Kg. Unit on supply, while lowering, laying of specials will be paid as mentioned in Schedule-B. However, 10% of the amount of lowering, laying will be withheld till satisfactory hydraulic testing of pipe line is given.

26.5. WELDING JOINTS**26.5.1 GENERAL**

Before aligning, assembling and welding the pipe faces shall be cleared by scraping with wire brushes or by any other method approved by the Engineer. Welding of pipes in field shall conform to ISS:816-1969 (code of practice for use of metal arc welding for general construction in Mild Steel). In case of variance, specifications hereunder shall have precedence.

Welder shall be qualified, experienced and approved by the Engineer-in-Charge to do the welding at the locations welding shall not be allowed to be done by helpers. Contractor shall remove such of the welders from the job, whose work is not found to be satisfactory. The Engineer may ask them to do test welding before approving their employment on the job.

The contractor shall keep record of the welding for each circumferential joint.

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It shall contain the name of the Welder, Operator and Date of Completion of such run of internal and external welding.

26.5.2 GOUSING AND CHIPPING

MS Pipes of diameter larger than 1016 mm shall be welded with two number of runs from inside and a sealing run from outside. External sealing run shall be done only after internal welding is completed. Before starting the external welding the weld material in the joint shall be cleaned by clipping out loose scales. Gousing shall be done before rectification of any defective welding wherever necessary and as directed by the Engineer. Gousing or chipping shall not be paid for separately and the rate for welding shall be deemed to include the cost of gousing.

26.5.3 ELECTRODES

Welding electrodes to be used for welding in this contract shall conform the Indian Standard Specifications ISS:814-1971 (Specification for covered electrodes for metal arc welding of Mild Steel)

The contractor shall use standard electrodes depending on the thickness of the plates to be welded and the type of joint. The contractor shall also use standard current and A.C. voltage required for the machine as per manufacture's directions.

26.5.4 TYPES OF WELDED JOINTS

The circumferential joints of the pipes shall be butt welded with required number of runs externally and internally.

All fillet welds shall have a throat thickness not less than 0.7 times the thickness of the pipe to be welded.

26.6.0 WELDING PROCEDURE

All parts of pipes, specials, etc. shall have all loose scale, slag, rust, paint and any other foreign material shall be removed with wire brush and left clean and dry. All scale and slag shall be removed from each run of weld when that run is completed.

Openings in the form of manholes in the laid pipeline at suitable distance of access for the work of cleaning, repairs etc. Such manholes, as far as possible shall be provided on sides of the pipe line and cutting manholes at the crown shall be strictly avoided.

Patch Plates for plugging the above manholes shall be cut from a separate pipe of the same diameter. Edges of the patch plate shall be properly shaped and shall be inserted in the opening leaving a gap of 3 to 4 mm and tacked. Welding of patch plate shall be done in segments in a proper sequence conforming to Indian Standard Specifications IS : 823

26.6.1. TESTING OF WELDED JOINTS :

Welded joints shall be tested in accordance with procedure laid down in Indian Standard Specifications (IS : 3600, Part I –1985 of procedure for Testing Fusion welded joints and weld metals in steel)

At least one test specimen shall be taken out for testing for every fifty field joints done. Test pieces shall be taken out from the places pointed out by the Engineer. These shall be machined and tested early as possible. The shape of the test pieces removed for testing shall be such that it shall be such that it shall give the specimen of the required dimensions with the weld in the middle of the specimen and at the same time leave the holes in the pipe with rounded corner. This hole shall be patched with a plate of suitable size cut from a separate pipe of same diameter. It must ensure good butt weld.

26.6.1.1 TENSILE TEST

The test specimen taken perpendicularly across the weld shall be shaped in accordance with Indian Standard Specifications IS:223. The tension test specimen shall be machined. The protruding welded portion from inside as well

as outside shall be machined. The protruding welded portion from inside as well as outside shall be removed by machining before the specimen is tested.

If the specimen shows defective machining or develops flaws not associated with welding, It shall be discarded and another specimen substituted. The welded joint shall show a strength not less than the minimum tensile strength for the plate in accordance with ISS:226.

26.6.1.2 BEND TEST

Bend Test specimen shall also be prepared in the same fashion as the tensile test specimen. The specimen shall stand being bent cold 180° around a pin that has a diameter equal to 4.5 times the plate thickness, without developing cracks. For this test face representing inside of the pipe shall be placed next to the pin.

26.6.1.3 TRE-PANED PLUG :

Tre-Panned plugs shall be taken out from any welded portion as pointed out by the Engineer. These plugs shall not show any defect in welding such as inclusion of slag, blow holes cavities, etc. the plug shall be 12 mm in dia and shall be taken out by means of suitable electrically operated holes. Such holes in the pipe shall either be filled back by inserting a steel stud and welding around or threading the hole and providing suitable G.I. plug. This test shall be done only if considered necessary by the Engineer.

26.6.1.4 PROCEDURE OF FAILURE OF TEST SPECIMEN

If the test fails in either tensile or bend test or in both, two additional test specimen shall be taken out from the section and shall be tested for tensile and bend tests. If any one of them fails, extensive gousing and rewelding shall be done for the welded joints in that section to the full satisfaction of the Engineer. However, if both the samples give satisfactory results, the joint from which the original sample was taken and had failed shall be repaired to the satisfaction of the Engineer by gousing and welding etc. at contractor's cost. Welder who has done the welding of the joint that has failed shall be solely held responsible for bad workmanship and failure. Since all other factors like electrodes, current, arc voltage etc. are already controlled, on negligence on the part of the welder only is responsible for such failure. For first such failure the welder shall be warned and if the welded joint done by him fails for the second time, he shall be removed from the job.

26.6.1.5 MEASUREMENT AND PAYMENT

Welding shall be paid in linear meter of welding done including the required number of runs. The welding shall be paid for in the relevant item of welding butt joint or lap joint in respective items in the Bill of Quantities and

Rates. The rate shall include providing all labour, material and welding machinery including all ancillary preparations and testing, repairing retesting, gousing etc. complete in all positions and circumstances prevailing in site. No extra payment on any account whatsoever may be admissible to contractor 10% of the amount under this item will be withheld till the satisfactory hydraulic testing is given.

26.7 GAS CUTTING**26.7.1 GENERAL**

Gas cutting of MS Pipes may require to be adopted on site for fabrication of bends on site or for preparing distance pieces, straps etc. and for cutting holes in pieces for manholes, branches scour valves, Air Valves and other appurtenances and temporary manholes for cleaning welding etc..

After gas cutting the edges shall be made smooth and even so as to remove all the equalities ends of the pipe shall have „V' edge from in side.

26.6.2 MEASUREMENT AND PAYMENT

Gas cutting shall be measure in linear meters of gas cutting done and shall be paid for in this item and rates shall include all labour materials and machinery for gas cutting irrespective of any circumstances, shall ancillary preparation and including chamfering the ends to form „V' edges.

26.7.0 PROVIDING, FABRICATING AND TRANSPORTATION OF M.S SPECIALS**26.7.1 SCOPE**

The scope or special specification shall cover the following works under the contract. Fabrication MS plates for specials for road crossing works, expansion joints and testing, etc. at the contractor's factory and testing the pipes.

These specials (detailed hereafter) specifications, supplement, standard specifications for civil construction works prepared by the LCMC for LCMC.

26.7.2 DRAWINGS

Working drawings shall have to be prepared by the contractor taking into consideration the sizes and lengths of the MS plates, flats, etc. The contractor shall have no claim by whatever reason of sizes of material issued being different from those shown in the drawings, in case supplied by the LCMC to the contractor.

26.7.3 SUPPLY OF MATERIALS TO THE CONTRACTOR:

The LCMC will not supply MS Materials such as plates, flats etc. required for the fabrication of pipes, specials, appurtenances, etc.

The conveyance of fabricated materials from workshop to site of work shall be

deemed to have been covered in the relevant items of fabrication of pipes, specials etc. The contractor should note that the steel plates and other structural steel required for fabrication of specials is to be procured by him from open market at his cost. The contractor has to procure such plates in several stages as the circumstances demand, or as directed by Engineer-in-Charge.

The LCMC shall not however supply any steel or structural steel to the contractor for his use for preparing jigs, testing arrangements, platforms etc. in the factory or in the field. The contractor shall have to make his own arrangements for procuring them at his own cost immediately on receipt of work order and the LCMC shall not entertain any request for extension of completion period of compensation on increase in cost etc.

26.7.4 HYDRAULIC TESTING OF FABRICATED PIPES

The pipe length fabricated shall be as specified earlier above. The contractor shall provide all the required machines and apparatus for testing all the pipes at the factory. The arrangements made by the contractor for hydraulic testing of pipes shall be subject to the approval by the Engineer. The contractor shall paint inside the serial number of pipe, the diameter and the plate thickness and letters LCMC as well as the date of the test etc. as directed by the Engineer. The pipes shall be inspected thoroughly before testing for any apparent defect in welding and the contractor shall repair such defects by gousing and rewelding. Such pipes will be laid only on approval of the Engineer-in-Charge. Necessary provisions for storage tank for water for

testing water pumping arrangements, if necessary and making available the required water shall be made by the contractor. Hydraulic test shall be carried out under cover at the fabrication in the presence of and to the satisfaction of the Engineer-in-Charge or his authorized representative.

Accurate pressure gauge of approved make shall be mounted on one end of the pipe to indicate the pressure inside the pipe being tested. The Engineer at his discretion may accept untested pipes if the total length of fabricated pipes of that particular dia. is less than 50 meters.

The pressure shall be applied gradually by approved means and shall be maintained at least for 10 minutes or till inspection by EIL and Engineer-in-Charge during which time, the pipes be hammered throughout its length with sharp blows with 1 kg. Hand hammer. The pipe shall stand the test without showing any sign of weakness, leakage, oozing or sweating. If any leakage is observed, on approval of Engineer-in-Charge, it shall be repaired by gousing and rewelding or as directed by him. No separate/additional payment shall be made for dewatering, gousing, repairing and dewatering and the handling required to be done for such pipes.

26.7.5 HYDRAULIC TESTING OF PIPE LINE

The working pressure shall be not less than 12 kg/cm². The drop in pressure shall not exceed 0.7 kg/cm² within a period of 2 hours after the full test pressure is built-up. Under this pressure no leak or sweating shall be visible at the welded joints. During the test, the pipe shall be struck sharp blows with 1.5 kg hammer. Water shall not spout, ooze or sweat through any part. In case of any leak observed anywhere in the field joints whether welded or bolted, the same shall be repaired entirely at the contractor's cost which shall include repairs to welding and regunitting etc. The repaired joint shall be subjected to retest. No section shall be accepted unless it is perfectly water tight.

The entire cost of testing, retesting including cost of water taken together shall be paid under relevant item or Bill of Quantities. The contractor shall make all the arrangements for all labour, pumps, pressure gauge equipment etc. The gauges should be got tested if insisted by the Engineer-in-Charge. The contractor shall arrange for labour required for operating air valves, scour valves etc. Any labour of LCMC employed for the above activities of the test other than supervision shall charged to the contractor as per rules.

The hydraulic testing of the leading main will be carried out for entire length or part of it as directed by Engineer-in-Charge. If any leakages are observed even during defects liability period due to defective workmanship, the same shall be rectified immediately.

The charges of repairs if done departmentally will be recovered from the amount of retention money. Repairs on live water mains are to be carried out immediately to avoid wastage of water and other problems such as disruption of water supply and traffic etc. In view of this, it will be very difficult to give prior intimation to concerned contractor. As such the cost of repairs, being the expenditure will be recovered from the contractor's retention money withheld in deposit without giving any prior intimation. The contractor will not challenge or claim any extra for such action on the part of the Department. Generally the contractor shall be required to test the pipe line sections of 1 km using necessary equipment. However, if the Engineer-in-Charge directs, to test full pipeline lengths in further suitable sections in the interest of the work, the tenderers will have to carry out the test in such sections as directed by Engineer-in-Charge.

26.7.6 MODE OF PAYMENT AND UNIT OF MEASUREMENT

The payment shall be on Rmt basis

27. PROVIDING AND SUPPLYING DI/CI/MS SPECIALS(Sub-work No..... item No),

The items include providing, supplying DI/CI/MS Double flanged specials suitable for diameter as required and of required thickness and including all materials labour charges with epoxy paint from inside and outside including all taxes (Central & local) Octroi if necessary, inspection charges, transportation to stores/ sites & stacking etc complete. As per requirement a machine ends DI specials suitable for PCCP/BWSC/D.I .pipes will also be supplied under this item. The mode of measurement of payment shall be on weight (Kg) basis.

Scope: The item cover supply of DI/CI/MS double socket and flanged specials of various diameters including conveyance of specials from manufacture's works to site stores, stacking them properly and protecting till commissioning of work. **General:** The specials

shall confirm to relevant I.S.S.

Materials: The specials shall be manufactured from cast iron conforming to IS 210 Gr. 20.

Coating: The specials shall be coated by bitumen by not dipping process.

Tests: The specials shall be tested at factory for 25 kg/sq/cm/ Pressure.

Flanges: The flanges shall be drilled to IS-1538.

Tolerance: The tolerance in weight and dimensions shall be as per ISS. Only the specials fitting within tolerance limit shall be accepted.

27.1 DISMANTLING JOINTS

Providing and fixing Dismantling joints

Providing dismantling joints of appropriate diameter of M.S.as per detailed drawing suitable for PCCP pipes including epoxy coating of approved make

Contractor

No. of correction

Executive Engineer

from inside, outside, transportation, loading, unloading octroi, inspection charges as per directions from Engineer-in-charge etc.

27.2 MODE OF MEASUREMENT

Diameter wise on No.& kg basis.

27.3 PERMANENT TEST POINTS

Providing permanent test points on the pipe line as per drawing and as directed by Engineer In Charge including providing and fixing sluice valves road box for sluice valve of Size 80mm to 250mm in one brick masonry chamber 300mm x 300mm clear C.M 1:5 with 12 mm thick 1:3 cementplaster both inside and outside on M -100 C.C 150mm thick etc complete as specified & directed.

27.4 MODE OF MEASUREMENT

On No. & kg basis

27.5 GAS CUTTING HOLES

Gas cutting holes up to 50 mm dia (for plugs) (either square Cut of „V' cut) to pipe, plates etc. of required thickness including cost of Gas, tools, machinery, conveyance of labour and machinery etc. complete and as directed by Engineer-in-Charge..

27.6 MODE OF MEASUREMENT

On rmt basis

27.7 ALL CAST IRON SPECIALS Material

All Cast iron specials such as C.I. detachable joints shall confirm to I.S. 1538- 1993 (Part 1 to 24). The Supply at departmental stores shall be of various diameters as specified. The specials shall be free from any defects.It should be possible to cut/drill the special to suit site condition to fit in the position. The hardness of the external surface shall not exceed 210 HBS.Rings shall confirm to IS 5382- 1985. Ring shall be homogeneous and free from porosity, grit and surface defects , such as pitting, irregularities. Dimension of rings shall be as per IS 10292-1988.

27.7.1 MANUFACTURE :

The dimensions of flanged sockets and flanged spigots shall be as per Tables 7 & 8 of IS 1538-1993, respectively. Supply and Stacking at Departmental Store or Work Site : As specified under the agreement.

Markings :

Each fitting shall have cast stamped or indelibly painted on it the following markings :

1. Manufacturer's Name or trademark or identification mark.
2. The nominal diameter,
3. Mass of fitting,

4. Last 2 digits of year of manufacture,
5. Any other mark required by the purchaser.

Item to Include:

The item includes the supply of Cast Iron detachable joints, including all taxes, levies excluding octroi, transporting, loading, unloading and stacking at departmental store or work site as directed. The necessary test certificate also shall be provided along with the supply. Octroi paid shall be reimbursed on producing documentary evidence for the payment made.

27.7.2 MODE OF MEASUREMENT AND PAYMENT :

The item shall be measured as number of sets for the specified diameter of pipe. The rate shall be for supply of one number of detachable joint of specified diameter.

27.7.3 CAST IRON JIFFY COLLAR COUPLING WITH RINGS

The item provides to supply at departmental store the Cast Iron jiffy collar coupling with rings etc. complete as per the specified diameter of pipe / pipes. (Dia. between 80 mm & 750 mm). The joints shall conform the provisions of IS: 1538-1993 and IS 5382-1985.

27.7.4 MATERIAL

All Cast iron specials such as C.I. mechanical compression collar coupling shall confirm to I.S. 1538- 1993 (Part 1 to 24). The Supply at departmental stores shall be of various diameters as specified in supply order. The special shall be free from any defects. It should be possible to cut it drill the special to suit the site condition and fit in position etc. The hardness of the external surface shall not exceed 210 HBS. Sealing Rings shall confirm to IS 5382-1985. Ring shall be homogeneous and free from porosity, grit and surface defects, such as pitting, irregularities. Dimension of rings shall be as per IS 10292- 1988.

Manufacture:

Generally as per item WS/B/2.3. The dimensions of jiffy collar coupling shall be as per Table 9 IS 1538-1993.

Supply and Stacking at Departmental Store :

Specified under agreement.

Markings:

Each fitting shall have cast stamped or indelibly painted on it the following markings:

Manufacturer's Name or trademark or identification mark.

The nominal diameter,

Mass of fitting,

Last 2 digits of year of manufacture,

Any other mark required by the purchaser

Item to Include :

The item includes the supply of Cast Iron jiffy collar coupling, including all taxes, levies excluding octroi, transporting, loading, unloading and stacking at departmental store or work site as directed. The necessary test certificate also shall be provided along with the supply. Octroi paid shall be reimbursed on producing documentary evidence of payment made.

27.7.5 MODE OF MEASUREMENT AND PAYMENT:

The item shall be measured as numbers of collar couplings for the specified diameter of pipe. The measurement and payment shall be per No.

27.7.6 Flat rubber gaskets.

The item provides to supply at departmental store the flat rubber gaskets for flanged joints. Following two types of rubber gaskets, depending upon the hardness of rubber may be supplied as specified in the supply order:

1. Type A: 50 to 65 Hardness in IRHD and
2. Type B: 65 to 80 Hardness in IRHD.

In each of two types, 2 Grades, Grade 1 & 2 are again prescribed.

Material:

The rubber gaskets shall be manufactured from either a) Sheet Rubber or b) Sheet Rubber reinforced with fabric (Rubber insertion jointing). For manufacturing rubber gaskets, natural rubber or synthetic rubber or a blend thereof, shall be used, with suitable composition and vulcanization to attain the required degree of hardness.

The fabric for rubber insertion jointing shall have a minimum breaking strength of 120 N/mm², under test conditions according to IS: 1969- 1968.

Manufacture:

The rubber gaskets shall be free from porosity, grit and surface defects such as pitting and irregularities. The rubber shall be homogeneous. The manufacturing of sheet rubber and rubber insertion jointing shall be in accordance with the IS: 638-1979. The thickness and number of fabric plies shall be as per the IS. Unless mentioned in the supply order the size of each rubber sheet shall have suitable bolt holes conforming to IS 1538-1993, for the pipe diameter specified in the order.

Supply and Stacking at Departmental Store:

As specified under agreement.

Markings:

Each piece of rubber sheet jointing or rubber insertion jointing shall be marked with the following:

1. The name of manufacturer or the Trade Mark,
2. Type, Grade and Thickness,

3. Month and Year of manufacture,
4. Any other Marking as specified in the purchase order Item to Include:
The item includes the supply of flat rubber gasket at departmental store, suitable for flanged joints (3/6 mm thick) with bolt holes and nominal bore, pitch circle diameter as per IS: 1538- 1993 and gasket as per IS: 638-1979, including all taxes, levies except octroi, transporting, loading, unloading and stacking at departmental store as directed. The necessary test certificate also shall be provided along with the supply. Octroi paid shall be reimbursed on producing documentary evidence for the payment made. Mode of Measurement and Payment:

28. LOWERING, LAYING AND JOINTING DI PIPES OF GIVEN DIAMETER AND CLASS

(Sub-work No..... Item No.....),

Contractor shall take delivery of pipes from the stores and shall convey them upto work site for use after checking and testing for soundness of the pipes and shall be held responsible for replacement of such materials of cracked or damaged materials are in advertantly fixed and jointed.

The Department will issue pipes in available lengths and specials. Damages to departmental materials due to carelessness of the contractor during loading, unloading, transport, lowering, laying, cutting to required size, jointing, testing, etc. shall be at contractor's accounts and shall be recovered from him at the rates decided by the Executive Engineer.

During laying the pipe line some time it may be necessary to cut the pipe suit the site condition or to put in some special or valve or to have exact length of the section etc. The contractor at his cost shall do this cutting only. No claims for extra amount due to any particular type or individual length of cut pipes and specials being supplied or joints having been increased due to small lengths shall be entertained.

The payment for this item shall be admissible on the basis of actually laid at site including length occupied by all types of specials and incidental small pipe pieces or other types.

All the pipes and specials and valves to be taken into use shall be cleaned and brushed clear of rust and paint at both the spigot and socket ends.

Before the pipes and specials are lowered and laid in trenches, the contractor shall see that the bedding is plane or the surface is brought to uniform grade and leveled with the help of cross sight rails and boning staff and approved in advance by the last 3 days by the sub-divisional officer.

The contractor shall provide, fix and maintain cross sight rails and boning staff whenever required until the time of completion without any extra claim for cost

etc. and which shall be considered inclusive of the rates for excavation and lowering and laying. The contractor shall provide temporary benchmarks if called upon at a minimum distance every 150 M without any claim for extra cost. These benchmarks shall be either of stone masonry or mass concrete not less than 0.03 Cum.

The contractor shall provide ladder for inspection of works at least 2 Nos. at the time of inspection for all the trenches of depth greater than 1.2 M.

The pipes, specials and valves shall be lowered by means of ropes, rackles or pulley as ordered evenly and uniformly and shall be brought level with well consolidated hard murum or wooden sleeper as ordered.

All the S & S pipes and specials shall be laid with sockets facing direction of flow, as per manual.

Materials to be used for jointing such as spun yarn, etc. shall be first get approved in advance from the sub-divisional officer.

No jointing operations shall be started unless the sub-divisional officer approves the grade and levels.

The pipes shall be laid in a complete straight line with center line ranged accurately by mean of string stretched between marked centers in cross sight rails and no deviation will be permissible without the permission of the sub-divisional officer. For deviations proposed by the Department from marks on sight rails, the contractor shall postpone the work of jointing without claiming extra cost. The spigot end of the pipe or specials shall be inserted in socket and of the other pipe or special and shall touch squarely without any gap.

Under no circumstances, the D.I. pipes and other water mains will be laid in black cotton soil or rock surface without murum cushioning.

The above murum cushioning of a depth of 150 mm thick or as specified shall always be provided in all formation within the rate of laying pipe line unless an item for murum bedding is provided for separately in the tender.

The murum bedding shall be of the full width of the trench. Murum bedding will be necessary in rock formation boulder formation and soft soils and black cotton soil but not in murum formation itself.

No brickbats or hard stone metal bigger than 20 mm gauge shall be allowed beneath the pipe line directly in touch with the pipe as in the murum bedding.

All stakes such as electric wires, water and sewer mains, manhole, natural drainage, culverts, storm water drains, gutters, poles, etc. coming in the way

shall carefully be looked after and any damage be prevented to the same. Any work of removing repairing and reducing such structures or obstacles in the process of laying, jointing and testing pipe line etc. should be carried out by the contractor wherever directed, without any claims for extra to the satisfaction of the Engineer-in-charge. Contractor shall foresee all such situation and make necessary arrangement to overcome those in advance.

The contractor shall not be allowed, any wastage and breakage in pipes brought by him for pipes issued departmentally, the total length of pipes laid and that returned to stores in cracked or unused conditions shall coincide with total length is used. The cost of pipes etc. cracked due to fault of contractor beyond the above permissible limit shall be recovered from him. All waste and broken pipe pieces shall be returned by the contractor to the store of issue at no extra cost. The contractor shall keep an upto date account of pipes, specials and valves etc. issued him free of cost showing quantity received vide unstamped receipt No. and date, quantity used giving chainages as and balance at hand and returned (supported by acknowledgements signed by the Sub-Divisional Officer) failing which the Engineer-in-charge shall reserve the right to keep final bill pending till this account is finalized and contractor shall not claim any compensation in that case for delay in settlement of final bill.

Pipes shall be laid in reasonably dry trenches. Under no circumstances pipes shall be laid in slushy, marshy or water logged and filled up or yielding strata before getting it inspected from Engineer-in-charge and providing proper foundations.

Contractor shall make his own arrangements for obtaining permission for stacking or pipes etc. on the road from Land Owners whether it is belonging to any other Government Department or Municipal or Local Bodies or Private Land Owners.

For crossing obstacles natural or built up such as culverts, drains, gutters, cables, pipeline, poles etc. contractor shall approach respective authorities obtain permission for crossing them immediately at the time limit of acceptance of the tender and shall take into consideration all such difficulties for the time limit allowed for execution and completion of the work. Any such work left remaining to be carried out due to want of the tender without any claim for extra cost or compensation due to non receipt of permission or any other natural or unforced and until the date of completion of the work shall be treated as incomplete. contractor shall also not claim compensation if work is delayed on account of permission for road crossing etc. not being received in time.

Before the work of laying pipe line is started the contractor shall see that all pipes are stacked length wise above the trench between road fencing in sufficient number and without causing any construction to the traffic.

Necessary road diversion as directed shall be provided without any extra claims

by the contractor for excavation the roads till completion of work, so that the traffic shall not be hampered. Necessary guide stones duly painted with white wash shall be provided on both sides of temporary diversions. Necessary sign boards, indicating diversions and road closed etc. shall be provided at prominent places along with red flags and red letters at night time and maintained till the crossing work is over and road opened for traffic. The diversion shall be removed after road surfaces are brought to original condition. Necessary storing planks for crossing the trenches shall be provided on the open trenches in the towns and wherever required without claiming extra cost. The contractor shall take utmost care in laying the pipe line along with roads and in towns in order to avoid accidents to human life and animal.

28.1 JOINTING OF PIPES

All the jointing work shall be carried out by the contractor after giving written due intimation in advance at least for 4 days before jointing operation starts and laid pipes are approved for grade and cleaned of all inside waste material such as mud etc. and in presence of responsible Government Servant not below the rank of Junior Engineer. Unless otherwise mentioned in the wording of the item in Schedule 'B' of the tender all labour and materials required for jointing (depending upon the type of joint mentioned in item) such as lead, spunyarn, grease, oil, SBR quality rubber rings and gaskets, cement, sand, water, fire wood, nut-bolts, washers, rubber packing, RCC collars, etc. shall be Produced and used by the contractor at his cost. All the materials to be used for jointing should be first got approved from the Sub-Divisional Officer.

No extra claims or compensation will be admitted for items of laying pipes etc. If the pipes are required to be laid upto a depth not greater than 3 times the maximum depth shown in the sectioned longitudinal sectional drawings or estimate so also no compensation shall be paid if class of pipes to be laid is changed during execution.

If the lines are laid in separate detached sections and not continuous length due to any of the reasons such as non availability of specials or due to obstacles etc. contractor shall see that no end of any pipe length is kept open even temporarily and that all open ends are immediately covered up either by suitable blank flange or cap, plug or by means of a double layer gunny cloth tied properly by means of mild steel wires and without any claim for extra cost or compensation.

The contractor shall take utmost precautions to see that no extraneous matters such as lead, stones, brick bats or animals such as rats, reptiles are allowed any access into the pipe line and in case of their existence being detected in the pipe line, the contractor shall remove them by means of rodding etc. to the complete satisfaction of the sub-divisional officer, without any claim for extra cost.

No extra cost will be allowed to fixing of specials and other accessories such as valves, washouts, etc. unless provided for separately in the tender. So also no extra cost will be paid for cutting the pipes and specials as and where required for negotiation of bend or fixing valve, branch tee or achieving exact length of the line etc. The cutting operation shall be carried out preferably by means of standard pipe cutter or hacksaw unless cutting by chisel and hammer is allowed by the Engineer-in-charge. The end of pipe to be used for gasket joint shall be chamfered by means of file and made perfectly true or like original chamfered and if portion of pipe or specials is damaged rendered use less due to careless cutting of the contractor the cost of the damaged portion as decided by the Executive Engineer will be recovered from the contractor.

If necessary the contractor shall have to carry out the work of laying pipes by keeping gaps here and there if some pipes, specials and valves to be supplied by the Department as per Schedule 'A' would not be made available in time and the contractor shall not claim any compensation for being required to lay the pipe line in gaps and for excavating gap portion if it gets refilled etc.

Insertion of gaskets shall be done by proper application of a thin film of lubricant (Vegetable oil only) to the butt seating inside the socket. The gasket shall be wiped clean, fixed and then the socket with the bulb towards the back of the socket. The groove in the socket must be located on the retaining board in the socket and retaining hole of the gasket firmly bedded in the seating. Contractor shall ensure to the satisfaction of the Sub-Divisional Officer that the gasket fits evenly around the full circumference removing any bulges which would prevent the proper entry of the spigot and for large diameter this operation should be assisted by forming a second loop in the gasket opposite to the first and then pressing the loops flat one after the other.

The thin film of lubricant (Vegetable oil only) shall be applied to the inside surface of gasket which will be in contact with the entering spigot. A thin film of lubricant shall be also applied to the outside surface of the entering spigot for a distance of 25 mm from spigot end. The pipeline to be jointed should be supported centrally by the tackle used for laying and balance just clear of the trench bottom. The spigot of the pipe must be aligned and entered carefully into the adjacent socket until it makes contact with the gasket. Final assembly of the joint is completed from this position.

The spigot end of the entering pipe shall be compressed until it reaches the bottom of the socket. If the assembly is not completed with reasonable force, the spigot end shall be removed and the position of the gasket examined and then the assembly is refitted properly to the satisfaction of the Sub-Divisional Officer. The work shall generally be carried out as per instructions given in manufacturer's pamphlets. All the tools and tackles required for jointing, such as rack and layer 3 mm dia, 5 m long wire rope with thimble, hook and rope

Contractor

No. of correction

Executive Engineer

adjuster should be procured by the contractor at his own cost.

The item includes all other necessary materials including rings, etc. and labour.

28.2 HYDRAULIC TESTING

The pipeline and valves should be tested hydraulically upto the required pressure as per IS satisfactorily and all the leakages if any should be repaired at the time of hydraulic testing. The 10% amount of the lowering, laying and jointing of pipeline shall be released after satisfactory hydraulic testing. Contractor should make his own arrangements at his own cost for water for hydraulic testing of pipeline. He should not rely upon completion of any other sub-works for such testing.

28.3 MODE OF MEASUREMENT

The item will be measured and paid on the Running Meter basis. The 10% payment will be with held for till satisfactory hydraulic testing is given.

29. HDPE Pipes DELETED

30. GRP Pipe DELETED

31. Qualifying Testing DELETED

32. Inspection and Testing DELETED

33. Laying & Jointing of Pipe Line DELETED

34. VALVES/PEN STOCKS/SLUICE GATES

(Sub Work No....., Item No)

All the valves shall be C.I.D.F. type Valves shall be of approved make by MJP or such other reputed and approved make. Valves shall have the certificate of I.S.I. and shall be as per the relevant IS codes. All valves having diameter 300 mm and above shall have spur gear arrangement for manual operations. Dia below 300 mm shall be with hand wheel for operation.

All sluice gates shall be of approved make and with brass lining. It shall be provided with spur gear arrangement and hand wheel for easy manual operation.

All pen stocks shall be brass lined and provided with suitable arrangement for easy and smooth manual operation.

GAS CUTTING

GENERAL

Gas cutting of M.S. Pipes may require to be adopted on site for fabrication of

bends on site or for preparing distance pieces, straps etc. and for cutting holes in pieces for manholes, branches scour valves, Air Valves and other appurtenances and temporary manholes for cleaning welding etc..

After gas cutting the edges shall be made smooth and even so as to remove all the equalities ends of the pipe shall have „V' edge from in side.

MEASUREMENT AND PAYMENT

Gas cutting shall be measure in linear meters of gas cutting done and shall be paid for in this item and rates shall include all labour materials and machinery for gas cutting irrespective of any circumstances, shall ancillary preparation and including chamfering the ends to form „V' edges.

MAKING CROSS CONNECTIONS :

Making cross connections, to existing distribution system of any type including excavation, breaking and removing existing pipes, lowering, laying of special and pipes and their position, refilling closing the water supply in

that area dewatering and restoring the water supply etc. complete as directed by Engineer-in-charge.

The payment will be done on No. basis.

35. ROAD BOX

(Sub Work No.13, Item No.20)

The item includes providing and fixing 225x300 mm (20 Kg.) CI road box including necessary excavation, supporting B.B. Masonry etc. complete.

The mode of measurement shall be on basis of each number of completed item.

35A C.I. MECHANICAL JOINTS

Supply of C.I. Mechanical Compression collar coupling (popularly known as Jiffy Collar Coupling) suitable for C.I. spun pipes (as per IS:1536:2001) and D.I. pipes (as per IS:8329:2000) complete with sealing rubber gasket of SBR. C.I. Follower glands and MS Nit bolts. The whole assembly should be mechanically and hydraulically tested to the provisions as paid down in IS:1538:1993 and as directed by Engineer-in-Charge.

Mode of measurement : Per No.

36. COLOUR

WASH General

It item refers to providing and applying of approved colour wash to surfaces which are not given any finishing.

COLOUR WASH

Contractor

No. of correction

Executive Engineer

This is prepared by adding necessary colouring matter of approved make to the white wash which has been stained. The colour shall be as approved by the Engineer. For all colour wash, a sample must first be applied, allowed to dry and approved by the Engineer-in-Charge before the work proceeds. It should be noted to large surface such as the walls of a room. Care must be taken to mix sufficient colour wash to complete the whole surface to be treated, otherwise it is taken to mix impracticable to obtain exactly the same shade of colour in two successive mixtures. Sufficient gum or rice size should be added to prevent the colour wash coming off when rubbed with fingers.

Preparation of surfaces : The surfaces shall be prepared by brooming down, brushing or other means as may be ordered by the Engineer-in-Charge. The surface shall be thoroughly cleaned down and freed from all foreign matter before the base coat is applied.

Sub-base: Sub-base of two coats of white wash shall be applied as specified in Item No. Bd.P-1.

Application of colour wash: The colour wash shall be applied over the base coat. It shall be applied in the same way as white wash. The number of coats shall be as mentioned in the item, each coat being applied after the earlier coat has dried.

Mode of measurement : Per sq m

36A POLISHED SHAHABAD/TANDUR/KOTAH STONE FLOORING

The specification for this item shall be same as for item No. B.M.1

1. All the stone slabs shall be square in shape. The dimensions shall be 0.60 x 0.60 m or other dimensions as specified in the special provisions or as directed by Engineer-in-Charge. Tolerance in thickness ± 3 mm
2. The exposed surface of the specified stone flags shall be machine polished to a smooth, even and true plane and the edges machine cut square and to the required shape when necessary. Samples shall be got approved by the Engineer-in-Charge who will keep them in his office for reference.
3. The thickness of joints shall not exceed 1.5 mm
4. Joints shall be grouted with neat cement slurry
5. When the bedding and joints of the flooring have completely set, the surface shall be machine polished to give a smooth, even and true plane to the floor and thoroughly cleaned.

Mode of measurement : Per sq meter

36 B GLAZED TILES FOR SKIRTING AND DADO

Plastering : Cement plaster of about 12 mm for brick walls and 20 mm for stone

masonry walls shall be applied to the part of the wall where dado or skirting is to be fixed as per specification No. B.11. The proportion of mortar shall be as mentioned in the item.

Fixing tiles : Dado or skirting work shall be done only after fixing tiles on the floor. The white glazed tiles shall be soaked in water for at least 2 hours before being used for skirting or dado work. Tiles shall be fixed when the cushioning mortar is still plastic and before it gets very stiff. The back of tiles shall be covered with a thin layer of neat cement plaster and the tile shall then be pressed in the mortar and gently tapped against the wall with a wooden mallet. The fixing shall be done from the bottom of wall upwards without any hollows in the bed or joints. Each tile shall be fixed as close as possible to the one adjoining. The tiles shall be joined with white cement slurry. Any difference in the thickness of tiles shall be evened out in cushioning mortar so that all tile faces are in the vertical plane. The joints between the tiles shall not exceed 1.5 mm in width and they shall be uniform between the tiles in dado work, care shall be taken to break joints vertically. After fixing the dado, skirting etc. they shall be kept continuously wet for 14 days.

If doors, windows or other openings are located within the dado area, the sills, jambs, angles etc. shall be provided with white glazed tiles and appropriate specials according to the foregoing specification and such tiled area shall be measured net along with the dado.

Cleaning : After the tiles have been fixed the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. After the complete curing the dado or skirting work shall be washed thoroughly clean.

Item to include : The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above.

- Plastering
- Fixing the tiles including all angles, etc., after applying neat cement paste
- Jointing the tiles with white cement slurry
- Curing
- Cleaning the dado and skirting.

Mode of measurement and payment : Same as for item No. Bd.M-9.

Name of work : **NAME OF WORK: AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0, PHASE-1, HEADWORKS AT LATUR, TAL. LATUR, DIST. LATUR.**

OBLIGATORY REQUIREMENT FOR JACK WELL

The structural design for the Jack well with overhead pump house and Approach bridge shall be done as per standard specifications and code of practice of the IS.

The design shall be carried out in conformity with following latest IS code.1.

1. IS:456-2000
2. IS:875
3. IS:11682
4. IS:1893 with inclusion of seismic zones as per latest circular.
5. IS:1786 for cold worked steel high grade deformed bar (Tor steel of 415 and Mild steel of grade – I shall only be used).
6. IS:13920-1993 for ductile detailing. BSI Publication S.D. 34 (S & T)1987.
7. IS:3370:2009 (Part – I to IV) for water retaining structures.
8. Trial pit details of work site shall be given. (Open rock is visible nearby bearing capacity shall be taken as 20 MT/Sqm for design purpose only).
9. Design shall be got approved from VJTI/IIT/VNIT/WCE/Government Engineering College/Reputed Consultants (approved by M.J.P.) at contractor's own cost.

All RCC work on Jackwell and pump house shall be designed in M-250 and water retaining structure as well as structure whichever exposed to sever rain, alternate wetting and drying. According not less than 45 mm concrete cover shall also be provided. The item shall be executed as per IS Code and in M-300.

JACK WELL

1. The arrangements of column and beams shown in the drawing enclosed shall be designed as per requirements.
2. The floor shall be provide with RCC M-300 concrete for which live load shall be 500 Kg/Sqm.
3. The beams supporting pumps on the floor shall be designed for the load of pumps, motors and column assembly. The beams shall be so designed that in one bay five pumps will be installed at equal distance. The space left between the pumps shall be provided with M.S. grating. The beams shall be capable of resisting impact load as per relevant IS for which load of 5 motor, and dynamic load of pump, including column assembly as 1.5MT.
4. There shall be a M.S. ladder from pump house floor to have access upto RL 618.75 M. The M.S. ladder shall have 0.50 m width with railing on both sides. This shall be designed for 300 Kg/Sqm live load.
5. The RCC wall panels on water side shall be designed for the critical loading as specified below.
 - a) Full water load from inside without any soil load from outside. The H.F.L. is 644.5 M which shall be considered for accounting of internal water pressure.
 - b) Saturated earth fill load from outside and having no water pressure from inside.
6. The columns shall be capable to taking load as well as bendingmoment due to load transfer from wall panels. The internal bracings/beams shall be designed for self weight plus live load of 150 Kg/Rmt.
7. The well structure upto RL 652.5 M shall be designed for non- cracking condition.

JACK WELL FLOOR

The floor of Jackwell (bottom slab of well) shall be designed for full uplift.

PUMP HOUSE

1. The two storeyed pump house shall be provided over the Jackwell and it shall cover full area of Jackwell as per drawing. The floor level shall be RL 644.5 M. The clear size of the pump house shall be 15 m dia. The outer column shall be continued upto roof level with internal beams/lintels etc. The total height of pump house shall be minimum 11.11 M upto top of roof slab as shown in drawings. There shall be continuous corbel beam with a corbel for supporting moving gantry. The capacity of gantry shall be taken 7.50 MT and the corbel beams shall be designed duly considering the impact load due to moving gantry.
2. Two rolling shutter shall be provided for the pump house and the size of rolling shutter shall be as per mentioned in BOQ.
3. Aluminium windows with glass shutters of size as per mentioned in BOQ shall be provided with M.S. grill.

4. The panelling shall be with B.B. masonry 230 mm thick in cement mortar 1:4 proportion. Inside plaster 1:3 CM with neeru finish shall be provided and out side plaster in CM 1:3 with sand face surface.
5. Colour wash of approved shade shall be provided from inside in 3 coats and water proof cement paint shall be provided in 3 coats from outside.

ROOF

The RCC slab shall be provided at the top of the pump house resting on beams and columns. There shall be 150 mm projection of roof slab and a normal slope to be given to drain off the rain water.

**NAME OF WORK: AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR
LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0, PHASE-1,
HEADWORKS AT LATUR, TAL. LATUR, DIST. LATUR**

OBLIGATORY CONDITION FOR JACK WELL

1.	HEAD WORKS		
I	Jack Well		
a)	Location	:	
b)	Type of Construction	:	R.C.C. M – 300
c)	Average of bed level of Jackwell	:	618.75 M
d)	Floor level of jack well	:	640.00 M
e)	Dia of Jackwell	:	15.00 M
f)	Depth of Jackwell	:	(Top RL – 640.00 Bottom RL 618.75) = Total 21.25 m
g)	Levelling course	:	PCC M-150
h)	Ladder	:	MS ladder of 0.50 M wide.
i)	Vertical wall	:	0.30 M thick (minimum)
j)	Floor Jackwell	:	RCC M-300.
k)	Floor beam	:	Location of floor beam and foundation block for pumping machinery shall be confirmed from Executive Engineer and then assembly design shall be submitted.

Floor slab of Jackwell should be designed for dynamic loading and vibration load.

II	OVER HEAD PUMP HOUSE.		
a)	Size of pump house	:	double storeyed.
b)	Clear height of P.H.	:	10.50 m for two floor
c)	Construction	:	RCC Framed structure with B.B. Masonry works
d)	Top RL of pump house	:	655.00 m.
e)	Opening at floor level of pump house	:	Opening around the pumps should covered with holding.
f)	Continuous Corbel beam	:	Continuous corbel Beam shall be designed to sustain the load of 7.50 MT gantry crane
g)	Rolling shutter	:	With width 4 M extension
h)	Steel windows	:	1.5 m X 1.2 M, 17 Nos
j)	Lintel (RCC)	:	Over windows and rolling shutters.
k)	Chajja (RCC)	:	Over rolling shutter and window of size as mentioned in BOQ.
l)	Cement plaster	:	20 mm for outside and inside face with neeru finish in CM 1:4
m)	Flooring	:	Polished tandur stone floorng
n)	Distemper	:	White wash inside of pump house.
o)	Water proof cement paint	:	Outside of pump house and expose face of Jackwell.

DATA SHEET FOR SUB WORK No.

Providing and constructing RCC Jack Well, & Overhead Pump House.

All above obligatory levels and sizes of said components of the complete structure may change as per instruction of engineer-in-charge without any extra compensation above the respective notes quoted against the various items under Schedule 'B' of the Tender Documents.

All foundation level and strata shall be inspected by Engineer-in-charge and only after approval of foundation strata further casting of respective footing should be conduit.

All necessary soil testing should be carried out as per instructed by Engineer-in-charge at own cost of agency.

LATUR CITY MUNICIPAL CORPORATION, WATER SUPPLY DEPARTMENT

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**NAME OF WORK: AUGMENTATION OF LATUR WATER SUPPLY SCHEME FOR
LATUR CITY MUNICIPAL CORPORATION UNDER AMRUT 2.0 PHASE-1,
HEADWORKS AT LATUR, TAL. LATUR, DIST. LATUR**

DETAIL OBLIGATORY CONDITIONS FOR R.C.C. BRIDGE

DELETED

Contractor

No. of correction

Executive Engineer

**Augmentation of Latur Water Supply Scheme for Latur City
Municipal Corporation Under Amrut 2.0, Phase-1, Headworks at
Latur, Tal. Latur, Dist. Latur**

**BASIC DESIGN REQUIREMENT & OBLIGATORY LEVELS OF ESR
AND
SPECIAL OBLIGATORY CONDITIONS FOR WATER RETAINING STRUCTURE**

The basic design requirements, criteria and dimension mentioned hereafter shall be strictly adhered to.

The intending tenderer should acquainted himself thoroughly with the site conditions as well as needs of LCMC before tendering and designing the schedules. The contractor should make his own arrangement about probable depth and strata for resting foundations.

**OBLIGATORY LEVELS AND REQUIREMENTS (Parameters)
(As per Annexure-I)**

DETAILS OF RCC BPT/MBR/ESRs AT VARIOUS LOCATIONS TABLE

R.C.C. BPT:-

S. No.	Location of GSR/ Sump / BPT	Cap. in Liters	Avg. GroundLevel	Low supply level and sull supply level and Numbers
1.			M	

Note: No change in these levels will be permitted & RCC design will not be accepted by LCMC if changes are made.

Note: No change in these levels will be permitted & RCC design will not be accepted by LCMC if changes are made.

DESIGN CRITERIA & ASSUMPTIONS

DESIGN STANDARDS

The structural design of the tank shall confirm to the following standard specifications and code of practice of the BIS, IS:456-Code of practice of plain and reinforced

cement concrete (latest revision),

IS:3370 –Code of practice for concrete structures for storage liquids Part-I to IV(latest revision),

IS : 875-Code of Practice for structural safety of building, loading standards (latest edition),

Part-I... Dead Load

Part-IIImposed Load

Part-III... Wind Load

IS : 1893-Criteria for earthquake resistance design of structures (latest edition)

IS:1682-1985 -Code of Practice for criteria for design of RCC staging for overhead water tanks (latest edition) and various standards issued by BIS.

DESIGN OF STRUCTURES

The above Indian Standards current on the date of tender shall be applicable to the design of structure. Item which is not specifically covered by Indian Standard Code of Practice, reference shall be made to the relevant standard specifications.

Construction of various capacities RCC MBR/ESR / SUMP

1. The reservoir will be a covered RCC container supported on RCC column footing and termed ate braces, etc as per drawing.
2. Suitable RCC spiral stair case should be provided with landing parapet, RCC pardi for approach to the Gallery and top of the ESR, RCC cantilever catwalk (gallery) of 1.20 m width, GI pipe railing shall be provided at floor level, preferably at junction of floor slab and vertical walls and GI pipe railing with RCC post of 1.0 m c/c interval at the roof slab level of the container.

Ventilators shall be provided on top slab of ESR. One number of C.I. manhole frame and cover shall be provided and fixed in the roof of the tank. One S.S. ladder shall be provided and fixed for access into the tank through manhole left in the Roof. Ladders shall be provided as per specifications. Water level indicator (Mercury) assembly of approved type shall be provided and installed.

Lightening arrestor as per IS specifications and confirming to IE rules shall be

provided and fixed. Vertical & horizontal pipe of CI,D/F flanged pipes ,M.S./C.I. specials of required sizes for inlet, outlet & overflow arrangements together with suitable Sluice Valves shall be provided as per drawings. For washout, one tee shall be fixed on the outlet pipe with one valve of suitable .. Sluice Valves of required size shall be fixed for inlet, outlet & washout. These valves shall be supplied by the contractor, confirming to relevant IS code and of makes approved by MJP.

Required no. of B.B. masonry chambers of suitable sizes directed with C.I. manhole frame & covers shall be provided & constructed at suitable locations for Sluice Valves. Water proof cement plaster of CM(1:2) proportion ,20 mm thick shall be provided for inside surface of water tank, including roof slab bottom & epoxy painting in two coats be provided as per specifications.

Outside surface of tank, exposed faces, columns, braces, catwalk bottom portion of slab & exposed surface of the tank shall be provided with cement plaster of CM(1:3) proportion ,20 mm thick with smooth finish\and then 3 coats of water proof cement paint approved by LCMC shall be rendered. Letters indicating capacity of tank, name of scheme and the year of construction shall be either embossed or engraved on vertical wall of tank and shall be painted with suitable shade of oil paint in 2 coats.

On the completion of work hydraulic test or water –tightness test shall be given as per standard specification. Therefore required water arrangements shall be made by the contractor at his own cost.

Since this a lump sum offer, the interim payments will made at different stages of works contract, as per break-up schedule enclosed. Which is to be approved by the competent authority.

Since this is water retaining structure, contractor shall give a satisfactory hydraulic test of the tank. This test shall be considered as water tightness test and accepted if the structure appears bone dry from outside after filling the water up to full supply level & the drop in water level is not more than 40 mm in 7 days. For this purpose the water filling arrangements shall be made by the contractor at his own cost, Including cost of water pumping arrangements; etc.

If during testing any damage occurs to the structure, it will be responsibility of the contractor to rectify the same. Until satisfactory water tightness test is given on completion of work, interim payments to be made at different stages of works as per break-up of payment schedule enclosed.

MATERIALS REQUIRED FOR CONSTRUCTION

1. ***Sand, Metal & Bricks***

Sand, metal & bricks of best quality will be insisted. Samples of these will have to be got approved prior to use on work.

2. ***Cement***

OPC of 43 grade in jute/polyethylene bags (weighing 50 Kg each) shall be used for all water retaining Structures & for all works. The cement shall be used of following brands (1) Ultratech, (2) Birla and (3) Ambuja. Super plasticizer in the proportion of 0.5 % (0.25Kg/cement bag) should be used.

3. ***Reinforcement***

Tor steel of 415 grade & mild steel grade-I shall only be used as per design. /The steel to be used shall be of grade Fe-250, Fe-450 as per design.

The Contractor shall have to procure the steel from open market. The steel procured by Contractor shall be only tested one and the Contractor shall produce manufacturer's test certificate without which it shall not be accepted. Further the Contractor shall arrange to get tested any sample from steel brought at site by him in laboratory at his cost and results should be submitted to the LCMC. Defective steel brought by Contractor shall be rejected and will not be allowed to be used. Test certificate stating the chemical composition & characteristics of the product should also be produced.

At least three samples of each diameter should be tested from every 5 tons (MT) or part thereof. Tested lots only will be permitted to be used.

4. ***Concrete***

The PCC and RCC work shall be as per IS 456:2000.(OR LATEST REVISION) Concrete mixer shall be used for preparing concrete.

Vibrator shall be used to consolidate concrete while placing in position. Mix design will be allowed only if required for minimum infrastructure like weigh batching plant, Needle vibrator and proper form work is provided.

While concreting, representative samples in form of Test Cubes shall be taken by the LCMC supervisor and shall be tested under his supervision, charges of testing shall be borne by the Contractor. Frequency of taking cubes (sampling, accepting criteria, standard deviation values, carting of concrete cubes, test procedure etc.) should be followed by contractor as per IS:456.

5. *Water Level Indicator Assembly*

Mercury water level indicator with 15 mm dia. required GI pipes (medium duty), stop cocks (2 nos.), necessary fixtures suitable for staging height upto 15 M and water depth up to 5 M to represent depth of water in tank, etc. shall be provided and fixed by the Contractor as per direction of LCMC. The indicator should be fixed to exterior face of column at about 1.5 M above ground level at site or as per requirement of Engineer –in-charge.

6. *Lightening Arrestor*

Lightening arrestor conforming to IS and Indian Electricity Rules shall be provided. The lowermost portion of tape for 2 metres above ground level and 2 meters below ground level shall be enclosed by 50 mm GI pipe of 'M' class.

7. *Pipe Railing at free end of Catwalk*

Railing shall be of GI pipes 'A' class not less than 25 mm diameter in two rows and shall be fixed in position to RCC posts or M.S. angle posts of size 65 mm x 65 mm x 6 mm, 1.0 metre in height, located at a maximum distance of 1.5 M C/C. The railing and the posts shall be provided with two coats of oil paint of approved shade.

8. *M.S. Ladder*

M.S. Staircase with one meter width from ground level to bottom slab, gallery to roof slab with intermediate platforms. The ladder should be fabricated from heavy angles, steps & railing as directed by Engineer-in-charge.

9. *S.S. Ladder in container*

Two nos of heavy type S.S. Ladder & of required length & design as approved by Department shall be provided by the contractor for each ESR. This shall be for the access inside the tank. The contractor shall furnish to the LCMC the various manufacturers of the ladder.

10. *Centering Work*

Before starting the work of ESR, the Contractor should submit design of centering and its detailed drawing for approval by LCMC. This set of drawings shall be kept at site. This condition shall be applicable for the ESR with Contractor's design.

**Augmentation of Latur Water Supply Scheme for Latur City
Municipal Corporation Under Amrut 2.0 Phase-1, Headworks at
Latur, Tal. Latur, Dist. Latur**

**Specification for Construction of RCC Bandhara
near Jackwell**

Designing, providing and constructing R C C bandhara across river near jack well including excavation for foundation in all type of soil, murum, soft rock, hard rock by chiseling, wedging, line drilling, by mechanical means or by any other means other than blasting including trimming and leveling the bed, removing the excavated material upto a distance of 50 meters beyond the area and all lifts including backfilling, etc. as per approved design and drawing. Providing and laying in situ Cement concrete for RCC work in RCC M-300 including M.S./Tor reinforcement (fusion bonded epoxy coated) (design in M-250 and construction in M-300).Item includes providing and fixing M.S. sluice gate in position as per detailed drawing and including cost of all material. Necessary provision for constructing cofferdam in river basin including excavation ,filling the middle portion with B.C. soil (in gunny bags if required) Item include dismantling of cofferdam after completion of work including required dewatering as per direction of Engineer-in-charge. The design is to be got approved from Government recognized Engineering college. Scope of work as below.

1. Design of RCC bandhara .
2. Length of bandhara - m .
3. Average height of bandhara.....m.
4. Section arrived as per approved design.
5. Excavation in all type strata for required depth (including backfilling) as per design.
6. RCC for stem, toe, heal in M-300 including with anchoring steel Dowell bars at specific distance and to a safe depth.
7. Cofferdam as required to complete the whole work.
8. Dewatering as and when required from starting to finishing of work.
9. M.S. sluice gate-.... m x.....m - Nos. The weight of sluice gate should notbe less than.....kg.

The R.C.C. bandhara is to be constructed as according to contractor's own design and drawing . The scope of work includes survey at site of work of Bandhara ,collection of other allied data from Irrigation department, preparation of design and drawings from reputed R.C.C consultant and got it checked from any recognized

Engineering college. The charges for the same are to be borne by the agency. The detailed specifications for items operated for construction of R C C bandhara i.e. excavation, R.C.C.,etc. will be governed by the specifications of relevant items given under various sub works in the tender.

The obligatory data is as below.

G.L. R.L. ---.....m (Average)

R.L. at top of

Bandhara --- m

H.F.L. at Bandhara

site --- m

In addition to above ,all other relevant and necessary requirements for construction of R.C.C. Bandhara are to be fulfilled by the agency without any extra claim.

Break up of payment

1.	Approval of Design and drawing	-	2 %
2.	Cofferdam	a) Construction	- 15 %
		b) Dismantling	- 5 %
3.	Excavation		- 15 %
4.	RCC work below GL		- 20 %
5.	RCC work above GL (Half height)		- 20 %
6.	RCC work above GL (Full height)		- 20 %
	Providing and fixing sluice gate and		- 3 %
7.	all misc. work		
		Total	- 100 %

The breakup of payment given for this item is tentative. However the agency is to submit his own break up and get it approved from S. E. if required

4.0 COPPER LIGHTENING CONDUCTOR (Sub-Work No....., Item No)

The contractor shall ensure that any structure must or other installations provided by him is adequately designed to minimize damage to the works from lighting strike.

Any lighting conductor shall be design in accordance with the edition of the

Contractor

No. of correction

Executive Engineer

appropriate Indian Standard Code of Practice IS:2903:1969.

Mode of Measurement & Payment and Payment

The item shall measured and paid in per No. basis

6.0 PROVIDING AND FIXING M.S. LADDER

(Sub-Work No....., Item No)

- 6.1 Ladder shall be manufactured as per the details provided in the tender item. All the materials and labour required for executing the item are to be provided by the Contractor at his cost. The ladder shall be properly fixed at site as directed and the bottom and top shall be properly embedded in 1:2:4 CC block as directed at Contractor's cost. In order to have stiffness to the ladder, cross supports or stiffeners at suitable intervals as directed, shall be provided of suitable M.S. flats duly embedded in walls or welded to the ladder. The specification for this item as given in the Standard Specification Book (Red Book) published by PWD Department shall be followed.

Mode of Measurement & Payment & Payments

The item shall be measured and paid in Rmt basis.

7.0 RUBBLE STONE SOLING

Sub-work No....., Item No)

7.1 GENERAL

After the structural foundation, plinth construction and filling are completed, rubble soling of specified thickness shall be laid over the consolidated plinth filling, hand packed and compacted. The specification of the work as per Standard Specification Bd.A-12)

7.2 MATERIALS

The stones to be used shall be broken rubble with fairly regular shape and free from weathered, soft and decayed portion. The rubble shall be of sound stones of the type mentioned in the item and selected for their larger size. Stones shall be of the full height of the soling and the length and width shall not generally exceed 2 times the height. The stones to be used for wedging in the joints between larger stones, shall be chips of the largest size possible to fit in the interstices. All sound and suitable rubble obtained from the foundation excavation and approved by the Engineer shall be necessarily made use of first unless otherwise directed.

7.3 CONSTRUCTION

The bed on which rubble filling is to be laid shall be cleared of all loose materials, leveled, watered and compacted and got approved by the Engineer before laying rubble soling.

Rubble soling shall be laid to the specified thickness closely packed by hand and firmly with their broadest face downwards. The interstices between adjacent stones shall be wedged in with stones of the proper size and shape and well driven in with wooden mallets to ensure a tightly packed layer. Such wedging shall closely follow the placing of the larger stones. After hand packing and wedging, compaction of the soling shall be done thoroughly with logrammers. Adequate care shall be taken by the contractor while laying and compacting the rubble soling to see that the masonry or any part of the structure is not damaged. Rubble soling shall be started only after the masonry is fully cured.

7.4 BROKEN RUBBLE

- a) Supplying broken rubble of approved of approved quality and size at site.
- b) All labour, material, tools and equipment for handling, laying, hand packing and compacting the rubble.

7.5 Any other incidental charges to complete the work as per sanctioned plan.

MODE OF MEASUREMENT & PAYMENT

Rubble soling shall be measured and paid in cubic meters limiting the dimensions to those shown on the drawings or as directed by the Engineer. The dimensions shall be measured correct to 2 places of decimals of a meter and quantities worked out correct to 2 places of decimals of a cubic meter. No deduction shall be made for voids.

The correct rate shall be for a unit of 1 cum

**9.0 PROVIDING AND APPLYING WASHABLE OIL BOUND DIS-TEMPER.
(Sub-Work No. Item No.)**

The surface to be distempered shall be cleaned and all cracks, boles and surface defects shall be repaired with gypsum and allowed to set hard. All irregularities shall be sand papered smooth and wiped clean. The surface so prepared must be completely dry and free from dust before distempering is commenced. In the case of walls newly plastered, special care shall be taken to see that it is completely dry before any treatment is attempted.

The washable oil bound distemper of the approved shade of colour conforming to IS:428:1969, shall be used after applying priming coat of petrifying liquid or other primer as may be recommended by the manufacturers of the distemper.

The rate shall include all labour, material, equipment's and tools for carrying out the following operations.

- Providing the primer and distemper and mixing the distemper.
- Scaffolding
- Preparing the surface to receive the primer and finishing coats.
- Applying the priming coat
- Applying the distemper as specified above in the number of coats, mentioned in the item.
-

Mode of Measurement & Payment

This item will be measured and paid in Sqm basis.

11.0 PROVIDING PRESSURE GROUTING

(Sub Work No., Item No.....)

Providing pressure grouting at a pressure of 0.56 kg/sqcm in required row /zigzag fashion as specified at 1.50 m interval as per site condition to stop leakages through water retaining structures to the entire satisfaction of the Engineer-in-charge including material compound, hardening materials, compressor equipment including scaffolding smooth finishing etc. complete.

MODE OF MEASUREMENT

This item will be measured and paid as per Bag. basis.

12.0 DESILTING THE SUPPLY WELL

(Sub Work No., Item No.)

Desilting the Supply Well, Intake Well / Head Works, sump of water supply/ sewerage works etc. in wet or dry condition including lifts upto 9 M and lead upto 150 M as required beyond the work site, stacking, spreading, including necessary guarding, etc. complete, as directed by Engineer-in-charge.

MODE OF MEASUREMENT

This item will be measured and paid as per Cum. basis.

3. LOWERING AND FIXING OF SLUICE VALVES/KINETIC AIR VALVES

This item includes fixing of valves at work site including cost of transportation, loading, unloading, etc. all materials and labours required for fixing, including testing. The size of nuts, bolts and packing shall be as per IS specifications and suitable for the type of valves and as per the directions of the Engineer-in-charge. The location of the valves shall be decided by the Engineer-in-charge. Before any of these valves are fixed at the pre-determined position, these shall be cleaned, greased and it shall be checked that these are in proper working condition. Sluice valves shall be properly supported on wooden sleepers till the anchor blocks sets.

..... mm dia

..... mm dia

Kinetic Air valve PN mm dia

The pipeline and valves should be hydraulically tested upto the required pressure as per IS, satisfactorily and leakages if any should be repaired at the time of hydraulic testing. The 10% amount of the lowering, laying and jointing the pipe shall be released after satisfactory hydraulic testing. Contractor should make his own arrangements at his own cost for water, for hydraulic testing of pipeline. He should not rely upon completion of the any other sub-works for such testing.

The item will be measured and paid on the No. basis. 90% payment will be made after lowering and fixing and remaining 10% will be released after satisfactory hydraulic test.

The rose pieces shall be fabricated out of 10 mm thick M.S. plates. The strength diameter shall be 1% times the diameter specified in the Schedule-B. The holes to be drilled in strainer portion shall be of mm diameter at cm center to center and shall be staggered. The inside and outside surfaces of the rose piece shall be applied with three coats of anticorrosive oil paint and provide closing plate. The item includes cost of all material and labor required for the work, and this item will be executed as directed by the Engineer-in-Charge.

Mode of Measurement & Payment

This item shall be measured and paid in weight per Kg. basis.

PROVIDING FUSION BONDED EPOXY COATING

(Sub-work No, Item No.),)

- 7.1 Providing fusion bonded epoxy coating to reinforcement bars as per ASTM- 755 specification for a thickness of 175 (+50) microns including extra cost on account of careful handling, extra cost on account of using PVC coated binding wire instead of G. I. wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost account of transportation to and fro from steel yard at ----- to plant at Daman and Plant at Daman to work site by trailer, loading, unloading, including all taxes (Central and Local), etc. complete

7.2 MODE OF MEASUREMENT AND PAYMENT

The item shall be measured and paid in weight per MT basis.

PROVIDING AND LAYING C.C.FLOORING

(Sub-work No., Item No.)

Providing and laying cement concrete flooring 40 mm thick with cement concrete M-25 laid to proper line, level and slope in alternate days including compaction, filling joints marking lines to give appearance of tiles 30cm x 30cm or other approved design, finishing smooth (with extra cement) in approved colour as directed and curing etc. complete.

MODE OF MEASUREMENT AND PAYMENT

The item shall be measured and paid in weight per Sqm. basis.

REFILLING OF TRENCHES OF PIPELINE

(Sub-work No., ItemNo.),

After lowering, laying, jointing and welding of pipe line, site gunitting and concreting work, refilling of trenches with available excavated stuff shall be done.

The available excavated stuff shall be laid in layers of 15 cm to 20 cm. Each layer shall be watered and compacted before the upper layer is laid till the required level is reached. First 2 layers of 15 to 20 cms shall be free from stones or chips or any harmful material, to protect the pipe from damage.

Only soil or soft murum shall be used for filling.

Originally filling shall be done 30 to 40 cms above natural ground or road level. Sinking below the road or ground level, if noticed till the completion of work, the contractor shall have to make it level at his cost.

This item includes,..

- a) Clearing useful excavated material of rubbish bracking clods, stone, etc.
- b) Conveying the useful excavated material upto 500 M and filling in layers, watering and compacting.
- c) All labour, equipment and other arrangements necessary for the satisfactory completion and completion of the item.

Mode of measurement and payment of the rate shall be for a unit of 1 Cum of compacted trench filling with approved excavated material. The measurement shall be net for the compacted filing and no deduction for shrinkage or voids shall be made. However, deduction for pipe volume will be made. Depth of filling for measurement will be limited from natural ground level only. No payment will be made for filling for 30 to 40 cms above natural ground level, if so insisted by the Engineer-in-charge.

Surplus excavated material is the property of LCMC. So contractor is not empowered to sell this excavated material to any other agency.

This disposal will not be considered for initial 500 M lead from edge of pipe line trenches and so will not be paid for.

The material shall be conveyed by means of suitable devices/manner.

The material conveyed to the place of disposal shall either be stocked or spread as directed by Engineer-in-charge or his representative.

The route opening and maintenance, payment of any royalties, compensation to land owners and for damaged of any etc. during the process of conveyance etc. shall be the entire responsibility of the contractor.

90 % payment s made after completion of lowering ,laying and remaining 10% amount will be withheld till satisfactory hydraulic testing of pipe line is given.

Item No Reflux Valve :-

The item includes providing, erecting, jointing with jointing material and commissioning CI, double flanged Reflux Valve of 150 mm. dia. of PN1.6 rating

The valve shall conform IS:5312 (part - I). The valves shall be provided with a concrete block for support. The minimum size of reflux valve shall be so selected that, the velocity of water shall not exceed 2.0 M/Sec.

Acceptable makes : As per latest approved list of MJP .

5. MURUM BEDDING

(Sub-Work No, Item No.),

General

The specification contained in the Standard Specification Volume-II published by Public Works and Housing Department, Govt. of Maharashtra, Chapter Bd.A-10, Page 263 shall apply. In addition to above, following specifications shall govern.

Murum bedding shall be done with approved quality of soft murum, selected from excavated stuff and approved by the Engineer-in-Charge. The murum shall be collected from available excavated stuff and to be utilized if murum is not available from selected excavated stuff, it should be brought from outside and rates payable will be as stipulated in the tender item. Thickness of murum bedding will be 15 cm.. The contractor shall be paid for one Cubic Meter of the filling laid and compacted and will be paid upto two place of decimal of Cum.

Murum bedding shall be laid in exact 15 cm thickness for full width of excavation, it shall be well rammed with hand rammers so that pipe line is laid on firm bedding. Collection of murum from excavated stuff and carting upto the work site is included in the item and contractor shall make his own arrangement for procurement and carting of murum at his cost.

Mode of Measurement and Payment

Quantity shall be measured in Cubic Meter. The dimensions shall be measured upto two Decimal of Cubic meters and quantity shall be calculated upto two places of Decimal of Cubic meter. Payment for murum bedding will be made after lowering, laying and jointing of the pipe.

10. B.B. MASONRY CHAMBER

(Sub-Work No. , Item No),

Providing and constructing B.B. masonry valve chambers of internal size x and x m or as size as per Schedule-B and as per approved drawing for ESR/MBR/WTP etc.

The work is to be carried out as per type design or drawing of the department and as per detailed description of the item in Schedule-B of the tender. Sizes

of chamber mentioned in the item are the clear internal dimensions of the chamber after completion of plastering. Unless otherwise mentioned in the wording of item in Schedule-B of the tender the rate for this item shall include following allied works.

- a) The cost of extra excavation in all types of strata which is in addition to the line trench, refilling the sides and disposing off surplus stuff will be paid separately under relevant item.
Excavation covered by pipe line trenches coming under M.H. chamber shall not be admissible for payment.
- b) Providing and casting at site 15 cm thick bed concrete in CC M-100 below external size of complete chamber.
- c) Providing B.B. masonry side walls in 225 mm thick in CM 1:5
- d) Providing 20 mm thick plaster in CM 1:3 from inside.
- e) Providing cement plaster 20 mm thick in CM 1:3 from outside at least upto 30 cm below ground level.
- f) Providing top coping 15 cm thick in M-150 with smooth finishing to surface.
- g) Providing and fixing in position pre-cast RCC manhole frame cover.
- h) Unless otherwise directed by the department the finished top of the chamber constructed on road surface and shall not cause hindrance to traffic.

Mode of Measurement

This item will be measured and paid as per number basis.

2. PROVIDING AND SUPPLYING C.I./D.I. FLANGED PIPES

Sub-Work No., Item No),

The item includes supply CI/DI flanged pipes as per latest IS and approved by Engineer-in-Charge. The cost of pipe should be including all taxes central and local, railway freight, transportation upto site of work or departmental store.

The item will be measured and paid as per running meter basis.

3. PROVIDING AND SUPPLYING C.I.FLANGED / S/S SPECIALS

(Sub-Work No., Item No),

The item includes supply CI flanged/s/s specials as per latest IS and approved by Engineer-in-Charge. The cost of specials should be including all taxes central and local, railway freight, transportation upto site of work or Departmental store.

The item will be measured and paid as per kg. basis.

1.0 DISMENTLING OF ESR

(Sub Work No. , Item No.)

Dismantling of ESRs of various capacities and heights using crane (10 MT capacity) and handing over M.S./ C.I./ G.I. pipes, valves, bends, etc. to the Department However taking steel reinforcement by the dismantling agency including removing dismantled materials from site and disposing them at suitable place as directed, etc. complete. Capacity of E.S.R. upto 2 lakh literes and staging upto 12.00 M height in conjusted area. Note:- Above 12 M staging height add 5% per meters staging of ESR of any capacity.

Mode of Measurement

This item will be measured and paid on per lit. basis.

2.0 PROVIDING AND ERECTING WIRE FENC- ING (Sub Work No., Item No.)

- 2.1 Providing and erecting 1.5 meter high wire fencing with seven rows of barbed wire supported on mild steel angles (50 x 50 x 6 mm) at 2.5 meters centre to centre including excavating pit for foundation, fixing posts in cement concrete blocks of size 45 x45 x 45 cm, fastening the wire and painting the mild steel angles with one coat of red lead primer and two coats of painting etc. complete.

2.2 MODE OF MEASUREMENT

This item will be measured and paid as per Rm. basis.

Nature of Work: Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur

UNDERTAKING FOR GUARANTEE

I/ We Guarantee that

1. I/We will replace, repair and adjust free of all charges to the employer any part of the work which fails to comply with the specifications of amendment to such specification as referred to in specifications attached to tender, fair wear and tear expected until the completion and for a period of 60 Months for all Sub work from the date of acceptance certificate issued under Article-24 of General Conditions of Contract.
2. All the works will be reliable.
3. All the works will be of a type which has been proved in service to be suitable for the duty required by the specifications and will be manufactured and tested in accordance with the appropriate standard specifications approved by the Engineer-in-Charge.
4. I/We accept and abide by the clause relating to quality and guarantee of work.

BIDDER'S SIGNATURE

Contractor

No. of correction

Executive Engineer

Nature of Work: Augmentation of Latur Water Supply Scheme for Latur City Municipal Corporation under AMRUT 2.0, Phase-1, Headworks at Latur, Tal. Latur, Dist. Latur

DECLARATION

I/We Guarantee that

I/We hereby declare that I/We have made myself / ourselves thoroughly conversant with the local conditions regarding all materials and labor on which, I/We have based our rates from this work. The specifications and requirements for this work have been carefully studied and understood by me/us before submitting the tender.

I/We undertake to use only the best materials, to be approved by the Executive Engineer in-Charge of the work or his duly authorized representative before starting the work and also to abide by this decision.

I/We hereby undertake to pay the labor engaged on the work as per minimum wages Act 1984 applicable to the zone concerned or any other as applicable.

BIDDER'S SIGNATURE

Contractor

No. of correction

Executive Engineer

DECLARATION

1. The local condition regarding all materials such as stone, murum, sand, availability of water, electricity and labor etc. on which I /WE have based our rates for this work. The specifications and requirements of lead for this work have been carefully studied and understood by me before submitting the tender. I /WE undertake to use only the best materials, to be approved to the Executive Engineer In-charge of the work or his duly authorised representative, before starting the work and also to abide by his decision.
2. I / WE hereby undertake to pay the labor engaged on the work as per "Minimum Wages Act 1984" applicable to the zone concerned or any the Act applicable.

BIDDER'S SIGNATURE

Contractor

No. of correction

Executive Engineer

DECLARATION/AUTHORITY LETTER FOR SITE VISIT AND GEO TAGGING

Name of work-_____. Scheme
Tq. _____ District.:

Name of Contractor/Agency: -

I Myself----- hereby declare / authorize my authorized representative -----
to carry out site visit and inspect/visit other important location on site of above-mentioned work.

Date:

Place:

Time:

Signature with Stamp of the Contractor/Agency

I Myself/authorized representative have personally inspected the work site on the date -----time-
----- AM/PM and have made myself/ our self-acquainted. Satisfied with the site condition. The
details of Geo-Tagging as mentioned in the tender will be uploaded in envelope No.1 of the tender.

Date:

Place:

Time:

Signature with Stamp of the Contractor/Agency

Certified by
The Executive Engineer
Latur City Municipal Corporation

Note: Locations specified by Engineer in charge

Contractor

No. of correction

Executive Engineer

Following condition of Geo-tagging of the proposed site shall be complied, by contractors.

GEO-TAGGING

- 1) It shall be binding for all contractors to inspect the work site, quarry area and other Important site location before filling the tender.
- 2) The officers calling for the tender have to fix 3 (Three) site location for geo-tagging for effective site visit (details of location visit will be made available at the time of site visit).
- 3) The officers calling for the tender or representative will be available during office hours at the site location. During the period 5 working days before tender closing date from to from the site visit to carry out procedure of geo-tagging effectively for convenience office representative number is given below.
- 4) The Contractor himself or his authorized representative shall carry out Geo-tagging and shall submit authority letter to the department. The Declaration/Authority letter duly attested with date and time of the site visit. The contractor himself or his authorized representative shall satisfy the representative officers calling for the tender present at the site by giving his identity or showing authentic identity card and shall keep the procedure confidential (Annexure).
- 5) The contractor shall submit Geo-Tagging with Deceleration/Authority (Format attached with Tender) Letter in Envelope No.1. Without Geo-tagging the tender will not be considered.

Enc: Annexure

The Executive Engineer
Latur City Municipal Corporation

DESIGN OF APPROACH CHANNEL L-150M

Sr. No.	Description			Values	Unit
1	Gross demand @ head works			172.26	MLD
2	Hours of pumping			20	Hrs.
3	Hourly discharge			10766250	Lit/Hr.
				2.991	m ³ /s
4	Design Discharge (2 V.F.)			344.52	MLD
				5.981	m ³ /s
5	Bed Width			4.0	m
6	Water depth			2.0	m
7	Bed slope (Horizontal) 1 in - S			900	
8	Side slope (Vertical) 1 in			1.5	
	Length of channel			660.0	Rmt
9	Manning's co-efficient - n			0.03	
10	Area - A			8.00	m ²
11	Wetted perimeter - P			11.21	m
12	Hydraulic mean depth R = A / P			0.71	m
	Manning's Formula				
13	Velocity V =		$1/n \times R^{2/3} \times (1 / S)^{0.5}$		
		=	0.89	m/s	
14	Actual Discharge = A x V				
		=	7.10	m ³ /s	
	Available discharge is more than required				OK
Hence Existing Approach channel is sufficient					

VOLUMETRIC DESIGN OF INTAKE WELL

1	Daily demand		83.02	MLD
2	Pumping Hours		20.00	Hrs.
3	Design Demand		199.25	MLD
4	Rate of pumping		138.37	Cum/Min.
		Say	139.00	Cum/Min.
5	Detention period assumed		0.50	Min.
6	Capacity of Intake well		69.50	Cum
7	Provide diameter of Intake well		6.00	m
8	Hence min. depth will be		2.46	m
		Say	3.00	m
So provide intake well of size 6.00 M dia and 5.00 M depth.				
a.	Sill Level		632.80	M
b.	MDDL		635.72	M
c.	Top RL of Intake well		637.50	M
d.	Rose piece RL		628.0, 629.50 & 631.0	M
e	Bottom RL of Intake Well		624.50	M
f	Average GL @ Intake well site		633.50	M

DESIGN OF ROSE PIECES AT HEADWORKS

1	FTL of Dam	RL	594.05	M
2	Sill level	RL	589.33	M
3	Rate of pumping	=	4151000	Lit/hr.
4	Capacity of rose piece (assumed)By considering factor of safety of '2'	=	8302000	Lit/hr.
5	Assuming diameter of holes	=	25.00	mm
6	Velocity of water in the pipe = V	=	1.20	m/sec.
	$Q = A \times V$			
7	Area of pipe	=	1.92	Sqm.
	'Say 'A'	=	1.92	Sqm.
8	Diameter of pipe required	=	1.56	M
	Say	=	1.60	M
	Hence provide 900mm diameter rose piece			
9	Assuming diameter of holes	=	25.00	mm
a	Area of each hole	=	0.000491	Sqm.
b	No .of hole required	=	4096.00	Holes
c	Add 10% for blockage	=	409.60	Holes
	Say	=	4505.60	Holes
d	Consider 40 Rows of 100 holes@50mmc/c	=	4000.00	Holes
	front portion		600.00	Holes
	total holes		4600.00	Holes
e	No. of Rose pieces	=	3.00	Nos.
f	Length of Rose piece	=	1.60	M

DESIGN OF CONNECTING MAIN

1	Gross Daily demand at Head Works (Ultimate Stage Year 2057)	172.262	MLD		
2	Gross Demand cater by Existing Head Works	89.240	MLD		
3	Balance Demand to be cater by New Head Works	83.022	MLD		
4	Hours of Flow	20.000	Hrs		
5	Rate of Pumping	4151.08	M3/Hr		
6	Design Discharge with 2 Vol flow	199.25	MLD		
7	Total Flow (Q)	2.31	Cum / sec.		
8	Assumed number of pipes	2.00	Nos.		
9	Flow through each pipe	1.15	Cum / sec.		
10	Assume Diameter of each pipe	1400.00	mm		
11	Area of Pipe	1.54	m ²		
12	Velocity	0.75	m/sec	< 0.9m/s	Hence, safe
The velocity falls within the range of 0.6 m/sec (Non-silting) to 0.9 m/sec (non-scoring). Thus provide 2no.s of RCC NP-III Connecting main of 1400mm diameter of 80m length					

DESIGN OF JACK WELL

Sr. No.	Particulars	Details	Unit
1	Total gross demand at Headworks	172.262	MLD
2	Gross Demand cater by Existing Head Works	89.240	MLD
3	Balance Demand to be cater by New Head Works	83.022	MLD
4	Hours of Pumping	20	Hrs.
5	Rate of Pumping	4151.08	M3/Hr
6	Detention Period	15.00	Minutes
7	Required Discharge	1037.77	Cum
8	Assume Diameter of Jack well	15.00	m
9	Actual area provided for Jack well	176.72	m ²
10	Depth of Jack well required	5.87	m
	Say	6.00	m
11	Invert of Connecting Main near Intake well	628.00	m
12	Length of Conn Main	80.00	m
13	Slope provided (1:100)	0.01	
14	Invert of connecting main near Jackwell	627.20	m
15	L.S.L. of Jackwell	621.20	m
16	Assume silt pocket depth	1.00	m
17	Assume additional depth to account pump vertex	1.00	m
18	Bed R.L. of Jack well	619.20	m
19	Foundation R.L. of Jack well	618.75	m
20	H.F.L. of River	644.50	m
21	Floor of Pump House	644.50	m
22	Height of Pump house	10.50	m
23	Top of Pump House	655.00	m
24	Depth of Jack well below pump floor level	25.75	m
25	G.L. at Jack well site	640.00	m
26	Depth of Jack well Below GL	20.80	m
	Say	21.00	m
27	Corbel beam top R.L.	652.50	m
28	Dia. of Pump House proposed	15.00	m

Contractor

No. of correction

Executive Engineer

SALIENT FEATURES OF RAW WATER RAISING MAIN FROM JACKWELL TO MS SHAFT

Sr. No.	Particulars	Details	Unit
1	Gross Daily demand at Head Works (Ultimate Stage Year 2057)	172.26	MLD
2	Gross Daily demand at Head Works (Intermediate Stage Year 2042)	143.54	MLD
3	Gross Demand cater by Existing Rising Main	89.24	MLD
4	Balance Demand to be cater by New Rising Main (Ultimate Year 2057)	83.02	MLD
5	Balance Demand to be cater by New Rising Main (Intermediate Year 2042)	54.30	MLD
6	Length of Rising Main	3600.00	m
7	Proposed Dia (Ultimate year 2057)	1000.00	mm
8	Material	DI K9	
9	Flow	3202.22	m ³ /hr
10	BHP (Intermediate year 2042)	537.66	HP
11	Head	85.00	m
12	Working	3.00	Nos.
12	Standby	2.00	Nos.

DESIGN OF M S SHAFT

DESIGN OF M.S. SHAFT			
Sr. No.	Particulars	Details	Unit
1	Design Discharge	99.624	MLD
2	Inlet Pipe Dia	1000	MM (ID)
3	Total discharge through 300 mm dia pipe	99624000	LITERS
4	Total volume of inner dia of pipe per meter	0.785	M3
5	Considering outer dia	1500	MM (ID)
6	Total volume of outer dia of pipe per meter	1.76625	M3
7	Net volume of outer dia	0.98125	M3

Note: Vol. of outer diameter is greater than inner dia of shaft hence design of M.S.

Contractor

No. of correction

Executive Engineer

DRAWINGS

The following drawings shall be incorporated in the tender:

1. L section of rising main /Gravity Mains with invert levels of pipeline and Hydraulic Gradient line.
2. Excavation profile of Jack-well.
3. Headwork drawing showing all levels related to execution of works.

DETAILED BILL OF QUANTITIES (BOQ)

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME		
Recapitulation of Cost (135 LPCD) [AS PER MJP CSR 2023 - 24 & PWD CSR 22-23]		
Part Wise Cost Abstract		
Sr.No.	Name of Sub-works	Ammount
	<u>CIVIL PART</u>	
1	Working Survey	2,500,000
2	Intake Well .(6.00 M Dia)	3,397,500
3	Inspection Well (5.00 M Dia)	1,694,800
4	Connecting Main (1400 MM Dia L = 80 M) TWO ROWS	10,007,000
5	Jack well & Pump House.(15.00 M Dia)	36,930,300
6	Approach Bund (Length 70 m)	2,773,600
7	Meter Room At Head Work	549,100
8	Estimate of Raw Water Rising Main (HW To M.S.Shaft) (1000 MM DIA D.I.K- 9 PIPES. L - 3615 M)	125,304,500
9	Estimate of M.S.Shaft	4,520,500
10	Estimate of Raw Water Gravity Main (M.S.Shaft to WTP) (1200MM Dia = 25390 M,1100 MM Dia=19550 & 700 MM Dia=800M D.I.K-7 PIPES)	1,990,602,100
	Total Cost	2,178,279,400
	GST 18%	392,090,292
	Technical Sanction Charges 1%	21,782,794
	Total Rs:	2,592,152,486

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Estimate of Survey Work				
ABSTRACT				
Description of Item / measurements	Qty	Rate	Unit	Amount
1	2	3	4	5
Item No. 1 : Provision for working survey including levelling compassing , taking trial pits , preperation of detail hydraulic designs , typing the designs and estimates and preparing the drawings and preparing 6 nos booklets etc complete.				
	Job	2500000.00	Lump sum	2500000.00
		Total Rs.		2,500,000

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Estimate of Intake Well (DIA - 6.0 M)				
ABSTRACT				
Description of Item	Qty	Rate	Unit	Amount
1	2	3	4	5
Item No. 1 :- Excavation in general in soft material comprising of soft soil, soft murum, sand, hard murum with boulders in wet or dry condition for Head Works i.e. Intake Well, Connecting Pipe, Jack Well, Pump House, Supply Well, etc. for lift 0 to 1.5 M and lead of 150 M including baricating, gurading, disposing off surplus excavated stuff within a radius of 0.5 km. as directed by Engineer-in- charge, etc. complete excluding refilling.				
(MJP CSR 23-24, I.No.10 a. P.No.39)				
Lift 0.0 to 1.5 m	176.81	510.00	Cum	90174.00
Item No. 2 :- Excavation in general in hard material comprising of soft rock ,hard rock,manjara rock etc by blasting / controlled blasting chiselling as required in wet or dry condition for Head Works i.e. Intake well, connecting pipe, Jack well, pump house, supply well, etc for lift 0 to 1.5 m and lead of 150 M including barricading gurading, disposing off surplus excavated stuff within a radius of 0.5 km as directed by Engineer in charge				
(MJP.CSR 23-24 , I.No11 a P.No.39)				
Lift 1.50 to 3.00 m	106.34	1149.00	Cum	122182.00
Lift 3.00 to 4.50 m	92.28	1180.00	Cum	108895.00
Lift 4.50 to 6.00 m	86.13	1211.00	Cum	104308.00
Lift 6.0 to 7.50 m	80.19	1242.00	Cum	99602.00
Lift 7.50 to 9.00 m	74.47	1273.00	Cum	94799.00
Lift 9.0 to 10.50 m	18.87	1304.00	Cum	24609.00
Item No. 3 :- Providing and casting in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap / granite / quartzite / gneiss metal for foundation and bedding including dewatering , compacting and curing.etc. complete				
(As Per Rate Analysis)				
PCC for levelling course below slab .				
Lift 5.0 to 10.0 M.Below G.L	6.99	7279.39	Cum	50853.00

LATUR CITY MUNICIPAL CORPORATION

Item No. 4 : - Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal fo RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewartering, form work, compaction, finishing and curing, etc.complete (By weigh batching and mix desing for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding m.S. or Tor reinforcement Reinforced Cement Concrete.				
(As Per Rate Analysis)				
A) Footings M-300				
Lift 5.0 to 10.0 (Below G. L.)	10.90	9564.77	Cum	104223.00
Item No. 5 : Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as directed by Engineer-in-charge inclouding normal dewarterin, centreing, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface whtere necsessary or rougheninig if special fnish is to be proved and curing, etc.complete (By weigh batching and mix desing for M-250 - and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement				
(As Per Rate Analysis)				
A)Vertical staining wall of well(Grade M - 300)				
a) Lift 0.00 to 5.00 Above Below G. L.	53.45	10724.47	Cum	573174.00
b) Lift 5.00 to 10.00 Above Below G. L.	23.75	11741.67	Cum	278907.00
Item No. 6 :- Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as directed by Engineer-in-charge inclouding normal dewarterin, centreing, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface whtere necsessary or rougheninig if special fnish is to be proved and curing, etc.complete (By weigh batching and mix desing for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement				
(As Per Rate Analysis)				
B) Slabs (M-300)				
a) Lift 0.00 to 5.00 Above Below G. L.	10.26	10724.47	Cum	110086.00

LATUR CITY MUNICIPAL CORPORATION

Item No. 7 :- Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes, caps, footing, foundation, slabs, beams, columns, canopies staircases. Newels, chajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and shedules including cutting , bending ,hooking the bars ,binding with wires or tack welding and supporting as required etc complete (including cost of binding wire) Tor steel.				
Lift 0.00 to 5.00				
1.00% of Concrete Qty	5.001	80681.00	MT	403507.00
Lift 5.00 to 10.00				
1.00% of Concrete Qty	1.865	84715.05	MT	157965.00
(MJP.CSR 23-24 , I.No.8 b P.No 50)				
Item No. 8 :- Providing and fixing in position steel fibre reinforced concrete (SFRC) frame and covers of approved make including loading,unloading, transportation, all taxes,etc.complete as directed by Engineer-in-Charge				
Size - 90 x 60 cm.	1.00	3798.00	No	3798.00
(MJP.CSR 23-24 , I.No.17, d P.No 288)				
ITEM No. 9 :- Dewatering the excavated trenches and pools of water in the building trenches/ pipeline trenches, well works by using pumps and other devices including disposing of water of safe distance as directed by Engineer-in-charge (including cost of machinery, etc. complete as directed by Engineer-in-charge.				
Intake well of 6.0 M. dia.	1.00	287016.00	No	287016.00
(MJP.CSR 23-24, I.No. 16, v P.No.293)				
ITEM No.10 :- Providing and fixing in position C.I. Type dapuri steps of 22 mm dia. M.S. bar step with proper anchorage, etc. and providing and applying 3 coats of ant-corrosive paint, etc complete as directed by Engineer-in-charge.				
(MJP.CSR 23-24, I.No. 11 P.No.292)	27.00	464.00	No	12528.00
ITEM No.11 :- Providing and fixing M.S. sluice gates in position as per detailed drawing and specification including cost of all materials, labour, operating pedestal, connecting rod, painting with three coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge.				
(MJP.CSR 23-24, I.No. 12 P.No.292)	2400.00	137.00	Kg	328800.00
ITEM No.12 :- Providing and fixing in position C.I. /M.S. rose pieces in intake wells including cost of all materials and labour, painting with three coats of anti-corrosive oil paint, etc.complete as directed by Engineer-in-charge.				
(MJP.CSR 23-24, I.No. 13 P.No.292)	3600.0	120.00	Kg	432000.00
ITEM No.13:- Preparing designs of well from structural designer and getting it approved from appropriate authority. The drawing sets to be submitted in seven copies by the agency.				

LATUR CITY MUNICIPAL CORPORATION

Job Work	Job		L.S	10000.00
Total of subwork				3397426.00
	Say	Rs.	3,397,500	

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME					
Estimate of Intake Well (DIA - 6.0 M)					
M E A S U R M E N T S					
Description of Item	Nos	Length	Breadh	Depth	Qty
1	2	3	4	5	6
Item No. 1 :- Excavation in general in soft material comprising of soft soil, soft murum, sand, hard murum with boulders etc. complete excluding refilling.					
For Intake Well	R.L.	633.50	to	632.00	
Lift 0 to 1.50 M.	0.7855	$\frac{(14.50+10.00)^2}{2}$		1.50	176.81
					Cum
Item No. 2 :- Excavation in general in hard material comprising of soft rock ,hard rock,etc complete					
	R.L.	632.00	to	630.50	
Lift 1.50 to 3.00 mtr.	0.7855	$\frac{(10.00+9.00)^2}{2}$		1.50	106.34
					Cum
	R.L.	630.50	to	629.00	
Lift 3.0 to 4.50 mtr.	0.7855	$\frac{(9.00+8.70)^2}{2}$		1.50	92.28
					Cum
	R.L.	629.00	to	627.50	
Lift 4.50 to 6.00 mtr.	0.7855	$\frac{(8.70+8.40)^2}{2}$		1.50	86.13
					Cum
	R.L.	627.50	to	626.00	
Lift 6.0 to 7.50 mtr.	0.7855	$\frac{(8.40+8.10)^2}{2}$		1.50	80.19
					Cum
	R.L.	626.00	to	624.50	
Lift 7.50 to 9.00 mtr.	0.7855	$\frac{(8.10+7.80)^2}{2}$		1.50	74.47
					Cum
	R.L.	624.50	to	624.10	
Lift 9.0 to 10.50 mtr.	0.7855	$\frac{(7.80+7.70)^2}{2}$		0.40	18.87
					Cum
Item No. 3 :- Providing and laying in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap / granite.etc. complete					
Lift 5.0 to 10.0 M.Below G.L					
PCC.M - 150.For Intake Well.	0.7855	7.70	7.70	0.15	6.99
			.		Cum
Item No. 4 :- Providing and laying in situ cement concrete of trap and footing and steel stanchions including etc,complete					

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Lift 5.0 to 10.0 (Below G. L.)					
RCC.Raft Footing.M-300.	0.7855	6.80	6.80	0.30	10.90
			.		Cum
Item No. 5 :- Providing and laying in situ cement concrete of trap/granite/ etc, cement is permitted.)					
RCC.Vertical wall.M - 300.					
Lift 0.0 to 5.0 M.					
Below & Above G. L.	3.142	6.30	0.30	9.00	53.45
Lift 5.0 to 10.0 M.					
Below & Above G. L.	3.142	6.30	0.30	4.00	23.75
					Cum
Item No. 6 :- Providing and laying in situ cement concrete of trap/granite, etc, cement is permitted.)					
Lift 0.00 to 5.00 M.					
RCC.Roof Slabs.M-300. (600.40 - 600.60)	0.7855	6.60	6.60	0.30	10.26
					Cum
Item No. 7 :- Providing and fixing in position steel bar reinforcement of various diameters etc complete					
Lift 0.00 to 5.00					
1.0 % of Concrete Qty	63.71	0.01	7850.00	5001.26	Kg
				5.001	MT
Lift 5.00 to 10.00					
1.0 % of Concrete Qty	23.75	0.01	7850.00	1864.65	Kg
				1.865	MT
(As Per Corrigendum No.Lett.No.9/1368.Dt.06.05.22)					
Item No. 8 :- Providing and fixing in position steel fibre reinforced concrete (SFRC) frame and covers o etc. complete					
Size - 90 x 60 cm.	1.00	1.00		1.00	No.
ITEM No. 9 :- Dewatering the excavated trenches and pools of water etc complete					
Intake well of 6.00 M. dia.	1.00	1.00		1.00	No.
ITEM No.10 :- Providing and fixing in position C.I. Dapuri Steps 22mm Dia MS bars etc. complete.					
	1.00	27.00		27.00	Nos.
ITEM No.11 :- Providing and fixing M.S. sluice gates in position as per detailed . complete as directed by Engineer-in-charge.					
M.S.Sluice Gate including M.S.Rod For operatig Gate.	3.00	800.00		2400.00	Kg
ITEM No.12 :- Providing and fixing in position C.I. /M.S. rose pieces in intake directed by Engineer-in-charge.					
	3.00	1200.00		3600.00	Kg

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ITEM No.13:- Preparing designs of well from structural designer and getting it approved from appropriate authority. The drawing sets to be submitted in seven copies by the agency.					
Job Work (2% of total cost)				JOB	L.S.

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Estimate of Inspection Well No. -1 (Dia - 2.0 M)				
ABSTRACT				
Description of Item	Qty	Rate	Unit	Amount
1	2	3	4	5
Item No. 1 :- Excavation in general in soft material comprising of soft soil, soft murum, sand, hard murum with boulders in wet or dry condition for Head Works i.e. Intake Well, Connecting Pipe, Jack Well, Pump House, Supply Well, etc. for lift 0 to 1.5 M and lead of 150 M including baricating, gurading, disposing off surplus excavated stuff within a radius of 0.5 km. as directed by Engineer-in- charge, etc. complete excluding refilling.				
(MJP CSR 23-24, I.No.10 a. P.No.39)				
Lift 0 to 1.5 M.	154.47	510.00	Cum	78781.00
Item No. 2 :- Excavation in general in hard material comprising of soft rock ,hard rock,manjara rock etc by blasting / controlled blasting chiselling as required in wet or dry condition for Head Works i.e. Intake well, connecting pipe, Jack well, pump house, supply well, etc for lift 0 to 1.5 m and lead of 150 M including barricading gurading, disposing off surplus excavated stuff within a radius of 0.5 km as directed by Engineer in charge				
(MJP.CSR 23-24 , I.No11 a P.No.39)				
Lift 1.50 to 3.00 M.	89.18	1149.00	Cum	102470.00
Lift 3.00 to 4.50 M	76.35	1180.00	Cum	90098.00
Lift 4.50 to 6.0 M	58.97	1211.00	Cum	71418.00
Lift 6.00 to 7.50 M.	65.40	1242.00	Cum	81222.00
Lift 7.50 to 9.00 M	60.24	1273.00	Cum	76680.00
Lift 9.00 to 10.50 M	46.07	1304.00	Cum	60078.00
Item No. 3 :- Providing and casting in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap / granite / quartzite / gneiss metal for foundation and bedding including dewatering , compacting and curing.etc. complete				
(As Per Rate Analysis)				
PCC for levelling course below raft slab of Jack well				
(Lift 5.00 to 10.00 Below G. L.)	5.13	7279.39	Cum	37362.00

LATUR CITY MUNICIPAL CORPORATION

Item No. 4 : - Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal fo RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewartering, form work, compaction, finishing and curing, etc.complete (By weigh batching and mix desing for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding m.S. or Tor reinforcement Reinforced Cement Concrete.				
(As Per Rate Analysis)				
A) Footings M-300				
Lift 5.00 to 10.00 M	9.35	9564.77	Cum	89448.00
Item No. 5 : Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as directed by Engineer-in-charge inclouding normal dewarterin, centreing, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface whtere necsessary or rougheninig if special fnish is to be proved and curing, etc.complete (By weigh batching and mix desing for M-250 - and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement				
A)Vertical staining wall of well(Grade M-300)				
a) Lift 0.00 to 5.00 Above Below G. L.				
(As Per Rate Analysis)	22.87	10724.47	Cum	245309.00
Lift 5.00 to 10.00 (Below G. L.)	16.34	11741.67	Cum	191841.00
(As Per Rate Analysis)				
Item No. 6 :- Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as directed by Engineer-in-charge inclouding normal dewarterin, centreing, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface whtere necsessary or rougheninig if special fnish is to be proved and curing, etc.complete (By weigh batching and mix desing for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement				
(As Per Rate Analysis)				
B) Slabs M-300				
a) Lift 0.00 to 5.00				
Asper Rate Analysis	4.58	10724.47	Cum	49130.00

LATUR CITY MUNICIPAL CORPORATION

Item No. 7 :- Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes, caps, footing, foundation, slabs, beams, columns, canopies staircases. Newels, chajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and shedules including cutting , bending ,hooking the bars ,binding with wires or tack welding and supporting as required etc complete (including cost of binding wire) Tor steel.				
Lift 0.00 to 5.00				
1.00% of Concrete Qty	2.155	80681.00	MT	173883.81
b) Lift 5.0 to 10.00				
1.00% of Concrete Qty	2.017	84715.05	MT	170842.93
(MJP.CSR 23-24 , I.No.8 b P.No 50)				
Item No. 8 :- Providing and fixing in position steel fibre reinforced concrete (SFRC) frame and covers of approved make including loading,unloading, transportation, all taxes,etc.complete as directed by Engineer-in-Incharge.				
Size - 90 x 60 cm.	1.00	3798.00	No	3798.00
(MJP.CSR 21-22, I.No.17 P.No 226)				
ITEM No. 9 :- Dewatering the excavated trenches and pools of water in the building trenches/ pipeline trenches, well works by using pumps and other devices including disposing of water of safe distance as directed by Engineer-in-charge (including cost of machinery, labour fuel) etc complete				
Inspection well of 5.0 M. dia.	1.00	152917.50	No	152917.50
(MJP.CSR 23-24, I.No. 16, iii P.No.293)				
ITEM No.10 :- Providing and fixing in position C.I. Type dapuri steps of 22 mm dia. M.S. bar step with proper anchorage, etc. and providing and applying 3 coats of ant-corrosive paint, etc complete as directed by Engineer-in-charge.				
(MJP.CSR 23-24, I.No. 11 P.No.292)	32.00	464.00	No	14848.00
ITEM No.11:- Preparing designs of well from structural designer and getting it approved from appropriate authority. The drawing sets to be submitted in seven copies by the agency.				
Job Work (2% of total cost)	Job		L.S	4600.00
Total of subwork			Rs.	1694727.24
	Say		Rs.	1,694,800

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

**ESTIMATE OF INSPECTION WELL NO (DIA - 5.0 M)
M E A S U R M E N T S**

Description of Item	Nos	Length	Breadh	Depth	Qty
1	2	3	4	5	6
Item No. 1 :- Excavation in general in soft material comprising of soft soil, etc. complete excluding refilling.					
For Inspection Well	R.L.	634.50	to	633.00	
Lift 0 to 1.5 M.	0.7855	$\frac{(13.70+9.20)^2}{2}$		1.50	154.47
(MJP CSR 21 -22, I.No.10 a P.No.44)		2			
Item No. 2 :- Excavation in general in hard material comprising of soft rock ,etc complete					
	R.L.	633.00	to	631.50	
Lift 1.50 to 3.00 M.	0.7855	$\frac{(9.20+8.20)^2}{2}$		1.50	89.18
		2			
	R.L.	631.50	to	630.00	
Lift 3.00 to 4.50 M	0.7855	$\frac{(8.20+7.90)^2}{2}$		1.50	76.35
		2			
	R.L.	630.00	to	628.50	
Lift 4.50 to 6.0 M	0.7855	$\frac{(7.9+7.60)^2}{2}$		1.50	58.97
		2			
	R.L.	628.50	to	627.00	
Lift 6.00 to 7.50 M.	0.7855	$\frac{(7.6+7.3)^2}{2}$		1.50	65.40
		2			
	R.L.	627.00	to	625.50	
Lift 7.50 to 9.00 M	0.7855	$\frac{(7.3+7.0)^2}{2}$		1.50	60.24
		2			
	R.L.	625.50	to	624.25	
Lift 9.00 to 10.50 M	0.7855	$\frac{(7.00+6.70)^2}{2}$		1.25	46.07
		2			
(MJP.CSR 21-22 , I.No11a P.No.44)					
Item No. 3 :- Providing and laying in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap / granite.etc. complete					
Lift 5.0 to 10.0 M.Below G.L.					
PCC.M - 150.For Intake Well.	0.7855	6.60	6.60	0.15	5.13
(As Per Rate Analysis)					Cum
Item No. 4 :- Providing and laying in situ cement concrete of trap and footing of RCC columns etc,complete					
Lift 5.00 to 10.00 (Below G. L.)					
RCC.Raft footing.M-300.	0.7854	6.30	6.30	0.30	9.35
(As Per Rate Analysis)			.		Cum
Item No. 5 :- Providing and laying in situ cement concrete of trap/granite/ etc, cement is permitted.)					
Vertical staining wall of well					
Lift 0.00 to 5.00 (Above /Below G. L.)	3.142	5.20	0.20	7.00	22.87

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Lift 5.00 to 10.00 (Below G. L.)	3.142	5.20	0.20	5.00	16.34
(As Per Rate Analysis)					Cum
Item No. 6 :- Providing and laying in situ cement concrete of trap/granite, etc, cement is permitted.)					
Slabs					
Lift 0.00 to 5.00 Floor slab	0.7855	5.40	5.40	0.20	4.58
(As Per Rate Analysis)					Cum
Item No. 7 :- Providing and fixing in position steel bar reinforcement of various diameters etc complete					
Lift 0.00 to 5.00					
1.0 % of Concrete Qty	27.45	0.01	7850.00	2155.20	Kg
				2.155	MT
Lift 5.00 to 10.00	25.69	0.01	7850.00	2016.68	Kg
				2.017	MT
(As Per Corrigendum No.Lett.No.9/1368.Dt.06.05.22)					
Item No. 8 : - Providing and fixing in position steel fibre reinforced (SFRC) frame and covers o etc. complete					
Size - 90 x 60 cm.	1.00	1.00		1.00	No
(MJP.CSR 21-22, I.No.17 P.No 226)					
ITEM No. 9 :- Dewatering the excavated trenches and pools of water etc complete					
Inspection well of 5.00 M. dia.	1.00	1.00		1.00	No
(MJP.CSR 21-22, I.No. 16 P.No.231)					
ITEM No.10 :- Providing and fixing in position Ci Dapuri steps 22mm etc. complete.					
	1.00	32.00		32.00	No
(MJP.CSR 21-22, I.No. 11 P.No.230)					
ITEM No.11:- Preparing structural designs of well and getting approved from appropriate authority					
Job Work				JOB	L.S.

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Esitmate of Connecting Main 1400 MM RCC NP-III Pipe L - 80 M				
A B S T R A C T				
Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	ITEM NO. 1			
	Excavation in general in soft material comprising of soft soil, soft murum, sand, hard murum with boulders in wet or dry conditions for Head Works, i.e. intake well, Connecting pipe, jack well, Pump House. Supply Well etc. For lift 0 to 1.5 M and lead of 150m including barricating gaurding disposing off surplus excavated stuff within a radius of 0.5 km as directed by ingineer incharge etc complete excluding refilling			
	(MJP CSR 23-24, I.No.10 a. P.No.39)			
	a) For head word on river or dam submergence			
994.50	Lift 0.00 to 1.50 m.	510.00	Cum	507195.00
	ITEM No. 2			
	Excavation in general in hard material comprising of soft rock, Manjara rock, etc. by blasting/controlled blasting, chiseling as required in wet or dry conditions for Head Works, i.e. intake well, Connecting pipe, jack well, Pump House. Supply Well etc. For lift 0 to 1.5 and lead of 150m including barricating gaurding disposing off surplus excavated stuff within a radius of 0.5 km as directed by ingineer incharge etc complete excluding			
	(MJP.CSR 23-24 , I.No11 a P.No.39)			
	a) For head word on river or dam submergence			
664.50	Lift 1.50 to 3.00 m.	1149.00	Cum	763511.00
586.50	Lift 3.0 to 4.5 m.	1180.00	Cum	692070.00
550.50	Lift 4.5 to 6.0 m.	1211.00	Cum	666656.00
321.38	Lift 6.0 to 7.50 m.	1242.00	Cum	399148.00
159.38	Lift 9.0 to 10.50 m.	1301.00	Cum	207347.00
30.37	Lift 10.50 to 12.00 m.	1332.00	Cum	40459.00
	ITEM NO. 3			
	Providing ISI standard R.C.C. pipes in standard lengths of following class and diameter suitable for either collar joints or rubber ring joints, excluding GST lev-ied by GOI & GOM in all respect including inspec- tion charges, transport to departmental stores, unloading and stacking etc. complete as per IS-458/1988. Note :One collar should be supplied with each full length plain ended RCC pipe, cost including in rates below. One rubber ring should be supplied with each full length of socketed pipe, cost included in rates below.			
160.00	1400 mm dia.RCC NP-III Pipe.	11146.00	Rmt	1783360.00
	(MJP.CSR 23-24 , I.No1,e,xix P.No.110)			
	ITEM NO. 4 :-			

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	Lowering, laying and jointing in proper grade and alignment R.C.C. pipes with collar joints in C.M.1:1 proportion or socketed R.C.C. pipes with rubber joints (excluding cost of rubber ring or R.C.C. collar,) including cost of conveyance from stores to site of work, cost of jointing material, labour, etc. complete as directed by Engineer-in-charge (For all class of pipes.) as per IS- 783-1985.			
160.00	1400 mm dia.RCC NP-III pipes (without rubber ring)	883.00	Rmt	141280.00
	(MJP.CSR 2023-24 , P.No. 110 .It.No. 2, xix)			
	ITEM NO. 5 :-			
	Dewatering the excavated trenches and pools of water in the building trenches/ pipeline trenches, well works by using pumps and other devices including disposing of water of safe distance as directed by Engineer-in-charge (including cost of machinery, labour,fuel) etc complete			
80.00	For Connecting Main	5750.00	Rmt	460000.00
	(MJP.CSR 2023-24 , P.No. 293 .It.No. 16, iv)			
	ITEM NO. 6 :-			
	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm. Layers with all leads and lifts including consolidation, surcharging, etc. complete			
3377.63		92.00	Cum	310742.00
	(MJP.CSR 2023-24 , P.No. 40 .It.No. 15)			
	ITEM NO. 7 :-			
	Providing,construction coffer dam in river basin/dam storages as per type design including excavation,filling the middle portion with B.c soil [in gunny bags if required] providing impervious /semipervious materials including remming ,copacting to the satisfaction of Engineer in charge,till the completion of work including dismantling of coffer dam after completion of works and disposing off the material as directed by the engineer			
	Note : Pay line maximum - Top width payable shall be 2 mtr.and maximum payable side slopes shall be 1.5 Horizontal to 1 Vertical, if the constructed top width of the side slopes are less, then the measurments at actual are payable. Extra top width or flatt slopes are not payable. contractor is free to use ballies,plastic sheets,piles,pipes, CGI sheets for supporting hearting material instead of impervious/ semipervious hearting material for whichno extra payments shall be payable 30%payment shall be withheld for dismantelling of			
4432.30	(MJP.CSR 2023-24 , P.No. 290 .It.No. 1)	818.00	Cum	3625621.00
Total of subwork			Rs.	10006964.00
	Say		Rs.	10,007,000

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

Estimate of Connecting Main 1400 MM RCC NP-III. Pipe L - 80 M (TWO ROWS)

MEASUREMENTS

ITEM NO. 1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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							Total Qty.			=	30.37	Cum.		
ITEM NO. 3														
Providing DI K-7 grade pipes with internal cement mortor liningetc comp.														
1)	1400 mm dia.RCC NP-III Class Pipes.						2	x	80	=	160	Rmt		
ITEM NO. 4														
Lowering laying and jointing with SBR rubber gasketetc comp.														
1)	1400 mm dia.RCC NP-III Class Pipes.						2	x	80	=	160	Rmt		
ITEM NO. 5														
Dewatering charges forconnecting main for head works in river basin or dam.														
							1	x	80	=	80	Rmt		
ITEM NO. 6														
Refilling the trenches with excavated stuff withetc complete.														
	Qty to be refilled for excavation.												3629.63	Cum
	Deduct Vol. of pipe.				0.7855	x	1.416	x	1.416	x	160	=	252.00	Cum
	Net. Qty.										Net Qty	=	3377.63	Cum
ITEM NO. 7														
	: - providing,construction coffer dam in river basin/dam storages asper type desing including													
	Assuming water level - For Connecting Main													
(CH 0 STARTS FROM INTAKE WELL)														
	From Ch - 0 to 30 M						2.00		30.00	13.10	+	2.00	4.10	1857.30
												2.00		
	From Ch - 30 to 55 M						2.00		25.00	11.00	+	2.00	3.50	1137.50
												2.00		
	From Ch - 55 to 80 M						2.00		25.00	9.50	+	2.00	3.00	862.50
												2.00		
	FOR CROSSING AT CH.120 M													
	From Ch - 0 to 40 M						1.00		40.00	9.50	+	2.00	2.50	575.00
												2.00		
												Total Qty =	4432.30	

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Estimate of Jack Well & Pump House 15 M Dia RCC				
A B S T R A C T				
Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	ITEM NO. 1			
	Excavation in general in soft material comprising of soft soil, soft murum, sand, hard murum with boulders in wet or dry conditions for Head Works, i.e. intake well, Connecting pipe, jack well, Pump House. Supply Well etc. For lift 0 to 1.5 M and lead of 150m including barricating gaurding disposing off surplus excavated stuff within a radius of 0.5 km as directed by ingineer incharge etc complete excluding refilling			
	(MJP CSR 23-24, I.No.10 a. P.No.39)			
	a) For head word on river or dam submergence			
808.13	Lift 0.00 to 1.50 m.	510.00	Cum	412148.00
	ITEM NO. 2			
	Excavation in general in hard material comprising of soft rock, Manjara rock, etc. by blasting/controlled blasting, chiseling as required in wet or dry conditions for Head Works, i.e. intake well, Connecting pipe, jack well, Pump House. Supply Well etc. For lift 0 to 1.5 and lead of 150m including barricating gaurding disposing off surplus excavated stuff within a radius of 0.5 km as directed by ingineer incharge etc complete excluding refilling			
	(MJP.CSR 23-24 , I.No11 a P.No.39)			
	a) For head word on river or dam submergence			
656.10	Lift 1.50 to 3.00 m.	1149.00	Cum	753862.00
541.77	Lift 3.0 to 4.50 m.	1180.00	Cum	639289.00
526.72	Lift 4.50 to 6.00 m.	1211.00	Cum	637861.00
511.89	Lift 6.0 to 7.50 m.	1242.00	Cum	635762.00
497.26	Lift 7.5 to 9 m.	1273.00	Cum	633013.00
482.85	Lift 9.0 to 10.5 m.	1304.00	Cum	629635.00
468.65	Lift 10.5 to 12 m.	1335.00	Cum	625645.00
454.66	Lift 12 to 13.5 m.	1366.00	Cum	621065.00
440.88	Lift 13.50 to 15.0 m.	1397.00	Cum	615913.00
427.32	Lift 15.0 to 16.50 m.	1428.00	Cum	610210.00
413.96	Lift 16.50 to 18.0 m.	1459.00	Cum	603975.00
400.82	Lift 18.0 to 19.50 m.	1490.00	Cum	597228.00
387.89	Lift 19.50 to 21.0 m.	1521.00	Cum	589988.00
63.59	Lift 21.0 to 22.50 m.	1552.00	Cum	98684.00
	ITEM NO. 3 :-			
	Providing and laying in situ cement concrete M-15 / 1:2:4 of trap/ granite/ quartzite/ gneiss metal for foundation and bedding including dewatering, form work, compacting roughening if special finishis to be provided, finishing if required etc. complete.			
	Lift 0.0 to 5.0 M			
	individual footing of pump house			
8.10	1:2:4 (M – 150) grade for Jack well	6691.29	Cum	54199.00
	Lift 20 to 25.0 M			
38.18	1:2:4 (M – 150) grade for Jack well	9043.69	Cum	345246.00
	(As Per Rate Analysis)			
	ITEM NO. 4			
	Providing and laying in situ of C.C. of trap/ granite / quartzite/ gneiss metal for RCC works in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering , centering, form work, compaction, finishing and curing,etc. complete. (By weight batching mix design for M – 250 & M-300 only. Use of L&t , ACC, Ambuja,Birla Gold,Manikgad, Rajashree,etc.cement is permitted. Excluding M.S. or Tor reinforcement.)			
	Lift 0 to 5			
	a) For RCC M – 300 grade			
21.20	Footing for Column of Pump House.	8745.47	Cum	185360.00
	(As Per Rate Analysis)			

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	Lift 20 to 15			
	a)For RCC M – 300 grade			
263.01	1) Bottom Slab of Jack well	12022.67	Cum	3162057.00
	(As Per Rate Analysis)			
	ITEM NO. 5			
	Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surface with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M – 250 and M –300 only. Use of L & T. A.C.C. Ambuja, Birla Gold, Manikgad, Rajshree etc Cement is permitted. Excluding M.S. or Tor reinforcement.)			
	(As Per Rate Analysis)			
	Lift 0 to 5 M For RCC M – 300			
316.62	Slabs/ Landings/ Vertical walls/ .	10724.47	Cum	3395557.00
	Lift 5 to 10 M For RCC M – 300			
121.75	Slabs/ Landings/ Vertical walls/ Waist slabs	11741.67	Cum	1429578.00
	Lift 5 to 10 M For RCC M – 250			
31.55	Slabs/ Landings/ Vertical walls/ Waist slabs	11453.47	Cum	361351.00
	Lift 10 to 15 M For RCC M – 300			
121.75	Slabs/ Landings/ Vertical walls/ .	12758.87	Cum	1553424.00
	Lift 15 to 20 M For RCC M – 300			
121.75	Slabs/ Landings/ Vertical walls/ Waist slabs	13776.07	Cum	1677271.00
	Lift 15 to 20 M For RCC M – 250			
59.04	Slabs/ Landings/ Vertical walls	13435.47	Cum	793254.00
	Lift 20 to 25 M For RCC M – 300			
1.22	Slabs/ Landings/ Vertical walls/ Waist slabs	14793.27	Cum	18011.00
	ITEM NO. 6			
	Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surface with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M – 250 and M –300 only. Use of L & T. A.C.C. Ambuja, Birla Gold, Manikgad, Rajshree etc Cement is permitted. Excluding M.S. or Tor reinforcement.)			
	(As Per Rate Analysis)			
	For Beams & Lintels			
	Lift 0 to 5.M For RCC M – 300			
86.04	Floor Beam of Jack well	10038.47	Cum	863758.00
	Lift 5 to 10M For RCC M – 250			
11.12	Lintel Beam for Pump House	10716.47	Cum	119217.00
	Lift 10 to 15 M (Above & Below G.L.) M-250			
17.11	For Beams & Lintels with	11640.47	Cum	199121.00
	Lift 15 to 20 M (Above & Below G.L.) M-250			
11.69	For Beams & Lintels with	12564.47	Cum	146884.00
	ITEM NO.7			
	Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surface with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M – 250 and M –300 only. Use of L & T. A.C.C. Ambuja, Birla Gold, Manikgad, Rajshree etc Cement is permitted. Excluding M.S. or Tor reinforcement.)			
	(As Per Rate Analysis)			
	All type of columns			
	Lift 0 to 5 M For RCC. M – 300			
9.08	All types of Columns	10203.47	Cum	92597.00
	Lift 5 to 10 M (Above & Below G.L.) M – 300			
3.00	All types of Columns	11168.57	Cum	33506.00

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	Lift 10 to 15 M For RCC M – 300			
3.00	All types of Columns	12133.67	Cum	36401.00
	Lift 15 to 20 M (Above & Below G.L.) M – 300			
3.00	All types of Columns	13098.77	Cum	39296.00
	Lift 20 to 25 M (Above & Below G.L.) M – 300			
0.03	All types of Columns	14063.87	Cum	422.00
	All type of columns			
	Lift 0 to 5 M For RCC M – 250			
1.28	All types of Columns	9956.47	Cum	12695.00
	Lift 5 to 10 M (Above & Below G.L.) M-250			
13.70	All types of Columns	10896.87	Cum	149233.00
	Lift 10 to 15 M For RCC M – 250			
12.75	All types of Columns	11837.27	Cum	150925.00
	Lift 15 to 20 M (Above & Below G.L.) M-250			
1.28	All types of Columns	12777.67	Cum	16292.00
	ITEM No.8 :-			
	Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes , caps, footings foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings fins, arches, etc as per detailed designs, drawings, and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc complete. (including cost of binding wire.)			
	(MJP.CSR 23-24 , I.No.8 b P.No 50)			
	Lift 0 to 5 M			
34.09	b) Tor Steel.	80681.00	M.T.	2750035.00
	Lift 5 to 10 M			
14.22	b) Tor Steel.	84715.05	M.T.	1204483.00
	Lift 10 to 15 M			
12.14	b) Tor Steel.	88749.10	M.T.	1077127.00
	Lift 15 to 20 M			
15.45	b) Tor Steel.	92783.15	M.T.	1433095.00
	Lift 20 to 25 M			
20.74	b) Tor Steel.	96817.20	M.T.	2008380.00
	ITEM No.9 :-			
	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm. Layers with all leads and lifts including consolidation, surcharging, etc. complete			
4577.61	(MJP.CSR 2023-24 , P.No. 40 .It.No. 15)	92.00	Cum	421140.00
	ITEM No. 10:-			
	Dewatering the excavated trenches and pools of water in the building trenches/ pipeline trenches, well works by using pumps and other devices including disposing of water of safe distance as directed by Engineer-in-charge (including cost of machinery, labour,fuel) etc complete			
1	Jack well of 15.0 M. dia.	717540.00	No	717540.00
	(MJP.CSR 2023-24 , P.No. 293 .It.No. 16, v)			
	ITEM No. 11 :-			
	Providing IInd class B.B masonry with conventional / Indian standerd type bricks in CM 1:6 in Superstructure including striking joints , raking out joints, watering,and scaffolding etc. complete.			
	(As Per Rate Analysis)			
21.60	lift 0.00 to 3.80.M. Above Floor Slab	8423.53	Cum	181915.00
31.39	lift 3.80 to 7.60.M	8503.47	Cum	266959.00
20.44	Lift 7.60 to 11.40.M	8583.41	Cum	175442.00
	ITEM No. 12 :-			

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	Providing and fixing rolling shutter fabricated from steel laths of minimum thickness 0.9 mm with lock plate of 3.15 mm thickness reinforced with 35 x 35 x 5 mm angle section fitted with sliding bolts and handles for both sides, deep M.S. channel section of depth and thickness not less than 65 mm and 3.15 mm respectively with hold fast arrangements, M.S. Bracket plate 300 x 300 x 3.15 mm minimum size & shape with square bar, suspension shaft of minimum 32 mm diameter, hood cover of M.S. sheet not less than 0.9 mm thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etc. complete. (I.S. 6248-1979) (With mechanical gear)			
	(PWD SSR 2021-22 P.No.308 It. No.39.25)			
12.00	1) Rolling steel shutter.	5308.00	sqm.	63696.00
	ITEM No. 13 :-			
	Providing and fixing steel window of various sizes as per detailed drawing without hot dip zinc coating, without ventilators, including fabricating / glazing with plain / obscured glass panels of approved type and quality, iron oxidised fixtures and fastenings, oil painting two coats complete.			
30.60	a) for Steel windows	4607.00	sqm.	140974.00
	(PWD SSR 2022-23 P.No.306 It. No.39.19)			
	ITEM No. 14:-			
	Providing & fixing steel Ventilator fully glazed partly top hung and partly fixed as per detailed drawing without hot dip zinc coating includign glazing with plain obscured glass panel and of approved type and quality and fixtures and fastening without te			
15.30	1) Steel Ventilators	3375.00	sqm.	51638.00
	(PWD SSR 2022 -23 P.No.308 It. No.39.29)			
	ITEM No. 15 :-			
	Providing and fixing in position M.S. Ladder 0.5 M wide consisting of 75 x 10 mm M.S. flats as stringers and 16 mm dia M.S. bars in double rows as steps paced at 25 cm c/c including cost of material and labour involved welding, anchoring and applying 3 oats of anticorrosive paint, etc. complete as directed by Engineer-in- charge.			
49.50	(MJP.CSR 2023-24 P.No. 281 Item No. 5)	1493.00	Rm.	73904.00
	ITEM No. 16 :-			
	Providing and fixing in position copper lightening conductor including copper rod of 20 mm dia as per upper terminal 1.5 M.long with a knob at end with conical spike at top, Copper tape conductor 20 x 3 mm size, copper earth plate of 3 mm thick and necessary excavation, laying and fixing the conductor, providing and fixing 40 mm G.I. pipe upto 3 M. height from ground and 0.5 M below ground including making all connections, filling the earthing pit with charcoal,salt,etc.and refilling and watering etc.			
	(MJP.CSR 2023-24 P.No. 280 Item No. 1, i)			
1.00	1) For tape of 10 M length	14897.00	No	14897.00
15.00	Rebate/ extra rate per metre length or part thereof over and above initial length of 10 M.	394.00	Mtr.	5910.00
	ITEM No. 17 :-			
	Providing internal cement plaster 20 mm thick in two coats in cement mortar 1:3 without neeru finish to cocrete, brick surfaces in all positions including scaffolding and curing , etc. complete			
1614.00	a) 20 mm thick cement plaster (1:3)	415.56	Sq.M.	670709.00
	(As Per Rate Analysis)			
	ITEM No. 18 :-			
	Providing sand faced plaster externally in cement mortor using kharsalia / kasaba or similar type of sand in all positions including base coat of 15 mm thick in cement mortor 1:4 using waterproofing compound at 1 Kg per cement bag. Curing the same for no			
924.97	(As Per Rate Analysis)	683.30	Sq.M	632029.00
	ITEM No.19 :-			
	Providing and applying two coats of Exterior acraylic emulsion paint conforming to corresponding I.S.of approved manufacture and of approved colour to the plastered surfaces including cleaning,prepaireing the plaster surface,applying primer coat ,scaffolding if necessecary,and watering the surface for two days etc complete.			

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924.97	(PWD SSR 2021-22 P.No.226,It. No. 35.25)	261.00	sqm.	241418.00
	ITEM NO.20			
	Providing & applying washable oil-bound distemper of approved colour and shade to old & new surfaces in two coats including scaffolding, preparing the surfaces. (excluding the primer coat.) etc. complete.			
1614.00	(PWD SSR 2022-23 P.No. 280 It. No. 36.11)	48.00	sqm.	77472.00
	ITEM NO.21			
	Providing and applying white wash in two coat for wall surface to receive oil bound distemper treatment etc. complete.			
2538.97	(PWD SSR 2022-23 P.No. 279 Item No. 36.03)	12.00	sqm.	30468.00
	ITEM NO.22			
	Providing and fixing in position C.I. / M.S. rose piece in intake wells including cost of all materials and labour, painting with three coats of anti corrosive oil paint,etc, complete as directed by Engineer in charge.			
4800.00	(MJP.CSR 2023-24, I.No. 13 P.No.292)	120.00	Kg.	576000.00
	ITEM NO.23			
	Providing and fixing G.I. Pipe railing having 1.00 M height consisting 50x50x6 mm thick M.S. angle as verticals at 1.5 M c/c and additional posts at every corner with 3 rows of 25 mm dia G.I. pipes of medium class variety as horizontal and paint in 3 coats			
65.00	(MJP.CSR 2023-24, I.No. 1, A P.No.56)	1191.00	Rmt.	77415.00
	ITEM NO.24			
	Providing and fixing MS Sluice Gate in position as per detailed drawing and specification including cost of all materials, labour, operating pedestal, connecting rod, painting with three coats of anti-corrosive paint etc. complete as directed by Engineer-i			
3200.00	(MJP.CSR 23-24, I.No. 12 P.No.292)	137.00	Kg.	438400.00
	ITEM NO. 25 :-			
	Providing,construction coffer dam in river basin/dam storages as per type design including excavation,filling the middle portion with B.c soil [in gunny bags if required] providing impervious /semipervious materials including ramming ,compacting to the satisfaction of Engineer in charge,till the completion of work including dismantling of coffer dam after completion of works and disposing off the material as directed by the engineer in charge.			
	Note : Pay line maximum - Top width payable shall be 2 mtr.and maximum payable side slopes shall be 1.5 Horizontal to 1 Vertical, if the constructed top width of the side slopes are less, then the measurements at actual are payable. Extra top width or flat slopes are not payable. contractor is free to use ballies,plastic sheets,piles,pipes, CGI sheets for supporting heaving material instead of impervious/ semipervious heaving material for which no extra payments shall be payable 30%payment shall be withheld for dismantling of coffer dam			
327.50	(MJP.CSR 2023-24 , P.No. 290 .It.No. 1)	181.00	Cum	59278.00
	Total of subwork		Rs.	36930257.00
	Say Rs			36,930,300

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME													
Estimate of Jack Well & Pump House 15 M Dia RCC													
M E A S U R M E N T S													
ITEM NO. 1													
Excavation in general in soft materialetc complete.													
Lift 0 to 1.50 M.			R.L.		640.00	to		638.50					
	0.785	x	(	27.10	+	22.60	)^2	x	1.50	=	727.13	Cum.	4.50
					2								
Excavation individual footing of pump house													
	6	x		3	x	3	x	1.5	=	81	Cum.		
								Total Qty	=	808.13	Cum.		
ITEM NO. 2													
Excavation in general in hard materialetc complete.													
Lift 1.5 to 3.00 M.			R.L.		638.50	to		637.00					
	0.785	x	(	22.60	+	21.60	)^2	x	1.50	=	575.10	Cum.	1
					2								
Excavation individual footing of pump house													
	6	x		3	x	3	x	1.5	=	81	Cum.		
								Total Qty	=	656.10	Cum.		
			R.L.		637.00	to		635.50					
Lift 3.0 to 4.50 M.													
	0.785	x	(	21.60	+	21.30	)^2	x	1.50	=	541.77	Cum.	2
					2								
Lift 4.5 to 6.0 M.			R.L.		635.50	to		634.00					
	0.785	x	(	21.30	+	21.00	)^2	x	1.50	=	526.72	Cum.	2
					2								
Lift 6.0 to 7.50 M.			R.L.		634.00	to		632.50					
	0.785	x	(	21.00	+	20.70	)^2	x	1.50	=	511.89	Cum.	1.5
					2								
Lift 7.5 to 9 M.			R.L.		632.50	to		631.00					
	0.785	x	(	20.70	+	20.40	)^2	x	1.50	=	497.26	Cum.	
					2								
Lift 9 to 10.5 M.			R.L.		631.00	to		629.50					
	0.785	x	(	20.40	+	20.10	)^2	x	1.50	=	482.85	Cum.	
					2								
Lift 10.5 to 12 M.			R.L.		629.50	to		628.00					
	0.785	x	(	20.10	+	19.80	)^2	x	1.50	=	468.65	Cum.	
					2								
Lift 12 to 13.50 M.			R.L.		628.00	to		626.50					
	0.785	x	(	19.80	+	19.50	)^2	x	1.50	=	454.66	Cum.	
					2								
Lift 13.50 to 15.00 M.			R.L.		626.50	to		625.00					
	0.785	x	(	19.50	+	19.20	)^2	x	1.50	=	440.88	Cum.	
					2								
Lift 15.00 to 16.50 M.			R.L.		625.00	to		623.50					
	0.785	x	(	19.20	+	18.90	)^2	x	1.50	=	427.32	Cum.	
					2								
Lift 16.50 to 18.00 M.			R.L.		623.50	to		622.00					
	0.785	x	(	18.90	+	18.60	)^2	x	1.50	=	413.96	Cum.	
					2								
Lift 18.00 to 19.50 M.			R.L.		622.00	to		620.50					

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	0.785	x	(	18.60	+	18.30	)^2	x	1.50		=	400.82	Cum.	
					2									
Lift 19.50 to 21.00 M.				R.L.	620.50	to	619.00							
	0.785	x	(	18.30	+	18.00	)^2	x	1.50		=	387.89	Cum.	
					2									
Lift 21.00 to 22.50 M.				R.L.	619.00	to	618.75							
	0.785	x	(	18.00	+	18.00	)^2	x	0.25		=	63.59	Cum.	
					2									
												9121.84		

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME							
Estimate of Jack Well & Pump House 15 M Dia RCC							
M E A S U R M E N T S							
Sr.No	Description of Item.	No.	L	W	D	Qty	Unit
1	2	3	4	5	6	7	8
	ITEM NO. 3 :-						
	Providing and laying in situ of following grades of C.C. etc. complete.						
	1:2:4 (M – 150) grade (with 12 to 20 mm metal)						
	Lift 0.0 to 5.0 M	R.L.	637.15	to	637.00		
	individual footing of pump house	6.0000	3.00	3.00	0.15	8.10	Cum.
	Lift 20.0 to 25.0 M	R.L.	618.75	to	618.95		
	For J/W,	0.7855	18.00	18.00	0.15	38.18	Cum.
	ITEM NO. 4						
	Providing and laying in situ of C.C. ,etc. complete.						
	a) For RCC Footing M –300 grade						
	Lift 0.0 to 5.0 M						
	Footing for Column of Pump House.	6	3.00	3.00	0.20	10.80	Cum.
		6	1.75	1.65	0.60	10.40	Cum.
					Total =	21.20	Cum.
	Lift 20.0 to 25.0 M	R.L.	618.95	to	619.95		
	Bottom slab of Jack well	0.7855	17.80	17.80	1.00	248.88	Cum.
	Footing for Column of Pump House.	4	3.00	3.00	0.20	7.20	Cum.
		4	1.75	1.65	0.60	6.93	Cum.
					Total =	263.01	Cum.
	ITEM NO. 5						
	Providing and laying in situ Cement Concrete etc. complete.						
	Lift 0 to 5 M (Above & Below G.L.)						
	a) For RCC M –300 grade						
	Slabs/ Landings/ Vertical walls/						
	vertical wall below G.L.	R.L.	635.00	to	640.00		
		3.142	15.50	0.50	5.00	121.75	Cum
	vertical wall above G.L.	R.L.	640.00	to	644.50		
		3.142	15.50	0.50	4.50	109.58	Cum
	landing	3.00	1.00	1.00	0.10	0.30	Cum
	C) Slabs/ Landings/ Vertical walls						
	Floor slab.	R.L.	644.30	to	644.50		
		0.7855	16.00	16.00	0.40	80.44	Cum
	Floor gallery.	3.142	16.10	1.20	0.15	4.55	Cum
					Total	316.62	Cum
	Lift 5 to 10 M (Above & Below G.L.)						
	a) For RCC M –300 grade						
	vertical wall Below G.L.	R.L.	630.00	to	635.00		
		3.142	15.50	0.50	5.00	121.75	Cum
	b) For RCC M –250 grade						Cum
	chajja on door.	1.00	3.00	1.20	0.15	0.54	Cum
	chajja on window.	17.00	2.10	0.45	0.12	1.93	Cum
	Middle floor Slab	1.00	7.615	25.46	0.15	29.08	Cum
					Total	31.55	Cum
	Lift 10 to 15 M (Below G.L.)						
	a) For RCC M –300 grade	R.L.	625.00	to	630.00		
	vertical wall below G.L.	3.142	15.50	0.50	5.00	121.75	Cum
	Lift 15 to 20 M (Above & Below G.L.)						
	a) For RCC M –300 grade	R.L.	620.00	to	625.00		
	vertical wall below G.L.	3.142	15.50	0.50	5.00	121.75	Cum
	b) For RCC M –250 grade						
	Roof slab	R.L.	603.05	to	603.20		

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Jack well	1.00	15.46	25.46	0.15	59.04	Cum
				Total	59.04	Cum
Lift 20 to 25 M (Below G.L.)						
a) For RCC M –300 grade	R.L.	619.95	to	620.00		
vertical wall below G.L.	3.142	15.50	0.50	0.05	1.22	Cum
ITEM NO.6						
Providing and laying in situ Cement Concrete etc. complete.						
a) For RCC M –300 grade						
For Beams & Lintels						
Lift 0 to 5.M (Above G.L.)	R.L.	643.30	to	644.50		
Floor Beam of Jack well	4	16.00	0.40	1.20	30.72	Cum
Floor Beam for Pump House	3	25.46	0.40	0.90	27.50	Cum
	5	15.46	0.40	0.90	27.83	Cum
				Total	86.04	Cum
Lift 5 to10 M (Above G.L.)						
b) For RCC M –250 grade	R.L.	646.60	to	647.00		
Lintel Beam for Pump House	2	25.23	0.23	0.40	4.64	Cum
	2	15.23	0.23	0.40	2.80	Cum
1.st.floor Beam for Pump House	4	7.50	0.23	0.40	2.76	Cum
	2	5.00	0.23	0.40	0.92	Cum
				Total	11.12	Cum
Lift 10 to 15 M (Above G.L.)						
a) Beam @ Gantry level.RCC M –250 grade	R.L.	652.50	to	653.00		
Gantry Beam	2	25.23	0.73	0.30	11.05	Cum
Corbel Beam	2	25.23	0.30	0.40	6.06	Cum
				Total	17.11	Cum
Lift 15 to 20 M (Above G.L.)						
b) Roof level beam.RCC M –250 grade	R.L.	655.10	to	655.50		
Pump House	2	25.46	0.23	0.40	4.68	Cum
	5	15.23	0.23	0.40	7.01	Cum
				Total	11.69	Cum
ITEM NO.7						
Providing and laying in situ Cement Concrete etc. complete.						
a) Columns (RCC M – 300)						
Lift 0 to 5.0 M (Below & Above G.L.)	R.L.	635.00	to	640.00		
A) Column of Pump House	4	0.30	0.50	5.00	3.00	Cum
	6	0.30	0.75	4.50	6.08	Cum
				Total	9.08	Cum
Lift 5.0 to 10.0 M (Below G.L.)	R.L.	630.00	to	635.00		
A) Column of Pump House	4	0.30	0.50	5.00	3.00	Cum
Lift 10.0 to 15.0 M (Below G.L.)	R.L.	625.00	to	630.00		
A) Column of Pump House	4	0.30	0.50	5.00	3.00	Cum
Lift 15.0 to 20.0 M (Below G.L.)	R.L.	620.00	to	625.00		
A) Column of Pump House	4	0.30	0.50	5.00	3.00	Cum
Lift 20.0 to 25.0 M (Below G.L.)	R.L.	619.95	to	620.00		
A) Column of Pump House	4	0.30	0.50	0.05	0.03	Cum
b) Columns (RCC M – 250)						
Lift 0 to 5.0 M (Above G.L.)	R.L.	644.50	to	645.00		
A) Column of Pump House	5	0.30	0.50	0.50	0.38	Cum
	8	0.30	0.75	0.50	0.90	Cum
				Total	1.28	Cum
Lift 5.0 to 10.0 M (Above G.L.)	R.L.	645.00	to	650.00		
A) Column of Pump House	5	0.30	0.50	5.00	3.75	Cum
	8	0.30	0.75	5.00	9.00	Cum
B) Column of Pump House of Middle Floor	3	0.30	0.50	2.10	0.95	Cum
				Total	13.70	Cum
Lift 10.0 to 15.0 M (Above G.L.)	R.L.	650.00	to	655.00		
A) Column of Pump House	5	0.30	0.50	5.00	3.75	Cum
	8	0.30	0.75	5.00	9.00	Cum

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					Total	12.75	Cum
	Lift 15.0 to 20.0 M (Above G.L.)	R.L.	655.00	to	655.50		
	A) Column of Pump House	5	0.30	0.50	0.50	0.38	Cum
		8	0.30	0.75	0.50	0.90	Cum
					Total	1.28	Cum
	ITEM No. 8 :-						
	Providing and fixing in position steel bar reinforcement						
	Lift 0 to 5 M	1	434.21	0.01	7850	34.09	M.T.
	Lift 5 to 10 M	1	181.12	0.01	7850	14.22	M.T.
	Lift 10 to 15 M	1	154.61	0.01	7850	12.14	M.T.
	Lift 15 to 20 M	1	196.76	0.01	7850	15.45	M.T.
	Lift 20 to 25 M	1	264.26	0.01	7850	20.74	M.T.
	ITEM No. 9 :-						
	Refilling the trenches with available excavated stuff						
	Total Excavation up to GL.					9121.8	
	Deduct volume of steining	0.7855	(16.0)^2	21.25	4273.12		
	P.C.C.				8.10		Cum.
	Beam				263.01		Cum.
				Total.	4544.23		
		9121.84	-	4544.23		4577.61	Cum.
	ITEM No.10 :-						
	ITEM No. 9 :- Dewatering the excavated trenches and pools of water etc complete						
	Inspection well of 15.M. dia.	1.00	1.00	1.00		1.00	No
	ITEM No.11 :-						
	Providing IInd class B.B masonry						
	a) In Cement Mortar (1:6)						
	Lift 0.00 to 3.80.M	R.L.	644.50	to	648.30		
	For Pump House	2	25.46	0.23	3.80	22.25	Cum.
		2	10.46	0.23	3.80	9.14	Cum.
	Deduction.						
	Rolling shutter.	1	3.00	4.00	0.23	2.76	Cum.
	Windows.	17	1.50	1.20	0.23	7.04	Cum.
					Total =	21.60	Cum.
	Lift 3.80 to 7.60.M	R.L.	648.30	to	652.10		
	For Pump House	2	25.46	0.23	3.80	22.25	Cum.
		2	10.46	0.23	3.80	9.14	Cum.
					Total =	31.39	Cum.
	Lift 7.60 to 11.40.M	R.L.	652.10	to	655.00		
	For Pump House	2	25.46	0.23	2.90	16.98	Cum.
		2	10.46	0.23	2.90	6.98	Cum.
					Total =	23.96	Cum.
	Deduction.						
	Ventilators.	17	1.50	0.60	0.23	3.52	Cum.
					Total.	3.52	Cum.
					Total =	20.44	Cum.
	ITEM No. 12:-						
	Providing and fixing rolling steel shutter						
	1) Rolling steel shutter.	1	3.00	4.00		12.00	sqm.
	ITEM No. 13:-						
	Providing & fixing steel window						
	a) for Steel windows	17	1.50	1.20		30.60	sqm.
	ITEM No.14 :-						
	Providing & fixing steel Ventilator						
	1) Steel Ventilators	17	1.50	0.60		15.30	sqm.
	ITEM No. 15:-						
	Providing and fixing M.S. Ladderetc complete.						
	Inside the steining of well	9	5.50			49.50	Rm.
	ITEM No. 16:-						
	Providing and fixing in position copper lightening conductor						

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1) for tape of 10 M length	1	1.00			1.00	No
Extra rate per meter length for 7.00 M beyond 10 M.	1	15.00			15.00	Rmt
ITEM No. 17:-						
Providing cement plaster Inside						
a) 20 mm thick cement plaster in two coats in cement Mortar (1:3)						
Inside the Pump house.	1	2	25.00	10.80	540.00	Sq.M.
	1	2	15.00	10.80	324.00	Sq.M.
Celing of J/W	1	2	15.00	25.00	750.00	Sq.M.
				Total =	1614.00	Sq.M.
ITEM No. 18:-						
Providing sand faced plaster externally in two coats.						
1) In C.M. 1:4 prop.	1	2	25.46	11.30	575.40	Sq.M.
	1	2	15.46	11.30	349.40	Sq.M.
Column offset outside	1	12.00	0.44	11.00	58.08	Sq.M.
				Total =	982.87	Sq.M.
Deduction.						
Shutter	1	3.00	4.00		12.00	Sq.M.
Windows.	17	1.50	1.20		30.60	Sq.M.
Ventilators.	17	1.50	0.60		15.30	Sq.M.
				Total =	57.90	Sq.M.
				Total =	924.97	Sq.M.
ITEM No. 19:-						
Providing and applying two coats of appex Ap pex Ace white exterior paint of approved etc complete.						
1) for two coats.						
Total quantity of plaster.	1	924.97			924.97	Sq. M.
ITEM No. 20-						
Providing and applying oil bound distemper paint external face						
	1	1614.00			1614.00	Sq. M.
ITEM No.21 :-						
Providing and applying primer coat for wall surface to receive oil bound distemper treatment etc.complete.						
	1	2538.97			2538.97	Sq. M.
ITEM No. 22 :-						
Providing and fixing in position CI / MS Rose pieceetc comp.						
	4	1200			4800.00	Kgs.
ITEM No.23 :-						
Providing and fixing GI pipe railing having 1.00 M height ... etc comp.						
Jackwell	2	25			50.00	Rmt.
	1	15			15.00	Rmt.
				Total =	65.00	Rmt.
ITEM No.24 :-						
Providing and fixing MS Sluice Gate etc. complete	4	800			3200.00	Kg.
ITEM NO. 25 :-						
providing,construction coffer dam in river basin/dam storages asper type desing including						
Assuming water level - For Jack Well						
From Ch - 0 to 30 M						
	2.00	50.00	4.55	+	2.00	1.00
			2.00			327.50

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
R.C.C. Approach Bridge & Earthen Approach Bund				
ABSTRACT				
Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	EARTHEN APPROACH BUND (60 m Length)			
	Item No.01:- Providing earth work in embankment with approved materials obtained from departmental land or other sources upto lead of 50m. including all lifts, laying in layers of 20cm. to 30cm. thickness breaking clods, dressing to the required lines, curves, grades & section, watering and compaction with Power roller to achieve not less than 97 % of standard proctor density etc.. complete.			
3150.00	(PWD. SSR 2022-23.Page No.28 , I.No.2.28)	757.00	cum	2384550.00
	Item No.02:- Providing dry rubble stone pitching 23 cm (About 9``)thick including packing with quarry spalls and hard murum etc. complete as directed by Engineer -In -Charge			
425.04	(As Per Rate Analysis)	915.27	cum	389025.55
Total of subwork			Rs.	2773576.00
	Say		Rs.	2,773,600

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME						
Approach Bund , Length 60.00 M , 4.0 m wide						
MEASUREMENT						
Description of Item.	No.	L	W	D	Qty	Unit
1	2	3	4	5	6	7
EARTHEN APPROACH BUND						
Item No.01:- Providing and filling murum embankment for approach from GL to approach bridge... etc complete						
	70	20.00	10.00	(4+2)/2	3150.00	
		2.00				Cum
				Say	3150.00	Cum
Item No.02:- Providing dry stone pitching.etc com.	2	70.00	10.12	0.30	425.04	Cum
				Say	425.04	Cum

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

Estimate of Meter Room at WTP

A B S T R A C T

Description of Item	Qty	Rate	Unit	Amount
1	2	3	4	5
ITEM NO. 1				
Excavation for foundation/pipe trenches in earth, soils of all types of sand gravel & soft murum incl. Removing the excavated material upto a distance of 50 M. & lift as below.stacking and spreading as directed, Normal dewatering, preparing the bed for fo				
Lift 0 to 1.5 M.	14.112	165.00	Cum.	2328.00
MJP CSR 2023 - 24 Page No. 37 I.No.1				
ITEM NO. 2				
Excavation for foundation/ pipe trenches in hard murum & boulders. W.B.M. road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering				
Lift 0 to 1.5 M.	12.35	11.00	Cum.	136.00
MJP CSR 2023 - 24 Page No. 37 I.No.3				
ITEM No.3				
Excavation for foundation/ pipe trenches in soft rock & old cement and lime masonry foundation asphalt road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking as directed by Engineer-in-charge,				
Lift 0 to 1.5 M.	8.82	629.00	Cum.	5548.00
MJP CSR 2023 - 24 Page No. 37 I.No.5				
ITEM No.4				
Providing & laying in situ following grades of C.C. of trap/ granite / quartzite /gneiss metal for foundation and bedding including dewatering, form work, compacting and curing, finishing etc. Complete.(Bd-E- 1/287)				
c) 1:2:4 (M -150) grade (with 12 to 20 mm metal)	2.65	6691.29	Cum	17705.00
(As Per Rate Analysis)				
ITEM No.5				
Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction,				
Lift 0 to 5 M For RCC M – 250				
RCC Column footing	5.78	8479.47	Cum	48977.00
(As Per Rate Analysis)				
ITEM No.6				

LATUR CITY MUNICIPAL CORPORATION

Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction,				
Lift 0 to 5 M For RCC M – 250				
RCC Beams/Braces/Lintel	3.31	9792.47	Cum	32433.00
(As Per Rate Analysis)				
ITEM No.7				
Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction,				
Lift 0 to 5 M				
RCC ColumnsM-250	3.30	9956.47	Cum	32856.00
(As Per Rate Analysis)				
ITEM No.8				
Providing and laying in situ Cement Concrete of trap/ granite/ quartzite/ gneiss metal of approved quality for RCC works as per detailed drawing and design or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction,				
Lift 0 to 5 M M-250				
RCC Slab/Landing/Vertical Wall	3.58	10462.47	Cum	37435.00
(As Per Rate Analysis)				
ITEM NO.9				
Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes , caps, footings foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings fins, arches, etc as per detailed designs, drawings, and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc complete. (including cost of binding wire.)				
Lift 0 to 5 M				
Tor Steel.	1.25	80681.00	M.T.	101120.00
(MJP.CSR 23-24 , I.No.8 b P.No 50)				
ITEM NO.10				
Providing IInd class B.B masonry with conventional / Indian stander type bricks in CM 1:6 in plinth & Superstructure including striking joints , raking out joints, watering,and scaffolding etc. complete.				
For superstructure	9.09	8423.53	Cum	76605.00
For Plinth	3.31	8184.53	Cum	27107.00
(As Per Rate Analysis)				
ITEM NO.11				

LATUR CITY MUNICIPAL CORPORATION

Providing and fixing rolling shutter fabricated from steel laths of minimum thickness 0.9 mm with lock plate of 3.15 mm thickness reinforced with 35 x 35 x 5 mm angle section fitted with sliding bolts and handles for both sides, deep M.S. channel section of depth and thickness not less than 65 mm and 3.15 mm respectively with hold fast arrangements, M.S. Bracket plate 300 x 300 x 3.15 mm minimum size & shape with square bar, suspension shaft of minimum 32 mm diameter, hood cover of M.S. sheet not less than 0.9 mm thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etc. complete. (I.S. 6248-1979) (With mechanical gear)				
Rolling steel shutter.				
(PWD SSR 2022-23 P.No.308 It. No.39.25)	5.25	5308.00	Sq.m.	27867.00
ITEM NO.12				
Providing & fixing steel window of various sizes as per detailed drawings fabricated from I.S. stander section without hot dip zinc coating without/ with ventilators including fabrication, glazing with non acetinic / plain / obscured glass panels of approved type and quality all fixtures and fastening without teak wood boxing, and architraves and finishing with one coat of primer complete. with guard bars 12 mm square bar 10 cm. centre to centre.				
for Steel windows	2.40	4607.00	Sq.m.	11057.00
(PWD SSR 2022-23 P.No.306 It. No.39.19)				
ITEM NO. 13				
Providing & fixing steel Ventilator fully glazed partly top hung and partly fixed as per detailed drawing without hot dip zinc coating includign glazing with plain obscured glass panel and of approved type and quality and fixtures and fastening without teak wood boxing and architraves and oil painting two coats etc complete.				
Steel Ventilators	0.81	3375.00	Sq.m.	2734.00
(PWD SSR 22-23 P.No.308 It. No.39.29)				
ITEM NO. 14				
Providing internal cement plaster 20 mm thick in two coats in cement mortar 1:3 without neeru finish to cocrete, brick surfaces in all positions including scaffolding and curing , etc. complete				
a) 20 mm thick cement plaster (1:4)	64.00	415.56	Cum	26596.00
(As Per Rate Analysis)				
ITEM NO15				

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Providing sand faced plastre externally in cement mortor using kharsalia / kasaba or similar type of sand in all positions including base coat of 20 mm thick in cement mortor 1:4 using waterproofing compound at 1 Kg per cement bag. Curing the same for no				
(As Per Rate Analysis)	71.11	683.30	Sq.m.	48587.00
ITEM NO. 16				
Providing and applying two coats of Exterior acraylic emulsion paint conforming to corresponding I.S.of approved manufacture and of approved colour to the plastered surfaces including cleaning,prepaireing the plaster surface,applying primer coat ,scaffolding if necessecary,and watering the surface for two days etc complete.				
1) New Surface.	71.11	261.00	Sq.m.	18559.00
(PWD SSR 2022-23 P.No.277 . Item No. 35.25)				
ITEM NO.17				
Providing and laying vitirified rustic matt stone premium quality finish decorative type tiles of size 590 mm to 605mm X 590mm to 605mm of 8 to 10 mm thickness and confirming to IS 15622 - 2006 (Group Bla) of approved make shade and pattern for flooring in required position laid on a bed of 1:4 cement mortor including neat cement float , filling joints curing and clearing etc.complete. Note : (Water absorption should not be more than 0.05%) Spec. No.: Bd.M.12 Page No. 385				
(PWD SSR 2022-23 P.No. 267 Item No.33.44)	16.00	1769.00	Sq.m.	28304.00
ITEM NO. 18				
Providing and applying washable oil bound distemper of approved colour and shade to old and new surface in three coats including scaffolding preparing the surfaces (including the primer coat) etc.complete				
(PWD SSR 2022-23 P.No. 280 It. No. 36.11)	64.00	48.00	Sq.m.	3072.00
Total of subwork			Rs.	549026.00
		Say RS		549,100

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

Estimate of Meter Room at WTP

M E A S U R M E N T

Description of Item	Nos	L	B	D	Qty	Unit
1	2	3	4	5	6	7
<u>ITEM NO. 1</u>						
Excavation for foundation/pipe trenches in earth, soils						
Lift 0 to 1.5 M.						
columns	4	2.10	2.10	0.8	14.1	cum
<u>ITEM NO. 2</u>						
Excavation for foundation/ pipe trenches in hard murum & boulders.						
Lift 0 to 1.5 M.	4	2.10	2.10	0.7	12.35	cum
<u>ITEM NO.3</u>						
Excavation for foundation/ pipe trenches in soft rock						
Lift 1.5 to 3 M.	4	2.10	2.10	0.5	8.82	cum
<u>ITEM NO4</u>						
Providing & laying in situ following grades of C.C. of trap/ granite / quartzite /gneiss metal						
c) 1:2:4 (M -150) grade column footing	4	2.10	2.10	0.15	2.65	cum
<u>ITEM NO5</u>						
:- Providing and laying in situ cement concrete of trap/granite/ foundation and footing of RCC columns etc.complete						
For RCC M – 250						
Lift 0 to 5 M						
a) column footings	4	1.9	1.90	0.40	5.78	Cum
<u>ITEM NO 6</u>						
:- Providing and laying in situ cement concrete of trap/granite/quartzite etc.complete						
RCC brace Beam M-250						
Lift 0 to 5 M						
B) For Beams & Lintels						
gl beam & intermediate beam	4	4	0.23	0.45	1.66	Cum
Lintel level beam.	4	4	0.23	0.15	0.55	Cum
Roof beam.	4	4	0.23	0.3	1.10	Cum
				Total	3.31	Cum
<u>ITEM NO7</u>						
Providing and laying in situ cement concrete of trap/granite/quartzite etc.complete						
column-M-250						
Lift 0 to 5 M column above & below GL	4	0.3	0.50	5.5	3.30	Cum
Total					3.30	Cum
<u>ITEM NO8</u>						

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Providing and laying in situ cement concrete of trap/granite/quartzite etc.complete						
slab M-250						
Lift 0 to 5 M						
chajja on door.	1	2.5	0.60	0.15	0.23	Cum
chajja on window.	2	1.3	0.60	0.15	0.23	Cum
Roof slab	1	4.56	4.56	0.15	3.12	
Total					3.58	Cum
<u>ITEM NO.9</u>						
Providing and fixing in position steel bar reinforcement						
Lift 0 to 5 M	1	16.0	0.01	7850	1.25	M.T.
<u>ITEM NO.10</u>						
Providing IInd class B.B masonry						
a) In Cement Mortar (1:6)						
Lift 0. to3.8 m.	4	4	0.23	3.00	11.04	Cum.
Deduction.						
Rolling shutter.	1	2.5	2.10	0.23	1.21	Cum.
Windows.	2	1	1.20	0.23	0.55	Cum.
Ventilators.	2	0.9	0.45	0.23	0.19	Cum.
				Total.	1.95	Cum.
Net Qty.					9.09	Cum.
for plinth	4	4	0.23	0.9	3.31	Cum.
<u>ITEM NO. 11</u>						
Providing and fixing rolling steel shutter						
Rolling steel shutter.	1	2.50	2.10		5.25	Sq.m.
<u>ITEM NO. 12</u>						
Providing & fixing steel window						
for Steel windows	2	1.00	1.20		2.40	Sq.m.
<u>ITEM NO.13</u>						
Providing & fixing steel Ventilator						
Steel Ventilators	2	0.90	0.45		0.81	Sq.m.
<u>ITEM NO.14</u>						
Providing cement plaster Inside						
20 mm thick cement plaster in two coats in cement Mortar (1:3)						
Inside the Pump house.	4.0	4.00	3.00		48	Sq.m.
Celing	1.0	4.0	4.0		16	
					64	Sq.m.
<u>ITEM NO. 15</u>						
Providing sand faced plaster externally in two coats.						
In C.M. 1:4 prop.	4	4.46	4.46		79.57	Sq.m.
Deduction.						
Door	1	2.50	2.10		5.25	
Windows.	2	1.20	1.00		2.4	
Ventilators.	2	0.90	0.45		0.81	
				Total	8.46	Sq.m.
Net Qty.					71.11	Sq.m.
<u>ITEM NO. 16</u>						
two coats of appex Appex Ace white exterior paint						
Total quantity of plaster.	1	71.11			71.11	Sq.m.

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<u>ITEM NO. 17</u>						
∴ Providing and laying vitrified rustic matt stone premium quality finish decorative type tiles of size 590 mm to 605mm X 590mm to 605mm						
	1	4.00	4.00		16	Sq.m.
<u>ITEM NO. 18</u>						
Providing and applying oil bound distemper						
inside face					64	Sq.m.

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME									
CALCULATION OF LEAD CHARGES (AS PER M.J.P.2021-22 & PWD SSR 2022-23)									
(FOR Head Work)									
Sr. No.	Material	Quarry	Distance (K.M.)	Rate for Final Lead	Rate for Initial Lead	Net Lead Charges	Pay Load Factor	Rate / Cum	Unit
1	Sand								
	As per MJP CSR	Gangakhed	85.0	9199.67	1097.42	8102.25	5.75	1409.09	
	As per PWD CSR	Gangakhed	85.0	7718.09	0.00	7718.09	5.75	1342.28	
2	Sand(BSF)								
3	Metal below (60 & 40 mm)								
	As per MJP CSR	Diksal	15.0	2143.30	899.91	1243.39	5.75	216.24	
4	Rubble soling								
	As per PWD CSR	Diksal	15.0	2360.66	0.00	2360.66	4.70	502.27	
5	Murum								
	As per MJP CSR	Gairan	0.0	0.00	0.00	0.00	6.00	0.00	
	As per PWD CSR	Gairan	0.0	0.00	0.00	0.00	6.00	0.00	
6	Bricks								
	As per PWD CSR	Local	0.0	0.00	0.00	0.00	0.00	0.00	

LEAD CALCULATION FOR AUG.TO LATUR W.S.S.

Sr. No.	Item	Sand	Metal	Rubble	Bricks	Murum	Sub Work	Net Lead Charges	Unit
1	P.C.C. 1:2:4	0.44	0.88				HW		
	As per MJP CSR	620.00	190.29					810.29	Cum
2	R.C.C. M-200	0.40	0.80				HW		
	As per MJP CSR	563.63	172.99					736.63	Cum
3	R.C.C. M-250	0.30	0.60				HW		
	As per MJP CSR	422.73	129.75					552.47	Cum
4	R.C.C. M-300	0.30	0.60				HW		
	As per MJP CSR	422.73	129.75					552.47	Cum
5	Rubble soling								
6	As per PWD CSR			1.000			HW		
				502.27				502.27	Cum
7	Murum MJP CSR					1.00	HW		
						0.00		0.00	Cum
8	Murum PWD CSR					1.00	HW		
						0.00		0.00	Cum
9	Brick Masonry in CM 1:6 (PWD)	0.320			475.00		HW		
		429.53			0.00			429.53	Cum
10	External Cement Plaster 1:4 20 mm.	0.033					HW		
		44.30						44.30	Cum
11	Internal Cement Plaster 1:4 15mm.	0.025					HW		
		33.56						33.56	Sqm.
12	B.B.masonry chambers 0.9 x 0.6 m	0.580	0.19						
		817.27	41.09					858.36	Cum

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13	B.B.masonry chambers 1.2 x 1.2 m	0.870	0.29						
		1225.91	62.71					1288.62	Cum

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AUGMENTATION OF LATUR WATER SUPPLY SCHEME

For Head Works

RATE ANALYSIS

Sr. No	Description of Item	Basic Rate	Lead Charges	Total Rate
1	2	3	4	5
1	Item No. 1 :- Providing and casting in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap / granite / quartzite / gneiss metal for foundation and bedding including dewatering , compacting and curing,etc. complete			
	PCC for levelling course below slab .			
	Lift 0.00 to 5.00 M.	5881.00	810.29	6691.29
	Lift 5.00 to 10.00 M.	6469.10	810.29	7279.39
	Lift 10.00 to 15.00 M.	7057.20	810.29	7867.49
	Lift 15.00 to 20.00 M.	7645.30	810.29	8455.59
	Lift 20.00 to 25.00 M.	8233.40	810.29	9043.69
	(MJP CSR 23-24, I.No.1 P.No.47)			
2	Item No. 2 :- Providing and laying in situ of C.C. of trap/ granite / quartzite/ gneiss metal for RCC works in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering , centering, form work, compaction, finishing and curing,etc. complete. (By weight batching mix design for M – 250 & M-300 only. Use of L&t , ACC, Ambuja,Birla Gold,Manikgad, Rajashree,etc.cement is permitted. Excluding M.S. or Tor reinforcement.)			
	RCC Footing,M- 200			
	Lift 0.00 to 5.00 M.	7318.00	736.63	8054.63
	RCC Footing,M- 250			
	Lift 0.00 to 5.00 M.	7927.00	552.47	8479.47
	Lift 5.00 to 10.00 M.	8719.70	552.47	9272.17
	Lift 10.00 to 15.00 M.	9512.40	552.47	10064.87
	RCC Footing,M- 300			
	Lift 0.00 to 5.00 M.	8193.00	552.47	8745.47
	Lift 5.00 to 10.00 M.	9012.30	552.47	9564.77
	Lift 10.00 to 15.00 M.	9831.60	552.47	10384.07
	Lift 15.00 to 20.00 M.	10650.90	552.47	11203.37
	Lift 20.00 to 25.00 M.	11470.20	552.47	12022.67
	(MJP CSR 23-24, I.No.2 P.No.47)			
3	Item No. 3 :- Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal for RCC work as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface where necessary or roughening if special finish is to be provided and curing, etc.complete (By weight batching and mix design for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement.			
	RCC Beams/ BRACES/Lintels.M - 200			
	Lift 0.00 to 5.00 M.	8674.00	736.63	9410.63
	RCC Beams,M - 250			
	Lift 0.00 to 5.00 M.	9240.00	552.47	9792.47
	Lift 5.00 to 10.00 M.	10164.00	552.47	10716.47
	Lift 10.00 to 15.00 M.	11088.00	552.47	11640.47
	RCC Beams,M - 300			
	Lift 0.00 to 5.00 M.	9486.00	552.47	10038.47
	Lift 5.00 to 10.00 M.	10434.60	552.47	10987.07
	Lift 10.00 to 15.00 M.	11383.20	552.47	11935.67
	(MJP CSR 23-24, I.No.4 P.No.48)			
4	Item No. 4 :- Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work, compaction finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc.complete (By weight batching and mix design for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding m.S. or Tor reinforcement Reinforced Cement Concrete.			
	For RCC M-300 grade - all types of columns.			
	RCC.Columns.M - 200			
	Lift 0.00 to 5.00 M.	8815.00	736.63	9551.63
	RCC.Columns.M - 250			
	Lift 0.00 to 5.00 M.	9404.00	552.47	9956.47
	Lift 5.00 to 10.00 M.	10344.40	552.47	10896.87
	Lift 10.00 to 15.00 M.	11284.80	552.47	11837.27
	Lift 15.00 to 20.00 M.	12225.20	552.47	12777.67

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	Lift 20.00 to 25.00 M.	12225.20	552.47	12777.67
	RCC.Columns.M - 300			
	Lift 0.00 to 5.00 M.	9651.00	552.47	10203.47
	Lift 5.00 to 10.00 M.	10616.10	552.47	11168.57
	Lift 10.00 to 15.00 M.	11581.20	552.47	12133.67
	Lift 15.00 to 20.00 M.	12546.30	552.47	13098.77
	Lift 20.00 to 25.00 M.	13511.40	552.47	14063.87
	(MJP CSR 23-24, I.No.3 P.No.47)			
5	Item No. 5 :-Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as directed by Engineer-in-charge inclouding normal dewarterin, centreing, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface whtere necsessary or rougheninig if special fnish is to be proved and curing, etc.complete (By weigh batching and mix desing for M-250 - and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement .			
	RCC.Vertical Walls.M - 200			
	Lift 0.00 to 5.00 M.	9313.00	736.63	10049.63
	RCC.Vertical Walls.M - 250			
	Lift 0.00 to 5.00 M.	9910.00	552.47	10462.47
	Lift 5.00 to 10.00 M.	10901.00	552.47	11453.47
	Lift 10.00 to 15.00 M.	11892.00	552.47	12444.47
	Lift 15.00 to 20.00 M.	12883.00	552.47	13435.47
	RCC.Vertical Walls.M - 300			
	Lift 0.00 to 5.00 M.	10172.00	552.47	10724.47
	Lift 5.00 to 10.00 M.	11189.20	552.47	11741.67
	Lift 10.00 to 15.00 M.	12206.40	552.47	12758.87
	Lift 15.00 to 20.00 M.	13223.60	552.47	13776.07
	Lift 20.00 to 25.00 M.	14240.80	552.47	14793.27
	(MJP CSR 23-24, I.No.5 P.No.48)			
6	Item No. 6 :- Providing and casting in situ cement concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as directed by Engineer-in-charge inclouding normal dewarterin, centreing, form work, compaction, finishing the formed surfaces with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface whtere necsessary or rougheninig if special fnish is to be proved and curing, etc.complete (By weigh batching and mix desing for M-250 and M-300 only. Use of L& T A.C.C Ambuja, Birla Gold, Manikgad, Rajashree, etc, cement is permitted.) Excluding M.S. or Tor reinforcement .			
	RCC.Slabs.M - 200			
	Lift 0.00 to 5.00 M.	9313.00	736.63	10049.63
	RCC.Slabs.M - 250			
	Lift 0.00 to 5.00 M.	9910.00	552.47	10462.47
	Lift 5.00 to 10.00 M.	10901.00	552.47	11453.47
	Lift 10.00 to 15.00 M.	11892.00	552.47	12444.47
	Lift 15.00 to 20.00 M.	12883.00	552.47	13435.47
	RCC.Slabs.M - 300			
	Lift 0.00 to 5.00 M.	10172.00	552.47	10724.47
	Lift 5.00 to 10.00 M.	11189.20	552.47	11741.67
	Lift 10.00 to 15.00 M.	12206.40	552.47	12758.87
	(MJP CSR 23-24, I.No.5 P.No.48)			
7	Item No. 7 :- Providing Second Class burnt Brick masonry with conventional / indian standard type bricks in cement mortar 1:6 in superstructure as bacing in composite masonry including scaffolding, racking cut joints and waterinG complete.			
	Lift 0.00 to 3.80 M.	7994.000	429.53	8423.53
	Lift 3.80 to 7.60 M.	8073.940	429.53	8503.47
	Lift 7.60 to 11.40 M.	8153.880	429.53	8583.41
	Lift 11.40 to 15.20 M.	8233.820	429.53	8663.35
	Lift 11.40 to 15.20 M.	8313.760	429.53	8743.29
	Lift 15.20 to 19.00 M.	8393.700	429.53	8823.23
	(PWD SSR 2022-23, I.No.27.05 P.No 242)			
8	Item No. 8 :- Providing Internal cement plaster 20 mm thick in single coats in cement mortar 1:4 with out neeru to concrete, brick surface, in all positions including scaffolding and curing complete.-			
	(PWD SSR 2022-23, I.No.32.07 P.No 256)	382.00	33.56	415.56
9	Item No.9 :- Providing sand faced plaster externally in cement motar using Approved scened sand in all positions including base coat of 15 mm. thick in cement mortar 1:4 using waterproofing compound at 1 Kg. per cement bag, curing the same for not less than 2 days and keeping the surface of the base coat rough to recive the sand faced tretment 10 mm. thick in cement mortar 1:4 finishing the surface by taking out grains and curing for foureen days scaffolding etc. complete.for compound Wall. BDL-7(Only for Building works not for compound wall) Spec. :Bd.L .7 Page No. 367			
	(PWD CSR 2022-23, I.No.32.11 P.No 257)	639.00	44.30	683.30

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10	ITEM No.10 :- Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding excluding excavation, B.B. masonry in C.M. 1:5 proportion precast RCC frame and cover etc. complete as directed by Engineer in charge			
	MJP SSR 2023-24 I No. 1, Page No. 283			
	1) As above of 90 x 60 cm internal size and depth upto 1.2 M with precast RCC slab cover	11899.00	858.36	12757.36
	2) As above of 1.20 x 1.20 cm internal size and depth upto 1.2 M with precast RCC slab cover	18237.00	1288.62	19525.62
	2) As above of 1.50 x 1.50 cm internal size and depth upto 1.5 M with precast RCC slab cover	27729.00	1288.62	29017.62
11	Item No.11 :- Providing dry rubble stone pitching 23 cm (About 9") thick including packing with quarry spalls and hard murum etc. complete as directed by Engineer -In -Charge			
	Dry rubble stone pitching	413.00	502.27	915.27
	(PWD SSR.2022-23 P.No.28.Item No. 2.34)			
12	Item No. 12 :- Providing Second Class burnt Brick masonry with conventional / indian standard type bricks in cement mortar 1:6 in foundation & plinth as bacing in composite masonry including scaffolding, racking cut joints and waterinG complete.			
	Lift 0.00 to 3.80 M.	7755.000	429.53	8184.53
	(PWD SSR 2022-23, I.No.27.01 P.No 242)			

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

Raw Water Rising Main. From H/W To BPT @ Dabha pati

(1000 MM DIA D.I.K-9 PIPES)

Classification of Strata as per Trial Pit Results

							2.066
Sr.No	Chainage	Soft Soil	Murum	Hard murum & Bould.	Soft rock	Hard rock by blasting	Total depth
1	2	3		4	5	6	7
1	0	0.6	0.3	0.35	0.35	0.5	2.10
2	500	0.5	0.3	0.65	0.35	0.3	2.10
3	1000	0.5	0.35	0.35	0.3	0.6	2.10
4	1500	0.35	0.2	0.5	0.4	0.65	2.10
5	2000	0.4	0.4	0.3	0.45	0.55	2.10
6	2500	0.3	0.5	0.35	0.45	0.5	2.10
7	3000	0.55	0.35	0.35	0.45	0.4	2.10
8	3500	0.45	0.35	0.3	0.35	0.65	2.10
9	4000	0.4	0.35	0.35	0.5	0.5	2.10
10	4500	0.3	0.3	0.3	0.3	0.9	2.10
	Total	4.35	3.40	3.80	3.90	5.55	18.90
	Avg Depth	0.44	0.34	0.38	0.39	0.56	2.10

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

R.W.R.M.From H.W to SHAFT @ Dabha pati (1000 mm.dia.D.I.K-9.Pipe.L-4500.M)

ABSTRACT

Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	ITEM No. 1 :- Providing D.I.Pipes (push on joints pressure pipes of D I of following class and diameter confirming to the I S specifications inclusive cost of jointing materials (Rubber gasket of EPDM quality) excluding GST levied by GOI and GOM in all respect,including Third party inspection charges of TPI agency approved by MJP including transit, insurance, railway freight, unloading from railway wagon, loading into truck, transportation to deparmental store, site of work, unloading, stacking etc. complete as directed by Engineer in charge (IS- 1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latest edition/ revision with amendments for rubber gasket)			
3615.00	1000 mm dia.DI.K-9 Pipe.	27750.00	Rmt	100316250.00
	MJP.SSR .2023 - 24. Page No.69 . I.No.3, xv			
	ITEM No.2 :- Providing & Supplying ISI standard D.I. specials and fittings with sealing rubber gasket of SBR complete with C.I. follower glands and mild steel nut bolts coated or otherwise protected from rusting and suitable for D.I.pipes including cost of labour,material and transportation to stors /site,loading,unloading including all taxes etc complete as per IS-9523.			
17289	350 mm dia & Above,PN-16	186.00	Kg.	3215754.00
	MJP.SSR .2023 - 24. Page No.71 . I.No.10, b			
	ITEM No:3 :-Providing and supplying ISI mark CI D/F reflux valves (non-return valves) of following dia including railway freight, inspection charges, unloading from railway wagon, loading into truck, transportation upto departmental stores, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete. Reflux valves as per I.S.5312 Part I (1984)			
1	1000 mm dia Reflux Valve.P.N.1.6	906647.00	No.	906647.00
	MJP.SSR .2023 - 24. Page No.145 . I.No.1, c,xix			
	ITEM No:4 :- Providing double flanged Sluice Valves conforming to IS-14846 including worm gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges transportation stores,unloading,stacking excluding GST levied by GOI & GOM in all respect etc.complete.			
10	200 mm dia Sluice Valve.P.N.1.6	27877.00	No.	278770.00
1	1000 mm dia Sluice Valve.P.N.1.6	1013501.00	No.	1013501.00
	MJP.SSR .2023 - 24. Page No.146 . I.No.2, c,vi & xix			

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	Item No 5 :- Providing and supplying at site ductile Iron / Spheroidal Graphite (S.G) iron single / Double chamber tamper proof air valve without isolating sluice valve.Valves in accordance with BSEN 1074-4 of PN 10/16 rated with body and bonnet of ductile iron conforming to EN 1563/IS 1865.Gr.500/7 or Gr.400/15 floats,float guide,seat ring of stainless steel I.4436/I.4306.seat ring gasket of WRAS approved EPDM rubber (suitable for drinking water) internal fastness of stainless steel A2 Body & Bonnet coated inside & outside with electrostatically applied epoxy poeder coated blue colour (suitable for drinking water) as per DIN 30677-2 & GSK guidelines with a coating thickness of min.250 microns.Flange connections as per IS 1538 raised face & pressure testing at manufactures works shall be done as per IS 14845,including transportation charges excluding GST levied by GOI & GOM in all respect etc.complete..			
9	200 mm dia. Tamper Proof Air Valve.PN-1.60	31689.00	No.	285201.00
	MJP.SSR .2023 - 24. Page No.160 . I.No.25, V			
	ITEM No 6 :- Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, manual dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.			
	MJP CSR 2023 - 24 Page No. 37 I.No.1			
2516.04	Lift 0 to 1.5 M.	165.00	Cum.	415146.60
	Item No.7 :- Excavation for foundation/ pipe trenches in hard murum including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd-A - 3/259)			
	MJP CSR 2023 - 24 Page No. 37 I.No.2			
1966.56	Lift 0 to 1.5 M.	187.00	Cum	367747.00
	Item No.8 :- Excavation for foundation/ pipe trenches in hard murum & W.B.M. road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd-A - 3/259)			
	MJP CSR 2023 - 24 Page No. 37 I.No.3			
2197.92	Lift 0 to 1.5 M.	211.00	Cum	463762.00

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	Item No.9 :- Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation, asphalt road, soft rock by blasting and hard rock by controlled blasting, including trimming and levelling the bed by chiselling where necessary and removing the excavated material and stacking it in measurable heaps within a distance of 50 metres from the area and lifts as below, normal dewatering, excluding backfilling, etc. complete.			
	MJP CSR 2023 - 24 Page No. 37 I.No.5			
1966.56	Lift 0 to 1.5 M.	629.00	Cum	1236967.00
289.20	Lift 1.5 to 3.0 M.	600.00	Cum	173520.00
	Item No 10 :- Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means.			
	MJP CSR 2023 - 24 Page No. 38 I.No.6			
3210.12	Lift 1.5 to 3.0 M.	859.00	Cum	2757494.00
	ITEM No.11 :- Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials from foundation 15 cm to 20 cm layers including watering			
	MJP CSR 2023 - 24 Page No. 41 I.No.16			
867.60	A).Murum available from excavated stuff	92.00	Cum	79820.00
	ITEM No. 12 :- Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.			
	MJP CSR 2023 - 24 Page No. 68 I.No.2, xvii			
3615.00	1000 mm dia.DI.K-9 Pipe.	1021.00	RM	3690915.00
	ITEM No. 13 :- Hydraulic testing of pipeline to specified pressure including cost of all materials and labour and water for testing using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.			
	MJP CSR 2023 - 24 Page No. 72 I.No.12, xvii			
	CI Class 'LA' / Mortar inlined D.I. K-9 / K-7			
3.62	1000 mm dia.DI.K-9 Pipe.	113603.00	Km	410675.00

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	ITEM No. 14 :- Lowering, laying and jointing in position following C.I. D/F reflux valves, Butterfly valves and sluice valves including cost of all labour jointing material including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)			
	MJP CSR 2023 - 24 Page No. 148 I.No.12, 4,b,vii & xix			
10	200 mm dia Sluice Valve.P.N.1.6	4160.00	No.	41600.00
2	1000 mm dia Reflux Valve.P.N.1.6	19344.00	No.	38688.00
	ITEM No. 15 :- Providing and fixing in position air valve shaft including providing and fixing G.I. Medium class of 6 mm thick M.S. pipe shaft 2.70 m long over branch flange of air valve tee. Providing PCC block of M- 150 concrete 150 mm thick around the air valve tee including encasing of vertical shaft in PCC M- 150 as shown in type design together with providing and making flanged joints wherever required cost of air valve over the shaft excluding cost of air valve and branched flanged air valve tee, etc complete as per branched flanged air valve tee, etc complete as per type design and as directed by Engineer-in-charge for following diameters of pipe lines. (Type design)			
	MJP CSR 2023 - 24 Page No. 155 I.No.17, a,iv			
	A) Foundation on Murum and Hard Strata			
9.00	1000 to 1200 mm Dia pipeline.	19192.00	No.	172728.00
	ITEM No.16 :- Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:2:6 proportion PCC bedding excluding excavation, B.B. masonry in C.M. 1:5 proportion precast RCC frame and cover etc. complete as directed by Engineer in charge (internal size 60 x 45 cm and depth 90 cm)			
	As Per Rate Analysis			
2	2) As above of 150 x 150 cm internal size and depth upto 1.5M with precast RCC slab cover	29017.62	No.	58036.00
	ITEM No. 17 :- Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm. Layers with all leads and lifts including consolidation, surcharging, etc. complete			
8347.62	MJP.SSR .2023- 24. Page No.40 . I.No.15	92.00	Cum	767982.00
	Item No. 18 :- Providing and supplying ISI standard MS specials of required thickness with 3 coats of approved make epoxy paint (Shalimar, Ciba or Mahindra & Mahindra make) from inside and outside including all taxes (Central and local), octroi, inspection charges, transportation to stores / site and stacking etc complete			
	MJP.SSR .2023 - 24. Page No.70 . I.No.7			
3000.00	MS Specials (All Socketed)	95.00	Kg	285000.00
	ITEM No. 19 :- Providing and laying in situ cement concrete of trap/ granite/ quartzite/ gneiss metal for foundation and bedding including dewatering, form work, compacting roughening if special finishis to be provided,			
68.32	1:2:4 (M – 150) grade	6691.29	Cum	457168.67

LATUR CITY MUNICIPAL CORPORATION

	Rate Analysis			
	Item No.20 :- Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work in foundation like raft,grillage,strip foundation and footing of R.C.C. columns and steel stanchions including normal dewatering,formwork,compaction,finishing and curing etc.complete			
	Rate Analysis			
	In R.C.C. M-200			
171.52	For Thrust/Anchor block at bends	8054.63	cum	1381510.00
	Item No. 21 :- Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes , caps, footings foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings fins, arches, etc as per detailed designs, drawings, and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc complete. (including cost of binding wire.)			
	(MJP SSR 2023 - 24, Item.No.8,b.Page.No.50)			
13.464	Tor Steel.	80681.00	MT	1086299.00
	Item No. 22 :- Making cross connection to existing distribution main of any type including excavation, breaking and removing exiting pipes, lowering, laying of specials and pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diamerts of existing pipeline, irrespective of diameter of branch line (the number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores).			
	(MJP SSR 2023 - 24, Item.No.10, xvii.Page.No.58)			
1.00	1000 mm dia	72794.00	No.	72794.00
	Item No. 23 :- Provision for charges to be deposited to PWD department and Telephone department for various permissions (Including Crossing of National Highway, State Highway, MDR & ODR etc. & charges to be paid against pipe line to be laid along the road side,etc)			
3000.00	PWD Charges Along the Road	275	Rmt	825000.00
1.00	Road Crossing	5500	Rmt	5500.00
	Item No. 24 :- Provision for charges towards crop compensasion of farmers,etc)			
18000	(As per Rate Analysis)	250.00	Sq.mt.	4500000.00
		Total	Rs.	125304475
		Say Rs	Rs.	125,304,500

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

R.W.R.M.From H.W to SHAFT @ Dabha pati (1000 mm.dia.D.I.K-9.Pipe.L-4500.M)

M E A S U R M E N T S

Description of Item	No	L	W	D	Qty	Unit
1	2	3	4	5	6	7
ITEM No.1 :- Providing D.I. K-9 grade pipes with internal cement mortar lining including taxes, insurance,						
Raw water Rising Main						
1000 mm dia.DI.K-9 Pipe.	1	3615			3615	Rmt
ITEM No.2 :- Providing and supplying DI/MS specials suitable for above pipes,						
Above 350 mm Dia						
1000 x 1000 x 200 Hydrant Tee-weight 444 Kg.Each	10	444			4440	Kg
1000 mm dia Bend						
90 Degree weight 964 Kg.Each	6	964			5784	Kg
45 Degree weight 651 Kg.Each	1	651			651	Kg
22,1/2 Degree weight 454 Kg.Each	2	458			916	Kg
11,1/4 Degree weight 384 Kg.Each	2	384			768	Kg
1000 mm dia MJ Coller Coupling	10	473			4730	Kg
				Total Wt.	17289	Kg
ITEM No:3 :-Providing and supplying ISI mark CI D/F reflux valves (non-return valves) of following dia including railway freight, inspection charges, unloading from railway wagon,loading into truck, transportation upto departmental stores, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.Reflux valves as per I.S.5312 Part I (1984)						
1000 mm dia Reflux Valve.P.N.1.6	1	1			1	Nos.
ITEM No.4 :- Providing and supplying ISI mark C.I. D/F sluice valves						
200 mm dia Sluice Valve.P.N.1.6	1	10			10	Nos.
1000 mm dia Sluice Valve.P.N.1.6	1	1			1	Nos.
Item No 5 :- Providing , supplying & fixing in positon stainless ball, tamper proof air vents ... etc <u>including all taxes and duties except octroi</u>)						
200 mm dia. Tamper Proof Air Valve.PN-1.60	1	9			9	Nos.
Item No.6 :- Excavation for foundation/ pipe trenches in Soft Soil..... excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
1000 mm dia.DI.K-9 Pipe.	1	3615	1.60	0.44	2516.04	Cum
Item No.7 :- Excavation for foundation/ pipe trenches in hard murum excluding backfilling, etc. complete.						

LATUR CITY MUNICIPAL CORPORATION

Lift 0 to 1.5 M.						
1000 mm dia.DI.K-9 Pipe.	1	3615	1.60	0.34	1966.56	Cum
Item No.8 :- Excavation for foundation/ pipe trenches in hard murum & W.B.M. road..... excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
1000 mm dia.DI.K-9 Pipe.	1	3615	1.60	0.38	2197.92	Cum
Item No.9 :- Excavation for foundation / pipe trenches in soft rock and old cement .. by blasting and hard rock by controlled....., etc. complete.						
Lift 0 to 1.5 M.						
1000 mm dia.DI.K-9 Pipe.	1	3615	1.60	0.34	1966.56	Cum
Lift 1.5 to 3.0 M.						
1000 mm dia.DI.K-9 Pipe.	1	3615	1.60	0.05	289.20	Cum
Item No 10 :- Excavation for foundation / pipe trenches in Hard rock by Cheseling, excluding backfilling, etc. complete.						
Lift 1.5 to 3.0 M.						
1000 mm dia.DI.K-9 Pipe.	1	3615	1.60	0.56	3210.12	Cum
				2.10		
ITEM No. 11 :-Filling in plinth and floors murum bedding in trenches						
A) Murum available from excavated stuff	1	3615	1.60	0.15	867.60	Cum
ITEM No. 12 :- Lowering laying and jointing with SBR rubber gasket C.I. / D.I. S/S pipes etc. complete.						
1000 mm dia.DI.K-9 Pipe.	1	3615			3615	Rmt
ITEM No. 13 :- Hydraulic testing of pipeline to specified pressure including cost of all materials and labour ..etc.						
<u>CI Class 'LA' / Mortar inlined D.I. K-9 / K-7</u>						
1000 mm dia.DI.K-9 Pipe.	1	3.62			3.62	Km
ITEM No. 14 :- Lowering, laying and jointing in position following C.I. D/F Sluice Valve						
200 mm dia Sluice Valve.P.N.1.6	1	10			10	Nos.
1000 mm dia Reflux Valve.P.N.1.6	1	2			2	Nos.
ITEM No.15 :- Providing and fixing in position air valve shaft						
A) Foundation on Murum and Hard Strata						
1000 to 1200 mm Dia pipeline.	1	9			9	Nos.
ITEM No. 16 :- Providing and constructing B.B. masonry valve chamber						
2) As above of 150 x 150 cm internal size and depth upto 1.5 M with precast RCC slab cover	1	2			2	Nos.

LATUR CITY MUNICIPAL CORPORATION

ITEM No. 17 :- Refilling the trenches with available excavated stuff						
Total excavation					12146.40	Cum
Deduction						
Murum bedding					867.60	
Volume of pipe for 1000 mm dia	0.7855	1.016	1.016	3615	2931.18	
Total deduction					3798.78	
Net qty of refilling				Total =	8347.62	Cum
Item No. 18 :- Providing MS Specials etc charges, transportation to stores / site, and stacking, etc. complete						
MS Specials	1	3000			3000	Kg
ITEM No. 19 :- Providing and laying in situ cement concrete M-10 / 1:3:6 of trap/ granite/ quartzite/ gneiss metal for foundation and bedding 1:2:4 (M-150) grade						
Encasing in Nalla portion	1	22	2	1.6	70.40	
P.W.D.Road crossing's	1	25	2.1	0.3	15.75	
Deduct Pipe Volume =	1.00	22.00	0.785	(0.1000)^2	17.83	Cum
				Total =	68.32	Cum
Item No.20 :- Providing and Casting RCC M-200 ...etc complete.						
For Thrust/Anchor block at bends	11	4.50	2.10	1.65	171.52	Cum
Item No.21 :- Providing and fixing in position steel bar reinforcement of various diameters etc complete. (including cost of binding wire.)						
Tor Steel.	1.00	171.52	0.01	7850	13.464	MT
Item No. 22 :- Making cross connection to existing distribution main of any type including ..etc. complete						
1000 mm dia	1	1			1	No.
Item No. 23 :- Provision for charges to be deposited to PWD department and Telephone department for various permissions (Including Crossing of National Highway, State Highway, MDR & ODR etc. & charges to be paid against pipe line to be laid along the road side,etc)						
PWD Charges Along the Road	1	3000			3000	Rmt
Road Crossing	1	1			1	Rmt
Item No. 24 :- Provision for charges towards crop compensasion of farmers,etc)						
	1	4500	4		18000	Sq.mt.

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Estimate of M.S. SHAFT				
A B S T R A C T				
Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	ITEM No. 1 :-			
	Providing & supplying ISI standerd MS Specials of required thickness with 3 coats of approved make epoxy paint (Shalimar, Ciba or Mahindra & Mahindra make) from inside and outside including all taxes (Central & Local), octroi, inspection charges, transportation to store/site, and stacking etc complete.			
20873.94	MS barrels (pipe pieces) locally manufactured (for small quantities)	92	kg	1920402.17
	(MJP CSR 2023-24 P.No. 70 It. No.7,f)			
	ITEM No. 2 :-			
	Providing and making flanged joints to flanged C.I./M.S. pipes of all classes/specials etc. including all jointing materials (rubber packing, nut bolts etc), labour, hydraulic testing etc.			
12	1) 1000 mm dia	8909	joint	106908.00
15	2) 1500 mm dia.	13363.5	joint	200452.50
	(MJP CSR 2023-24 P.No. 71 It. No.9,xvii)			
	ITEM No. 3 :-			
	Excavation for foundation/ pipe trenches in hard murum & boulders. W.B.M. road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd-A - 3/259)			
24.50	Lift 0 to 1.5 M.	211	Cum	5169.50
	(MJP CSR 2023-24 P.No.37 It. No. 3)			
	ITEM No.4:-			
	Excavation for foundation/ pipe trenches in soft rock & old cement and lime masonry foundation asphalt road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling etc complete. (Bd-A-4/259)			
49.00	Lift 0 to 1.5 M.	629	Cum	30821.00
	(MJP CSR 2023-24 P.No.37 It. No. 5)			
	ITEM No.5:-			
	Providing & laying in situ following grades of C.C. of trap/ granite / quartzite /gneiss metal for foundation and bedding including dewatering, form work, compacting and curing, finishing etc. Complete.(Bd-E- 1/287)			
5.4	c) 1:2:4 (M -150) grade (with 12 to 20 mm metal)	6691.29	Cum	36133.00
	Rate Anlysis			

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	Item No.6 :- Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work in foundation like raft,grillage,strip foundation and footing of R.C.C. columns and steel stanchions including normal dewatering,formwork,compaction,finishing and curing etc.complete			
	Rate Anlysis			
	In R.C.C. M-200			
37.50	For r block at Shaft	8054.63	Cum	302049.00
	Item No. 7 :- Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes , caps, footings foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings fins, arches, etc as per detailed designs, drawings, and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc complete. (including cost of binding wire.)			
	(MJP CSR 2023-24 P.No.50 It. No.8,b)			
2.94	Tor Steel.	80681.00	MT	237505.00
	ITEM No.8 :-			
	Erecting and hoisting in position and jointing,testing M.S./C.I.D/Fpipes and specials invertical position including cost of all jointing materials (rubber packing,nutbolts,etc.)			
26	1000 mm DF MS Pipes	8909	Rmt	231634.00
29	1500 mm DF MS Pipes	13363.5	Rmt	387541.50
	(MJP CSR 2023-24 P.No. 71 It. No.9,xvii)			
	ITEM No9:-			
	Providing and supplying ISI mark C.I. D/F sluice valves and butterfly valves of following diameter including all taxes (Central and Local). Railway wagon, loading into truck, transport to departmental stores/ site,unloading, stacking etc. Complete.			
1	1) 1000 mm dia (PN 1.6)-for byepass	1013501	No.	1013501.00
	(MJP CSR 2023-24 P.No146 It. No. 2,c,xix)			
	ITEM No10:-			
	Lowering, laying and jointing in position following C.I. D/F Sluice Valve cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing etc. complete (Rate			
1	2) 1000 mm dia CIDF Sluice valve. -bypass	19344	No.	19344.00
	(MJP CSR 2023-24 P.No.148 It. No. 4-a, xix)			
	ITEM No.11:-			
	Providing and constructing B.B. masonry valve chamber with 15 mm cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 cm thick precast RCC frame & cover etc complete as directed by Engineer-in-charge.			
1	1)As above of 1.5 x 1.5cm internal size and depth upto 1.5M with precast RCC slab cover	29017.62	No.	29018.00
	Rate Anlysis			
		Total	Rs.	4520478.67
			Say	4,520,500

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

ESTIMATE OF M.S. SHAFT

MEASURMENTS

Description of Item.	No.	L	W	D			Qty	Unit
1	2	4	5	6			7	8
ITEM No. 1 :-								
Providing & supplying ISI standerd MS Specials of required thickness with 3 coats of approved make epoxy paint etc complete.								
MS barrels (pipe pieces) locally manufactured (for small quantities)								
For 1000 mm dia pipe, 8 mm thick	1	26	3.142	1.016	0.008	7850	5212.34	Kg
For 1000 mm dia bend. 8 mm thick	1	0.8	3.142	1.016	0.008	7850	160.38	Kg
For 1500 mm dia pipe, 8 mm thick	1	29	3.142	1.516	0.008	7850	8674.87	Kg
For 1500 mm dia bend. 8 mm thick	1	0.8	3.142	1.516	0.008	7850	239.307	Kg
For M.S. base plate	1	5	5.000	0.008	7850	7850	1570	Kg
Bolts for fixing base plate.	36	0.785	0.016	0.016	0.30	7850	17.0374	Kg
MS specials for bypass arrangement tee & bends	1					5000	5000	Kg
					Total.		20873.9	Kg
ITEM No. 2								
Providing and making flanged joints to flanged C.I./M.S. pipes of all classes/specials etc. including all jointing materials (rubber packing, nut bolts etc), labour, hydraulic testing etc.								
1) 1000 mm dia	1	12					12	No.
2) 1500 mm dia.	1	15					15	No.
ITEM No. 3								
Excavation for foundation/ pipe trenches in hard murum & boulders.								
Lift 0 to 1.5 M.								
For shaft fixing	1	7	7	0.50			24.50	Cum
ITEM No. 4 :-								
Excavation for foundation/ pipe trenches in soft rock								
Lift 0 to 1.5 M.								
For 250 mm dia	1	7	7	1.00			49.00	Cum
ITEM No. 5 :-								
Providing & laying in situ following grades of C.C. of trap/ granite / quartzite /gneiss metal								
c) 1:2:4 (M -150) grade								
For bedding	1	6	6	0.15			5.4	Cum
ITEM No. 6 :-								
Providing & laying in situ following grades of C.C. of trap/ granite / quartzite /gneiss metal								
c) 1:2:4 (M -200) grade								

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For fixing base plate	1	5	5	1.50			37.50	Cum
Item No.7 :- Providing and fixing in position steel bar reinforcement of various diameters etc complete. (including cost of binding wire.)								
Tor Steel.								
	1	37.50	1%	7850.00			2.94	MT
ITEM No.8 :-								
Hoisting & erecting double flanged MS pipes for MS shaft								
1000 mm	1	26					26	Rmt
1500 mm	1	29					29	Rmt
ITEM No.9:-								
Providing and supplying ISI mark C.I. D/F sluice valves and butterfly valves								
Sluice Valve PN-1.6								
1) 1000 mm dia CIDF Control valve	1	1					1	No.
ITEM No. 10 :-								
Lowering, laying and jointing in position following C.I. D/F Sluice Valve								
1) 1000 mm dia CIDF Sluice valve.	1	1					1	No.
ITEM No. 11:-								
Providing and constructing B.B. masonry valve chamber								
1) As above of 1.5 x 1.5 cm internal size and depth upto 1.5M with precast RCC slab cover	1	1					1	No.

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AUGMENTATION OF LATUR WATER SUPPLY SCHEME

Raw Water Gravity Main. From MS Shaft to WTP

(1200MM Dia = 26200 M, 1100 MM Dia.=20500 & 700 MM Dia=800M D.I.K-7 PIPES)

CLASSIFICATION OF STRATA AS PER TRIAL PIT RESULTS

							2.266
Sr.No	Chainage	Soft Soil	Murum	Hard murum & Bould.	Soft rock	Hard rock by blasting	Total depth
1	2	3		4	5	6	7
	1200MM Dia = 26183 M,D.I.K-7 PIPES						
1	0	0.6	0.3	0.35	0.35	0.7	2.30
2	500	0.5	0.3	0.65	0.35	0.5	2.30
3	1000	0.5	0.35	0.35	0.3	0.8	2.30
4	1500	0.35	0.2	0.5	0.4	0.85	2.30
5	2000	0.4	0.4	0.3	0.45	0.75	2.30
6	2500	0.3	0.5	0.35	0.45	0.7	2.30
7	3000	0.55	0.35	0.35	0.45	0.6	2.30
8	3500	0.45	0.35	0.3	0.35	0.85	2.30
9	4000	0.4	0.35	0.35	0.5	0.7	2.30
10	4500	0.3	0.3	0.3	0.3	1.1	2.30
11	5000	0.35	0.2	0.5	0.4	0.85	2.30
12	5500	0.4	0.4	0.3	0.45	0.75	2.30
13	6000	0.3	0.5	0.35	0.45	0.7	2.30
14	6500	0.3	0.5	0.35	0.45	0.7	2.30
15	7000	0.35	0.2	0.5	0.4	0.85	2.30
16	7500	0.4	0.4	0.3	0.45	0.75	2.30
17	8000	0.3	0.5	0.35	0.45	0.7	2.30
18	8500	0.55	0.35	0.35	0.45	0.6	2.30
19	9000	0.45	0.35	0.3	0.35	0.85	2.30
20	9500	0.4	0.35	0.35	0.5	0.7	2.30
21	10000	0.3	0.3	0.3	0.3	1.1	2.30
22	10500	0.35	0.2	0.5	0.4	0.85	2.30
23	11000	0.35	0.2	0.5	0.4	0.85	2.30
24	11500	0.4	0.4	0.3	0.45	0.75	2.30
25	12000	0.3	0.5	0.35	0.45	0.7	2.30
26	12500	0.55	0.35	0.35	0.45	0.6	2.30
27	13000	0.45	0.35	0.3	0.35	0.85	2.30
28	13500	0.4	0.35	0.35	0.5	0.7	2.30
29	14000	0.3	0.3	0.3	0.3	1.1	2.30
30	14500	0.35	0.2	0.5	0.4	0.85	2.30
31	15000	0.35	0.2	0.5	0.4	0.85	2.30
32	15500	0.4	0.4	0.3	0.45	0.75	2.30
33	16000	0.3	0.5	0.35	0.3	0.85	2.30
34	16500	0.55	0.35	0.35	0.45	0.6	2.30
35	17000	0.45	0.35	0.3	0.35	0.85	2.30
36	17500	0.4	0.35	0.35	0.5	0.7	2.30
37	18000	0.3	0.3	0.3	0.3	1.1	2.30
38	18500	0.35	0.2	0.5	0.4	0.85	2.30
39	19000	0.35	0.2	0.5	0.4	0.85	2.30

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40	19500	0.4	0.4	0.3	0.4	0.8	2.30
41	20000	0.3	0.5	0.35	0.45	0.7	2.30
42	20500	0.55	0.35	0.35	0.45	0.6	2.30
43	21000	0.45	0.35	0.3	0.35	0.85	2.30
44	21500	0.4	0.35	0.35	0.45	0.75	2.30
45	22000	0.3	0.3	0.3	0.3	1.1	2.30
46	22500	0.35	0.2	0.5	0.3	0.95	2.30
47	23000	0.35	0.2	0.5	0.4	0.85	2.30
48	23500	0.4	0.4	0.3	0.4	0.8	2.30
49	24000	0.3	0.5	0.35	0.45	0.7	2.30
50	24500	0.55	0.35	0.35	0.45	0.6	2.30
51	25000	0.45	0.35	0.3	0.3	0.9	2.30
52	25500	0.4	0.35	0.35	0.5	0.7	2.30
53	26000	0.3	0.3	0.3	0.3	1.1	2.30
		20.85	18.05	19.55	21.3	42.15	121.9
		0.39	0.34	0.37	0.40	0.80	2.30
	1100 MM Dia=17317+3100M=20417m D.I.K-7 PIPES						2.166
1	26500	0.3	0.5	0.55	0.3	0.5	2.15
2	27000	0.15	0.7	0.4	0.2	0.7	2.15
3	27500	0.3	0.5	0.35	0.45	0.55	2.15
4	28000	0.35	0.45	0.25	0.55	0.55	2.15
5	28500	0.3	0.5	0.55	0.3	0.5	2.15
6	29000	0.15	0.7	0.4	0.2	0.7	2.15
7	29500	0.3	0.5	0.35	0.45	0.55	2.15
8	30000	0.3	0.5	0.35	0.45	0.55	2.15
9	30500	0.35	0.45	0.2	0.35	0.8	2.15
10	31000	0.1	0.15	0.55	0.6	0.8	2.20
11	31500	0.3	0.5	0.35	0.45	0.55	2.15
12	32000	0.35	0.45	0.25	0.55	0.55	2.15
13	32500	0.3	0.5	0.35	0.45	0.55	2.15
14	33000	0.35	0.45	0.25	0.55	0.55	2.15
15	33500	0.2	0.5	0.45	0.3	0.7	2.15
16	34000	0.4	0.35	0.25	0.4	0.75	2.15
17	34500	0.35	0.45	0.2	0.35	0.8	2.15
18	35000	0.3	0.5	0.35	0.45	0.55	2.15
19	35500	0.1	0.15	0.55	0.6	0.75	2.15
20	36000	0.3	0.5	0.35	0.45	0.55	2.15
21	36500	0.35	0.45	0.2	0.35	0.8	2.15
22	37000	0.1	0.15	0.55	0.6	0.75	2.15
23	37500	0.3	0.5	0.35	0.45	0.55	2.15
24	38000	0.35	0.45	0.25	0.55	0.55	2.15
25	38500	0.3	0.5	0.35	0.45	0.55	2.15
26	39000	0.2	0.5	0.45	0.3	0.7	2.15
27	39500	0.4	0.35	0.25	0.4	0.75	2.15
28	40000	0.35	0.45	0.2	0.35	0.8	2.15
29	40500	0.3	0.5	0.35	0.45	0.55	2.15
30	41000	0.35	0.45	0.2	0.35	0.8	2.15
31	41500	0.1	0.15	0.55	0.4	0.95	2.15

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32	42000	0.3	0.5	0.35	0.45	0.55	2.15
33	42500	0.35	0.45	0.25	0.4	0.7	2.15
34	43000	0.1	0.15	0.55	0.4	0.95	2.15
35	43500	0.3	0.5	0.35	0.45	0.55	2.15
36	44000	0.5	0.35	0.35	0.3	0.65	2.15
37	44500	0.35	0.2	0.5	0.4	0.7	2.15
38	45000	0.4	0.4	0.3	0.45	0.6	2.15
39	45500	0.3	0.5	0.35	0.3	0.7	2.15
40	46000	0.55	0.35	0.35	0.45	0.45	2.15
41	46500	0.3	0.5	0.35	0.45	0.55	2.15
42	47000	0.3	0.5	0.35	0.5	0.5	2.15
	Total	12.40	18.15	15.05	17.60	27.15	90.35
	Avg Depth	0.30	0.43	0.36	0.42	0.65	2.15
	700 MM Dia=800M D.I.K-7 PIPES						1.866
1	0	0.3	0.45	0.35	0.3	0.5	1.90
2	500	0.15	0.4	0.45	0.2	0.7	1.90
3	800	0.15	0.45	0.4	0.2	0.7	1.90
	Total	0.60	1.30	1.20	0.70	1.90	5.70
	Avg Depth	0.20	0.43	0.40	0.23	0.63	1.90

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AUGMENTATION OF LATUR WATER SUPPLY SCHEME

RWGM from M.S. Shaft to WTP

(1200MM Dia = 26200 M,1100 MM Dia.=20500 & 700 MM Dia=800M D.I.K-7 PIPES)

ABSTRACT

Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	ITEM No. 1 :- Providing D.I.Pipes (push on joints pressure pipes of D I of following class and diameter confirming to the I S specifications inclusive cost of jointing materials (Rubber gasket of EPDM quality) excluding GST levied by GOI and GOM in all respect,including Third party inspection charges of TPI agency approved by MJP including transit, insurance, railway freight, unloading from railway wagon, loading into truck, transportation to depatmental store, site of work, unloading, stacking etc. complete as directed by Engineer in charge (IS- 1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latested edition/			
25390.00	1200 mm dia.DI.K-7 Pipe.	38818.00	Rmt	985589020.00
20500.00	1100 mm dia.DI.K-7 Pipe.	33427.00	Rmt	685253500.00
800.00	700 mm dia.DI.K-7 Pipe.	13246.00	Rmt	10596800.00
	MJP.SSR .2023 - 24. Page No.69 . I.No.3			
	1277.41	42700000		
	ITEM No.2 :- Providing & Supplying ISI standard D.I. specials and fittings with sealing rubber gasket of SBR complete with C.I. follower glands and mild steel nut bolts coated or otherwise protected from rusting and suitable for D.I.pipes including cost of labour,material and transportation to stors /site,loading,unloading including all taxes etc complete as per IS-9523.			
155088	350 mm dia & Above,	186.00	Kg	28846368.00
	MJP.SSR .2023 - 24. Page No.71 . I.No.10,b			
	ITEM No:3 :- Providing double flanged Refiux Valves conforming to IS-5312 including worm gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges transportation stores,unloading,stacking excluding GST levied by GOI & GOM in all respect etc.complete.			
1	1200 mm dia Sluice Valve.P.N.1.6	1306050.00	Nos.	1306050.00
1	1100 mm dia Sluice Valve.P.N.1.6	1097039.00	Nos.	1097039.00
1	700 mm dia Sluice Valve.P.N.1.6	444257.00	Nos.	444257.00
	MJP.SSR .2023 - 24. Page No.144 . I.No.1,c			
	ITEM No:4 :- Providing double flanged Sluice Valves conforming to IS-14846 including worm gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges transportation stores,unloading,stacking excluding GST levied by GOI & GOM in all respect etc.complete.			
102	200 mm dia Sluice Valve.P.N.1.6 (Isolated & scour)	27877.00	Nos.	2843454.00
1	700 mm dia Sluice Valve.P.N.1.6	368329.00	Nos.	368329.00
2	1100 mm dia Sluice Valve.P.N.1.6	1259767.00	Nos.	2519534.00

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2	1200 mm dia Sluice Valve.P.N.1.6	1489438.00	Nos.	2978876.00
	MJP.SSR .2023- 24. Page No.146 . I.No.2,c			
	Item No 5 :- Providing and supplying at site ductile Iron / Spheroidal Graphite (S.G) iron single / Double chamber tamper proof air valve without isolating sluice valve.Valves in accordance with BSEN 1074-4 of PN 10/16 rated with body and bonnet of ductile iron conforming to EN 1563/IS 1865.Gr.500/7 or Gr.400/15 floats,float guide,seat ring of stainless steel I.4436/I.4306.seat ring gasket of WRAS approved EPDM rubber (suitable for drinking water) internal fastness of stainless steel A2 Body & Bonnet coated inside & outside with electrostatically applied epoxy poeder coated blue colour (suitable for drinking water) as per DIN 30677-2 & GSK guidelines with a coating thickness of min.250 microns.Flange connections as per IS 1538 raised face & pressure testing at manufactures works shall be done as per IS 14845,including transportation charges excluding GST levied by GOI & GOM in all respect etc.complete..			
95	200 mm dia. Tamper Proof Air Valve.PN-1.60	31689.00	Nos.	3010455.00
	MJP.SSR .2023 - 24. Page No.145 . I.No.25			
	ITEM No 6 :- Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, manual dewatering, preparing the bed for foundation and excluding backfilling, etc. complete			
	MJP.SSR .2023 - 24. Page No.37 . I.No.1			
28492.04	Lift 0 to 1.5 M.	165.00	Cum.	4701186.92
	Item No.7 :- Excavation for foundation/ pipe trenches in hard murum including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd-A - 3/259)			
	MJP.SSR .2023 - 24. Page No.37 . I.No.2			
31110.06	Lift 0 to 1.5 M.	187.00	Cum	5817582.00
	Item No.8 :- Excavation for foundation/ pipe trenches in hard murum & W.B.M. road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd A - 2/259)			
	MJP.SSR .2023 - 24. Page No.37 . I.No.3			
29793.92	Lift 0 to 1.5 M.	211.00	Cum	6286517.00

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	Item No.9 :- Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation, asphalt road, soft rock by blasting and hard rock by controlled blasting, including trimming and levelling the bed by chiselling where necessary and removing the excavated material and stacking it in measurable heaps within a distance of 50 metres from the area and lifts as below, normal dewatering, excluding backfilling, etc. complete.			
	MJP.SSR .2023 - 24. Page No.37 . I.No.5			
33232.17	Lift 0 to 1.5 M.	629.00	Cum	20903037.00
	Item No 10 :- Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means.			
	MJP.SSR .2023 - 24. Page No.38 . I.No.7			
257.60	Lift 0 to 1.5 M.	1119.00	Cum	288255.00
59340.46	Lift 1.5 to 3.0 M.	1147.00	Cum	68063508.00
	ITEM No.11 :- Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials from foundation 15 cm to 20 cm layers including watering and compaction etc.			
	MJP.SSR .2023 - 24. Page No.41 . I.No.16			
13370.80	A).Murum available from excavated stuff	92.00	Cum	1230114.00
	ITEM No. 12 :- Lowering laying and jointing with SBR rubber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.			
	MJP.SSR .2023 - 24. Page No.68 . I.No.2,a			
25390.00	1200 mm dia.DI.K-9 Pipe.	1225.20	Rmt	31107828.00
20500.00	1000 mm dia.DI.K-9 Pipe.	1021.00	Rmt	20930500.00
800.00	700 mm dia.DI.K-9 Pipe.	529.00	Rmt	423200.00
	ITEM No. 13 :- Hydraulic testing of pipeline to specified pressure including cost of all materials and labour and water for testing using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.			
	MJP.SSR .2023 - 24. Page No.72 . I.No.12,a			
	<u>CI Class 'LA' / Mortar inlined D.I. K-9 / K-7</u>			
25.39	1200 mm dia.DI.K-9 Pipe.	136323.60	Km	3461257.00

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20.50	1000 mm dia.DI.K-9 Pipe.	113603.00	Km	2328862.00
0.80	700 mm dia.DI.K-9 Pipe.	58662.00	Km	46930.00
	ITEM No. 14 :- Lowering, laying and jointing in position following C.I. D/F reflux valves, Butterfly valves and sluice valves including cost of all labour jointing material including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for 1000 mm dia. pipe)			
	MJP.SSR .2023 - 24. Page No.148 . I.No.4,a			
102	200 mm dia Sluice Valve.P.N.1.6 (Isolated & scour)	4160.00	Nos.	424320.00
3	1200 mm dia Sluice Valve.P.N.1.6	24545.00	Nos.	73635.00
3	1100 mm dia Sluice Valve.P.N.1.6	22336.00	Nos.	67008.00
2	700 mm dia Sluice Valve.P.N.1.6	11785.00	Nos.	23570.00
	ITEM No. 15 :- Providing and fixing in position air valve shaft including providing and fixing G.I. Medium class of 6 mm thick M.S. pipe shaft 2.70 m long over branch flange of air valve tee. Providing PCC block of M- 150 concrete 150 mm thick around the air valve tee including encasing of vertical shaft in PCC M-150 as shown in type design together with providing and making flanged joints wherever required cost of air valve over the shaft excluding cost of air valve and branched flanged air valve tee, etc complete as per branched flanged air valve tee, etc complete as per type design and as directed by Engineer-in-charge for following diameters of pipe lines. (Type design attached)			
	MJP.SSR .2023 - 24. Page No.155 . I.No.17,a			
	A) Foundation on Murum and Hard Strata			
93.00	1000 to 1200 mm Dia pipeline.	19192.00	Nos.	1784856.00
	B) Foundation on Murum and Hard Strata			
2.00	450 to 900 mm Dia pipeline.	15284.00	Nos.	30568.00
	ITEM No.16 :- Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:2:6 proportion PCC bedding excluding excavation, B.B. masonry in C.M. 1:5 proportion precast RCC frame and cover etc. complete as directed by Engineer in charge (internal size 60 x 45 cm and depth 0.9 m.)			
	As Per Rate Analysis			
9	As above of 150 x 150 cm internal size and depth upto 1.5M with precast RCC slab cover	29017.62	Nos.	261159.00
	ITEM No. 17 :- Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm. Layers with all leads and lifts including consolidation, surcharging, etc. complete			
#####	MJP.SSR .2023 - 24. Page No.40 . I.No.15	92.00	Cum	10946892.00
	Item No. 18 :- Providing and supplying ISI standard MS specials of required thickness with 3 coats of approved make epoxy paint (Shalimar, Ciba or Mahindra & Mahindra make) from inside and outside including all taxes (Central and local), octroi, inspection charges, transportation to stores / site, and stacking, etc. complete.			

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	MJP.SSR .2023 - 24. Page No.70 . I.No.7			
5000.00	MS Specials (All Socketed)	95.00	Kg	475000.00
	ITEM No. 19 :- Providing and laying in situ cement concrete of trap/ granite/ quartzite/ gneiss metal for foundation and bedding including dewatering, form work, compacting roughening if special finishis to be provided, finishing if required etc. complete.			
2016.18	1:2:4 (M – 150) grade	6691.29	Cum	13490873.51
	(As Per Corrigendum No.Lett.No.9/1368.Dt.06.05.22)			
	Item No.20 :- Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work in foundation like raft,grillage,strip foundation and footing of R.C.C. columns and steel stanchions including normal dewatering,formwork,compaction,finishing and curing etc.complete			
	(As Per Corrigendum No.Lett.No.9/1368.Dt.06.05.22)			
	In R.C.C. M-200			
545.74	For Thrust/Anchor block at bends	8054.63	Cum	4395713.00
	Item No. 21 :- Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes , caps, footings foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings fins, arches, etc as per detailed designs, drawings, and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc complete. (including cost of binding wire.)			
	MJP.SSR .2023 - 24. Page No.50 . I.No.8,b			
42.840	Tor Steel.	80681.00	MT	3456406.00
	Item No. 22 :- Making cross connection to existing distribution main of any type including excavation, breaking and removing exiting pipes, lowering, laying of specials and pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diamerts of existing pipeline, irrespective of diameter of branch line (the number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores).			
	MJP.SSR .2023 - 24. Page No.58 . I.No.10,xvii			
2.00	1000 mm dia	72794.00	Nos.	145588.00

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	Item No. 23 :- RATES FOR ROAD AND RAILWAY CROSSING BY PUSH THROUGH METHOD Pushing of M.S. pipe of following dia for road crossing and railway crossing by push through method in all types of strata by using hydraulic jack and drilling machine of required diameter, below MS casing pipe lowering, laying, jointing of material,required welding machinery,tripod, chain pully block,crane , blower ,compressor,loading and unloading of machinery into the trench etc,transporting and dewatering etc.complete as directed by engineer in charge but excluding cost of MS Pipes.			
90.00	b) 500 mm to 1200 mm dia MS pipe	34522.00	Rmt	3107000.00
	MJP.SSR .2023 - 24. Page No.60 . I.No.14,b			
	Item No. 24 :- Manufacturing, providing and supplying spirally welded / ERW/ SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming ‘V’ edge on both ends of pipes including railway freight, insurance, unloading from railway wagon, loading into truck, transport to stores, unloading, stacking, excluding GST levied by GOI and GOM in all respect etc. complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).			
0.00	Dia of Pipe : 1200 mm (I. D.) 9.0mm thk	25240.00	Rmt	0.00
60.00	Dia of Pipe : 1000 mm (I. D.) 9.0mm thk	21065.00	Rmt	1263900.00
30.00	Dia of Pipe : 700 mm (I. D.) 9.0mm thk	14802.00	Rmt	444060.00
	MJP.SSR .2023 - 24. Page No.174 . I.No.2			
	Item No. 25 :- Provision for charges to be deposited to PWD department and Telephone department for various permissions (Including Crossing of National Highway, State Highway, MDR & ODR etc. & charges to be paid against pipe line to be laid along the road side,etc)			
47500.00	PWD Charges Along the Road	275	Rmt	13062500.00
3.00	Road Crossing	5500	Rmt	16500.00
	Item No. 26 :- Provision for charges towards crop compensasion of farmers,etc)			
186760	(As per Rate Analysis)	250	Sq.mt.	46690000.00
		Total	Rs.	1990602007
		Say Rs	Rs.	1,990,602,100

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME						
RWGM from M.S. Shaft to WTP						
(1200MM Dia = 26200 M, 1100 MM Dia.=20500 & 700 MM Dia=800M D.I.K-7 PIPES)						
M E A S U R M E N T S						
Description of Item	No	L	W	D	Qty	Unit
1	2	3	4	5	6	7
ITEM No.1 :- Providing D.I. K-9 grade pipes with internal cement mortar lining including taxes, insurance,						
Raw water gravity Main						
1200 mm dia.DI.K-7 Pipe.	1	25390			25390	Rmt
1100 mm dia.DI.K-7 Pipe.	1	20500			20500	Rmt
700 mm dia.DI.K-7 Pipe.	1	800			800	Rmt
ITEM No.2 :- Providing and supplying DI/MS specials suitable for above pipes,						
Above 350 mm Dia PN-16						
1200 x 1200 x 200 Hydrant Tee-	53	1099	weight/No.		58247	Kg
1100 x 1000 x 200 Hydrant	45	793	weight/No.		35685	Kg
700 x 700 x 200 Hydrant	2	226	weight/No.		452	Kg
1200 mm dia Bend						
90 Degree	8	1692	weight/No.		13536	Kg
45 Degree	2	1173	weight/No.		2346	Kg
22,1/2 Degree	3	846	weight/No.		2538	Kg
11,1/4 Degree	4	723	weight/No.		2892	Kg
1200 mm dia MJ Coller Coupling	15	766	weight/No.		11490	Kg
1200mm diaTail piece	3	523	weight/No.		1569	Kg
1000 mm dia Bend						
90 Degree	6	1365	weight/No.		8190	Kg
45 Degree	1	955	weight/No.		955	Kg
22,1/2 Degree	2	696	weight/No.		1392	Kg
11,1/4 Degree	2	599	weight/No.		1198	Kg
1100 mm dia MJ Coller Coupling	15	666	weight/No.		9990	Kg
1100mm diaTail piece	3	432	weight/No.		1296	Kg
700 mm dia Bend						
90 Degree	2	402	weight/No.		804	Kg
45 Degree	1	280	weight/No.		280	Kg
22,1/2 Degree	2	214	weight/No.		428	Kg
11,1/4 Degree	2	176	weight/No.		352	Kg
700 mm dia MJ Coller Coupling	4	264	weight/No.		1056	Kg
700mm diaTail piece	2	196	weight/No.		392	Kg
				Total Wt.	155088	Kg

LATUR CITY MUNICIPAL CORPORATION

ITEM No.3 :- Providing and supplying ISI mark C.I. Reflux valve						
1200 mm dia Sluice Valve.P.N.1.6	1	1			1	Nos.
1100 mm dia Sluice Valve.P.N.1.6	1	1			1	Nos.
700 mm dia Sluice Valve.P.N.1.6	1	1			1	Nos.
ITEM No.4 :- Providing and supplying ISI mark C.I. D/F sluice valves						
200 mm dia Sluice Valve.P.N.1.6 (Isolated &	1	102			102	Nos.
700 mm dia Sluice Valve.P.N.1.6	1	1			1	Nos.
1100 mm dia Sluice Valve.P.N.1.6	1	2			2	Nos.
1200 mm dia Sluice Valve.P.N.1.6	1	2			2	Nos.
Item No 5 :- Providing , supplying & fixing in position stainless ball, tamper proof air vents ... etc including all taxes and duties except octroi)						
200 mm dia. Tamper Proof Air Valve.PN-1.60	1	95			95	Nos.
Item No.6 :- Excavation for foundation/ pipe trenches in Soft Soil..... excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
1200 mm dia.DI.K-7 Pipe.	1	25390	1.80	0.39	17978.99	Cum
1100 mm dia.DI.K-7 Pipe.	1	20500	1.70	0.30	10289.05	Cum
700 mm dia.DI.K-7 Pipe.	1	800	1.40	0.20	224.00	Cum
				Total Qty.	28492.04	Cum
Item No.7 :- Excavation for foundation/ pipe trenches in hard murum excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
1200 mm dia.DI.K-7 Pipe.	1	25390	1.80	0.34	15564.55	Cum
1100 mm dia.DI.K-7 Pipe.	1	20500	1.70	0.43	15060.18	Cum
700 mm dia.DI.K-7 Pipe.	1	800	1.40	0.43	485.33	Cum
				Total Qty.	31110.06	Cum
Item No.8 :- Excavation for foundation/ pipe trenches in hard murum & W.B.M. road..... excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
1200 mm dia.DI.K-7 Pipe.	1	25390	1.80	0.37	16858.00	Cum
1100 mm dia.DI.K-7 Pipe.	1	20500	1.70	0.36	12487.92	Cum
700 mm dia.DI.K-7 Pipe.	1	800	1.40	0.40	448.00	Cum
				Total Qty.	29793.92	Cum
Item No.9 :- Excavation for foundation / pipe trenches in soft rock and old cement .. by blasting and hard rock by controlled....., etc. complete.						
Lift 0 to 1.5 M.						
1200 mm dia.DI.K-7 Pipe.	1	25390	1.80	0.40	18367.03	Cum
1100 mm dia.DI.K-7 Pipe.	1	20500	1.70	0.42	14603.81	Cum
700 mm dia.DI.K-7 Pipe.	1	800	1.40	0.23	261.33	Cum
				Total Qty.	33232.17	Cum

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Item No 10 :- Excavation for foundation / pipe trenches in Hard rock by Cheseling, excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
700 mm dia.DI.K-7 Pipe.	1	800	1.40	0.23	257.60	Cum
Lift 1.5 to 3.0 M.						
1200 mm dia.DI.K-7 Pipe.	1	25390	1.80	0.80	36346.02	Cum
1000 mm dia.DI.K-7 Pipe.	1	20500	1.70	0.65	22528.04	Cum
700 mm dia.DI.K-7 Pipe.	1	800	1.40	0.42	466.40	Cum
				Total Qty.	59340.46	Cum
ITEM No. 11 :-Filling in plinth and floors murum bedding in trenches						
A) Murum available from excavated stuff						
1200 mm dia.DI.K-9 Pipe.	1	25390	1.80	0.15	6855.30	Cum
1100 mm dia.DI.K-9 Pipe.	1	20500	1.70	0.15	5227.50	Cum
700 mm dia.DI.K-9 Pipe.	1	800	1.40	1.15	1288.00	Cum
				Total Qty.	13370.80	Cum
ITEM No. 12 :- Lowering laying and jointing with SBR rubber gasket C.I. / D.I. S/S pipes etc. complete.						
1200 mm dia.DI.K-9 Pipe.	1	25390			25390	Rmt.
1000 mm dia.DI.K-9 Pipe.	1	20500			20500	Rmt.
700 mm dia.DI.K-9 Pipe.	1	800			800	Rmt.
ITEM No. 13 :- Hydraulic testing of pipeline to specified pressure including cost of all materials and labour ,etc.						
<u>CI Class 'LA' / Mortar inlined D.I. K-9 / K-7</u>						
1200 mm dia.DI.K-9 Pipe.	1	25.39			25.39	Km
1000 mm dia.DI.K-9 Pipe.	1	20.50			20.50	Km
700 mm dia.DI.K-9 Pipe.	1	0.80			0.80	Km
ITEM No. 14 :- Lowering, laying and jointing in position following C.I. D/F Sluice Valve						
200 mm dia Sluice Valve.P.N.1.6 (Isolated & scour)	1	102			102	Nos.
1200 mm dia Sluice Valve.P.N.1.6	1	3			3	Nos.
1100 mm dia Sluice Valve.P.N.1.6	1	3			3	Nos.
700 mm dia Sluice Valve.P.N.1.6	1	2			2	Nos.
ITEM No.15 :- Providing and fixing in position air valve shaft						
A) Foundation on Murum and Hard Strata						
1000 to 1200 mm Dia pipeline.	1	93			93	Nos.
B) Foundation on Murum and Hard Strata						
450 to 900 mm Dia pipeline.	1	2			2	Nos.
ITEM No. 16 :- Providing and constructing B.B. masonry valve chamber						
As above of 150 x 150 cm internal size and depth upto 1.5M with precast RCC slab cover	1	9			9	Nos.
ITEM No. 17 :- Refilling the trenches with available excavated stuff						
Total excavation					182226.25	Cum

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Deduction						
Murum bedding					13370.80	
Volume of pipe for 1200 mm dia	0.7855	1.216	1.216	25390	29490.09	
Volume of pipe for 1000 mm dia	0.7855	1.116	1.116	20500	20055.27	
Volume of pipe for 700 mm dia	0.7855	0.716	0.716	800	322.15	
Total deduction					63238.31	
Net qty of refilling				Total =	118987.95	Cum
Item No. 18 :- Providing MS Specials etc charges, transportation to stores / site, and stacking, etc. complete						
MS Specials	1	5000			5000	Kg
ITEM No. 19 :- Providing and laying in situ cement concrete M-10 / 1:3:6 of trap/ granite/ quartzite/ gneiss metal for foundation and bedding etc. complete.						
1:2:4 (M-150) grade						
Encasing in Nalla portion	10	50	2	2	2000.00	
P.W.D.Road crossing's	3	30	2.1	0.3	56.70	
Deduct Pipe Volume =	1.00	50.00	0.785	(0.1000)^2	40.52	Cum
				Total =	2016.18	Cum
Item No.20 :- Providing and Casting RCC M-200 ...etc complete.						
For Thrust/Anchor block at bends	35	4.50	2.10	1.65	545.74	Cum
Item No.21 :- Providing and fixing in position steel bar reinforcement of various diameters etc complete. (including cost of binding wire.)						
Tor Steel.	1.00	545.74	0.01	7850	42.840	MT
Item No. 22 :- Making cross connection to existing distribution main of any type including ..etc. complete						
1000 mm dia	1	2			2	Nos.
Item No. 23:- RATES FOR ROAD AND RAILWAY CROSSING BY PUSH THROUGH METHOD Pushing of M.S. pipe of following dia for road crossing and railway crossing by push through method in all types of strata by using hydraulic jack and drilling machine of required diameter, below MS casing pipe lowering, laying, jointing of material,required welding machinery,tripod, chain pully block,crane , blower ,compressor,loading and unloading of machinery into the trench etc,transporting and dewatering etc.complete as directed by engineer in charge but excluding cost of MS Pipes.						
b) 500 mm to 1000 mm dia MS pipe	3	30			90	Rmt

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Item No. 24 :- Manufacturing, providing and supplying spirally welded / ERW/ SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including railway freight, insurance, unloading from railway wagon, loading into truck, transport to stores, unloading, stacking, excluding GST levied by GOI and GOM in all respect etc. complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).						
Dia of Pipe : 1200 mm (I. D.) 8mm thk	0	30			0	Rmt
Dia of Pipe : 1000 mm (I. D.) 8mm thk	1	60			60	Rmt
Dia of Pipe : 700 mm (I. D.) 8mm thk	1	30			30	Rmt
Item No. 25 :- Provision for charges to be deposited to PWD department and Telephone department for various permissions (Including Crossing of National Highway, State Highway, MDR & ODR etc. & charges to be paid against pipe line to be laid along the road side,etc)						
PWD Charges Along the Road	1	47500			47500	Rmt
Road Crossing	1	3			3	Rmt
Item No. 26 :- Provision for charges towards crop compensasion of farmers,etc)						
	1	46690	4		186760	Sq.Rmt

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AUGMENTATION OF LATUR WATER SUPPLY SCHEME								
Raw Water Rising Main. From RCW To AF								
(200 MM DIA D.I.K-9 PIPES)								
CLASSIFICATION OF STRATA AS PER TRIAL PIT RESULTS								
							1.25	1.45
Sr.No	Chainage	Soft Soil	Murum	Hard murum & Bould.	Soft rock	Hard rock by blasting	Total depth	Location
1	2	3		4	5	6	7	8
1	0	0.2	0.3	0.3	0.25	0.2	1.25	
2	100	0.25	0.25	0.3	0.25	0.2	1.25	
	Total	0.45	0.55	0.60	0.50	0.40	2.50	
	Avg Depth	0.23	0.28	0.30	0.25	0.20	1.25	

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AUGMENTATION OF LATUR WATER SUPPLY SCHEME				
Raw Water Rising Main. From RCW To AF				
(200 MM DIA D.I.K- 9 PIPES. L - 100 M)				
ABSTRACT				
Qty	Description of Item	Rate	Unit	Amount
1	2	3	4	5
	ITEM No. 1 :- Providing and supplying ISI mark D.I. S/S pipes (push on joints pressure pipes) of D I of following class and diameter confirming to the I S specifications inclusive cost of jointing materials (rubber gasket of EPDM quality) including all statutory duties and taxes lavied by GOI and GOM in all respect, education cess, VAT, Third party inspection charges of TPI agency approved by MJP including transit, insurance, railway freight, unloading from railway wagon, loading into truck, transportation to deparmental store, site of work, unloading, stacking etc. complete as directed by Engineer in charge (IS-1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latested edition/ revision with			
100.00	200 mm dia.DI.K-9 Pipe.	3083.00	Rmt	308300.00
	MJP CSR 2023 - 24 Page No. 67 I.No.1,a,iv			
	ITEM No.2 :- Providing and supplying D.I. fitting with ISI mark socket pushon joints or flanged joints confirming to table 12 to 31 of IS 9523/2000 upto latest amendments including cost of SBR/EDPM tyton rings. Fittings should be with internally ordinary portland cement mortor lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation & all			
2	200 x 200 x 80 MM DIA TEE	6469.00	Nos.	12938.00
	MJP CSR 2023 - 24 Page No. 110 I.No.1,xiv			
	ITEM No.3 :- Providing and supplying D.I. fitting with ISI mark socket pushon joints or flanged joints confirming to table 12 to 31 of IS 9523/2000 upto latest amendments including cost of SBR/EDPM tyton rings. Fittings should be with internally ordinary portland cement mortor lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation & all taxes etc. complete			
	MJP CSR 2023 - 24 Page No. 99 I.No.1,I,ii,iii,iv			
	200 mm Dia			
2	90 Degree Bend	4064.00	Nos.	8128.00
1	45 Degree Bend	4200.00	Nos.	4200.00
1	22.5 Degree Bend	3545.00	Nos.	3545.00

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1	11.25 Degree Bend	3370.00	Nos.	3370.00
	ITEM No.4 :- Providing and supplying D.I. fittings with ISI mark Mechanical joint confirming to tables 12 to table 31 of IS 9523/2000 upto latest amendments including cost of SBR/ EDPM gaskets, Nuts, Bolts, Washers and Ductile iron follower glands. Fittings should be with internally Ordinary portland cement mortar lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation and all taxes etc. complete.			
2	200 mm dia.MJ.Jiffy collar	6540.00	Nos.	13080.00
	MJP CSR 2023 - 24 Page No. 99 I.No.1,I			
	ITEM No 5 :- 1 D.I. Socket and flanged fittings :-Providing and supplying D.I. fitting with ISI mark socket pushon joints or flanged joints confirming to table 12 to 31 of IS 9523/2000 upto latest amendments including cost of SBR/ EDPM tyton rings. Fittings should be with internally ordinary portland cement mortar lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation & excluding all statutory duties and taxes such as GST levied by Gol and GoM in all respect etc. complete.			
1	200 mm dia.Flange Socket-PN-10	3259.00	Nos.	3259.00
	MJP CSR 2023 - 24 Page No. 100 I.No.1,viii			
	ITEM No.6 :- Providing & Supplying ISI standard D.I. specials and fittings with sealing rubber gasket of SBR complete with C.I. follower glands and mild steel nut bolts coated or otherwise protected from rusting and suitable for D.I.pipes including cost of labour,material and transportation to stors/site,loading,unloading including all taxes etc complete as per IS-9523.			
500	DI.specials 80 to 300 mmdia	153	Kg	76500.00
	MJP SSR 2023-24 Item No. 10 Page No. 71			
	ITEM No:7 :- Providing double flanged Sluice Valves conforming to IS-2906 / 14846 including worm gear arrangements as per test pressure, stainless steel spindle, caps, including all taxes, transportation, etc. complete.			
2	80 mm dia Sluice valve PN-1.00 (Scour & Isolating)	6158.00	Nos.	12316.00
1	200 mm dia Sluice Valve.P.N.1.00	22297.00	Nos.	22297.00
	MJP CSR 2023 - 24 Page No. 145 I.No.2,a			

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	Item No 8 :- Providing and supplying at site ductile iron / Spheroidal Graphite (S.G.) iron single /Double chamber tamper proof air valve without isolating sluice valve. Valves in accordance with BSEN 1074-4 of PN 10/16 rated, with body and bonnet of ductile iron confirming to EN 1563/IS 1865 Gr. 500/7 or Gr.400/15 floats, float guide, seat ring of stainless steel 1.4436/1.4306, seat ring gasket of WRAS approved EPDM rubber (suitable for drinking water), internal fasteners of stainless steel A2. Body & Bonnet coated inside & outside with electrostatically applied epoxy powder coated blue colour (suitable for drinking water) as per DIN 30677-2 & GSK guidelines with a coating thickness of min. 250 microns.Flange connections as per IS 1538 raised face & pressure testing at manufactures works shall be done as per IS			
1	50 mm dia. Tamper Proof Air Valve.PN-1	17353.00	Nos.	17353.00
	MJP CSR 2023 - 24 Page No. 160 I.No.25			
	Item No 9 :- Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, manual dewatering, preparing the bed for foundation and excluding backfilling, etc. complete			
	MJP CSR 2023 - 24 Page No. 37 I.No.1			
18.00	Lift 0 to 1.5 M.	165.00	Cum	2970.00
	Item No.10 :- Excavation for foundation/ pipe trenches in hard murum including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd-A - 3/259)			
	MJP CSR 2023 - 24 Page No. 37 I.No.2			
22.00	Lift 0 to 1.5 M.	187.00	Cum	4114.00
	Item No.11 :- Excavation for foundation/ pipe trenches in hard murum & W.B.M. road including removing the excavated material upto a distance of 50 m beyond the area and lifts as below stacking and spreading as directed by Engineer- in-charge, Normal dowering, preparing the bed for found-ation and excluding backfilling etc complete. (Bd-A - 3/259)			
	MJP CSR 2023 - 24 Page No. 37 I.No.3			
24.00	Lift 0 to 1.5 M.	211.00	Cum	5064.00

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	Item No.12 :- Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation, asphalt road, soft rock by blasting and hard rock by controlled blasting, including trimming and levelling the bed by chiselling where necessary and removing the excavated material and stacking it in measurable heaps within a distance of 50 metres from the area and lifts as below, normal dewatering, excluding backfilling, etc. complete.			
20.00	Lift 0 to 1.5 M.	629.00	Cum	12580.00
	MJP CSR 2023 - 24 Page No. 37 I.No.5			
	Item No 13 :- Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means.			
16.00	Lift 0 to 1.5 M.	1119.00	Cum	17904.00
	MJP CSR 2023 - 24 Page No. 37 I.No.7			
	ITEM No.14 :- Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials from foundation 15 cm to 20 cm layers including watering and compaction etc.			
	MJP CSR 2023 - 24 Page No. 37 I.No.16			
12.00	A).Murum available from excavated stuff	92.00	Cum	1104.00
	ITEM No. 15 :- Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc.			
	MJP CSR 2023 - 24 Page No. 68 I.No.2			
100.00	200 mm dia.DI.K-9 Pipe.(without rubber ring)	127.00	Rmt	12700.00
	ITEM No. 16 :- Hydraulic testing of pipeline to specified pressure including cost of all materials and labour and water for testing using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.			
	CI Class 'LA' / Mortar inlined D.I. K-9 / K-7			

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	MJP CSR 2023 - 24 Page No. 72 I.No.2			
0.100	200 mm dia.DI.K-9 Pipe.(without rubber ring)	14165.00	Km	1416.50
	ITEM No. 17 :- Lowering, laying and jointing in position following C.I. D/F reflux valves, Butterfly valves and sluice valves including cost of all labour jointing material including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for			
	MJP CSR 2023 - 24 Page No. 148 I.No.4,a			
2	80 mm dia Sluice valve PN-1.00 (Scour & Isolating)	1947.00	Nos.	3894.00
1	200 mm dia Sluice Valve.P.N.1.00	4160.00	Nos.	4160.00
	ITEM No.18 :- Providing and fixing in position air valve shaft including providing and fixing G.I. Medium class of 6 mm thick M.S. pipe shaft 2.70 m long over branch flange of air valve tee. Providing PCC block of M- 150 concrete 150 mm thick around the air valve tee including encasing of vertical shaft in PCC M- 150 as shown in type design together with providing and making flanged joints wherever required cost of air valve over the shaft excluding cost of air valve and branched flanged air valve tee, etc complete as per branched flanged air valve tee, etc complete as			
	MJP CSR 2023 - 24 Page No. 155 I.No.17,a			
	A) Foundation on Murum and Hard Strata			
1	200 to 400 mm Dia pipeline.	7515.00	Nos.	7515.00
	ITEM No. 19 :- Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:2:6 proportion PCC bedding excluding excavation, B.B. masonry in C.M. 1:5 proportion precast RCC frame and cover etc. complete as directed by Engineer in charge (internal size 60 x 45 cm and depth 0.9 m.)			
	(As Per Rate Analysis)			
1	1) As above of 90 x 60 cm internal size and depth upto 1.2 M with precast RCC slab cover	12871.82	Nos.	12872.00
	ITEM No. 20 :- Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm. Layers with all leads and lifts including consolidation, surcharging, etc. complete			
	MJP CSR 2023 - 24 Page No. 40 I.No.15			
68.24	Basic Rate	92.00	Cum	6279.00
	Item No. 21 :- Providing and supplying ISI standard MS / CIspecials of required thickness with 3 coats of approved make epoxy paint (Shalimar, Ciba or Mahindra & Mahindra make) from inside and outside including all taxes (Central and local), octroi, inspection charges, transportation to stores / site, and stacking, etc. complete.			

LATUR CITY MUNICIPAL CORPORATION

500.00	MS Specials (D/F-Plain Ended)	95.00	Kg	47500.00
	MJP.CSR 2023-24 Page No.70. I.No.7			
	Item No.22 :- Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work in foundation like raft,grillage,strip foundation and footing of R.C.C. columns and steel stanchions including normal dewatering, formwork, compaction, finishing and curing etc.complete			
5.76	In R.C.C. M-200 (1:1.5:3)	8079.91	Cum	46541.00
	(As Per Rate Analysis)			
	Item No. 23 :- Providing and laying in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap / granite / quartzite / gneiss metal for foundation and bedding including dewatering , compacting and curing.etc.			
	(As Per Rate Analysis)			
10.33	PCC.M-150.1:2:4.	6719.10	Cum	69421.00
	Item No. 24 :- Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes , caps, footings foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings fins, arches, etc as per detailed designs, drawings, and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc complete. (including cost of binding wire.)			
0.45	Tor Steel.	80681.00	MT	36481.00
	MJP.CSR 2023-24 Page No.50. I.No.8,b			
Total of subwork			Rs.	777802
Say			Rs.	777,900

LATUR CITY MUNICIPAL CORPORATION

AUGMENTATION OF LATUR WATER SUPPLY SCHEME

Raw Water Rising Main. From RCW To AF

(200 MM DIA D.I.K- 9 PIPES. L - 100 M)

M E A S U R M E N T S

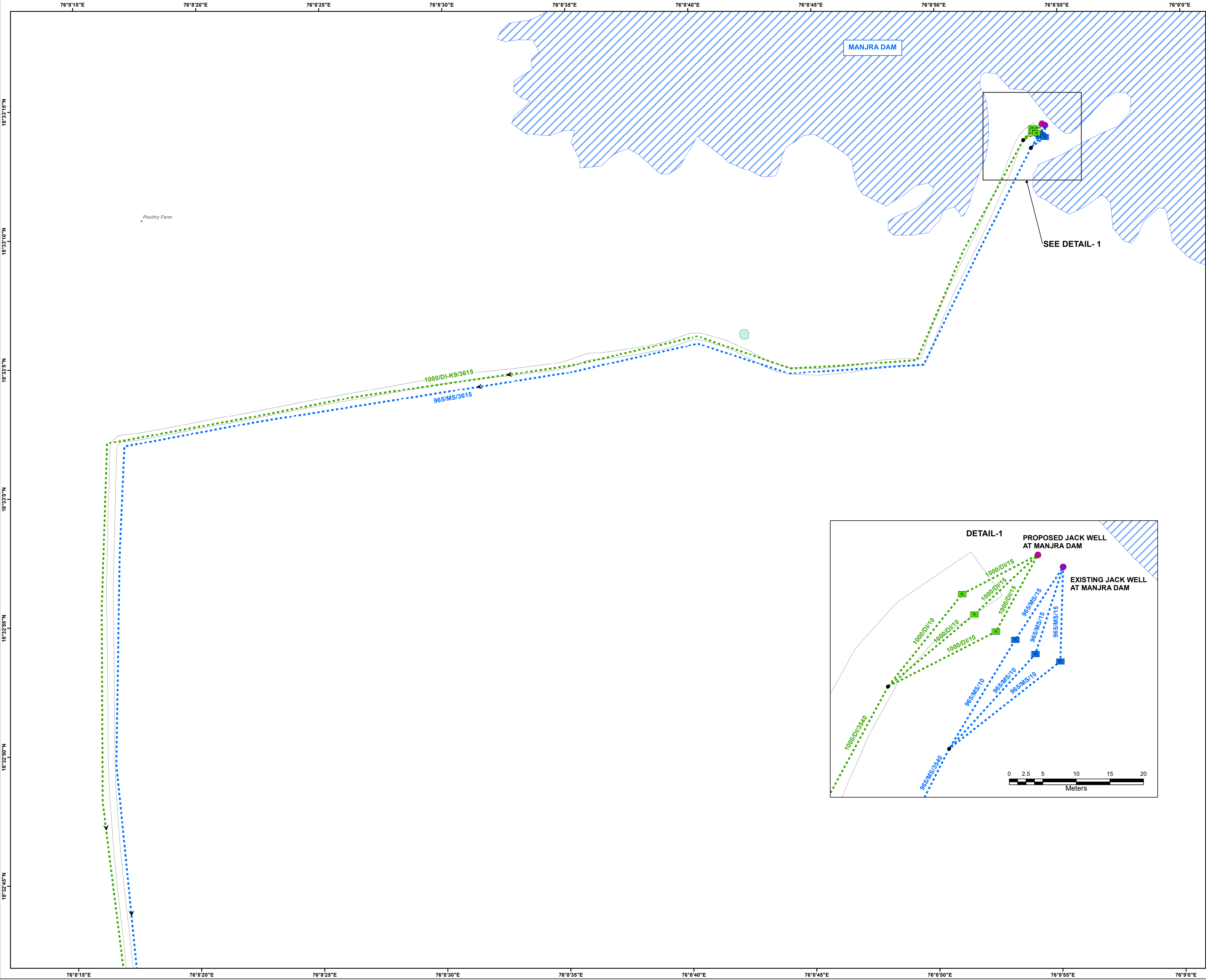
Description of Item	No	L	W	D	Qty	Unit
1	2	3	4	5	6	7
ITEM No. 1:- Providing and supplying ISI mark D.I. S/S pipes (push on joints pressure pipes) of D I of following class and diameter confirming to the I S specifications inclusive cost of jointing materials (rubber gasket of EPDM quality) including all statutory duties and taxes lavied by GOI and GOM in all respect, education cess, VAT, Third party inspection charges of TPI agency approved by MJP including transit, insurance, railway freight, unloading from railway wagon, loading into truck, transportation to deparatmental store, site of work, unloading, stacking etc. complete as directed by Engineer in charge (IS- 1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latested edition/ revision with amendments for rubber gasket)						
200 mm dia.DI.K-9 Pipe.	1	100			100	Rmt
ITEM No. 2 :- Supply of CI MJ double Socket with flange Tees complete..						
200 x 200 x 80 MM DIA TEE	1	2			2	No.
ITEM No.3 :- Supply of CI MJ double Socket bend complete..						
200 mm Dia						
90 Degree Bend	1	2			2	Nos.
45 Degree Bend	1	1			1	No.
22.5 Degree Bend	1	1			1	No.
11.25 Degree Bend	1	1			1	No.
ITEM No.4 :- Supply of C.I M.J Giffy collar coupling etc complete..						
200 mm dia.MJ.Jiffy collar	1	2			2	Nos.
ITEM No.5 :- Supply of DI fitting with ISI Mark etc						
200 mm dia.Flange Socket-PN-10	1	1			1	No.
ITEM No.6 :- Providing and supplying DI specials suitable for above pipes,						
DI.specials	1	500			500	Kg
ITEM No.7 :- Providing and supplying ISI mark C.I. D/F sluice valves						
80 mm dia Sluice valve PN-1.00 (Scour & Isolating)	1	2			2	Nos.
200 mm dia Sluice Valve.P.N.1.00	1	1			1	No.
Item No 8 :- Providing , supplying & fixing in positon stainless ball, tamper proof air vents ... etc including all taxes and duties except octroi)						
80 mm dia. Tamper Proof Air Valve.PN-1.00	1	1			1	No.

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Item No.9 :- Excavation for foundation/ pipe trenches in Soft Soil..... excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
200 mm dia.DI.K-9 Pipe.	1	100	0.8	0.23	18.00	Cum
Item No.10 :- Excavation for foundation/ pipe trenches in hard murum excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
200 mm dia.DI.K-9 Pipe.	1	100	0.8	0.28	22.00	Cum
Item No.11 :- Excavation for foundation/ pipe trenches in hard murum & W.B.M. road..... excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
200 mm dia.DI.K-9 Pipe.	1	100	0.8	0.30	24.00	Cum
Item No.12 :- Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation,asphalt road,soft rock by blasting and hard rock by controlled....., etc. complete.						
Lift 0 to 1.5 M.						
200 mm dia.DI.K-9 Pipe.	1	100	0.80	0.25	20.00	Cum
Item No 13 :- Excavation for foundation / pipe trenches in Hard rock by Cheseling, excluding backfilling, etc. complete.						
Lift 0 to 1.5 M.						
200 mm dia.DI.K-9 Pipe.	1	100	0.80	0.20	16.00	Cum
ITEM No. 14 :-Filling in plinth and floors murum bedding in trenches						
A) Murum available from excavated stuff						
200 mm dia.DI.K-9 Pipe.	1	100	0.80	0.15	12.00	Cum
ITEM No. 15 :- Lowering laying and jointing with SBR rubber gasket C.I. / D.I. S/S pipes etc. complete.						
200 mm dia.DI.K-9 Pipe.(without rubber ring)	1	100			100.00	Rmt
ITEM No. 16 :- Hydraulic testing of pipeline to specified pressure including cost of all materials and labour ..etc.						
CI Class 'LA' / Mortar inlined D.I. K-9 / K-7						
200 mm dia.DI.K-9 Pipe.(without rubber ring)	1	0.100			0.100	Rmt
ITEM No. 17 :- Lowering, laying and jointing in position following C.I. D/F Sluice Valve						
80 mm dia Sluice valve PN-1.00 (Scour & Isolating)	1	2			2	Nos.
200 mm dia Sluice Valve.P.N.1.00	1	1			1	No.
ITEM No.18 :- Providing and fixing in position air valve shaft						
Foundation on Murum and Hard Strata						
200 to 400 mm Dia pipeline.	1	1			1	No.
ITEM No. 19 :- Providing and constructing B.B. masonry valve chamber						
1) As above of 90 x 60 cm internal size and depth upto 1.2 M	1	1			1	No.
ITEM No. 20 :- Refilling the trenches with available excavated stuff						
Total excavation				100.00	Cum	
Deduction						

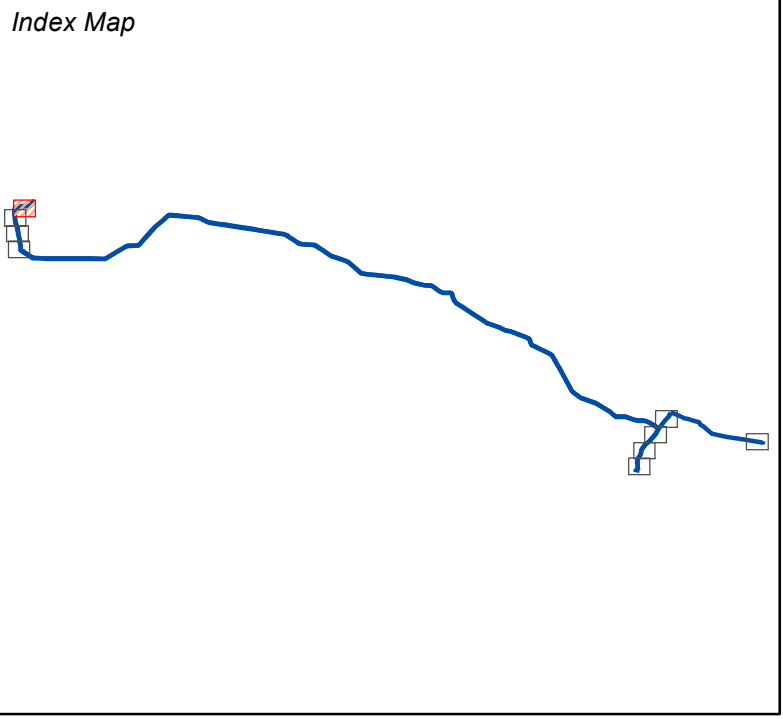
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Murum bedding					12.00	
Volume of pipe for 200 mm dia	0.7855	0.216	0.216	100	3.66	
Qty. of concrete for Thrust Block					5.76	
Qty. of concrete for Encasing					10.33	
Total deduction					31.76	
Net qty of refilling				Total =	68.24	Cum
Item No. 21 :- Providing MS Specials etc charges, transportation to stores / site, and stacking, etc. complete						
MS Specials	1	500			500	Kgs.
Item No.22 :- Providing and Casting RCC M-200 ...etc complete.						
For Thrust/Anchor block at bends	2	2.00	1.20	1.20	5.76	Cum
Item No. 23 :- Providing and laying in situ Cement concrete M-15 /1:2:4 grade of C.C. of trap /etc. complete						
Encasing in Road Crossing	1.00	5.00	0.75	0.75	2.81	Cum
Encasing in Nalla portion	1.00	10.00	0.90	0.90	8.10	Cum
Deduct Pipe Volume =		15.00	0.7850	(0.416)^2	0.58	Cum
				Total =	10.33	Cum
Item No.24 :- Providing and fixing in position steel bar reinforcement of various diameters etc complete. (including cost of binding wire.)						
Tor Steel.	1.00	5.76	0.01	7850	0.45	MT

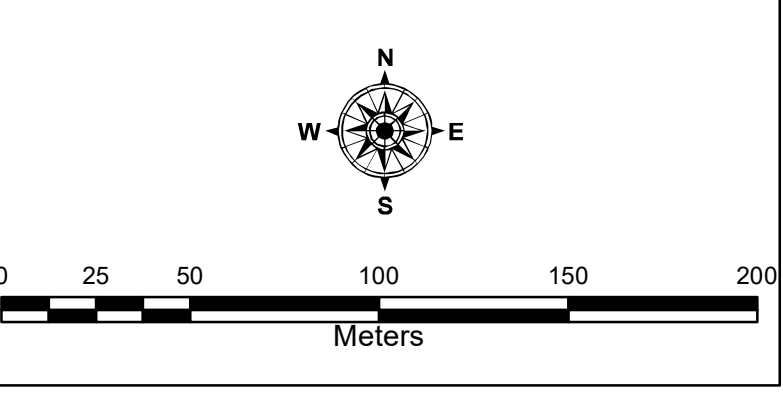


Map Title

ANNEXURE- 4
PROPOSED RAW WATER TRANSMISSION
SYSTEM - NETWORK MAPS



- Legend
- EXISTING JACK WELL
 - PROPOSED JACK WELL
 - EXISTING WTP
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 - ROAD EDGES
 - LANDMARK
 - DIAMETER/ MATERIAL/ LENGTH (M)



Project Title

AUGMENTATION OF LATUR WATER
SUPPLY SCHEME

Client:

LATUR MUNICIPAL CORPORATION
Latur 413 512 (MH) INDIA

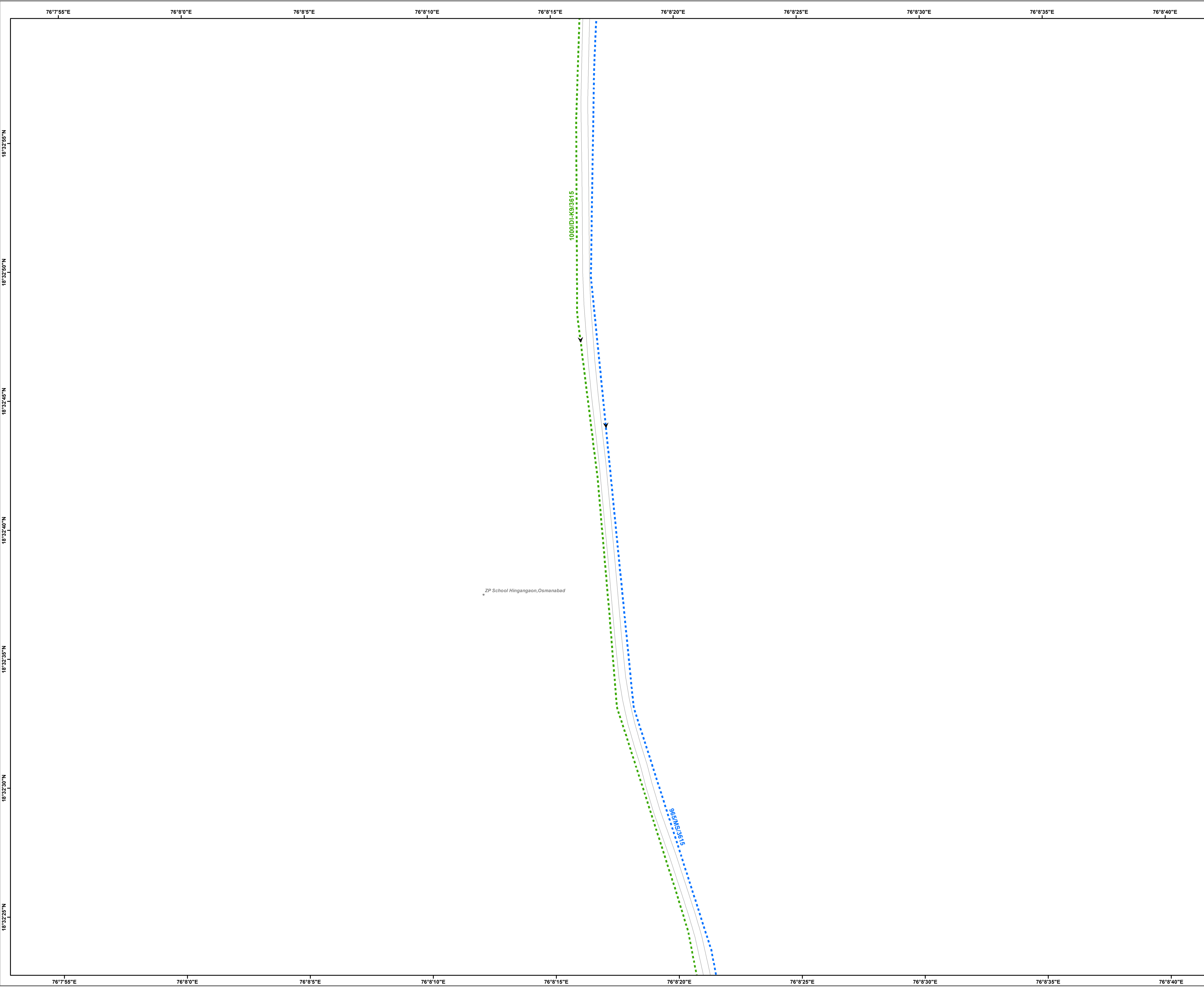
Consultant:

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Concepts & Technologies Pvt. Ltd.
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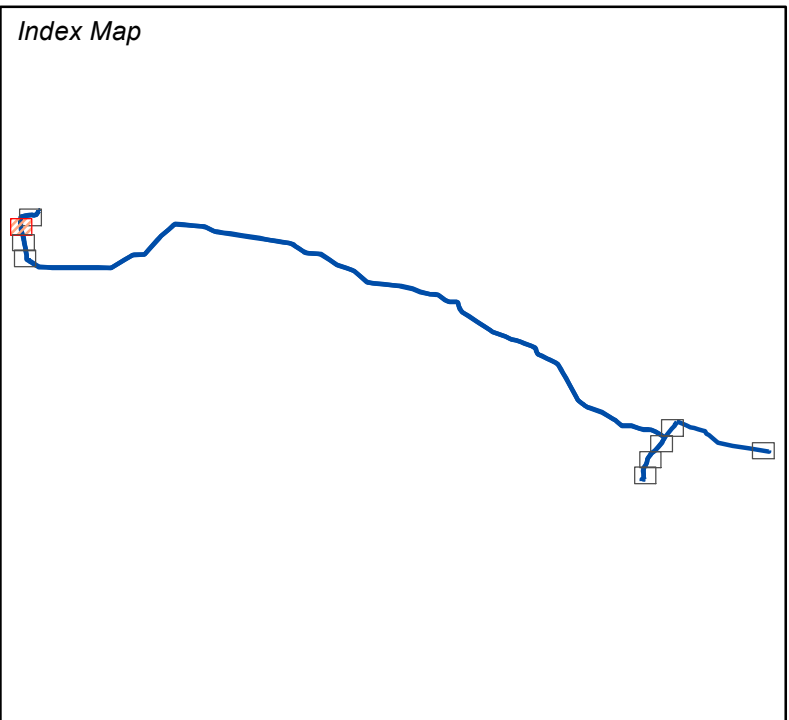


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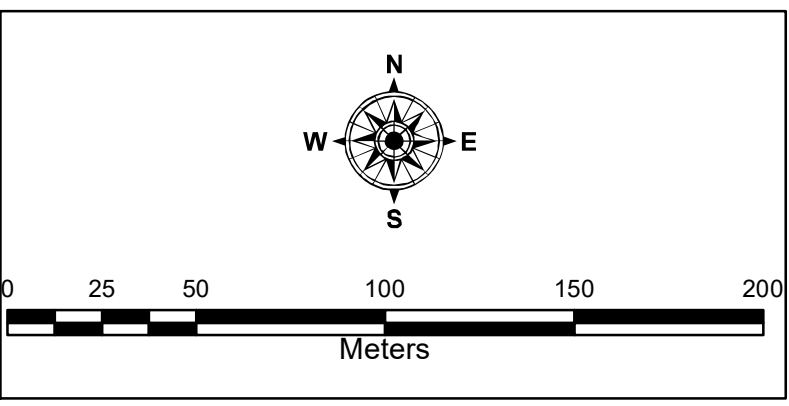
ANNEXURE- 4

PROPOSED RAW WATER TRANSMISSION

SYSTEM - NETWORK MAPS



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Project Title

AUGMENTATION OF LATUR WATER

SUPPLY SCHEME

Client:

 **LATUR MUNICIPAL CORPORATION**

Latur 413 512 (MH) INDIA

Consultant:

 **LifeFirst**

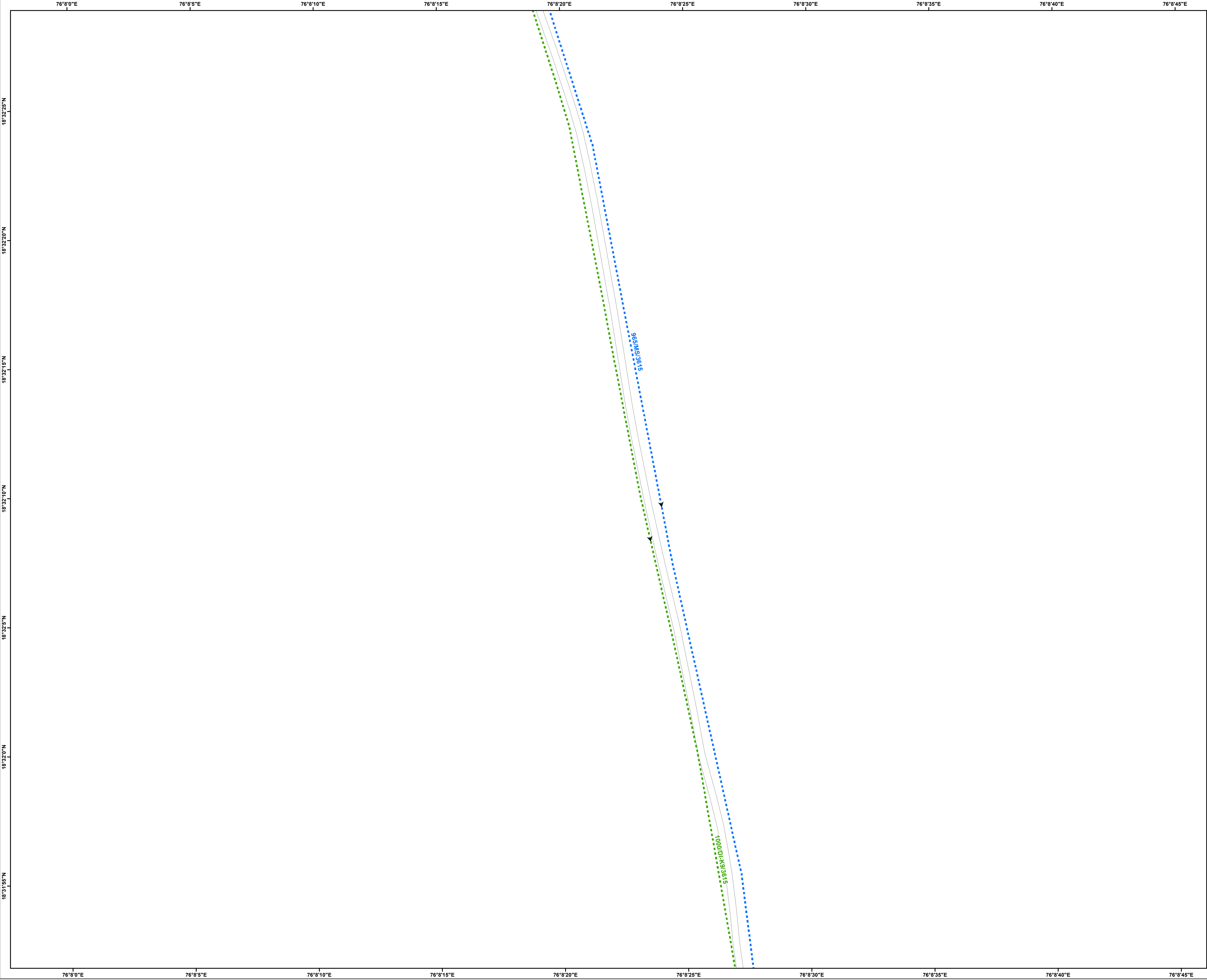
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Date- March 2023

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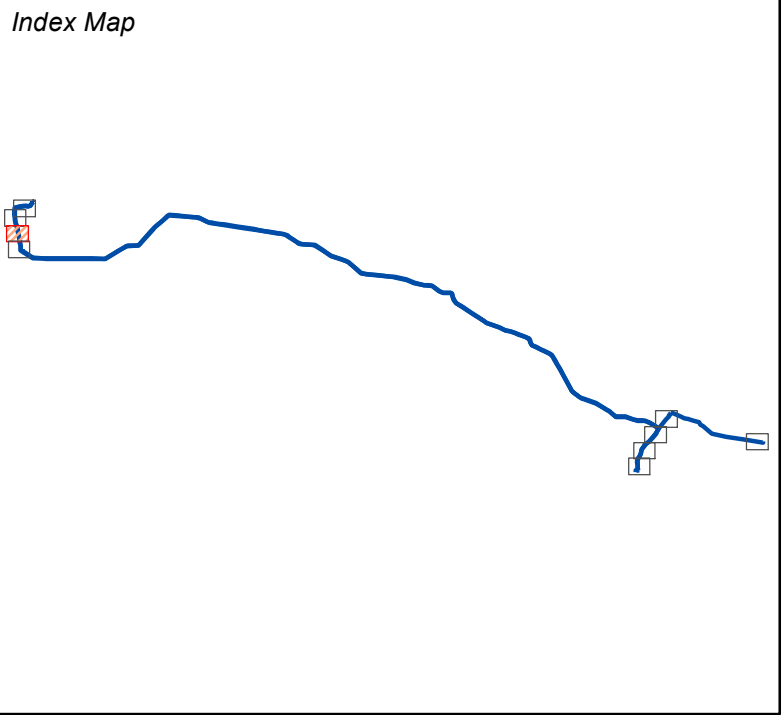


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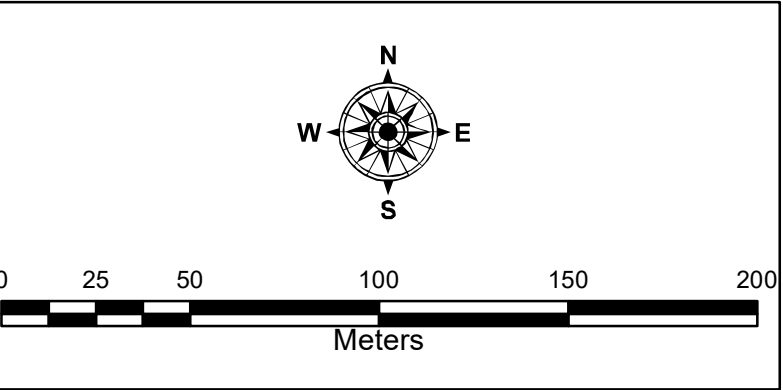
ANNEXURE- 4

PROPOSED RAW WATER TRANSMISSION

SYSTEM - NETWORK MAPS



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Project Title

AUGMENTATION OF LATUR WATER

SUPPLY SCHEME

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 **LATUR MUNICIPAL CORPORATION**

Latur 413 512 (MH) INDIA

Consultant:

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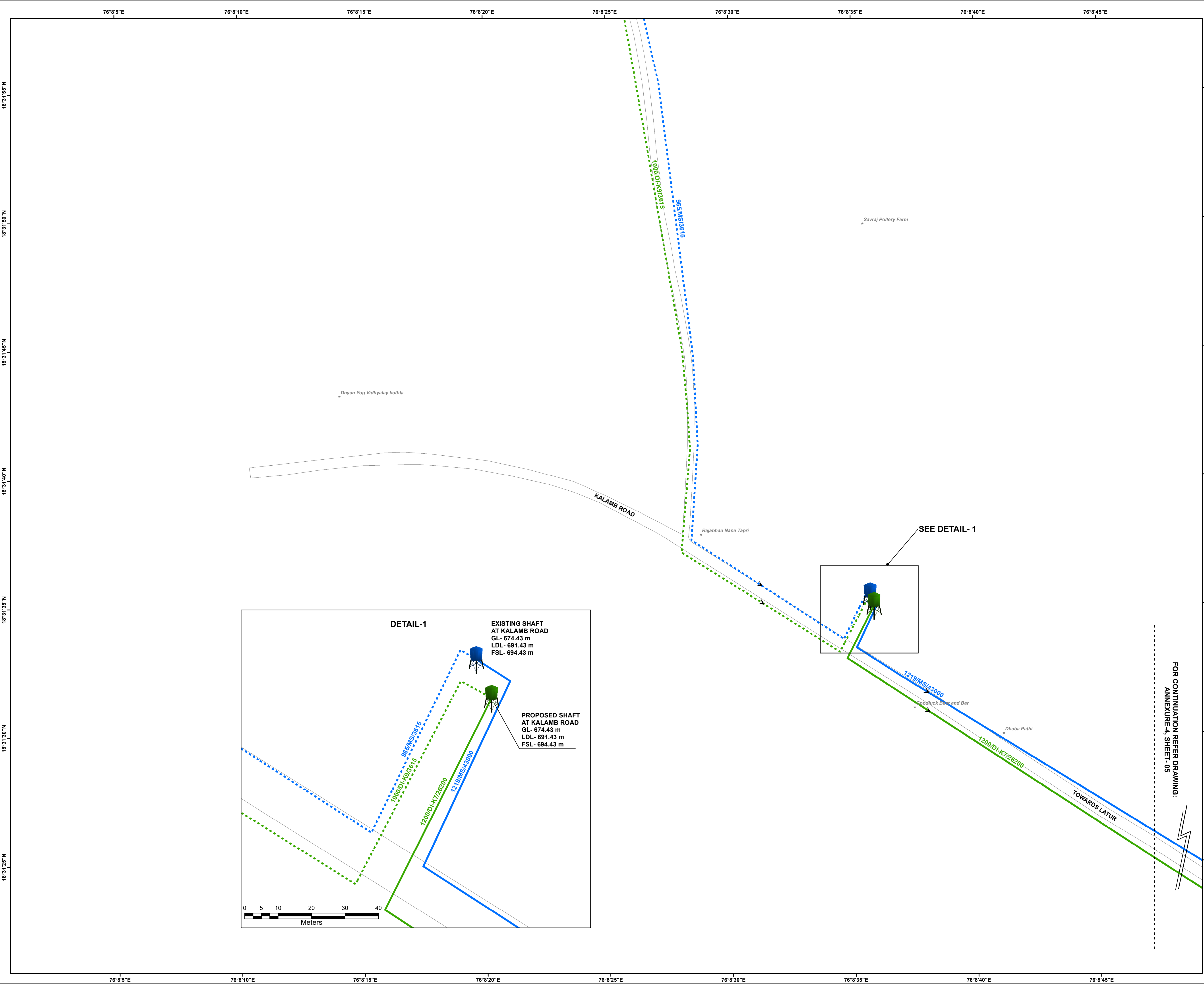
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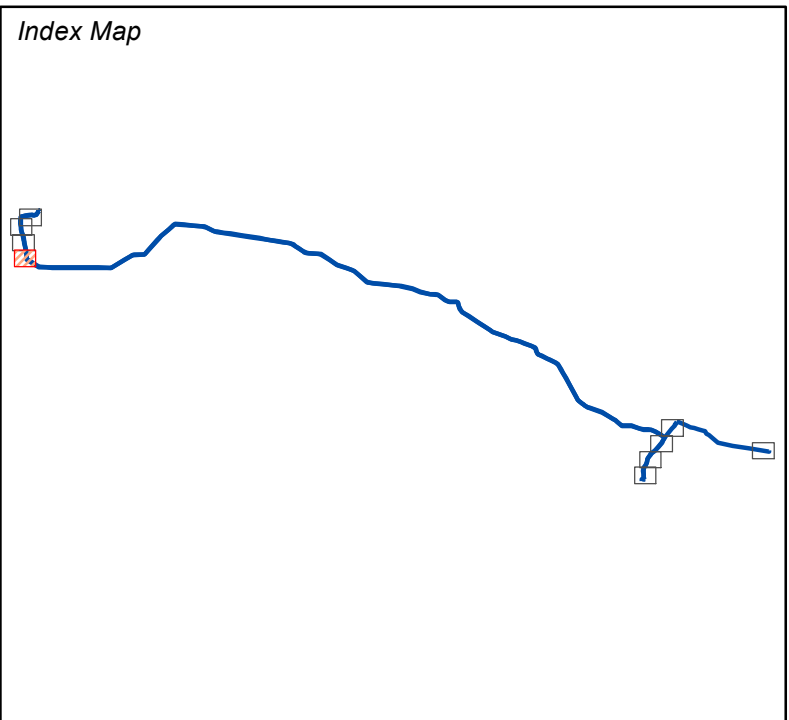
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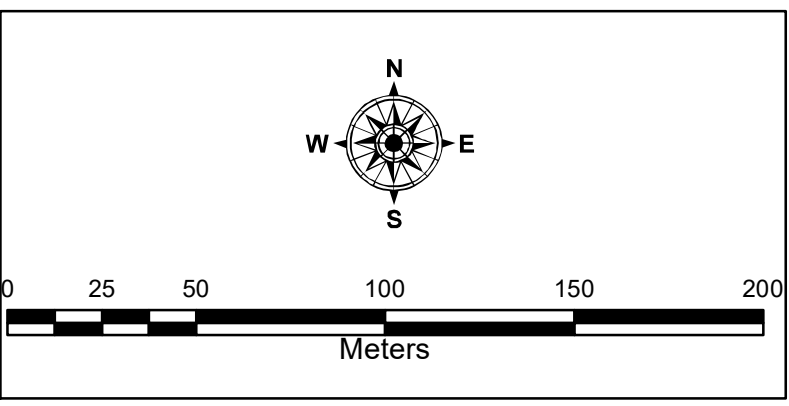


Map Title

ANNEXURE- 4
PROPOSED RAW WATER TRANSMISSION
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AUGMENTATION OF LATUR WATER
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Latur 413 512 (MH) INDIA

Consultant:

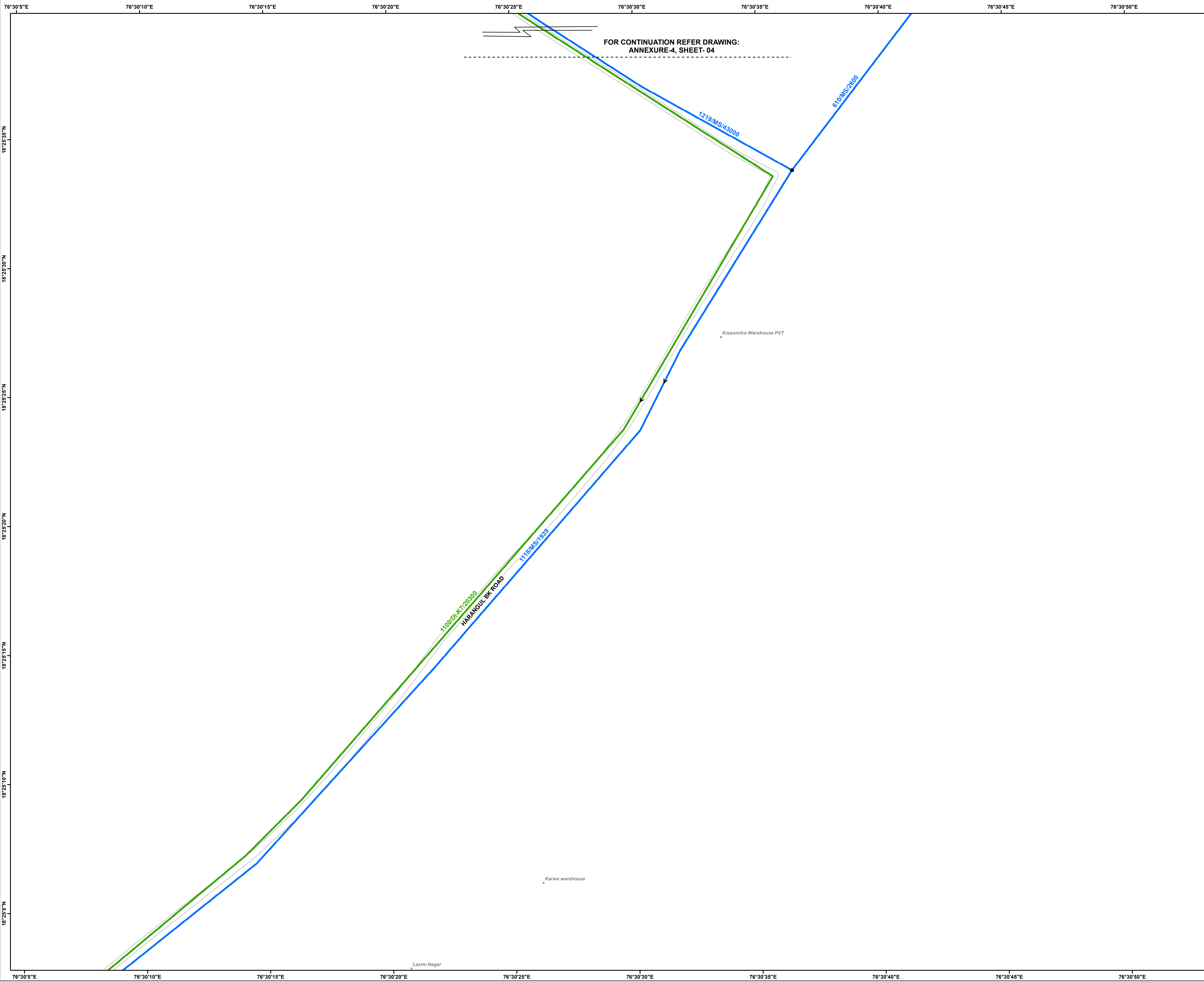
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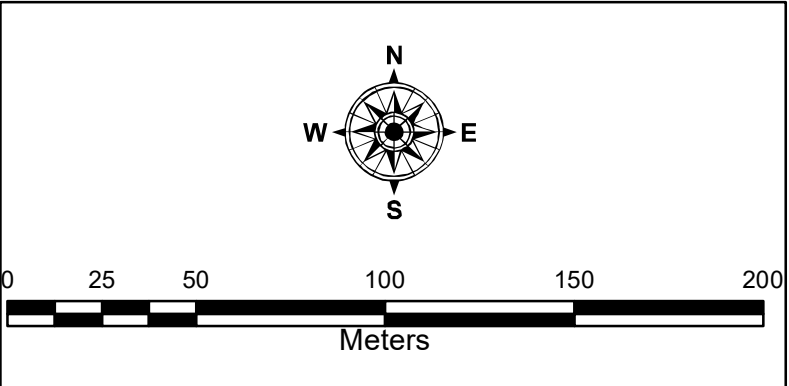
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ANNEXURE- 4
PROPOSED RAW WATER TRANSMISSION
SYSTEM - NETWORK MAPS



Legend

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Project Title

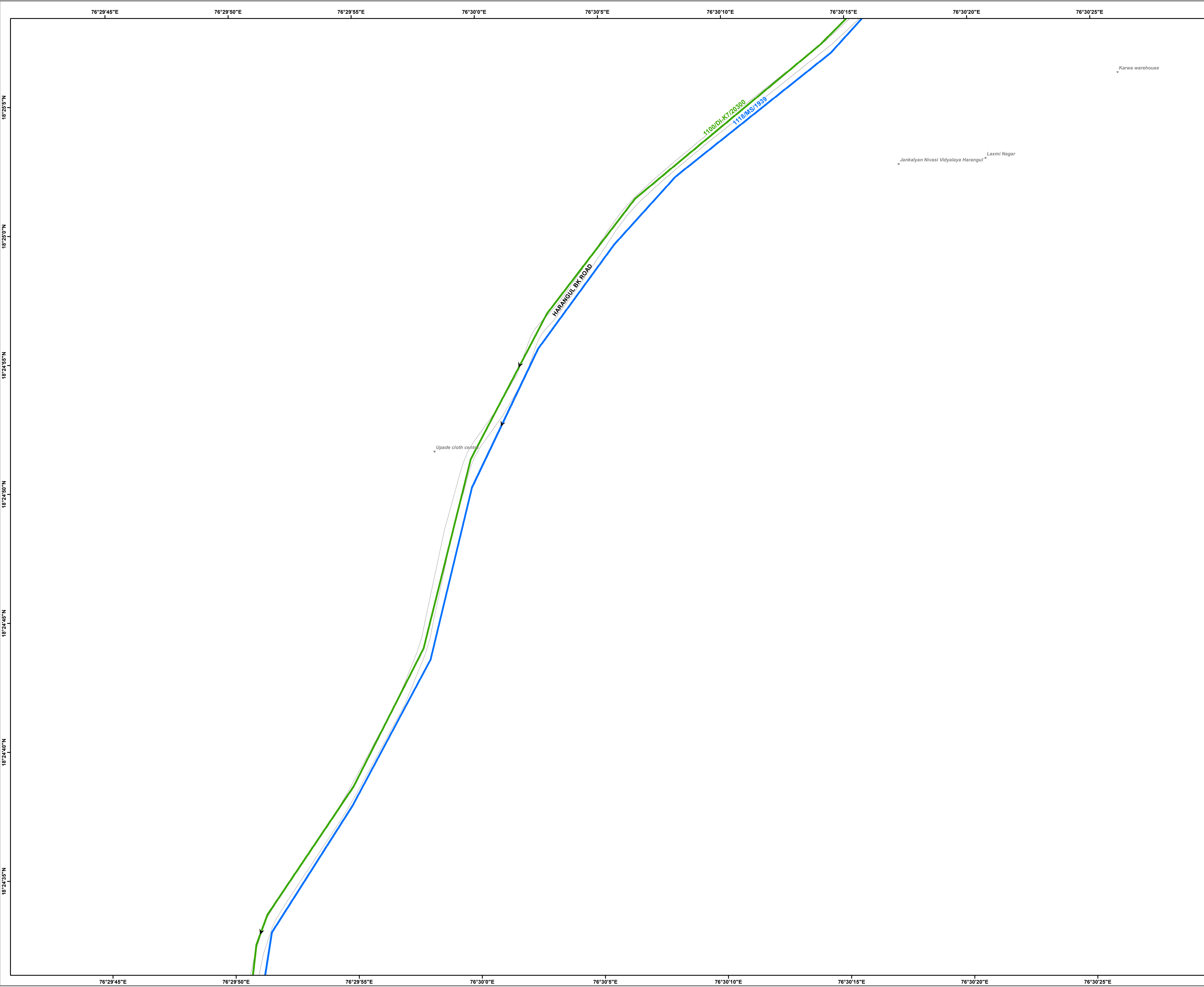
AUGMENTATION OF LATUR WATER
SUPPLY SCHEME

Client:

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Latur 413 512 (MH) INDIA

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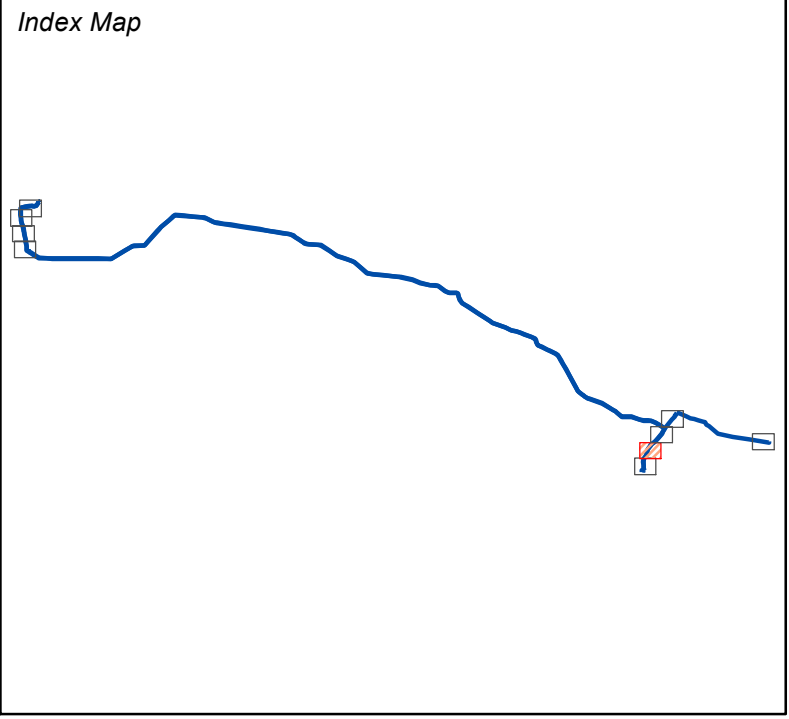


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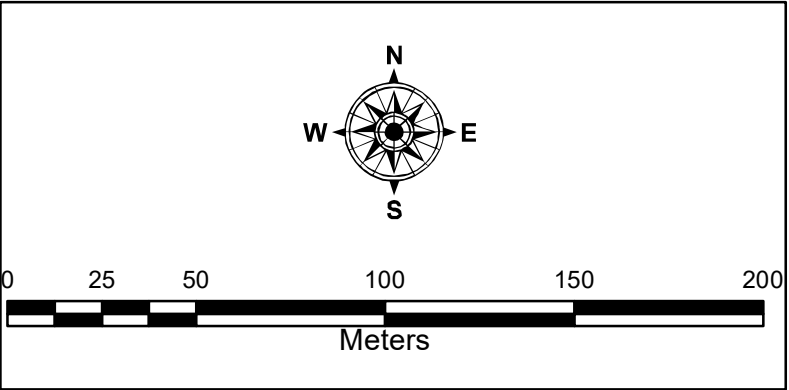
ANNEXURE- 4

PROPOSED RAW WATER TRANSMISSION

SYSTEM - NETWORK MAPS



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Project Title

AUGMENTATION OF LATUR WATER

SUPPLY SCHEME

Client:

 **LATUR MUNICIPAL CORPORATION**

Latur 413 512 (MH) INDIA

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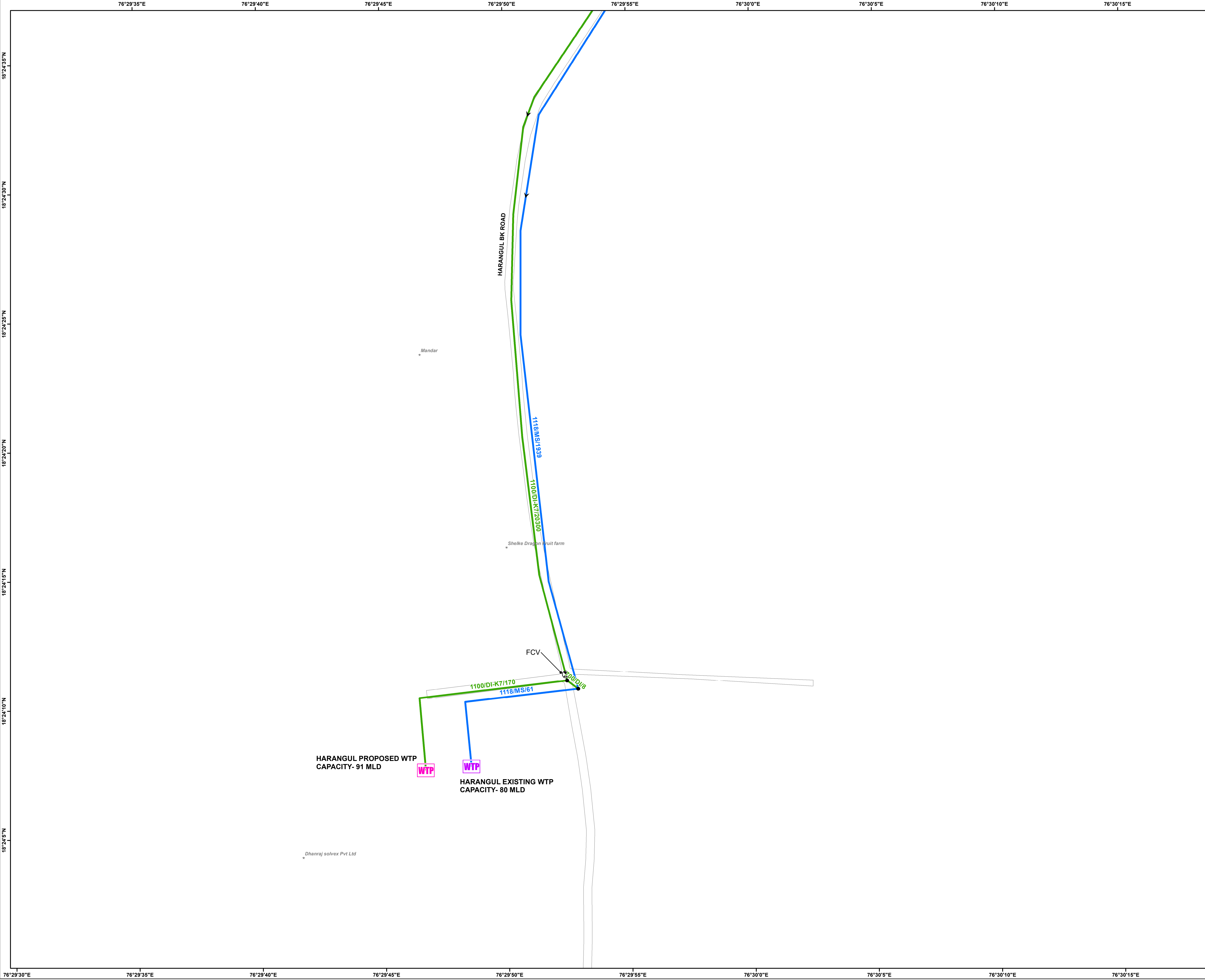
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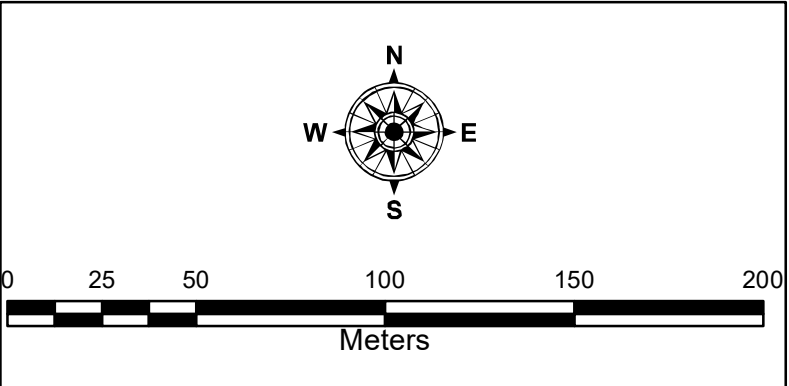


Map Title

ANNEXURE- 4
PROPOSED RAW WATER TRANSMISSION
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Project Title

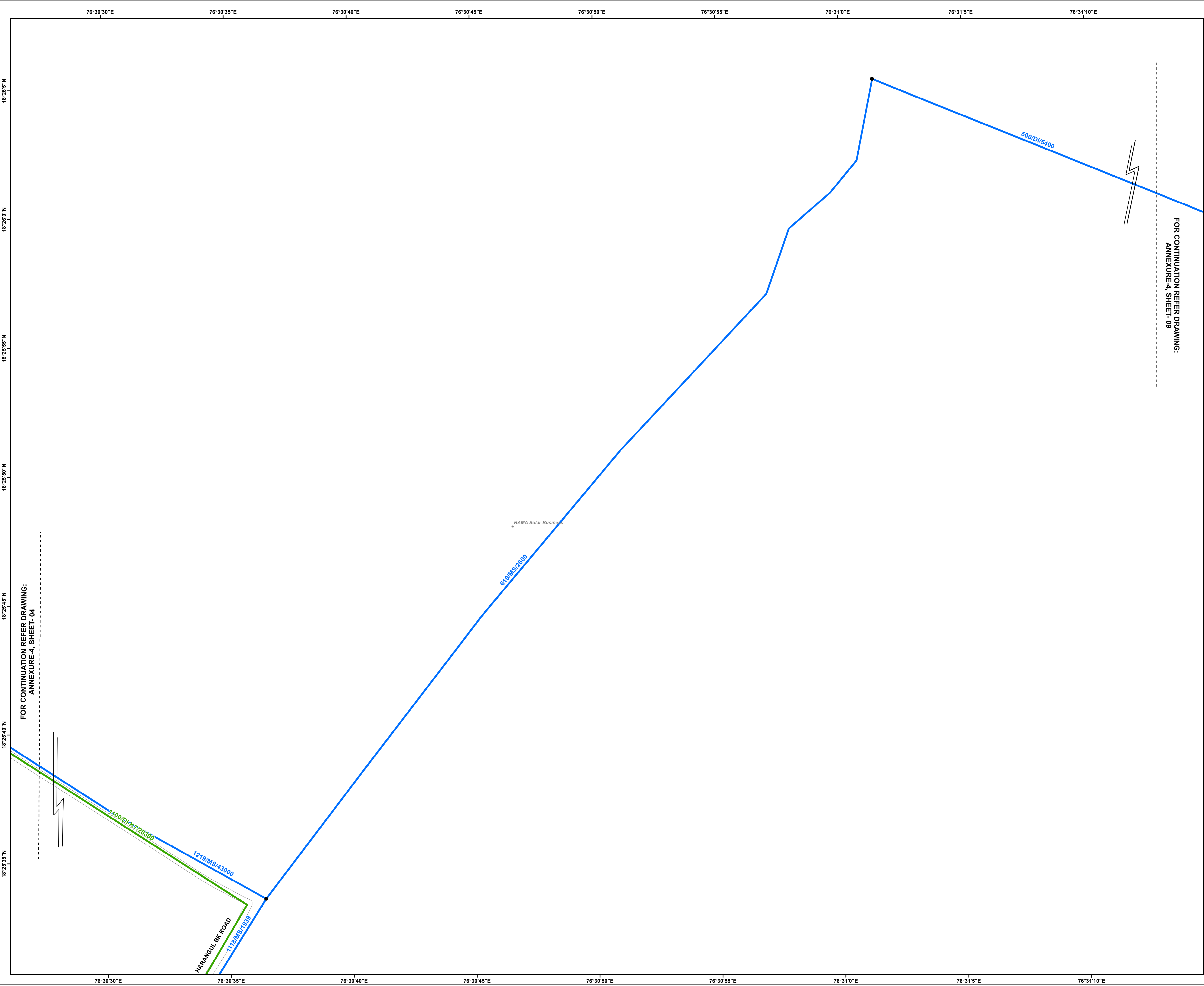
AUGMENTATION OF LATUR WATER
SUPPLY SCHEME

Client:

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Latur 413 512 (MH) INDIA

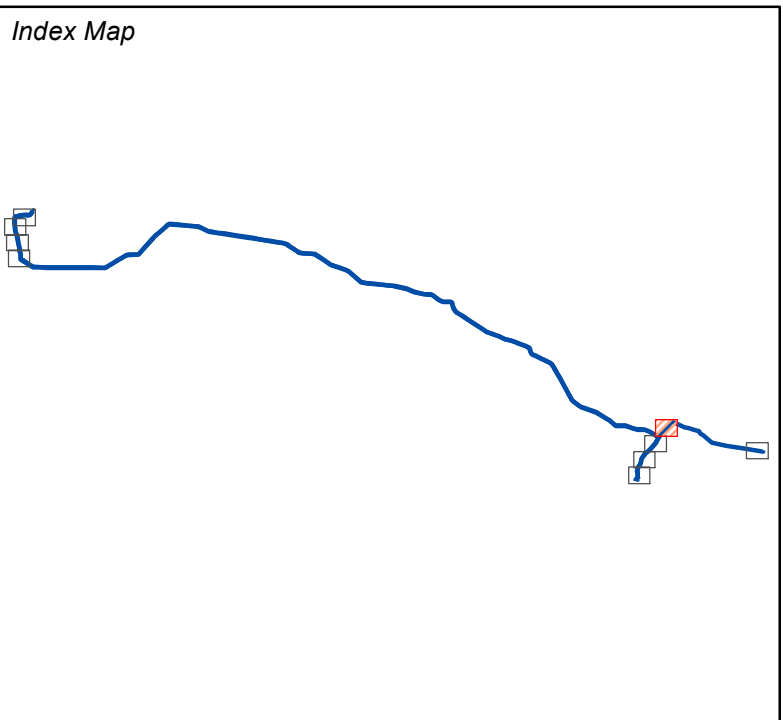
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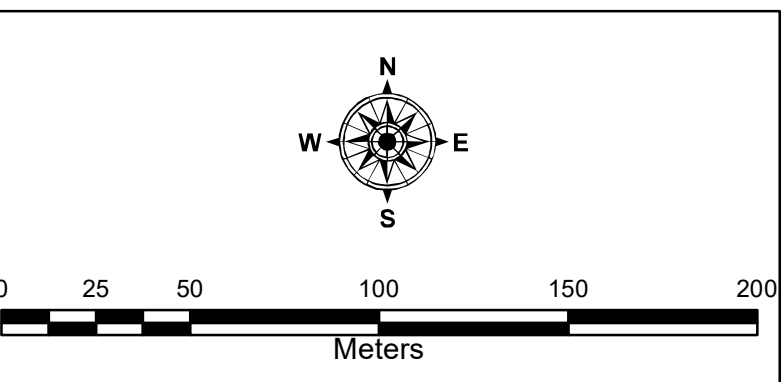


Map Title

ANNEXURE- 4
PROPOSED RAW WATER TRANSMISSION
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Project Title

AUGMENTATION OF LATUR WATER
SUPPLY SCHEME

Client:

LATUR MUNICIPAL CORPORATION
Latur 413 512 (MH) INDIA

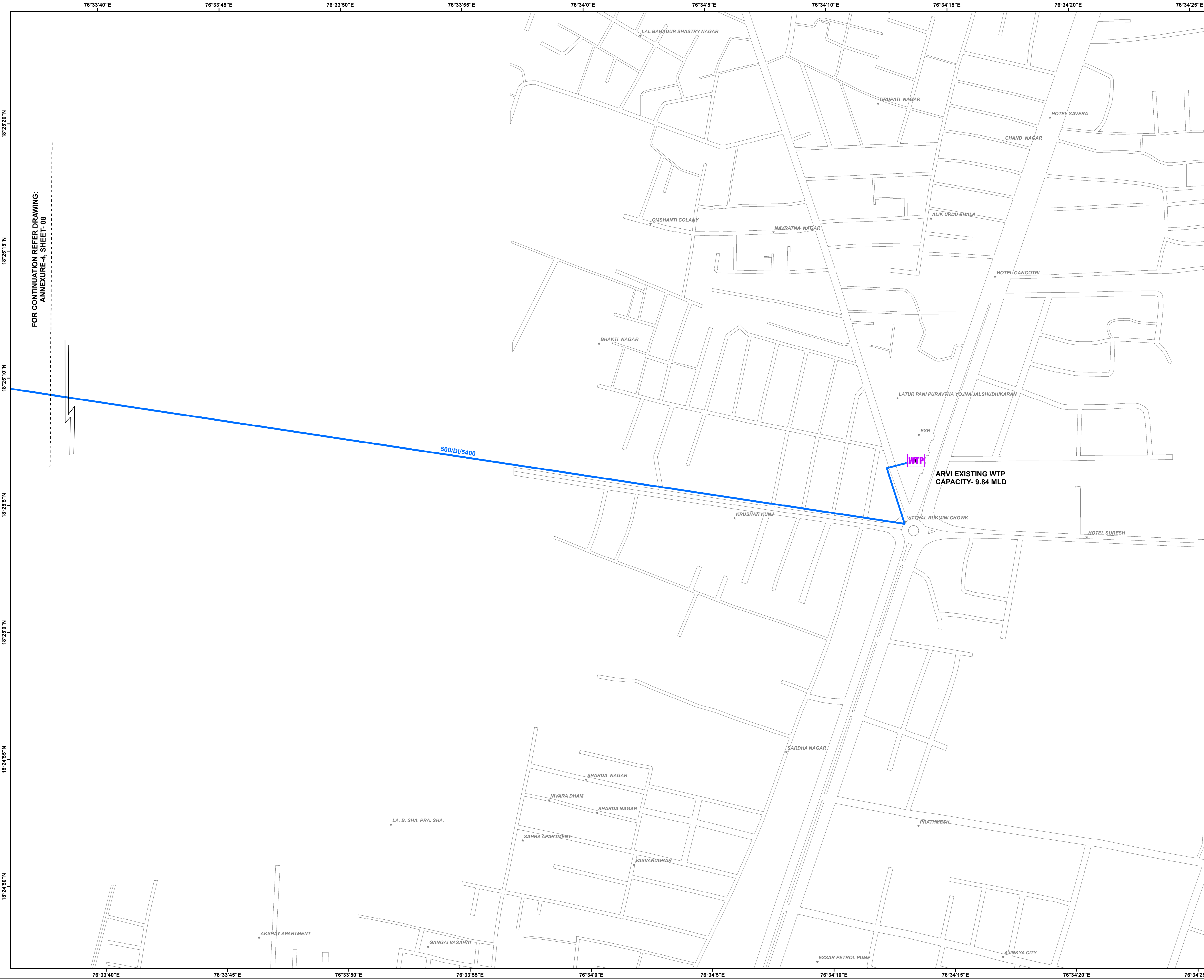
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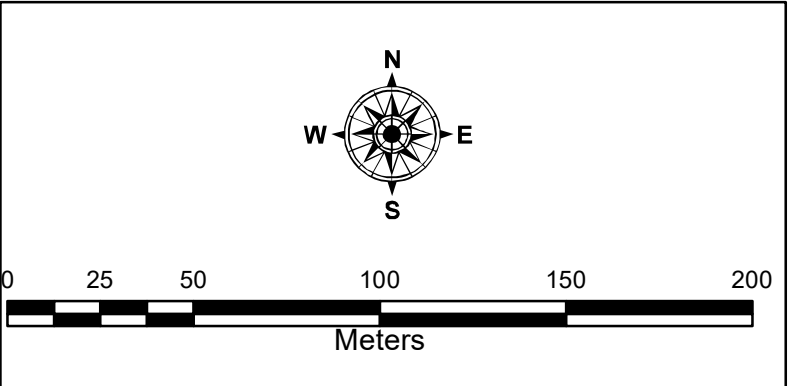
Map Title

ANNEXURE- 4
PROPOSED RAW WATER TRANSMISSION
SYSTEM - NETWORK MAPS



Legend

	EXISTING JACK WELL
	PROPOSED JACK WELL
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Project Title

AUGMENTATION OF LATUR WATER
SUPPLY SCHEME

Client:

LATUR MUNICIPAL CORPORATION
Latur 413 512 (MH) INDIA

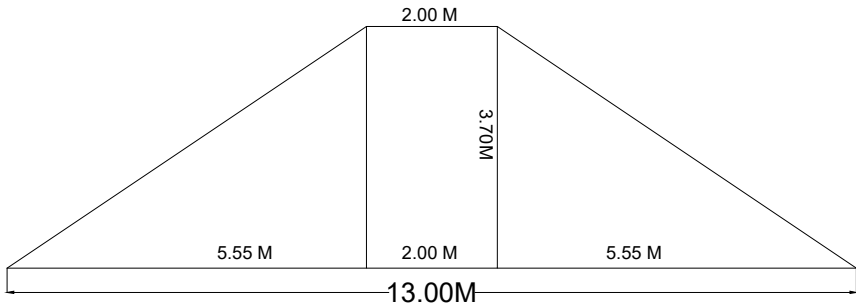
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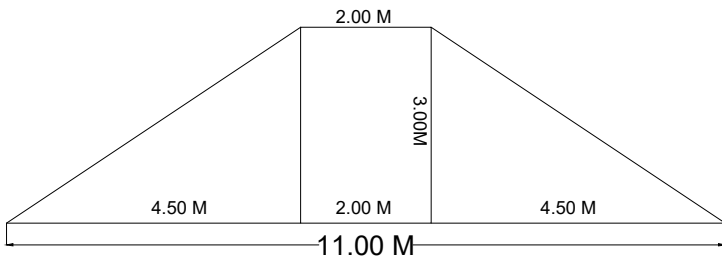
COFFER DAM

CH - 0 to INTAKE WELL

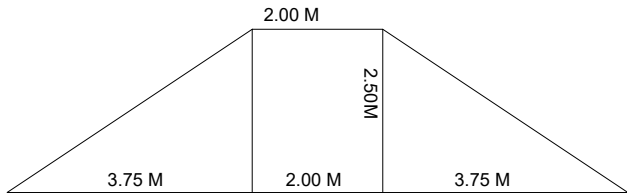
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2 CH - 30 to 60

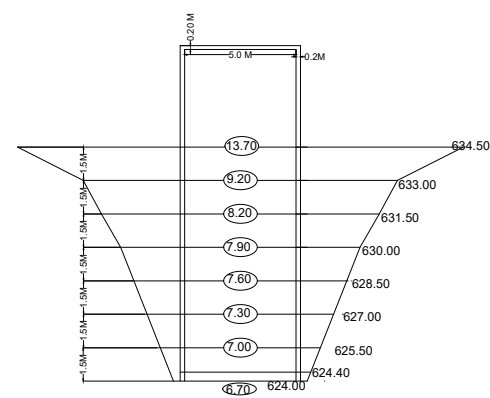


3 CH - 60 to 90

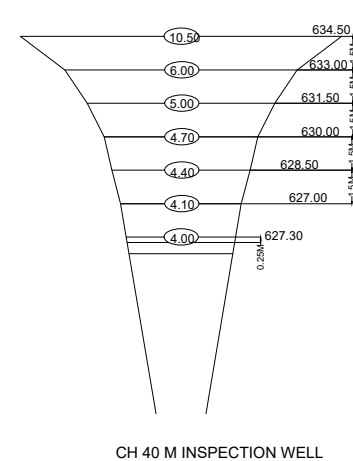


Project Title:	AUGMENTATION OF LATUR WATER SUPPLY SCHEME
Work Title:	COFFER DAM
Client:	 LATUR MUNICIPAL CORPORATION Latur 413 512 (MH) INDIA
Consultant:	 LifeFirst Concepts & Technologies Pvt. Ltd. 1st Floor, Pawar Baug, B T Kawade Road, Ghorpadi, Pune 411 001 (MH) INDIA
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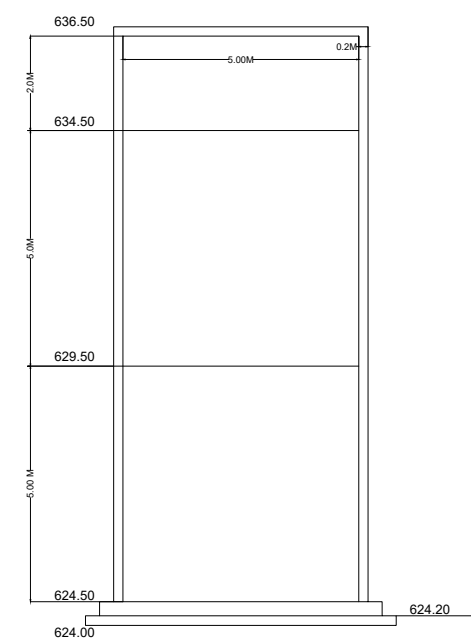
INSPECTION WELL EXCAVATION PROFILE



CONNECTING MAIN EXCAVATION PROFILE



INSPECTION WELL EXCAVATION PROFILE



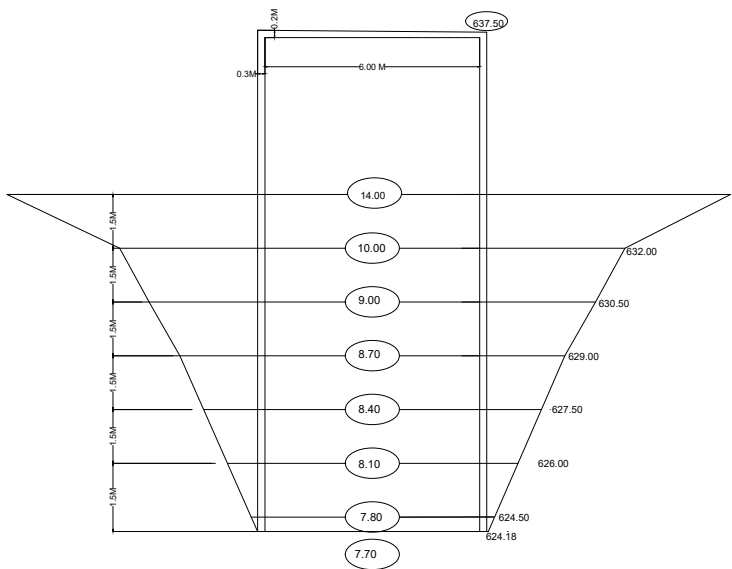
Project Title: AUGMENTATION OF
LATUR WATER SUPPLY SCHEME

Work Title: INSPECTION WELL

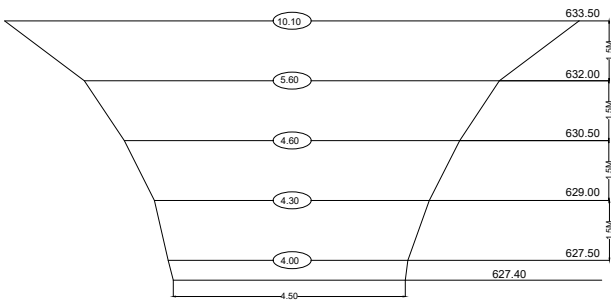
Client: LATUR MUNICIPAL CORPORATION
Latur 413 512 (MH) INDIA

Consultant: LifeFirst
Concepts & Technologies Pvt. Ltd.
1st Floor, Pawar Baug, B T Kawade Road,
Ghorpadi, Pune 411 001 (MH) INDIA

INTAKE WELL EXCAVATION PROFILE

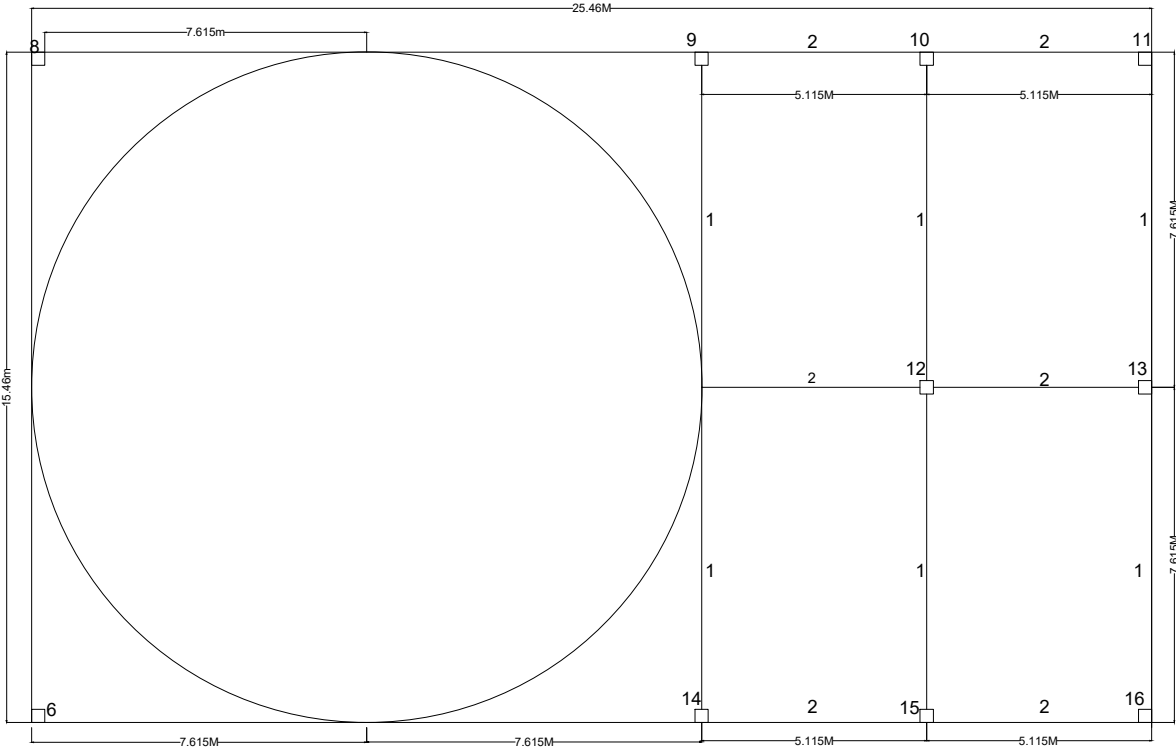
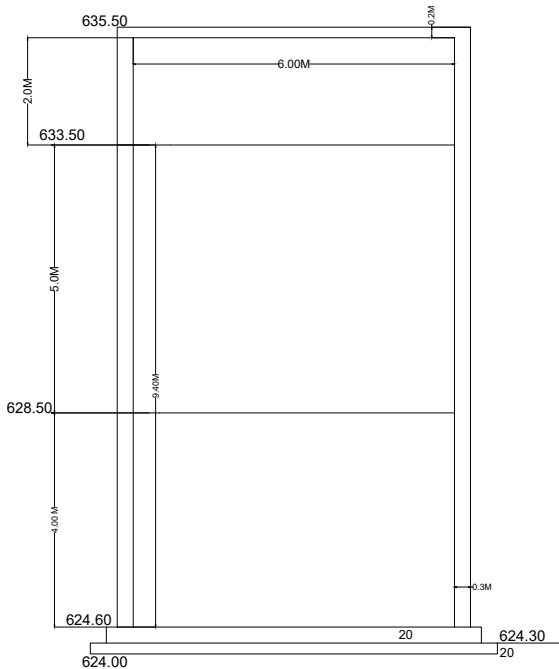


CONNECTING MAIN EXCAVATION PROFILE



CH OM INTAKE WELL

INTAKE WELL EXCAVATION PROFILE



COLUMN - 9,10,14,15 :- 300 X 750 MM
COLUMN - 6,8,11,13,16 :- 300 X 500 MM
BEAM - 1 :- 250 X 400 MM
BEAM - 2 :- 300 X 500 MM
ROOF BEAM :- 300 X 900 MM
SLAB THICKNESS :- 150 MM

Project Title:
**AUGMENTATION OF
LATUR WATER SUPPLY SCHEME**

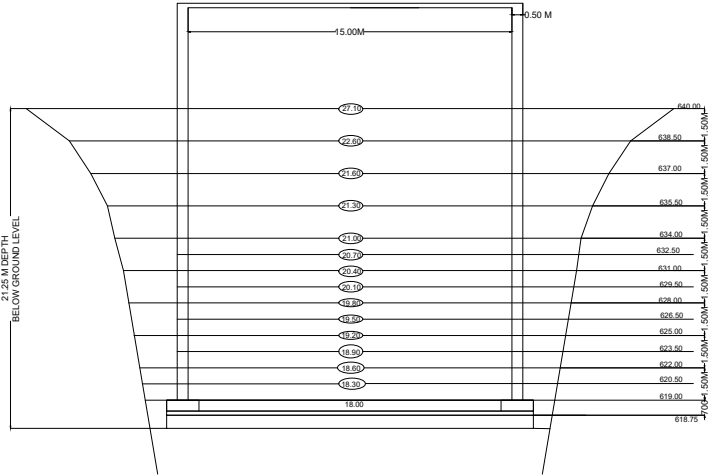
Work Title:
INTAKE WELL

Client:
 **LATUR MUNICIPAL CORPORATION**
Latur 413 512 (MH) INDIA

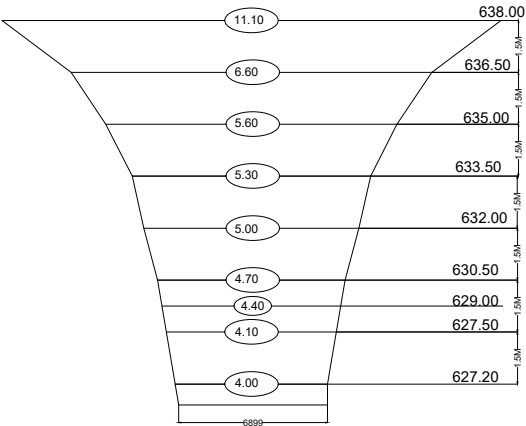
Consultant:
 **LifeFirst**
Concepts & Technologies Pvt. Ltd.
1st Floor, Pawar Baug, B T Kawade Road,
Ghorpadi, Pune 411 001 (MH) INDIA

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JACK WELL EXCAVATION PROFILE

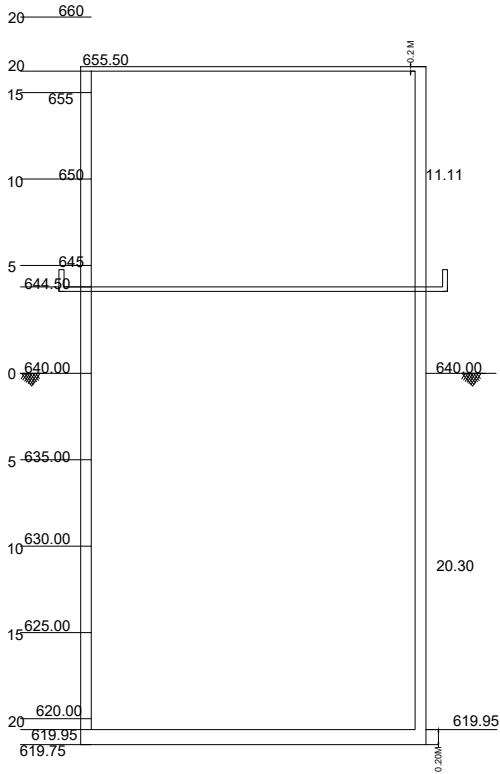


CONNECTING MAIN EXCAVATION PROFILE



CH 80 M JACK WELL

JACK WELL



Project Title:

AUGMENTATION OF
LATUR WATER SUPPLY SCHEME

Work Title:

JACK WELL

Client:



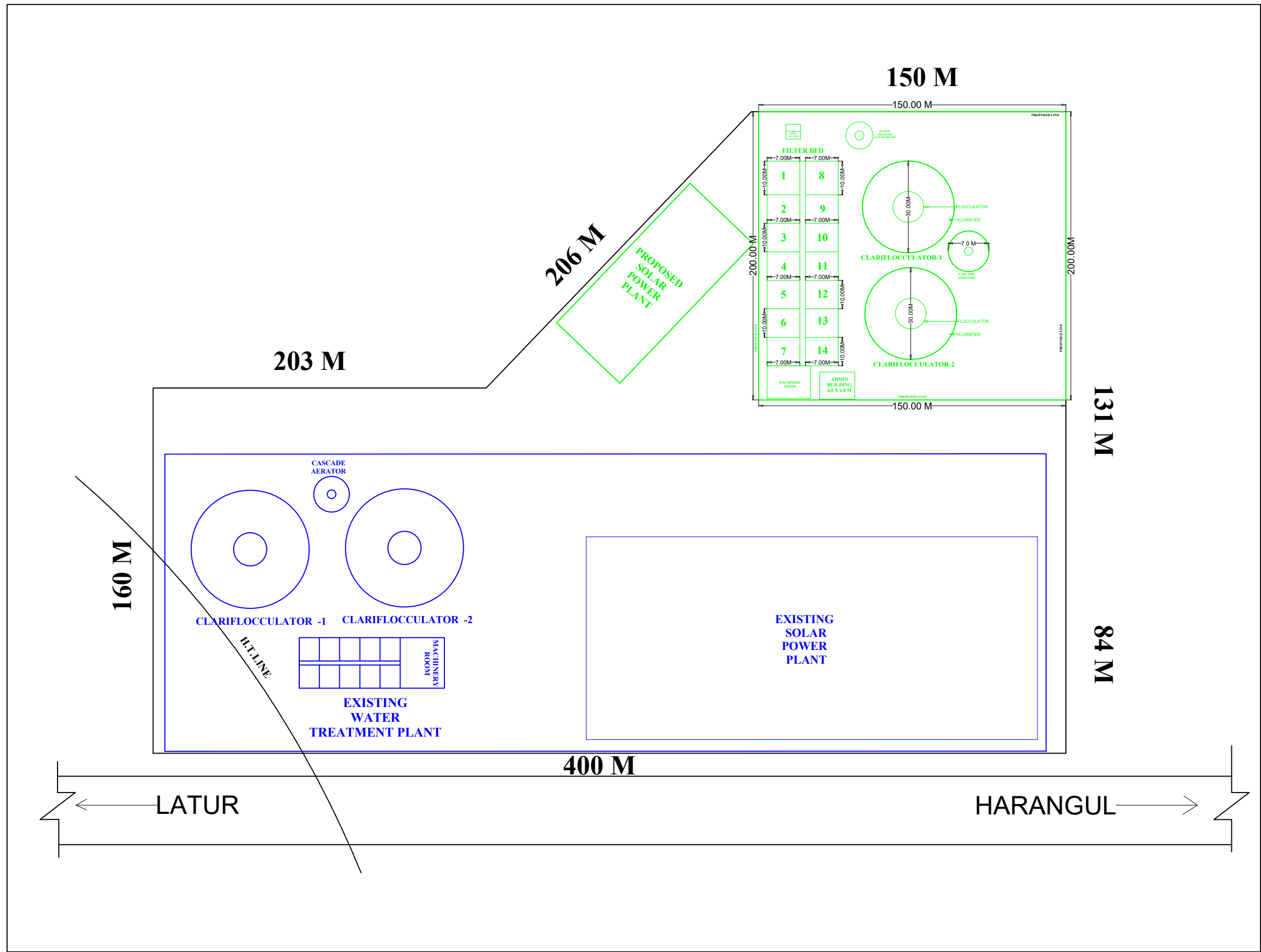
LATUR MUNICIPAL CORPORATION
Latur 413 512 (MH) INDIA

Consultant:



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Ghorpadi, Pune 411 001 (MH) INDIA

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LEGEND		
S.No.	CODE	DESCRIPTION
1		WATER TREATMENT PLANT (WTP)
2		ELEVATED SERVICE RESERVOIR (ESR)
3		PURE WATER GRAVITY MAIN
4		PURE WATER PUMPING MAIN
5		PURE WATER GRAVITY MAIN
6		PURE WATER PUMPING MAIN
7	450/CI/140	DIAMETER/ MATERIAL/ LENGTH (M)
8		DIMENSIONS
9		GATE
10		ROAD EDGES
11		BUILDING FOOTPRINT
12		EXISTING COMPOUND WALL
13		PROPOSED COMPOUND WALL
14		RIVER
15		DRAINS & CANAL
16		EXISTING LINE
17		PROPOSED LINE
NOTE: - ALL DIMENSIONS ARE IN METER		
Project Title: AUGMENTATION OF LATUR WATER SUPPLY SCHEME		
MAP TITLE: PROPOSED LAYOUT OF WTP		
Client:  LATUR MUNICIPAL CORPORATION Latur 413 512 (MH) INDIA		
Consultant:  LifeFirst Concepts & Technologies Pvt. Ltd. 1st Floor, Pawar Baug, B T Kawade Road, Ghorpadi, Pune 411 001 (MH) INDIA		
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