BHAVNAGAR MUNICIPALCORPORATION

NoticeInvitingOn-LineTender

TenderNoticeNo.-04 BMC/DRAINAGE/SJMMSVY/TENDER/2024-2025

DepartmentName	:-	Drainage Department
IFBNo.	:-	TenderNoticeNo.-04/DRAINAGE/SJMMSVY/TENDER/2024-2025
NameofProject	:-	Swarnim Jayanti MukyamantriShahrivikas yojana
NameofWork	:-	Providing & Laying various Diameter RCC pipe Spigot socket rubber ring joint Pipeline for the storm water Drainage Network including 5 years of O &M in adhewada area of Bhavnagar municipal Corporation (Part-1)
EstimatedContractValue(INR)	:-	Rs. 26,89,44,093.00
ClassofRegistrationrequired	:-	Class"AA"andABOVE
PeriodofCompletion(inmonth)	:-	10(Ten) Including Monsoon
BidCall(Nos)	:-	Open(PercentageRateTender)
TenderCurrencyType	:-	Single
TenderCurrencySettings	:-	IndianRupee(INR)
JointVenture	:-	N.A.
Rebate	:-	N.A.
AmountDetails		
BidDocumentFee	:-	Rs.18,000/- (Rs.eighteenThousandOnly)
BidDocumentFeePayableTo	:-	Commissioner,MunicipalCorporation,Bhavnagar
BidSecurity/EMD(INR)	:-	Rs.26,90,000/-(Rs. Twentysix lacs Ninty thousand)
BidSecurity/EMDinfavourof	:-	Commissioner,MunicipalCorporation,Bhavnagar
Defectliabilityperiod	:-	Twoyear
EPFregistrationno.	:-	Thebiddershallhavetosubmitvalidcertificateofregistrationfor havingEPFnumber.
ESICregistrationno.	:-	Thebiddershallhavetosubmitvalidcertificateofregistrationfor havingESICregistrationnumber.
Securitydeposit	:-	Thebiddershallhavetopay10%securitydepositatthetimeof agreement,outofwhich5%shallbeintheformofBankGuarantee ofschedulebank,2.5%intheformofFDRaddressedtoThe Commissioner,BhavnagarMunicipalCorporation,andremainin g 2.5%shallbedeductedfromeveryrunningbillasretentionmoney. Theretentionmoneysodeductedwillberefundedalongwiththe final billuponthesuccessfulcompletionofprojectandsubmissionof certificateofEIC.The7.5%SDwillbe convertedin theperformance securityandshallbereleasedattheendofdefectliabilityperiodand onproductionofcertificateofEIC.
Tender Dates		
BidDocumentDownloadingStartDate	:-	17-10-2024
BidDocumentDownloadingEndDate	:-	06-11-2024
PreBidMeeting	:-	28-10-2024 : 12.30 Clock
LastDate&TimeofReceiptofBid (SubmissionOfBid)	:-	06-11-2024
BidValidityPeriod	:-	180 days

Remarks	:-	**CLASS OF REGISTRATION REQUIRED FOR BIDDER MUSTBE"AA"ANDABOVE.Demand Draftfortenderfee&Emdshallbe submitted in Electronic Formatethrough online scanning alongwith all the supporting documents such as Registration,BankSolvencyCertificateetc. whileuploadingthebid. OfferofthosewillbeopenedwhoseEMD&Tenderfeeis received electronically alongwith the bids. however for thepurpose of realizationofDemandDraftbiddershallsendthemin original alongwithall therequireddocumentsmentionedin the tender documentsthroughRPAD/Speedpost/RegADso as theyreachtothe office of Exe. Engg. - Building Dept. Bhavnagar Municipal Corporationduringofficehoursbetween-06-11-2024 to 11-11-2024-16:00pm.Penaltativeactionshallidentinitiatedfornot submittingthesupportingdocumentsinoriginalto E.E.bybidder. Hardcopywillnotbe acceptedandconsidered. SuccessfullyBids (Preliminary&TechnicalBid),ifpossiblewillbeopenedonthe 11-11-2024,17:30pmattheCityEngineer'soffice-BMC.**
BidOpeningDate	:-	**11-11-2024-17:00PM**
SPECIAL CONDITION FOR SUBMISSIONOF EMD, BG,SD,FD:-		**Hence forthBankGuarantee,EarnestMoneyDeposit,Security Deposit,** Fixed**Deposit,DemanddraftofStateBankofIndiawillnotbe accepted.**

Other Details		
OfficerInvitingBids	**:-**	**CityEngineer,MunicipalCorporation,Bhavnagar**
BidOpeningAuthorityMembersin committee	**:-**	**(1)ExecutiveEngineer(2)CityEngineer(3)ChiefAccountant(4) ChiefAuditor**
Address	**:-**	**BuildingDept0278-2424832,ExeEngg.9825836369**

E-tendering relate instructions

(1)Bidderscandownloadthetenderdocumentfreeofcostfromthewebsite.**www.nprocure.com**
(2)BiddershavetosubmitTechnicalbidaswellasPricebidinElectronicforonlyon**www.nprocure.com**websitetillthe LastDate&timeforsubmission.
(3)Offersinphysicalfromwillnotbiacceptedinany case.
(4)Freevendortrainingcampwillbeorganizedevery Saturdaybetween4.00to5.00p.m.at(n)codesolutions- ADivision ofGNFCLtd.,Biddersarerequestetakebenefitofthesame.

Allbidsshouldbedigitallysigned,fordetailsregardingdigitalsignaturecertificaterelatedtraininginvolved,kindly,contactth ebelowmentionedaddress.

(n)CodeSolutionsADivisionofGNFCLtd.
403,GNFCInfotower,Bodakde
v, Ahemedabad-
380054(India)
Tel.+917926854511/12/13(EXT:501,512,516,525) +9179 26857316/17/18(EXT:501,512,516,525)
Fex.+917926857321,40007533
E-mail:nprocure@gnvfc.net
Web-site:www.nprocure.com

BHAVNAGAR MUNICIPAL CORPORATION

Tender Notice (online) No. - BMC/DRAINAGE/SJMMSVY/TENDER/2023-05

PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION(PART-1).

PROJECT FUNDED UNDER SWARNIM JAYANTI MUKYAMANTRI SHAHERI VIKAS YOJANA 2023-24

VOLUME – I
TECHNICAL BID

Milestone Dates	
Online Downloading of Technical Bid & Price Bid	17/10/2024 to 06/11/2024 up to 18:00 hrs
Pre – Bid Conference	On 28/10/2024 from 12:30 hrs. At office of the City Engineer
Last Date of Online Submission of Technical Bid & Price Bid	06/11/2024 up to 18:00 hrs
Last Date for Physical Submission of Tender Fee, EMD and other Documents	11/11/2024 up to 16:00 hrs to Executive Engineer (Drainage), Bhavnagar Municipal Corporation by RAPD or Speed Post only
Online Opening of the Technical Bid	11/11/2024 up to 17:30 hrs

CONSULTANT:
TTI Consulting Engineers (I) Pvt Ltd
Block A, 607, Mondeal Heights,
S G Highway, Ahmedabad
Gujarat – 380 015

CLIENT:
Executive Engineer,
Drainage Department,
Bhavnagar Municipal Corporation,
Sir Mangalsinhji Road,
Bhavnagar – 364 001
Mobile No.: 987979732

BHAVNAGAR MUNICIPAL CORPORATION

BHAVNAGAR Drainage Dept.

PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1).

VOLUME – I

TECHNICAL BID

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BHAVNAGAR MUNICIPAL CORPORATION

Bhavnagar

Tender Notice No **BMC/DRAINAGE/SJMMSVY/TENDER/2023-05**

ONLINE E-TENDERING

City Engineer, Bhavnagar Municipal Corporation, invites On- Line Percentage rate tenders for the following work as per tender provisions in single stage two bid system for the works shown in the schedule given below in the schedule given below including 2 YEAR defect liability.

1	Work Description	PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1).
2	Estimated Cost (Capital + 2-year DLP + 5-year O & M)	Rs. 26,89,44,093.00
3	EMD 1%	Rs. 26,90,000.00
4	Tender Fee	Rs. 18,000 /- (Non-refundable)
5	Qualification of Bidder	Duly registered with State/Central Govt./Municipal Corporation/PSU/Agencies in Class 'AA' or above.

The detail tender notice & Bid Documents will be available on the website: https://tender.nprocure.com and notice can be seen on https://www.bmcgujarat.com from date: **17/10/2024 to 06/11/2024 up to 18:00 hrs** The Municipal Commissioner reserves the right to reject any or all offers received without assigning any reasons thereof. Further details, if any, may be obtained from Executive Engineer (Drainage Department),BMC.

Executive Engineer
Bhavnagar Municipal Corporation

Date:17/10/2024

BHAVNAGAR MUNICIPAL CORPORATION

Notice Inviting On -Line Tender

Tender Notice No.- BMC/DRAINAGE/SJMMSVY/TENDER/2023/05

Department Name	:-	Drainage Department
IFB No.	:-	
Name of Project	:-	Swarnim Jayanti Mukyamantri Shahri vikas yojana 2023-24
Name of Work	:-	Providing & Laying various Diameter RCC pipe Spigot socket rubber ring joint Pipeline for the storm water Drainage Network including 5 years of O &M in adhewada area of Bhavnagar municipal Corporation (Part-1)
Estimated Contract Value (INR)	:-	Rs. 26,89,44,093.00
Class of Registration required	:-	Class "AA" and ABOVE
Period of Completion (in month)	:-	10 (Ten) Including Monsoon
Bid Call (Nos)	:-	Open (Percentage Rate Tender)
Tender Currency Type	:-	Single
Tender Currency Settings	:-	Indian Rupee (INR)
Joint Venture	:-	N.A.
Rebate	:-	N.A.
Amount Details		
Bid Document Fee	:-	Rs. 18,000/- (Rs. eighteen Thousand Only)
Bid Document Fee Payable To	:-	Commissioner, Municipal Corporation, Bhavnagar
Bid Security / EMD (INR)	:-	Rs. 26,90,000 /- (Rs. Twenty Six lacs Ninety thousand)
Bid Security / EMD in favour of	:-	Commissioner, Municipal Corporation, Bhavnagar
Defect liability period	:-	Two year
EPF registration no.	:-	The bidder shall have to submit valid certificate of registration for
ESIC registration no.	:-	The bidder shall have to submit valid certificate of registration for
Security deposit	:-	The bidder shall have to pay 10% security deposit at the time of agreement, out of which 5% shall be in the form of Bank Guarantee of schedule bank, 2.5 % in the form of FDR addressed to The Commissioner, Bhavnagar Municipal Corporation, and remaining 2.5% shall be deducted from every running bill as retention money. The retention money so deducted will be refunded along with the final bill upon the successful completion of project and submission of certificate of EIC. The 7.5% SD will be converted in the performance security and shall be released at the end of defect liability period and on production of certificate of EIC.
Tender Dates		
Bid Document Downloading Start Date	:-	17-10-2024
Bid Document Downloading End Date	:-	06-11-2024
Pre Bid Meeting	:-	28-10-2024
Last Date & Time of Receipt of Bid (Submission Of Bid)	:-	06-11-2024
Bid Validity Period	:-	180 days

Remarks	**:-**	**CLASS OF REGISTRATION REQUIRED FOR BIDDER MUST BE " AA " AND ABOVE. Demand Draft for tender fee & Emd shall be submitted in Electronic Formate through online scanning along with all the supporting documents such as Registration, Bank Solvency Certificate etc. while uploading thebid. Offer of those will be opened whose EMD & Tender fee is received electronically along with the bids. however for the purpose of realization of Demand Draft bidder shall send them in original alongwith all the required documents mentioned in the tender documents through RPAD/Speed post/ Reg AD so as they reach to the office of Exe. Engg. - Building Dept. Bhavnagar Municipal Corporation during office hours between- 07 - 10 - 2024 to 06 - 11 -2024 - 18:00 pm. Penaltative action shall identinitiated for not submitting the supporting documents in original to E.E. by bidder. Hard copy will not be accepted and considered. Successfully Bids (Preliminary & Technical Bid), if possible will be opened on the 11 -11 - 2024, 17:00 pm at the City Engineer's office -BMC.**
Bid Opening Date	**:-**	**11 - 11 - 2024 - 17:00 PM**
SPECIAL CONDITION FOR SUBMISSION OF EMD, BG,SD,FD:-		**Hence forth Bank Guarantee, Earnest Money Deposit, Security Deposit,** Fixed **Deposit, Demand draft of State Bank of India will not be accepted.**

Other Details		
Officer Inviting Bids	**:-**	**City Engineer, Municipal Corporation, Bhavnagar**
Bid Opening Authority Members in committee	**:-**	**(1) Executive Engineer (2) City Engineer (3) Chief Accountant (4)**
Address	**:-**	**Building Dept 0278 - 2424832, Exe Engg.**

E-tendering relate instructions

(1) Bidders can download the tender document free of cost from the website.**www.nprocure.com**
(2) Bidders have to submit Technical bid as well as Price bid in Electronic for only on **www.nprocure.com** website till the
Last Date & time for submission.
(3) Offers in physical from will not bi accepted in any case.
(4) Free vendor training camp will be organized every Saturday between 4.00 to 5.00 p.m. at (n)code solutions - A Division of GNFC Ltd.,Bidders are requeste take benefit of the same.

All bids should be digitally signed,for details regarding digital signature certificate related training involved,kindly,contact the below mentioned address.

(n) Code Solutions A Division of GNFC Ltd.
403,GNFC
Infotower,Bodakdev,
Ahemedabad - 380 054
(India)
Tel. +91 79 26854511/12/13 (EXT :501,512,516,525) +91 79 26857316/17/18 (EXT :501,512,516,525) Fex.+91 79 26857321,40007533

MEMORANDUM OF WORK IN BRIEF

Name of work: PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1).

Name of Employer: Bhavnagar Municipal Corporation

a. **Name of concerned city engineer:** Mr. C.C. Devmurari

b. **Address:** Bhavnagar Municipal Corporation, Bhavnagar -364001

c. **Estimated Cost:** As Mentioned in Tender Notice

1. **Time allowed for completion of the work:** As Mentioned in Tender Notice
2. **Amount of Earnest Money deposit (E.M.D.) as specified in the bid**: As Mentioned in Tender Notice.

   Mode of submission of tender documents:

   a. Technical bid & Price bid duly filled in with Scanned copy of EMD and tender fee and other supporting documents. : Online submission only on https://tender.nprocure.com

   b. Other documents in Hard copy - Registration Certificate, IT certificate, Tender fee, EMD, solvency certificate, required supporting documents & tender volumes. : "Address of the Executive Engineer (Project) By RPAD/ SPEED POST only.

   Note: Tenders sent by any other mode than specified in 3a & 3b above will be outright rejected.

3. **Validity period of the offer:** 180 days from the last date of submission of bid.
4. **Opening of the Tender :** On the date specified, the electronic tender box will be opened:
5. **Place of opening :** As specified in the Tender Notice
6. **Date & Time of Opening :** As specified in the Tender Notice
7. **Amount of security Deposit:** As specified in the Tender Notice
8. **Penalty for delay :** 0.1 % (Zero point one percentage) of the contract price per day , Maximum up to 10 % (Ten Percentage) of the contract price.

BHAVNAGAR MUNICIPAL CORPORATION

BHAVNAGAR

VOLUME – I

SECTION - II

INSTRUCTIONS TO BIDDERS

A. GENERAL

1.0 GENERAL:

Online tenders are invited and published by Commissioner, Bhavnagar Municipal Corporation for the work of "**PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1)**" from the contractors who are registered as 'AA' Class in Govt. of Gujarat (R&B/WRD/GWSSB/ Board, Corporation, and Government Undertaking /Organizations of state government).
The concerned Contractor shall submit the certificate of registration as in concerned State/ Government bodies/ Authority along with the tender.

1.1 SPECIAL ATTENTION

This tender consists for the work **"PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1)"**

(i) A pre- bid conference for the works, open to all intending bidders, shall be held on the date & venue as mentioned in the Tender Notice.

(ii) All Bidders are urged to submit a written request immediately upon receipt of the tender documents for the matter where clarification and/or additional information are desired, along with the details of the work. The request shall be submitted not less than four days in advance of the pre-bid conference.

(iii) The tender document shall be submitted as per the procedure mentioned in tender documents.

(iv) Earnest money deposit details & scanned copy shall be submitted as prescribed online and after submission online, in form specified shall be submitted as per details given online in sealed envelope. If an earnest money deposit is not received within the prescribed time limit the bid shall be rejected.

(v) Tender shall be opened as per procedure laid down as per detailed tender notice etc.

(vi) All Bidders are cautioned that e-tender containing any deviation from the contractual terms and conditions, specifications or requirements shall be rejected as non-responsive.

(vii) A conditional offer will be outright rejected. No condition shall be included in the tender.

(viii) Alternative tenders are not acceptable.

(ix) Qualification of bidder will be done whose tender is considered responsive and meets the specified evaluation and qualification criteria as per tender conditions.

(x) Bidders shall have to declare regarding the tender submitted in the prescribed format.

(xi) The department reserves the right to qualify/ disqualify any applicant without assigning any reason thereof.

(xii) **The bidder shall be disqualified if.**

a. The bidder had made misleading or false representation in the forms, statements and attachment submitted in proof of qualification requirements and/or

b. A record of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

(xiii) The bidder shall submit an Undertaking in the form of an affidavit regarding blacklisting and debar as per format. If the bidder which has been blacklisted and barred by the Central or State Government or any entity controlled by them (controlling stake) from participating in any project (in Water or Sewerage works) and the bar subsists as on the date of issue of NIT and /or submission of the bid, the bidder shall not be eligible to submit or upload the bid, either individually or as a member of consortium.

The bidder shall submit an undertaking in the form of an Affidavit to the effect that applicant firm has never been blacklisted/debarred from any government department in the last three years. Failure to provide such information by the bidder or any partner may result in failure of the application.

(xiv) The bidder shall submit along with the bid details of all pending litigation. The maximum possible legal liability arising out of all the pending litigation should not exceed Rs. 50% of the net worth of the bidder. A duly audited and certified statement by a Chartered Accountant shall be submitted by the bidder.

A duly audited and certified statement by a Chartered Accountant shall be submitted by the bidder.

The bidder should provide a list of litigation/arbitration cases resulting from contracts completed or under execution by him over the last ten years. A consistent history of arbitration awards/ judgments against the applicant or any partner of a joint venture may result in disqualification for proposed work. If the details of litigation history is hidden by the applicant and later on it comes to the knowledge of the employer the bidder shall be disqualified for the proposed work and other appropriate actions shall be taken against the bidder.

The bidder should submit an undertaking on non-judicial stamp paper of Rs. 300/- duly attested by notary public regarding document submitted, are true. Board would have the right to forfeit the EMD and blacklist to the bidder if any of the information given by the bidder is found faulty or incorrect or misleading.

(xv) If the bidder has submitted tender fee and EMD online & in hard copy, the request of the bidder for not opening of bid shall not be accepted in any circumstances.

(xvi) If bidder has not submitted in original, tender fee and E.M.D. offline, but same is scanned and submitted with his bid online or vice versa within stipulated period, to the designated officer as per Tender document, the bid shall be liable to be considered as non-responsive.

(xvii) All those documents which are scanned and submitted should be numbered chronologically and with their reference in the self-appraisal of P.Q. will have to be given proof of qualification.

(xviii) The bidder, whose contracts are terminated earlier on account of poor performance in Bhavnagar Municipal Corporation, will not be eligible for this tender.

(xix) Any bidder who has been barred by the state/central government or any entity control by them (Controlling Stake) from participating in any project and the bar subsists as on the day of issue of notice inviting tender and/or submission of bid, the bidder shall not be eligible to submit the tender document either individually or as a member of consortium. However, if the bidder submits the bid, the tender shall not be considered for evaluation.

(xx) The experience of works executed in Government (State / Central), Board, Corporation, and Government Undertaking / Organizations of state & central government including all Public Sector Units shall only be considered for evaluation.

The experience certificate from the client equivalent to not below the rank of

Executive Engineer shall only be considered. The experience of sublet works / in house / private / foreign work shall not be considered.

(xxi) Bidders shall not be listed under a declaration of ineligibility for corrupt or fraudulent practices issued by the central/ state govt. Or not in the list of blacklisted contractors announced by Government (State / Central), Board, Corporation, and Government Undertaking / Organizations of state & central government including all Public Sector Units and Bhavnagar Municipal Corporation

(xxii) Bidder (individual or any member in case of JV/ consortium) shall not have suffered bankruptcy/ insolvency during the last 5 years. For this, Certificate of CA appointed by the bidder must be produced along with a self-affidavit to same effect of prescribed stamp paper of affidavit.

(xxiii) Memorandum of Understanding (MOU) shall be done before online submission of Bid to Bhavnagar Municipal Corporation.

(xxiv) The approved Vendor list is enclosed with the tender document. If any additional items are required beyond above Vendor List, Contractor should take prior approval of Bhavnagar Municipal Corporation before order placement.

(xxv) Bhavnagar Municipal Corporation shall provide ROU (Right of Use) of adequate width as per availability. During excavation, laying, back filling, any damages to the hidden object beneath the earth like pipelines, cables etc. shall be the responsibility of contractor. The contractor has to rectify the same without any financial implication on Bhavnagar Municipal Corporation within the stipulated time as instructed by EIC. The crop compensation (if any) only for a single time is the responsibility of Bhavnagar Municipal Corporation.

(xxvi) However, if any delay, due to any reasons in contractor's part, if the next crop compensation is required to be paid, it will be the responsibility of the contactor and in event of failure by contractor, to do so, Bhavnagar Municipal Corporation shall deduct and recover the same amount from contactors bills. Any damage in the area will be responsibility of the contractor. After successful completion of the pipeline works like laying, excavation, back filling etc. the contractor is also required to level the field where pipelines are laid in their original condition with caution.

Further ROU (Right to Use) in terms of length shall be provided as per site availability by Bhavnagar Municipal Corporation and it may be in selective available length also.

Any demand by the contractor to get continuous length to start the work will not be considered by Bhavnagar Municipal Corporation under any circumstances.

(xxvii) **All the applicant contractors are required to have their own employers' code number under EPF Act, 1952 and are required to comply the applicable provisions of said statute regularly and totally.**

EPF & ESIC Registration no. – The bidder shall have to Submit valid Certificate of registration for having EPF & ESIC number.

(xxviii) It shall be the sole discretion of the competent authority to decide the total numbers of packages for evaluation/award to the bidder based on the facts and circumstances of the cases.

This will be based on the least cost combination and as may be the most advantageous to Bhavnagar Municipal Corporation and shall be final and binding to all the bidders.

(xxix) In the event of any rectification of a defect or replacement of any defective goods during the defect liability period, the contractor must rectify or replace such goods at his own cost as per decision of EIC.

(xxx) DELETED

(xxxi) Since this is Percentage rate contract, the bidders are to quote their rates based on the actual market scenario. Any rates which are found to be abnormal higher/lower or unworkable shall lead to rejection of the bid. The decision of the Bhavnagar Municipal Corporation shall be final and legally binding to all the bidders.

(xxxii) The Employer wishes to clarify that regardless of the contents of a bid, the successful Bidder shall be required to conform in all respects to the requirements of the Contract, and all proposals shall be subject to the approval of the Engineer In-charge. Acceptance of the Bidder’s proposal for the purposes of bid evaluation and award of tender shall not be construed as approval by the Bhavnagar Municipal Corporation. All details will subsequently be subject to the approval of the Engineer In-charge during execution of the Contract. No claim for additional payments shall be entertained, other than in accordance with the Contract

(xxxiii) The Contractor shall completely indemnify and hold harmless Bhavnagar Municipal Corporation and its employees against any liability, all claims by statutory authorities, losses under various Labour Laws, statutes or any civil or criminal laws in connection

with employees deployed by him or damages sustained by it or them by reason of any breach of contract, wrongful act or negligence by the Contractor or any of its employees engaged in the provision of the manpower services to Client.

PERCENTAGE RATE TENDER AND CONTRACT FOR WORKS

GENERAL DESCRIPTION OF THE WORK

This is a bid document for

"**PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1)"**

The successful bidder shall have to undertake route surveys for ascertaining the terrain and planning the scheme as well as to conduct geotechnical investigations for designing of foundation system of various structures. The contractor shall submit the good for construction drawings for review and approval before executing the same. This is applicable to all the components of this project.

The successful bidder shall have to prepare and submit 'As Built Drawings' depicting the exact construction carried out on site, in soft and hard copy format. The detailed description of the works is included in the "Extent of Work" under Volume–III

PARTICULARS PROVISIONAL

The particulars of the proposed works given as well as in the accompanying brief note are provisional and must be considered only as advance information to assist applicants.

1.2 **DEFINITION**

In this document the following words and expressions have the meaning hereby assigned to them.

1.2.1. **BIDDER / TENDERER / APPLICANT:**

Means individual, proprietary firm, firm in partnership, Limited Company, Corporation, MOU Partner applying to become eligible to tender.

1.2.2. **ONLINE :**

Any activity that is done on website is referred as 'online' activity for e.g., Submission of Bid online would mean that technical & price Bid has to be submitted on website.

1.2.3. **OFFLINE :**

Any activity that is done in conventional route is referred as 'Offline' activity for e.g. “Submission of Tender fee ,Earnest Money Deposit , Registration Certificate, Solvency Certificate, qualifying documents, tender volumes with sign and seal etc in Offline mode” would mean that the tender fee, Earnest Money Deposit, Registration Certificate, Solvency Certificate etc is to be Submitted to the Office of the concerned Municipal Department.

1.2.4. **E- TENDER :**

Tender in which the bidder can participate online by means of logging in onto the respective website is called E- Tender.

1.2.5. **DIGITAL SIGNATURE :**

Any electronic documents, which contains encrypted message digest using hash algorithm and Tender public key is known as Digitally Signed Documents and the process of generating such document is called digitally signing it.

1.2.6. **SCANNED COPY :**

Electronic Copy of any document generated using a Scanner is called scanned copy.

1.2.7. **SYSTEM :**

Means the computer which hosts the website www.nprocure@ncode.in, using which Bidder participates in the tendering process.

1.2.8. **UPLOAD :**
The process of transferring electronic document from Bidder's computer using internet connection to the website (www.nprocure@ncode.in) is called uploading.

1.2.9. **IT ACT-2000:**

Means Information Technology Act, 2000 of Government of India

1.2.10. **APPROVED / APPROVAL:**

Means approval in writing.

1.2.11. **B.I.S:**

Means Bureau of Indian Standards.

1.2.12. **Deleted**

1.2.13. **CONSTRUCTION PLANT:**

Means all equipment, appliances or things of whatsoever nature required for the execution, completion or maintenance of the primary work or temporary works but does not include materials or other things intended to form or forming part of permanent work.

1.2.14. **CONTRACT:**

Means the instruction and information to bidders, general and special conditions of contract, specifications, drawings, schedules of quantities & tender prices, other parts of the Bid Document, the formal agreement between the employer and contractor and all addenda and attachments related to the above.

1.2.15. **CONTRACTOR:**

Means the bidder with whom the contract has been made for executing the works.

1.2.16. **CONTRACT PRICE / CONTRACT AMOUNT:**

Means the agreed amount stated in the Contract Agreement for Designing, Development and Maintenance of the works for the stipulated period and to remedy of any defects, and includes adjustments (if any) in accordance with the Contract.

1.2.17. **CONTRACTOR'S EQUIPMENT:**

Means all equipment, tools, apparatus, machinery, vehicles and other things required for the execution and completion of the works and the remedying of any defects. However, Contractor's Equipment excludes Temporary works, Departmental equipment (if any) or plant, materials and any other things intended to form or forming part of the permanent works.

1.2.18. **COMPLIANCE WITH LAWS:**

The Contractor shall, in performing the Contract, comply with all applicable Laws related to all actions of his obligation as per the contract.

1.2.19. **CONTRACTOR'S OBLIGATIONS:**

Means the obligation to execute the Project in all its entirety and shall, without limitation, include Operation and Maintenance.

1.2.20. **CONTRACTOR'S USE OF EMPLOYER'S DOCUMENTS:**

As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Employer's requirements and other documents made by (or on behalf of) the employer. The contractor may at his own cost, copy, use, and obtain communication of these documents for the purposes of the contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

1.2.21. **COUNTRY:**

Means the Country in which the site (or most of it) is located, where the Permanent Woks are to be executed.

1.2.22. **DAY:**

Means a day from midnight to midnight.

1.2.23. **DEFECTS LIABILITY PERIOD:**

2 years of Defects liability period after handover total Execution work / Work completion Certificate.

1.2.24. Means the period of Five years from the certified date of completion of work

1.2.25. **DRAWINGS:**

Means the drawings referred to in the specifications, any modifications of such drawings approved in writing by the Executive Engineer, and such other drawings as may from time to time be furnished or approved in writing by the Engineer-in-charge.

1.2.26. **EMPLOYER / OWNER / DEPARTMENT:**

Bhavnagar Municipal Corporation, Gujarat, or the person named as Employer or Owner in the Contract Agreement and the legal successor in title to this person.

1.2.27. **EMPLOYER'S EQUIPMENT:**

Means the apparatus, machinery and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the Employer's requirements but does not include plant which has not been taken over by the Employer. No any equipment will be provided by BMC to contractor.

1.2.28. **EMPLOYER'S USE OF CONTRACTOR'S DOCUMENT:**

As between the Parties, the Contractor shall retain the copyright and other intellectual property right of the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

The Contractor shall be deemed by signing the Contract to give the Employer a non- terminable, transferable, non-exclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:

- Apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works.
- Entitle any person in proper possession of the relevant part of the works to copy, use and communicate the Contractor's documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the works, and
- In the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the site and other places as envisaged by the Contract, including replacements of an computers supplied by the Contractor. The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Employer for purposes other than those permitted under this Sub- Clause.

1.2.29. **ENGINEER-IN-CHARGE:**

Means the Engineer-in-Charge of the works, or in-charge of specified parts of the works under the contract or such other assistants or sub-ordinates to whom the Engineer-in Charge may have delegated certain duties, acting separately within the scope of the particular duties entrusted to them.

The contractor will be given a copy of the Bhavnagar Municipal Corporation authorization designating the Engineer-in-charge by name and delegating him his authority, at the time when contract is signed. It is however, to be distinctly understood that, no delegation of powers shall be made to such assistants or sub-ordinates, except in respect of supervision to ensure compliance of the contract conditions.

1.2.30. **EXECUTIVE ENGINEER/CITY ENGINEER:**

Means the Executive Engineer / City Engineer in overall charge of the works i.e. Engineer In- Charge.

1.2.31. **FACILITY:**

Means the entire system to be designed and constructed in accordance with the provisions hereof, including the equipments, buildings, structures, ramps, pits, pipes, pipeline appurtenances, fencing, lighting, testing and analysis equipment, tools, computers, software programs, safety equipment, plant machinery, supplies, instruments and inventory incorporated therein, as well as all open areas within the site, and including any additions, modifications, alterations, adjustments, replacements and repairs as may be made thereto from time to time.

1.2.32. **GOODS:**

Means Contractor's Equipment, Materials, Plant and Temporary Works, all or any of them as appropriate.

1.2.33. **GOVERNMENTAL AUTHORITY / GOVERNMENT:**

Means any Indian entity, authority or body exercising executive, legislative, judicial, regulatory or administrative functions, including, without limitation, any Government authority, agency, department, board, commission or instrumentality of Indian or any political subdivision thereof, court, tribunal, arbitrator or self-regulatory organisation.

1.2.34. **JOINT AND SEVERAL LIABILITIES:**

If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:

- These persons shall be deemed to be jointly and severally liable to the Employer for the performance of the contract.
- These persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and

  The contractor shall not alter its composition or legal status without the Prior consent of the Employer.

1.2.35. **LAWS:**

Means and includes all the provisions of all National (or state) legislation, Indian statutes, regulations, ordinances, codes, official or other standards, administrative or other rules, zoning and other plans and restrictions, building and other permits, judgements awards and decrees of, or agreements with any Governmental, semi- Governmental or quasi-Governmental Authority as currently in effect or as may be in effect from time to time and /or as may be amended or supplemented from time to time.

1.2.36. **MAINTENANCE STANDARD:**

Means the requirements for maintaining, repairing, and renewing the Facility:

- As set forth in the Operation & Maintenance Manual; bidder shall provide this at the time of commissioning of the project.
- Required pursuant to applicable Law;
- As may be necessary for keeping the facility in a satisfactory working condition such that the Facility will continuously comply with the Operation Standard; and
- As may be necessary to ensure that the Facility shall continuously be in an optimum working condition and state in relation with the lifetime of the Facility.

1.2.37. **MATERIALS:**

Means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply (only materials if any) to be supplied by the Contractor under the Contract.

1.2.38. **MATERIAL SUPPLIER:**

Means the person who supplies goods or services. A supplier may be distinguished from a contractor or subcontractor, who commonly adds specialized input to deliverables also called vendor.

1.2.39. **MONTH:**

Means from the beginning of a given date of calendar month to the end of preceding date of the next calendar month.

1.2.40. **PERFORMANCE GUARANTEES:**

Means the List of Guarantees offered / provided by the Contractor in his Bid Submission pursuant of the Bid Documents.

1.2.41. **PERMANENT WORKS:**

Means the works to be designed and executed by the Contractor under the Contract.

1.2.42. **PIPE SUPPLIER:**

Means the person that supplies pipes.

1.2.43. **RUPEE:**

Means Indian National Rupees (INR)

1.2.44. **SITE:**

Means the specific areas / lands and other places on, under, in or through which, the works are to be executed or carried out and any other lands or places provided by the owner for the purposes of the contract together with such other places as may be specifically designated in the Contract or subsequently approved as forming part of the site.

1.2.45. **TAKING OVER:**

Means, the Owner shall take over the project after contractual completion of the Defect Liability period and meeting all contractual obligations, Terms & Conditions as agreed by the contractor however BMC may take over during any time if the contractor fails to perform his responsibilities. Such take over will be at the cost and risk of contractor.

1.2.46. **TEMPORARY WORKS:**

Means all temporary works of every kind required for successful execution of the Contract.

1.2.47. **TESTS ON COMPLETION:**

Means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out (Test on Completion) before the works or a section (as the case may be) are taken over by the Employer.

1.2.48. **WEEK:**

Means seven consecutive days.

1.2.49. **WORKS:**

Means the works / action to be executed in accordance with the contract.

1.2.50. **COMMISSIONING:**

Means the successful operation of the project after successfully running for a period of Three month as a part of trial run.

1.2.51. **COMPLETION:**

Means the date of successfully commissioning of all the equipments in the scheme after satisfactory running for one as a part of trial run.

1.2.52. **TRIAL RUN/ TRIAL OPERATION:**

"Deleted.

1.2.53. **SUBSTANTIAL COMPLETION:**

Substantial Completion of the work means when the work or designated portion thereof is Sufficiently completed in accordance with the contract except for any minor outstanding Works and defects which will not substantially affect the use of works or section for their Intended purpose

1.3 **BID INVITATION:**

Means the call / invite by The Bhavnagar Municipal Corporation from all interested and eligible bidders for Sewerage Project as per Tender Notice.

1.4 **DOWNLOAD OF TENDER DOCUMENTS:**

The tender documents are available in electronic form, from the website https://www.nprocure.com. Interested bidders can view these tender documents online, and can down load tender documents.

1.5 **Particular Provisional**

The particulars of the proposed works given herein as well in the accompanying brief note are provisional and must be considered only as advance information to assist applicants.

1.6 **Present Status of Work:**

This is a proposed Stormwater Network scheme needs to be designed and executed as per the specifications and BOQ etc.

2.0 Time of Performance:

The successful bidder will be expected to complete the works within stipulated time including Trial and Run Period as per time limit given in memorandum of work from the 10th day of date of Letter of Intent.

The successful bidder will be expected to complete the works within **10 Months** (Including Monsoons), as per time limit given in memorandum of work from the date of Letter of Intent.

The O& M time period shall be **5 years** (including defect liability period of 2year), from the date of issue of Successful Commissioning Certificate and it may be extended for further five years subjected to mutual agreement between both the parties

3.0 Project Implementing Agency:

The **"Bhavnagar** Municipal Corporation **"shall** be the project implementing agency. This contract shall be administered and managed by The Municipal Commissioner / Executive Engineer / City Engineer for and on behalf of Bhavnagar Municipal Corporation and shall act as the "Engineer In-charge."

4.0 Allocation of Risk & Responsibilities:

4.1 Contractor:

a) The preliminary designs and details contained in the bid documents are based on limited and indicative field data as available with the Employer at the time of preparation of the bidding documents. Bidder shall be responsible to verify/ examine/ check and make his own assessment of the site, site data, soil data and the schematic details shown in the bid documents based on his own investigations and/ or additional surveys, if required, at bidder's own cost.

The contractor shall be responsible to make good and bring to original position road and land surface, etc. damaged during laying of pipelines and construction of structures or while carrying out any activities related to this contract, at his cost.

The Contractor shall be responsible for all the damages that may occur during the execution of the work, to the underground cables, power lines, telephone lines, other water/sewer lines and other infrastructure facilities etc. while executing the works under this contract and shall bear all costs relating to repairs / replacements.

b) The contractor shall be responsible for failure of any components of the works executed by him during the full period of contract and the defect liability period**.** The contractor shall have to replace defective/ damaged/non-standard components of the executed works as may be identified by the engineer in charge at the cost of the contractor.

The Contractor will prepare and present interim/running and final bills with required copies of attachments in three sets.

The Contractor shall be responsible for the safety and performance of all civil and other structure up to the end of period of defect liability period. The damages/defects identified by the "Engineer in charge" shall be made good, as per Standards, by the contractor at his cost and risk. In case of collapse of structures in part or full replacement/ reconstruction shall be done by the contractor at his cost and risk.

The defects liability period shall commence from the date of successful commissioning of work and will be Five Years from the certified date of completion of work.

5 The Employer:

a) The Bhavnagar Municipal Corporation assures all participants for the contract that, adequate financial resources are available to cover the financial requirements and funds are available to meet the disbursement needs of the construction contracts in accordance with the provisions of tender documents.

All the material shall be inspected by Bhavnagar Municipal Corporation internal system and/or through Third Party Agency appointed.

Bhavnagar Municipal Corporation will provide indicative drawings and design parameters as may be required for works to be executed by the contractor.

Bhavnagar Municipal Corporation will approve and pay all interim / running / final bills presented by the Contractor after due verification against the provisions of contract.

The contractor will prepare documents and will be responsible to get all statutory permissions and clearances from the concerned central/ state or local statutory

authorities. However, the contractor shall have to manage the day-to-day co-ordination and follow up activities based on these clearances on site. Bhavnagar Municipal Corporation shall provide required help and assistance for such day-to-day activities. Fees to pay for such permissions will be borne by BMC.

The Bhavnagar Municipal Corporation will make available land for laying the pipeline & will be responsible for payment of crop compensation etc. in case of laying the pipeline in private/ government land. However, once clearance/ possession is obtained and established through mutual consent of the owner, its day-to-day management on site shall be the responsibility of the contractor for which Bhavnagar Municipal Corporation shall provide only necessary help and assistance.

b) All bids are to be completed and returned to the Employer in accordance with these Instructions to Bidders.

c) A copy of the available reports and data has been kept for reference in the office of:
(Name, Address, Contact Person & nos. of Executing Authority as per appendix to bid details)

6. ONE BID PER BIDDER:

Each bidder shall submit only one bid. A bidder who submits or participates in more than one bid under this proceed will cause all those bids to be rejected.

7. COST OF BIDDING:

The bidder shall bear all costs associated with the preparation and submission of its bid, up to acceptance of the offer. The Employer will in no case be responsible or liable for those costs.

8. SITE VISIT: The day of pre-bid meeting.

8.1 The bidder is advised to depute a suitable team to visit and examine the Site of Works and its surroundings for fully understanding of the job and ascertain the difficulties that may be encountered during execution of the works and for obtaining for himself, on his own responsibility, all information that may be necessary for preparing the bid and entering into the Contract. The cost of visiting the Site shall be entirely at bidder's own expense.

8.2 **COMMUNICATION**: Deleted

9 DETAILS OF APPROACH

Approach to the site of works: The bidder has to make own arrangements for approaching the site

10 GENERAL FACILITIES

10.1. **Deleted**

10.2. **Housing:**

The Bhavnagar Municipal Corporation has not envisaged any provision of house colony for contractors. The contractor, therefore, has to make his own arrangement for housing his staff and labourers.

10.3. **Deleted** .

10.4. **Water Supply**

The contractor shall have to make his own arrangement for water supply for work as well as for colonies of camps which may be established by him.

10.5. **Medical Aids**

Government and private Hospital facilities are available at all districts. However, the contractor will have to make own arrangement for Medical services for his labour and staff.

10.6. **Electric Power**

The contractor will have to arrange with Gujarat Electricity Board, Gujarat for his power requirements during construction phase.

10.7. **Post. Telegraph and Telephones**

Post and Telephone services are available for public use at all district places.

10.8. **Supply of Diesel, petrol and Oil**

Petrol and diesel pumps are installed by private agencies in all district places. The contractor shall have to make his own arrangement for procuring the lubricants required by him.

11 CLIMATE AND WORKING SEASON

11.1. Temperature

Gujarat State has tropical climate. The temperature varies in the ranges from 10^{o} Celsius to 43^{0} Celsius in Bhavnagar town.

11.2. Rainfall

Average annual Rainfall ranges from less than 550 mm the North West region to over 2000 mm in the South, with most part of the State receiving 200mm to 1000mm of rainfall. About 95% of rainfall occurs during the months June to September leaving remaining period of the year almost dry.

11.3. Working Season:

Since rainfall spreads over the period starting from middle of June to the end of September, It is generally not contentions and intense except for few days.

The above information of Climate of the project area is given only as helping information in good faith and Bhavnagar Municipal Corporation does not carry any liability for providing this information. The interested parties may refer the reports and forecast issued by the Indian Meteorological Department or other weather agencies for their use.

B. BIDDING DOCUMENTS

12. CONTENT OF BIDDING DOCUMENTS

12.1 The bidding documents are those stated below, and should be read in conjunction with any Addenda issued there to in accordance with Clause 14.

VOLUME: I	• Section I : Tender Notice • Section II : Instruction to Bidders • Section III : Qualification criteria & Evaluation Procedure
VOLUME – II	• General conditions and conditions of particular applications
VOLUME – III	• Item wise Technical Specification

VOLUME –IV	• Material Specification
VOLUME-V	• Price Bid
VOLUME-VI	• BMC Vendor List
VOLUME-VII	• Detail Tender Notice
VOLUME-VIII & IX	• Bid Conceptual Drawings & Typical Drawing

12.2 The bidder is expected to examine carefully the contents of the Bidding documents. Failure to comply with the requirements of bid submission will be at the bidder's own risk. Pursuant to **Clause 28** under **"E. Opening of Tender"** bids which are not substantially responsive to the requirements of the bidding documents will be rejected.

13 CLARIFICATION OF BIDDING DOCUMENT:

A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or by fax (hereinafter the term "fax" is deemed to include electronic transmission such as facsimile, cable and telex) at the Employer's address indicated in the Invitation for Bids. The Employer will respond to any request for clarification, which it receives earlier than 4 days prior to Pre-bid meeting. Copies of the Employer's response, including a description of the enquiry, will be communicated on www.tender.nprocure.com.

14. AMENDMENTS OF BIDDING DOCUMENTS:

14.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder modify the bidding documents by issuing amendment.

14.2 Any addendum/amendment thus issued shall be part of the bidding documents pursuant to Sub-Clause 12.1, and shall be communicated on online.

14.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids, in accordance with Clause 26, Submission of Tender.

14.4 All amendments and modifications issued by the Employer shall be deemed to be integral part of the contract to be signed with the successful bidder.

C. <u>PREPARATION OF BIDS</u>

15. LANGUAGE OF BID:

The bid, and all correspondence and documents, related to the bid, exchanged between the bidder and the Employer shall be written in the English language. Supporting documents and printed literature furnished by the bidder may be in another language provided they are

accompanied by an accurate translation of the relevant passages in the English language, in which case, for purposes of interpretation of the bid the English translation shall prevail.

16. DOCUMENTS COMPRISING THE BID:

16.1 The bid submitted by the bidder shall comprise two envelopes submitted simultaneously, one containing only the "**Technical Proposal**" and the other the "**Price Proposal**".

16.2 The technical proposal shall contain the following;

(i) Bid Form for Technical Proposal and Appendix to Technical Proposal.

(ii) Power of Attorney

(iii) Information on Qualification

(iv) Confirmation of Eligibility

(v) Schedule of Major items of equipments

(vi) Schedule of major items of Constructional plant

(vii) Schedule of key personnel

(viii) Schedule of compliance with the bidding documents

(ix) Schedule of construction facilities

(x) Schedule of construction method

(xi) Any other material required to be completed and submitted by bidders in accordance with these instructions to bidders.

(xii) Form of Bid Security

16.3 The price proposal shall contain the following;

(i) Bid form for price proposal and Appendix to price proposal;

(ii) Schedule of prices:

(iii) Schedule of Payment

(iv) Any other materials required to be completed and submitted by bidders in accordance with these Instructions to Bidders.

17. BID FORM & PRICE SCHEDULE:

The Bidder shall complete the Bid Forms and schedules furnished in the bidding documents in the manner and detail indicated therein, following the requirements of Clause 15 and Clause 16.

18. BID PRICES:

18.1 Unless specified otherwise in Employer's requirements, Bidders shall quote for the entire facilities on a "single responsibility" basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the bidding documents in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation and completion of the facilities. This includes all requirements under the Contractor's responsibilities for testing, pre- commissioning and commissioning of the facilities and, where so required by the bidding documents, the acquisition of all permits, approvals and licenses, etc. services as may be

specified in the bidding documents, all in accordance with the requirements of the Conditions of Contract.

18.2 The bidders shall have to give detailed rate analysis in justification of the prices as may be required by the employer as a part of the evaluation process, if so desired by the employer.

19. BID CURRENCIES:

The prices shall be quoted on fixed and firm price basis in Indian currency i.e. Indian currency (INR) Only.

20. BID VALIDITY:

20.1 Bids shall remain valid for a period mentioned in NIT from the last date of submission of bid.

20.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the responses there to, shall be made in writing. A bidder may refuse the request without forfeiting its bid security. A bidder agreeing to the request will not be required or permitted to modify its bid, but will be required to extend the validity of its bid security for the period of the extension, and in compliance with Clause 18 in all respects.

21 BID SECURITY:

21.1 The bidder shall furnish, as part of its bid with the technical proposal, a bid security amount as specified in the Tender Notice.

21.2 The bid security shall, at the bidder's option, be in one of the following form:

(a) A Demand Draft payable to the officer inviting bid as per tender notice and issued by short listed bank as per tender notice.

(b) Fixed deposit receipt pledged in the name of the officer inviting bid as per tender notice and issued by short listed bank as per tender notice and valid up to 28 days from the date of closure of the bid validity period of 180 days. **i.e. (Total of 180+28=208 days).**

(c) Unequivocal and unconditional Bank Guarantee in the prescribed format given in this document issued by short listed bank as per tender notice and valid up to 28 days from the date of closure of the bid validity period of 180 days. The format of the bank guarantee shall be in accordance with the sample form included in Section–IV as Form-19. Other formats may be permitted subject to the prior approval of the Employer. The bid security shall remain valid for 28 days beyond the original validity

period for the bid and beyond any period of extension subsequently requested under Sub-Clause 20.2. **i.e. (Total of 180+28=208 days)**

21.3 Any bid not accompanied by an acceptable bid security shall be rejected by the Employer as non-responsive.

21.4 The bid securities of unsuccessful bidders will be returned as promptly as possible.

21.5 The bid security of the successful bidder will be returned when the bidder has signed the Contract Agreement and furnished the required performance security.

21.6 Within 10 days from the date of issue of the letter accepting his tender, the successful Bidder shall furnish the required Security Deposit for performance and plus additional security if any for unbalanced bids in accordance with the condition of the Contract and attend the office of the Engineer In–charge for execution of the Contract documents. If he fails to furnish the Security Deposit for performance or to execute the Contract for the work offered to him, his EMD shall be forfeited and the Bidder may be disqualified from tendering for further works for three years.

21.6 The bid security may be forfeited;

(a) If the bidder withdraws its bid, during bid validity period specified

(b) If any document submitted by the bidder are false and fraudulent

(c) If the successful bidder fails

i. To furnish security deposit in accordance with the relevant clause in the bid.

ii. To sign the contract with in time limit specified in the bid.

21.7 In case of forfeiture of EMD, Bidder shall be disqualified and shall not be allowed to bid for further works under Bhavnagar Municipal Corporation for three years.

22. ALTERNATIVE PROPOSALS BY BIDDERS:

Bidders are not permitted to give any alternative offer containing technical or other alternatives. Their bid proposals shall be in total conformity of the employer's requirement as described in the bidding documents.

23 **PRE- BID MEETING:**

23.1 The bidder or its official representative is invited to attend a pre-bid meeting, which will take place at:

Venue : As mentioned in Tender Notice

Date : As mentioned in Tender Notice

23.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

23.3 The bidder is requested to submit any questions in writing, to reach the Employer not later than four day before the pre-bid meeting.

23.4 Minutes of the meeting, including the text of the questions raised and the responses given, will be transmitted without delay to all of the bidding documents. Any modification/ corrections/ amendments to the bidding documents shall be declared after the pre-bid meeting and shall be the listed as part of the minutes of the pre-bid meeting or separately thereafter as may be necessary. The pre bid minutes and the modifications /corrections/ amendments issued by the employer will publish online only and contractor has to down load it and submit with sign and seal with submission of documents.

23.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

D. <u>SUBMISSSION OF BIDS</u>

24 METHOD OF TENDERING:

24.1. If the tender is uploaded by an individual, it shall be digitally signed by the individual.

24.2. If the tender is uploaded by a proprietary firm, it shall be digitally signed by the proprietor.

24.3. If the tender is uploaded by a firm, in partnership, it shall be digitally signed by all the partners of the firms or alternatively by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the tender, a certified copy of the partnership deed, full name, current address of the firm, current addresses of all the partners of the firm shall also accompany the tender.

24.4. If the tender is uploaded by a limited company or a corporation, it shall be digitally signed by a duly authorized person holding the powers of attorney for signing the tender. Such limited company or corporation may be required to furnish satisfactory evidence of its existence before the contract is awarded. They should also furnish Articles of Memorandum of Association.

24.5. Each bidder shall submit only one bid for the particular work. A bidder who submits more than one bid in the particular work will be disqualified.

24.6. Deleted

24.7. Deleted.

24.8. Deleted.

24.9. All witnesses and sureties shall be person of status and probity their full name, occupation and addresses when they fill the vendor registration form provided in the website. www.nprocure@ncode.in

24.10. In case at time of tender uploading, if any of the above information has changed then the Bidder shall correct the same by making the modification in his personal profile.

25 ACCOMPANIMENTS TO TENDER

The Bidder shall have to upload following documents which are digitally signed by Bidder's Digital Certificate with his tender.

25.1. Scanned Copy or Notarized or self-attested of the latest Income Tax Return with permanent account number (PAN) and Income Tax ward where assessed.

25.2. Scanned Copy or Notarized or self-attested of client certificate showing, performance of the Bidder working with Bhavnagar Municipal Corporation or any employer for ongoing works as per prescribed Performa mentioned in Section-III.

25.3. Scanned Copy or Notarized or self-attested of declaration showing the details of all works completed and works on hand with the contractor and the value of works that remain to be executed.

25.4. Scanned Copy or Notarized or self-attested of contractor's registration certificate 'AA' Class in Govt. of Gujarat (R&B/WRD/GWSSB/ Board, Corporation, and Government Undertaking /Organizations of state government).

25.5. Scanned Copy or Notarized or self-attested of the Power of Attorney duly authorized by a notary public, if power is delegated for signing the Bid to other person by the Bidder.

25.6. Scanned Copy or Notarized or self-attested of E.M.D. in accordance with relevant clause in **"Tender Notice"** of tender notice and the original shall also be submitted in physical form by RPAD/Speed Post/Courier.

25.7. Scanned Copy or Notarized or self-attested of the Solvency Certificate from Bank of required amount as per Tender Notice.

25.8. Scanned Copy or Notarized or self-attested of Account payee Demand Draft for Tender Fee in accordance with relevant clause of Tender Notice, and also in physical form shall also be submitted by RPAD/Speed Post.

25.9. Scanned Copy or Notarized or self-attested of all the prescribed Forms & Annexure mentioned in Section-III, also in physical form in separate sealed cover by RPAD/Speed Post. in the office of The Executive Engineer of Drainage, Bhavnagar as mentioned in Tender Notice.

25.10. Scanned Copy or Notarized or self-attested of the detailed statement of the turnover (Civil Engineering Works Only) of last seven completed financial years audited and certified by the Chartered Accountant.

-All Documents must be in scanned copy and it should be clearly readable & All Such Documents shall be Notarized OR Self attested.

** if Not, The same will be accepted Subjected to notarized copy is submitted in hard copy ..

25.11. The bidder should submit undertaking on non judicial stamp paper of Rs. 300/- duly notarized regarding document submitted, are true. Bhavnagar Municipal Corporation would have the right to forfeit the EMD and black list to the bidder if any of the information given by the bidder is found faulty or incorrect or misleading.

25.12. If the Bidder Firm is a member of a Group of Companies (with a common name), scanned copies of all relevant documents clearly indicating the stake of the bidding Firm in the equity of each firm of the Group, Turnover, Net Tangible Worth and Cash Flow of each company wherein the stake of the Bidding Firm is 51% or more in terms of equity.

25.13. All MOU's shall be on a Non Judicial stamp paper of appropriate value duly notarized and signed by respective authorised representatives.

26. SUBMISSION OF TENDER:

26.1. The Bidder must submit online duly filled in the entire tender document i.e. technical bid and price-bid available on website the rate and the along with other details in Volume IV of tender document.

26.2. The bidder shall fill the required details/ data/ information in the prescribed form of tender document.

26.3. Tender in offline mode will not be accepted.

26.4. The tender i.e. Technical bid and Price bid, dully filled in shall be uploaded on bmc.nprocure.com in up to the date and time mentioned in the Tender Notice.

26.5. The employer at his discretion can extend the last date for submission of tender by amending the bidding document in which case all rights and obligations of the employer and bidder will thereafter be subject to the last date as extended. The bidder shall be responsible for extending the validity of tender accordingly, failing which his bid shall be rejected as non-responsive.

26.6. Bidders will have to submit Demand Draft only for Earnest Money Deposit and tender fee in a separate sealed envelope and other technical documents in another sealed envelope. The documents shall be submitted by RPAD/Speed Post only to the designated officer, as mentioned in the Tender Notice & submission made by courier shall not be considered. Each cover must clearly be marked with the contents i.e. **"TENDER FEE & EMD"** and **"TECHNICAL BID DOCUMENT"**

27. LATE AND DELAYED TENDER:

As a rule the system will not accept any Tender after the due date and time and hence in case of E-Tenders there will be no late tender. Physical submission also must be on or before stipulated date & time as per NIT.

27.1 STATING OF RATES

The Rates for items in Schedule – B, Price Bid must be submitted in figures only on the website. Amount in words will be automatically generated by system. Total amount of each item and the grand total in figures and the respective words will be automatically calculated by the Computer and displayed.

E. OPENING OF TENDER

28. OPENING OF TENDERS

The Designated Officer of Bhavnagar Municipal Corporation will open the e-Tender on the date as mentioned in the tender notice, if possible in his office at the address specified in the Tender Notice. The intending Bidders, if they wish may participate in online Tender opening process and view the result on tender.nprocure.com To participate in online tender opening, bidder will have to log in with his user ID and password and click on "Mark my attendance button" to view Tender result. For more details please refer "Vendor Training Manual."

1. Opening of Technical Bid :

The designated officer of Bhavnagar Municipal Corporation will open technical bid first at the address specified in the Tender Notice. The evaluation of Technical Bid will be done as per **"Clause F: Evaluation of Tender".**

2. Opening of Price Bid :

The price Bid of only qualified bidders shall be opened as decided here after.

The designated Officers of Bhavnagar Municipal Corporation will open each price bid on or after the date and time mentioned in the Tender or time and date pre-intimated to qualified bidders on and the print out of total amount quoted in the tender along with rate quoted for each item in the Bid Schedule and the condition if any put forth by the Bidder. The Bidder can see his price bid as well as other Bidders' entire price Bid who have participated in the E-Tender.

All Tenders will be opened online irrespective of the presence of the Bidder.

F. EVALUATION OF TENDER

EVALUATION & COMPARSION OF TECHNICAL PROPOSAL:

The Employer will carry out a detailed evaluation of the bids in order to determine whether the bidders are qualified and whether the technical aspects are substantially responsive to the requirements set forth in the bidding documents. In order to reach such a determination, the Employer will examine the information supplied by the Bidders and other requirements in the bidding documents, taking into account the following factors:

QUALIFICATION

The determination will take into account the Bidder's financial, technical, production capabilities and past performance; it will be based upon examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to Clause 24, as well as such other information as the Employer deems necessary and appropriate; and

An affirmative determination will be a prerequisite for the employer to continue with the evaluation of the technical proposal; a negative determination will result in rejection of the Bidder's bid.

TECHNICAL:

Overall completeness and compliance with the Employer's Requirements

29 EVALUATION OF TECHNICAL BIDS

29.1. The bidder shall be qualified on the basis of information furnished by the bidder in accordance with Clause-25 above, in support of his capability with reference to qualification criteria laid down.

29.2 Even though the bidder meets the above qualification criteria, he shall be disqualified if:

a. The bidder had made misleading or false representation in the forms, statements and attachment submitted in proof of qualification requirements and/or

b. A record of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

c. Bidder has been blacklisted by any Government/ Non Government / Private agencies/ Organizations/ Institutions/ Government Undertakings and funding Agencies in the last 05 years.

The bidder should provide accurate information on litigation and/ or arbitration resulting from contract completed or under execution by him over the last five years. A consistent history of arbitration awards/ judgments against the applicant may result in disqualification for proposed work. If the details of litigation history is hidden by the applicant and later on it comes to knowledge of the employer the bidder shall be disqualified for the proposed work and other appropriate actions shall be taken against the bidder.

The bidder should submit undertaking on non judicial stamp paper of Rs. 300/- dully attested by notary public regarding document submitted, are true. Bhavnagar Municipal Corporation would have the right to forfeit the EMD and black list to the bidder if any of the information given by the bidder is found faulty or incorrect or misleading.

29.3 During the process of evaluation the Bhavnagar Municipal Corporation may visit and inspect the works carried out by the bidder in order to assess the performance of the work. The bidder shall have to make arrangement for inspection of work at the respective work site only. This shall also be considered for evaluation with reference to performance of the bidder.

29.4 Depending upon the actual bid capacity assessed and other qualifying requirements, the applicant will be qualified for the work. However at the price bid evaluation stage, a careful check of the appropriate references with reference to the information submitted by the bidder will be done and in no case, a contract will be awarded to a bidder lacking in the financial criteria.

30. **Evaluation of Price bid**

30.1. Quoted Tender rates shall have to be reasonable and competitive to meet with the timely and satisfactory performance of the contract.

30.2 Reasonability of Tenders' proposed method and technique of construction, construction programme, sequence of components of the work and proposed resources assigned to the work shall be seen where it has been called for in the tender.

30.3. (a) If the Bid of the successful bidder is seriously unbalanced in relation to the estimated cost of the work/ item (s) to be performed under the Contract, Bhavnagar Municipal Corporation, may require the bidder to produce detailed rate price analysis for any of all Items of the Bid of the quantities to demonstrate the internal consistency of this rate Price with the construction methods proposed. After evaluation of the rate analysis, the Bhavnagar Municipal Corporation may require, that, the amount of the Performance Security set forth in **"Clause No. 21 under Bid Security"** above of the contract be increased at the expense of the successful Bidder to a level sufficient to protect the Bhavnagar Municipal Corporation, against financial loss in the event of default of the successful Bidder under the contract.

(b) In respect of those items for which the quoted rates are more than 10% above the overall percentage of accepted tender, the payment of such items in the running bills shall be made at rate of that item which was used for the estimate plus or minus overall variation percentage of the accepted tender plus 5% of the estimated rate of that item. The balance amount as per accepted tender rate shall be withheld from the running bills and will be released as per R&B Department Circular no .PARCH/102008/(61) dated 03-05-2013. No interest will be payable for such withheld amount. This shall be taken care by way of payment schedule and quoted rates need not be changed.

(c) The contract performance for actual execution and the payments to be made for the work shall be based on such bid rates as per (a) and (b) above wherever applicable

for the purpose of running account bills. However the final payments shall be made based on the item wise quoted rates.

(d) Any decision of Bhavnagar Municipal Corporation regarding the interim rates at which payment shall be made in accordance with the above Clauses shall be final and binding to the Bidder.

(e) The application of the above clause (a) & (b) above shall be at the discretion of the employer.

30.4. To assist in the examination, evaluation and comparison of Tenders, the Bhavnagar Municipal Corporation may ask the Bidders individually for clarification of their tenders including break up of work done. The request for clarification and the response shall be in writing but no changes in the price or substance of the tender shall be sought, offered or permitted.

31 Bhavnagar Municipal Corporation reserves the right to accept or reject any Tender without assigning any reason.

32. PROCESS TO BE CONFIDENTIAL:

Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process. Any effort by a bidder to influence the Employer's processing of bids or award decisions by any way may result in the rejection of the bidder's bid.

33 PRELIMINERY EXAMINATION OF TECHNICAL PROPOSAL:

The Employer will examine the bids to determine whether they are complete, whether the documents have been properly signed, whether-the required security is included, and whether the bids are generally in order. Any bids found to be non-responsive for any reason or not meeting the minimum levels of the performance or other criteria specified in the bidding documents will be rejected by the Employer and not included for further consideration.

34 DELETED

35. DELETED

G. <u>AWARD OF CONTRACT</u>

36 SUCCESSFUL BIDDER:

The Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive in terms of minimum qualification requirement and technical requirements to the bidding documents and who has offered the Lowest Evaluated Bid Price, provided that such bidder has been determined to be eligible & qualified in

accordance with the provisions mentioned under **"Clause F. Evaluation of Tender" in Section-II**. A substantially evaluated responsive Tender is one, which conforms to all the terms, conditions and specifications of tender documents without material deviation or reservation. The material deviation or reservation is one,

36.1. Which affects in any substantial way the scope, quality or performance of the works.

36.2. Which limits in any substantial way inconsistent with tender documents, the Employer's 'right' or the Bidder's obligations to the contractor.

36.3. Whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive tender.

37 EMPLOYER'S RIGHT TO ACCEPT ANY BID OR TO REJECT ANY OR ALL BIDS:

37.1. Those Tenders which do not have Digital Signature attached shall be rejected.

37.2. Tender without Tender Fee & Earnest Money Deposit, will be treated as non responsive and will be out rightly rejected.

37.3. Notwithstanding the above, the Bhavnagar Municipal Corporation reserves the rights to accept or reject any bid or to cancel the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders on the grounds of the Bhavnagar Municipal Corporation action.

37.4. In addition to the above, the Tender will also be liable to be rejected out rightly if, the Bidder or in the case of a firm, each partner or the person holding the Power of Attorney thereof does not digitally sign.

38 NOTIFICATION OF AWARD:

38.1 Prior to the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder by mail, confirmed by registered letter, that its bid has been accepted. This letter (hereinafter and in the Conditions of Contract called the "Letter of Intent") shall name the sum which the Employer will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called "the Contract Price").

38.2 The notification of award will constitute the formation of the Contract.

38.3 Upon the furnishing by the successful bidder of a performance security (and domestic preference security where required).

39 SIGNING OF CONTRACT AGREEMENT:

39.1 At the same time that he notifies the successful bidder that its bid has been accepted, the Employer will send the bidder the Form of Contract Agreement, incorporating all agreements between the parties.

39.2 Within 15 days of receipt of the Form of Agreement, the successful bidder shall sign the Form and return it to the Employer.

40 PERFORMANCE SECURITY:

40.1. The successful bidder shall have to pay Performance Security in the form of Unequivocal bank guarantee issued by any shortlisted bank as per Notice Inviting Tender having branch at Bhavnagar and the same shall become refundable as per Clause No. 01 under General Conditions of Contract.

41 CORRUPT OR FRAUDULENT PRACTICES:

41.1 The Bhavnagar Municipal Corporation requires that bidders/suppliers/contractors have followed the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy:

(a) Defines for the purposes of this provision, the terms set forth below as follows:

(i) **"Corrupt practices"** means behaviour on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

(ii) **"Fraudulent practice"** means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the determination of the Borrower, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the borrower of the benefits of free and open competition;

(b) Will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded an contract if it at any time determines that the firm has engaged in corrupt and fraudulent practices in competing for, or in executing, an contract.

If at any stage it is found that bidder had hidden material information or had submitted information which is false and fraudulent shall be debarred from bidding in Bhavnagar Municipal Corporation tender for three years and EMD shall be forfeited. The matter shall also be brought to notice to the registration authority of the contractor.

42 GENERAL RULES AND DIRECTIONS:

42.1. 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 Bhavnagar Municipal Corporation unless it is signed by the Engineer-in-Charge.

42.2. The measurements of work will be taken according to the usual method in use in Bhavnagar Municipal Corporation and no proposal to adopt alternative methods will be accepted. The decision of the 'Engineer-in-Charge as to what is the usual method in use in the Bhavnagar Municipal Corporation , will be final.

42.3. Under no circumstances shall any contactor be entitled to claim enhanced rate for any item covered in this Contract except price variation for specified items as per contract.

42.4. The Contractor shall not be permitted to tender for the work in which his near relative is working in that Division or its sub-division as an Engineer of any category, Divisional Accountant, Store Keeper, and in the Circle Office as a Superintending Engineer Controlling that division as on date when Tender is submitted.

42.5. The contractor shall compulsorily furnish his latest address(es) including the latest address of his partners and place(s) of filling his/their income tax returns along with the tender (in the annexure form appended hereinafter). Any changes, if occur, in such address, during the tenure of contract, the latest address(es) shall invariably and forthwith be intimated by the Contractor to the concerned Engineer-in-Charge.

42.6. Receipt for payment made on account of the work, when executed by a firm shall be signed by all the partners except where the contractors are described in their tender as firm in which case the receipt shall be signed in the name of the firm by one of the partners or by some other person having authority to give effectual receipts for the firm.

42.7. Every Blank (fields) in the Tender document (Forms, Schedule, etc.) must be filled up by the Bidder and shall be submitted online.

42.8. Erasures and corrections:

Persons tendering are informed that no erasures or alternations by them in the text of document downloaded from website will be allowed and such erasure and alterations will be disregarded. If there is any error in writing, Bidder can edit the same and correct it. Please refer to the Vendor Training Manual.

42.9. The contract will normally be made within 180 days from last date of receipt of Tenders.

43.0 DECLARATION FORM: (FORM-H)

43.1. In conjunction to Sub Clause 'C' under "29. Evaluation to Technical bids" the bidder should submit undertaking as per Form-H on non judicial stamp paper of Rs. 300/- dully attested by notary public regarding document submitted, are true. Bhavnagar Municipal Corporation would have the right to forfeit the EMD and blacklist the bidder if any of the information given by the bidder is found faulty or incorrect or misleading.

44.0 REQUIREMENTS OF A BIDDER

44.1 The applicant in the same name and style shall be a well established Civil Engineering Contractor and shall have Registration in the required class for the work. The agencies whose contracts have been terminated on account of non-performance / poor performance in Bhavnagar Municipal Corporation work and debarred contractors will not be eligible for this Tender.

44.2 **COMPETENCY OF TENDER:-**

Contract will be awarded to responsive Bidders on the basis of prequalification criteria and evaluation of price-bid accordingly.

44.3 The Bidders/ Bidders are required to deploy the necessary machineries/ equipments (by owning/ hiring/ leasing) for the execution of work as specified in Clause 3.0, Section-III of this Volume

44.4 The Bidder shall employ Project Manager, Engineers, technicians and other key personnel and other Civil Technical Staff as specified.

BHAVNAGAR MUNICIPAL CORPORATION

BHAVNAGAR

VOLUME – I

SECTION-III

QUALIFICATION CRITERIA & EVALUATION PROCEDURE

QUALIFICATION CRITERIA & EVALUATION PROCEDURE

A. GENERAL

1.0 GENERAL:

All information requested for in the downloaded forms should be furnished against the respective columns in the forms in electronic formats. If information is nil it should also be mentioned as nil or no such case. If any particular query is not applicable in case of the applicant, it should be stated as not applicable However, the tender/ Bidders are cautioned that not giving complete information called for in the tender Documents in the form required or not giving it in clear terms or making any charge in the prescribed forms may result in the Bidder being summarily disqualified.

1.1 The tender's/ Bidder's name shall appear on each page of the prescribed Proforma.

1.2 Reference, Information and certificates from the respective clients certifying suitability, technical know-how or capability of the Bidder shall be signed by that client, in full with his name underneath in block letter and designation in that organization.

1.3 No further information will be entertained after submission of Tender Document unless it is called for by the Bhavnagar Municipal Corporation

1.4 Any effort by a Bidder / Bidder to influence the Bhavnagar Municipal Corporation in the process of examination. Clarification, evaluation of Tender and in decision concerning qualification, may result in disqualifying the Bidder.

1.5 The successful per-qualification made in the case of any Bidder for any other work of Bhavnagar Municipal Corporation will not be considered valid for the present work.

1.6 The time for completion of the work is **as per detailed tender notice** from the 10th day of date of 'Letter of Intent'.

1.7 The intending Bidder shall get himself registered with nproucre.com for obtaining his unique identification number and digital signature required for participating in the bid.

1.8 The bids received under this single stage, two envelope procedure, shall be assessed and evaluated based on the qualification criteria and evaluation procedure prescribed hereunder.

1.9 BMC reserves the right about to ask contractor to submit lacking documents for qualifying purpose.

2.0 LIST OF ACCOMPANIMENT:

Bidder shall include following accompaniment to tender documents while submission.

2.1 Letter of transmittal (Scanned Copy)

2.2 Power of attorney:

A power of attorney on Non Judicial stamp paper of appropriate value duly notarised by a notary public, if power is delegated for signing the bid to other persons by applicant. (Scanned Copy)

2.3 Certificate of registration:

A Certificate of contractor's registration certificate 'AA' Class in Govt. of Gujarat (R&B/WRD/GWSSB/ Board, Corporation, and Government Undertaking /Organizations of state government). (Scanned copy).

2.4 Supporting document:

Every blank (Fields) in the tender documents (Forms, Schedules, etc.) must be filled by the Bidder and submitted online. Tender forms which are not completed will not be accepted online use of dash (-) is not permitted. Please write "Not applicable" or "Nil" as and where required by Bidder.

SL. NO.	FORM NO.	DESCRIPTION OF PROFORMA
1	Form-0	List of Submittals
2	-	Proforma for "Letter for submission of tender".
3	Form-1	Details of organization structure of the bidder
4	Form : 2	Details of Personnel
5	Form : 3	Details of Machinery Equipments and work Plan
6	Form : 4	Information relating to Financial Criteria
7	Form-5	Financial data
8	Form-6	List of works already completed by the Bidder

SL. NO.	FORM NO.	DESCRIPTION OF PROFORMA
9	Form-7	Details of works on hand with Bidder
10	Form-8	Details of experience of completed work (similar nature)
11	Form-9	Additional Information and Litigation History / Debarment / Blacklisting
12	Form-10	Information for tenders submitted but not awarded
13	Form-11	Certificate for experience of work
14	Form-12	Joint Venture data (Deleted)
15	Form-13	Personnel/ staff proposed for the project
16	Form-14	Curriculum Vitae of Project Manager and all key Technical Staff
17	Form-15	Proposed site organization and Management
18	Form-16	Details of experience for physical qualification criteria
19	Form-17	Approach & Methodology.
20	Form-18	Form-H (Declaration)
21	Form-19	Proforma for Bank Guarantee (EMD)
22	Form-20	Work wise details of work completed/ in progress by the contractor.
23	Form-21	Proforma for Performance bond/ Performance guarantee Proforma for bid security
24	Form-22	Proforma for Joint Venture Agreement (Deleted)
25	Form-23	"Assured Pipe Supply Declaration" – (To be filled without proposed dispatch schedule at the time of Bidding)
26	Form-24	Proforma for memorandum of understanding (MOU) with pipeline supplier

3.0 **ELIGIBILITY FOR QUALIFICATION:**

3.1 The Bidder in the same name and style shall be a well established Civil Engineering contractor with at least 10 (ten) years experience and capability for construction of all types of Civil Engineering works.

3.2 The Bidder in the same name and style must give evidence of having adequate experience in mobilizing equipment and personnel for large value contracts and in the deployment of heavy construction equipment for the type of work described earlier.

3.3 The Bidder must have adequate staff and equipments for carrying out work in accordance with time schedule.

3.4 The Bidders/Bidder must have a Project Manager with minimum 10 (Ten) years experience in managing construction in the field of Civil Engineering works, similar works, as mentioned in Clause 4.1.2 along with minimum number of engineering, technical and other key personnel with adequate experience in civil engineering work as under:

i.	Civil Engineers (Degree holders)	2 Nos
ii.	Construction Engineer (Degree holders)	2 Nos
iii.	Supervisors (Diploma holders)	3 Nos
iv.	Technical Assistants (Diploma / ITI)	3 Nos
v.	Surveyor	1 Nos
vi.	Safety Engineer	1 Nos

Note: *If sufficient staff does not exist at the time of bidding, an undertaking for employing the necessary staff shall be given by the Bidder.*

3.5. The Bidder must provide evidence of having adequate experience. The Bidder should up load the digitally signed scanned copies to supporting certificate, reports relating to physical, financial, technical, machinery and other capability of the applicants in their original language along with certified translation of all relevant portions of the certificate/reports in English duly attached with their Digital Signature. The applicant should upload the financial capabilities in Rupees only.

3.6 The Bidders are required to upload digitally signed scanned copies along with their applications certificates obtained from the concerned authorities/ employers towards proof.

3.7 Qualification of the bidder:

To be qualified for award of Contract, bidders shall:

(a) Submit a written power of attorney authorizing the signatory of the bid to submit the bidder. -

(b) Submit Qualification requirements specifying financial capacity, technical capacity, minimum acceptable levels with regards to Bidder's experience in relevant projects and other relevant factors such as work in hand, future commitments, and litigation history as given and described in the **Appendix 1** to Instruction to Bidders.

(c) Submit proposals regarding work methods, scheduling and resourcing which shall be, provided in sufficient detail to confirm the bidders' capability to complete the works in accordance with the specifications and the time for completion.

BID EVALUATION REPORT (PRE-QUALIFICATION)						
Name of Work :						
Tender notice no:		**Online e-Tender notice no.**	**TENDER ID:**	**ESTIMATED COST : (Without GST)**	**Hard copy opened Dt. , ONLINE TECHNICAL BID OPENED DATE :**	**Remarks**
	Submission	**Required as per Tender Conditions**	**1**	**2**	**3**	
			Bidder n1	**Bidder n2**	**Bidder n3**	
1	Tender Fee	Rs. 18,000/-				
2	EMD	Rs. 26,90,000/-				
3	**Class of Registration**	**"AA" or Above**				
	(a) Validity of certificate					
	(b) Is it as per Tender Condition					
	(c) Whether it is verified by issuing authority. Yes / NO					
4	**Bank Solvancy**	**at least 20 % of Tender Amount = > Rs.**				
	Validity requirement					
	Whether it is verifed by issuing authority Yes / No					
5	GST Registration Number					
6	PAN card Number					

7	**Turn over Detail**	**For financial year to Minimun Turn over required > 30% of Estimated value of work.**				
	(a) Requirment	Rs. = **>**				
	(b) Whether it is verified by issuing authoriy (CA) Yes / No					
8	**Work Experience Certificates required**					
	(a) Whether it is verified by issuing authority Yes / NO					
	Similar nature of Work completion certificate :"Similar works" means,"	Similar Completed works . Minimum 3 works, each costing not less than amount equal to 40% of estimated cost. i.e Rs.				
		or				
		Similar Completed works . Minmum 2 works, each costing not less than amount equal to 50% of estimated cost. i.e Rs.				
		or				
		Similar Completed works . each costing not less than amount equal to 80% of estimated cost. i.e				
9	**Anti - Blacklist Affidavit Produced ? YES or NO**	Litigation or Arbitration resulting from contract executed in the last five years or currently under execution.	Annexure - X : Arbitration/Litigation History	Annexure - X : Arbitration /Litigation History	Annexure - X : Arbitration/ Litigation History	
10	**In case of Private Work Experience**					

	(a) work order (b) Agreent (c) Completion Certificate (d) Final Bill (e) TDS certificate (f) Whether all above documents are verified by issuing authority Yes / No					
11	Necessary Staff Req.					
12	**Any other special conditions in Tender ?**					
	(a) ,(b), (c)..					
	Department's clear opinion with signature :					

3.8 DELETED

3.9 Bidders shall also submit proposals of work methods and schedule, in sufficient detail to demonstrate the adequacy of the bidders' proposals to meet the Employer's Requirements.

3.10 DELETED.

4.0. MINIMUM QUALIFYING CRITERIA:

To qualify, each bidder in the same name and style should have achieved the following performances:

4.1. FINANCIAL

4.1.1 TURNOVER:

Bidder must have achieved minimum annual financial turnover 30% of Project Cost(at current price level with GST) from contract receipt of works (in all classes of civil engineering construction works only) in any three financial years out of last Seven (7) financial years i.e. from 2016-2017 to 2022-2023

Note :

The details pertaining to turnover for the year 2017-2018 to year 2023-2024 shall be certified by Chartered Accountant on his own letter head and duly attested. Turnover of financial year 2022-2023 shall be considered subject to submission of provisional/audited certificate from chartered accountant by the Bidder.

4.1.2 SIMILAR NATURE OF WORK:

A. Tenderer shall be required to submit the enlisted documents in hard copy along with the Qualification Bid. If documents are insufficient or it does not match the required criteria mentioned below, then the Price Bid of the tenderer shall not be opened. Mainly tenderer shall fulfill following for pre-qualification,

(A) Experience of having successfully completed similar works during last 7 years either of the following

(1a) Three similar completed works, each costing not less than amount equal to 40% of the estimated cost of relevant part.

OR

(2a) Two similar completed works, each costing not less the amount equal to 50% of the Estimated Cost of relevant part.

OR

(3a) One similar completed works, each costing not less the amount equal to 80% of the estimated Cost of relevant part.

Similar works means works of Providing and laying of Construction of R.C.C Box Drains / Pipe Drain for Sewerage/Storm Water/Storm water Drainage (SWD).

(B) Average Annual Turnover during last 3 years, ending 31st March of previous financial year, should be at least 30% of Estimated Cost. An attested copy of annual turnover for last 3 years should be enclosed.

(C) The Contractors / Companies having solvency certificate of any nationalized or Schedule Bank (except SBI) listed elsewhere in tender documents, amounting minimum 20% of the estimated cost. Solvency Certificate shall not older than 09 (Nine) months on the date of receipt of tender or If bank has mentioned clearly validation date in Bank Solvency Certificate, then it shall be valid for 03 (Three) more months from the last date of receipt of tender.

(C) The Contractors / Companies having solvency certificate of any nationalized or Schedule Bank listed elsewhere in tender documents, amounting minimum 20% of the estimated cost. Solvency Certificate shall not older than 09 (Nine) months on the date of receipt of tender or If bank has mentioned clearly validation date in Bank Solvency Certificate, then it shall be valid for 03 (Three) more months from the last date of receipt of tender.

(D) An attested copy of registration with MES, various department of State Government, Surat Municipal Corporation, CPWD etc. Registration required: "AA" class with Experience

4.1.3 **AVAILABLE BID CAPACITY:**

The Bidder who fulfils the qualifying criteria mentioned above shall be qualified only if he fulfils the requirement of bidder's capacity. The bidding capacity of any tender/ Bidder is required to be more than or equal to the estimated cost of the work i.e. **Rs. 26,89,44,093.00/- (100% of the estimated cost)** The bidder's capacity shall be computed as shown below.

Available Bid Capacity = [(A x N x 2) - B)]

Where :

A	=	Performance of the Bidder for maximum annual turnover for last seven financial year.
B	=	Value of the existing commitments as on date of bid submission for works (complete or partial) to be completed in the next One Year **(Equivalent to duration of the project)** The details shall be countersigned by the Executive Engineer or the equivalent officer of the employer on whose behalf the firm is carrying out the works. In the case of a Joint Venture (If Applicable), parameters A and B shall be determined based on details pertaining to such partners who propose to undertake physical execution of work and in proportion to their participation/stake as specified in respective clause in the tender documents.
N	=	Years prescribed for completion of the work for which bids are invited.

If the Tender has been invited as a Package/Slice Minimum aggregate required Bid Capacity shall be considered and accordingly the Bidder may qualify for less number of Packages/Slices. In case of individual Tenders (not invited in a single Basket) the Bidder may qualify for a particular work (based on his Technical Bid), but at the time of evaluation of Price Bid, if more number of such individual Bids are evaluated simultaneously, aggregate Bid Capacity shall be considered. In such a case, if the Bidder does not have adequate capacity for all the Bids in which his Bid is the lowest responsive Bid, he may be considered for less number of Bids. Decision of the Employer based on the least cost combination as may be the most advantageous to Bhavnagar Municipal Corporation shall be final and binding to all the Bidders.

Note:

(a) The statement showing the value and details of completed works, existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the work listed should be countersigned by the officer not below the rank of an Engineer-In-Charge.

(b) The certificate for past performance should be as per prescribed Proforma in Form11...

(c) The Bidders are required to upload latest client's certificates in Form-11 (or in any format with yearly breakup) obtained from the concerned authorities/ employers towards proof of their having executed contracts satisfactorily along with their bids. The quantities involved should be certified by the top executive of the firm in the prescribed Performa in Form 11 (or in any format with yearly breakup) of Volume-I.

(d) Physical and Financial Performance of Any Work Not Supported By Client Certificate in Form-11 or In Any Form Will Not Be Considered For Qualification.

(e) The applicant Bidder must provide by uploading evidence of having adequate experience. The bid should include supporting certificate or report relating to physical, financial, technical and other capability of Bidder in their original language along with certified translation of relevant portion of the certificate/ report in English. The Bidder should furnish the information about financial capability in Rupees only.

(f) Depending upon the actual bid capacity assessed and other qualifying requirements, the applicant will be qualified for the work.

(g) The bidder is required to submit the declaration of his financial liabilities, work on hand/completed projects on Rs.300/- Non Judicial stamp paper. In case of false statement/ declaration the bidder shall be liable for penal action. Further, the details furnished in the relevant form as per tender should be in line to the declaration by the bidder.

(h) The criteria mentioned above at shall be evaluated based on the details submitted with the documents. Such bidder shall have to submit the details in the prescribed proforma which are applicable to them. Bidders should read the note under each Form/Annexure carefully and submit the details accordingly.

Note on Financial Criteria :

This note is applicable to "4.1. Financial Criteria" i.e. Turnover, Similar nature of Work, Available Bid Capacity.

(i) List of the works already completed in last 7 years in prescribed Performa and attested copies of certificates from head of the office concerned for completion of the works. Following enhancement factors will be used for the cost of works executed andfinancial figures to arrive at common base for the value of the works completed 6 in India. Cut off month shall be considered as a month of tender submission. If tender submission changes in any of any addenda Corrigendum, the cut of month shall be changed accordingly

Financial Year	Multiplying factor
Immediate last year of the assessment year*	1.1
Second	1.21
Third	1.33
Fourth	1.46
Fifth	1.61
Sixth	1.77
Seventh	1.95

- * Here Assessment year shall be reckon from year & month in which tender is submitted.

Bidder Should indicate actual figures of costs and amount for the work executed in Annexue-1 withou accounting for the above mentioned factors.

Note:

(i) Financial year means period beginning from the 1st April to 31st March of the next year.

(ii) The details pertaining to Turnover for the year last 5 years shall be certified by Chartered Accountant on his own letter head and duly attested.

(iii) The cost of material supplied by the Government/ Client shall not be taken into account for experience against Turnover & Similar nature of work.

4.2. PHYSICAL CRITERIA:

The bidder must have successfully carried out minimum quantities of the following work in any one project during last Seven (7) i.e. From Year 2016-2017 to year 2022-2023 and up to one month prior to last date of submission of the bid.

Note to 4.2 Physical Criteria:

I) In case the bidder has successfully completed the work of Box Drain work in any of the Government (State / Central), Board, Corporation, or Government Undertaking Organizations of State / Central Government, and it is fully commissioned after hydraulic testing, but the entire awarded work under the contract is yet to be completed, the bidder shall have to submit the completion issued by the Engineer In- charge not lower than rank of Executive Engineer of the respective organization giving the details like length, diameter, type of pipe etc., along with mention of successful testing.

II) The works for which bidder have not entered in to contract agreement will not be considered

III) The above experience shall be within last seven (7) financial years i.e. and upto one month prior to last date of submission of the bid for which Form -3A /11 must be submitted.

IV) Experience as sub contractor shall not be considered.

V) The experience of works executed in Government (State/Central), Board, Corporation, and Government Undertaking /Organisations of state & central government shall only be considered for evaluation. The experience certificate from the client equivalent to not below the rank of Executive Engineer shall be considered. The experience of sublet works shall not be considered.

VI) All MOU's shall be on a Non Judicial stamp paper of appropriate value duly notarised and signed by respective authorised representatives.

VII) The Bidder/ MOU partners contract should not have been terminated/blacklisted/debarred in any State Govt/ Municipal Corporations/ Central Govt./ Any state Govt Organisation, Urban Local body and/or its undertaking company or its SPV, Asian Development Bank/ World Bank or similar international funding agencies organisations due to delay in projects during last five years.

BHAVNAGAR MUNICIPAL CORPORATION

BHAVNAGAR

VOLUME – I

SECTION-IV

QUALIFICATION DATA SHEET
TO BE FILLED UP BY THE BIDDER

The qualification questionnaire contains the following forms:

SL. NO.	FORM NO.	DESCRIPTION OF PROFORMA
1	Form-0	List of Submittals
2	-	Proforma for "Letter for submission of tender".
3	Form-1	Details of organization structure of the bidder
4	Form : 2	Details of Personnel
5	Form : 3	Details of Machinery Equipments and work Plan
6	Form : 4	Information relating to Financial Criteria
7	Form-5	Financial data
8	Form-6	List of works already completed by the Bidder
9	Form-7	Details of works on hand with Bidder
10	Form-8	Details of experience of completed work (similar nature)
11	Form-9	Additional Information and Litigation History / Debarment / Blacklisting
12	Form-10	Information for tenders submitted but not awarded
13	Form-11	Certificate for experience of work
14	Form-12	Deleted
15	Form-13	Personnel/ staff proposed for the project
16	Form-14	Curriculum Vitae of Project Manager and all key Technical Staff
17	Form-15	Proposed site organization and Management

SL. NO.	FORM NO.	DESCRIPTION OF PROFORMA
18	Form-16	Details of experience for physical qualification criteria
19	Form-17	Approach & Methodology with conceptual design & supporting calculations of the system.
20	Form-18	Form-H (Declaration)
21	Form-19	Proforma for Bank Guarantee (EMD)
22	Form-20	Work wise details of work completed/ in progress by the contractor.
23	Form-21	Proforma for Performance bond/ Performance guarantee Proforma for bid security
24	Form-22	Deleted
25	Form-23	"Assured Pipe Supply Declaration" – (To be filled without proposed dispatch schedule at the time of Bidding)
26	Form-24	Proforma for memorandum of understanding (MOU) with pipeline supplier

Note:

1. If necessary, additional sheets may be added to the forms. Each page of each form should be clearly marked in the right top corner as follows: Form-0, page 1; Form I, page 2, etc.
2. Some of the forms will require attachments. Such attachments should be clearly marked as follows: Attachment 1 to Form I, Attachment 2 to Form I, etc.

FORM- O

SR NO	LIST OF SUBMITTALS		CONFIRM IF SUBMITTED (YES/NO)	PAGE NO
1	Covering Letter	Letter of transmittal **(Scanned Copy)**		
2	Power Of Attorney	Power of attorney on Rs. 300/- Non Judicial stamp paper duly notarised, if power is delegated for signing the bid to other persons by applicant. **(Scanned Copy)**		
3	Certificate Of Registration	Contractor's registration certificate 'A' Class in Govt. of Gujarat (R&B/WRD/GWSSB/ Board, Corporation, and Government Undertaking /Organizations of state government). **(Scanned copy).**		
4	Permanent Account Number (PAN) And Income Tax Details	Copy of the latest Income Tax Return with permanent account number (PAN) and Income Tax ward where assessed. **(Scanned copy).**		
5	Company Establishment Details	Letter of Incorporation of the company		
6	List Of Work On Hand And Work Completed	A scanned copy of declaration showing the details of all works completed and works on hand with the contractor and the value of works that remain to be executed. **(List of Work on hand to be supported with non-judicial stamp paper of Rs. 300/ duly notarized).**		
7	Earnest Money Deposit	Scanned copy of E.M.D. in accordance with relevant clause in "Tender Notice" of tender notice and the original shall also be submitted in physical form by RPAD/Speed post		
8	Tender Fee	Scanned copy of Account payee Demand Draft for Tender Fee in accordance with relevant clause of Tender Notice, and also in physical form shall also be submitted by RPAD/Speed		

9	Solvency Certificate	Scanned Copy of the Solvency Certificate from Bank of required amount as per Tender Notice.		
10	Undertaking Regarding Document Submitted, Are True.	The bidder should submit undertaking on non judicial stamp paper of Rs. 300/- duly notarized regarding document submitted, are true.		
11	Joint Venture Agreement(Not Applicable)	Deleted		
		Deleted		
12	Bidder Past Performance	The bidder, whose contracts are earlier terminated on account of poor performance in Bhavnagar Municipal Corporation works, will not be eligible. For this tender Self Declaration by bidders is required		
13	Supporting Document	Form-0 to Form-24		
14	Other Documents	Schedule of construction method Work plan		
		Schedule of Major items of equipment's		
		Schedule of key personnel		

Note: All submittals shall be numbered chronically and reference of page nos shall be $mentioned in **"FORM-1 To 24 ".** The same is to be uploaded online and submitted in physical form as well

LETTER FOR SUBMISSION OF TENDER

To

The Municipal Commissioner,

Bhavnagar Municipal Corporation

Sub: SUBMISSION OF TENDER APPLICATION FOR (NAME OF WORK)

Sir,

1 Having examined the details given in the invitation to Bidder for qualification and brief note, the condition of contract, Specification, Drawings and bill of quantities and Nos. …… for the execution of above named work, we the undersigned, offer to execute and complete such works and remedy any defects therein in conformity with the conditions of contract, Specifications, Drawings, Bill of Quantities and quoted amount in accordance with the said conditions.

2 We hereby certify that all the statements made and information supplied in the enclosed forms and accompanying statements are true and correct.

3 We have furnished all information and details necessary for qualification and have no further pertinent information to supply.

4 We submit the certified solvency certificate of Rs._____ Crores and authorize the Bhavnagar Municipal Corporation to approach the Bank issuing the solvency certificate to verify the correctness thereof. We also authorize, Bhavnagar Municipal Corporation to approach individuals, employers, firms and Corporation to verify our competency and general reputation.

5 We hereby apply for qualification for (Name of work).

6 We undertake, if our Tender is accepted, to commence the works immediately after the receipt of the Engineer's notice to commence, and to complete the whole of the works comprised in the contract within the time stated in the Appendix to tender.

7 We agree to abide by this Tender for the period of 180 days from the last date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

8 We enclose here with fixed Deposit receipt / Deposit at call receipt / cross demand draft / Bank Guarantee amounting to Rs. ……. Towards Earnest Money Deposit which is to be absolutely forfeited by Bhavnagar Municipal Corporation should we not Deposit the amount of Security Deposit specified in the Clause 1, General Conditions of Contract, Volume-IB

9 We enclose .....DD in favor of Field officer's designation & office name (as applicable) amounting to Rs._____towards tender fees.

10 Unless and until a formal Agreement is prepared and executed this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.

11 We also submit a general description on the approach to the construction methods,

technologies proposed etc. and the detailed Work Plan proposed for execution.

12 We submit the following certificates in support of our suitability, technical know-how and capability for having successfully completed the following works.

Sr. No.	Works	Client / owner

13 We hereby confirm that there are no deviations to the terms & conditions of the contract and we are liable for execution of this contract in accordance with the stipulated conditions of the contract.

14 We understand that you are not bound to accept the lowest or any tender you may Receive. Dated this _____ day of_____(Year) Signature _____in the capacity of _____ Duly authorized to sign tender for and on behalf of_____

15 We are enclosing herewith ‘‘Form H’

16 Irrespective of whatsoever has been stated to the contrary anywhere else in our offer no technical deviations have been taken and the entire work shall be performed as per your specifications and Tender documents.

Signature of Applicant.

(NAME IN BLOCK CAPITALS)

Address _____

Seal of Applicant

Date of submission

Witness _____

Address _____

Occupation _____

Enclosures :

FORM - 1

DETAILS OF ORGANIZATION STRUCTURE OF THE BIDDER

1.	Name of Bidder	
2.	Nationality of Bidder	
3.	Office address Telegraphic Address Telephone Number Fax Number E-mail address.	
4.	Year of Establishment	
5.	Location of Establishment	
6	Bid is submitted as a) An individual b) A proprietary firm c) A firm in partnership d) A limited Company or Corporation e) A Group of Firms / Joint Venture (if applicant is of category "f" give complete information in respect of each other). f) A Group of Companies	
7.	Attach the Organization chart showing the structure of the organization including the names of the Directors and Position of officers	
8.	Number of years of experience a) as a prime contractor (Contractor shouldering main responsibility) i) in own country ii) other countries (Specify countries) b) in a joint venture i) in own country ii) other countries (Specify countries)	
9.	For how many years has your organization been in business of Civil Engineering works under its present name? What were your fields when your organization was established?	
9a	Whether any new fields have been added in your organization? and if so, when?	
10	Whether you were required to suspend construction for a period of more than six months continuously after the work was started? If so, give the name of project and reasons thereof.	

11	Have you ever left the work awarded to you incomplete? (If so, give name of project and reasons for not completing work)	
12	In how many of your projects penalties were imposed for delays? (Please give details)	
13	In which fields of civil engineering construction do you claim specialization and interest?	
14	Give details of experience includes water supply & sewerage projects, pipe laying works, Installation of large capacity of Pumps with modern technology and quality control.	
15	Give details of experience for construction of large water supply and sewerage projects.	
16	Give details of experience in using heavy earth moving machinery, machineries for pipe laying	
17	Give details of testing laboratory, if any.	
18	In how many of your works cases of litigations have arisen?	
19	If the applicant intends to enter into a Joint Venture for the project, please give the following information otherwise state.	
	I. Name and Address of Joint Venture II. Name of Lead Firm III. Name and address of each of the partner/ member of JV IV. Indicating the responsibility of planning, construction equipments and execution of the work of each of the JV partner. V. Name and address of the bankers to the JV VI. Details regarding financial responsibility and participation (percentage share in the total) of each firm in the JV. Attach a certified copy of the JV (in prescribed Proforma)	

DETAILS OF PERSONNEL

Give details of key Technical and Administrative Personnel who could be assigned the work in the following Proforma.

A)	1) 2) 3)	Details of the Board of Directors Name of the Director Address Organization of the Board of Director			
B)	1) 2) 3) 4) 5) 6) 7)	Key Technical and administrative Personnel and Consultants Individual's Name Professional Qualification Present position in the firm Professional experience and details of works carried out No. of years worked with the applicant. Languages known Additional information			
(C)	Key Technical , Administrative Personnel				
	Sr. No.	Key Personnel	Nos.	Professional Experience	Qualification
	1.	Project Manager			
	2.	Civil Engineer			
	3.	Civil Supervisor			
	4.	Technical Assistant			
(D)		Skilled and other labor (indicate number category wise) 1) Skilled labor 2) Other labor			

SIGNATURE OF BIDDER

FORM – 3

DETAILS OF MACHINERY EQUIPMENTS AND WORK PLAN

Plant & Equipment's Owned & Proposed for the Project

Name of Applicant:

The Applicant will provide adequate information to demonstrate clearly that it has the capability to meet the requirements for each and all items of equipment listed in the Employers requirements. A separate Form-3 will be prepared for each item of equipment proposed by the Applicant. For each item of equipment, the applicant should attach a copy of ownership certificate or lease agreement.

Name of Equipment		
Equipment information	1. Name of manufacturer	2. Model and power rating
	3. Capacity	4. Year of manufacture
Current status	5. Current location	
	6. Details of current commitments	
Source	7. Indicate source of the equipment □Owned □Rented □Leased □Specially manufactured	

Owner	8. Name of owner	
	9. Address of owner	
	Telephone	Contact name and title
	Facsimile	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the Project	

SIGNATURE OF BIDDER

INFORMATION RELATING TO FINANCIAL CRITERIA

Name of Applicant

All applicants are requested to complete the information in this form. The information supplied should be the annual turnover of the Applicant, in terms of the amounts billed to clients for each year for work in progress or completed.

Applicants should not enclose testimonials, certificates, and publicity material with their applications; they will not be taken into account in the evaluation of qualifications.

Annual turnover data for the last seven financial years i.e. ..... to… … . (Rs. In lacs)

Year	Turnover	Annual income from contracting	Annual income from other sources
2016-2017			
2017-2018			
2018-2019			
2019-2020			
2020-2021			
2021-2022			
2022-2023			

Note: The declared figures as mentioned above shall be supported with balance sheet certified by Chartered Accountant and duly notarized for the respective financial year.

FORM - 5

FINANCIAL DATA

1)	**Name of Firm**	
2)	**Name of Partner / Director**	
3)	**Capital** **(a) Authorized** **(b) Issued and paid up**	
4)	Furnish Balance sheet and profit and loss statement with Auditor's Reports and Income Tax assessment orders for last Seven (7) financial years. It should, interlaid include the following information i) Working Capital ii) Foreign Investment iii) Turnover for the last seven (7) financial year, the contract receipts for Civil Engineering works (Furnish reference page number to balance sheet attached)	

Sr. No.	Year	Turnover (Rs in Crores)	Reference page No. to balance sheet or other documents
(I)	**2016-2017**		
(II)	**2017-2018**		
(III)	**2018-2019**		
(IV)	**2019-2020**		
(V)	**2020-2021**		
(VI)	**2021-2022**		
(VII)	**2022-2023**		

GROSS INCOME IN THE LAST SEVEN (7) FINANCIAL YEAR

Sr. No.	Year	Gross Income (Rs in Crores)	Reference page No. to balance sheet or other documents
(I)	**2016-2017**		
(II)	**2017-2018**		
(III)	**2018-2019**		
(IV)	**2019-2020**		

(V)	**2020-2021**		
(VI)	**2021-2022**		
(VII)	**2022-2023**		
5.	Maximum gross income from contract works during last seven (7) financial year		
6.	What is the maximum cost of the project that has been handled? (Please give details)		
7.	Have you ever been denied tendering facilities by any Government / Government Undertaking Organisations / Public sector under taking etc.? (If Yes, Please give details)		
8.	List your sources of finance		
9	Amount of financial soundness certified by Bank. (Attach copy of certificate)		
10.	Name and address of Bank from whom reference can be obtained		
11.	Have you ever been declared bankrupt? (If yes, please give details)		

Note:

- Firms owned by individuals, and partnerships, may submit their balance sheets certified by a registered accountant, and supported by copies of tax returns. Attach Certificate(s) issued by any Bank or Financial Institution for available credit to the Lead partner and joint venture partner.

SIGNATURE OF BIDDER

FORM-6

List of works already completed by the bidder during last 7 financial years i.e. from year 2017-18 to year 2023-2024 & up to one month prior to last date of submission of the bid

Sr. No.	Name of work	Place/ Dist./ State	Tendered amount Rs. In Lac	Cost on completion Rs. In lac	Date of starting	Original time limit in months	Extended time limit in months	Time taken in month to complete the work	Actual date of completion	Reason for delay in completion	Remarks
1.	2.	2a.	3.	4	5a	5b.	5c.	5d.	5e	6	7

Note:

- Necessary completion certificate showing the year wise breakup of amount of work done from concerned officers shall be attached with the tender.

Date: Signature of the Bidder.

FORM-7

DETAILS OF WORKS ON HAND WITH BIDDER

Work performance and Value of the existing commitments (Work on Hand) as on the date of bid submission for works (complete or partial) to be completed in the next One Year. (In separate form for each work)

1)	Name of Work	
2)	Agreement No. & Date	
3)	Country and Location	
4)	Client's Name and Address	
5)	Tendered Cost of work (Rs. in Lacs)	
6)	Brief description of works including principal features and quantity of main items.	
7)	**Details of work on hand** i) Date of Starting ii) Percentage of Physical completion iii) Amount billed for the work completed iv) Cost of work remaining to be executed v) Stipulated date of completion **vi) Anticipated date of completion**.	
8)	Name of Applicant's Engineer - in - Charge with Professional Qualification.	
9)	Explain for non-completion of work within stipulated time limit if so.	
10)	Whether any Penalties / Fine / Stop notice / Compensation/ Liquidated Damages imposed? (Yes or No), (If Yes, give amount and explanation)	
11)	Details of Litigation / Arbitration cases, if	

	any pertaining to ongoing works.	
12)	Attach Client's certificate for the details furnished in the Form-3A/ Form-11 (Not below the rank of Executive Engineer or equivalent).	

Note:

- Necessary certificates showing the year wise breakup of amount of work done from the officer concerned shall be attached with the tender.

SIGNATURE OF BIDDER

FORM – 8

DETAILS OF EXPERIENCE OF COMPLETED WORKS (SIMILAR NATURE)

Give details of the similar type of work completed during last seven (7) financial year from i.e. year 2016-2017 to year 2022-202 & up to one month prior to last date of submission of the bid in the following Proforma. (Separate form for each work)

1)	Name of Work	
2)	Agreement No. & Date	
3)	Country and location	
4)	Client's Name and Address	
5)	Total Tendered cost of work (Rs. in Lac)	
6)	Cost of completed work	
7)	Brief description of works including principal features and quantity of main items.	
8)	Annual achievement (duly supported by certificate **from Engineer In -Charge)** a) Of key quantities, total physical output of last seven (7) financial year (Separately for each item) (For contract for Water Supply Projects/Sewerage Projects) b) Financial Output in Rupees (Cost of Work) (Including cost of materials supplied by the client)	
9)	Period of completion (a) Originally stipulated time limit. (b) Date of starting (c) Stipulated date of completion (d) Extended time limit	

	if any, Actual time taken to complete the work. Reasons for non completion of work in stipulated time limit / extended time limit if so. (e) Actual Cost of Work Done	
10)	Name of applicant's Engineer - in -charge of the work and his educational qualification	
11)	Were there any Penalties/ Fines / Stop notice / Compensation / Liquidated Damage imposed? (Yes or No. If yes, give case wise details)	
12)	Give the details of Annual Financial Performance and your experience in execution in mobilizing Lift Irrigation, Pipeline Project	
13)	Details of Litigation / Arbitration cases, if any pertaining to work completed.	
14)	Attach Client's certificate in Form-3A (Not below the rank of Executive Engineer or equivalent)	

SIGNATURE OF BIDDER

(*) If the information is hidden or misleading by the bidder, he shall be disqualified for the Tender and debarred for three financial years.

Note:

FORM - 9

ADDITIONAL INFORMATION DECLARATION REGARDING LITIGATION HISTORY / DEBARMENT / BLACKLISTING [300 Rs STAMP]

Name of Applicant :

1. PLEASE DESCRIBE:

Company's history of litigation or arbitration / Debarment / Blacklisting from contract executed in the last ten years or currently under execution. Please indicate for each case the year, name of employer, cause, matter in dispute, disputed amount, and whether the award was for or against the company.

2. Please add any further information that you consider to be relevant to the evaluation of your application. If you wish to attach other documents, please list below:

SIGNATURE OF BIDDER

FORM – 10

INFORMATION FOR TENDERS SUBMITTED BUT NOT AWARDED

a) Please add any further information which the applicant considers relevant in regard to his capabilities.
b) Please give a brief note indicating by applicant considers himself eligible for qualification for the work.
c) List of works for which tender have already submitted to the client but not awarded

Sr. No	Name of Work	Estimated amount (In Crores Rs.)	Date of Submission of Offer	Name of Client	Likely date of award	Position with ref. to lowest bid.

Note: Giving additional information as per (a) and (b) shall not automatically lead to prequalification.

SIGNATURE OF BIDDER

Note

FORM – 11

Name of Office:-

Date:

CERTIFICATE FOR EXPERIENCE OF WORK

This is to Certify that M/s_____was awarded the work of _____(Agreement / contract No. & Year ____). As individual / in a Joint Venture with _____other details of the work are as under.

1(a)	Name of Joint Venture (If applicable)	
1(b)	-Office address. -Name of state -Telegraphic address -Telephone number with STD code -Fax number. -E-mail address.	
2)	Percentage of share of the agency as per Joint Venture agreement (If applicable)	
3)	Tendered amount Rs. in Lac.	
4)	Actual cost of work completed, including price escalation	
5)	Time Limit in months	
6)	(A) Actual date of starting. (B) Stipulated date of completion	
7)	Actual / expected date of completion	
8)	Whether any fine imposed for not carrying the work as per stipulated time Schedule? (If Yes please give details)	
9)	Deleted	
10)	Deleted	
11)	Deleted	
12	Operation & Maintenance of Strom Network / Sewrage Network or Similar Nature of work Scheme	

Note:

1 The agency has carried out the work timely/ late and satisfactorily/ unsatisfactorily.
2 Details of quantities of main items of similar nature of work shall be given in the respective column.
3

SIGNATURE OF ACCOUNTANT

NAME OF ACCOUNTANT

DATE:

PLACE:

SIGNATURE OF ENGINEER-IN-CHARGE

NAME AND SEAL OF ENGINEER-IN-CHARGE

DATE:

PLACE:

FORM – 12 (Deleted)

PERSONNEL/STAFF PROPOSED FOR THE PROJECT

Name of Applicant

For specific positions essential to contract implementation, applicants should provide the names of at least two candidates qualified to meet the specified requirements stated for each position. The data on their experience should be supplied in separate sheets using one Form-14 for each candidate.

1.	Title of position: **Project Manager**
	Name of prime candidate:
	Name of alternate candidate:
2.	Title of position: **Civil Engineer**
	Name of prime candidate
	Name of alternate candidate
	Title of position: **Construction Engineer**
	Name of prime candidate
	Name of alternate candidate

Note: Attach **Manning (Personnel) Schedule** stating each personnel's roles and responsibility for work to be carried out for the project.

CURRICULUM VITAE OF PROJECT MANAGER & ALL KEY TECHNICAL PERSONNEL's

Name of Applicant

Proposed Position:		Candidate □ Prime □ Alternate
Candidate information	1. Name of candidate	2. Date of birth
	3. Professional qualifications:	
Present employment	4. Name of employer	
	Address of employer:	
	Telephone:	Contact (manager / personnel officer):
	Facsimile:	Telex:
	Job title of candidate:	Years with present employer:

Summarize professional experience over the last ____years, in reverse chronological order.

Indicate particular technical and managerial experience relevant to this Project.

From	To	Company / Project / Position / Description of relevant technical & managerial project specific experience

FORM - 15

PROPOSED SITE ORGANIZATION & MANAGEMENT

Name of Applicant

A. Preliminary Site Organization Chart at HO level & at field level:

B. Narrative Description of Site Organization & Project Management Chart

C. Description of Relationship between Head Office and Site Management[1]

D. Description of Approach & Methodology to carried out work of this project.

Note: Indicate clearly which responsibility and what authority will be delegated to site management.

DETAILS OF EXPERIENCE FOR PHYSICAL QUALIFICATION CRITERIA

Sr.No	Name of work	Cost of work in Rs. Lakhs	Work completed/ in progress	Particulars of item	Unit	Qty in tender	Executed Quantity

Note: For each experience criteria Form-11 shall be submitted by the contractor duly singed by the employer

- In case the bidder has executed the works mentioned above in Joint Venture, he shall mention their stake in the works executed. The client certificate along with copy of joint venture agreement mentioning the JV stake shall also be attached.

FORM – 17

Approach and Methodology

Bidder may submit their work plan, detail methodology to be adopted for this work.

SIGNATURE OF THE BIDDER

FORM-18

PROFORMA FOR LETTER OF UNDERTAKING (FORM-H)

(TO BE EXECUTED ON NON-JUDICIAL STAMP PAPER OF Rs. 300/- AND SUBMITTED BY THE TENDERER ALONGWITH HIS TENDER IN A SEPARATE COVER)

To,

Municipal Commissioner,

Bhavnagar Municipal Corporation

Dear Sir,

i. I/We hereby declare that I/We have visited the site and fully acquainted myself / ourselves with local situations regarding materials, labor and other factors pertaining to the work before submitting this tender.

ii. I/We hereby declare that I/We have read the Tender Documents published on website www.nprocure@ncode.in and accordingly submitted online price Bid for the work of ----------
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iii. I/We hereby declare that I/We have carefully studied the conditions of contract and specifications and other documents of this work and agree to execute the same accordingly.

iv. I/We hereby declare that my/our near relatives are not working in this division or in its sub-divisions as an Engineer of any category, Divisional Accountant, Store Keeper, and in the Circle Office as a Superintending Engineer as on today.

v. I/we hereby declare that I/we are not declared ineligibility for corrupt or fraudulent practices issued by the central/state govt. In accordance with **Sub Clause No. 41 Corrupt or Fraudulent Practices** or not in the list of black listed contractors announced by Bhavnagar Municipal Corporation / Govt of Gujarat or its Public Sector Undertakings, Government of India, Other states Government or Public Sector Units.

vi. I/ We hereby submit our tender and undertake to keep our tender valid for a period of 180 days from the date of opening of tenders i.e. up-to ----------. I/We shall not vary/ alter or revoke my/ our tender during the validity period of tender. This undertaking is in consideration of Bhavnagar Municipal Corporation agreeing to open my/ our tender, consider and evaluate the same for the purpose of award in terms of provisions of tender documents. Should this tender be accepted, I/ We also agree to abide by fulfill and comply with all the terms and conditions and provisions of the above mentioned tender documents.

vii. I/We also declare that the bid duly filled in online and digitally singed and the required Earnest Money Deposit, Tender Fee and other required documents (scanned copy submitted

online) will be handed over in physical form to the **..... by RPAD/Speed Post/ Courier only**.

If this declaration is found to be incorrect then without prejudice to any other action that may be taken I/we shall be debarred from bidding in Bhavnagar Municipal Corporation tender for three years and my/our security deposit may be forfeited by Bhavnagar Municipal Corporation in full & the tender, if any, to the extent accepted, may be cancelled.

Signature along with seal of the Company

(Duly authorised to sign the tender on behalf of the Bidder)

Name:

Designation:

Name of Company (BLOCK LETTERS)

WITNESS :

Signature :

Date :

Date :

Postal Address :

Name & Address :

Telephone/Fax No.

Form-19
FORM OF BANK GUARANTEE
(Earnest Money Deposit)

Whereas M/s..... (herein after called the Tenderer) is desirous and prepared to tender for work in accordance with Terms & Conditions of Tender Notice of (financial year) dated ..... and whereas We, ... Bank; agree to give the Tenderer a guarantee for the Earnest Money Deposit.

1. Therefore, we hereby affirm that we are Guarantors on behalf of the Tenderer upto a total of Rupees .....(i.e. Rs.....) and we undertake to pay the Municipal Commissioner, ... upon his first written demand and without demur, without delay and without necessity of previous notice of individual or administrative procedure and without necessity to prove the bank the defects or shortcomings or debit of the contractor any sum within the limit of Rupees.....
2. We further agree that the guarantee here in contained shall remain in full force and effective during the period that would be taken for the acceptance of the tender. However, unless a demand or claim under this guarantee is made only in writing on or before the ..... We shall be discharged from all liabilities under the guarantee thereafter.
3. We undertake not to revoke the guarantee during its currency except with the previous consent of the Municipal Commissioner,..... in writing.
4. We lastly undertake not to remove the guarantee for any change in constitution of the Tenderer or the Bank.

Signature and Seal of the Guarantor Bank:

Address:

Date:

Form-20 (Form-3A)

WORK WISE DETAILS OF WORK COMPLETED/ IN PROGRESS BY THE CONTRACTOR

1. Name of Contractor :
2. Name of Work :

3. Estimated Cost Of Work Put To Tender :

4. Tendered Amount :

5. Date of starting of the work :

6. Date of completion of the work :
   (As per contract agreement)

7. Actual Date of Completion of Work :
8. Amount of work done upto :
9. Brief history of the work :

Sr. No.	Particular	Unit	Qty.

10 State whether details as above given by the contractor correct, if not as to what is the correct information. :

11 State whether the contractor has executed the work in progress satisfactory as per specification/ has completed the work, satisfaction, if any give the correct position of the work. :

Form-21

PERFORMANCE GUARANTEE

(See clause No. 1)

(The date of this bond must not be prior to the date of the instrument in connection with which it is given)_____

Principal (Contractor) _____

Surety (Scheduled or Nationalized Bank) _____

Sum of bond (express in words and figures) _____

Contract No. and date of contract _____

KNOW ALL MEN BYTHESE PRESENTS THATWE, THE PRINCIPALS AND SURETY above named are held and firmly bound upto the_____hereinafter called the Employer in the amount stated for payment of which' sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents subject to the provisions of which the aforesaid Contractor on demand and without demand on a claim being made by the Employer.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the principals have entered in to a contract with the Employer numbered and 'dates as shown above and hereto attached for the execution of work_____

_____.

NOWTHEREFORE, if the Principal shall well and truly perform and fulfil all the undertakings, covenants, terms, conditions and agreements of said contact during the original terms of the said Contract and any extensions thereof that may be granted by the Employer with or without notice to the surety and during the life or any guarantee required under the contract and shall also well and truly perform and fulfil all the Undertakings, covenants, terms, conditions and agreements of any all duty and unduly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the surety being hereby waived or shall pay over, make good and reimburse to the Employer all loss and damages which the employer may sustain by reason of failure or default on the part of said Principal so to do.

We_____ further agree that the guarantee herein Contained shall remain in full force and effect during the period that would be taken for the validity of the said Contract, and that it shall continue to be enforceable till all the dues of the employer under or by virtue of the Contract have been fully paid and its claims satisfied or discharged or till the Employer certifies that the terms and conditions of the Contract have been

fully and properly carried out by the said Contractor and accordingly discharges the guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the _____ we shall be discharged from all liability under this guarantee thereafter.

IN WITNESS WHERE OF, the above bounded parties have executed this instrument under their several seals on the date indicated above the name and corporate seal, of each corporate partly being hereto affixed and these presents duly signed by is undersigned representatives, pursuant to authority of its governing body.

In the presence of witness individual

Principal

1. _____as to _____(seal)

2. _____as to _____(seal)

3. _____as to _____(seal)

4. _____as to _____(seal)

By _____affix Corporate Seal

Attested Corporate Surety

Business address

Affix by _____Corporate Seal

Title _____

For and on behalf of the Employer

JOINT VENTURE AGREEMENT

Deleted

Form-23
"Assured Pipe Supply Declaration"

In the interest of timely completion of the Project, after discussions and getting assurance from the manufacturer, the following schedule for Pipe supply is proposed in order to meet the milestones and desire target of the Projects.

Name of the Pipe Supply Firm	Location of Manufacturing Unit	Size of Pipe		Quantity (In Km)	Assured date of delivery at site (zero date starts from date of work order)
		Diameter (In mm) (FID)	Length (In Km)		

Total number of days for supply of pipe shall be ____ days from the date of work order. We hereby declare that the supply of pipes for the Project will be ensured by us (within ___days) as per the above mentioned schedule. We are aware, that, in case the above schedule is not met with by us, we shall be liable for paying the Liquidated damages as prescribed in the tender documents for non fulfillment of assured supply of pipes.

Authorised Signatory of the Contractor Authorised Signatory of the Manufacturer.

FORM - 24

MEMORANDUM OF UNDERSTANDING (MOU) -

This MEMORANDUM OF UNDERSTANDING hereinafter referred to as MoU made on___ Day _____(month and year) at _____by and between.

(Name and Pipe Manufacturer with address) _____,represented by _____ Authorized Signatory, which expression shall unless repugnant to the subject or context include its administrators, Successors and assigns.

(Name of Bidder with Address)_____, represented by_____(Authorized Signatory), which expression shall unless repugnant to the subject or context includes its administrator, successor and assigns

Hereinafter referred to as “Parties” in the collective sense and each of which is referred to as “_____(Name of Pipe Manufacturer)” & " _____(Name of Bidder)” in the individual sense.

WHEREAS Bhavnagar Municipal Corporation (hereinafter referred to as Employer) has invited tender (hereinafter referred to as the (“project”) for the following work:

Name of Project: _____

_____

_____

WHEREAS if the said project is awarded to “_____”(Name of Bidder) to execute the said project and it would also need _____pipes and we the “_____”(Name of Bidder) hereby enter into this MoU with "_____(Name of Pipe Manufacturer)__" for timely execution of _____pipe line work and supply of pipes as per “Form 23 - Assured pipe Supply Declaration” attached herewith and as per the tender conditions and further we mutually agree to execute the said project jointly and both the parties would be jointly and severally responsible for execution of the said projects as per the Bidding Documents.

IN WITNESS WHEREOF all the parties mentioned herein above have signed this MOU on the day, month and year first above mentioned.

No change shall be made in this agreement without prior consent of Employer and other party. However, If the Employer direct the parties to make changes in MOU agreement so as to fulfill the tender condition / requirement, the parties shall discuss with the employer and shall mutually agree for such changes as may be required to be made in the agreement.

In the interest of timely completion of the project, after discussion and getting assurance from manufacture of _____ pipe, the following schedule for _____ pipe supply is proposed in order to meet the milestones and desired target of the projects .

Total number of days for supply of pipe shall be _____days from the date of work order. We hereby declare that the supply of pipes for the Project will be ensured by us (within _____days) as per the above mentioned schedule. We are aware that , in case the above schedule is not met with by us , we shall be liable for paying the Liquidated damages as prescribed in the tender documents for non fulfilment of assured supply of pipes.

For, (Name of Bidder) **For, (Name of Pipe Manufacturer)**

Authorised Signatory **Authorised Signatory**

Encl. : Form 23 - Assured Pipe Supply Declaration

BHAVNAGAR MUNICIPAL CORPORATION

Tender Notice (online) No. -BMC/DRAINAGE/SJMMSVY/tender/2023-05

PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORMWATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O & M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (Part-1).

PROJECT FUNDED UNDER SWARNIM JAYANTI MUKYAMANTRI SHAHERI VIKAS YOJANA 2023-24

VOLUME – II
General Condition of Contract

Milestone Dates	
Online Downloading of Technical Bid & Price Bid	As per detailed tender notice
Pre – Bid Conference	As per detailed tender notice
Last Date of Online Submission of Technical Bid & Price Bid	As per detailed tender notice
Last Date for Physical Submission of Tender Fee, EMD and other Documents	As per detailed tender notice
Online Opening of the Technical Bid	As per detailed tender notice

CONSULTANT:
TTI Consulting Engineers (I) Pvt Ltd
Block A, 607, Mondeal Heights,
S G Highway, Ahmedabad
Gujarat – 380 015

CLIENT:
Executive Engineer,
Drainage Department,
Bhavnagar Municipal Corporation,
Sir Mangalsinhji Road,
Bhavnagar – 364 001

I N D E X

	stairways	
Clause 21-B	Regulations for hoisting appliance	
Clause 22	Measures for prevention of fire	
Clause 23	Liabilities to contractors for any damages done in or outside work	
Clause 24	Risk & Cost Clause	
Clause 25	Recovery from Contractors	
Clause 26	Work not to be sublet; consequences for unauthorised subletting, bringing and becoming insolvent	
Clause 27	Sums payable by way of compensation to be considered as reasonable compensation without reference to actual loss.	
Clause 28	Changes in the constitution of firm to be notified	
Clause 29	Works to be under directions of Superintending Engineer	
Clause 30	Settlement of Disputes and Arbitration	
Clause 31	Deleted	
Clause 32	Lump sums in estimates.	
Clause 33	Action where no specifications	
Clause 34	Definition of work	
Clause 35	Non refund of quarry fees & Royalties	
Clause 36	Compensation under the Workmen's Compensation Act	
Clause 36-A	Liability of the contractor in case of accidents	
Clause 36-B	Arrangements for personal safety requirements and first aid	
Clause 37	Quantities in the tender to be considered approximate and they are subject to variations	
Clause 38	Employment of famine or other labour	
Clause 39	Claim for compensation for delay in starting the work	
Clause 40	Claim for compensation for delay in the execution of work	
Clause 41	Entering upon or commencing any portion of work	
Clause 42	Minimum age of persons employed	
Clause 43	Method of payment	
Clause 43-A	Set off Clause.....	
Clause 44	Check Measurements	
Clause 45	Termination by Engineer in Charge	
Clause 46	Payment upon Termination	
Clause 47	Rates inclusive of all taxes.	
Clause 47-A	Income Tax	
Clause 48	Employment through Employment Exchange and local labour	
Clause 49	Fair wages	

Clause 50	Deleted	
Clause 51	List of Machinery	
Clause 52	Deleted...	
Clause 53	Local labour on normal rates	
Clause 54	Land on Hire and rental charges	
Clause 55	Vaccination to labourers	
Clause 56	Camp facilities to workers	
Clause 57	Gum boots, hand gloves, masks etc, to labourers	
Clause 58	No distinction between harijans and other workers	
Clause 59	Price Variation Clause	
Clause 60	Fencing and Lighting	
Clause 61	Liabilities for accidents to persons	
Clause 62	Access to site and work on site	
Clause 63	Reports regarding labour	
Clause 64	Treasure trove	
Clause 65	Indemnity	
Clause 66	Insurance of labourers	
Clause 67	Setting out	
Clause 68	Cement Register	
Clause 69	Materials and works Test Register	
Clause 70	Progress Schedule	
Clause 71	Secured Advance. (Deleted)	
Clause 72	Advance payment (Deleted)	
Clause 73	Advance against machineries (Deleted)	
Clause 74	Mobilization Advance	
Clause 75	Licence for contact labour	
Clause 76	Recovery of Testing Charges and handing over empty cement bags	
Clause 77	Recover of Sales Tax	
Clause 78	Building and other construction works welfare cess (Labour cess)	
Clause 79	Police Protection	

GENERAL CONDITIONS OF CONTRACT

(CLAUSE-1) Security Deposit:

Within ten days from the date of issue of the letter accepting this Tender, the successful Bidder shall furnish the required Security Deposit for performance and attend the office of the Engineer In-Charge for execution of the Contract documents. If he fails to furnish the security deposit for performance or to execute the Contract for the work offered to him, his EMD shall be forfeited and the Bidder may be disqualified from tendering for further works.

The successful bidder shall have to pay **10%** security deposit at the time of agreement, out of which initial performance security deposit in the form of an unequivocal bank guarantee equivalent to **5%** of the contract value issued by any nationalized bank or as per list mentioned in GR of. Finance Department, GR No: EMD/10/2018/18/DMO, Date: 16.04.2018**(Except SBI).** Further amount equivalent to **2.5%** in the form of FDR addressed to The Commissioner, Bhavnagar Municipal Corporation, and remaining **2.5%** shall be deducted from the running bill as retention money so that total performance security deposit turns out to be **10%** of the contract value.

The contractor will be permitted to give an unequivocal composite bank guarantee from any nationalized bank **(Except SBI)** or as per list mentioned in GR of. Finance Department, GR No: EMD/10/2018/18/DMO, Date: 16.04.2018, to cover the performance security and the retention money. In case if the contractor does not give a composite bank guarantee, and if he so desires, the employer shall allow conversion of the money recovered from running bills towards retention money into an unequivocal bank**(except SBI)** guarantee from any nationalized bank or as per list mentioned in GR of. Finance Department, GR No: EMD/10/2018/18/DMO, Date: 16.04.2018.

Without limitation to the provisions of the preceding paragraph, whenever the Employer's representative determines an addition to the Contract price as a result of a change in cost and/or legislation or as a result of variation amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor, at the Employer's representative's written request, shall promptly increase the value of the performance security in that currency by an equal percentage.

The performance security for the works shall be valid beyond 30 days from the date of issue of the taking-over-certificate at the end of defect liability period.

2.5% performance security and 2.5% retention money recovered from each running bills till successful completion of the work (Total 10% of contract value) shall be released as mentioned below:

(i) Retention money shall be released after final bill.

(ii) security deposit shall be released after 30 days from the date of successful completion of the defect liability period i.e. 2 year from the date of successful completion.

Prior to making any claim under the performance security, the Employer shall, in every case, notify the Contractor stating the nature of the default for which the claim is to be made.

(CLAUSE-2) Liquidated damages for delay:

2.1 Overall Physical Progress of work :

a) The schedule of completion of the work shall be as under:-

Time	Percentage of work (Physical)	MODE OF DEDUCTION AT EACH MILE STONE
25%	15%	DEPOSIT
35%	25%	DEPOSIT
50%	40%	DEPOSIT
60%	50%	DEPOSIT
75%	75%	DEPOSIT
100%	**100%**	**LD Deduction**

b) However if the contractor fails to meet any of the milestone both in time (e.g. 25 % for first milestone) and corresponding Physical progress (e.g. 15 % for first milestone) as mentioned above, amount to be retained at the rate of 0.1 percentage of that milestone value per day till said designated part (s) is completed. In case, if the contractor executes and meet the subsequent milestone criteria, then the earlier retained amount shall be released. However, such retention / release for the slippage of subsequent / other milestones shall be applicable in the similar manner.

c) However, if the contractor meets any of the next milestones of physical completion of work within the corresponding time limit as per the table above, the amount kept as deposit as per para (b) above, shall be returned to the contractor after completing that milestone.

d) If the contractor does not compete the entire work under the scope on the date of Completion, (i.e. 100% of the physical progress at the end of 100% of the time of completion), Liquidated damages at the rate of 0.1% of contract value per day of delay shall be recovered from the contractor. In such case, the amount retained as deposit shall be converted into liquidated damages.

e) In case the time limit for completing the work is extended under any circumstances by BHAVNAGARMUNICIPAL CORPORATIONthe milestone for completing the works will get changed according to the table as specified in Clause (a) above. Subsequently in event of any amount deposited as per Clause (b) above shall be released to the contractor. But in case, the work is not completed within the extended time limit and no further time extension to be granted, the liquidated damages shall be payable as 0.1% of the total contract value per day subjected to the maximum amount of 10% of the total contract value.

2.2 Pipeline Crossing Works:

f) The contractor must complete the pipeline crossing works requiring permissions of following authorities, within stipulated time limit as mention below. The contractor is required to plan and frame his project execution schedule accordingly.

NO.	AUTHORITY	TIME LIMIT IN MONTHS Contractor must start procedure within two month from date of LOI
1.	Railway	2 months from the date of receiving the work permit or 2 months from the date of receiving caution order from Railway or 2 months from the date of issue of LOI, whichever is later **(While calculating the total time limit for completion of the structures of Railway, the relevant rules of the railway authority should also be taken into account.)**
2.	National Highway	2 months from the date of receiving the permission from Concerned Authority or from the date of issue of LOI, whichever is later
3.	State Highway	2 months from the date of receiving the permission from Concerned Authority or from the date of issue of LOI, whichever is later
4.	Major Canal Crossing	2 months from the date of receiving the permission from Concerned Authority or from the date of issue of LOI, whichever is later
5.	Minor Canal Crossing	2 months from the date of receiving the permission from Concerned Authority or from the date of issue of LOI, whichever is later
6.	Gas / Oil / Petroleum Pipeline	2 months from the date of receiving the permission from Concerned Authority or from the date of issue of LOI, whichever is later
7.	Forest	2 months from the date of receiving the permission from Concerned Authority.

a) If contractor fails to execute the works as in (a) above within stipulated time limit as mention above, he shall attract compensation at 0.1% cost of respective work per day of delay, calculated on the basis of BOQ, and it will have cumulative effect till the actual date of completion of the delayed work. The compensation recovered under this clause will be of permanent nature and will remain non-refundable under any circumstances.

2.3 <u>Supply of Pipes:</u>

a) The contractor shall pay specific attention to timely supply of pipes under the project. The contractor is bound to supply pipes as per the specification laid within the time period stipulated in work plan approved by EIC. For ensuring the same, the contractor has to upfront declare at the time of bidding, their method of procurement of pipes i.e. (i) Through cash (if yes, this has to be reflected in their cash flow / fund flow plan to be submitted by contractor within one month from the date of signing of contract agreement) (ii) Through credit (iii) Through Letter of Credit (LOC); etc. In case of LOC, the contractor will enter into/ open LOC with the approved vendor within one month from the date of approval of QAP of pipes matching with delivery schedule. The maximum ceiling for number of times for opening of LOC is four, however the date of opening of last LOC with

approved vendor for supply of pipes will be 4 month prior to stipulated end date for supply of pipes as per approved work plan.

b) The event of non supply of pipes, as per approved work plan / delivery schedule shall attract compensation at the rate 0.25% of cost of pipes, calculated on the basis of BOQ, to be supplied per month, per day of delay and will be having cumulative effect till the date of actual supply of pipe. The compensation levied under this clause shall be of permanent nature and is non refundable under any circumstances. However, the maximum ceiling limit of 10% of Contract Price as specified above shall also apply to liquidated damage deducted under this clause.

c) The bidder shall furnish declaration for arrangement of supply of pipes of specified nature as per contract and shall submit as per proforma for 'Assured Pipe Supply Declaration' as per Volume-I, Section-IV, Form-23.

2.4 The aggregate maximum amount of liquidated damages recoverable under this Clause-2 "LIQUIDATED DAMAGES "shall be subject to ten percent of the total contract value.

2.5 The reasons requiring recovery of liquidate damages of ten percent of the contract value for performance shall be sufficient cause for termination of contract and for forfeiture of security deposit including amount of performance bond/security and registration of the contractor shall also be kept in abeyance for three years from the date as fixed in all cases.

(CLAUSE-3) Default by Contractor:

If the Contractor shall neglect of fail to proceed with the work with due diligence or if he violates any of the provision of the Contract, the Engineer -in-Charge shall give the Contractor a notice, identifying deficiencies in performance and demanding corrective action, Such notice shall clearly state that it it's given under the provision of this clause. After service of such notice, the contractor shall not remove any plant; equipment and material from the site. The commissioner shall have a lien on all such plant; equipment and material from the date of such notice till the, said deficiencies have been corrected as mentioned in the said notice.

If the contractor fails to take satisfactory corrective action **within seven day after receipt of such notice**, the Engineer In-charge on behalf of commissioner shall terminate the contract in whole. In case, the entire contract is terminated, the amount of security deposit and performance bond if any together with the value of the work done but not paid for, shall stand forfeited to the BMC. The plants, equipment and materials, held under this clause shall then be at the disposal of the BMCto recover the amount equivalent to the liquidated damages and registration of the contractor shall be kept in abeyance for three years from the date as fixed in all such cases.

The Engineer In-charge if necessary shall direct that a part of the whole of such plant, equipment and material be removed from the site within a stipulated period, if the Contractor fails to do so, the Engineer-in-charge shall cause them or any part of them to be sold holding the net proceeds of such sale to the credit of the Contractor. After settlement of accounts, the lien by the commissionerof the contractor's remaining plant equipment and balances of materials shall be released.

Termination of the contract in whole shall be an adequate authority for the Engineer In-charge to demand discharge of the obligations form the guarantors of the security for the obligations from the guarantors of the security for the performance.

(CLAUSE-4) Actions when the progress of any particular portion of the work is unsatisfactory.

If the progress of any particular portion of the work under Contract is unsatisfactory, the Engineer-in-charge shall, notwithstanding that the general progress of the work is satisfactory, in accordance with Clause-2 be entitled to take necessary action under Clause-3, after giving the Contractor ten day's notice in writing and the contractor shall have no claim whatsoever for any compensation for any loss caused to him due to such action.

(CLAUSE-5) Non exercise of power under Clause-3 not a waiver.

In any case in which any of powers conferred upon the Engineer -in-charge by Clause 3 hereof shall have become exercisable and the same shall not have been exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable at any future date.

(CLASE-5A)Powers to seize tools, plants, machineries, materials and stores of the contractor on invocation of clause 3

In the event of the Engineer- in charge taking action under clause 3, he may, if so desire, take possession of all or any tools, plants, machineries, materials and store in or upon the work or the site thereof or belonging to the contractor of procured by him and intended to be used for upon the work of 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, by paying or allowing for the same in account at the contract rate or in case of contract rates not being applicable at such reasonable rates, as may be comparable to current market rates where ascertainable of similar articles and comparable condition, to be certified by the Engineer-in-charge. In the alternative the alternative the Engineer-in-charge may by notice in writing to the contractor or his clerk of the works foreman or other authorized agent require him to remove such tools, plants, machineries, materials or store form the premises within a time to be specified in such notice and in the event of the contractor failing to comply with any such requisition, the Engineer- in- charge may remove them at the contractor's expense or shall remove them by auction or private sale at the risk and cost of the contractor in all respects, and the certificate of the Engineer-in -charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such removal shall be final and conclusive against the contractor.

(CLASE-6 :): **Extension of time limit:**

If the contractor shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or any other ground he shall apply in writing to the Engineer -in- charge before the expiration of the period stipulated in the tender or before the expiration of 30 days from the date on which he was hindered whichever is earlier and the Engineer-in-charge may, if in his opinion, believe that there are reasonable grounds for granting an extension, grant such extension, as he thinks necessary or proper. The decision of the competent authority of BHAVNAGAR MUNICIPAL CORPORATION in this matter shall be final.

(CLASE-7 :): **Final measurement and final bill on completion of work:**

As soon as the work is completed, the contractor shall give a notice of such completion to the Engineer-in-charge and on receipt of such notice the Engineer-in-charge shall inspect the work and if he is satisfied that the work is completed in all respects then Engineer In-charge shall take final measurements :-

No certificate of completion shall be issued not shall the work be considered to be complete till the contractor shall have removed from the premises, on which the work has been executed, all scaffoldings, sheds and surplus materials, except such, as are required for rectification of defects; rubbish and all huts and sanitary arrangements required for his workmen on the site in connection with the execution of the work, as shall have been erected by the contractor for the workmen and cleared all dirt from all parts of building(s) in, upon or around which the work has been executed or of which he may have possession for the purpose of the execution thereof and cleared floors, gutters and drains, cased doors and sashes, oiled locks and fastening labelled keys clearly and handed them over to the Engineer- in- charge or his representative and made the whole premises fit for immediate occupation or use to the satisfaction of the Engineer-in-charge. if the contractor shall fail to comply with any of the requirements of these conditions as aforesaid, on or before the date of completion of the works, the Engineer-in-charge may, at the expense of the contractor, fulfil such requirements and dispose of the scaffolding, or surplus materials and rubbish etc. as he thinks and the contractor shall have no claim in respect of any such scaffolding or surplus materials accept for any sum actually released by the sale thereof less the Cost of fulfilling the requirements and any other amount that may be due from the contractor. If the expenses of fulfilling such requirements are more than the amount realised such disposal as aforesaid the contractor shall forthwith, on demand, pay such excess. The Engineer- in-charge shall also have the fights to adjust the amount of excess against any amounts that may be payable to the contractor.

(CLAUSE-8 :): **Intermediate and final payments:**

No payments shall be made for any work, estimated to cost less than rupees one thousand till after the whole of the said 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 and passed by the Engineer- in-charge, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. All such intermediate payments shall be regarded as payments by way of advance against the final payments only on not as payments for work actually done and completed and shall not preclude the Engineer- in-charge from requiring bad, unsound, imperfect or unskilled work to be removed and taken away and reconstructed, or re-erected, nor shall any such payment be considered as an admission of the due performance of the contractor or any part therefore in any respect or the accruing of any claims, nor shall it conclude, determine, or affect in any way the power of the Engineer in- charge as to the final settlement and adjustment of the account or otherwise or in any other way very or effect the contract. The final bill shall be submitted by the contactor within one months of the completion of the work, otherwise the Engineer-in charge's certificate of the measurements and of the total amount payable for the work shall be final and binding on all parties. The payment shall be as per schedule given in financial bid. Minimum progress amount of payment for any RA bill shall not be less than RS 0.15 Cr except final bill.

(CLAUSE-9): **Payment at reduced rates:**

The rates for items of works shall be valid only when the items concerned is accepted as having been competed fully in accordance with the sanctioned specifications. In cases where the items of work are accepted as not so competed, the Engineer In-charge or PMC can make payments at reduced rates.

(CLAUSE-10):**Bill to be submitted monthly (with copies of the required documents, registers etc in 3 copies)**

Payment will be made as desired by contractor and as agreed by BMC. However contractor shall not submit any R.A. Bill less than amounting Rs. 0.15 crore till the submission of final bill, Where as Final bill may be of any amount arrives at the completion of work, however contractor is abide to submit EPFO no. with muster roll, pay slips of each worker with each RA bill.

(CLAUSE-11):**Bills and rates payable:**

The contractor shall submit all the bills on the printed forms at the office of the Engineer-in-charge. The chares to be made in the bills shall always be entered at the rates specified in the agreement or at the partly reduced rates subject to the approval be the Engineer-in -charge in the case of items not completed/executed as per agreements or in the case of any extra work ordered in pursuance of these conditions and not mentioned or provided for the tender, at the rate here in after provided for such work. Contractor has to submit EPF, muster and salary paid receipt with every running bill to client office. Contractor has to submit invoice of R. A bill with GST,CST with every running bill.

Note: Contractor has to submit necessary documents i.e, Bar Bending Schedule, Material Consumption and supply register, Measurement sheet, abstract and as build topography plan (CAD file in UTM Coordinate) verified and certified by PMC/TPI along with every bills to the BMC as directed by Engineer In charge.

(CLAUSE-12):**Materials to be supplied by the department.(No Store Supply)**

If the specification of the work provides for the use of any special description of materials to be supplied form the Department Store or if it is required that the contractor shall use certain stores to be provided be the Engineer- in-charge (Such materials and stores and the prices to be charged therefore as here in after 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 her to annexed) the contractor shall be supplied with materials and stores as may be required form time to time to be used be him for the purpose of the contract only, and the value of the full quantity of materials and stores so supplied shall be set off or deducted from any sum then deposit, or the proceeds of sale thereof, if the deposit is held in govt. 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 BMC and shall on account be removed from the site of the work and shall at all time, be open to inspection by the Engineer-in-charge. Any such materials, unused and in perfectly good condition at the time of completion or termination of the contract, shall be returned to the Departmental store if the Engineer-in-charge so requires by a notice in Writing given under his hand, but the contractor shall not be entitled to return any such materials except with the consent in writing of the Engineer-in- charge and he shall have no clam for compensation on account of any such material except with the consent in writing of the Engineer-in-charge and he shall have no claim for compensation on account of any such material supplied to him as aforesaid but remaining unused by him or for any wastage in of damage thereto.

For materials provided in Schedule-A and consumed in excess quantities, the rates provided in Schedule A shall be increased/ decreased corresponding to the increased/ decreases in the new rate payable for excess quantity as compared to date of issue of such quantity of materials.

(CLAUSE-12A): **Consumption and return of materials supplied by the department.**

The contractor shall be entitled to use the material supplied by the Department only to the extent of quantities of such materials required for execution of the work as per theoretical calculation. The Engineer-in-charge- may however, on being satisfied that a large quantity of such materials is required for the execution of the work permit the contractor to use such large quantity of the materials. Such permission shall be given in writing.

The contractor is bound to return in good condition such materials issued in excess of the requirements so worked out or in excess of the quantities so permitted to be used by the Engineer-in-charge. If the contractor fails to return such extra materials within a period of 15days from the date of the demand in writing of such materials being made by the Engineer- in charge, he shall be charged for the excess materials at double the issue rate for materials specified in Schedule A of contract Agreement.

(CLAUSE-12B):-**Safe custody of materials supplied by the department**

All stores and materials supplied by the department shall be in safe custody .The store shall be accessible to the Engineer-in-charge or his agent at all times, No materials shall be allowed to removed from the site of the work and any material required for the execution of the work shall be taken out form the store only in the presence of a duly authorized agent of the Engineer-in-charge.

(CLAUSE-13): **Drawings, designs, instructions of the engineer-in-charge and specifications, order of precedence in case of discrepancies**

(1) The contactor shall execute the whole and every part of the work in the most substantial and workmen-like manner and both as regards materials and in other respects in strict accordance with specifications.

The contractor shall also conform exactly, full and faithfully to the design, drawings and instructions in writing for the work signed by the Engineer-in-charge. The design and the drawings shall be lodged in the office of the site engineer-in-charge to which the contractor shall be entitled to have access or the purpose of inspection at such office during office hours.

Where the instructions referred to above are not contained in separate letters addressed to the contractor the same shall be recorded in the work order book, which shall be maintained and kept on the site of the work. The contractor shall be required to sign such entries in the work order book in token of having noted the instruction. However, if the contractor fails to sign the work- order book for any reason whatsoever, the entry of the instructions in the work order book shall be deemed to be the due notice to him of the said instructors. The work-order book shall be open for inspections to the contractor on the site or the work during office hours.

(2) The contractor will be entitled to receive one copy of the accepted tender along with the work order free of cost.

(3) The several documents forming the contract are essential parts of the contract and requirements' occurring in one is binding as through occurring in all. They are intended to be mutually explanatory and complimentary and to describe and provide for a complete work.

In the event of any discrepancy in the several documents forming the contract or in any one document, the following order of precedence should apply:

(a) Dimension and quantities: (i) Drawings (ii) Schedule-B of the Tender form (iii) specifications.

On drawings, figures dimensions, unless obviously incorrect, will be followed in preference to scaled dimensions. Note- no extra payment done for any discrepancy in drawing.

(b) Description: (i) Schedule-B of the Tender form: (ii) Drawings (iii) specifications.

In the case of defective description or ambiguity, the Engineer-in-charge is entitled to issue further instructions directing in what manner the work is to be carried out. The contractor cannot take any advantage of any apparent error or omission in drawings or specification and the Engineer-in-charge shall be entitled to makes corrections and interpretations as necessary to fulfil the plans and specifications. Note- no extra payment done for any discrepancy in drawing

(CLAUSE-14) Excess over Tender Quantities, Extra Items and Variations

The Engineer-in-charge shall have power to make any alterations in or addition to the original specifications, drawings, designs and instructions that may appear to him to be necessary or 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 alternation 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 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 rate as are specified in the tender for the main work.

(14.1) When the quantity of any item exceeds the quantity as in the tender contractor will be paid for the quantity in excess at the rate entered in the tender rate.

(14.2) If the additional or altered work includes any class or work for work of which no rate is specified in this contract, then such class of work shall be carried out.

(i) At the rate derived from the item within the contract which is comparable to the one involving additional or altered class of work where there are more than one comparable items, the item of the contract which is nearest in comparison with regard to class or classes of the work involved, shall be selected and the decision of EIC shall be final and binding to the contractor.

(ii) If the rate cannot be derived in accordance with (i) above, such class of works shall be carried out at the rate entered in the Schedule of rate GWSSB for the year in which the tender was received, increased or decreased by the percentage by which the tender amount is more or less as compared to the amount arrived at the rates in the year in which the tender was received. If the Schedule of rates of GWSSB does not contain all the items, the percentage increase or decrease of the tender shall be calculated considering such items which ware included in the "Schedule of Rates" of BMC.

(iii) If it is not possible to arrive at the rate from (i) and (ii) above, such class or work shall be carried out at the rate decided by the competent authorities on the basis of detailed rate analysis after hearing the contractor.

(14.3) The time limit for the completion of the work shall be extended the proportion that the increase in the cost occasioned by alternations bears to the cost of the original contract work and the certificate of the engineer-in-charge as to such proportion shall be final and conclusive.

(CLAUSE-15) NoClaim to any payment or compensation for alterations or for restrictions of work

If at any time after the execution of the contract documents the Engineer-in-charge shall for any reason whatsoever, require the whole or part of the work, as specified in the tender, be stopped for any period or shall not require the whole or part of the work to be carried out at work, as specified in the tender, be stopped for any period of shall not require the whole or part of the work to be carried out at all or to be carried out by the contractor he shall give notice in writing, stating the fact to the Contractor who shall thereupon suspend or stop the work totally or partially, as the case may be. In any such case, except as provided hereunder, the Contractor shall have no claim to any payment or compensation whatsoever except as provided hereunder on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not so drive in consequence of the full amount of the work not having been out, or on account of any loss that he may be put to on account of materials purchased or agreed to be purchased or unemployment of labour required by him, He shall not have also any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which may involve any curtailment of the work as originally contemplated.

The Contractor shall not be entitled for loss of any expected profit of such work.

(CLAUSE 16 :) Claims under the contract

Time limit for unforeseen claims: The contractor shall not be entitled to any compensation from BMCon any account unless where allowed by the conditions of this contact.

(CLAUSE-17) Remedies for inferior or bad work, materials of workmanship and maintenance clause:

If, at any time before the expiry of Defects Liability period as detailed in Clause 17-A. It shall appear to the Engineer-in-charge or his sub-ordinate in charge of the work that/any work has been executed unsound, imperfect or unskilled workmanship or with materials or inferior quality or that any materials or articles provided by him for the execution of the work are unsound, or of a quality 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 passed, certified and paid or 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 so specified in whole or in part and provide other proper and suitable 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 in the written intimation aforesaid, the contractor shall be liable to pay compensation at the rate or percent on the amount of the estimate of the rectification for every day not exceeding ten days during which the failure so continues, and in the event of any such failure as aforesaid continuing beyond ten days, the Engineer-in-charge may rectify or remove, and re-execute the work or remove and replace the materials 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 described above may be accepted or made use of, it shall be within his discretion to accept the same at such reduced rates as he may fix therefore.

However, the contractor shall be responsible for normal maintenance of the work till the final bill for the work is prepared by the Departmental Officer.

(CLAUSE-17A) Defect liability clause:

The contractor shall be responsible to make good and remedy at his own expense any defect in works (Items)carried out by the contractor including surface worn out which may develop or may be noticed or

may be noticed before the period mentioned hereunder form the certified date of completion. The Engineer-in-charge shall give the contractor a notice in Writing about the defects and the contractor shall make good the same within 15 days of receipt of the notice. In the case of failure on the contractor, the Engineer- in charge may rectify or remove or re-execute the work at the risk & cost of the contractor. The Engineer-in-charge shall be entitled to appropriate the whole or any part of the amount of security deposit towards the expenses, if any, incurred by him in rectification, removal or re-execution. The Detect Liability Period shall be **three years** from the certified date of completion of work.

(CLAUSE-18) Work to be open to inspections- Contractor or responsible agent to be present:

All works under or in course of execution or executed in pursuance of the contract shall, at all times be open to the inspection and supervision of the Engineer-in-Charge and his subordinates and the Contractor shall, at all times during the usual working hours, and all other times for which reasonable notice of the intimation of the Engineer -in-charge or his subordinate to visit the works shall have been given to the contractor, either himself be present to receive orders and instruction or have a responsible agent duly accredited in writing present for the present for the 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.

Employment of a qualified site Engineer by the Contract. As per tender document clause 3.0 of qualifying criteria

(CLAUSE-19) Notice to be given before work is covered up:

The contractor shall give not less than five day's 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 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 which the same was executed.

(CLAUSE-20) Damage to contract work- in- progress and damages to surrounding properties.

If the contractor or workmen, or servants shall break, deface, injure or destroy any part of the building or the work in question in/on which they may be working or any building, road, fence, enclosure or grass-land or cultivated ground contiguous to the premises on which the work or any part thereof is being executed or if any damage shall be done to the work form any cause whatever before damage occurred /caused due to normal flood or rain or if any imperfections become apparent in it. within three months form the grant of a certificate of completion, final or otherwise by the Engineer-in-charge, the contractor shall make good the same at own expenses or in default, the Engineer-in-charge may cause the same to be made good by other contractor, and deduct the expenses (of which the certificate of the Engineer-in-charge shall be final) form any sums that may thereafter become due to the contractor or form his security deposit or the proceeds of sale thereof or a sufficient portion thereof of a sufficient portion thereof,

(CLAUSE-20-A)Damages due to acts of God and unprecedented floods.

Neither party shall be liable. to the other for any loss of damage occasioned by or arising out of acts of God, such as Unprecedented flood, Volcanic eruption, earthquake of other convulsion of nature and other acts such as but not restricted to invasion, the acts of foreign countries, hostilities, or war like operations before or after declaration or war, rebellion, military or Usurped power which prevent performance of the contract and which could not have been foreseen or avoided by a prudent person.

Note: "Unprecedented flood" means the flood crossing the High Flood Level of the past 10 year(s) which is on the available record.

(Modified Vide R.& B.D.G.R. No. TNC- TNC-1096-IB-143-(16)-C dated 11-1-99)

(CLAUSE-21) Contractor to supply ladders, Scaffolding etc. and is liable for damage arising from non- provision of lights, fencing etc-:

The contractor shall supply at his own cost all material (except such special materials if any, as may, in accordance with the contract to be supplied form the Public Works Department Store), plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding, and any temporary works which may be required for the proper execution of the work whether in the original, altered or substituted form and whether included in the specifications. or other documents forming part of the contract or referred to in these conditions of not and which may be necessary for the purpose of satisfying or complying with requirements of the Engineer-in-charge as to any matter or to which under these conditions he is entitled to be satisfied or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials necessary for the purpose of settings out works and counting, weighing and assisting in the measurement of examination at any time and form time to time, of the work or the materials, failing this, the same may be provided by the Engineer -in-charge at the expense of the Contractor and the expenses may be deducted from any money due to the Contractor under the contractor or form his security deposit, or proceed of sale thereof or of a sufficient portion thereof. The contractor shall provide all necessary fencing and lights required to protect the public form accident and shall also be bound to bear expenses of defences of every suit, action or other legal proceeding at law 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 in compromising any claim by any such person.

(CLAUSE-21A) Regulations for scaffolds, working platforms, gangways and stairways

The Contractor shall provide suitable scaffolds and working platforms. Gangways and stairways, and shall comply with the following regulations in connection therewith,

(a) Suitable scaffolds shall be provided for workmen for all works that cannot be safely done form a ladder or by other means.

(b) A scaffold shall not be constructed, taken down or substantially altered except-

(i) Under the supervision of a competent and responsible person.

(ii) Appointed by contractor and by competent workers possessing adequate experience in this kind of work.

(c) All scaffolds and appliances connected therewith and all 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 proper condition.

(d) Scaffolds shall be so constructed that on part thereof can be displaced in consequence of normal use.

(e) Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed.

(f) Before installing the lifting gear on scaffolds, special precaution shall be taken to ensure the strength and stability or 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 regulation herein specified.

(i) Working platforms, gangways shall be so constructed that no part thereof can dag unduly or unequally. be so constructed and maintained having regard to the prevailing conditions as to reduce as far as practicable risks of persons tripling or slipping and-be kept free form any unnecessary obstruction.

(i) In the case of working platforms, gangways working places and stairways at a height exceeding 2.00 metre (to be specified)

(i) Every working platform and every gangway shall be closely boarded unless other adequate measures are taken to ensure safety.

(j) Every working platform, gangway, working place and stairway shall be suitably fenced.

(k) 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 access of person or the transport or shifting or materials be provided with suitable means to prevent the tall of persons or material.

(l) When persons are employed on a roof where there is danger of failing form a height exceeding 3.00 (to be specified) meters suitable precaution 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 scaffold of other working places.

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

(CLAUSE-21B) Regulations for hoisting appliance

The contractor shall comply with the following regulations as regards the hoisting appliances to be used by him-

(a) Hoisting Machines and tackle including their attachments, anchorages and supports shall-

(i) be of good mechanical construction sound material and adequate strength and free from patent defect, and

(ii) be kept in good repair and in working order.

(b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free form partner defect.

(c) Hoisting machines and tackles 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 Engineer-in-change.

(d) Every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

(e) Every crane driver or hoisting- appliance operator shall be properly qualified.

(f) No. person who is below age of 15years shall be in control of any hoisting machine, including any scaffolds, nor shall give signals to the operator.

(g) In the case of every hoisting machine and of every chain, ring hook, shackle, swivel and pulley block used in hoisting of lowering or as a means of suspension the safe working load shall be ascertained by adequate means.

(h) Every hoisting machine and all gears referred to in preceding regulation shall be plainly marked with the safe working load.

(i) In the case of hosting machine having a variable safe working load, each safe working load and conditions under which it is applicable shall be clearly indicated.

(j) No part of any hoisting machine or gear referred to in regulation 'g' above shall be loaded beyond the safe working load except for the purpose of testing.

(k) Motors, gears, transmissions, electric wiring and other dangerous parts of hoisting appliances shall be provided with sufficient safeguards.

(l) Hoisting applications shall be provided with such means as will reduce to a minimum the risk of the accidental decent of the load.

(m) Adequate precautions shall be taken to reduce to minimum the risk or any part of a suspended load becoming accidentally displaced.

(CLAUSE-22) Measures for prevention of fire:

The contractor shall not set fire to any standing jungle, trees, bush wood or grass without a written permit from the engineer-in-charge.

When such permit is given, and also in all cases when destroying cut or dug up tress, bush wood, grass etc, by fire, the contractor shall take necessary measures to prevent such fire spreading to or other-wise damaging surrounding property. When such permit is given, and also in all cases when destroying cut or dug up tress, bush wood, grass etc by fire, the contractor shall take necessary measures to prevent such fire spreading to or other- wise damaging surrounding property.

(CLAUSE-23)Liability of contractors for damages done in or outside work area:

Compensation for all damage done intentionally or unintentionally by Contractor's labourers whether in or beyond limits of BMC/Government property including any damages caused by the spreading of fire mentioned in the clause 22, shall be estimated by the Engineer-in - charge, or such other Officer as he may appoint and the estimates of the Engineer-in-charge, subject to the decision of the Superintending Engineer, on appeal, shall 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 damages in the manner prescribed in clause 1 or deducted by the Engineer-in-charge form any sums that may be due or become due form Government to the contractor under this contract or otherwise.

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

(CLAUSE 24) Risk & Cost:

The Engineer-in-charge or the Competent Authority defined under rules may, without prejudice to his rights against the Contractor, in respect of any delay or inferior workmanship or otherwise, or any claims for damages in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this Contract or otherwise, and whether the date for completion has or has not elapsed, by notice in writing, absolutely determine the Contract in any of the following cases:

(i) If the Contractor having been given by the Engineer-in-charge or PMC, a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un-workman like manner shall omit to comply with the requirements of such notice for a period of seven days, thereafter, or if the Contractor shall delay or suspend the execution of the work so that either in the judgment of the Engineer-in-charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion or he has already failed to complete the work by that date,

(ii) If the Contractor, being a company, shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager, on behalf of a creditor, shall be appointed or if circumstances shall arise, which entitle the court or creditor to appoint a receiver or a manager or which entitle the court to make a winding up order,

(iii) If the contractor commits breach of any of the terms and conditions of this Contract,

(iv) If the contractor commits any acts mentioned in, clause 26 thereof. When the Contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in charge on behalf of the Governor of Gujarat shall have powers: -

a) To determine or rescind the contract, as aforesaid (of which determination or rescission notice in writing to the Contractor under the hand of the Engineer-in-charge shall be conclusive evidence), upon such determination or rescission, the earnest money, full security deposit of the contract shall be liable to be forfeited and shall be absolutely at the disposal of Government.

b) To employ labour paid by the Department and to supply materials to carry out the work or any part of the work, debiting the Contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-charge shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respects in the same manner and at the same rates, as if it had been carried out by the Contractor under the terms of this Contract. The certificate of the Engineer-in-charge, as to the value of the work done, shall be final and conclusive evidence against the Contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the Contractor. Provided also that; if the expenses incurred by the Department are less than the amount payable to the Contractor at his agreement rates, the difference shall not be paid to the Contractor.

c) After giving notice to the contractor to measure up the work of the contractor and to take such part thereof, as shall be unexecuted out of his hands, and to give it to another contractor to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (of the amount of which excess, the certificate in writing of the Engineer-in-charge shall be final and conclusive) shall be borne and paid by the original Contractor and may be deducted from any money due to him by Government under this contract or on any other account whatsoever, or from his Earnest Money,

Security Deposit, Enlistment Security or the proceeds of sales thereof, or a sufficient part thereof, as the case may be. In the event of any one or more of the above courses being adopted by the Engineer-in-charge, the Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of contract. And, in case action is taken under any of provisions aforesaid, the Contractor shall not be entitled to recover or be paid, any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-charge has certified, in writing, the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified. No interest shall be payable to the Contractor on any payment due or awarded by any authority.

(CLAUSE 25) Recovery from Contractors:

Whenever any claim against the Contractor for the payment arises under the contract, the Department may be entitled to recover such sum by:

a) Appropriating, in part or whole of the Performance Guarantee and/or Security Deposit and / or any sums payable under the contract to the contractor.

b) If the amount recovered in accordance with (a) above is not sufficient, the balance sum may be recovered from any payment due to the contractor under any other contract of the department, including the securities which become due for release.

The department shall, further have an additional right to effect recoveries as arrears of land revenue under the Gujarat Land Revenue Code.

(CLAUSE 26) Work not to be sublet; consequences for unauthorised subletting, bribing and becoming insolvent.

The Contractor shall not sublet the entire work under the contract or any part thereof under any circumstances, except the specialised work which is permitted as described in following clauses.

The contractor shall be permitted to sublet the specialised work of Railway Crossings, by the Box Pushing technique. The contractor to which the subletting is proposed to be done, shall be an experienced contractor, who has successfully carried out similar crossing works in the Western Railway region. The contractor shall propose the name of specialised agency to the Engineer In Charge, along with the details of work completed by the specialised agency, proposed time schedule, equipment to be deployed for the proposed crossing works, arrangement for seeking approval from Railway authorities etc, to the Engineer In Charge for his approval to the agency.

The actual work on site shall start only on approval from the Engineer In Charge. The extent of the work allocated to the specialised agency shall be only for the Box structure to be pushed under the railway track. All the approaches, pipe laying and other auxiliary works related to the crossing shall be responsibility of the Contractor.

The contractor shall be responsible for the safety of work and labour and other laws for the sublet work to be carried out by the specialised agency. All the safety, insurance and legal requirement of this contract shall be applicable mutatis mutandis to the work sublet to the specialised agency.

The payments to such approved specialised agency shall be directly made by the Contractor. However, BHAVNAGARMUNICIPAL CORPORATION will have a right to recover from any amount due to the

Contractor, any amount payable by the contractor to the engaged specialised agency. A tripartite agreement shall be signed between the Contractor, Specialised Agency and BHAVNAGARMUNICIPAL CORPORATION to that effect.

Contract may be rescinded and security deposit forfeited for subletting the work without approval or for bribing a public officer or if contractor becomes insolvent**.**

(CLAUSE-27) Sums payable by way of compensation to be considered as reasonable compensation without reference to actual loss:

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 Government without reference to the actual loss or damage sustained and whether any damage has or had not been sustained.

(CLAUSE-28) Change in the constitution of firm to be notified:

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

(CLAUSE-29) Works to be under directions of Executive Engineer:

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of **Executive Engineer** of the Division 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 form time to time carried on.

(CLAUSE-30) Settlement of Disputes & Arbitration:

A) SETTLEMENTS OF DISPUTES:

i) If any dispute of any kind whatsoever may arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing any question regarding its existence validity or termination, or the execution of the works whether during the progress of the work or before or after the termination, abandonment or breach of the contract, the either parties shall have to raise/ refer their disputes/ differences / claims in writing to the other party, within a period of 30 days on occurrence of such events, to resolve any such dispute or difference.

ii) The contractor shall have to refer their disputes to the concerned City Engineer. After receipt of the dispute from the contractor under this clause, the City Engineer In-charge of works shall have to submit their report to the Municipal Commissioner within a period of 90 (Ninety) days. The Municipal Commissioner shall offer an opportunity to the contractor to be heard and to furnish evidence in support of their disputes within 30 (Thirty) days after the receipt of the disputes duly compiled by City Engineer. After hearing the contractor regarding their disputes along with their documentary support and the concern City Engineer & Executive Engineer in charge of the work, Municipal Commissioner shall give decision within a period of 120 (One Hundred Twenty) days or the contractor is dissatisfied with the decision within 120 (One Hundred Twenty) days after the contractor has been heard. If The Municipal Commissioner does not give decision within 120 (One Hundred Twenty) days or the contractor is dissatisfied with the decision of the Municipal Commissioner, the contractor shall within 30 (thirty) days after receiving the instruction or decision, appeal to the Municipal Commissioner BHAVNAGARMUNICIPAL CORPORATION. After hearing both the parties the Municipal Commissioner BHAVNAGARMUNICIPAL CORPORATION will give

reasonable decision within 180 (One Hundred Eighty) days from the date of receipt of appeal by the contractor. The decision of the Municipal Commissioner BHAVNAGARMUNICIPAL CORPORATION shall be final and binding on both the parties. If the Municipal Commissioner BHAVNAGARMUNICIPAL CORPORATION does not give decision within 180 (One Hundred Eighty) days after the date of appeal by the contractor, the contractor will have right to refer the dispute to arbitration tribunal as per provision of clause "Arbitration". The case must be represent within one year to arbitration.

B) ARBITRATION:

i) Subject to Clause (A) mentioned above and in the event of any dispute or difference arising out of or in any way relating to all concerning these contracts or the construction or effect of these contracts shall on the initiative of either party to the contract be referred to "The Arbitration Tribunal Constituted Under The Provision Of Gujarat Public Work Contract Dispute Arbitration Tribunal Act, 1992".

ii) The arbitration shall be conducted in accordance with the provisions of the "Gujarat Public Work Contract Dispute Arbitration Tribunal Act, 1992" or statutory modifications there on. The Arbitration shall be held at such place and time as the Tribunal may determine.

iii) The decision of the tribunal shall be final and binding upon both the parties. The expenses of the arbitration shall be paid as may be determined by the Tribunal or equally both the party.

iv) Performance of the contractor under the contract shall if reasonably be possible, continue during the arbitration proceedings and payments due to the contractors by the owner shall not be withheld, unless they are the subject matter of the arbitration proceedings.

v) The dispute is deemed to have arisen on the date, on which Municipal Commissioner BHAVNAGARMUNICIPAL CORPORATION shall not give his decision as mentioned above in Clause (A) or in the case of intimation of any decision, the contractor intimates in writing that he has finally refused to accept the offer made by the BHAVNAGARMUNICIPAL CORPORATION

vi) Where any dispute arises between the parties to the work contract either party shall irrespective of whether such works contract provides for any arbitration or not, refer, within one year from the date that Municipal Commissioner BHAVNAGARMUNICIPAL CORPORATIONhas not given the decision as per Clause (A) such dispute in writing to the Tribunal for arbitration in such form and accompanied by such documents or other evidence any by such fees, as may be prescribed.

vii) Legal jurisdiction: All question relating to this Tender shall be governed by the law of India and shall be subject to jurisdiction of court at Gandhinagar, Gujarat.

(CLAUSE-31) Deleted.

(CLAUSE-32) **Lump sum in estimates:**

When the estimate on which a tender is made includes lump sum in respect of part of the contractor shall be entitled to payment in respect of the items of works involved of the part of the work in question at the same rates as are payable under this contract for such items, 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, as his discretion, pay the lump sum amount entered in the estimate in the estimate and the certificate in writing or 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.

(CLAUSE-33) Action where no specifications:

In the case of work for which there is no such specification, such work shall be carried out in accordance with the GWSSB Specification and in the event of there being no GWSSB Specifications, then, in such case the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-charge.

(CLAUSE-34) Definition of work:

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 construed to mean the work, of the works, contracted to be executed under or in virtue of the contract, whether temporary or permanent and whether original, altered, substituted or additional.

(CLAUSE-35) Non refund of quarry fees & Royalties:

The contractor shall pay the royalty to the competent authority/ local body as per rules. The contractor shall furnish quarterly the statement showing quarterly or quarried materials, from whom purchased (with full address of the seller) and copies of bills for purchase to the District Officer of the Mining and Geology Department or authority competent to levy royalty in the area of work. Contractor shall also furnish such additional information as regards royalty payment to the Royalty authority. The royalty charges paid shall be borne by the Contractor and shall not be reimbursed by the Executive Engineer (Authority: R & BD Circular No. TNC-2286-UO-39(19)-C, dtd,23/10/1989). Contractor is solely responsible to pay royalties to concern departments.

(CLAUSE-36) Compensation under the workmen's compensation Act:

The contractor shall be responsible for and shall pay compensation to his workman payable under the Workmen's Compensation Act. 1923 (VII of 1923) hereinafter called the said Act) for injuries caused to the workmen. If such compensation is paid by Government as principal under sub- section 12(1) of the said Act on behalf of the Contractor it shall be recoverable by Government from the contractor under sub-section 12(2) of the said section. Such compensation shall be recovered in the manner laid down in clause-1 above.

(CLAUSE-36A) Liability of the contractor in case of accidents

The contractor shall be responsible for and shall pay the expenses of providing medical aid to any workmen or other citizen(s)who may suffer a bodily injury as a result of an accident. If such expenses are incurred by BMC, the same shall be recoverable from the contractor for with and be deducted, without prejudice to any other remedy of Government from amount due or that may become due to the contractor.

(CLAUSE-36B) Arrangements for personal safety requirements and first aid

The contractor shall provide all necessary personal safety equipment and first aid apparatus available for the use of the person employed on the site and shall maintain the same in suitable condition for immediate use at any time and shall comply with the following regulations in connection therewith.

(a) The workers shall be required to use the equipment so provide be the Contractor and Contractor shall take adequate steps to ensure proper use of the equipment by those concerned.

(b) When work is carried on in approximately to any place where there is a risk of drowning all necessary equipment shall be provided and kept for use and all necessary steps shall be taken for the prompt rescue of any person, in danger.

(c) Adequate provision shall be made for prompt first aid treatment of all injuries to be sustained during the course of the work.

(CLAUSE-37) Quantities in the tender to be considered approximate and they are subject to variations.

The quantities shown in the tender are approximate and no claim shall be entertained for quantities of work executed being less than those entered in the tender. The rates for the increased quantities as aforesaid will be fixed in the manner specified in Clause-14.

(CLAUSE-38) Employment of famine or other labour:

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

(CLAUSE -39) Claim for compensation for delay in starting the work

No compensation shall be allowed for any delay caused in the starting of the work on account of delay in making available the full site of land at a time.

(CLAUSE-40) Claim for compensation for delay in the execution of work

No claim for compensation shall be allowed for any delay in execution of the work on account of encroachment removal.

(CLAUSE -41) Entering upon or commencing any portion or work:

The contractor shall not enter upon or commence any portion or work except with the written authority and instruction of the Engineer-in-charge or of his subordinate in charge of the work. Failing such authority, the contractor shall be no claim to ask measurement of or payment for work.

(CLAUSE-42) Minimum age of person employed:

(i) No contractor shall employ any person who is under the age of 18 years.

(CLAUSE -43) Method of Payment: Payment shall be made by cheques or RTGS directly into account of the contractor

(CLAUSE -43-A) In Case of Late Payment: In most of the cases, no delay in payment due to non availability of fund in BMC. Rarely delay in payment may become, in such cases interest on late payment shall not be claimed by the contractor.

(CLAUSE -44) Check Measurements

44.1. The department and reserve the right to prescribe a scale of check measurement of work in general or specific scale for specific works or by other special orders.

44.2. Checking of measurement by superior officer shall supersede measurements by subordinate officer(s), and the former will become the basis of the payment.

44.3. Any over/excess payments detected, as a result of such check measurement or otherwise at any stage up to the date of completion of the defect liability period specified in this contract, shall be recoverable from the Contractor.

(CLAUSE -45) Termination by Engineer in Charge

If the Contractor fails to carry out any obligation under the Contract, the Engineer in Charge may by notice require the Contractor to make good the failure and to remedy it within a specified reasonable time.

45.1. The Engineer in Charge shall be entitled to terminate the Contract if the Contractor:

a. abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,

b. the Contractor is declared as bankrupt or goes into liquidation other than for approved reconstruction or amalgamation;

c. without reasonable excuse fails to comply with the notice to correct a particular defect within a reasonable period of time as specified in Claue-3, Clause 20, Clause 21 and Clause 23.

d. the Contractor does not maintain a valid instrument of financial security as prescribed;

e. the Contractor has delayed the completion of the Works by such duration for which the maximum amount of liquidated damages is recoverable;

f. If the Contractor fails to deploy machinery and equipment or personnel or set up a field laboratory as specified in the contract document.

g. If the contractor, in the judgment of the Engineer in charge has engaged in corrupt or fraudulent practices in competing for or in executing the contract as specified in clause 26.

h. Any other fundamental breaches as specified in the Contract.

45.2. In any of these events or circumstances, the Engineer in Charge may, giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (c)or (g), the Engineer in Charge may terminate the Contract immediately.

45.3. Notwithstanding the above, the Engineer-in-Charge may terminate the Contract for convenience by giving notice to the Contractor.

(CLAUSE -46) Payment upon Termination

If the contract is terminated under clause 45.2, the Engineer shall issue a certificate for value of the work done less liquidated damages, if any, less recoverable advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed as indicated in the Contract. The amount so arrived at shall be determined by the Engineer-in-Charge and shall be final and binding on both the parties.

46.1. Payment on termination under clause 45.3 above -

If the Contract is terminated under clause 44.3 above, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

46.2. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be recovered as per clause 25 above.

(CLAUSE -47)Rates inclusive of taxes.(except GST)

The rates to be quoted by the contractor must be inclusive of all taxes except GST. **GSTshall be paid extra.**

(CLAUSE-47A)Income tax:-

Deduction will be made at source on the contractor's bill towards Income tax by the employers as per prevailing rules of the Income tax authority.

(CLAUSE -48) Employment through Employment Exchange and local labour

The contractor should as far as possible, obtain his requirement of labourers skilled and unskilled, from the nearest Employment Exchange so as to utilize the local employment potential. If there are no local Employment Exchange or such Exchanges are not able to provide the required labour locally, suitable

labourers should be utilized to the maximum extent possible.

(CLAUSE -49)Fair Wages:

If a Contractor fails to pay within '7' (Seven) days to the labourer(s)/ worker(s) the minimum wages prescribed by the Government under the Minimum Wages Act-1948 as in force from time to time, the Engineer-in-charge shall be at liberty to deduct the amount payable to the labourers/ workers from his (Contractor's) bills or deposit(s) payable by the contractor after making due inquiries and establishing the claim(s) of the labourer(s)/ worker(s).

The contractor shall not be entitled to any payment of compensation on account of any loss that the contractor may have to incur on amount of the action as aforesaid. Before the action as aforesaid, is enforced, a notice in writing to the contractor shall be issued by the Engineer-in-charge to pay the wages as per Minimum Wages Act in force at the relevant time. If contractor does not act as afore said within seven days, then the action contemplated as above shall be taken against him.

(CLAUSE -50) Deleted

(CLAUSE -51) List of Machinery:

The contractors shall also give a list of machineries in his possession and which they propose to use in the work.

(CLAUSE -52) Deleted

(CLAUSE -53) Local labour on normal rates:

The contractor shall have to engage local labour and person seeking employment where available on current minimum wage rate of Gujarat Government and revision if any.

(CLAUSE -54) Land on Hire and rental charges

Rent will be recovered from the contractor for the land (if available) given to them for stacking materials as well as for construction of temporary hutments etc.

(CLAUSE -55) Vaccination to labourers

The contractor shall employ only such labour who shall produce a valid certificate of having been vaccinated against covid.

(CLAUSE -56) Camp Facilities to Workers.

1.Huts:

The contractor shall build sufficient number of huts on a suitable of land for the use of the labourers according to the following specifications:

(1) Huts of bamboos and grass may be constructed.

(2) A good site shall be selected. High ground removed from jungle but well provided with trees shall be chosen wherever it is available. The neighbourhood of rank jungle, grass or weeds should particularly be avoided. Camps should not be established close to large cuttings of earth-work.

(3) The lines of huts shall have open spaces of at least 10 m. between rows. When a good natural site cannot be procured, particular attention should be given to the drainage.

(4) There should be no over-crowding. Floor spaces at the rate of 2.8 Sq. m. per head shall be provided.

Care should be taken to see that the huts are kept clean and in good order.

(5) The contractor must find out his own land. If he wants Government land, he should apply for it and pay assessment for it.

2. Drinking Water:

The contractor shall as far as possible, provide an adequate supply of chlorinated pure potable drinking water for the use of labourers.

3. The contractor shall construct semi permanent latrines for the use of labourers on the following scale, namely:

(a) Where female are employed, there shall be at least one latrine for every 25 females.

(b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number or males or female exceed 100, it shall be sufficient if there is one latrine for every 25 males or females, as the case may be upto the first 100 and one for every 50 thereafter.

4. **Privacy in latrines**: Every latrine shall be under cover and so partitioned off as to secure privacy and shall have a proper door and fastenings.

5. **Notice to be displayed outside latrines and urinals:**

(1) Where workers of both sexes are employed there shall be displayed outside each block of latrine and urinal a notice in the language understood by the majority of the workers for Men Only of For Women Only : as the case may be.

(2) The notice shall also bear the figures of a man or of women, as the case may be.

6. **Urinals:** There shall be at least one urinal for male/ female workers upto 50 employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to first 500 and one for every 100 males or females or part thereof.

7. Latrines and Urinals to be accessible:

(1) The latrines and urinals shall be conveniently situated and accessible to workers at all times at the establishment.

(2)(i) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

(2)(ii) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities.

8. Water for latrines and urinals:

Water shall be provided by means of pipes of tanks or their wise, so also be conveniently accessible in or near the latrines and urinals.

9. Bathing and washing places:

(1) The contractor shall construct sufficient number of bathing places; every unit of 20 persons being provided with a separate bathing place.

(2) Washing places should also be provided for the purpose of washing clothes. Every unit of 30 persons shall have at least one washing place.

(3) Such bathing and washing places should be suitably screened and separate places provided for male and female workers.

(4) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

10. Drainage:

The contractor shall make sufficient arrangement for drainage away the sewerage water as well as water from the bathing and washing places and shall dispose of this waste water in such a way as not to cause nuisance.

11. Medical Facilities:

The contractor shall engage a medical officer with a travelling dispensary for a camp having 500 or more persons if there is no Government or other private dispensary situated within 6 km from the camp.

12. Conservancy and cleanliness:

The contractor shall provide the necessary staff for effecting 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. Conservancy staff should dump refuge in compost pit, away from the labour camp.

13. Health Provisions:

The District Health Officer of the District or the Deputy Director of Health services shall be consulted before opening a labour camp and his instructions on matters such as water supply, sanitary convenience, the camp-site accommodation and food supply shall be followed by the contractor.

14. Precaution against epidemic:

(a) When the authorities in charge of the labour colony suspect or have reason to believe that any inmate of the labour colony is suffering from the infectious or contagious disease, they shall forthwith arrange for the segregation of such persons to isolated huts to be specifically provided for the purpose and also for their treatment.

15. Rest Rooms

(1) In every place where in contract labour is required to halt at night in connection with the contract works and in which employment of contract labour is likely to continue for three months or more, the contractor shall provide and maintain rest rooms or other suitable alternative accommodation within fifteen days of the employment of contract labour.

(2) If the amenity referred to in sub rule is not provided by the contractor within the period prescribed the employer shall provide the same within a period of fifteen days of the expiry of the period laid down in the sub-rule(1).

(3) Separate rooms shall be provided for women employees.

(4) Effective and suitable provision shall be made in every room for securing and maintaining adequate ventilation for the circulation of fresh air and there shall also be provided and maintained sufficient and suitable natural or artificial lighting.

(5) The rest room or other suitable alternative accommodation shall be of such dimensions as to provide at least a floor area or 1 sq. mt. for each person making use of rest rooms.

(6) The rest rooms or other suitable alternative accommodation shall be so constructed as to afford adequate protection against heat, wind, rain and shall have smooth, hard and impervious surface.

(7) The rest rooms of other suitable alternative accommodation shall be a convenient distance from the establishment and shall have adequate supply of whole some drinking water.

16. Canteen Facilities:

(1) In every establishment of contract work and wherein work regarding the employment of contract labour is likely to continue for six months and wherein contract labour numbering one hundred or more are ordinarily employed, the adequate canteen facilities shall be provided by the contractor for the use of such contract labour within sixty days of the commencement of the employment of contract labour.

(2) If the contractor fails to provide the canteen facilities within the time laid down the same shall be provided by the principal employer within sixty days of the time allowed to the contractor.

(3) The Canteen shall be maintained by the contractor or principal employees as the case may be in an efficient manner.

17. Accommodation in canteen:

(1) The canteen shall consist of at least dining hall, kitchen, storeroom, pantry and washing place separately for workers and for utensils.

(2)(i) The canteen shall be sufficient lighted at all times where any person has access to it.

(ii) The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour-washed at least once in each year, provided that the inside walls of the kitchen shall be lime-washed every four months/

(3)(i) The premises of the canteen shall be maintained on clean and sanitary condition.

(ii) Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as cause nuisance.

(iii) Suitable arrangements shall be made for the collection and disposal of garbage.

18. Accommodation in dining hall:

(1) The dining hall shall accommodate at a time, at least 30% of the contract labour working at a time.

(2) The floor area of the dining hall excluding the area occupied per dinner to be accommodated shall as prescribed in sub-rule (1).

(3) (i) A portion of the dining hall and service counter shall be partitioned and reserved for women workers, in proportion to their numbers (ii) Washing places for women shall be separate and screened to secure privacy.

(4) Sufficient table, stools, chairs or benches shall be available of the number of dinners to be accommodated as prescribed in sub-rule-1.

19. Equipment in canteen:

(1)(i) There shall be provided and maintained sufficient utensils, crockery, cutlery, furniture and any other equipment necessary for the efficient running of the canteen.

(ii) The furniture utensils and other equipment shall be maintained in a clean and hygienic conditions.

(2)(i) Suitable clean clothes for the employees serving in the canteen shall also be provided and maintained.

(ii) A service counter, if provided, shall have a top of smooth and impervious materials.

(i) Suitable facilities including and adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

20. Food stuff to be served:

The food stuff and other items to be served in the canteen shall be in conformity with the normal food habits of the contract labour.

21. Prices to be displayed:

The charges of food stuffs, beverages and any other item served in the canteen shall be based on 'no profit, no loss' and shall be conspicuously displayed in the canteen.

22. Canteen to be run on 'No profit no loss' basis:

In deriving the prices of food stuffs and other articles served in the canteen, the following items shall not be taken into consideration as expenditure namely.

(a) The rent for the land and building.

(b) The depreciation and maintenance charges for the building and equipment provided for in the canteen.

(c) The cost of purchase, repairs, and replacement of equipment including furniture, crockery, cutlery and utensils.

(d) The water charges and other charges incurred for lighting and ventilation.

(e) The interest on the amount spent on the provisions and maintenance of furniture and equipment provided for in the canteen.

The local officers should check up whether, facilities as offered and which are admissible under the existing rules and orders are made available to the workers and enforce upon the contractors the necessary of adhering the instructions for promotion of welfare of the workers according to the terms of the contract.

23. Books of accounts and registers of the canteen:

The books of accounts and registers and other documents used in connection with the running of the canteen shall be produced on demand to an inspector.

24. Audit of the Account of the Canteen:

The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors; provided that the Labour Commissioner may approve of any other person to audit the accounts, if he is satisfied that it is not feasible to appoint a registered accountant and auditor in view of the sire or the location of the canteen.

(CLAUSE -57) Gum boots, hand gloves, masks etc, to labourers

Contractor shall have to arrange for the supply of gumboot, Hand gloves, and mask etc. invariably the labourers / workers engaged by the contractor on asphalt work.

(CLAUSE -58) Deleted

(CLAUSE -59): Deleted

(CLAUSE -60) Fencing and lighting:

(a) The contractor shall, unless otherwise specified, be responsible for the proper fencing, lighting grading and taking of the necessary safety measures for all works comprised in the contract and for the proper provision of temporary road, ay, foot-way, guards, fences, caution notice etc. as far as the same may be rendered necessary by reasons of the work for the accommodation of workmen, foot passengers or other traffic and of owners and occupiers of adjacent property and the public and shall remain responsible for any accidents that may occur on account of his failure to take proper & timely precautions.

(b) All the arrangements made for fencing and lighting shall be maintained by the contractor through the currency of the contract till the physical taking over of the work by department.

(CLAUSE -61) Liability of Accidents to Persons:

Responsibilities and liabilities of the contractor under workmen's compensation act are give in clause-37 in addition following shall also apply: (a) On the occurrence of an accident, which result in death of workmen employed by the contractor or which is so serious as is likely to result in death of any such workmen, the contractor, shall within 24 hours of happening of such accident(s) intimate, in writing to the Engineer-in-charge the fact of such accident(s). The contractor shall indemnify BMC against all loss or damage

sustained by the Government resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or fines, if any, payable by the Government as a consequence of Government's failure to give notice under the workmen's compensation act or otherwise to conform to the provisions of the said act in regard to such accident(s) (b) in the case of an accident, in respect of which compensation may become payable under workmen's compensation Act, whether by the contractor or by the Government as principal Employer, it shall be lawful for the Engineer-in-charge to retain out of money due and payable to the contractor, such sum or sum of money as may, in the opinion of the Engineer-in-charge, be sufficient to meet such a liability. The opinion of the Engineer-in-charge shall be final in regard to all matters arising under this clause.

(CLAUSE -62) Access to site and work on site:

The Engineer may, if he considers fit from the time, enter upon any land(s) which may be in possession of the contractor his contract for the purpose of executing any work not included in this contract and may execute such works not included in this contract by agents or by other contractors, at his opinion and the contractor shall, in accordance with the requirements of the Engineer-in-charge, afford all reasonable facilities for execution of the work including occupation of lands by structure or otherwise for any other contractor employed by the Government and his workmen or for the workmen of the Government who may be employed in the execution on or near the site of the work not included in the contract or of any contract in connection with or ancillary to the work and in default, the contractor shall be liable to the Government for any delay or expense incurred by reason of such default. Provided always that if damage arising, make a statement of the same of the Engineer-in-charge who shall from time to time, assess the value in his judgment of such damage and the Government shall from time to time pay to the contractor the amount (if any) accepted as justified by the Engineer-in-charge.

(CLAUSE -63) Reports Regarding Labour:

The contractor shall submit the following reports to the Engineer-in-charge:

(i) A daily report in the suitable format of the strength of labour, both skilled and unskilled employed by him on the work(s). The contractor shall increase or decrease the strength both skilled and unskilled. If directed by the Engineer-in-charge. The submission of such reports shall not, however, relieve the contractor of his responsibilities and duties regarding progress or any other obligation under the contract.

(ii) A report of any accident, which may have occurred, to be sent within 24 hours of the occurrence.

Such other report as may be prescribed.

(CLAUSE -64) Treasure Trove:

In the event of discovery by the contractor or his employees, during the progress of work of any gold, silver, oil or other minerals of any description and precious stones, treasures, coils, antiquates, relic, fossils or other articles or value of interest whether geological, archaeological or any other such treasure & other things shall be deemed to be the absolute property of the Government and the contractor shall duly preserve the same to the satisfaction of the Engineer-in-charge from time to time, and relive the same to such persons as the Engineer-in-charge may appoint.

The contract shall take all reasonable precautions to prevent his workmen or any other person from removing or damaging any such articles or things, immediately after the discovery thereof the before removal acquaint the Engineer-in-charge with such discovery and carry out his orders for the disposal of the same.

(CLAUSE -65) Indemnity:

The contractor shall indemnify the Government against all actions, suits, claims and demands through or made against the department in respect of work of this contractor against any loss damage to Department in consequence of any action or suit being brought against the contractor for anything done or omitted to be done in execution of the work of this contract.

(CLAUSE -66) Insurance of Labourers:

The contractor shall be responsible to arrange for insurance of all labourers, skilled and unskilled workers, supervisors etc. employed by him as per labour regulation of the state.

(CLAUSE -67) Setting out:

The contractor shall be responsible for the true and proper setting out of the works and the correctness of positions, levels, dimensions and alignments of all parts of the work and for the provisions of all necessary instruments, appliance and labour in connection therewith. If, at any time, during the progress of the work, any errors, appear or arise in the position, levels, dimensions or alignments or any part of the work, the contractor, on being required to rectify such errors by the Engineer-in-charge shall at his own expense do so to the satisfaction or the Engineer-in-charge. If however, such error is based on incorrect data supplied in writing by the Engineer-in-charge, the expenses of rectifying the same shall be borne by the Department. The checking of and setting out of any line or level by the Engineer-in-charge or his representative shall not in any way, relive the contractor of his responsibilities for the correctness of the error. The contractor shall carefully protect and observe all bench-marks, site-nails, page and other things used in setting out of the work(s).

(CLAUSE -68) Cement & Steel Register:

A register in the prescribed form showing day-to-day receipt, consumption and balance of cement, steel on site of work will be maintained by the contractor, which shall invariably be signed daily by the contractor or his authorized representative in token of its correctness and get witness sign of PMC agency.

(CLAUSE -69) Materials and Works Test Register:

A register in the prescribed form showing day to day receipt, consumption and balance of cement on site of work by the Department, which shall invariably be signed by the Contractor of his authorized representative in taken of its correctness and get witness sign of PMC agency/BMC.

(CLAUSE -70) Progress Schedule:

(a) The contractor shall furnish within one month (unless extended by the Engineer-in-charge) of the order to start the work, the progress schedule in quadruplicate indicating the date of starting, the monthly expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating dates of procurement and setting up the materials, plants and machinery. the schedule should include a statement of proposed general and detailed arrangements for carrying out works, and of item, order and manner in which it is proposed general and detailed arrangements for carrying out works, and of item, order and manner in which it is proposed general and derailed arrangements for carrying out works, and of item, order and manner in which it is proposed that these shall be executed. The schedule should be framed keeping requirement of the clause-2 of tender form in view and be such as in practice to the achievement towards completion of the work in the time limit and of the particular items on the

dates specified in the contract and shall have to approval of the Engineer-in-charge. Further, the dates for the progress, as in this schedule shall be adhered to.

(a) In case it is found necessary, at any stage to alter the schedule the contractor shall submit in good, time a revise schedule incorporating necessary modification proposed and get the same approved from the Engineer-in-charge. No revised schedule shall be operative without such acceptance in writing. The Engineer-in-charge is further empowered to ask for more derailed schedule or schedules, any week by week for any item or items and the contractor shall supply the same as and when asked for.

(b) The Engineer-in-charge shall have at all times the right without in any way vitiating this contract forming grounds for any claim, to alter the order of the work of any part thereof and the contractor shall after receiving such direction, proceed in the order directed. The contractor shall also revise the progress, schedules accordingly and submit four copies of the revised schedule to the Engineer-in-charge within seven days of the said Engineer's direction to alter the order of works.

(c) The contractor shall furnish sufficient plant, equipment and labour and shall work such hours and shifts as may be necessary to maintain the progress of the work as per approved progress-schedule. The working and shift hours shall comply with all the Government regulations in force and shall be such, as may be approved by the Engineer-in-charge and the same not be varied without the prior approval of Engineer-in-charge.

(d) The contractor shall from time to time, as may be required by the Engineer-in-charge, furnish the Engineer-in-charge with a statement in writing of the arrangements he proposes to adopt for the execution of this contract and the Engineer-in-charge may, if he considers necessary at any time advice alternation in the same, which the contractor shall adopt on notice thereof.

(e) The progress schedule(s) shall be in the form of progress chart, forms, statements, and/ or reports as may be approved by the Engineer-in-charge.

The contractor shall submit four copies showing the progress of the work in the form of a chart etc., at periodically intervals as may be specified by Engineer-in-charge.

(f) The Approval of the progress schedules by the Engineer-in-charge shall not relieve the contractor of schedule require by the Engineer-in-charge shall not entitle the contractor to any extra payment.

(CLAUSE -71)Secured Advance : Deleted

(CLAUSE -72) Advance Payment : Deleted

(CLAUSE -73) Advance against Machineries : Deleted

(CLAUSE -74) Mobilization Advance:Deleted

(CLAUSE -75) License for contract labour

Before, starting the work, the contractor will have to obtain the license from the District Assistant Labour Commissioner under the Contract Labour (Regulation and Abolition) Act, 1970 and contract Labour (regulation and Abolition) Gujarat Rules 1972 after paying necessary fees and deposit on the basis of the number of labourers to be employed on the work and will have to supply two true copies of the said licence to the Executive Engineer before the work is started.

(CLAUSE -76) :Recovery of Testing Charges and handing over empty cement bags

All testing charges such as steel, cement, cubes, destructive tests of pipe weld joints etc shall be paid by the contractor. All inspection charges payable tofactory and laboratory inspection shall be borne by the contractor. The charge to be pay to PMC/TPI will be borne by BMC.

(Clause: 77): Recover of Sales Tax – Deleted

(Clause: 77A): Any other new tax comes inforce after submission of tender, it will be reimbursed by BMC in actual subject to produce the original receipts and documents to department for verification etc.

(Clause: 78):Building and other construction works welfare cess (Labour cess)

As per Building and other construction works welfare cess act and the provision under Rule No.5 of the rules of 1998 of Gujarat State, the 1% cess shall be recovered from the running account bill of the contractor.

(Clause: 79): Police Protection

If police is asked for protection by the contractor for special protection of his camp of work, the client may arrange for such protection so far as possible with the authority concerned and the full cost of such protection shall be debited to the contractor and recovered from his bills. The contractor shall launch FIR if needed.

ITEM NO.1 :

Excavation in bituminous road as per required gradient and line including safety provisions using site rails and stacking excavated stuff including up to all required lead cleaning the site etc. complete for all lifts as specified.

1.0 General

1.1 The excavation for trenches will generally, refers to open excavation for trenches in wet / dry conditions for pipe laying work.

2.0 Clearing of Sites:

2.1 The site on which the pipelines are to be laid and shown on plan and the area required for setting out and other operations shall be cleared and all obstruction loose stones and materials, rubbish of all kinds, stumps, brushwood as trees shall be removed as directed the roots shall be entirely grubbed up.

2.2 The products of the clearing to restacked in such a place and in such a manner, as directed by the engineer in charge.

2.3 All holes or hollows whether originally existing or produced by digging up roots, shall be carefully filled up with earth, well watered, well rammed leveled off, as may be directed.

2.4 The agency has to obtain necessary permission for diverting the traffic or public as per requirement from competent authority for carrying out the work.

3.0 Setting Out:

The center lines of all pipe trenches etc. shall be given by the Engineer-in-charge and it will be the responsibility of the contractor to install substantial reference marks, bench marks, etc. and maintain them as long as required true to line, level curve and slopes. The contractor shall assure full responsibility for alignment, and dimension of trench.

The labour materials etc. required for setting out and establishing benchmarks and other reference marks shall be arranged by the contractor at his own cost.

4.0 Excavation

4.1 The excavation for the pipe trenches shall also include removal of all materials of whatever nature and whether wet or dry condition necessary for laying of pipelines exactly in accordance with alignment, levels grades and curves shown on the plans or as directed by the Engineer-in-charge. Trenches shall be excavated to the exact width and depth according to the size of pipe and the sides shall be left vertical as far as possible or according to the angle of repose of various soils. Unless there is a specific extra provision in the contract for shoring and strutting or for cutting side slopes the contractor shall at his own cost do the necessary shoring and strutting or cutting of slopes to the angle of repose or both approved by the Engineer-in-charge. The contractor shall notify the Engineer before starting excavation to enable him to take cross sectional levels for purpose of measurements before the ground is disturbed. The bottom of the trenches shall be leveled both longitudinally and transversely or slopped as directed by the Engineer. The contractor shall at his own cost to remove such portions of boulders or rocks, as are rectified to make the bottom of the trench level. No filling shall be allowed to bring the trench to level. If by contractor's mistake excavation is made deeper than shown on the plans and if ordered by the Engineer the extra depth shall have

to be made with selected excavated stuff only with watering, ramming etc. as directed, by the Engineer and at the cost of the contractor. Other hard excavation shallbe cleared of all sorts including loose materials and cut to firm surface, either level, stepped as directed by the Engineer. The Engineer may order such changes in the dimensions and alignment of pipe trench as may be deemed necessary to secure satisfactory cover over pipeline.

After each excavation is completed, the contractor shall notify the Engineer to that effect and no laying of pipeline will be allowed to be laid until Engineer has approved the depth and dimensions of trenches, level and measurements.

Excavation by the Use of Explosives

Unless otherwise stated herein, I.S. Specification "IS: 4081: Safety Code for Blasting

and IS 3764-1966 safety code of Excavation works and related Drilling Operations" shall be followed. As far as possible all blasting shall be completed prior to commencement of construction. At all stages of excavation, precautions shall be taken to preserve the rock below and beyond the lines specified for the excavation, in the soundest possible condition. The quantity and strength of explosives used shall be such as will neither damage nor crack the rock outside the limits of excavation. All precautions, as directed by Employer's Representative, shall be taken during the blasting operations and care shall be taken that no damage is caused to adjoining buildings or structures as a resultof blasting operations. In case of damage to permanent or temporary structures, Contractor shall repair the same to the satisfaction of Employer's Representative at his cost. As excavation approaches its final lines and levels, the depth of the charge holes and amount of explosives used shall be progressively and suitably reduced.

The contractor shall obtain a valid Blasting License from the authorities concerned. No explosive shall be brought near the work in excess of quantity required for a particular amount of firing to be done; and surplus left after filling the holes shall be removed to the magazine. The magazine shall be built as away as possible from the area to be blasted. Employer's Representative's prior approval shall be taken for the location proposed for the magazine.

In no case shall blasting be allowed closer than 30 meters to any structure or to locations where concrete has just been placed. In the latter case the concrete must be at least 7 days old. Blasting for excavation in hard rock will only be allowed if permitted by competent authority otherwise shall be done with chiseling only.

For blasting operations, the following points shall be observed.

i) Contractor shall employ a competent and experienced supervisor and licensed blaster in-charge of each set of operation, which shall be held personally responsible to ensure that all safety regulations are carried out.

ii) Before any blasting is carried out, Contractor shall intimate Employer's Representative and obtain his approval in writing for resorting to such operations. He shall intimate the hours of firing charges, the nature of explosive to be used and the precautions taken for ensuring safety.

iii) Contractor shall ensure that all workmen and the personnel at site are excluded from

an area within 200 m radius from the firing point, at least 15 minutes before firing time

by sounding warning whistle. The area shall also be given a warning by sounding a distinguishing whistle.

iv) The blasting of rock near any existing buildings, equipments or any other property shall be done under cover and Contractor has to make all such necessary muffling arrangements. Covering may preferably be done by MS plates with adequate dead weight over them. Blasting shall be done with small charges only and where directed by Employer's Representative; a trench shall have to be cut by chiseling prior to the blasting operation, separating the area under blasting from the existing structures.

v) The firing shall be supervised by a Supervisor and not more than 6 (six) holes at a time shall be set off successively. If the blasts do not tally with the number fired, the misfired holes shall be carefully located after half an hour and when located, shall be exploded by drilling a fresh hole along the misfired hole (but not nearer than 600 mm from it) andby exploding a new charge.

vi) A wooden tamping rod with a flat end shall be used to push cartridges home and metal rod or hammer shall not be permitted. The charges shall be placed firmly into place and not rammed or pounded. After a hole is filled to the required depth, the balance of the hole shall be filled with stemming, which may consist of sand or stone dust or similar inert material.

vii) Contractor shall preferably detonate the explosives electrically.

viii) The explosives shall be exploded by means of a primer, which shall be fired by detonating a fuse instantaneous detonator (F.I.D) or other approved cables. The detonators with F.I.D. shall be connected by special nippers.

ix) In dry weather and normal dry excavation, ordinary low explosive gunpowder may be used. In damp rock, high explosive like gelatin with detonator and fuse wire may be used. Underwater or for excavation in rock with substantial accumulated seepage electric detonation shall be used.

x) Holes for charging explosives shall be drilled with pneumatic drills, the drilling pattern being so planned that rock pieces after blasting will be suitable for handling without secondary blasting.

xi) When excavation has almost reached the desired level, hand trimming shall have to be done for dressing the surface to the desired level.

xii) Any rock excavation beyond an over break limit of 75 mm shall be filled up as instructed by Employer's Representative, with concrete of strength not less than M10. Stopping in rock excavation shall be done by hand trimming.

xiii) Contractor shall be responsible for any accident to workmen, public or Employer's property due to blasting operations. Contractor shall also be responsible for strict observance of rules, laid by Inspector of explosives, or any other Authority duly constituted under the State and / or Union Government as applicable at the place of excavation.

Stripping Loose Rock

All loose boulders, detached rocks partially and other loose material which might move therewith not directly in the excavation but so close to the area to be excavated as to be liable, in the opinion of Employer's Representative, to fall or otherwise endanger the workmen, equipment, or the work shall be stripped off and removed from the area of the excavation. The method used shall be such as not to render unstable or unsafe the portion, which was originally sound and safe.

Any material not requiring removal in order to complete the permanent works, but which, in the opinion of Employer's Representative, is likely to become loose or unstable later, shall also be promptly and satisfactorily removed.

Classification of Strata:

The decision regarding, classification of strata shall rest with the Engineer in charge and his decision shall be final and binding to the contractor.

All the materials encountered in the excavation shall be classified as under :-

Ordinary soil and soft murrum:

These will include all materials of an earthy or sandy nature, which can be easily ploughedor small shingle, and gravel, which can be easily removed.

Hard murrum:

This shall include all kinds of disintegrated rock or shale or inundated clay which can be removed with a shovel without difficulty and which do not require blasting.

Soft rock:

This shall includes all materials which is rock or hard conglomerate, all decomposed and weathered rock, highly fissured rock old masonry and also soft rock boulders bigger than1/2 cubic meter and other varieties of rock. Which do not require blasting and which can be removed with the pie crowbars wedges and hammer.

Hard rock:

This shall include rocks, occurring in masses, which could best be removed by chiseling.

5.0 Shoring and Strutting:

5.1 Shoring & strutting if required shall have to be carried out by the contractor, for which any extra charge will not be paid.

5.2 During excavation if water connections, sewage connections, telephone lines khalkuva (soak pits) etc. are damaged by the contractor, the same shall have to be restored bythe contractor without any extra cost.

6.0 Protection

6.1 The trenches shall be strongly fenced and red light signal shall be kept at night and arrangement of watchman to prevent accidents should be done. Sufficient care andprotective measure shall be taken to see that the excavation shall not affect or damage the adjoining structure. The contractor shall be entirely responsible for any injury to life and damage to the properties etc. Necessary protection work such as guide ropes, crossing places, barricades, caution boards etc. shall be provided by the contractor.

7.0 The excavation in all sorts of soil, hard murram, soft rock or hard rock or any type of soil shall have to be carried out up to the required depth by the agency

8.0 Disposal of Excavated Stuff

8.1 No excavated stuff from trench are to be placed even temporarily nearer than 1.5 meter or greater distance up to 90 meter or as prescribed by the Engineer from the outer edge of trench. All excavated material will be the property of the owner. The rate of excavation includes sorting out of useful materials and stacking them separately as directed within specified lead. The excavated stuff suitable and useful for refilling or for other use shall be stacked at convenient places. The materials not useful in any way shall be disposed off as directed by the Engineer from the outer edge of trench.

8.2 The site should be cleared off on completion of work.

9.0 Additional Requirements

9.1 At the joints of pipes, the trench shall be excavated to an additional depth of 15 cm. and width of 30 cm. And length of 15 cm. beyond the edge of collar on both the sides or as directed. The rate include for such extra excavation made at the joints. The trenches shall be excavated perfectly in straight line. The bottom of the trench shall be kept as per invert level or as directed. To maintain the proper slope the usual method of site rails and boning rods shall be adopted. The contractor shall have to provide and fix and maintain sight rails and boning rods without any extra cost.

If the contractor fails or makes delay to give hydraulic test of the pipe line laid in any ofthe section, without any genuine reason, he shall be responsible to get any part of the length trenches refill in such case (i.e. before testing) for safety of pedestrian and/or vehicular traffic as found necessary by the engineer-in-charge without any extra cost. If found necessary and directed by the Engineer-in-charge, the contractor shall have to excavate the refilled trenches, during hydraulic test without any extra cost.

At all road crossings, trenches shall be excavated only for half width of the road and pipe shall be laid. The other half shall be excavated only after back filling over the laidpipeline is done so as to make it suitable for the traffic. The contractor shall provide diversion when the pipeline is to be laid along the road as required and shall maintainthe diversion or any part of it, without any extra cost. At all road crossings, the pipe shallbe laid below the crest of road.

9.2 The contractor shall break the road surface by chiseling to the exact width and length as shown on the drawing or as directed by the Engineer-in-charge.
The excavated stuff shall be deposited in uniform layers to avoid mixing with other kind of materials at non-objectionable place or as directed by the Engineer-in-charge.

ITEM NO.2 :
"Excavation for pipe line trenches for water supply, sewerage line, manhole etc. all with shoring and struting if required as per required gradient and line including safety provisions using site rails and stacking excavated stuff including up to all required lead cleaning the site etc. complete for all lifts and strata as specified.
In all sorts of soil and soft murrum "

1.0 General

1.1 The excavation for trenches will generally, refers to open excavation for trenches in wet / dry conditions for pipe laying work.

2.0 Clearing of Sites:

2.1 The site on which the pipelines are to be laid and shown on plan and the area required for setting out and other operations shall be cleared and all obstruction loose stones and materials, rubbish of all kinds, stumps, brushwood as trees shall be removed as directed the roots shall be entirely grubbed up.

2.2 The products of the clearing to restacked in such a place and in such a manner, as directed by the engineer in charge.

2.3 All holes or hollows whether originally existing or produced by digging up roots, shall be carefully filled up with earth, well watered, well rammed leveled off, as may be directed.

2.4 The agency has to obtain necessary permission for diverting the traffic or public as per requirement from competent authority for carrying out the work.

3.0 Setting Out:

The center lines of all pipe trenches etc. shall be given by the Engineer-in-charge and it will be the responsibility of the contractor to install substantial reference marks, bench marks, etc. and maintain them as long as required true to line, level curve and slopes. The contractor shall assure full responsibility for alignment, and dimension of trench.

The labour materials etc. required for setting out and establishing benchmarks and other reference marks shall be arranged by the contractor at his own cost.

4 Excavation

4.1 The excavation for the pipe trenches shall also include removal of all materials of whatever nature and whether wet or dry condition necessary for laying of pipelines exactly in accordance with alignment, levels grades and curves shown on the plans or as directed by the Engineer-in-charge. Trenches shall be excavated to the exact width and depth according to the size of pipe and the sides shall be left vertical as far as possible or according to the angle of repose of various soils. Unless there is a specific extra provision in the contract for shoring and strutting or for cutting side slopes the contractor shall at his own cost do the necessary shoring and strutting or cutting of slopes to the angle of repose or both approved by the Engineer-in-charge. The contractor shall notify the Engineer before starting excavation to enable him to take cross sectional levels for purpose of measurements before the ground is disturbed. The bottom of the trenches shall be leveled both longitudinally and transversely or slopped as directed by the Engineer. The contractor shall at his own cost to remove such portions of boulders or rocks, as are rectified to make the bottom of the trench level. No filling shall be allowed to bring the trench to level. If by contractor's mistake excavation is made deeper than shown on the plans and if ordered by the Engineer the extra depth shall have to be made with selected excavated stuff only with watering, ramming etc. as directed, by the Engineer and at the cost of the contractor. Other hard excavation shall be cleared of all sorts including loose materials and cut to firm surface, either level, stepped as directed by the Engineer. The Engineer may order such changes in the dimensions and alignment of pipe trench as may be deemed necessary to secure satisfactory cover over pipeline.

After each excavation is completed, the contractor shall notify the Engineer to that effect and no laying of pipeline will be allowed to be laid until Engineer has approved the depth and dimensions of trenches, level and measurements.

Excavation by the Use of Explosives

Unless otherwise stated herein, I.S. Specification "IS: 4081: Safety Code for Blasting and related Drilling Operations" shall be followed. As far as possible all blasting shall

be completed prior to commencement of construction. At all stages of excavation, precautions shall be taken to preserve the rock below and beyond the lines specified for the excavation, in the soundest possible condition. The quantity and strength of explosives used shall be such as will neither damage nor crack the rock outside the limits of excavation. All precautions, as directed by Employer's Representative, shall be taken during the blasting operations and care shall be taken that no damage is caused to adjoining buildings or structures as a result of blasting operations. In case of damage to permanent or temporary structures, Contractor shall repair the same to the satisfaction of Employer's Representative at his cost. As excavation approaches its final lines and levels, the depth of the charge holes and amount of explosives used shall be progressively and suitably reduced.

The contractor shall obtain a valid Blasting License from the authorities concerned. No explosive shall be brought near the work in excess of quantity required for a particular amount of firing to be done; and surplus left after filling the holes shall be removed to the magazine. The magazine shall be built as away as possible from the area to be blasted. Employer's Representative's prior approval shall be taken for the location proposed for the magazine.

In no case shall blasting be allowed closer than 30 meters to any structure or to locations where concrete has just been placed. In the latter case the concrete must be at least 7 days old. Blasting for excavation in hard rock will only be allowed if permitted by competent authority otherwise shall be done with chiseling only.

For blasting operations, the following points shall be observed.

i) Contractor shall employ a competent and experienced supervisor and licensed blaster in-charge of each set of operation, which shall be held personally responsible to ensure that all safety regulations are carried out.

ii) Before any blasting is carried out, Contractor shall intimate Employer's Representative and obtain his approval in writing for resorting to such operations. He shall intimate the hours of firing charges, the nature of explosive to be used and the precautions taken for ensuring safety.

iii) Contractor shall ensure that all workmen and the personnel at site are excluded from an area within 200 m radius from the firing point, at least 15 minutes before firing time by sounding warning whistle. The area shall also be given a warning by sounding a distinguishing whistle.

iv) The blasting of rock near any existing buildings, equipment's or any other property shall be done under cover and Contractor has to make all such necessary muffling arrangements. Covering may preferably be done by MS plates with adequate dead weight over them. Blasting shall be done with small charges only and where directed by Employer's Representative; a trench shall have to be cut by chiseling prior to the blasting operation, separating the area under blasting from the existing structures.

v) The firing shall be supervised by a Supervisor and not more than 6 (six) holes at a time shall be set off successively. If the blasts do not tally with the number fired, the

misfired holes shall be carefully located after half an hour and when located, shall be exploded by drilling a fresh hole along the misfired hole (but not nearer than 600 mm from it) and by exploding a new charge.

vi) A wooden tamping rod with a flat end shall be used to push cartridges home and metal rod or hammer shall not be permitted. The charges shall be placed firmly into place and not rammed or pounded. After a hole is filled to the required depth, the balance of the hole shall be filled with stemming, which may consist of sand or stone dust or similar inert material.

vii) Contractor shall preferably detonate the explosives electrically.

iii) The explosives shall be exploded by means of a primer, which shall be fired by detonating a fuse instantaneous detonator (F.I.D) or other approved cables. The detonators with F.I.D. shall be connected by special nippers.

ix) In dry weather and normal dry excavation, ordinary low explosive gunpowder may be used. In damp rock, high explosive like gelatin with detonator and fuse wire may be used. Underwater or for excavation in rock with substantial accumulated seepage electric detonation shall be used.

x) Holes for charging explosives shall be drilled with pneumatic drills, the drilling pattern being so planned that rock pieces after blasting will be suitable for handling without secondary blasting.

xi) When excavation has almost reached the desired level, hand trimming shall have to be done for dressing the surface to the desired level.

Any rock excavation beyond an over break limit of 75 mm shall be filled up as instructed by Employer's Representative, with concrete of strength not less than M10. Stopping in rock excavation shall be done by hand trimming.

xii) Contractor shall be responsible for any accident to workmen, public or Employer's property due to blasting operations. Contractor shall also be responsible for strict observance of rules, laid by Inspector of explosives, or any other Authority duly constituted under the State and / or Union Government as applicable at the place of excavation.

Stripping Loose Rock

All loose boulders, detached rocks partially and other loose material which might move therewith not directly in the excavation but so close to the area to be excavated as to be liable, in the opinion of Employer's Representative, to fall or otherwise endanger the workmen, equipment, or the work shall be stripped off and removed from the area of the excavation. The method used shall be such as not to render unstable or unsafe the portion, which was originally sound and safe.

Any material not requiring removal in order to complete the permanent works, but which, in the opinion of Employer's Representative, is likely to become loose or unstable later, shall also be promptly and satisfactorily removed.

Classification of Strata:

The decision regarding, classification of strata shall rest with the Engineer in charge and his decision shall be final and binding to the contractor.

All the materials encountered in the excavation shall be classified as under:-

Ordinary soil and soft murrum:

These will include all materials of an earthy or sandy nature, which can be easily ploughed or small shingle, and gravel, which can be easily removed.

Hard murrum:

This shall include all kinds of disintegrated rock or shale or inundated clay which can be removed with a shovel without difficulty and which do not require blasting.

Soft rock:

This shall include all materials which is rock or hard conglomerate, all decomposed and weathered rock, highly fissured rock old masonry and also soft rock boulders bigger than 1/2 cubic meter and other varieties of rock. Which do not require blasting and which can be removed with the pie crowbars wedges and hammer.

Hard rock:

This shall include rocks, occurring in masses, which could best be removed by chiseling.

5.0 Shoring and Strutting:

5.1 Shoring & strutting if required shall have to be carried out by the contractor, for which any extra charge will not be paid.

5.2 During excavation if water connections, sewage connections, telephone lines khalkuva (soak pits) etc. are damaged by the contractor, the same shall have to be restored by the contractor without any extra cost.

6.0 Protection

6.1 The trenches shall be strongly fenced and red light signal shall be kept at night and arrangement of watchman to prevent accidents should be done. Sufficient care and protective measure shall be taken to see that the excavation shall not affect or damage the adjoining structure. The contractor shall be entirely responsible for any injury to life and damage to the properties etc. Necessary protection work such as guide ropes, crossing places, barricades, caution boards etc. shall be provided by the contractor.

7.0 The excavation in all sorts of soil, hard murram, soft rock or hard rock or any type of soil shall have to be carried out up to the required depth by the agency

8 Disposal of Excavated Stuff

8.1 No excavated stuff from trench are to be placed even temporarily nearer than 1.5 meter or greater distance up to 90 meter or as prescribed by the Engineer from the outer edge of trench. All excavated material will be the property of the owner. The rate of excavation includes sorting out of useful materials and stacking them separately as directed within specified lead. The excavated stuff suitable and useful for refilling or for other use shall be stacked at convenient places. The materials not

useful in any way shall be disposed off as directed by the Engineer from the outer edge of trench.

8.2 The site should be cleared off on completion of work.

9.0 Additional Requirements

9.1 At the joints of pipes, the trench shall be excavated to an additional depth of 15 cm. and width of 30 cm. And length of 15 cm. beyond the edge of collar on both the sides or as directed. The rate include for such extra excavation made at the joints. The trenches shall be excavated perfectly in straight line. The bottom of the trench shall be kept as per invert level or as directed. To maintain the proper slope the usual method of site rails and boning rods shall be adopted. The contractor shall have to provide and fix and maintain sight rails and boning rods without any extra cost.

If the contractor fails or makes delay to give hydraulic test of the pipe line laid in any of the section, without any genuine reason, he shall be responsible to get any part of the length trenches refill in such case (i.e. before testing) for safety of pedestrian and/or vehicular traffic as found necessary by the engineer-in-charge without any extra cost. If found necessary and directed by the Engineer-in-charge, the contractor shall have to excavate the refilled trenches, during hydraulic test without any extra cost.

At all road crossings, trenches shall be excavated only for half width of the road and pipe shall be laid. The other half shall be excavated only after back filling over the laid pipeline is done so as to make it suitable for the traffic. The contractor shall provide diversion when the pipeline is to be laid along the road as required and shall maintain the diversion or any part of it, without any extra cost. At all road crossings, the pipe shall be laid below the crest of road.

9.2 The contractor shall break the road surface by chiseling to the exact width and length as shown on the drawing or as directed by the Engineer-in-charge.

The excavated stuff shall be deposited in uniform layers to avoid mixing with other kind of materials at non-objectionable place or as directed by the Engineer-in-charge.

10.1 Payment shall be made as per actual work done.

10.2 The rate for the item of excavation shall include the following unless and otherwise mentioned.

(a) Clearing of site

(b) Setting out work including all materials and labour.

(c) Providing and subsequently removing, shoring and strutting outing Slopes etc.

(d) Excavation and removal and staking of all excavated stuff as directed.

(e) Necessary protection including labour materials equipment etc. to ensure safety and protection against risk or accident.

(f) Providing facilities for inspection and damage to property if caused during progress of work.

(g) Compensation for injury to life and damage to property if caused during progress of work.

(h) Restoring of water supply connections, sewer connections, telephone **z**lines, khalkuva soak pits etc. if damaged by contractor without extra payment.

(j) Clearing the site on completion of works directed by the Engineer.

ITEM NO.3 :
Providing bedding incl. ramming, watering, levelling, consolidating etc. Complete as per standard and instruction of engineer incharge As above with required quality Sand brought from outside inclduing all lead

Murrum bedding shall be done in the pipe line trenches where the hard & soft rock is encountered during excavation during the pipe line trenches. Bedding shall be done from selected excavated soil in layers not less than 15 cm thick. Total thickness of selected excavated soil shall be 15 cm. Necessary watering, ramming shall be done as per the instruction of Engineer in charge & bottom should be level before laying of pipe.

WORKMANSHIP:

1.1 The sand/granular material to be use for bedding shall be free from salts, organic or other foreign matter. All clods of sand shall be broken.

1.2 As soon as the work in trench has been completed and measured the site of trench shall be cleared of all debris, brick bats, mortar dropping etc. sand filled with sand in layers not exceeding 20 cms. Each layer shall be adequately watered, rammed and consolidated before the succeeding layer is laid. The sand shall be rammed with iron rammers where feasible and with the butt ends of crowbars, where rammer cannot be used.

1.3 The finished level of bedding shall be kept to shape intended to be given to excavation.

1.4 The consolidation may be done by hand rammers, where so specified. The extent of consolidation required shall also be as specified.

1.5 The sand / granular material shall be allowed to be used in bedding the trenches. Under no circumstances black cotton soil be used for bedding.

1.5.1 Bedding shall not be provided for stoneware pipes for house connection chambers. The available excavated earth should be compacted in such a manner that rocky surface shall not be observed.

ITEM NO.4 :

Providing and supplying ISI Standard R.C.C. pipes(of Sulphate Resisting Cement) in standard lengths of following class and diameter suitable for either collar joints or rubber ring joints including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. Note : One collar should be supplied with each full length plain ended RCC pipe, cost included in rates below. One rubber ring should be supplied with each full length socketed pipe, cost included in rates below.Class NP3 Test Pressure 0.7 Kg/sq.cm and Lowering, laying and jointing R. C. C. pipes in C. M. 1:1 1/2 of following diameters in proper position, grade and alignment at all level as directed by Engineer-in-charge including conveyance from stores to site of work, labour, giving hydraulic testing as per ISI code.

1.1 Scope

This specification covers the requirements for manufacturing, testing, supplying, jointing and testing at work sites of Reinforced Cement Concrete (RCC) pipes, of non pressure varieties, sewers and storm water drains. R.C.C. NP3 class pipes are to be used for sewer collecting system

Applicable Codes

The manufacturing, testing, supplying, jointing and testing at work sites of RCC pipes shall comply with all currently applicable statutes, regulations, standards and codes. In particular, the following standards, unless otherwise specified herein, shall be referred. In all cases, the latest revision of the codes shall be referred to. If requirements of this specification conflict with the requirements of the codes and standards, this specification shall govern.

2.0 Materials

(a) IS: 458 - Specification for precast concrete pipes (with and without reinf.)-2003

(b) IS: 3597 - Method of tests for concrete pipes.

(c) IS: 5382 - Specification for rubber sealing rings for gas mains, water mains and sewers

(d) IS: 516 - Method of test for strength of concrete.

2.1 Codes of Practice

(a) IS: 456 - Code of practice for plain and reinforced concrete.

(b) IS: 783 - Code of practice for laying of concrete pipes.

3.0 Design

Design of RCC pipes including reinforcement details and the ends of pipes shall be in accordance with the relevant clauses of IS: 458-2003**.**

4.0 Manufacturing

4.1 General

Pipe can be manufactured by spinning process or by vibrated casting process

4.1.1 The method of manufacture shall be such that the form and the dimensions of the finished pipes are accurate within the limits specified in relevant clause of IS: 458. The surfaces and edges of the pipes shall be well defined and true, and their ends shall be square with the longitudinal axis. The ends of the pipes shall be further reinforced by an extra ring of reinforcement to avoid breakage during transportation.

4.1.2 The RCC pipes and rubber rings shall be systematically checked for any manufacturing defects by experienced supervisors so as to maintain a high standard of quality.

4.1.3 Owner/Engineer shall at all reasonable times have free access to the place where the pipes and collars/rubber rings are manufactured for the purpose of examining and testing the pipes and collars/rubber rings and of witnessing the test and manufacturing.

4.1.4 All tests specified either in this specification or in the relevant Indian Standards shall be performed by the supplier/contractor at his own cost and in presence of Owner/Engineer if desired. For this, sufficient notice before testing of the pipes and fittings shall be given to Owner/Engineer.

4.1.5 If the test is found unsatisfactory, Owner/Engineer may reject any or all pipes of that lot. The decision of Owner/Engineer in this matter shall be final and binding on Contractor and not subject to any arbitration or appeal

4.2 MATERIALS

4.2.1 Cement

Cement used for the manufacture of RCC pipes should be **Sulphate Resisting Cement (SRC)** only and shall confirm to relevant IS codes.

4.2.2 Aggregates

Aggregates used for the manufacture of RCC pipes shall conform to IS: 383. The maximum size of aggregate should not exceed one-third the thickness of the pipe or 20 mm, whichever is smaller.

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4.2.3 Mixing and Curing Water

Water shall be clean, colorless and free from objectionable quantities of organic matter, alkali, acid, salts or other impurities that might reduce the strength, durability or other desirable qualities of concrete and mortar

4.2.4 Reinforcement

Reinforcement used for the manufacture of the RCC pipes shall be mild steel Grade I or medium tensile steel bars conforming to IS: 432 (Part-I) or hard-drawn steel wire conforming to IS: 421 (Part-2). Reinforcement cages for pipes shall be as per relevant requirements of IS: 458

4.2.5 Concrete

Concrete used for the manufacture of RCC pipes shall conform to IS: 456. The minimum cement content and minimum compressive strength of concrete shall be as per relevant requirements of IS:458 (Latest Edition). Compressive strength tests shall be conducted on 15 cm cubes in accordance with the relevant requirements of IS: 456 and IS: 516.

4.2.6 Rubber Ring

Rubber ring chords used in pipe joints shall be EPDM rubbering as per IS 5382: 1985.

4.2.7 Curing

Pipes manufactured in compliance with IS:458 (Latest Edition) shall be either water cured or steam cured for minimum stipulated curing period in accordance with relevant requirements of the latest revised IS:458 (Latest Edition).

4.3 Dimensions

4.3.1 The internal diameter, wall thickness and length of barrel and collar of pipes, reinforcement (longitudinal and spiral), type of ends and minimum clear cover to reinforcement and strength test requirements shall be as per the relevant clauses/tables of IS: 458 for different classes of pipes.

Table – 1

Design and Strength Test Requirements of Concrete Pipes of Class NP3 Reinforced Concrete, Medium Duty, Non-Pressure Pipes

Internal Diameter of Pipes in mm	Barrel Wall Thickness	Reinforcements			Strength Test Requirements for Three Edge Bearing Test	
		Longitudinal, Mild Steel or Hard Drawn Steel		Spirals, Hard Draws Steel	Load to Produce 0.25 mm Crack kN/linear meter	Ultimate Load
		Minimum number	Kg/linear meter	Kg/linear meter		kN/linear meter
(1)	(2)	(3)	(4)	(5)	(6)	(7)
300	40	8	0.78	1.80	15.50	23.25
400	75	8	0.78	3.30	19.16	28.74
600	85	8 or 6+6	1.18	7.01	28.74	43.11
800	95	8 or 6+6	2.66	13.04	38.32	57.48
900	100	6 + 6	2.66	18.30	43.11	64.67
1000	115	6 + 6	2.66	21.52	47.90	71.85
1200	120	8 + 8	3.55	33.57	57.48	86.22
1400	135	8 + 8	3.55	46.21	67.06	100.60
1600	140	8 + 8	3.55	65.40	76.64	114.96
1800	150	12 + 12	9.36	87.10	86.22	129.33
2000	170	12 + 12	9.36	97.90	95.80	143.70
2200	185	12 + 12	9.36	133.30	105.38	158.07

Note:

1. If mild steel is used for spiral reinforcement, the weight specified under col.5 shall be increased to 140/125.
2. The longitudinal reinforcement given in this table is valid for pipes up to 2.5 m. effective length for internal diameter of pipe up to 250 mm and up to 3 m. effective length for higher diameter pipes.
3. Total mass of longitudinal reinforcement shall be calculated by multiplying the values given in col.4 by the length of the pipe and then deducting for the cover length provided at the two ends.
4. Concrete for pipes shall have a minimum compressive strength of 35 N/mm2 at 28 days.

Table – 2

Design and Strength Test Requirements of Concrete Pipes of Class NP3 Reinforced Concrete, Medium Duty, Non-Pressure Pipes Made by Vibrated Casting Process

Internal Diameter of Pipes in mm	Minimum Barrel Wall Thickness	Reinforcements			Strength Test Requirements for Three Edge Bearing Test	
		Longitudinal, Mild Steel or Hard Drawn Steel		Spirals, Hard Draws Steel	Load to Produce 0.25 mm Crack kN/linear meter	Ultimate Load kN/linear meter
		Minimum number	Kg/linear meter	Kg/linear meter		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
300	50	8	0.78	1.53	15.5	23.25
400	60	8	0.78	1.6	19.16	28.74
600	75	8 or 6 +6	1.18	2.2	28.74	43.11
800	95	8 or 6 +6	2.66	6.87	38.32	57.48
900	100	6 + 6	2.66	11.55	43.11	64.67
1000	115	6 + 6	2.66	15.7	47.9	71.85
1200	125	8 + 8	3.55	21.25	57.48	86.22
1400	140	8 + 8	3.55	30	67.06	100.6
1600	165	8 + 8	3.55	50.63	76.64	114.96
1800	180	12 + 12	9.36	64.19	86.22	129.33
2000	190	12 + 12	9.36	83.12	95.8	143.7
2200	210	12 + 12	9.36	105.53	105.4	158.07

Note: Concrete for pipes shall have a minimum compressive strength of 35 N/mm^2 at 28 days

4.4 Workmanship and Finish

4.4.1 Pipes shall be straight and free from cracks except that craze cracks may be permitted. The ends of the pipes shall be square with their longitudinal axis so that when placed in a straight line in the trench no opening between ends in contact shall exceed 3 mm in pipes up to 600 mm diameter (inclusive), and 6 mm in pipes larger than 600 mm diameter

4.4.2 The outside and inside surfaces of the pipes shall be smooth, dense and hard, and shall not be coated with cement wash or other preparation unless otherwise agreed to between Owner/Engineer and the manufacturer or supplier.

4.4.3 The pipes shall be free from defects resulting from imperfect grading of the aggregate, mixing or molding.

4.4.4 The pipes shall be free from local dents or bulges greater than 3 mm in depth and extending over a length in any direction greater than twice the thickness of barrel..

4.4.5 The deviation from straight in any pipe throughout its effective length, tested by means of a rigid straight edge parallel to the longitudinal axis of the pipe shall not exceed, for all diameters 3 mm forever meter run

4.5 Testing

All pipes for testing purposes shall be selected at random from the stock of the manufacturer and shall be such as would not otherwise be rejected under the criteria of tolerances as mentioned in IS: 458.(Latest Edition)

During manufacture, tests on concrete shall be carried out as per IS: 456. The manufacturer shall supply, when required to do so by Owner/Engineer the results of compressive tests of concrete cubes and split tensile tests of concrete cylinders made from the concrete used for the pipes. The manufacturer shall supply cylinders or cubes for test purposes required by the Owner/Engineer and such cylinders or cubes shall withstand the tests prescribed by the manufacturer for the hydrostatic test pressure. For non-pressure pipes, 2 percent of the pipes shall be tested for hydrostatic test pressure.

The specimen of pipes for the following tests shall be selected in accordance with relevant Clause of IS: 458 (Latest Edition) and tests in accordance with the methods described in IS: 3597.

i) Hydrostatic test
ii) Three edge bearing test
iii) Absorption test.

Note: Three edge bearing strength to produce 0.25 mm crack in case of special design of pipes shall be as per IS:458:2003.

For Inspection at manufacturing site 24 hrs. Access shall be provided to GUDC Engineers as well as engineer appointed by PMC/TPI agency. Apart from this GUDC will establish its own pipe testing facility where pipes will be randomly tested. The cost of transporting the pipe to the testing facility & testing charges shall be borne by the contractor

4.6 Sampling and Inspection

4.6.1 In any consignment, all the pipes of same class and size and manufactured under similar conditions of production shall be grouped together to constitute a lot. The conformity of a lot to the requirements of this specification shall be ascertained on the basis of tests on pipes selected from it

4.6.2 The number of pipes to be selected from the lot for testing shall be in accordance with Table 15 of IS: 458 (Latest Edition).

4.6.3 Pipes shall be selected at random. In order to ensure randomness, all the pipes in the lot may be arranged in a serial order and starting from any pipe, every 'n'th pipe be selected till the requisite number is obtained, n being the integral part of N/n, where N is the lot size and n is the sample size.

4.6.4 All pipes selected as per IS: 458 shall be inspected for dimensional requirements, finish and deviation from straight. A pipe failing to satisfy one or more of these requirements shall be considered as defective.

4.6.5 The number of pipes to be tested for tests under IS: 458 shall be in accordance with column 4 of Table 15 of IS: 458 (Latest Edition). These pipes shall be selected from pipes that have satisfied the requirements mentioned in Clause above.

4.6.6 A lot shall be considered as conforming to the requirements of IS:458 (Latest Edition) of the following conditions are satisfied.

(a) The number of defective pipes shall not be more than the permissible number given in column 3 of Table 15 of IS: 458 (Latest Edition).

(b) All the pipes tested for various tests as per IS-458 shall satisfy corresponding requirements of the tests.

(c) In case the number of pipes not satisfying requirements of any one or more tests, one or two further samples of same size shall be selected and tested for the test or tests in which failure has occurred. All these pipes shall satisfy the corresponding requirements of the test

4.7 Marking

The following information shall be clearly marked on each pipe:

(a) Internal diameter of pipe.

(b) Class of pipe.

(c) Date of manufacture, and

(d) Name of manufacturer or his registered trademark or both.

ITEM NO.5 :

Lowering, laying and jointing R. C. C. pipes in C. M. 1:1 1/2 of following diameters in proper position, grade and alignment at all level as directed by Engineer-in-charge including conveyance from stores to site of work, labour, giving hydraulic testing as per ISI code.

LAYING OF PIPES

The laying of RCC pipes shall confirm to Technical Specifications: Item:-6

JOINTING

GENERAL

Jointing of RCC pipes shall be done with SRC cement only and as per the requirements of following specifications and as per the relevant IS. The type of joints shall be as below. After jointing, extraneous material, if any, shall be removed from the inside of the pipe and the newly made joints shall be thoroughly cured. In case, rubber-sealing rings are used for jointing, these shall conform to IS 5382 and shall be of such type as mentioned in IS-458:2003.

1. FLUSH JOINT (INTERNAL)

This joint shall be generally used for culvert pipes of 900-mm diameter and over. The ends of the pipes are specially shaped to form a self-centering joint with an internal jointing space 13-mm wide. The finished joint is flush with both inside and outside with the pipe wall. The jointing space is filled with cement mortar in the proportion as specified in IS-458-2003, mixed sufficiently dry to remain in position when forced with a trowel or rammed.

2. FLUSH JOINT (EXTERNAL)

This joint is suitable for pipes which are too small for jointing from inside. This joint is composed of specially shaped pipe ends. Each end shall be butted against each other and adjusted in correct position. The jointing space shall then be filled with cement mortar as specified in IS-458-2003, sufficiently dry and finished off flush. Great care shall be taken to ensure that the projecting ends are not damaged as no repairs can be readily affected from inside the pipe

3. Spigot and Socket Joint (Flexible)

The RCC pipe with the rubber ring accurately positioned on the spigot shall be pushed well home into the socket of the previously laid pipe by means of uniformly applied pressure with the aid of a jack or similar appliance. The RCC pipes shall be of spigot and socket type and rubber rings as specified in IS-458-2003, shall be used, and the manufacturers instructions shall be deemed to form a part of these specifications. The rubber rings shall be lubricated before making the joint and the lubricant shall be soft soap water or an approved lubricant

supplied by the manufacturer. Socket & Spigot NP3 & NP4 pipe with rubber ring roll on joint for diameter up to 900 mm should be provided as per table 14 pf IS 458 : 2003. Socket & spigot NP3 & NP4 pipe with rubber ring confined joint for diameter 1000 mm to 2200 mm should be provided as per Table -17 of IS 458:2003

4. Cleaning Of Pipes

As soon as a stretch of RCC pipes has been laid complete from manhole to manhole or for a stretch as directed by Owner/Engineer, contractor shall run through the pipes both backwards and forwards a double disc or solid or closed cylinder 75 mm less in diameter than the internal diameter of pipes. The open end of the incomplete stretch of pipeline shall be securely closed as may be directed by Owner/Engineer to prevent entry of mud or silt etc.

If as a result of the removal of any obstructions Owner/Engineer considers that damages may have been caused to the pipelines, he shall be entitled to order the stretch to be tested immediately. Should such test prove unsatisfactory, contractor shall amend the work and carry out such further tests as are required by Owner/Engineer.

It shall also be ascertained by contractor that each stretch from manhole to manhole or the stretch as directed by Engineer is absolutely clear and without any obstruction by means of visual examination of the interior of the pipeline suitably enlightened by projected sunlight or otherwise.

5. Testing At Work Site

After laying and jointing of RCC pipes is completed the pipe line shall be tested at work site as per the following specifications and as directed by Owner / Engineer In-Charge. All equipment for testing at work site shall be supplied and erected by contractor and shall be rectified by him to the full satisfaction of Owner / Engineer In-Charge.

After the joints have thoroughly set and have been checked by Owner/Engineer and before backfilling the trenches, the entire section of the sewer or storm water drain shall be proved by contractor to be water tight by filling in pipes with water to the level of 1.50 m above the top of the highest pipe in the stretch and heading the water up for the period of one hour. The apparatus used for the purpose of testing shall be approved by Owner/Engineer. Contractor if required by Owner/Engineer shall dewater the excavated pit and keep it dry during the period of testing. The loss of water over a period of 30 minutes should be measured by adding water from a measuring vessel at regular 10 minutes intervals and noting the quantity required to maintain the original water level. For the approval of this test the average quantity added should not exceed 1 liter/hour/100 linear meters/10 mm of

nominal internal diameter. Any leakage including excessive sweating which causes a drop in the test water level will be visible and the defective part of the work should be removed and made good.

In case of pressure pipeline the completed stretch of pipeline shall be tested for site test pressure as specified in IS-458-2003. The site test pressure should not be less than the maximum operating pressure plus the calculated surge pressure, but in no case should it exceed the hydrostatic test pressure as specified in IS:458 (Latest Edition).

Measurement

All RCC pipes shall be measured according to the work actually done and no allowance will be made for any waste in cutting to the exact length required. The measurement for pipes shall be in running meter nearest to a cm. of length along the center line of pipe as actually laid at work sites.

The rate for providing, laying and jointing of RCC pipes shall be deemed to include the cost of rubber rings, jointing material, testing and extra excavation required for ordinary bedding of pipes and also for pipe sockets, if any.

Notes:

1 If any damage is caused to the pipeline during the execution of work or while cleaning/testing the pipeline as specified. Contractor shall be held responsible for the same and shall replace the damaged pipeline and retest the same at his own cost to the full satisfaction of Engineer.

2. Water for testing of pipeline shall be arranged by Contractor at his own cost.

3. Pipes shall be brought on site proportionate to the required progress for Thirty days

ITEM NO.6 :

Providing and constructing Sewer manholes, scraper manholes and unit house connection chamber, as per the type design in brick masonry in C. M. 1:5 and inside and outside 20mm thick plastering in C. M. 1:3 necessary 100 mm coping with reinforcement in R.C.C.M. 200 fixing C. I. steps and fixing manhole frame and covers (But excluding supply of manhole frame and covers) over manholes and house connection chambers and fixing Manhole covers (but excluding supplying of manhole covers) over scraper manhole etc. complete, providing and fixing safety chain wherever necessary as per the stipulations in the type design complete as per latest CPHEEO manual.(excl. excavation).

TYPE-A 1200 mm DIA
TYPE-B 1500 mm DIA
TYPE-C 1500 mm DIA
TYPE-D 1500 mm DIA

1. **MATERIALS :**

Water shall conform to M-1,Cement Conform to M-3,Stone coarse aggregate of 20 mm nominal size shall conform to M-5A, Grit shall conform to M-5, Steel reinforcement shall conform to M-11 . Brick shall conform to M-9, Cement mortar of specified proportion shall conform to M-7, The cast iron steps shall conform to M-27. "

Manhole cover with frame of required size and weight shall be procured by the contractor. Supply of manhole frame and cover shall be paid separately under respective item.

2. **WORKMANSHIP :**

The manhole of different types and sizes as specified shall be constructed in sewer line at such place and to such levels and dimension as shown in drawing or as directed.

Excavation :-

The excavation for construction of manhole including dismantling of all types of roads surface guarding, barricading, lightening the trenches, baling out water if required, removing and replacing, shifting of telephone/electric cables, pipe line etc. and all other safety provisions like shoring and strutting etc. till refilling of trenches and completion of manhole construction, stacking of excavated stuff within the specified lead, back filling of selected excavated earth, watering and consolation etc. complete shall be carried out as per relevant specification, including disposal of surplus soil as directed.

Concrete work :-

The bed concrete in C.C. 1:3:6, Coping in C.C. 1:1.5:3 and benching concrete in proportion C.C. 1:2:4 (1 Cement : 2 coarse sand : stone aggregate of 20 mm nominal size) by volume with necessary centering and shuttering work shall be provided. It shall be placed deemed and or vibrated and cured as directed by Engineer-in-charge.

REINFORCEMENT :

All the reinforcement bars shall be accurately placed in exact position shown on the drawings and shall be security held in position during placing of concrete by annealed No. 1 binding work not less than 1 mm is size and by using stay block or metal chair spacers, metal hangers, supporting wires or other approved devices it sufficiently close intervals. Bars shall not be allowed to lag between supports nor displaced during concrete of any other operation of the work. Reinforcement after being placed in position shall be maintained in a clean condition until completely embedded in concrete. Special care shall be exercised to prevent any displacement of reinforcement in concrete already

placed. To prevent reinforcement from corrosion, concrete cover shall be provided as indicated on drawings.

Bars shall be bent cold to specified shape and dimensions or as directed, attain proper radius of bends, Bars shall not be bent or straightened in a manner that will injure the materials. Bars bend during transport of handling shall be straightened before being used on the work. Unless otherwise specified for mild steel a `U' type hook at the end of each bar shall invariably be provided to main reinforcement.

In case bars which are not round and in case of deformed bars, the diameter shall be taken as the diameter of circle having an equivalent effective area. The cold twisted steel bars shall be used without hooks at the ends. Deformed bars without hooks shall however, comply with relevant anchorage requirements.

Bars crossing each other where required shall be secured by binding wires (annealed) of size not less than 1 mm in such a manner that they do not slip over each other at the time of fixing and concreting.

As far as possible bars of full length shall be used. In case this not possible overlapping of bars shall be done as directed. The overlaps shall be staggered for different bars and located at points along the span where neither shear nor bending moment is maximum.

When permitted or specified on the drawings joints of reinforcement bars shall butt welded so as to transmit their full stresses. Welded joints shall preferably located at points where steel will not be subject to more than 75 percent of the maximum permissible stresses and welds so staggered that at any one section not more than 20 percent of the rods are welded. It shall be ensured that no voids are left in welding and when welding is done in two or three stages, previous surface shall be cleaned properly. Ends of the bars shall be cleaned of all loose scale, rust, grease, paint and other foreign matter before welding. Only competent welders shall be employed on the work.

PLASTER WORK :

The surface shall be cleaned of all dust, loose mortar droppings, traces of algae efflorescence and other foreign mortar by water or by brushing. Smooth surface shall be roughened by wire brushing not hard by racking if it is hard. In case of concrete surface, if a chemical retarder has been applied to the form work the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the retarders is left on the surface. Trimming of projections on brick / concrete surface where necessary shall be carried out to get an even surface.

The work shall be soaked but only damped evenly before applying the plaster. If the surface become dry, such areas shall be moistened again.

The plaster about 15 x 15 cms. shall be first applied horizontally and vertically at not more than 2 meters intervals over the entire surface to serve as gauge. The surface of these gauges shall be truly in plane of the finished plastered surface. The mortar shall then be applied in uniform surface slightly more than the specified thickness, then brought to a true surface by working a wooden straight edge reaching across the gauges with small upward and sideways movements at a time. Finally, the surface shall be finished off true with a trowel of wooden float accordingly excessive trowel ling of over working the float shall be avoided. All corners arises angles and junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Rounding or chamfering corners, arises junctions etc. shall be carried out with proper templates the size required.

Cement mortar for plaster shall be used within half an hour after addition of water. And mortar for plaster which is partially set shall be rejected and removed forthwith from the site.

In suspending the work at the end of the day, the plaster shall be left out clean to the line both horizontally and vertically, when recommending the plaster the edge of the old work shall be scraped clear and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly get together. Plastering work shall be closed at the end of the day on the body of the wall and nearer than 15 cm. to any corners of arises. It shall not be closed on the body of features such as plaster bends and cornices not at the corners or arises. Horizontal joints in plaster work shall not also occur on walls and copings these invariably leads to leakage. No portion of the surface shall be depth out initially to be packed up later on.

POINTING :

The flush pointing work shall be carried out with cement mortar of required proportion by volume. Before pointing to be started the joints shall be racked to such depth that the average of new mortar measured from the sunk surface of the finished pointing or from the edge or the brick shall be average 10 mm.

The mortar shall be pressed into the racked out joints with a pointing trowel according to the type of pointing specified in item or as directed. The mortar shall not spread over the corners of finished work i.e at fixing of C.I. Steps and M.H. cover.

RCC WORK :

Vertical shaft of manhole shall be in RCC M-30 pre-cast.

The entries and exits of main sewers as well as house service sewers requires careful detailing because the issue of puncturing the walls for insertions of especially house service sewers later on is impossible. These shall be managed as detailed below.

- The cone portion shall be separately cast and its design standardized with respect to the diameter of its base.

- The vertical shaft is best pre-cast to have a better quality control of raw materials and workmanship, which is otherwise very suspect in local situations of every manhole.
- The shaft itself shall be made of rings with lap joints of the annular rim and duly jointed at site by cement mortar or elasto-polymers. The varying heights of the manhole are obtained by choosing the bottom ring deeper than the fractional height needed there and filling up the bottom floor after placing the ring such that the invert level of the sewer is obtained thereby.
- This ring shall have a vertical inverted U cut out in casting itself to insert the sewer pipes and caulk the annular space using cement concrete with cement-based water proofing admixtures. The dimensions of the U cut out shall be standardized to match the OD of proposed sewers and a clear cover of 50 cm all round for caulking.
- The position of the vertical inverted U cut outs will normally be 180 degrees apart in plan but in cases of junction manholes and drop manholes it may be at differing angles in plan and needs to be precast suitably and shall not be chiseled out in the field.
- For insertion of the house service sewers into the manholes, it is necessary to have a precast ring section below the corbel portion, with holes at 45 degrees to the public sewer line to facilitate insertion of three house service sewers on each side of the public sewer axis. Usually the house service sewers shall be 110 mm or 160 mm UPVC 4 kg/sqcm (as detailed in sewer laying section). Accordingly, the height of the ring shall be 250 mm and 300 mm to permit filling of the annular interspaces between the sewer and the opening with cement concrete of at least 50 mm around the finished sewer.

  Trimming of projections on brick / concrete surface where necessary shall be carried out to get an even surface.

FIXING OF POLY PROPYLENE STEPS AND MANHOLE COVER :

During the construction of masonry wall of the manhole the cement mortar of required proportion shall be used for embedding the Poly propylene steps in the wall masonry. The spacing of steps in the masonry shall be 300 mm center to center in the staggered position in the vertical direction with two staggered raw at 385 mm center to center in the horizontal direction. The top of the manhole shall not be more than 300 mm above the first step from top of manhole frame and cover and the center line of two staggered rows shall be the center line of the shorter side of manhole frame in the roof of chamber.

The detailed specifications for the "Poly propylene steps as below:

The Polypropylene conforming to an ASTM D-4101, injection molded around a 12 mm dia. IS 1786 grade Fe-415 steel reinforcing bar and should meet the load required 225 Kg. as per IS-5455. The measurement should be as per attached drawing. The tolerance in the length and width is +/- 5 mm and +/- 1 mm in thickness. The weight of the steps should not be less than 0.900 Kg.

Un chequered portion of the step shall be inserted with the rich cement mortar during the course of masonry work so constructed around the steps as to keep the step on its right position. The non-slip grip chequered portion of the steps shall be well kept outside the masonry.

During fixing of the steps, the wall should not be damaged and shall not vibrate or shall not shake during ascents and decants otherwise they shall have to be re fixed correctly as per the drawings or as mentioned above.

Manhole frame shall be firmly and securely laid on top of shafts of conical tops in 25 mm thick cement mortar and shall be embedded in 150 mm thick cement concrete of proportion 1:2:4 (1 Cement : 2 coarse sand : 4 Kapchi as aggregate of 20 mm nominal size) in such a way that the top of M.H. frame shall be flush with concrete surface and top surface neatly finished 25 mm thick with cement mortar 1:3 in conformity with ground or road levels.

- **OTHER REQUIREMENTS :**

As per line and level and size of the manhole pit shall be excavated as per drawing or as ordered by the Engineer.

The foundation concrete 1:3:6 with required thickness as per drawing or as directed shall be laid after compacting the bottom of the pit. The cement concrete shall conform to specified specification of Cement Concrete.

The clear inside chamber size of opening shall be as per the drawing or as directed by the Engineer-in-charge.

The masonry wall shall be plastered inside and outside with 15 mm thick 1:3 cement mortar. The off set for the concrete foundation shall be 100 mm on all sides beyond walls of chamber.

Whenever pipes enter or leave the masonry chamber bricks on edge must be so laid around the upper half of the pipes so as to form the arch to prevent the weight of the masonry chamber over it.

On the top of masonry walls RCC coping 1:1.5:3 150mm thick or as directed shall be laid and then 1:1 cement mortar shall be laid and then R.C.C. slab of grade 1:2:4 necessary and as directed by the Engineer with coarse aggregate of trap metal of 20 mm nominal shall be laid necessary from work and centering shall have to be provided by the contractor at his own cost as per relevant specification of cement concrete.

In the bottom of manhole the channel and benching shall be done in C.C. 1:2:4 (1 Cement : 2 Coarse sand : 4 graded stone aggregate of 20 mm nominal size) The channel at the bottom of the chamber shall be plastered 15 mm thick in c.m. 1:3 (1 Cement : 3 fine sand) and steel trowel smooth.

Channels shall be in semicircular in the bottom half and a diameter equal to the sewer. Above the horizontal diameter, the side shall be extended vertically to the same level as the crown of the outgoing pipe and the top edge shall be suitably rounded off. The branch channels shall also be similarly constructed with respect to the benching but at their junctions with the main channel an appropriate fall suitably rounded off in the direction of flow in the main channel shall be given.

For conical shaft of manhole necessary conical portion shall be treated from 750 mm below the bottom of concrete of slab for fixing of manhole cover and frame.

The item includes curing of all the cement work for 14 days.

If dewatering is required by installing pumping sets the same shall be paid separately
Under respective item.

The item include :-

(i) Bed concrete slab concrete and copping with necessary reinforcement.
(ii) Providing and fixing polypropylene steps.
(iv) Carting, conveying and fixing of manhole frame cover with necessary concrete and finishing.
(v) Refilling with necessary watering and consolidation.
(vi) Excavation with shoring is required.
(vii) Leveling coarse concrete
(viii) Disposal of surplus soil
(ix) Curing for 14 days.

ITEM NO.7 :
Dewatering in all sorts of Soil and Soft murum, hard murrum and boulders, soft rock , Hard rock , Extra for Dewatering in all strata's by pumping set of required capacity including temporary platform carting pumping at site and fixing the same in position including all accessories, and fuel and labour etc. complete.

Dewatering has to be done for removal of water so that work can be carried out there. Dewatering has to be done as directed by engineer in charge & as per site condition.

1. This scope of work outlines the requirements for DTP (Distempering, Tarring, and Pointing) for dewatering by a pumping set at the project site. The work involves providing the necessary equipment, labor, and accessories for dewatering, including

temporary platform carting, pumping, fixing the pump in position, and ensuring the availability of fuel for the entire duration of the dewatering process.

2. Dewatering is an essential process to remove accumulated water from excavation sites, construction pits, or any other area where water ingress poses a challenge to construction activities. The pumping set will be used to facilitate the removal of water, ensuring a safe and dry working environment.

3. Technical Specifications: 3.1. Pumping Set: a. The pumping set shall have the required capacity to handle the anticipated volume of water to be pumped. b. The pump must be in good working condition and capable of handling solids if present in the water. c. All accessories necessary for the pump's efficient operation, such as suction hoses, delivery hoses, and fittings, shall be provided.

3.2. Temporary Platform and Carting: a. A temporary platform will be constructed to position the pumping set at a suitable elevation for efficient dewatering. b. Ensure that the platform is stable, safe, and capable of supporting the weight of the pumping set. c. Proper carting arrangements will be made for transporting the pumping set to the site and moving it as needed during the dewatering process.

3.3. Pumping and Fixing: a. The pumping set shall be installed in a strategic location to maximize water removal efficiency. b. Adequate measures will be taken to secure the pumping set in position to prevent movement or displacement during operation.

3.4. Fuel and Labour: a. Sufficient fuel will be made available for the entire dewatering duration to ensure uninterrupted operation of the pumping set. b. Adequate and skilled labor will be assigned to manage the dewatering process, including pump operation, maintenance, and monitoring.

4. Safety Measures: a. Implement all necessary safety precautions during the dewatering process to protect the workers and the public. b. Ensure that all personnel involved in dewatering are trained in safety procedures and equipment operation. c. Provide safety barriers and signage to warn people of the dewatering activity and restricted areas.

5. Quality Control: a. Regularly inspect the pumping set and its components to ensure proper functioning. b. Monitor the dewatering progress and adjust the pumping rate as necessary to maintain efficiency.

6. Completion and Handover: Upon completion of the dewatering process, conduct a thorough inspection to ensure successful removal of water from the designated area. Prepare a comprehensive handover report detailing the work done, quality assurance measures, and any additional notes for reference

ITEM NO.8 :
RCC precast M.H. Frame & Cover Manufacture, supply & Delivery at store or at site of work precast RCC M.200Frame & cover suitable to drainage M.H. and as per type design & Drawing including cost of reinforcement M.S.Angles or Flat, curing mold work etc.
(A) For Circular manhole (heavy duty)

Precast RCC Manhole Frame & cover shall be as per IS: 12592 (part – I & II). The M.H. Frame & Cover shall be of Heavy duty of Grade designation HD- 20 – Circular of Internal clear opening 500 mm.

Materials such as cement, aggregate, water, reinforcement shall be of standard as prescribed in the material part. Other materials to be used for Frame & Cover shall be as under:

Concrete:

The mix proportions of concrete shall be determined by the manufacturer and shall be such as will produce a dense concrete without voids, honey combing, etc.(IS: 456 – 1978). The minimum cement content in the concrete shall be 360 Kg/m3 with a maximum water content ratio of 0.45. Concrete weaker than grade M 30 shall not be used. Compaction of concrete shall be done by machine vibration.

Steel Fibers:

The diameter/equivalent diameter of steel fibers shall not be greater than 0.75 mm. The aspect ratio of the fibers shall be in the range of 50 to 80. The minimum volume of fibers, where used, shall be 0.5 percent of the volume of the concrete.

Additives or Admixtures:

Additives or admixtures may be added either as additives to the cement during manufacture, or as admixtures to the concrete mix. Additives or admixtures used for covers may be:

a) Accelerating, water-reducing and air-entertaining admixtures confirming to IS: 9103-1979.
b) Coloring pigments
c) Fly ash confirming to IS: 3812-1981
d) Waterproofing agents conforming to IS: 2645-1975.

Dimensions and Tolerances:

Length, breadth and diameter of precast concrete manhole covers shall be such that the maximum clearance at top between the cover & frame of corresponding grade and shape shall be 5 mm. The minimum thickness of heavy duty precast manhole cover shall be 70 mm. The top surface of frame & cover is in level within a tolerance of ± 5 mm.

Placing of reinforcement, compaction of concrete & curing shall be attended as per IS: 12592. Edge Protection & Finishing shall be provided as per IS.

Physical requirements

All the frame & covers shall be sound and shall be free from cracks & other defects, which interferes with the proper placing of the units or impair the strength or performance of the units. Minor chippings resulting from the customary methods of handling and transportation shall not be deemed ground for rejection.

Marking: Each Cover shall have following marking:

Date of manufacture

Grade Designation

ISI mark

Testing:

Frame & covers will be tested at factory by owner / consultant & accepted goods shall be procured on site of work.

ITEM NO.9 :

Providing and constructing rectangular brick masonry chamber for house connection as per type design in brick masonry in C. M. 1:3 including M-100 in foundation M-150 in benching inside plastering in C. M. 1:3 and outside plastering in C. M. 1:3 coping in M200 and fixing RCC precast manhole frame and covers, but Excl. supply of manhole and cover etc. complete excl. excavation.

Location

House connection chambers shall be constructed at places approved by the Employer's Representative.

In case of manhole along the river or drain the top of Manhole shall be raised to safe height above the highest flood level of river /drain as directed by E.I.C.

1.2 Excavation

Excavation, shoring, dewatering etc. for the pits of manholes,/ House connection chamber laying of pipes and fittings/specials shall be done in accordance with Employer's Requirements described elsewhere in the document.

1.3 PLAIN CEMENT CONCRETE:

The water, sand, cement & stone aggregate of 40 mm nominal size shall be used of approved quality as per standard specification in I.S. 456. Detail specification of materials as given in General Technical Specification shall be observed.

1.3.1 Workmanship:

Before starting concrete the bed of foundation trenches shall be cleared of all loose materials, leveled, watered and rammed as directed.

1.3.2 Mixing:

The concrete shall be mixed in a mechanical mixer at the site of work. Hand mixing may however be allowed for smaller quality of work if approved by the Engineer-in-charge. When hand mixing is permitted by the Engineer-in-charge in case of breakdown of machineries and in the interest of the work, it shall be carried out on a water tight platform and shall be

taken to ensure that mixing is continued until the mass is uniform in colour and consistency. However, in such cases 10% more cement than otherwise required shall have to be used without any extra cost. The mixing in mechanical mixer shall be done for a period of 1.5 to 2 minutes. The quantity of water shall be just sufficient to produce a dense concrete of required workability for the purpose.

1.3.3 Transporting and placing the concrete:

The concrete shall be handed from the place of mixing to the final position in not more than 15 minutes by the method as directed and shall be placed into the final position, compacted and finished within 30 minutes of mixing with Water i.e. before the setting commences.

The concrete shall be laid as per the drawing dimension.

1.3.4 Compacting:

The concrete shall be rammed rapidly with heavy iron rammers to get the required compaction and to allow all the interstices to be filled with mortar.

1.3.5 Curing:

After the final set, concrete shall be kept continuously wet, if required by pounding for a period of not less than 7 days from the date of placement.

1.4 Bricks

Bricks used for construction of sewer manholes shall conform to the relevant Indian Standards IS: 4883-1988. They shall be sound, hard, and homogeneous in texture, well burnt in kiln without being vitrified, table molded, deep red, cherry or copper colored, of regular shape and size and shall have sharp and square and parallel faces. The bricks shall be free from pores, chips, flaws or humps of any kind. Bricks containing ungrounded particles and/or which absorb water more than 1/6th of their weight when soaked in water for twenty-four hours shall be rejected. Over burnt or under burnt bricks shall be liable to rejection. The bricks shall give a clear ringing sound when struck and shall have a minimum crushing strength of 50 kg/sq.cm. Unless otherwise noted in drawings. The class and quality requirements of bricks shall be as laid down in relevant IS.

The size of the brick shall be 23.0 x 11.5 x 7.5 cm. unless otherwise specified; but tolerance up to $\pm$ 3 mm in each direction shall be permitted. Only full size brick shall be used for masonry work. Brickbats shall be used only with the permission of Employer's Representative to make up required wall length or for bonding. Sample bricks shall be submitted to the Employer's Representative for approval and bricks supplied shall conform to approved samples. If required by the Employer's Representative, brick sample shall be tested as per IS: 3495 by Contractor. Bricks rejected by the Employer's Representative shall be removed from the Site within 24 hours.

1.5 Cement Mortar

Mortar for brick masonry shall be prepared as per IS: 2250. Manholes shall be constructed in

brick masonry with cement mortar (1:3) unless otherwise specified. Gauge boxes for sand shall be of such dimensions that one bag containing 50 kg. Of cement forms one unit. The sand shall be free from clay, shale, loam, alkali and organic matter and shall be of sound, hard, clean and durable particles. Sand shall be as approved by the Employer's Representative. If required by the Employer's Representative Sand shall be thoroughly washed till it is free of any contamination.

For preparing cement mortar, the ingredients shall first be mixed thoroughly in dry conditions. Water shall then be added and mixing continued to give a uniform mix of required consistency. Cement mortar shall be used within 25 minutes of mixing. Mortar left unused in the specified period shall be rejected.

The Contractor shall arrange for tests on mortar samples if so required by Employer's Representative. Re-tempering of mortar shall not be permitted.

1.6 Brick Masonry

All bricks shall be thoroughly soaked in clean water for at least one hour immediately before being laid. The cement mortar for brick masonry work of manholes shall be in the proportion specified in drawing. Brick work 230 mm thick and over shall be laid in English Bond unless otherwise specified. 115 mm thick brick work shall be laid with stretchers. For laying bricks, a layer of mortar shall be spread over the full width of suitable length of the lower course. Each brick shall be pressed into the mortar and shoved into final position so as to embed the brick fully in mortar. Bricks shall be laid with frogs uppermost.

All brickwork shall be in plumb and square/ circular unless otherwise shown on drawing and true to dimensions shown. Vertical joints in alternate courses shall come directly one over the other and be in line. Horizontal courses shall be leveled. The thickness of brick courses shall be kept uniform. For walls of thickness greater than 230 mm both faces shall be kept in vertical planes unless otherwise specified. All interconnected brickwork shall be carried out at nearly one level (so that there is uniform distribution of pressure on the supporting structure) and no portion of the work shall be left more than one course lower than the adjacent work. Where this is not possible, the work shall be raked back according to bond (and not saw toothed) at an angle not exceeding 45 degrees. But in no case the level difference between adjoining walls shall exceed 1.25 M. Workmanship 2212.

Brick shall be so laid that all joints are well filled with mortar. The thickness of joints shall not be less than 6 mm and not more than 10 mm. The face joints shall be raked to a minimum depth of 12 mm by raking tools daily during the progress of work when the mortar is still green, so as to provide a proper key for the plastering to be done. When plastering is not required to be done, the joints shall be uniform in thickness and be struck flush and finished at the time of laying. The face of brickwork shall be cleaned daily and all mortar droppings removed. The surface of each course shall be thoroughly cleaned of all dirt before another course is laid on top. If mortar in the lower courses has begun to set, the joints shall be

raked out to a depth of 12 mm before another course is laid.

1.7 Cement Plaster

All joints in masonry shall be raked to a depth of 12 mm with hooked tool made for the purpose when the mortar is still green and in any case within 48 hours of its laying. The surface to be rendered shall be washed with fresh clean water free from all dirt, loose material, grease etc. and thoroughly wetted for 6 hours before plastering work is commenced. Concrete surfaces to be rendered will however be kept dry. The wall should not be too wet but only damp at the time of plastering. The damping shall be uniform to get uniform bond between the plaster and the wall.

The proportion of the cement mortar shall be as approved on relevant drawings. Cement shall be mixed thoroughly in dry condition and then just enough water added to obtain a workable consistency. The quality of water, sand and cement shall be as per relevant I.S. The mortar thus mixed shall be used immediately and in no case shall the mortar be allowed to remain for more than 25 minutes after mixing with water.

Curing of plaster shall be started as soon as the applied plaster has hardened enough so as not to be damaged. Curing shall be done by continuously applying water in a fine spray and shall be carried out for at least 7 days.

Water proof plastering shall be done on inner face of brick masonry in cement mortar (1:3) and 20 mm thick unless otherwise specified with required water proofing compared.

Plastering work shall be carried out in two layers, to the inner face the first layer being 14 mm thick and the second layer being 6 mm thick. The first layer shall be dashed against the prepared surface with a trowel to obtain an even surface. The second layer shall then be applied and finished leaving an even and uniform surface, trowel finished unless otherwise approved by the Employer's Representative.

1.8 Cement Concrete Channel

The channel for the manhole or chamber shall be constructed in cement concrete of M15 grade. Both sides of the channel shall be taken up to the level of the crown of the outgoing sewer. They shall be benched up in concrete and rendered in cement mortar (1:1) of 20 mm thickness and formed to a slope of 1 in 12 towards the channel.

1.9 Pipe Entering or Leaving Manhole/ House connection chambers

Whenever a pipe enters or leaves a manhole chamber, bricks on edge must be cut to a proper form and laid around the upper end of the pipe so as to form an arch. All around the pipes, there shall be a joint of cement mortar (1:2) 13 mm thick between it and the bricks.

1.10 Scaffolding

For brick work in M.H., single scaffolding shall be permitted. In such cases, the inner end of the horizontal scaffolding pole shall rest in a hole provided only in the header course for the purpose. Only one header for each pole shall be left out. Such holes for scaffolding shall, however, not are allowed in pillars/columns less than one meter in width, or immediately

near the skew backs of arches. The holes left in masonry works for scaffolding purpose shall be filled and made good before plastering.

1.11 Precast Manhole Frame & cover shall be fixed on manhole chamber in RCC M 30 as provided in a drawing.

1.12 Deformed / TMT bars confirming to relevant IS of grade Fe 500 shall be used with RCC coping work for fixing M.H. frame & cover on M.H.

1.13 C.I. Steps:

The steps as per detail specification shall be fixed in the fashion narrated in drawing. if required as per drawing.

Where the depth of invert of manhole chamber exceeds 800 mm, steps of approved pattern shall be fixed in the brickwork at the interval of 300 mm vertically and staggered at 380 mm horizontally center to center with C.C. M15.

1.14 75 mm all round vata in C.M. 1:3 shall be provided at bottom of outer periphery of masonry work over foundation concrete as per drawing.

1.15 Coping:

Coping in M-20 shall be carried out on all sides of House Connection chamber for 100 in thickness. No reinforcement is required.

1.16 Fixing:

Frame and Cover brought as per the ***item no.4 schedule B1*** checked for creakiness or any damages, damages frame and cover will be rejected and remove for the site.

Frame shall be fixed on laid coping on wall after placing rich cement slurry over it so that frame shall be fixed tightly.

1.17 Curing:

All PCC, R.C.C., Brick masonry, plaster, etc. shall be kept wet for seven days. During this period it shall be suitably protected from all damages.

1.18 Making holes in existing manhole chamber of sewer collecting system for house connection & repairing the same will be in contractor's scope. No extra payment will be made for this job.

1.19 Mode of Measurement:

The measurement of House connection chamber will be taken on Number basis as per type design for specified depth up to 0.9 mt

ITEM NO.10 :
Refilling the pipeline trenches incl. ramming, watering, consolidating desposal of surplus stuff as directed within a radius of 3 km. With selected soil brougth from outside including all lead Excavated soil Refilled as directed

Filling in Trenches

Filling in trenches for pipes and drains shall be commenced as soon as the joints of pipe and drains have been tested and passed. The backfilling material shall be properly consolidated taking due care so that no damage is caused to the pipes.

Where the trenches are excavated in soil, the filling from the bottom of the trench to the level of the center line of the pipe shall be done by hand compaction with selected approved earth in layers not exceeding 8 cm; backfilling above the level of the center line of the pipes shall be done with selected earth by hand compaction, or other approved means in layers not exceeding 15 cm. in case of excavation of trenches in rock, the filling up to a level 30 cm above the top of the pipe shall be done with fine materials such as earth, murrum, etc. The filling up to the level of the centerline of the pipe shall be done by hand compaction in layers not exceeding 8 cm whereas the filling above the centerline of the pipe shall be done by hand compaction or approved means in layers not exceeding 15 cm. The filling from a level 30 cm above the top of the pipe to the top of the trench shall be done by hand or other approved mechanical methods with broken rock filling of size not exceeding 15 cm mixed with fine material as available to fill up the voids.

Filling of the trenches shall be carried out simultaneously on both sides of the pipe to avoid unequal pressure on the pipe

ITEM NO. 11 :
Providing and supplying ISI marked only Standard length Stoneware pipes in standard lengths of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. (IS - 651 / 1989).& Lowering, laying and jointing Stone Ware pipes of following diameters with cement joints in C. M. 1:1 proportion in proper position, grade and alignment at all level as directed by Engineer-in-charge including conveyance from stores to site of work, Jointing material etc. comp.
Class A 150 mm dia

Stoneware pipes and fittings:

All pipes with spigot and socket ends shall conform to IS: 651/3006 and shall be of grade `A'. These shall be sound, free from visible defects such as fine cracks or hair cracks. The glaze of the pipes shall be free from crazing. The pipes shall give a sharp clear note when struck with a light hammer.

The following information shall be clearly marked on each pipe and fitting:

(a) Internal diameter;
(b) Grade;
(c) Date of manufacture;
(d) Name of manufacturer or his registered trade-mark or both.

All pipes and fittings shall have ISI mark.

Jointing of GSW pipes and fittings shall be done as per the requirements of the following Employer's Requirements and the relevant IS. After jointing, extraneous material if any shall be removed from the inside of the pipes and fittings and the newly made joints shall be thoroughly cured. In case, rubber sealing rings are used for jointing, these shall conform to IS: 5382

1. Providing and Supplying ISI Marked Standard Length Stoneware Pipes:
   - Material Requirements:
     - Material: Stoneware
     - Standard: IS - 651 / 1989
   - Pipe Sizes:
     - Diameter: 150 mm
     - Class: A
   - Compliance with Standards:
     - The supplied pipes shall conform to the specifications outlined in IS - 651 / 1989.
   - Transportation and Handling:
     - The supplier shall be responsible for the safe transportation, handling, and delivery of the Stoneware pipes to the specified location.
     - All associated costs, including taxes, insurance, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, and stacking, shall be included in the supplier's scope.
2. Lowering, Laying, and Jointing of Stoneware Pipes:
   - Pipe Sizes:
     - Diameter: 150 mm
   - Jointing Material:
     - Cement mortar mix in the proportion of 1:1 (C. M. 1:1) shall be used for jointing.
   - Installation and Alignment:
     - Pipes shall be properly lowered into the designated position.
     - Pipes shall be laid and jointed in accordance with the specified proportion (C. M. 1:1) and as per the Engineer-in-charge's direction.
     - Proper alignment and grade shall be ensured as per the project specifications.
   - Compaction and Finishing:
     - After jointing, proper compaction of the surrounding soil or backfill material shall be carried out.
     - The site shall be left in a neat and tidy condition upon completion of work.
   - Compliance with Standards:
     - The installation shall comply with the relevant standards and specifications for Stoneware pipes and jointing procedures.

ITEM NO. 12 :
Add for Restoration of infrastructure like kharkuwa, Electrical line, Telephonic cables all types, water lines, gas line, septic tanks, etc.

A. Kharkuwa
- **0.0 to 1.5 mt**
- **1.5 to 3.0 mt**

B. Electrical / Telephone cable

ITEM NO. 13 :

Providing and supplying D. I. (K-7) pipes for following nominal bore diameter with internal cement mortar lining including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading,conveyance to departmental stores, stacking etc. complete. (IS 8329-2000). Rate for DI pipe based on Wholesale Price index of Pig Iron as 157.60 for the month of Dec-2022. For sewerage project cement mortor lining shall be with sulphate resistance cement

DUCTILE IRON PIPES:

Note: Wherever International Standards or Indian standards / specifications are mentioned, their equivalent or higher standards / specifications are also acceptable

Supply and Delivery of Ductile Iron Pipe as per IS: 8329-2000 or its latest revision or amendments if any including jointing material as EPDM ring as per IS 5382-1985 and ISO: 4633-1996 or its latest revision or amendments if any.

Standards

The following standards, specifications and codes are part of this specification. In all cases, the latest revision of the including all applicable official amendments and revisions shall be referred to. In case of discrepancy between this specification and those referred to herein, this specification shall govern.

1. ISO: 10803-1997 Design method for ductile iron pipes
2. IS: 8329-2000 Centrifugally Cast (spun) ductile iron pressure pipes for water, gas and sewage
3. ISO: 2531-1991 Ductile iron pipes, fittings and accessories for pressure pipelines.
4. ISO: 4179-1985 ductile iron pipes for pressure and non-pressure-Centrifugal cement mortar lining – General requirements.
5. IS: 8112 Specification for 43 Grade ordinary Portland cement.
6. BS: 3416 Bitumen based coatings for cold application, suitable for use in contact with potable water.
7. ISO: 8179-1995 ductile iron pipes-External coating-Part-1 Metallic Zinc with finishing layer.
8. IS: 638 Sheet rubber jointing and rubber insertion jointing.
9. ISO: 4633-1996 Rubber Seals-Joint rings.
10. IS: 5382-1985 Specification for Rubber sealing rings for gas mains, water mains and sewers.
11. AWWA C600 Installation of ductile iron water mains and their appurtenances.

1 Internal Diameter:

The nominal values of the internal diameters of pipe, expressed in millimeters are approximately equal to the number indicating their nominal sizes DN.

2 Length:

The working length of socket and spigot pipes shall be 5 m, 5.5 m, or 6 meters.

3 Thickness:

The wall thickness of pipe 'e' in mm shall be calculated as a function of nominal diameter by the following equation with minimum of 5 mm.

e = K (0.5 + 0.001 DN)

Where: e = wall thickness in mm, DN = the nominal diameter, K = the whole number coefficient

4 EPDM Rubber Gasket:

Rubber Gasket shall be suitably for Push-on-Joint.

The spigot ends shall be suitably chamfered or rounded off to facilitate smooth entry of pipe in the socket fitted with the rubber gasket

Rubber Gasket shall confirm to IS 5382-1985 and ISO: 4633-1996 its latest revision or amendments if any.

5 Sampling Criteria:

Sampling criteria for various tests, unless specified in IS 8329-2000, shall be as laid down in IS 11606. Mechanical test, Brunel hardness test, Hydrostatic test etc shall be as per IS 8329-2000

6 Tolerances on External Diameter:

The nominal external diameter (DE) of the spigot end of socket and spigot pipes and when circumferentially using a diameter tape measured shall confirm to the requirements specified as follow. The positive tolerance is +1 mm and applies to all thickness classes of pipes. The maximum negative tolerance of the external diameter is specified as follow:

DN	Nominal	Positive Tolerance	Negative Tolerance
80	98	+1	-2.2
100	118	+1	-2.8
125	144	+1	-2.8
150	170	+1	-2.9
200	222	+1	-3.0
250	274	+1	-3.1
300	326	+1	-3.3
350	378	+1	-3.4
400	429	+1	-3.5
450	480	+1	-3.6
500	532	+1	-3.8
600	635	+1	-4.0

7 Tolerance on Ovality:

Pipes shall be as far as possible circular internally and externally. The tolerance for out-or-roundness of the socket and spigot ends is given below :

Nominal Diameter in mm	Allowable Difference Between Minor Axis and DE in mm
80 to 300	1.0
350 to 600	1.75
700	2.0
750 to 800	2.4

900 to 1000	3.5

8 Tolerance in thickness

The tolerance on wall thickness (e) and the flange thickness (b) of the pipes shall be as below:

Dimensions	Tolerance in mm
Wall thickness (e)	- (1.3 + 0.001 DN)(1)
Flange thickness (b)	+ (2+0.05b) & - (2+0.05b)

9 Coating

Pipe shall be delivered internally and externally coated.

External Coating:

Pipe shall be metallic zinc coated and after that it shall be given a finishing layer of bituminous paint as per IS - 8329-2000

Zinc coating shall comply with IS: 8329/EN 545/ ISO 8179. Only molten zinc spray coating shall be acceptable. The average mass of sprayed metal shall not be less than 130 g/sq.m with a local minimum of 110 g/sq.m.

Bitumen overcoat shall be of normal thickness of 70 microns unless otherwise specified. It shall be a cold applied compound complying with the requirements of BS 3416 Type II suitable for tropical climates factory applied preferably through an automatic process.

Damaged areas of coating shall be repainted on site after removing any remaining loose coating and wire brushing any rusted areas of pipe.

Internal lining:

Internally pipe shall be Portland cement mortar lined (as per IS - 8329-2000). The mortar shall contain by mass at least one part of cement to 3.5 part of sand. All pipes and fittings shall be internally lined with cement mortar using high speed centrifugal process in accordance with IWO 4179/IS 8329. Cement mortar lining shall be applied at the pipe manufacturing shop in conformity with the aforesaid standards. No admixtures n the mortar shall be used without the approval of the Engineer. The quantity to cement proportion of sand if justified by the sieve analysis. Pipe lining shall be inspected on site and any damage or defective areas shall be made good to the satisfaction of the Engineer. Lining shall be uniform in thickness all along the pipe. The minimum thickness of factory applied cement mortar lining shall be as per IS: 8329 Annex-B or ISO 4179. This is given below.

Nominal Pipe Size (mm)	Nominal lining thickness (mm)
Up to 300	3
350-600	5
700-1200	6
1400-2000	9

10 Joint

Jointing of DI pipes and fittings shall be push-on type

Push-on-joints

The Contractor shall source the push-on-joint gaskets only from the pipe manufactures. In turn the pipe manufacturer shall supply at least 10% additional quantity of gaskets over and above the requirement to the Contractor at no extra cost.

The gasket used for joints shall be suitable for natural and purified water conveyance. In jointing DI pipes and fittings, the Contractor shall take into account the manufacturer's recommendations as to the methods and equipments to be used in assembling the joints. In particular the Contractor shall

ensure that the spigot end of the pipe to be jointed is smooth and has been properly chamfered, so that once the rubber ring is correctly positioned before the joint is made, does not get damaged by friction or sharp edges of the spigot Chamfer. The rubber rings and the recommend lubricant shall be obtained only through the pipe manufacturer.

Rubber ring bundles form every lot shall carry with them manufacturers test certificate for the following mechanical properties.

1. Hardness
2. Tensile strength
3. Compression set
4. Accelerated again test
5. Water absorption test
6. Stress relaxation test

Rubber rings shall be clearly labeled in bundles to indicate the type of ring, the type of joint, the size of the pipe with which they are to be used, the manufacturer's name and trade mark, the month and year of manufacture and the shelf life.

11 Testing of Pipe:

The main test among others to be conducted shall be as per IS: 8329-2000 or with its latest revision/amendments.

[A] Mechanical Tests

Mechanical tests shall be carried out during manufacture of pipes as specified in the Standards. The frequency and sampling of tests for each batch of pipes shall be in accordance with IS 11606-1986. The test results so obtained for all the pipes and fittings of different sizes shall be submitted to Engineer. The method for tensile tests and the minimum tensile strength requirement for pipes and fittings shall be as per IS; 8329/EN 545 for pipes and IS: 9523/EN 545 for fittings.

[B] Brunel Hardness Test

For checking the Brielle hardness the test shall be carried out on the test ring or bars cut from the pipes used for the ring test and tensile test in accordance with IS:1500. The test shall comply with the requirements specified in IS: 1500/ISO 6506.

[C] Re-tests

If any test piece representing a lot fails in the first instance, two additional tests shall be made on test pieces selected from two other pipes from the same lot. If both the test results satisfy the specified requirements the lot shall be accepted. Should either of these additional test pieces fall to pass the test, the lot shall be liable for rejection.

[d] For hydrostatic test at works, the pipes and fittings shall be kept under test pressure as specified in the standard for a period of minimum 15 seconds during which the pipes shall be struck moderately with a 700 g hammer for conformation of satisfactory sound. They shall withstand the pressure test without showing any leakage, sweating or other defect of any kind. The hydrostatic test shall be conducted before surface coating and lining.

12. Price Variation: This shall be as per 'Price Variation clause' given in the volume.

13 Quality Assurance

The manufacturer shall have a laid down Quality Assurance Plan for the manufacture of the products offered which shall be submitted along with the tenders.

14 Mode of measurement and payments

The payment shall be as per payment schedule B and the measurement is in Running meter.

ITEM NO.14:

Lowering, laying and jointing D. I. S & S Spun pipes suitable for Tyton joints / Mortar lined D. I. Pipes of various classes with CI / MS specials of following diameters in proper position, grade and alignment as directed by Engineer-in-charge including hydraulic testing etc. comp.

The pipes & joints shall be procured, supplied by the Contractor at work site at his own cost. Every care shall be taken in carting them to site. During transportation any damage shall be occurring to pipes for fittings the replacement of pipes given by the contractor at his own cost.

The trenches shall be well leveled so that pipes are laid evenly among them. The pipes shall be fixed within two rubber rings to be supplied by department at the place shown in schedule A, if directed by the Engineer-in-charge or mentioned in item of schedule B. The specification for titan joints i.e. Rubber Rings shall be as per details specification material section.

The contractor shall make his own arrangement for obtaining permission for storing & stacking of pipes etc. from land boards whether they are Government, Municipal Local Bodies or Private land owner.

Every pipes before lowering into the trenches shall be got checked and thoroughly cleaned and the beds of the trenches shall be properly graded and leveled as required on the line, without any claim for extra cost whether it is required. The pipe shall be carefully lowered into the trenches with the help of a suitable type of chain pulley blocks, which shall first be approved by the Engineer-in-Charge. Each pipe shall be properly jacked and the spigot perfectly fixed into the socket. No jointing operation shall be started unless the gradients levels are approved by the Engineer-in-Charge or his representatives.

The pipes shall be laid complete in centerline ranged accurately by means of a string attached to both marked center of site rails and no deviation shall be permissible without the permission of Engineer-in-Charge. The pipe shall be laid in reasonably dry trenches and no circumstances on slushy bedding.

The pipes shall be brushed before lowering any laying or remove any soil or dirt etc. that may have accumulated.

The inside socket and outside of the spigot-shall be carefully cleaned. The pipe shall be lowered carefully with socket and toward and the flow of water or up till or as directed and spigot and should be carefully inserted into the socket and the space shall be filled with the joint.

Payment shall be as per payment schedule

TESTING OF WATER PIPES:

After each section of the pipeline has been completed it shall be tested for water tightness before being covered. The contractor shall at his own cost fill up water in pipe line and given necessary hydraulic test section by section and the pipe line shall stand the pressure which shall stand the pressure which shall exceed the working pressure by (a) 50% of the highest pressure in the section. (b) 30m whichever is less without showing any leakage or sweating anywhere in the pipes joints specials valves etc. it any defect are found the contractor shall be made good the same at his own cost.

Any leaking joints shall be made good and above test pressure in to be lowered gradually after satisfactory test is & over.

GUDC will not be able to provide water for testing of the pipelines & water containers of the project. This shall have to be managed by the contractor at his costs and risk.

The hydraulic test shall be given again if considered necessary by the Executive Engineer or his representative to show that no further leakages or sweating is there. The contractor shall have to make necessary arrangements for water testing as well as plugging the opening of pipes etc. as directed without claiming any extra cost. The pipelines shall be kept filled with water for a work lines shall be kept filled with water for a week or till it is situated for testing is done.

If the pipe lines are laid in detached sanctioned & not in continuous length due to any reasons such as non availability of specials or due to obstacle etc. The contractor shall see that no end of pipes length is kept open-ends are immediately covered up either by suitable blank flange or cap slug or by means of double layer gunny bags clothes tied properly by mild steel wire without any claim for extra-cost.

The rate shall be per meter of pipe line laid including all specials and fitting jointly etc. Cutting and waste shall not be paid separately. The length shall be measured not on the straight line and curves along the center line over the pipe and specials correct up to 1 cm. Payment of untested section shall be made at 70% of the tendered rate. Remaining payment shall be made on giving satisfactory hydraulic test by the contractor. Payment for untested pipeline shall be made for maximum length of 1 km. in each size of pipeline.

Payment shall be as per payment schedule

ITEM NO.15:

Pipe Encasing: Providing C.C.M.:100 for encasing/CC Block pipes using trap metal size 12 mm to 50 mm incl. form work curing consolidation etc. complete for various location on pipeline. Using trap metal 40 mm size.

ITEM NO.16:

Providing and fixing including fabrication as per Drawings or Engineer Incharge Instruction, work screen with round bar of MS at various Junction.

ITEM NO.17:

AS per Item No.4 (As Above)

ITEM NO.18:

AS per Item No.5 (As Above)

ITEM NO.19:

Renovation of manhole by increasing the height at top including cost of excavation, refitting of C. I. manhole frame and cover curing etc. complete incl. all carting and providing of materials which is required for the purpose (except manhole frame and cover) For all type manhole by providing RCC 1:2:4 Partition walls with required reinforcement 25 cm thick and circular opening with 500mm clear dia and 0.40 mt. av.ht.

Prior to initiating the cleaning process, the contractor shall conduct a thorough inspection of the line to assess the extent of debris and determine the most suitable approach.

The cleaning process shall commence with the loosening and dislodging of debris using appropriate tools and techniques, ensuring minimal disruption to the integrity of the line.

The super suction machine shall be employed to extract the loosened debris and sludge from the line efficiently.

Special attention should be given to areas prone to blockages, such as bends, junctions, and low points in the line.

The contractor shall be responsible for the proper disposal of all debris, sludge, and other waste materials removed from the line.

Suitable disposal methods may include transportation to approved waste treatment facilities or designated landfill sites.

ITEM NO.20:

Loosen, de-silt and thoroughly clean and remove debris and objects such as boulders, bricks etc. bacteriological slimes, roots, encrustations, grease, carbonated deposits, etc from the sewer line including disposal of silt / debris / malba / objects etc. by super suction machine.

Excavation: Excavate the existing manhole to the required depth to accommodate the increased height.

Refitting of C.I. Manhole Frame and Cover: Remove the existing frame and cover, clean and prepare the area, and refit the C.I. frame and cover securely.

Construction of RCC Partition Walls: Construct RCC partition walls with a thickness of 25 cm. The walls should have the necessary reinforcement bars as per structural requirements.

Circular Opening: Create a circular opening with a clear diameter of 500mm at the top of the manhole.

Increase Height: Increase the height of the manhole to the specified dimension of 0.40 meters average height.

Curing: Apply curing as per industry standards to ensure proper strength and durability of the constructed elements.

BHAVNAGAR MUNICIPAL CORPORATION

Tender Notice (online) No. - BMC/DRAINAGE/SJMMSVY/TENDER/2023-05

PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O&M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION(PART-1).

PROJECT FUNDED UNDER SWARNIM JAYANTI MUKYAMANTRI SHAHERI VIKAS YOJANA 2023-24

VOLUME – IV General Specification of Material.

Milestone Dates	
Online Downloading of Technical Bid & Price Bid	As Per detailed Tender Notice
Pre – Bid Conference	As Per detailed Tender Notice
Last Date of Online Submission of Technical Bid & Price Bid	As Per detailed Tender Notice
Last Date for Physical Submission of Tender Fee, EMD and other Documents	As Per detailed Tender Notice
Online Opening of the Technical Bid	As Per detailed Tender Notice

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1B	**Code of Practice**

GENERAL SPECIFICATION OF MATERIALS

(1) All materials to be used shall conform to the relevant specifications as per the latest edition of Indian Standard, unless otherwise stated in the detailed specifications of items of work.

(2) Wherever a reference to any Indian Standard appears in the specification, it shall be taken to mean as a reference to the latest version of the standard.

(3) Test for material shall be invariably is carried out by the contractor, when the same are specified in the specifications. Tests shall also have to be carried out, even though the same are not specifically mentioned in the specifications but in the opinion of the Engineer-In-Charge, the same are required to be carried out. All such tests shall be carried out in Government Lab or laboratories approved by the Engineer-in-charge and cost there of shall be entirely borne by the Contractor.

(4) No collection of materials shall be made before it is got approved from the Engineer-In-Charge.

(5) Collection of approved materials shall be done at site of work in a systematic manner. Materials shall be stored in such a manner as to prevent deterioration or intrusions of foreign matter and to ensure the preservation of their quality and fitness for the work.

(6) Materials, if rejected by the Engineer-In-Charge, shall be immediately removed from the site of work. If they are not removed within twenty four hours of receiving such intimation, Engineer-In-Charge shall get the same removed at contractor's cost. The Engineer-In-Charge shall dispose off such materials in a manner as he chooses and the contractor shall not be entitled to any compensation for the cost of such materials.

(7) Approval to the samples of various materials given by the Engineer-In-Charge will not absolve the contractor from the responsibility of replacing the defective material brought on site or materials used in the work found defective at a letter date. The contractor shall have no claim to any payment or compensation whatsoever on account of any such materials rejected by the Engineer-In-Charge.

(8) The contractor shall be responsible for observing the laws, rules and regulations imposed under the "Mineral Acts" and such other laws and rules prescribed by Government from time to time

M-1 WATER:

Water shall conform to IS: 456.

Water shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantities of silt and traces of oil and injurious alkalis, salts, organic matter and other deleterious material, which will either weaken the mortar or concrete or cause efflorescence or attack the steel in RCC. Container for transport, storage and handling of water shall be clean.

If required by the Engineer-In-Charge it shall be tested by comparison with distilled water. Comparison shall be made by means of standard cement tests soundness time of setting and mortar strength as specified in IS-269-1976. Any indication of unsoundness, change in time of setting by 30 minutes or more or decrease of more than 10 percent in strength of mortar, prepared with water sample when compared with the results obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

Water fit for drinking will generally be found suitable for mortar or concrete.

Water for curing of mortar, concrete or masonry should not be too acidic or too alkaline. It shall be free from elements, which significantly affect the hydration reaction or otherwise interfere with the hardening of mortar or concrete or produce objectionable stains or other unsighting deposits on concrete or mortar surfaces.

Hard and bitter water shall not be used for curing. Potable water will generally be found suitable for curing of mortar or concrete.

M-2 CEMENT:

Cement shall be Sulphate Resistant Cement conforming to IS: 12330, Ordinary Portland cement as per I.S. 269-1976 or Portland slag cement as per I.S.455-1976.

The Grade of cement should be of 43 grade or higher grade.

The contractor shall take every precaution to store the cement properly so that it is not spoiled by dampness etc. Cement required for use shall be fresh as far as possible and stored on planks raised 15 to 20 cms above the floor and stacked 30 cms away from the wall in suitable closed weather proof go down at the site of work. Cement shall be stored in such a way so as to allow the removal and use of cement in chronological order of receipt i.e. first received being first used. Not more than 15 bags shall be stacked vertically in one pile and maximum width of the piles should not be more than 3 meters. Any cement, which has deteriorated, caked or which has been set or partially set shall not be used. When temporarily stored in open for use, it shall be kept on a suitable platform and suitably protected as necessary.

Different brands of cement or cement of the same brand from different factories shall be stored in separate groups and shall not be mixed during use. Cement shall be kept in a store under double locking arrangements. A board indicating stock and daily transactions of cement shall be kept in each room of the cement store. Daily account of receipt and use of cement bags shall be maintained by the Contractor in the proforma prescribed by the Engineer-In-Charge.

The cement shall be measured by no. of bags for all use in concrete (except otherwise stated) and masonry etc. In no case, cement shall be measured by boxes or other means for the volumetric proportion of concrete and mortar. For calculation for the proportion, the volume of the cement bag shall be taken as 0.0342 cu.m. (1.20 cft.) And measuring box of size of 30 cm x 30 x 38 cms for concrete works. If weigh-batch concrete is to be used, the cement shall have to be used as per actual weight and the contractor shall not be entitled for any compensation for loss in weight due to shifting of bags or on account of any other reasons. The cement should be brought from Major Plants

M-3 SAND:

Sand shall be natural and, clean, well graded, hard, strong, durable and gritty particles free from injurious amounts of dust, clay, kankar nodules, or of flaky portion, alkali, salts, organic matter, loam, mica or other deleterious substances and shall be got approved from the Engineer-In-Charge. If sand is covered with dust, it shall be washed with water to make it clean.

(A) The sand to be used in cement mortar for masonry works and first coat of plaster should generally satisfy the following grading.

I.S. Sieve	**Percentage by weight passing sieve**
480	100
230	80-95
120	70-90
60	40-85
30	5-50
15	0-10

The fineness modulus shall not exceed 3.0

(B) Sand to be used in cement mortar for lining work, pointing and second coat of plaster may have the following gratings:

I.S. Sieve	**percentage by weight passing through**
480	100
240	100
120	75-100
60	40-85
30	5-50
15	0-10

The fineness modulus shall not exceed 1.6

(C) Sand to be used for concrete works shall of grades as specified in I.S. 383. Fineness modulus varying from 2.6 to 3.6 as per requirement.

M-4 BLACK TRAP GRIT:

Grit shall consists of crushed or broken stone and be hard, strong, dense, durable, clean of proper gradation and free from skin or coating likely to prevent proper adhesion of Mortar. Grit shall generally be cubical in shape and as far as possible flaky elongated pieces shall be avoided. It shall generally comply with the provision of IS-383-1970. Unless special stone of particular quarries is mentioned, aggregate shall be broken from the best black trap stone as approved by the Engineer-In-Charge. Grit shall have no deleterious reaction with cement.

The grit shall conform to the following gradation as per sieve analysis.

I.S. Sieve Designation	Percentage passing for sieve
12.50mm	100%
10.00mm	85-100%
4.75mm	0-20%
2.36mm	0-5 %

The crushing strength of grit will be such as to allow the concrete in which it is used to built-up the specified strength of concrete.

The necessary test for grit shall be carried out as per the requirements of IS: 2386 or as revised from time to time and as per instructions of the Engineer-In-Charge.

M-5 CEMENT MORTAR:

(A) Cément Mortar:

Cement: Cement shall conform to specification M-2.

Water: The water shall conform to specification M-1.

Sand: The sand shall conform to specification M-3.

Proportion of Mix: Cement and sand shall be mixed to specified proportion. Sand being measured by measuring boxes. The proportion of cement will be by volume on the basis of 50 kg. /bag of cement being equal to 0.0342 cu.m. The mortar may be hand mixed or machine mixed as directed by the Engineer-In-Charge.

(B) Preparation of Mortar:

In hand mixed mortar, cement and sand in the specified proportion shall be thoroughly mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogeneous mixture of uniform colour is obtained. Mixing platform shall be so arranged that no deleterious extraneous material shall get mixed with mortar or mortar shall flow out. While mixing, the water shall be gradually added and thoroughly mixed to form a stiff plastic mass of uniform colour, so that each particle of sand shall be completely covered with a film of wet cement. The water cement ratio may be adopted as directed by the Engineer-In-Charge.

The mortar so prepared shall be used within 30 minuets of adding water. Only such quantity of mortar shall be prepared as can be used within 30 minutes. The mortar

remaining unused after that period or mortar which has partially hardened or damaged shall not be re-tempered or remixed. It shall be destroyed or thrown away.

M-6 BLACK TRAP STONE COARSE AGGREGATE FOR PLAIN AND ORDINARY REINFORCED CONCRETE.

Coarse aggregate shall be of machine crushed stone of black trap and be hard strong, dense durable, clean and free in skin and coating likely to prevent proper adhesion of mortar. The aggregates shall generally be cubical in shape. Unless special stones of particular quarries are mentioned, aggregates shall be machine crushed from the best black trap stone as approved by the Engineer-In-Charge. Aggregate shall have no deleterious reaction with cement. The size of the coarse aggregate for plain cement concrete and ordinary reinforced cement concrete shall generally be as per the table given below. However, in case of reinforced cement concrete the maximum limit may be restricted to 6 mm less than the minimum lateral clear distance between bars or 6 mm less than the cover whichever is smaller.

TABLE - SIZE OF COARSE AGGREGATE

I.S. Sieve Designation	**Percentage Passing for single and nominal sized aggregate**		
	40 mm	**20 mm**	**16 mm**
40 mm	85-100	100	-
20 mm	0-20	85-100	100
16 mm	-	-	85-100
12.5 mm	-	-	-
10 mm	0.5	0-20	0-30
4.75 mm	-	0-5	0-5
2.36 mm	-	-	-

Note: This percentage may be varied somewhat by the Engineer-in-charge who considered necessary for obtaining better density and strength of concrete.

Single size coarse aggregates confirming to the requirements in table No.1 above, or following nominal sizes shall be used at site with the other ingredients of concrete as indicated below. The mixing shall be in a mixture or on the 1:2:4 and C.C. 1: 1:2 mixing with the other ingredient of concrete shall be done in the mixture only except for small work.

(1) C.C. 1:5:10 - Nominal size of aggregate 40 mm
(2) C.C. 1:4:8 - Nominal size of aggregate 40 mm
(3) C.C. 1:3:6 - Nominal size of aggregate 40 mm
(4) C.C. 1:2:4 - Nominal size of aggregate 20 mm
(5) C.C. 1:1 ½:3 - Nominal size of aggregate 20 mm
(6) C.C. 1:1:2 - Nominal size of aggregate 20 mm
(7) C.C. 1:1:1 - Nominal size of aggregate 20 mm

The grading test shall be taken in the beginning and at the change of the source of materials. The necessary test indicated in IS – 383 and IS – 456 shall have to be carried out to ensure the acceptability. The aggregates shall be stored separately and handled in such a manner to prevent the inter-mixing of different aggregates. If the aggregates are covered with the dust, it shall be washed with water to make it clean. The course/aggregates for plain and reinforced concrete shall be measured by volume in the steel or wooden boxes prepared as per the direction of the Engineer-In-Charge.

M-7 BLACK TRAP STONE COURSE AGGREGATES FOR CONTROLLED REINFORCED CONCRETE

Coarse aggregate shall be of machine-crushed stone of black trap and be hard / strong, dense, and durable clean and free from skin and coating likely to prevent proper adhesion of mortar. The aggregates shall generally be cubical in shape. Unless special stones of particular quarries are mentioned, aggregates shall be machine crushed from the best, black trap stone as approved by the Engineer-In-Charge. Aggregate shall have no deleterious reaction with cement.

In proportion concrete, the quantity of coarse aggregates shall be determined by weight only. The grading of coarse aggregate shall be controlled by obtaining the aggregate in different sizes and blending them in the right proportions as per concrete mix design approved by the Engineer-In-Charge. The different sizes shall be stocked in separate stockpiles; the grading of aggregates shall be checked as frequently as possible. The frequency for verification of the grading shall be as directed by the Engineer-In-Charge to ensure that the grading is maintained uniform with that of the samples used in the preliminary tests.

The necessary test indicated in IS - 383 and IS - 456 shall have to be carried out to ensure the acceptability of the material.

If aggregate is covered with dust it shall be washed with water to make it clean.

M-8 BRICKS:

(A) First Class Bricks

The bricks shall be hand or machine moulded and made from suitable soils and kiln burnt. They shall be free from cracks and flows and modules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform colour. The bricks shall be moulded with a frog of 100 mm x 40 mm and 10 mm to 20 mm deep on one of its flat sides. The bricks shall not break when thrown on the ground from a height of 600 mm.

The size of modular bricks shall be 190 mm x 90 mm x 90 mm. The standard size of bricks shall be 8 ¾'' x 4 ¼''x 2 $^{5}/_{8}$''. Bricks conform to I.S. 1077 in respect of tolerance for sub-class A bricks. The size of the conventional bricks shall be 225 mm x110 mm x 75mm.

The crushing strength of the bricks shall not be less than 35 kg/sq.cm. The average water absorption shall not be more than 20 percent by weight. A necessary test for crushing strength and water absorption shall be carried out as per I S 4883-1988 for sewer bricks and I S 2212-1962 practice for Brick works and IS: 3495 (Parts I to IV) as directed by the Engineer-In-Charge.

(B) Second Class Bricks

The second class bricks shall be similar to first class bricks except that they may be permitted to have slight distorted and rounded edges provided no difficulty shall arise on this account in laying of uniform courses.

M-9 MILD STEEL BARS

Mild steel bars reinforcement for R.C.C. work shall conform to IS. 432 and shall be of tested quality. It shall also comply with relevant part of IS. 456. All the reinforcement shall be clean and free from dirt, oil, paint, grease, mill scale or loose or thick rust at the time of placing.

Reinforcement steel shall be stored such as to avoid distortion and sags of long length and shall be protected as far as possible from surface deterioration. All bars of the same designation shall be stacked separately as far as possible and distinctly marked.

For the purpose of payment the bar shall be measured correct up to 10 mm length and weight payable worked out at the rate specified below.

(1)	6 mm	0.22 Kg/Rmt.
(2)	8 mm	0.39 Kg/Rmt.
(3)	10 mm	0.62 Kg/Rmt.
(4)	12 mm	0.89 Kg/Rmt.
(5)	14 mm	1.21 Kg/Rmt.
(6)	16 mm	1.58 Kg/Rmt.
(7)	18 mm	2.00 Kg/Rmt.
(8)	20 mm	2.47 Kg/Rmt.
(9)	22 mm	2.98 Kg/Rmt.
(10)	25 mm	3.85 Kg/Rmt.
(11)	28 mm	4.83 Kg/Rmt.
(12)	32 mm	6.31 Kg/Rmt.
(13)	36 mm	7.99 Kg/Rmt.
(14)	40 mm	9.86 Kg/Rmt.

M-10 FRS BARS: **Scope of work:**

The scope of work consists of providing and laying mild steel reinforcement and FRS reinforcement for RCC works of various components of the structure. This may be of Tiscon, Sulekhram, SAIL or Punjab Rolling Mill or any other Approved make. This includes cuttings, bending, binding, placing, with all Equipments and labour required for the work as directed by the Engineer-in-charge and all operations covered within the intent and purpose of the Specification.

Bending of Reinforcement:

Reinforcing steel shall conform accurately to the dimensions shown on relevant drawings and conforming to the relevant IS codes (latest revision)

Bars shall be bent cold to the specified shape and dimensions or as directed by the Engineer-in-charge using a proper bar bender, operated by hand or power to attain proper radii of bends. Bars shall not be bent or strengthened in a manner that will cause injury to the material. Bars bent during transport or handling shall be straightened before being used on work; they shall not be heated to facilitate bending.

The bending of the FRS bars shall be carried out as per the following:

Operation Size FRS Fe-500

1 Bend Up to 22 mm dia. 3d

Over 22 mm dia. 4d

2 Rebend Up to 10 mm dia. 4d

Over 10 mm dia. 5d

Placing of Reinforcement:

All reinforcing bars shall be accurately placed in the exact position shown on the drawings, and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm. in size and conforming to IS: 280 and by using stays blocks or metal chairs, spacer, metal hangers, supporting wires or other approved devices at sufficiently close intervals. Bars will not be neither allowed to sag between supports nor displaced during concreting or any other Operation over the work. All devices used for positioning shall be of no corrodible material. Wooden and metal supports will not extend to the Surface of concrete, except where shown on the drawings, Placing bars on layers of freshly laid concrete as the work progresses for adjusting bar spacing will not be allowed. Pieces of broken stone, brick or wooden blocks shall not be used. Layers of bars shall be separated by spacer bars, precast mortar blocks or other approved devices. Reinforcement after being placed in position shall be maintained in a clean condition until completely embedded in concrete. Special care shall be exercised to prevent any displacement of reinforcement in concrete already placed. To protect reinforcement from corrosion, concrete cover shall be provided as indicated on the drawings. All bars protruding from concrete to which other bars are to be spliced and which are likely to be exposed for an indefinite period shall be protected by a thick coat of neat cement grout. In the case of columns and walls, vertical bars shall be kept in normal position with timber templates having slots accurately cut in for bar position. Such templates shall be removed after the concreting has progressed up to a level just below them. Bars crossing each other, where required, shall be secured by binding wire (annealed) of size not less than 1 mm and conforming to IS : 280 in such a manner that they do not slip over each other at the time of fixing and concreting. As far as possible, bars of full length shall be used. In case this is not possible, overlapping of bars shall be done as directed by the Engineer-in-charge.

When practicable, overlapping bars shall not touch each other, but be kept apart by 25 mm or 1 1/4 times the maximum size of the coarse aggregates whichever is greater, by concrete between them. Where this is not feasible, overlapping bars shall be bound with annealed steel wire, not less than 1mm thickness twisted tight in eight shape around the lapped bars. The overlaps shall be staggered for different bars and located at fixed locations only along the span where neither shear nor bending moment is maximum.

Welding of Bars

33 per cent of the rods are welded. No pre-warming or post heat treatment is necessary. Interpose temperature should be limited to 200 ^{0}C with low heat input and equivalent strength low hydrogen type electrode. Suitable means shall be provided for holding the bars securely in position Welding of FRS bars can be permitted if specified on the drawings, joints of Reinforcement bars shall be butt welded so as to transmit their full strength. Welded joints shall preferably be located at points where steel will not be subject to more than 75 percent of the maximum permissible stresses and welds so staggered that at any one section, not more than during welding. It must be ensured that no voids are left in welding and when welding is done in 2 or 3 stages, previous surface shall be cleaned property. Ends of the bars shall be cleaned of all loose scale, rust. Grease, paint and other foreign matter before welding. Only competent welders shall be employed on the work. Welded pieces of reinforcement shall be tested. Specimens shall be taken from the actual site and their number and frequency of tests shall be as directed by the Engineer-in-charge.

M-11 MILD STEEL BINDING WIRE:

The mild steel wire shall be of 1.63 mm or 1.22 mm (16 or 18 gauge) diameter and shall conform to IS-280 or as revised from time to time.

The use of black wire will be permitted for binding reinforcement bars. It shall be free from dust, oil paint, grease, loose mill scale or any other undesirable coating, which may prevent adhesion of cement mortar.

Storage: The wire coils shall be stored such as to avoid deterioration.

Measurement: No measurement will be taken of the wire used for tying reinforcement bars. The rate for reinforcement steel and its fabrication shall include the cost of binding wire.

M-12 STRUCTURAL STEEL:

All structural steel shall conform to IS-226 and IS-800 or as revised from time to time. The steel shall be free from the defects mentioned in IS. 226 and shall have a smooth finish. The Material shall be free from loose mill scale, rust pits or other defects affecting the strength and durability. Rivet bars shall be conforming to IS-1148.

Structural steel shall be stored such as to avoid distortion of section of long length and shall be protected as far as practicable from surface deterioration. It should be so stored and handled that material will not be subjected to excessive stress and

damages. All deformed structural material will be properly straightened by methods, which are not injurious prior or being, and off, punched or otherwise worked in the shop. Sharp kinds and bends shall be caused for rejection.

When the steel is supplied by the Contractor test certificate of the manufactures shall be produced, if so required by the Engineer-In-Charge. If further test be necessary, they will be done according to IS-226 and IS-23 or as revised from time to time.

M-13 SHUTTERING:

The shuttering shall be either of wooden planking of 30mm minimum thickness with or without steel sheet lining or of steel plates stiffened by steel angles. The shuttering shall be supported on battens and beams and props of vertical ballies properly cross braced together so as to make the form work rigid.

The form work shall be sufficiently strong and shall have camber, so that it assumes correct shape after deposition of the concrete and shall be able to resist forces caused by vibration of live load of men working over it and other incidental loads associated with it. The shuttering shall have smooth and even surface and its joints shall not permit leakage of cement grout.

If at any stage of work during or after placing concrete in the structure the form work sags or budges out beyond the required shape of the structure, the concrete shall be removed and work redone with fresh concrete and adequate rigid form work. The complete formwork shall be got inspected by and approved from the Engineer-In-Charge before the reinforcement bars are placed in position.

If wooden props are used, the props shall consist of ballies having 100 mm minimum diameter measured at mid length and 80 mm at thin end and shall be placed at 1 to 1.20m spacing. These shall rest squarely on wooden sole places 40 mm thick and minimum bearing area of 0.10 sq.m. Lay on sufficiently hard base.

Double wedges shall further be provide between the sole plate and the wooden props so as to facilitate tightening and easing of shuttering without jerking the concrete.

The timber used in shuttering shall not be so dry as to absorb water from concrete and swell budge nor so green or wet as to shrink after erection. The timber shall be properly swan and planned on the sides and the surface coming in contact with concrete. Wooden form work with metal sheet lining or steel plates stiffened by steel shall be permitted.

As far as practicable clamp shall be used to hold the forms together and use of nails and spikes avoided.

The surface of timber shuttering that would come in contact with concrete shall be well wetted and coated with soap solution before the concreting is done. Alternatively coat of soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface.

The shuttering for beams and slabs shall have camber of 4 mm per meter (1 in 250) or as directed by the Engineer-In-Charge so as to offset the subsequent deflection.

For cantilever the camber at free end shall be 1/50 of the projected length or as directed by the Engineer-In-Charge.

The period that shall elapse after the concrete has been laid before easing and removal of centering and shuttering as under taken shall be as follows.

	Part of structure	Period
1.	Sides of Foundation, Columns beams & walls.	24 to 48 hours.
2.	Undersides of slabs up to 4.5 m span.	7 days.
3.	-do- above 4.50 m and underside of Beams and arches up to 6 m span.	14 days.
4.	-do- above 6 m span & upto 9 m. span	21 days.
5.	Inner sides of beams and arches over 9 m span.	28 days.
6.	Domes, shell & other structures of Special nature.	as per instruction

Work damaged through premature or careless removal of forms shall be reconstructed.

The period for striking the form work shall be 0.5 times more in case of Puzzoloana Cement if used than that of the ordinary Portland cement and the contractor shall not entitle for any extra claim for the same.

B) STONEWARE PIPES AND FITTINGS

The pipes and fittings shall be of best quality as approved by the Engineer-In-Charge. The pipe shall be of best quality and as per I S 651-1980 manufactured from stoneware of fire clay, salt glazed thoroughly burnt through the whole thickness, of a close even texture, free from air blows, fire blisters, crack and other imperfections, which effect the serviceability. The inner and outer surfaces shall be smooth and perfectly glazed. The pipe shall be capable to withstand pressure of 1.5m head without showing sign of leakage. The thickness of the wall shall not be less than $1/12^{th}$ of the internal dia. The depth of socket shall not be less than 38mm. The socket shall be sufficiently large to allow a joint of 1 mm around the pipe.

All pipes with spigot and socket ends shall conform to IS.651 and shall be of grade ‘A'. These shall be sound, free from visible defects such as fine cracks or hair cracks. The glaze of the pipes shall be free from crazing. The pipes shall give a sharp clear noise when struck with a light hammer.

The following information shall be clearly marked on each pipe and fitting:

(a) Internal diameter;
(b) Grade;
(c) Date of manufacture;
(d) Name of manufacturer or his registered trade-mark or both.

The dia, thickness and weight of stone ware pipe as per IS shall be as below:

Internal Dia of Pipe mm	Mean thickness of barrel and of socket mm	Weights of each pipe 60 cm long. kg approx.
100	12	14
150	16	22
200	17	33
250	20	52

M-14. Teak wood:

The teak wood shall be of good quality as required for the item to be executed. When the kind of wood is not specifically mentioned, good Indian teak wood as approved shall be used.

Teak wood shall generally be free from large, loose, dead or cluster knots, flaws, shakes, warps, twists bends or any other defects. It shall generally be uniform in substance and of straight fibres as far as possible. It shall be free from rot, decay, harmful fungi and other defects of harmful nature which will affect the strength durability of its usefulness for the purpose for which it is required. The colour shall be uniform as far as possible. Any effort like painting, using any adhesive or resins materials made to hide the defects shall render the pieces liable to rejection by the Engineer-in-charge.

All scantlings, planks etc. shall be sawn in straight lines and planes in the direction of grains and of uniform thickness.

The tolerances in the dimensions shall be allowed at the rate of 1.5 m.m. per face to be planed.

First class teak wood:

First class teak wood shall have no individual hard and sound knots, more than 6 sq. cm. size and the aggregate area of such knots shall not be more than 1% of area of piece. The timber shall be closed grained.

Second Class Teak Wood:

No individual hard and sound knots shall be more than 15 Sq. cms. in size and aggregate area of such knots shall not-exceed 2% of the area of piece.

M-14. (A) Non-teak wood:

The non-teak-wood shall be chemically treated, seasoned as per IS Specifications and of good quality. The type of wood shall be got approved before collecting the same on site. Fabrication of wooden members shall be started only after approval.

For this purpose wood of Bio, Kalali, Siras, Behda, Jamun, Sisoo will be used for door frames whereas only Kalali, Siras,Halda,Kalam etc. will be permitted for shutters after proper seasoning and chemical treatment.

The non-teak wood shall be free from large, loose, and dead of cluster knots, flows, shakes warps bends or any other defect. It shall be uniform in substance and of straight fibers as far as possible. It shall be free rots, decay harmful fungi and other defects of nature which effect the strength, durability or its usefulness for the purpose for which it is required. The colour of wood shall be uniform as far as possible. The scantlings planks etc. shall be sawn in straight lines and planes in the direction of grain and uniform thickness.

The department will use the Agency to produce certificate from forest Department in event of Disputes and the decision of the Department shall be final and binding to the contractor.

The tolerance in the dimension shall be allowed as 1.5 mm. per face to be planed.

M-15. Glass:

All glass shall be of the best quality free from specks, bubbles, smokes, veins, air holes blisters and other defects. The king of glass to be used shall be mentioned in the item or specification or in the special provisions or as shown in detailed drawings. Thickness of glass panes shall be uniform. The specifications or different kinds of glass shall be as under.

Sheet Glass:

In absence of any specified thickness or weight in the item or detailed specifications of the item of work, sheet glass shall be weighing 7.5 Kg/Sq.m. for panes upto 600 mm x 600 mm.

For panes larger than 600 mm. x 600 mm. and upto 800 m. x 800 mm. the glass weighing not less than 8.75 Kg/Sq.m. shall be used. For bigger panes upto 900 mm. x 900 mm. glass weighing not less than 11.25 Kg/Sq.m. shall be used.

Sheet glass shall be patent flattened glass of best quality and for glazing and framing purposes shall conform to I.S. : 1761-1960. Sheet glass of the specified colours shall be used, if so shown on detailed drawings or so specified. For important buildings and for panes with any dimension over 900 mm. plate glass of specified thickness shall be used.

Plate Glass:

When plate glass is specified it shall be ‘Polished patent plate glass’ of best quality. It shall have both the surface ground flat and parallel and polished to obtain clear undisturbed vision and reflection. The plate glass shall be of the thickness mentioned in the item or as shown in the detailed drawing or as specified. In absence of any specified thickness the thickness of pelted glass to be supplied shall be 6mm and a tolerande of 0.20mm shall be admissible.

Obscured Glass:

This type of glass transmits light so that vision is partially or almost completely obscured. Glass shall be plain rolled, figured, ribbed or fluted or frosted glass as may be specified as required. The thickness and type of glass shall be as per details on drawings or as specified or as directed.

Wired Glass:

Glass shall be with wire netting embedded in a sheet of plate glass electrically welded 13 mm. Georgian square mesh may be used. Thickness of glass shall not be less than 6 mm. Wired glass shall be of type and thickness as specified.

M-16 Fixtures and fastenings:

General

The fixtures and fastenings, that is, butt, hinges, tee and strap hinges sliding door bolts, tower bolts, door latch, bath room latch, handles, door stoppers, casement window fasteners, casement stays and ventilators catch shall be made of the metal as specified in the item or its specifications.

They shall be of iron, bras, aluminum, chromium plated iron chromium plated brass, copper oxidized iron, and copper oxidized brass or anodized aluminum as specified.

The fixtures shall be heavy, Medium or light type. The fixtures and fastenings shall be smooth finished and shall be such as will ensure ease of operation.

The samples of fixtures and fastenings shall be got approved as regards quality and shape before providing them in position.

Brass and anodized aluminum fixtures and fastenings shall be bright finished.

Holdfasts:

Holdfasts shall be made from mild steel flat 30 cm. length and one of the holdfasts shall be bent at right angle and two nos. of 6 mm. diameter holes shall be made in it for fixing it to the frame with screws. At the other end. The holdfast shall be forked and bent at right angles n opposite directions.

Butt hinges:

Railway standard heavy type butt hinges shall be used when so specified.

The strap hinges shall be manufactured from M. S. Sheet.

Siding door bold (Aldrops):

43 The Aldrops as specified in the item shall be used and shall be got be got approved.

Tower bolts (Barrel Type):

Tower bolts as specified in the item shall be used as shall be used and shall be got approved.

Door Latch:

The size of door latch shall be taken as the length of latch.

Bathroom Latch:

Bathroom latch shall be similar to tower bolt.

Handle:

The size of the handles shall be determined by the inside grip length of the handles. Handles shall have a base plate of length 50 mm more than size of the handle.

Door Stopper:

Door stoppers shall be either floor door stopper type or door catch type floor stopper shall be of overall size as specified as shall have rubber cushion.

Door Catch:

Door catch shall be fixed as height of about 900 mm from the floor level so that one part of the catch is fitted on the inside of the shutter and the other part is fixed in the wall with necessary wooden plug arrangements for appropriate fixate. The catch shall be fixed 20 mm eased the face of the door for easy operation of catch.

Wooden Door stop with highs:

Wooden door stop of size 100mm X 60 mm X 40 mm shall be fixed on the door frame with a high of 75 mm size at high of 900 mm from the floor level the wooden door stop shall be provided with 3 coats of approve oil paint.

Case meant window fastener:

Casement window fastener for single leaf window shutter shall be left or right handled as directed.

Casement stays (straight peg stay):

The stays shall be made from a channel section having three holes at appropriate position so that the window can be opened either fully or partially as directed as directed. Size of the stay shall be 250 mm to 300 mm as directed.

Ventilator catch:

The pattern and shape of the catch shall be as approved.

Pivot:

The base and socket plate shall be made from minimum 3 mm thick plate and projected pivot shall not be less than 12 mm length and shall be firmly riveted to the base plate in case of brass pivot.

M-17 Indian type water closet:

The Indian type white glazed water closet of first quality shall be of size as specified in the item and conforming to I.S. 771-1979 and I.S. 2556 (Part-II) 1981. Each pan shall have integral flushing ring of suitable type with adequate number of holes along as directed to have satisfactory flushing. It shall also have inlet at back or front connecting flush pipe as directed. The inside of the bottom of the pan shall have sufficient slope from the front towards the outlet and surface shall be uniform and smooth.

Pan shall be provided with 100 mm. diameter 'P' or 'S' trap with approximately 50 mm. water seal and 50 mm. diameter vent horn.

(A) Foot Rests:

A pair of white glazed earthen ware rectangular foot rests of minimum size 250 mm. x 130 mm 20 mm. shall be provided with water closet.

M-18 Paints:

(A) Oil Paints:

Oil Paints shall be of the specified colour and shade, and as approved. The ready mixed paints shall only be used. However, if ready mixed paint or specific shade or tint is not available, white ready mixed paint with approved strainer will be allowed. In such a case, the contractor shall ensure that the shade of the paint so allowed shall be uniform.

All the paints shall meet following general requirements:

(i) Paint shall not show excessive setting in a freshly opened full can and shall easily be redispressed with a paddle to a smooth homogeneous state. The paint shall show no curing, livering, caking or colour separation and shall be free from lumps and skins.

(ii) The paint as received shall brush easily, possess good levelling properties and show no running or sagging tendencies.

(iii) The paint shall not skin within 48 hours in a three quarters filled closed container.

(iv) The paint shall dry to a smooth uniform finish free from roughness, grit, unevenness and other imperfections.

Ready mixed paint shall be used exactly as received from the manufactures and generally according to their instructions and without any admixtures whatsoever.

(B) Enamel Paints:

The enamel paint shall satisfy in general requirements as mentioned in specification of oil paints. Enamel paint shall conform to I.S. 2933-1975.

M-19 Asbestos Cement Pipe (A.C. Pipe):

The asbestos cement pipe of diameter as specified in the description of the item shall conform to I.S. 1626-1980. Specials like bends, shoes cowls, etc. shall conform to relevant Indian Standards. The interior of pipe shall have a smooth finish, regular surface and regular, internal diameter. The tolerance in all dimensions shall be as per I.S. 1626-Part-I 1980.

M-20 Structural Steel:

All structural steel shall conform to I.S. 226-1965. The steel shall be free from the defects mentioned in I.S. 226-1975 and shall have a smooth finish. The material shall have a smooth finish. The material shall be free from loose mile scale, rust pits or other defects affecting the strength and durability. Rivet bars shall conform to I.S. 1148-1973.

When the steel is supplied by the Contractor test certificates of the manufactures shall be obtained according to I.S. 226-1975 and other relevant Indian Standards.

CODE OF PRACTICE

GENERAL:

(1) The method of the execution of the items shall conform to the relevant specifications as per the latest version of the Indian Standard, List of applicable Indian Standards **annexed** below, unless specified otherwise and as far as is applicable.

(2) Wherever a reference to any Indian Standard appears in the code, it shall be taken to mean as a reference to the latest version of the Standard.

(3) Work Tests shall invariably be got carried out by the Contractor, when the same are specified in this Code. Tests shall also have to be carried out, even though the same may not have been specifically mentioned in the Code, if in the opinion of the Engineer-In-Charge, they are required to be carried out. All the tests shall be got carried out in Government or approved laboratories and cost there of shall be entirely borne by the Contractor.

All moulds, equipment, etc. required of preparing specimens for tests shall be kept in sufficient numbers and in good state, as directed by the Engineer-In-Charge, on the site of work.

Specimen for tests shall be, sent to the Laboratory along with the representative of municipality/ consultant in time and the results thereof shall be promptly obtained and reported to the Engineer-In-Charge.

(4) Satisfactory test results shall not absolve the Contractor, from dismantling and re-doing any work revealed to be defective at a later date. The contractor shall have no claim for any payment or compensation whatsoever on account of replacement of such defective work. Contractor shall take all precautions and care during dismantling and re-doing the work to ensure that any other work, so far executed does not get damage or affected.

(5) The work shall be carried out in true line and level, and in conformity with the detailed drawings and specified patterns.

(6) All work shall be carried out in a workman-like manner and as per the best techniques for the particular item.

(7) All tools, templates, equipments etc. for correct execution of the work, as well as for checking lines, levels alignments of the works, during execution shall be kept in sufficient numbers on the site of work.

(8) All installations pertaining to water supply and drainage lines fixtures as well as and sanitary fittings shall be deemed to be completed only after giving satisfactory test by the Contractors.

(9) Scaffolding shall be provided by the Contractor at his own cost for such of the items for the execution of which it is essential

CODE OF PRACTICE		
List of I S (Indian Standard) For DRAINAGE WORKS		
Sr.No	**IS number**	**Particulars of Code**
1	**651**-1980	Code of Practice for Stone Ware Pipes and Fittings
2	**4127**-1983	Code of practice for laying of Stone ware pipe
3	**458**-2003	Code of practice for Concrete Pipe (with & without reinforcement)
4	**783**	Code of practice for laying of Concrete pipe
5	**784**-1978	Pre Stressed Concrete Pipe
6	**3597**- 2003	Method of test of Concrete Pipe
7	**8329**-2000	D.I. Pipe centrifugally cast (spun) for water, Gas Sewerage.
8	**12288**-1987	Laying of D I Pipe.
9	**9523**- 2000	D I Fittings/Specials
10	**1539**-&**1536**-1989	C I pipe Centrifugally casted (spun) iron pressure pipe for water, Gas, and Sewage.
11	**3114**-1985	Laying of C I pipe
12	**5531**-1977	C I Fittings/Specials
13	**3486**-1966	C I Spigot and Sockets drain pipe
14	**5455**-1969	C I Steps
15	**1726**	C I Man Hole and Frame Cover
16	**1729**	Sand C I spigot and sockets soil fittings
17	**780**-1980	C I Sluice Valve up to 300 mm Dia.
18	**2906**-1980	C I Sluice Valve above 300 mm Dia.
19	**14333**-1996	H D P E pipe for sewerage.
20	**7634** (Part-2) 1973	Laying and Jointing HDPE Pipe
21	**8360** (pat 1 to 3)	HDPE fabricated fittings
22	**8008** (part 1 to 7)	HDPE fitting injection molded
23	**7328**-1992	H D Polyethylene material for molding & extrusion
24	**4985**-1988	P V C Pipe
25	**1239**	Code of practice for G I Pipe
26	**7634**	Code of Practice for Plastic pipe
27	**1592**-2003	Code of practice for A C pressure pipe
28	**12709-& 14402**	G R P Pipes used for water & Sewerage
29	**1592-2003**	code of practice for A C pipes & Fittings.
30	**6530**	Code of practice for laying of A C pressure pipes
31	**3589**	Electrically Welded steel pipe
32	**5504**-1969	Spiral Welded pipe
33	**5822**-1986	Laying of Steel Welded pipe
34	**6392**-1971	Steel pipe flanges.
35	**8062**	Code of practice for Cathodic protection

CODE OF PRACTICE		
List of I S (Indian Standard) For DRAINAGE WORKS		
Sr.No	**IS number**	**Particulars of Code**
36	**4111**-1986 Part 1	Code of practice for Man Hole Chamber construction
37	**4111**-1986 (Part 1 to 4)	Code of practice for Ancillary Structure in Sewage system Man Hole, Invert Syphon,Flushing Tnak,Pumping Station.& pumping Main.
38	**12592-**1991 Part 1 & 2	Precast Man Hole Frame & Cover specification
39	**1538**-1976 (part1 to10)	General Requirements.
40	**3764**-1966	Safety code for Excavation Works
41	**5382**-1985	Rubber Ceiling Ring for Water, Gas & Sewerage
42	**12820**-1989	Dimensional requirements for Rubber Ring Gaskets
43	**4883**-1988	Specification for Sewer Bricks
44	**2212**-1962	Code of practice for Brick works.
45	**6280**-. 2001	Sewerage Screen.
46	**11117**-1984	Requirements for High pressure Jetting Machine for Sewerage
47	**11397**-1985	Attachment Tools for Power Driven Roding Machine.
48	**5600**-1970	Sewage and Drainage Pumps.
49	**6279**-1971	Equipment for Grit removal device.
50	**10037**-1981 (part 1 to 3)	Requirements for Sludge dewatering equipment.
51	**11972**-1967	Code of practice for Safety precaution to be taken when entering in a Sewage system.
52	**10261**-1982	Requirements for settling Tank.
53	**10552**-1983	Buckets to be use in power driven bucket type sewage cleaning machine.
54	**10595**-1983	Requirements for power driven Bucket type of sewage cleaning machine.
55	**210**	Specification for Grey Iron Casting
56	**269**	Specification for ordinary and low heat Portland Cement
57	**383**	Specification for Coarse and fine aggregates from natural sources for concrete
58	**432**	Specification for Mild Steel and Medium tensile steel bars and Hard drawn steel wire for concrete reinforcement.
59	**456**	Code of practice for Plain and reinforcement concrete.
60	**516**	Methods of tests for strength of concrete
61	**554**	Dimension for pipe threads where pressure tight joints are required on the threads.
62	**774**	Flushing Cisterns for Water closets and urinals (Valve less symphonic type)
63	**775**	C I brackets & Supports for wash basin and sink.

CODE OF PRACTICE		
List of I S (Indian Standard) For DRAINAGE WORKS		
Sr.No	**IS number**	**Particulars of Code**
64	**1786**	Specification for high strength deformed steel bars and wires for concrete reinforcement.
65	**1742**	Code of practice for building drainage works
66	**3370** (Prat1 to 5)	Code of practice for concrete structures for storage of liquids
67	**269**	Specification for 33 Grade ordinary Portland Cement.
68	**10262**	Recommended guidelines for concrete mix design.
69	**12269**	Specification for 53 Grade ordinary Portland cement.
70	**455**	Specification for Portland Slag Cement
71	**12330 or 6909**	Specification for Sulphate resisting Portland Cement.
72	**3696**	Safety Code for scaffolds and ladder.(Part1 &2)
73	**2720**	Method of test for soils (Part 1 to 38)
74	**8989**	Safety Code for erection of concrete framed structures.
75	**6587**	Specification for spun hemp yarn.
76	**5611**-.2002	Code of practice for Waste Stabilization Ponds (Facultative Type)
77	**14846**	C I Air Valve.
78	**226 & 800-1975**	Structural Steel
79	**1538 P- i to xxii**	C I Fitting for pressure pipe.

BHAVNAGAR MUNICIPAL CORPORATION

Tender Notice (online) No. - BMC/DRAINAGE/SJMMSVY/TENDER/2023-05

PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O & M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1).

PROJECT FUNDED UNDER SWARNIM JAYANTI MUKYAMANTRI SHAHERI VIKAS YOJANA 2023-24

VOLUME – VI Price Bid

Milestone Dates	
Online Downloading of Technical Bid & Price Bid	As Per detailed Tender Notice
Pre – Bid Conference	As Per detailed Tender Notice
Last Date of Online Submission of Technical Bid & Price Bid	As Per detailed Tender Notice
Last Date for Physical Submission of Tender Fee, EMD and other Documents	As Per detailed Tender Notice
Online Opening of the Technical Bid	As Per detailed Tender Notice

INDEX

A. PREAMBLE TO PRICE SCHEDULES

1. Name of work: "Title as mentioned in Notice Inviting Tender"
2. The bidder shall quote his firm and fixed price for the entire work under this Contract, defined in more details in various sections of this bid document.
3. The rates and prices shall be submitted in the electronic formats given by n-procure
4. which is called Schedule-B, rates and prices received in any other formats will be rejected and the bids will be disqualified.
5. It will be entirely at the discretion of the employer to accept or reject the bidder's proposal, without giving any reasons whatsoever and the bidder shall not be permitted to withdraw his bid on this account.
6. In Price Schedule-B the Bidder shall quote prices for the items on lump sum / unit rate as called for against the each item.
7. In Price Schedule-B, bidder shall quote his price for entire work. Prices quoted in Schedule-B only will be considered for comparison and evaluation.
8. In the Price Schedule B-1 to Schedule B-2 bidder shall furnish breakup of his prices quoted in Price Schedule-B.
9. delete
10. Wherever for a particular item the quantities have been specified payment shall be on unit rate basis and unit variation in quantity will be paid with pro rata basis.
11. Each item is to be individually priced online and the amounts shall be added up to arrive at the "Total of each Price Schedule". No column in the Schedules of prices shall be left blank except where the item description requires the item to be priced on "as applicable" basis. The item shall not be priced if it is "not applicable" to the bidder's design, in which case the bidder shall add the words "Not Applicable". The wording in the item description is for subject matter guidance only; clause references are indicative only and all other relevant clauses shall also be referred to. The prices shall allow for all the works covered under the bid and all liabilities and contractual obligations whether separately specified or not. Items against which no prices are quoted shall not be separately paid for and the bidder shall be deemed to have covered the cost of execution of such items (according to the requirements of the bid document) in the prices quoted for other items.
12. Items not specifically listed in his Price Schedules, but required to be executed for satisfactory working/safety of the system as specified, will not be separately paid for by the Employer when executed and shall be deemed to be already covered by other items and rates listed in the price sheets No extra payment shall be given for any item which is required to complete and perform the project.
13. The total of the item prices in Price Schedule B-1 to Schedule B-2 shall be equal to the price quoted by the bidder in Price Schedule-B and shall be firm and fixed, during the pendency of the Contract. In case of any discrepancy noted in the various price schedules, those in Schedule B will be considered and binding on the Contractor. The prices in Price Schedule B-1 to Schedule B-2 of the successful

bidder shall be corrected accordingly. Only Price Schedule–B after carried over and arithmetic corrections if any will be considered for financial evaluation of the bid.

14. Delete
15. Schedule-D gives the basis of interim payment for construction of civil works.
16. The bidder shall be deemed to have allowed in his price for provision, maintenance and final removal of all temporary works of whatsoever nature required for construction including temporary bunds, diverting water, pumping, de-watering etc. for the proper execution of works. The rates shall also be deemed to include any works and setting out that may be required to be carried out for laying out of all the works involved.
17. Prices shall be filled online only.
18. The Price Schedules are to be read in conjunction with the conditions of Contract, the Specifications and other sections of these bid documents and these documents are to be taken as mutually explanatory of one another.
19. The bidder shall interpret the data furnished and carry out any additional survey work, or investigation work required at his own cost.
20. The prices quoted shall also include the cost of materials utilized for testing.
21. The bidder should acquaint himself with the site conditions including the access to Work site. The successful bidder shall have to make suitable access to work sites at his own cost. These accesses will be used by the other contractors working for BHAVNAGAR MUNCIPAL CORPORATION.
22. The item descriptions in price schedule are for subject matter guidance only and the prices shall include all the equipments / materials / accessories and services required as per the specifications. The bidder shall fill in the price schedule furnished.
23. The amount to be quoted for Defect Liability shall be as per Volume-II, General Conditions of Contract, Clause No. 1 "Security Deposit".
24. 1% of the value of work will be deducted from the Running bill against labour cess, which shall be non refundable.
25. Third Party Inspection / CSC agency will be deployed by BHAVNAGAR MUNCIPAL CORPORATION and charges of the same will be borne by Contractor.
26. Any expenditure incurred by inspection/ CSC agency for the work misinformed by the contractor and charges of inspection/ CSC agency without any work due to misinformation shall be recovered from the contractor.
27. The prices shall be quoted inclusive of all taxes, royalties and duties prevailing at the time of submission of the bids. Statutory variation if any during the currency of contract shall have to borne by the agency which shall be not reimbursed by the BHAVNAGAR MUNCIPAL CORPORATION.

28. The rates should be quoted inclusive of all taxes as per Volume-II, General Conditions of Contract, Clause.

B. Bid Form

Bidders are required to fill up all the blank spaces in this Bid Form.

To,
The Municipial
Commissioner
Bhavnagar
Municipal
Corporation
Bhavnagar

Dear Sir,

SUB: **"PROVIDING & LAYING VARIOUS DIAMETER RCC PIPE SPIGOT SOCKET RUBBER RING JOINT PIPELINE FOR THE STORM WATER DRAINAGE NETWORK INCLUDING 5 YEARS OF O & M IN ADHEWADA AREA OF BHAVNAGER MUNICIPAL CORPORATION (PART-1)".**

1. Having visited the site and examined the Bid Documents, Drawings, Conditions of Contract, Specifications, Schedules, Annexure, Preamble to Price Schedules, Price Schedules etc. including Addenda / Amendments to the above, for the execution of the above Contract, wethe undersigned offer to Design, Engineer, Procure, Construct, Complete, Commission, operate, maintain and Run the whole of the said works for 60(Sixty) Months from the date of commissioning including defects liability period as given in Conditions of Contract and in conformity with the drawings, conditions of Contract, specifications, Preamble to Price Schedules, Price Schedules, Annexure, Bidding Documents, including Addenda Nos._____ (insert numbers) for Lump sum fixed price of Rs._____.(Rupees_____ _____) for Construction or such other sum asmay be ascertained in accordance with the conditions.

2. I / We agree that;

   (a) If we fail to provide required facilities to the Employer's representative or any other person / Agency by the Employer to perform on his behalf for carrying out the inspection and testing of materials and workmanship.

   Or

   (b) If we incorporate into the Works, materials before they are tested and approved by theEngineer's representative

   Or

   (c) If we fail to deliver pure water of required quantity according to the conditions / stipulations of the Contract, the Engineer will be at liberty to

take any action including termination of Contract and impose at his absolute discretion any penalties, and / or reject the work.

3. We undertake, if our Bid is accepted, to complete and deliver the works in accordance with the Contract within 10 Months, Including of monsoons, from the date or receipt of Letter of Acceptance issued to us by

4. We agree to abide by this Bid for a period of **180 days** from the last date of submission of bid and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
5. In the event of our Bid being accepted, we agree to enter into a formal Contract Agreement with you incorporating the conditions of Contract there to annexed but until such agreement is prepared this Bid together with your written acceptance thereof shall constitute a binding Contract between us.
6. We agree, if our Bid is accepted, to furnish performance Security in the forms and of value specified in the General Conditions of Contract.
7. We have independently considered the amounts of liquidated damages shown in Appendix to Bid and agree that they represent a fair estimate of the damages likely to be suffered by you in the event of the work not being completed by us in time.
8. We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this_____day of_____20___

_____
(Signature)

_____
(Name of the person)

_____(In the capacity of)_____

Company Seal

_____
(Name of firm)

Duly authorized to sign Bid for and on behalf of
(Fill in block capitals)

_____

_____

_____

Witness :
Signature _____
Name _____

C. PREAMBLE

1. As mentioned in the Conditions of contract, the Contract being a Item Rate, the provision of measurement will be applicable only for the assessment of value of work done for inclusion in any interim certificate for part payment to the Contractor.

2. The Schedule specifies the procedure for all such assessment of the items specified in Schedule B.

3. Each item of Schedule-B has been divided into broad components. The Employer's Representative shall assess the value of each component as indicated in paragraph 6 herein below.

4. Percentages are indicated against each component of each items specified in Schedule B, based on the Employer's best appreciation of the value of the component as related to the total costs of the concerned item as whole. A head titled (any other item(s)) is included in each breakdown of schedule and the tenderer shall at the time of tendering indicate any additional items which he considers necessary but cannot be covered by any of the heads indicated in the breakup.

5. The percentage breakup as indicated in the Schedule may differ from that corresponding to the tenderer’s scheme and design and he should take this into account while quoting his lump sum prices for the items specified in Schedule-B.

6. The contractor shall, after approval of his detailed designs and drawings furnish to the Employer's Representative an initial bill of quantities to all major items, to be reviewed and updated periodically with the Employer's Representative. This bill of quantities will be used for assessment of percentage progress of the component at any stage. By measurement jointly taken by the Employer's Representative and the Contractor, mutually agreed and entered in the measurement books in the form and by the method approved by the Employer's Representative, and signed jointly by both the parties.

Abstract sheet for Drain Pipe Network for Adhewada (Bhavnagar)					
SR. NO.	**ITEMS**	**QTY.**	**RATE (RS.)**	**UNIT**	**AMOUNT (RS.)**
1	**ITEM NO.1 :**				
	Excavation in bituminous road as per required gradient and line including safety provisions using site rails and stacking excavated stuff including up to all required lead cleaning the site etc. complete for all lifts as specified.				
	Excavation in Bituminous Road (As per measarment sheet)	2140.00	251	Cu.M.	₹ 5,37,140.00
2	**ITEM NO.2 :**				
	Excavation for pipe line trenches for water supply, sewerage line, manhole etc. all with shoring and struting if required as per required gradient and line including safety provisions using site rails and stacking excavated stuff including up to all required lead cleaning the site etc. complete for all lifts and strata as specified.				
a	In all sorts of soil and soft murrum				
	(A) Upto 1.5 Mt. dpt.from G.L.	116578.75	89.00	Cu.M.	₹ 1,03,75,508.75
	(B) 1.5 Mt. TO 3.00 Mt. Depth	52030.00	98.00	Cu.M.	₹ 50,98,940.00
	(C) 3.0 Mt TO 4.50 Mt depth	2210.00	103.00	Cu.M.	₹ 2,27,630.00
d	In hard rock and / or in C. C. 1:2:4 or RCC with blasting, breaking, chiseling, or by chiseling/breaking only.				
	(A) Upto 1.5 Mt. dpt.from G.L.	3120.00	372.00	Cu.M.	₹ 11,60,640.00
3	**ITEM NO.3 :**				
	Providing bedding incl. ramming, watering, levelling, consolidating etc. Complete as per standard and instruction of engineer incharge				
	As above with Murrum brought from outside including all lead	12630.00	176.00	Cu.M.	₹ 22,22,880.00
4	**ITEM NO.4 :**				
	Providing and supplying ISI Marked Only R.C.C. pipes(of Sulphate Resisting Cement) in standard lengths of following class and diameter suitable for ~~either~~ ~~collar joints~~ ~~or~~ rubber ring joints including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc				

	Note : ~~One collar should be supplied with each full length plain ended RCC pipe, cost included in rates below.~~ One rubber ring should be supplied with each full length socketed pipe, cost included in rates below.				
	(D1) 300 mm dia (NP3 Class)	9090.50	755.00	Rmt.	₹ 68,63,327.50
	(F1) 400 mm dia (NP3 Class)	3237.00	1150.00	Rmt.	₹ 37,22,550.00
	(G1) 450 mm dia (NP3 Class)	2464.00	1361.00	Rmt.	₹ 33,53,504.00
	(H1) 500 mm dia (NP3 Class)	1422.00	1485.00	Rmt.	₹ 21,11,670.00
	(I1) 600 mm dia (NP3 Class)	3406.00	1946.00	Rmt.	₹ 66,28,076.00
	(J1) 700 mm dia (NP3 Class)	2302.00	2879.00	Rmt.	₹ 66,27,458.00
	(K1) 800 mm dia (NP3 Class)	1946.00	3175.00	Rmt.	₹ 61,78,550.00
	(L1) 900 mm dia (NP3 Class)	1244.00	3601.00	Rmt.	₹ 44,79,644.00
	(M1) 1000 mm dia (NP3 Class)	1268.00	4821.00	Rmt.	₹ 61,13,028.00
	(O1) 1200 mm dia (NP3 Class)	2844.00	5899.00	Rmt.	₹ 1,67,76,756.00
	(P1) 1400 mm dia (NP3 Class)	1622.00	7587.00	Rmt.	₹ 1,23,06,114.00
	(Q1) 1600 mm dia (NP3 Class)	1044.00	11167.00	Rmt.	₹ 1,16,58,348.00
	(R1) 1800 mm dia (NP3 Class)	1726.00	13608.00	Rmt.	₹ 2,34,87,408.00
	(S1) 2000 mm dia (NP3 Class)	547.00	16256.00	Rmt.	₹ 88,92,032.00
	(K1) 2200 mm dia (NP3 Class)	1120.00	19403.00	Rmt.	₹ 2,17,31,360.00
		35282.50	**TOTAL LENGTH**		
5	**ITEM NO.5 :**				
	Lowering, laying and jointing R. C. C. pipes in C. M. 1:1 1/2 of following diameters in proper position, grade and alignment at all level as directed by Engineer-in-charge including conveyance from stores to site of work, labour, giving hydraulic testing as per ISI code.				
	Note: Spigot & Shocket ending pipe with EPDM rubble Ring and also filling remaining gap of joint)				
	(D1) 300 mm dia (NP3 Class)	9840.50	119.00	Rmt.	₹ 11,71,019.50
	(F1) 400 mm dia (NP3 Class)	3237.00	152.00	Rmt.	₹ 4,92,024.00
	(G1) 450 mm dia (NP3 Class)	3214.00	171.00	Rmt.	₹ 5,49,594.00
	(H1) 500 mm dia (NP3 Class)	1422.00	189.00	Rmt.	₹ 2,68,758.00
	(I1) 600 mm dia (NP3 Class)	3406.00	228.00	Rmt.	₹ 7,76,568.00
	(J1) 700 mm dia (NP3 Class)	2302.00	268.00	Rmt.	₹ 6,16,936.00
	(K1) 800 mm dia (NP3 Class)	1946.00	302.00	Rmt.	₹ 5,87,692.00
	(L1) 900 mm dia (NP3 Class)	1244.00	340.00	Rmt.	₹ 4,22,960.00
	(M1) 1000 mm dia (NP3 Class)	1268.00	375.00	Rmt.	₹ 4,75,500.00
	(O1) 1200 mm dia (NP3 Class)	2844.00	440.00	Rmt.	₹ 12,51,360.00
	(P1) 1400 mm dia (NP3 Class)	1622.00	514.00	Rmt.	₹ 8,33,708.00
	(K1) 1600 mm dia (NP3 Class)	1044.00	577.00	Rmt.	₹ 6,02,388.00
	(K1) 1800 mm dia (NP3 Class)	1726.00	650.00	Rmt.	₹ 11,21,900.00
	(K1) 2000 mm dia (NP3 Class)	547.00	726.00	Rmt.	₹ 3,97,122.00
	(K1) 2200 mm dia (NP3 Class)	1120.00	805.00	Rmt.	₹ 9,01,600.00
		36782.50	**TOTAL LENGTH**		
6	**ITEM NO.6 :**				

	Providing and constructing Sewer manholes, scraper manholes and unit house connection chamber, as per the type design in brick masonry in C. M. 1:5 and inside and outside 20mm thick plastering in C. M. 1:3 necessary 100 mm coping with reinforcement in R.C.C.M. 200 fixing C. I. steps/polypropylene steps and fixing manhole frame and covers (But excluding supply of manhole frame and covers) over manholes and house connection chambers and fixing Manhole covers (but excluding supplying of manhole covers) over scraper manhole etc. complete, providing and fixing safety chain wherever necessary as per the stipulations in the type design complete as per latest CPHEEO manual.(excl. excavation).				
	GWSSB SOR 2022-23, Section 2 D, Item No. 2, Page No. 101 & 102				
	TYPE-A 1200 mm DIA				
	1.20 mt.Depth	57	13504.60	No.	₹ 7,69,762.20
	1.30 mt.Depth	86	14167.40	No.	₹ 12,18,396.40
	1.40 mt.Depth	80	14830.20	No.	₹ 11,86,416.00
	(Add or Deduct Rs.662.80 per	223			
	0.10 Mt.Depth increase or				
	decrease.)				
	TYPE- B 1500 mm DIA				
	1.50 mt. Depth	175	21116.00	No.	₹ 36,95,300.00
	1.60 mt. Depth	95	22347.30	No.	₹ 21,22,993.50
	1.70 mt. Depth	68	23578.60	No.	₹ 16,03,344.80
	1.80 mt. Depth	63	24809.90	No.	₹ 15,63,023.70
	1.90 mt. Depth	45	26041.20	No.	₹ 11,71,854.00
	2.00 mt. Depth	41	27272.50	No.	₹ 11,18,172.50
	2.10 mt. Depth	38	28503.80	No.	₹ 10,83,144.40
	2.20 mt. Depth	39	29735.10	No.	₹ 11,59,668.90
	2.30 mt. Depth	35	30966.40	No.	₹ 10,83,824.00
	2.40 mt. Depth	25	32197.70	No.	₹ 8,04,942.50
	2.50 mt. Depth	31	33429.00	No.	₹ 10,36,299.00
	2.60 mt. Depth	26	34660.30	No.	₹ 9,01,167.80
	2.70 mt. Depth	31	35891.60	No.	₹ 11,12,639.60
	2.80 mt. Depth	31	37122.90	No.	₹ 11,50,809.90
	2.90 mt. Depth	26	38354.20	No.	₹ 9,97,209.20
	3.00 mt. Depth	71	39585.50	No.	₹ 28,10,570.50
	3.10 mt. Depth	27	40816.80	No.	₹ 11,02,053.60
	3.20 mt. Depth	22	42048.10	No.	₹ 9,25,058.20
	3.30 mt. Depth	12	43279.40	No.	₹ 5,19,352.80
	3.40 mt. Depth	9	44510.70	No.	₹ 4,00,596.30
	3.50 mt. Depth	5	45742.00	No.	₹ 2,28,710.00
	3.60 mt. Depth	2	46973.30	No.	₹ 93,946.60
	3.70 mt. Depth	1	48204.60	No.	₹ 48,204.60
	3.80 mt. Depth	1	49435.90	No.	₹ 49,435.90
	3.90 mt. Depth	3	50667.20	No.	₹ 1,52,001.60

	(Add or Deduct Rs.1231.30 per	922			
	0.10 Mt.Depth increase or				
	decrease.)				
	Total Manhole	1,145			
7	**ITEM NO.7 :**				
	For Dewatering : In all sorts of soil and soft murrum, hard Murrum and boulders, Soft Rock, Hard Rock, Extra for Dewatering in all sorts of Strata's , for each 1.5 mt part there of beyond 1.5 mt depth	33579.36	27.00	Cu Mtr.	₹ 9,06,642.72
8	**ITEM NO.8 :**				
	RCC precast M.H. Frame & Cover Manufacture, supply & Delivery at store or at site of work precast RCC M.200 Frame & cover suitable to drainage M.H. and as per type design & Drawing including cost of reinforcement M.S.Angles or Flat, curing mold work etc.For Circular / Square manhole (heavy duty)				
	(A) Frame suitable for 50cm opening of Manhole	1145.00	1121.00	No.	₹ 12,83,545.00
	(B) Cover suitable for 50cm opening of Manhole	1145.00	1173.00	No.	₹ 13,43,085.00
	Frame For House or Inlet connection Chamber Light duty	1386.00	813.00	No.	₹ 11,26,818.00
	Cover For House or Inlet connection Chamber Light duty	1386.00	920.00	No.	₹ 12,75,120.00
9	**ITEM NO 9 :**				
	Providing and constructing rectangular brick masonry chamber for house connection as per type design in brick masonry in C. M. 1:3 including M-100 in foundation M-150 in benching inside plastering in C. M. 1:3 and outside plastering in C. M. 1:3 coping in M200 and fixing RCC precast manhole frame and covers, but Excl. supply of manhole and cover etc. complete excl. excavation. (For Crossing Connection)	1386.00	7922.00	C.M.	₹ 1,09,79,892.00
10	**ITEM NO.10 :**				
	Refilling the pipeline trenches incl. ramming, watering, consolidating desposal of surplus stuff as directed within a radius of 3 km.	117640.00	22.00	C.M.	₹ 25,88,080.00
11	**ITEM NO.11 :**				

	Providing and supplying ISI marked only Standard length **Stoneware pipes** in standard lengths of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. (IS - 651 / 1989). & Lowering, laying and jointing Stone Ware pipes of following diameters with cement joints in C. M. 1:1 proportion in proper position, grade and alignment at all level as directed by Engineer-in-charge including conveyance from stores to site of work, Jointing material etc. comp.				
	Stoneware Pipes-Class A				
	100 mm dia	700	171	Rmt	₹ 1,19,700.00
	150 mm dia	500	251	Rmt	₹ 1,25,500.00
	200 mm dia	500	365	Rmt	₹ 1,82,500.00
12	**ITEM NO.12 :**				
	Add for restoration of infrastructures like Kharkuwa, Electrical Line, Telephone cables all types, water lines, gas line, septic tanks, etc.				
A	Kharkuwa ~~Repairing~~				
	0.00 to 1.5 Mt.	693	1829	No.	₹ 12,67,497.00
	1.5 to 3.00 Mt	693	1931	No.	₹ 13,38,183.00
B	Electric/ Telephone cable	693	721	No.	₹ 4,99,653.00
13	**ITEM NO.13:**				
	Providing and supplying D. I.(K-7) pipes for following nominal bore diameter with internal cement mortar lining including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. (IS 8329-2000). Rate for DI pipe based on Wholesale Price index of Pig Iron as 157.60 for the month of Dec-2022. For sewerage project cement mortor lining shall be with sulphate resistance cement.				
	100 mm	100	1003.0	No.	₹ 1,00,300.00
	150 mm	100	1477.0	No.	₹ 1,47,700.00
	200 mm	100	1880.0	No.	₹ 1,88,000.00
	250 mm	75	2466.0	No.	₹ 1,84,950.00
	300 mm	75	3110.0	No.	₹ 2,33,250.00
	350 mm	25	3858.0	No.	₹ 96,450.00
	400 mm	25	4583.0	No.	₹ 1,14,575.00
	450 mm	25	5418.0	No.	₹ 1,35,450.00
	500 mm	25	6505.0	No.	₹ 1,62,625.00
	600 mm	25	8483.0	No.	₹ 2,12,075.00

14	**ITEM NO.14:**				
	Lowering, Laying and Joining S & S Spun pipe suitable for tyton joints / mortor line D.I.Pipe of Various classes with CI/ MS Special of Following dia in proper position, gradeade aligment as directed by engineer-in- charge including hurulic testing etc. comp.				
	100 mm	100	55.0	No.	₹ 5,500.00
	150 mm	100	76.0	No.	₹ 7,600.00
	200 mm	100	99.0	No.	₹ 9,900.00
	250 mm	75	127.0	No.	₹ 9,525.00
	300 mm	75	155.0	No.	₹ 11,625.00
	350 mm	25	188.0	No.	₹ 4,700.00
	400 mm	25	225.0	No.	₹ 5,625.00
	450 mm	25	265.0	No.	₹ 6,625.00
	500 mm	25	312.0	No.	₹ 7,800.00
	600 mm	25	404.0	No.	₹ 10,100.00
15	**ITEM NO.15:**				
	Pipe Encasing: Providing C.C.M.:100 for encasing/CC Block pipes using trap metal size 12 mm to 50 mm incl. form work curing consolidation etc. complete for various location on pipeline. Using trap metal 40 mm size	224.30	3368.55	Cum	₹ 7,55,565.77
16	**ITEM NO.16:**				
	Providing and fixing including fabrication as per Drawings or Engineer Incharge Instruction, work screen with round bar of MS at various Junction	2500	140	Kg	₹ 3,50,000.00
17	**ITEM NO.17:**				
	Providing and supplying ISI Standard R.C.C. pipes(of Sulphate Resisting Cement) in standard lengths of following class and diameter suitable for either collar joints or rubber ring joints including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc.				
	(a) 250 mm dia NP3 class	120.00	527.00	Rmt	₹ 63,240.00
	(b) 300 mm dia NP3 class	120.00	755.00	Rmt	₹ 90,600.00
	(c) 450 mm dia NP3 class	120.00	1532.00	Rmt	₹ 1,83,840.00
	(d) 600 mm dia NP3 class	120.00	2174.00	Rmt	₹ 2,60,880.00
18	**ITEM NO.18:**				

	Lowering, laying and jointing R. C. C. pipes in C. M. 1:1 1/2 of following diameters in proper position, grade and alignment at all level as directed by Engineer-in-charge including conveyance from stores to site of work, labour, giving hydraulic testing as per ISI code.				
	(a) 250 mm dia NP3 class	120.00	97.00	Rmt	11640.00
	(b) 300 mm dia NP3 class	120.00	119.00	Rmt	14280.00
	(c) 450 mm dia NP3 class	120.00	171.00	Rmt	20520.00
	(d) 600 mm dia NP3 class	120.00	228.00	Rmt	27360.00
19	**ITEM NO.19:**				
	Renovation of manhole by increasing the height at top including cost of excavation, refitting of C. I. manhole frame and cover curing etc. complete incl. all carting and providing of materials which is required for the purpose (except manhole frame and cover) For all type manhole by providing RCC 1:2:4 Partition walls with required reinforcement 25 cm thick and circular opening with 500mm clear dia and 0.40 mt. av.ht.				
		32.00	3374.00	No.	107968.00
20	**ITEM NO.20:**				
	Loosen, de-silt and thoroughly clean and remove debris and objects such as boulders, bricks etc. bacteriological slimes, roots, encrustations, grease, carbonated deposits, etc from the sewer line including disposal of silt / debris / malba / objects etc. by super suction machine.				
	(a) 300mm dia.& below	120.00	1190.00	Rmt	142800.00
	(b) 450 mm dia	120.00	1785.00	Rmt	214200.00
			TOTAL AMOUNT	**Rs.**	**₹ 22,80,64,076.74**

Adhewada					
Estimate of Road Restoration - Pipe Drain work					
Abstract Sheet					
Sr. No.	**Item**	**Per**	**Qty**	**Rate**	**Amount**
1	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam (WMM) specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per Codal Provision.	CMT	21008.36	853.39	1,79,28,320.78
2	Graded Granular sub base (GSB) Providing & laying of compacted thickness of 200 mm Closed Graded Granular sub base (GSB) in single layer of graded granular material consisting of machine cut black Trap stone aggregate, as per grading - V given in table 400-1 of the specification MORT&H and compactor to the required density with 8 - 10 tonne vibratory roller with plain drum or heavy pneumatic tyred roller of minimum 200 to 300 KN weight in all seasons as per MORT&H , maintaining the required slope & grade during the operation as approved by the engineer in charge & watering to the proper moisture content and sprinkled with the help of truck mounted water tank fitted with suitable arrangement. (fully saturated having CBR value minimum 30)	CMT	11031.68	771.03	85,05,756.23
3	Supplying of graded Machine broken stone size of 40 mm to 63 mm at site.	CMT	3324.89	847.46	28,17,703.39
4	Labour charges for spreading the spouls 63 mm thick layer good earth filling in voids correcting the grade & camber comp. with rolling, watering, incl. preparing the surface by brushing for removing all loose or dirts ect.comp.	CMT	3324.89	152.54	5,07,186.61
5	Providing and laying controlled cement concrete For Various grade as mention below including temping , vibrating , Finising curing etc Complete but excluding the Cost of reinforcement and filling Expansion joint including proposing the and washing With Water etc Complete (C) M:250 garde. 150mm thk or More	CMT	564	5247	29,59,308.00
6	Providing and laying cement concrete 1:3:6 (1-Cement : 3- coarse sand : 6- hand broken stone aggregates 40 mm nominal size) and curing complete excluding cost of formwork in (A) Foundation and Plinth.	CMT	282.4	2959	8,35,621.60
				Total	**3,35,53,896.61**

Tender Part -1		
PIPE DRAIN WORK		
1	O & M Cost 1 year	12,00,000.00
2	O & M Cost 2 year	13,20,000.00
3	O & M Cost 3 year	14,52,000.00
4	O & M Cost 4 year	15,97,200.00
5	O & M Cost 5 year	17,56,920.00

BHAVNAGAR MUNCIPAL CORPORATION		
Adhewada Stromwater Pipe Drain Network Estimate Summary		
SCHEDULE - B		
SR. NO.	ITEM DESCRIPTION	AMOUNT (RS)
PART A		
1	Pipe Drain Network	₹ 22,80,64,076.74
2	Road Restoration	₹ 3,35,53,896.61
	Total Of Part A (CAPEX)	₹ 26,16,17,973.35
PART B		
1	O & M Cost of Civil work for 1st Year	₹ 12,00,000.00
2	O & M Cost of Civil work for 2nd Year 10 % Increase	₹ 13,20,000.00
3	O & M Cost of Civil work for 3rd Year 10 % Increase	₹ 14,52,000.00
4	O & M Cost of Civil work for 4th Year 10 % increase	₹ 15,97,200.00
5	O & M Cost of Civil work for 5th Year 10 % increase	₹ 17,56,920.00
	Total Of Part B	₹ 73,26,120.00
	Part A + Part B (Tender Cost)	₹ 26,89,44,093.35

Special Note :-

1. Municipal Commissioner has right to cancel whole or part work during execution of work.
2. Charges for the testing of material or TPI will be borne by work agency.
3. Joint Venture will not allowed.
4. The quoted rates should be inclusive of all taxes, incurance, labor overhead charges , Contractor's Profilt,
5. GST will be paid extra as per prevailing rules in all running / Final bills.
6. R & B Resonution No.TNC- 10-2017-01-C dated 11.07.2017 Form B-1 Clause -14.2 " Except that when quantity of any item exceeds the quantity as in the tender by more then 10 % the contractor will be paid for the quanitiy in excess of 10 % at the rate entered in the SOR of the year during which the excess in quanitity is first executed or tender rate whichever is less.

SUBMISSION OF PRICE PROPOSAL : I HAVE VISITED THE SITE OF WORK AND THOURGHLY GO THROUGH STATED SPECIFICATIONS AND CONDITIONS OF CONTRACT, HENCE, I AM SUBMITTING/ QUOTING RATE.....% ABOVE OR BELOW THEN ESTIMATED WORK AMOUNT RS.26,89,44,093.35 (Indian Rupees).

Signature of contractor
Name

City Engineer
BMC

Company's Seal

Drainage Department

Date

Date

MUNICIPAL CORPORATION

BHAVNAGAR

VENDOR LIST

(A)LIST OF APPROVED VENDORS FOR CIVIL WORKS

Sr. No.	ITEMS	Approved Brands / Quality
1	CEMENT PPC 53 Grade & SULPHATE RESISTANT CEMENT,S.R.C.	Ambuja, Hathi, Ultra Tech, Sanghi, Siddhi, Hi-bond
2	BRICKS	MBM, Arjun, PBM, 555, Kisan, ABM, TRD, Paresh, Dhara, B.R.C., Kiran, BMB, Kirit, Sonal
3	Steel TMT, CRS	TISCO, SAIL, VIZAG, Kamdhenu, NATIONAL, Electrotherm, JSW, Welspun steel, Pollad Steel, DIAMOUND TMT, M. G. Steel, Friends Steel, Crown next TMT, Briskon TMT
4	VITRIFIED TILES	Asian, Kajaria, Jonson, Varmora, Simpolo, OASIS
5	CERAMIC TILES	Asian, Kajaria, Johnson, Varmora, Simpolo, OASIS
6	GLAZED TILES	Asian, Kajaria, Johnson, Varmora, Simpolo
7	ACRYLIC PAINT	ICI, Asian, Nerolac, Burger
8	OIL BOUND DISTEMPER	ICI, Asian, Nerolac, Burger
9	EXTERIOR WEATHER PROOF EMULSION PAINT	ICI, Asian, Nerolac, Burger
10	Oil Paint	ICI, Asian, Nerolac, Burger
11	SANITARY WARE	Cera, Hindware, Parryware
12	CAST IRON PIPES AND FITTINGS.	NECO, Swayarhoo, Bengal, Oriental Castings, Electro steel Castings
13	P.V.C. PIPES AND FITTING (UPVC/CPVC)	Finolex, Supreme, Jain, Kisan, Astral, Dutron, Prince
14	CHROMIUM PLATED WATER SUPPLY FITTINGS	Jaquar, Ess Ess, Plumber ,ESSCO, Crown, Metro, Prince
15	GALVANIZED PIPE	Tata, Essco, Jaquar, Ess Ess, Plumber
16	GALVANIZED FITTINGS	'R' Brand, 'RV' Brand, Kranti
17	C.I. MANHOLE COVER	Manish, Sil, NECO
18	PLUMBING FIXTURES	Jaguar, Plumber, Essco
19	PVC WATER TANK (100% VIRGIN PVC)	SIntex, Aqua
20	ALUMINIUM SHEETS AND ACCESSORIES	Nalco, Jindal, Hindalco, Banko

Sr. No.	ITEMS	Approved Brands / Quality
21	ALUMINIUM EXTRUDED DOOR/ WINDOW SECTION	Jindal, Hindalco, Banko, Ajin India, Aldowin, Alumilite
22	ALUMINIUM HARDWARE	Rajdoot, Belu, Diamond, Glider, Ajin India, Aldowin, Alumilite
23	WATER PROOFING MATERIALS	Zycosil, Dr. Fixit,Kerakoll, Pidilite, Roff
24	DOOR CLOSER	Efficient Gadget, Everite, Hardwin, Aldowin, Ozone
25	DOOR FITTINGS	Godrej, Efficient Gadgets (E.G.) Dunex, Doorset, Suzu, Coral
26	HINGES	Suzu, Yama, E.P.P.W.
27	SCREW AND BOLTS	Nettle Folds, GKW, Stud
28	BOLTS & FASTENERS	Hilti, Fisher
29	LIFT	Top, Express, Omega,OTIS, Schander, TRIO, Aegis Elevator, Mitsubishi, Aditya, Siemens slider
30	ROOFING MATERIAL – Galvalume sheets	TATA, Essar, Jindal
31	Slag Cement	SANGHI CEMENT Sanghipuram
32	CPVC PIPES FOR AUTOMATIC SPRINKLER FIRE EXTINGUISHING SYSTEM	ASTRAL POLY TECHNIK LIMITED પાર્કિંગ એરિયા, બેઈઝમેન્ટ એરિયા જેવા વિસ્તારો સિવાય માત્ર કન્સીલ્ડ પાઈપીંગ માટે આ કંપનીના CPVC pipe નો ઉપયોગ fire sprinkler piping માટે કરવાની મંજુરી આપવામાં આવે છે.
33	AAC Blocks	NXTBLOC
34	Jointing Mortar	NXTFIX Block
35	Ready Mix Plaster	NXTPLAST
36	Block joining Masonry Mortar	Unifix
37	Tile adhesive	Unifix
38	RCC bench	Sardar Pre cast
39	Rubber mould garden curbin	Sardar Pre cast

Sr. No.	ITEMS	Approved Brands / Quality
40	Rubber mould Paver block	Sardar Pre cast
41	Fencing Pole	Sardar Pre cast
42	RCC Masonry block	Sardar Pre cast
43	Pre cast wall	Sardar Pre cast

(B) LIST OF APPROVED VENDORS FOR MECHANICAL & ELECTRICAL WORKS

Sr. No.	Description	Name of Manufacturer
1	HSCF Pump	Crompton Greaves Ltd
		Kirloskar Brothers Limited (KBL)
		JASCO
		Mather & Platt Pumps Ltd.
		Jyoti Ltd.
2	Electric Motor	Lubi Industries LLP
		Bharat Bijlee Ltd.
		Jyoti Ltd.
		JSL Industries Ltd.
		Jeumont Electrical India Pvt. Ltd.
		LHP
3	Electrical Panel	Crompton Greaves Ltd
		Bhagyashree Power Control
		Dynamic Control System
		Elembica Services
		JSL Industries Ltd.
		Nutral Power Tech
4	Kinetic Air Valve	Kirloskar Brothers Limited (KBL)
		FOURESS Engineering (India) Limited.
		Durga Valves Pvt.Ltd
		Orbinox
		શ્રી કિષ્ના ઈન્ડસ્ટ્રીઝ
5	Expansion Bellows	Precise Engineers
6	Dewatering (Drain) Pump(Submersible/ Horizontal)	KSB Pumps
		Kirloskar Brothers Limited (KBL)
		JASCO
		Crompton Greaves Ltd
		La Gajjar Machinery Pvt Ltd.
		Pullen Pumps Industries Pvt. Ltd.
		MBH
7	Sluice Valves and Sluice Gate	Kirlosker Brothers Limited (KBL)
		DURGA Valves Pvt.Ltd
		L & T Valves
		Jupiter
		SACHDEVA
8	UPVC Pipe	Supreme Industries Ltd.,Mumbai
		Dutron Polymers Ltd
		Parixit Industries Ltd., A'bad
		Jain Irrigation Systems Ltd., Jalgaon
9	HDPE Pipe	Parixit Industries Ltd., A'bad
		Jain Irrigation Systems Ltd., Jalgaon
		Dutron Polymers Ltd
		Jindal
		Essar Steel
10	C.I. Pipe	Electro Steel, Kejriwal, Oriental Castings, BIC, Jindal, Lanco Industries Ltd.,Chennai, Kesins
13	EOT Crane	Grip Engineering Pvt. Ltd., JAPS Project, Brady & Morris Engineering Co. Ltd., Techno Industries

Sr. No.	Description	Name of Manufacturer
14	Cable & Wires	KEI Industries Ltd.
		Polycab Wires Pvt. Ltd.
		Aerolex Cables Pvt. Ltd.
		Allwin Industries
		Finolex Cables
		L&T Cables
		ULTRA CAB (India) Limited
15	Transformer	Atlanta Electricals Pvt. Ltd.
		Powerlite Electricals
		Voltamp Transformers Ltd.
		SKP Transformers
		Arya Electronics
16	Components for MCC :	
	Switch	L&T, Siemens
	HRC Fuse	L&T, Siemens
	Timer	L&T, Siemens
	Relay	L&T, Siemens
	Push Button Stations	L&T, Siemens
	Indicating Lamp	L&T, Siemens
	Cable Jointing Kit	CCI, M. Seal
	MCB/DB's	MDS, Siemens, Indokupp
17	Capacitors	L&T, Crompton, Khatau Note: Capacitors shall be oil fill type
18	KWH Meter	Simco, Jaipur, GEC
19	Light Fittings: (Indoor & Outdoor Luminaries)	Philips, Crompton, Bajaj, NESSA Illumination
20	Exhaust Fans	Crompton, Bajaj,
21	Ceiling Fans	Crompton, Bajaj, Havells
22	Air Blowers	Everest Ltd.
		Swan Pneumatics (P) Ltd
23	Alum Dosing Pumps	Asia LMI
		VK Pumps
		Swelore
24	Pressure Gauges	General Instruments
		Bells Control
		H. Guru Marketing
25	Level Gauge / Indicator	R K Dutt
		Levecon
		S. B. Electromec
26	Clarifier Equipment	Enviro Control Associates
		Voltas Ltd
		Hindustan Dorr-Oliver
		Geomiller/Triveni
27	Chlorination System	Industrial Device (I) Pvt. Ltd
		Metito
		Chloroequip
		Pennwalt
28	Gear Box	Greaves
		Radicon
		Elecon
		Shanti

Sr. No.	Description	Name of Manufacturer
29	Level Switches	Level-Tech
		Revathi Electronics
		Levec
30	Refrigerator	LG, Samsung, Kelvinator
31	PVC Pipes for Fluid	Finolex, Jain Irrigation
32	PVC Conduits for Electricals	Precision, Shakti
33	Butterfly Valve	KIRLOSKAR Brothers Limited(KBL), DURGA valves Pvt Ltd, L & T valves, R&D MULTIPLE, Jupiter, શ્રી કૃષ્ણા ઈન્ડસ્ટ્રીઝ IVC, IVI, Audco, R & D multiple, Jupiter, Cair, Orbit Engineers
34	Check Valve (Dual Plate check Valve)	KIRLOSKAR Brothers Limited(KBL), DURGA valves Pvt Ltd, Orbinox, R&D MULTIPLE, Orbit Engineers
35	Metallic Expansion Bellow	Beloflex(B.D. Engineers), Stanfab Engineering Pvt. Ltd., D. Wren Engineering Pvt. Ltd., Sur Industries,
36	Centrifugal / Centrifugal Non Clog Pumps	Beacon Weir, KSB, Mather & Platt (Wilo), Worthington, WPIL, Xylem pumps , Grundfos Pumps Pvt. Ltd., MBH, JASCO
37	Submersible non Clog Pumps / Submersible Centrifugal Pumps	Kirlosker, KSB, ABS, ITT- Flyght, Xylem pumps, Grundfos Pumps Pvt. Ltd. , MBH, JASCO, AQUA, Jyoti, PULLEN PUMPS, Alpha, Het Pump
38	Screw Pump	Roto, Netzsch, Tushaco, Seepex
39	Metering / Dosing Pumps	Swellore, V.K. Pumps, Shapotools
40	Non Return Valves (Single / multi door) / Dual Plate Check Valves	Kirlosker, IVC, IVI, R & D multiple, Durga, Jupiter, Cair, Orbit Engineers
41	Knife Gate valves	Jash, Fouess, Vass (Dezurick), Vag, Orbinox, Orbit Engineers
42	Sluice gates / open Chanel Gates	Jash Engineering, IVC, R & D Multiple, Jupiter
43	Mechanical Fine Screens – Step (Mat) Type / Drum Type	Jash, Huber, Johnson, Savi, Italy, Apollo Screens
44	Mechanical Course bar Screen	Jash, Huber, Johnson, HDO, Triveni, Savi, Italy
45	Manual Bar Screen	Jash, Japs, HDO, Triveni, Auric
46	Grit mechanism	EIMCO – KCP, Hindustan Dorr – Oliver, Jash-Shivpad, Triveni, Voltas
47	Diffused Aeration System	EDI, OTT, Rehau
48	Air Blower	Kay, Swam, Everest, Usha Compressors, Gardner Denver
49	Agitator / mixer	Remi, Schurtek, Fibre & Fibre, Milton Roy
50	Gear Boxes	Greaves, Elecon, CPEC, PEPL, Bonfiglioli
51	Centrifuge	Humboldt, Alpha Laval, Hiller

Sr. No.	Description	Name of Manufacturer
52	HDPE Pipes	Astral, Dutron, Duraline, Narmada, RIL (PIL), Penwalt, Anjney, jain irrigation, Sangir
53	Air Compressor	Ingersoll – Rand, khosla, Kirlosker, CPE, Alpha
54	Bearing For All Equipments	SKF, FAG, Tata
55	Fasteners	Precision, Durakhanawala, Echjay, Tata, Sundaram
56	Mechanical Seals	Eagle Seals (Sealol), Durametallic, Burgman
57	Electric Actuator	Auma ,Rotork, Emerson, Pentair
58	(1) CATEGORY III Indoor LED fittings, LED Panel light, LED down light, outdoor LED ligh (street light, LED flood light, LED Post top lantern, LED bollard) (2) Solar LED Light	NESSA ILLUMINATION TECHNOLOGIES PVT.LTD., Litsun, Nextray
59	STREET LIGHT POLES	AMBICA POLES (for octogonal poles,swage poles,street loght poles, high mast poles,decorative poles, conical poles, JETCOTECH Engineering LLP
60	Resilient Seated Slice Valve	Cair
61	Air Vale	Cair, Orbit Engineers
62	Flow Control valve	Cair
63	Altitude Control valve	Cair, Orbit Engineers
64	Pressure reducing valve	Orbit Engineers
65	Pressure relief valve	Orbit Engineers
66	Ball valve	Orbit Engineers
67	Mast pole	JETCOTECH Engineering LLP
68	Earthing material	JETCOTECH Engineering LLP
69	Hot dip galvanizing	JETCOTECH Engineering LLP
70	LED Highbay	Litsun

(C) LIST OF APPROVED VENDOR FOR INSTRUMENTATION SYSTEM

SR NO	DESCRIPTION	Name Of Manufacturer
1	Electromagnetic Flow Meter	E+H, Siemens, Abb, Fuji, Yokogawa, Krohne-Marshall, AAROHI Embedded System Pvt Ltd., Emerson, SBEM
2	Pressure Gauges	Wika, H.Guru, General Instruments Consortium Manometer (India) P. Ltd. , Baumer, Waaree
3	Pressure Switch	Danfoss , Indfoss , Switzer
4	Process Analyzers (pH, DO, Free / Residual Chlorine , BOD / COD)	E+H , Emerson , Hach , Chemitech , Polymetron, Wtw (Forbes Marshall),Yokogawa
5	Ultrasonic transmitter level / diff. level / flow	E+H, Siemens – Milltronics, Krohne, Vega
6	Hydraulic level transmitter	E+H,Siemens, ABB, Forbes- Marshall, Emerson, SBEM
7	Displacer/Float Switches	Levcon, Nivo, Toshbro, Pune Techtrol , SBEM
8	PP Float / Buoyancy switch	Pepprl + Fuchs, Baumer, Waaree, E+H , Pune Techtrol , SBEM
9	Float & Board Type Level Gauge	Levcon, Nivo, Toshbro, Pune Techtrol, SBEM
10	Electromagnetic Flow Meter	E+H, Siemens, ABB, Fuji, Yokogawa, Krohne-Marshall
11	Field Transmitter (P, DP,F, L , T)	ABB, Fuji, Yokogawa, Honeywell, Emerson
12	Pressure Gauges	Wika, H.Guru, General Instruments Consortium Manometer (India) P. Ltd., Baumer, Waaree
13	Panel Mounted Process Indicator & Flow Integrator	Masibus, Nishko, Nivam, Selectron, Radix, Yokogawa, ABB
14	Pressure Switch	Danfoss, Indfoss, Switzer
15	Programmable Logic Controllers	Rockwell (Allen Bradeley), Siemens, Schneider, Fuji, ABB, GE Fanuc
16	Control Panel Enclosure	Rittal, Enklotek, Bartakke, BCH, Eldon
17	Alarm Annunciator	Aplab Ltd., Minilec , IIC
18	Solenoid valves	Asco, Rotex, Schrader
19	Tube Fitting	Excel Hydropneumatic, Multimetal, Placka

20	Instrument Valves , Manifolds	Aptek, Anmol (Superlok), Excel Hydropneumatic, General
21	Fitting	Instrument Consortium , Multimetal, Technomatic, Placka
22	Pneum , Brass Fitting	Swagelok, Multimetal Industries, SMC, Festo
23	Control Panel Accessories / Components	
a.	Miniature Relay	Wago, Omron,Phoenix, Rockwell
b.	Indication Pilot Lamps (LED Type)	Teknic, Schneider, Siemens
c.	Push Button / Selector Switch (with NO/NC Elements)	Teknic, Schneider, Siemens
d.	DC Power Supplies (DIN Rail mounted)	Phoenix, Omron, Schneider, Rockwell
e.	Terminals	Elmex, Phoenix, Wago, Connectwell
f.	Panel Wires	Finolex , Havell's , R R Kabel
g.	Panel Illumination	Philips , Crompton , GE
24	Instrument Cables (Power , Signal , Control)	Associated Cables, Associated Flexible and Wires P.Ltd., Brooks Cables, Thermo Cables, Udey Pyro
25	Cable Glands	Ex- protecta, Braco, Sudhir, Comet, Connectwell
26	Junction Box	Ex- protecta, CEAG, Sudhir, Baliga, FCG
27	Cable Tray	M.M.Engineering, Globe, Jacinth, Equi. Reputed, JETCOTECH Engineering LLP
28	Computer System	HP-Compaq, Dell, IBM, Sony, Samsung
29	UPS	Hirel-Hitachi, Emerson, APC
30	1. PLC (Programmable Logic Controller) 2. SCADA (Supervisory Control and Data acquisition) 3. VFD (Variable Frequency Drive Up to 500 KW) 4. ACB (Air Circuit Breaker up to	MITSUBISHI ELECTRIC INDIA PRIVATE LIMITED, Emerald House, EL-3, J Block, M.I.D.C., Bhosari, Pune 411026

	6000A) 5. MCCB (Moulded Case Circuit Breaker up to – 1600 A) 6. MCB (Miniature Circuit Breaker up to – 63 A) 7. ELCB (Earth Leakage Moulded Case Circuit Breaker up to 1600 A) 8. Contractor up to – 800 A & OLR (Over load Relay) up to 630 A 9. Multi Functional Meters 10. MPCB (Motor Protection Circuit Breaker up to 32 A)	

(D) LIST OF APPROVED VENDORS FOR MATERIALS RELATED TO WATER SUPPLY AND SEWERAGE NETWORK

SR. NO.	ITEMS	NAME OF AGENCIES
1	A C Pressure pipe MAZZA process	Lotus, Kirti
2	A C Pressure pipe MEGHNANI process	Lotus, Kirti, Hindustan
3	Sluice Valve	Durga, kartar, Kirloskar, Jupiter, SACHDEVA (C.I. & D.I.), શ્રી કિષ્ના ઈન્ડસ્ટ્રીઝ, Cair, Orbit Engineers
4	DI Pipe	Electrotherm (I) Ltd.,Ahmedabad, Lanco Industries Ltd.,Chennai, Electrsteel, Jindal Saw Ltd.,Ahmedabad, Kesins, Welspun
5	R.C.C. PIPE (COLLAR JOINT & SOCKET SPIGOT JOINT) CLASS NP3 & NP4, & R.C.C. COLLARS	VIPUL SPUN PIPES (SIHOR & LATHIDAD,BOTAD), KATARIYA & CO. (DHASSA), OMKARESHVAR PIPES (NAVAGAAM), OMKAR PIPES (LATHIDAD, BOTAD), MARUTI PIPES (BAGODARA ,AHMEDABAD), KALATHIYA PIPES(BAGODARA ,AHMEDABAD), R. S. PIPES (BODELI), UMA HUME PIPES (KALOL, GANDHINAGAR), SIDHDHIVINAYAK (KARDEJ ,BHAVNAGAR)
6	R.C.C. MACHINEOLE FRAME & COVER, INLET FRAME COVER 10T.(600*450 MM.) , 20T.,35T., & 50T.	SONI CEMENT PRODUCT , VIPUL SPUN PIPES, KATARIYA & CO., OMKARESHVAR PIPES, OMKAR PIPES, MARUTI PIPES, KALATHIYA PIPES , R. S. PIPES, UMA HUME PIPES, SIDHDHIVINAYAK , S.K. Corporation, Laxmi Price Industries, S.J.Corporation, Sardar pre cast
7	Stone ware PipeManufacturer having BIS Certificate for ISI marking	Krishna Pipe, j.K. Pipe, Taya ceramic, Burn & co., perfect Potteries, Navroji Vakil, Kashmira
8	D.I. & C.I. FITTINGS	RG BRAND, ESSEM Engineering Industries, Bikaners Engineers works
9	CID Joints	ESSEM Engineering Industries
10	Valves & Graded Castings	ESSEM Engineering Industries
11	Pipe Fittings	ESSEM Engineering Industries, Bikaners Engineers works
12	CI/DI/MS graded castings	Bikaners Engineers works
13	Scaper machine hole	Sardar Pre cast

MUNICIPALCORPORATION

BHAVNAGAR

VENDOR LIST

LIST OF APPROVED VENDORS FOR CIVIL WORKS

Sr. No.	ITEMS	Approved Brands / Quality
1	CE MENT PPC 43/ 53 Grade & SULPHATE RESISTANT CEMENT, S.R.C.	Ambuja, Hathi, Ultra Tech, Sanghi, Siddhi,Hi-bond
2	BRICKS	MBM, Arjun, PBM, 555, Kisan
3	Steel TMT, CRS	TISCO, SAIL, VIZAG, Kamdhenu, NATIONAL, Electrotherm, JSW, Welspun steel
4	VITRIFIED TILES	Asian, Kajaria, Jonson, Varmora, Simpolo
5	CERAMIC TILES	Asian, Kajaria, Jonson, Varmora, Simpolo
6	GLAZED TILES	Asian, Kajaria, Jonson, Varmora, Simpolo
7	ACRYLIC PAINT	ICI, Asian, Nerolac, Burger
8	OIL BOUND DISTEMPER	ICI, Asian, Nerolac, Burger
9	EXTERIOR WEATHER PRO€3F EMULSION PAINT	ICI, Asian, Nerolac, Burger
10	Oil Paint	ICI, Asian, Nerolac, Burger
11	SANITARY WARE	Cera, Hindware, Parryware
12	CAST IRON PIPES AND FITTINGS.	NECO, Swayarhoo, Bengal, Oriental Castings, Electro steel Castings
13	P.V.C. PIPES AND FITTING (UPVC/CPVC)	Finolex, Supreme, Jain, Kisan, Astral, Dutron, Prince
14	CHROMIUM PLATED WATER SUPPLY FITTINGS	Jaquar, Ess Ess, Plumber, ESSCO, Crown, Metro, Prince
15	GALVANIZED PIPE	Tata, Essco, Jaguar, Ess Ess, Plumber
16	GALVANIZED FITTINGS	'R' Brand, 'RV' Brand, Kranti
17	C.I. MANHOLE C0VER	Manish, Sil, NECO
18	PLUMBING FIXTURES	Jaguar, Plumber, Essco
19	PVC WATER TANK (100% VIRGIN PVC)	Syntex, Aqua
20	ALUMINIUM SHEETS AND ACCESSORIES	Nalco, Jindal, Hindalco, Banko
21	ALUMINIUM EXTRUDED DOOR/WINDOW SECTION	Jindal, Hindalco, Banko, Ajin India, Aldowin, Alumilite
22	ALU MINIUM HAR DWARE	RaJdoot, Belu, Diamond, Glider, Ajin India, Aldowin, Alumilite
23	WATER PROOFING MATERIALS	Zycosil, Dr. Fixit, Kerakoll, Pidilite, Rolf
24	DOOR CLOSER	Efficent Gadget, Everite, Hardwin, Aldowin, Ozone
25	DOOR FITTINGS	Godrej, Efficient Gadgets (E.G.) Dunex, Doorset, Suzu, Coral
26	HINGES	Suzu, Yama, E.P.P.W.
27	SCREW AND BOLTS	Nettle Folds, GKW, Stud
28	BOLTS & FASTENERS	Hilti, Fisher
29	LIFT	Top, Express, Omega, OTIS, Schander, TRIO
30	ROOFING MATERIAL — Galvalume sheets	TATA, Essar, Jindal

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LIST OF APPROVED FOR MECHANICAL & ELECTRICAL WORKS

Sr. No.	Description	Name of Manufacturer
1	HSCF Pump	Crompton Greaves Ltd. Kirloskar Brother Ltd (KBL) JASCO Mather & Platt Pumps Ltd. Jyoti Ltd.
2	Electric Motor	Lubi Industries LI.P Bharat Bijlee Ltd. Jyoti Ltd. JSL Industries Ltd. Jeumont Electrical India Pvt. Ltd.
3	Electrical Panel	Crompton Greaves Ltd Bhagyashree Power Control Dynamic Control System Elembica Services JSL industries Ltd.
4	Kinetic Air Valve	Kirloskar Brother Ltd (KBL) FOURESS Engineering (India) Limited. Durga Valves Pvt.Ltd. Orbinox
5	Expansion Bellows	Precise Engineers
6	Dewatering (Drain) Pump (Submersible/ Horizontal)	KSB Pumps Kirloskar Brothers Limited (KBL) JASCO Crompton Greaves Ltd La Gajjar Machinery Pvt Ltd. Pullen Pumps Industries Pvt. Ltd. MBH
7	Sluice Valves and Sluice Gate	Kitlosker Brothers Limited (K8L) DURGA Valves Pvt.Ltd L & T Valves
8	UPVC Pipe	Supreme Industries Ltd.,Mumbai Dutron Polymers Ltd Parixit industries Ltd., A'bad Jain Irrigation Systems Ltd., Jalgaon
9	HDPE and DWC Pipe	Parixit Industries Ltd., A'bad Jain Irrigation Systems Ltd., Jalgaon Dutron Polymers Ltd Jindal Essar Steel
10	C.I. Pipe	Electro Steel, Kejriwal, Oriental Castings, BIC, Jindal, Lanco Industries Ltd., Chennai, Kesins
11	EOT Crane	Grip Engineering Pvt. Ltd. JAPS Project, Brady & Morris Engineering Co. Ltd., Techno Industries
12	Cable & Wires	KEI Industries Ltd. Polycab Wires Pvt. Ltd. Aerolex Cables Pvt. Ltd. Allwin Industr‹es Finolex Cables L&T Cables
13	Transformer	Atlanta Electricals Pvt. Ltd. Powerlite Electricals Voltamp Transformers Ltd. SKP Transformers
14	Components for MCC:	

	Switch	L&T, Siemens, Kirloskar
	HRC Fuse	L&T, Siemens, Kirloskar
	Timer	L&T, Siemens, Kirloskar
	Relay	L&T, Siemens, Kirloskar
	Push Button Stations	L&T, Siemens, Kirloskar
	Indicating I.am p	L&T, Siemens, Kirloskar
	Cable Jointing Kit	CCI, M. Seal
	MCB/DB's	MDS, Siemens, Indokupp
15	Capacitors	L&T, Crompton, Khatau Note: Capacitors shall be oil fill type
16	KWH Meter	Simco, Jaipur, GEC
17	Light Fittings: (indoor & Outdoor Luminaries)	Philips, Crompton, Bajaj
18	Exhaust Fans	Crompton, Bajaj,
19	Ceiling Fans	Crompton, Bajaj, Havells
20	Air Blowers	Everest Ltd. Swan Pneumatics (P) Ltd
21	Alum Dosing Pumps	Asia LMI VK Pumps Swelore
22	Pressure Gauges	General Instruments Bells Control H. Guru Marketing
23	Level Gauge/ Indicator	R K Dutt Levecon S. B. Electromec
24	Clarifier Equipment	Enviro Control Associates Valtas Ltd Hindustan Dorr-Oliver Geomiller/Triveni
25	Chlorination System	Industrial Device (I) Pvt. Ltd Metito Chloroequip Pennwalt
26	Gear Box	Greaves Radicon Elecon Shanti
27	Level Switches	Level-Tech Revathi Electronics Levec
28	Refrigerator	LG, Samsung, Kelvinator
29	PVC Pipes for Fluid	Finolex, Jain Irrigation
30	PVC Conduits for Electricals	Precision, Shakti
31	Butterfly Valve	KIRLOSKAR Brothers Limited (KBL), DURGA valves Pvt Ltd, L & T valves, R&D MULTIPLE
32	Check Valve (Dual Plate check Valve)	KIRLOSKAR Brothers Limited (KBL), DURGA valves Pvt Ltd, Orbinox, R&D MULTIPLE
33	Metallic Expansion Bellow	Beloflex(B.D. Engineers), Stanfab Engineering Pvt. Ltd., D, Wren Engineering ng Pvt. Ltd., Sur Industries
34	Centrifugal/ Centrifugal Non-Clog Pumps	Beacon Weir, KSB, Mather & Platt (Wilo), Worthington, WPIL, Xylem pumps; Grundfos Pumps Pvt. Ltd., MBH, JASCO
35	Submersible non Clog Pumps / Submersible Centrifugal Pumps	Kirlosker, KSB, ABS, ITT- Flyght, Xylem pumps, Grundfos Pumps Pvt.Ltd., MBH,

		JASCO, AQUA, Jyoti
36	Screw Pump	Roto, Netzsch, Tushaco, Seepex
37	Metering/ Dosing Pumps	Swellore, V.K. Pumps, Shapotools
38	Non-Return Valves (Single/ multi door) Dual Plate Check Valves	Kirlosker, IVC, IVI, R & D multiple, Durga
39	Butterfly Valves	Kirlosker, IVC; IVI, Audco, R&D multiple, Durga
40	Knife Gate valves	Jash, Fouess, Vass (Dezurick), Vag, Orbinox
41	Sluice gates/ open Chanel Gates	Jash Engineering, IVC, R & D Multiple
42	Mechanical Fine Screens - Step (Mat) Type / Drum Type	Jash, Huber, Johnson, Savi, Italy
43	Mechanical Course bar Screen	Jash, Huber, Johnson, HDO, Triveni,Savi, Italy
44	Manual Bar Screen	Jash, laps, HDO, Triveni, Auric
45	Grit mechanism	EIMCO - KCP, Hindustan Dorr - Oliver, Jash- Shivpad, Triveni, Voltas
46	Diffused Aeration System	EDI, OTT, Rehau
47	Air Blower	Kay, Swam, Everest, Usha Compressor s, Gardner Denver
48	Agitator / mixer	Remi, Schurtek, Fibre & Fibre, Milton Roy
49	Gear Boxes	Greaves, Elecon-, CPEC, PEPL, Bonfiglioli
50	Centrifuge	Humboldt, Alpha Laval, Hiller
51	HDPE Pipes	Astral, Dutron, Duraline, Narmada, RIL {PIL), Penwalt, Anjney, jain irrigation, Sangir
52	Air Compressor	Ingersoll - Rand,khosla,Kirlosker, CPE
53	Bearing for All Equipments	SKF, FAG, Tata
54	Fasteners	Precision, Durakhanawala,Echjay, Tata, Sundaram
55	Mechanical Seals	Eagle Seals (Sealol),Du rametallic, Burgman
56	Electric Actuator	Auma, Rotork, Emerson, Pentair
57	DWC Pipe	Kiran Infra Tech ,AA Vasani Poly Pipe LLP ,NOBLE POLYTEC,Jain Irrigation Systems Ltd., Prince Pipes & Fittings Limited, Signet Industries Limited, . Alom Poly Extrusions Ltd.

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(C) LIST FOR APPOROVED VENDER FOR INSTRUMENTATION SYSTEM

Sr. No.	DESCRIPTION	Name of Manufacturer
1	Electromagnetic Flow Meter	E+H, Siemens, Abb, Fuji, Yokogawa, Kr ohne-Marshall, AAROHI Emb edded System Pvt Ltd., Emerson
2	Pressure Gauges	Wika, H.Guru, General Instruments Consortium Manometer (India) P. Ltd.,Baumer, Waaree
3	Pressure Switch	Danfoss, Indfoss, Switzer
4	Process Analyzers (pH, DO, Free Residual Chlorine, BOD/COD)	E+H, Emerson, Hach, Chemitech, Polymetron, Wtw (Forbes Marshall), Yokogawa
5	Ultrasonic transmitter level/diff.-level / flow	E+H, Siemens - Milltronics, Krohne, Vega
6	Hydraulic level transmitter	E+H,Siemens, ABB, Forbes- Marshall, Emerson
7	Displacer/Float Switches	Levcon, Nivo, Toshbro, Pune Techtrol, SBEM
8	PP Float/ Buoyancy switch	Pepprl + Fuchs,Baumer, Waaree, E+H, Fune Techtrol, SBEM
9	Float & Board Type Level Gauge	Levcon, Nivo, Toshbro, Pune Techtrol, SBEM
10	Electromagnetic Flow Meter	E+H, · Siemens, ABB, Fuji, Yokogawa, Krohne-Marshall
11	Field Transmitter (P, DP, F, L, T)	ABB, · Fuji, Yokogawa,Honeywell, Emerson
12	Pressure Gauges	Wika, H.Guru, General Instruments Consortium Manometer (India) P. Ltd., Baumer, Waaree
13	Panel Mounted Process Indicator &Flow Integrator	Masi bus, Nishko, Nivam, Selectron, Radix, Yokogawa, ABB
14	Pressure Switch	Danfoss, Indfoss, -Switzer
15	Programmable Logic Controllers	Rockwell (Allen Bradeley), Siemens, Schneider, Fuji, ABB, GE Fanuc
16	Control Panel Enclosure	Rittal,Enklotek, Bartakke, BCH, Eldon
17	Alarm Annunciator	AplabLtd., Minilec, IIC
18	Solenoid valves	Asco, Rotex, Schrader
19	Tube Fitting	Excel Hydropneumatic, Multimetal, Placka
20	Instrument Valves, Manifolds	Aptek, Anmol (Superlok), Excel Hydropneumatic, General
21	Fitting	Instrument Consortium, Multimetal, Technomatic, Placka
22	Pneum, Brass Fitting	Swagelok, Multimetal Industries, SMC, Festo
23	Control Panel Accessories/ Components	
a.	Miniature Relay	Wago, Omron, Phoenix, Rockwell
b.	Indication PilotLamps (LED Type)	Teknic, Schneider, Siemens
c.	Push Button/ Selector Switch (with NO/NC Elements)	Teknic, Schneider, Siemens
d.	DC Power Supplies (DIN Rail mounted)	Phoenix, Omron, Schneider, Rockwell
e.	Terminals	EJmex, Phoenix, Wago, Connectwell
f.	Panel Wires	Firiolex, Havell's, R R Kabel
g.	Panel Illumination	Philips, Crompton, GE
24	Instrument Cables (Power, Signal,Control)	Associated Cables, · Associated Flexible .and Wires P. Ltd., Brooks Cables, ThermoCables, Udey Pyro
25	Cable Glands	Ex-protecta, Braco, Sudhir, Comet, Connectwell
26	Junction Box	Ex-protecta, CEAG, Sudhir, ·Baliga, FCG
27	Cable Tray	M.M. Engineering, Globe, Jacinth, Equi. Reputed
28	Computer System	HP -Compaq, Dell, IBM, Sony, Samsung
29	UPS	Hirel-Hitachi, Emerson, APC

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(D) LIST FOR APPOROVED VENDER FOR MATERIAL TO WATER SUPPLY AND SEWERAGE NETWORK

Sr. No.	ITEMS	NAME OF AGENCIES
1	A C Pressure Pipe MAZZA Process	Lotus, Kirti
2	A C Pressure Pipe MEGHGHANI Process	Lotus, Kirti, Hindustan
3	Sluice Valve	Durga, Kartar, Kirloskar
4	DI Pipe	Electrotherm (I) Ltd, Ahmedabad, Lanco Industries Ltd., Chennai, Electrsteel, Jindal Saw Ltd., Ahmedabad, Kesins
5	R.C.C. PIPE (COLLAR JOINT& SOCKET SPIGOT JOINT) CLASS NP3&NP4 & R.C.C. COLLARS	VIPUL SPUN PIPES (SIHOR & LATHIDAD, BOTAD), KATARIYA & CO. (DHASSA), OMKARESHVAR PIPES (NAVAGAAM), OMKAR PIPES (LATHI DAD, BOT AD), MARUTI PIPES (BAGODARA, AHMEDABAD), KALATHIYA PIPES (BAGOOARA, AHMEDABAD), R. S. PIPES (BODELI), UMA HUME PIPES (KALOL GANDHINAGAR), SIDHDHIVINAYAK (KARDEJ, BHAVNAGAR)
6	R C.C. MANHOLE FRAME &COVER, INLET FRAME COVER 10T. (600*450 MM.), 20T.,35T., &5OT.	BHAGIRATH CEMENT PRODUCT, (HIMALAYA & HERO). SONI CEMENT PRODUCT, VIPUL SPUN PIPES, KATARIYA &CO., OMKARESHVAR PIPES, OM KAR PIPES, MARUTI PIPES. KALATHIYA PIPES, R. S. PIPES, UMA HUME PIPES, SIDHDHIVINAYAK, S.K. Corporation, Laxmi Price Industries, S.J. Corporation.
7	Stone ware Pipe Manufacturer having BIS Certificate for ISI marking	Krishna Pipe, J.K. Pipe, Taya ceramic, Burn & co., perfect Potteries, Navroji Vakil, Kashmira

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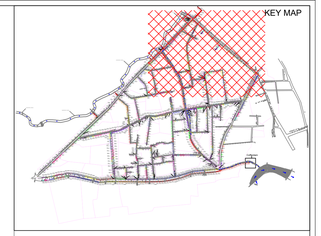
Special Conditions of this Tender

- Bidder shall make a note that reinforcement used for this project shall be either of TATA/ SAIL/ Electrotherm / Vizag/ JSW Steelmanufacturers.
- Bidder shall make a note that MCC Panel used for this project shall be either of L&T / Siemens/ Kirloskar.
- Bidder shall also make a note that concrete greater than 5 cum shall be brought at site through Ready Mix Concrete (RMC) batchingplant only.

KANSARA CANAL

KEY MAP



For DPR purpose only

LAYER MANAGAR

S.NO.	DISCRIPTION	SYMBOL	S.NO.	DISCRIPTION	SYMBOL
1.	ASPS/SPS	△	5.	NODE NO.	◎
2.	MANHOLE NO.	MH-	6.		
3.	GROUND LEVEL	GL-	7.	L = LENTH PIPE DIA IN MM SLOPE	
4.	INVERT LEVEL	IL-	8.		

DISTRIBUTION OF PIPE SYSTEM

S.NO.	DISCRIPTION	SIMBOL
1.	250 MMØ RCC PIPE	
2.	300 MMØ RCC PIPE	
3.	350 MMØ RCC PIPE	
4.	400 MMØ RCC PIPE	
5.	450 MMØ RCC PIPE	
6.	500 MMØ RCC PIPE	
7.	600 MMØ RCC PIPE	
8.	700 MMØ RCC PIPE	
9.	800 MMØ RCC PIPE	
10.	900 MMØ RCC PIPE	
11.	1000 MMØ RCC PIPE	
12.	1100 MMØ RCC PIPE	
13.	1200 MMØ RCC PIPE	
14.	1400 MMØ RCC PIPE	
15.	CATCHMENT AREA	

CLIENT:

BHAVNAGAR MUNICIPAL CORPORATION (BMC)

CONSULTANT:

TTI Consulting Engineers(I) Pvt.Ltd

PROJECT TITLE

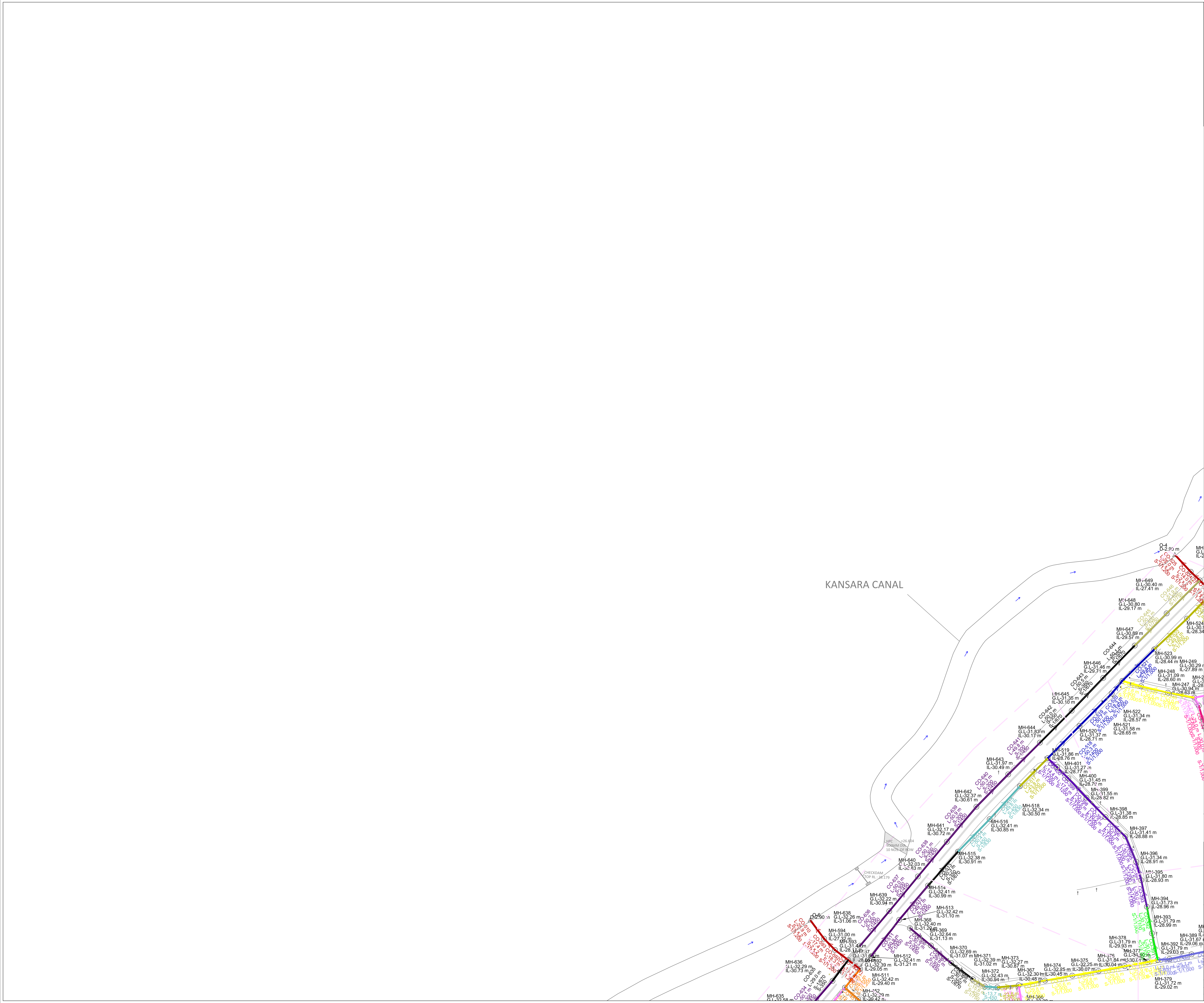
CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

DRAWING TITLE

PROPOSED DRAIN NETWORK

DRAWING NO:

DRAWN: Dhruvil	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:07-02-2024	SCALE:	SHEET NO: 01 OF 04



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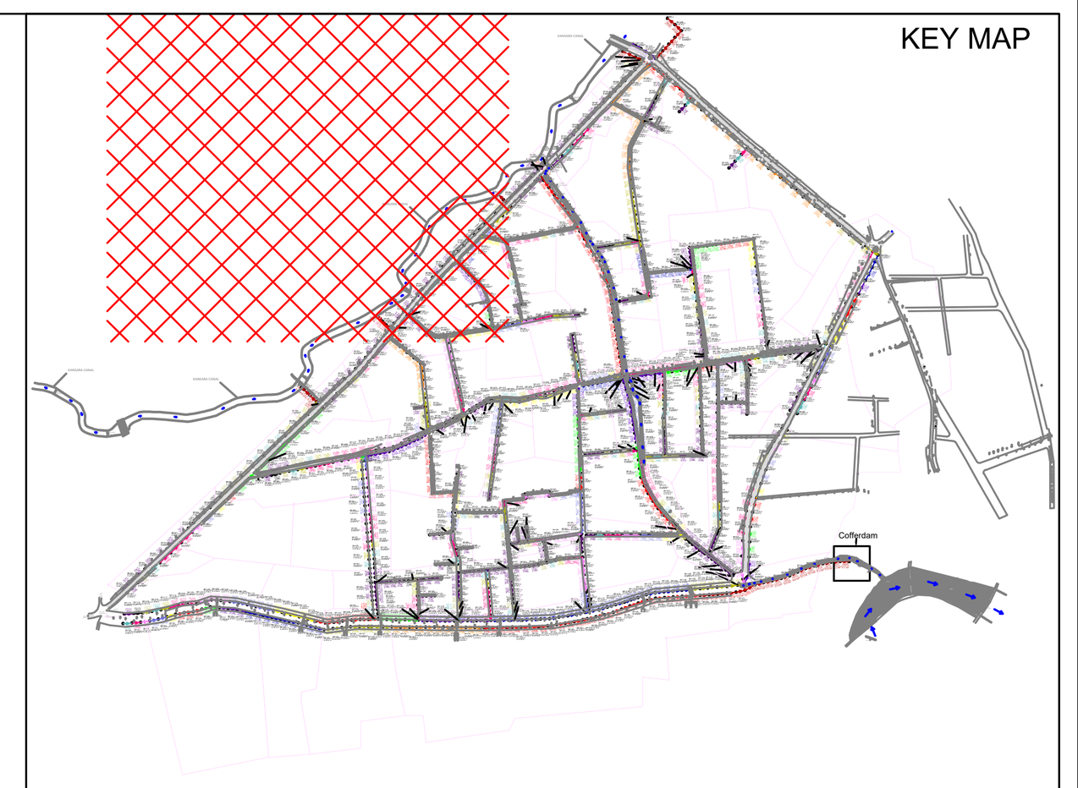

For DPR purpose only

LAYER MANAGAR

S.NO.	DISCRIPTION	SYMBOL	S.NO.	DISCRIPTION	SYMBOL
1.	ASPS/SPS	△	5.	NODE NO.	◎
2.	MANHOLE NO.	MH-	6.	→	
3.	GROUND LEVEL	GL-	7.	L = LENTH	
4.	INVERT LEVEL	IL-	8.	PIPE DIA IN MM SLOPE	

DISTRIBUTION OF PIPE SYSTEM

S.NO.	DISCRIPTION	SIMBOL
1.	250 MMØ RCC PIPE	——
2.	300 MMØ RCC PIPE	——
3.	350 MMØ RCC PIPE	——
4.	400 MMØ RCC PIPE	——
5.	450 MMØ RCC PIPE	——
6.	500 MMØ RCC PIPE	——
7.	600 MMØ RCC PIPE	——
8.	700 MMØ RCC PIPE	——
9.	800 MMØ RCC PIPE	——
10.	900 MMØ RCC PIPE	——
11.	1000 MMØ RCC PIPE	——
12.	1100 MMØ RCC PIPE	——
13.	1200 MMØ RCC PIPE	——
14.	1400 MMØ RCC PIPE	——
15.	CATCHMENT AREA	- - - - -

CLIENT:

..\..\..\Desktop\BMC LOGO IMAGE.jpg

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CONSULTANT:

TTI Consulting Engineers(I) Pvt.Ltd

PROJECT TITLE

CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

DRAWING TITLE

PROPOSED DRAIN NETWORK

DRAWING NO:

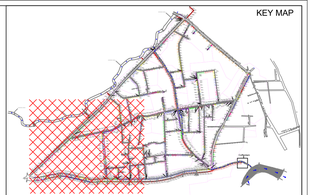
DRAWN: Dhruvil	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:07-02-2024	SCALE:	SHEET NO: 02 OF 04

KANSARA CANAL

MAJOR BRIDGE +36.204

CHECKDAM TOP RL- 30.124 +29.616

KEY MAP



For DPR purpose only

LAYER MANAGAR

S.NO.	DISCRIPTION	SYMBOL	S.NO	DISCRIPTION	SYMBOL
1.	ASPS/SPS	△	5.	NODE NO.	◎
2.	MANHOLE NO.	MH-	6.		
3.	GROUND LEVEL	GL-	7.	L = LENTH PIPE DIA IN MM SLOPE	
4.	INVERT LEVEL	IL-	8.		

DISTRIBUTION OF PIPE SYSTEM

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10.	900 MMØ RCC PIPE	
11.	1000 MMØ RCC PIPE	
12.	1100 MMØ RCC PIPE	
13.	1200 MMØ RCC PIPE	
14.	1400 MMØ RCC PIPE	
15.	CATCHMENT AREA	

CLIENT:

BHAVNAGAR MUNICIPAL CORPORATION (BMC)

CONSULTANT:

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PROJECT TITLE

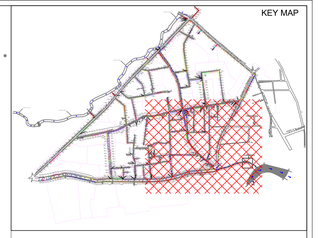
CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

DRAWING TITLE

PROPOSED DRAIN NETWORK

DRAWING NO:

DRAWN: Dhruvil	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:07-02-2024	SCALE:	SHEET NO: 03 OF 04



For DPR purpose only

LAYER MANAGAR

S.NO.	DISCRIPTION	SYMBOL	S.NO	DISCRIPTION	SYMBOL
1.	ASPS/SPS	△	5.	NODE NO.	◎
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DISTRIBUTION OF PIPE SYSTEM

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9.	800 MMØ RCC PIPE	
10.	900 MMØ RCC PIPE	
11.	1000 MMØ RCC PIPE	
12.	1100 MMØ RCC PIPE	
13.	1200 MMØ RCC PIPE	
14.	1400 MMØ RCC PIPE	
15.	CATCHMENT AREA	

Cofferdam

CLIENT:

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CONSULTANT:

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PROJECT TITLE

CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

DRAWING TITLE

PROPOSED DRAIN NETWORK

DRAWING NO:

DRAWN: Dhruvil	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:07-02-2024	SCALE:	SHEET NO: 03 OF 04

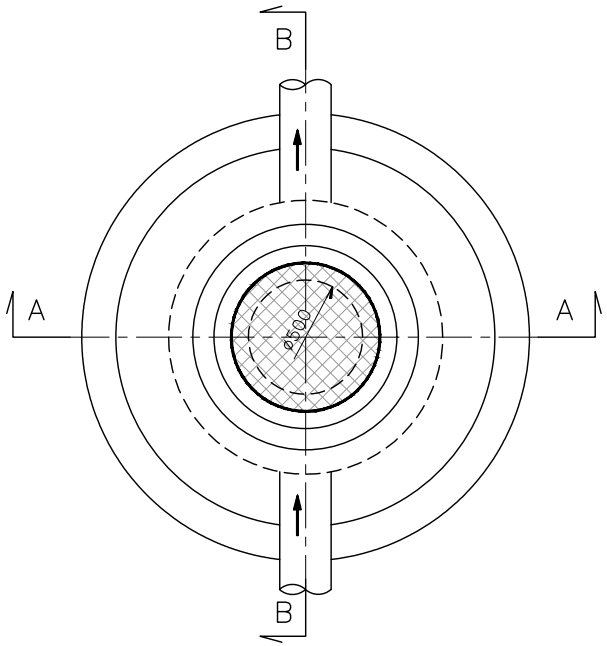
CIRCULAR MANHOLE

UP TO 600mmØ (Depth Up to 1.5M)

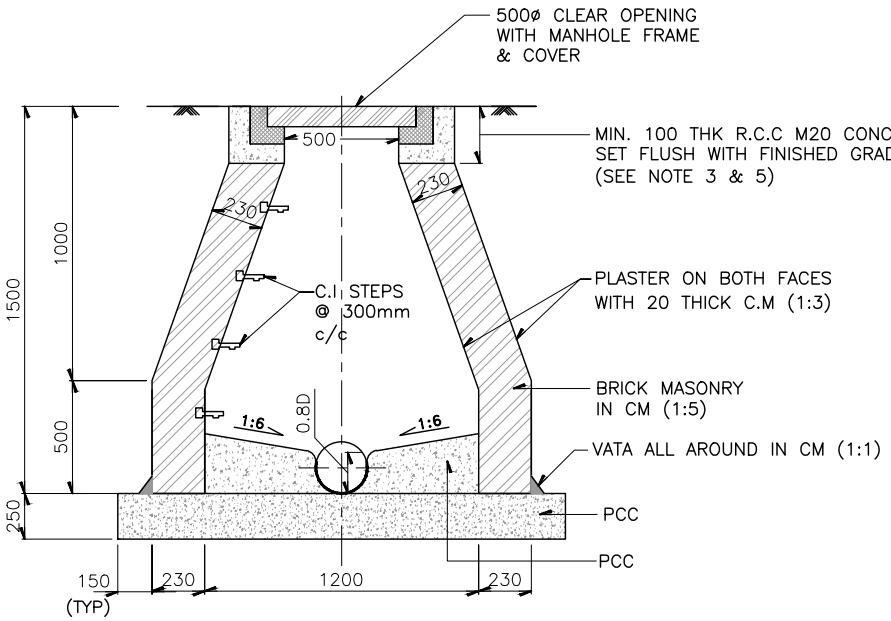
Note :
The input data for this drawing has been received by the respected municipality; however, it is to be verified on-site before considering it for any work.

DRAWING NOTES

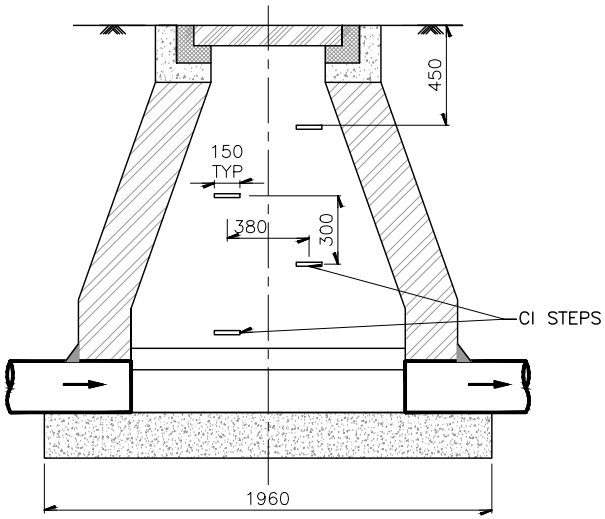
1) FOR TENDER PURPOSE ONLY.
2) THE INPUT DATA FOR THIS DRAWING HAS BEEN RECEIVED BY THE RESPECTED MUNICIPALITY; HOWEVER, IT IS TO BE VERIFIED ON-SITE BEFORE CONSIDERING IT FOR ANY WORK.



PLAN



SECTION A–A



SECTION B–B

NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. 'D' IS DIAMETER OF SEWER PIPELINE
3. 100 THICKNESS OF CONCRETE CAN BE VARIED TO FLUSH MANHOLE COVER AND FRAME WITH ROAD SURFACE.
4. CI STEPS FIXED WITH CEMENT MORTAR 1:3.
5. SFRC MANHOLE FRAME & COVER AS PER I.S. 12592-2002.
6. THE BENCHING AT THE SIDE OF THE CHANNEL SHALL START FROM 08 D FROM BASE AND THEN RISE WITH SLOPE OF 1 IN 6 TOWARDS THE SIDE OF THE MANHOLE. SEMICIRCULAR PORTION WILL BE ACHIEVED IN CEMENT CONCRETE FINISHING ITSELF.
7. INTERNAL PLASTERING SHALL BE SULPHATE RESISTANT CEMENT (SRC)

CLIENT:

BHAVNAGAR MUNICIPAL CORPORATION (BMC)

CONSULTANT:

TTI Consulting Engineers(I) Pvt.Ltd

PROJECT TITLE

CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

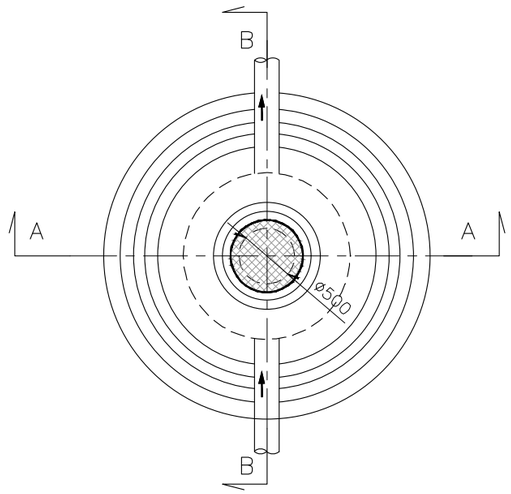
DRAWING TITLE: TYPICAL DETAILS OF 1200 MM DIAMETER CIRCULAR MANHOLE

DRAWING NO:

DRAWN: Jagath	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:25-11-2023	SCALE:	SHEET NO: 01 OF 03

'C' TYPE CIRCULAR MANHOLE

FOR 150MM TO 600MM DIA (Depth 1.5M TO 12M)



PLAN

LEGEND:

TYP	----------	TYPICAL
DIA	----------	DIAMETER
UN	----------	UNLESS NOTED
THK	----------	THICK
PCC	----------	PLAIN CEMENT CONCRETE
EQ	----------	EQUAL
C.I.	----------	CAST IRON
SFRC	----------	STEEL FIBRE REINFORCED CONCRETE

Note :
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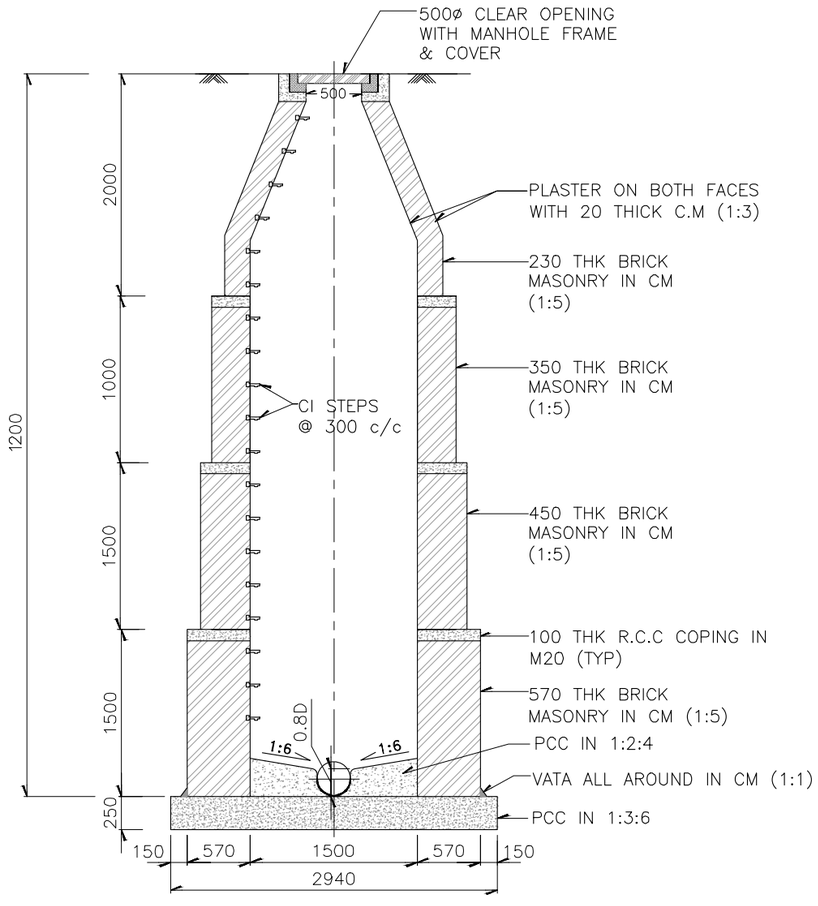
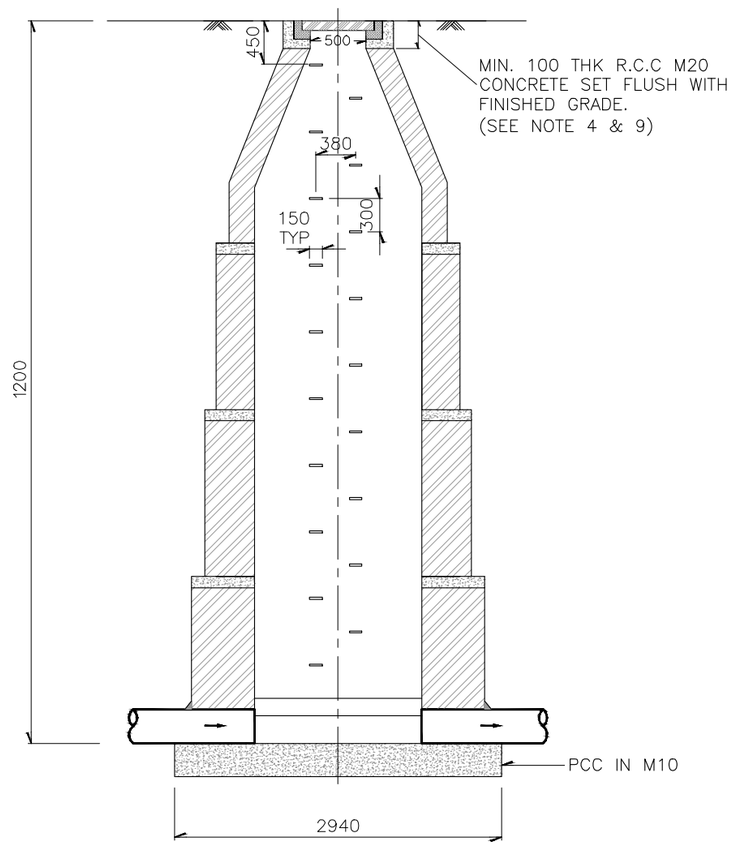


SECTION A–A



SECTION B–B

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT OTHERWISE STATED.
2. 'D' IS DIA. OF SEWER PIPELINE.
3. VATA IN C.M.(1:1) SHALL BE PROVIDED ALL AROUND THE PIPE ENTERING AND LEAVING THE MANHOLE AND ALSO AT THE JUNCTION OF BRICK MASONRY AND CONCRETE BASE SLAB.
4. 100 THICKNESS OF CONCRETE CAN BE VARIED TO FLUSH MANHOLE COVER AND FRAME WITH ROAD SURFACE.
5. AT A GIVEN DEPTH THE THICKNESS OF BRICK MASONRY SHALL NOT BE LESS THAN THAT SHOWN IN THIS DRAWING.
6. THICKNESS SPECIFIED FOR BRICK MASONRY IS EXCLUDING THE THICKNESS OF CEMENT PLASTER ON BOTH FACES.
7. CHANNELS FOR MANHOLE ARE TO BE CONSTRUCTED DULY CONSIDERING THE DIRECTION OF FLOW AS WELL AS ALIGNMENT AND INVERT LEVEL OF PIPES ENTERING/LEAVING THE MANHOLE AND AS DIRECTED BY ENGINEER.
8. CI STEP FIXED WITH CEMENT MORTAR 1:3
9. SFRC MANHOLE & FRAME OF AS PER I.S.12592–2002.
10. THE BENCHING AT THE SIDE OF THE CHANNEL SHALL START FROM 0.8D FROM BASE AND THEN RISE WITH A SLOPE OF 1 IN 6 TOWARDS THE SIDE OF THE MANHOLE. SEMICIRCULAR PORTION WILL BE ACHIEVED IN CEMENT CONCRETE FINISHING ITSELF.
11. INTERNAL PLASTERING SHALL BE SULPHATE RESISTANT CEMENT (SRC).

CLIENT:

BHAVNAGAR MUNICIPAL CORPORATION (BMC)

CONSULTANT:

TTI Consulting Engineers(I) Pvt.Ltd

PROJECT TITLE

CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

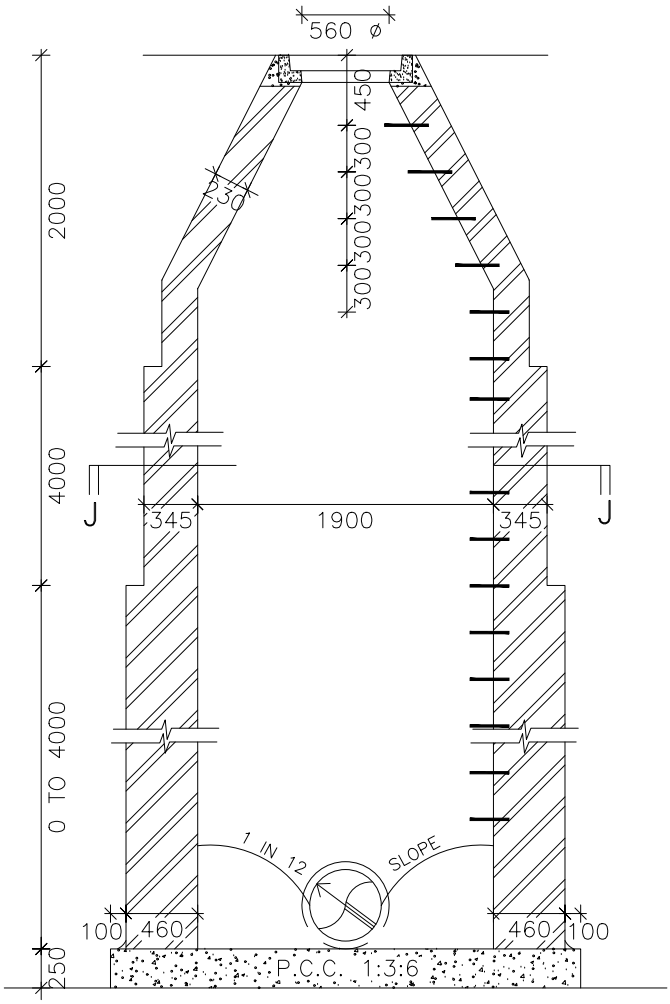
DRAWING TITLE: TYPICAL DETAILS OF 1500 MM DIAMETER CIRCULAR MANHOLE

DRAWING NO:

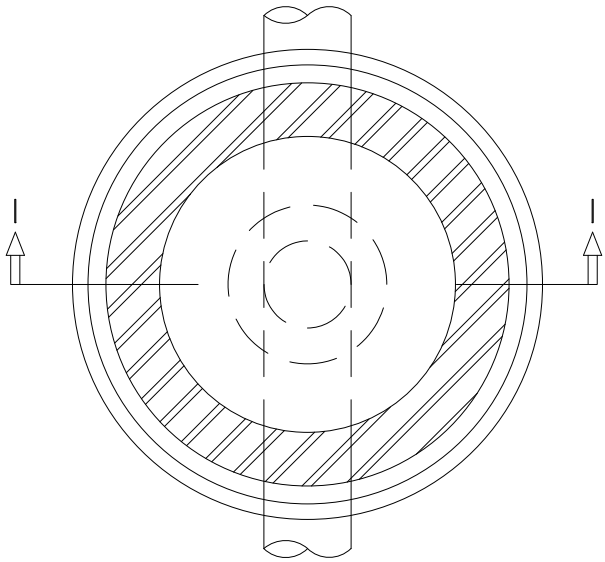
DRAWN: Jagath	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:25-11-2023	SCALE:	SHEET NO: 02 OF 03

'C' TYPE CIRCULAR MANHOLE

FOR 150MM TO 600MM DIA (Depth 6 M TO 10 M)



SECTION AT I–I



PLAN AT J–J

TYPE D3

6.0 MT TO 10.0 MT

FOR 1100 MM TO 2200 MM Ø SEWER

TYPE D3 CIRCULAR DIA. 2200 MM

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT OTHERWISE STATED.
2. 'D' IS DIA. OF SEWER PIPELINE.
3. VATA IN C.M.(1:1) SHALL BE PROVIDED ALL AROUND THE PIPE ENTERING AND LEAVING THE MANHOLE AND ALSO AT THE JUNCTION OF BRICK MASONRY AND CONCRETE BASE SLAB.
4. 100 THICKNESS OF CONCRETE CAN BE VARIED TO FLUSH MANHOLE COVER AND FRAME WITH ROAD SURFACE.
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8. CI STEP FIXED WITH CEMENT MORTAR 1:3
9. SFRC MANHOLE & FRAME OF AS PER I.S.12592–2002.
10. THE BENCHING AT THE SIDE OF THE CHANNEL SHALL START FROM 0.8D FROM BASE AND THEN RISE WITH A SLOPE OF 1 IN 6 TOWARDS THE SIDE OF THE MANHOLE. SEMICIRCULAR PORTION WILL BE ACHIEVED IN CEMENT CONCRETE FINISHING ITSELF.
11. INTERNAL PLASTERING SHALL BE SULPHATE RESISTANT CEMENT (SRC).

LEGEND:

TYP	----------	TYPICAL
DIA	----------	DIAMETER
UN	----------	UNLESS NOTED
THK	----------	THICK
PCC	----------	PLAIN CEMENT CONCRETE
EQ	----------	EQUAL
C.I.	----------	CAST IRON
SFRC	----------	STEEL FIBRE REINFORCED CONCRETE

Note :
The input data for this drawing has been received by the respected municipality; however, it is to be verified on-site before considering it for any work.

DRAWING NOTES

1) FOR TENDER PURPOSE ONLY.
2) THE INPUT DATA FOR THIS DRAWING HAS BEEN RECEIVED BY THE RESPECTED MUNICIPALITY; HOWEVER, IT IS TO BE VERIFIED ON-SITE BEFORE CONSIDERING IT FOR ANY WORK.

CLIENT:

BHAVNAGAR MUNICIPAL CORPORATION (BMC)

CONSULTANT:

TTI Consulting Engineers(I) Pvt.Ltd

PROJECT TITLE

CONSULTANCY SERVICES FOR STORM WATER DRAINAGE PROJECT INCLUDING PREPARATION OF DPR, DTP SUPERVISION OF THE PROJECT AT ADHEWADA AREA OF BHAVNAGAR

DRAWING TITLE: TYPICAL DETAILS OF " C " TYPE CIRCULAR MANHOLE

DRAWING NO:

DRAWN: Jagath	DESIGN:	CHECKED:	APPROVED:
REV. R0	DATE:25-11-2023	SCALE:	SHEET NO: 03 OF 03

Consolidated Tender Details

Tender Id: 119339

View BOQ/Item Details

Organization Name	Bhavnagar Municipal Corporation
Location	Bhavnagar
Department	Urban Development and Urban Housing Department
Sub Department	Bhavnagar Municipal Corporation
IFB/Tender Notice No	TenderNoticeNo.-04/DRAINAGE/SJMMSVY/TENDER/2024-2025
Tender Creation Date	17-10-2024 18:47
Tender Type	Open
Tender Title/Name of Project	Swarnim Jayanti MukyamantriShahrivikas yojana
Description of Material/Name of Work	Providing & Laying various Diameter RCC pipe Spigot socket rubber ring joint Pipeline for the stor m water Drainage Network including 5 years of O &M in adhewada area of Bhavnagar municipal C orporation (Part-1)
Sector Category	Urban Development
Form of Contract	Works
Product Category	Civil Works - Others
Tender Category	WORKS
Estimated Cost Value	268944093.00 INR (Twenty Six Crores Eighty Nine Lacs Forty Four Thousand zero Ninety Three)
Is ECV Visible to Supplier?	Yes
Tender Currency Type	Single
Tender Currency Setting	Indian Rupee
Period of Completion/Delivery Period	10 Months
Procurement Type	Works
Consortium / Joint Venture	N/A
Rebate	N/A
Alternate decrypter	N/A

Calender Details

Bid Document Download Start Date	17-10-2024 20:30
Bid Document Download End Date	06-11-2024 18:00
Bid Submission Start Date	17-10-2024 20:30
Bid Submission Closing Date	06-11-2024 18:00
Tender NIT View Date	N/A
Remarks	CLASS OF REGISTRATION REQUIRED FOR BIDDER MUSTBE"AA"ANDABOVE.Demand Draftf ortenderfee&Emdshallbe submitted in Electronic Formatethrough online scanning alongwith all the supporting documents such as Registration,BankSolvencyCertificateetc. whileuploadingthebid. Off erofthosewillbeopenedwhoseEMD&Tenderfeeis received electronically alongwith the bids. howeve r for thepurpose of realizationofDemandDraftbiddershallsendthemin original alongwithall therequir eddocumentsmentionedin the tender documentsthroughRPAD/Speedpost/RegADso as theyreacht othe office of Exe. Engg. - Building Dept. Bhavnagar Municipal Corporationduringofficehoursbetwe en-06-11-2024 to 11-11-2024- 16:00pm.Penaltativeactionshallidentinitiatedfornot submittingthesup portingdocumentsinoriginalto E.E.bybidder. Hardcopywillnotbe acceptedandconsidered. Successfu llyBids (Preliminary&TechnicalBid),ifpossiblewillbeopenedonthe 11-11-2024,17:30pmattheCityEngi neer'soffice-BMC.
Pre-Bid Meeting Mode	Offline
Pre-Bid Meeting Opening Date	28-10-2024 12:30
Bid validity	180

Amount Details

Bidding Processing Fee (OFFLINE)	18000.00 INR(Eighteen Thousand)
Bidding Processing Fee Payable to	Commissioner,MunicipalCorporation,Bhavnagar
Bidding Processing Fee Payable at	Commissioner, Municipal Corporation, Bhavnagar
Bid Security/EMD/Proposal Security INR(OFFLINE)	2690000.00 INR (Twenty Six Lacs Ninety Thousand)
Bid Security/EMD/Proposal Security INR Payable to	Commissioner, Municipal Corporation, Bhavnagar
Bid Security/EMD/Proposal Security INR Payable at	Commissioner, Municipal Corporation, Bhavnagar
Exempted Fee	Yes

Other Details

Officer Inviting Bids	Executive Engineer (Drainage Dept.), Municipal Corporation, Bhavnagar.
Bid Opening Authority	Tender Committee.
Address	1st Floor, Office of the Executive Engineer (Drainage Dept.) , Municipal Corporation Bhavnagar, Si r Mangalsinhji road, Bhavnagar- 364001.
Contact Details	Phone no. (Office) 0278 2430256 , Mobile No. 9825836369 E-mail ID:- bmcdrainage@gmail.com

General Terms & Conditions

General Terms and Conditions
(1) Bidders can download the tender document free of cost from the website.
(2) Bidders have to submit Technical bid as well as Price bid in Electronic format only on nprocure website till the Last Date & time for submission.
(3) Offers in physical form will not be accepted in any case.
(4) Free vendor training camp will be organized every Saturday between 4.00 to 5.00 P.M. at (n)code solutions-A Division of GNFC Ltd., Bidders are requested to take benefit of the same.

Bidders who wish to participate in online tenders will have to procure / should have legally valid Digital Certificate as per Information Technology Act-2000 (Class-III) using which they can sign their electronic bids. Bidders can procure the same from any of the license certifying Authority of India or can contract (n)code solutions- A division of GNFC Ltd, who are licensed Certifying Authority by Govt. of India.

In case bidders need any clarifications or if training required to participate in online tenders, they can contact (n)Procure Support team:-

(n)code Solutions-IT division of GNFC Ltd.,
(n)Procure Cell
501, GNFC Infotower, S.G. Road,
Bodakdev, Ahmedabad – 380054 (Gujarat)

+Contact Details
Phone
+91-79-40007517, 40007514, 40007515.
E-mail : nprocure@ncode.in

TOLL FREE NUMBER: 73590 21663

Other Terms & Conditions as per detailed tender documents

Tender Documents

Sr No	Document Name	Document Definition	Document Size
1	N.I.T.pdf	N.I.T.pdf	216.84 KB
2	01. Volume-I_ Techincal Bid_Pipe.pdf	01. Volume-I_ Techincal Bid_Pipe.pdf	3,829.7 KB
3	02._Volume_II__General_Conditions_of_Contract_Pipe.pdf	02._Volume_II__General_Conditions_of_Contract_Pipe.pdf	834.2 KB
4	03._Volume_III__ITEM WISE tender Specification_Pipe.pdf	03._Volume_III__ITEM WISE tender Specification_Pipe.pdf	1,630.91 KB
5	04.Voulme_IV_ Material Speicification_pipe.pdf	04.Voulme_IV_ Material Speicification_pipe.pdf	1,058.28 KB
6	05.Voulme_V_Price Bid_Pipe.pdf	05.Voulme_V_Price Bid_Pipe.pdf	2,530.34 KB

Sr No	Document Name	Document Definition	Document Size
7	06 VENDOR LIST.pdf	06 VENDOR LIST.pdf	1,171.22 KB
8	08. Drawing- Network.pdf	08. Drawing- Network.pdf	7,621.39 KB
9	09.TYPICAL MANHOLE DETAILS-A4.pdf	09.TYPICAL MANHOLE DETAILS-A4.pdf	578.95 KB
10	06. Volume-VI_BMC-VENDER LIST.pdf	06. Volume-VI_BMC-VENDER LIST.pdf	110.21 KB

Tender Stages

Stage Name	Evaluation Date	Minimum Forms for Submission	Evaluation Dependency
Preliminary Stage	11-11-2024 17:30	0	
Commercial Stage	11-11-2024 17:35	0	Preliminary Stage

1. Preliminary Stage

Form Id	Form Name	Form Mode	Submission Type	Mandatory	Action
5	Tender Fee Form	Library-Standard	Single	Yes	
6	Emd Fee Form	Library-Standard	Single	Yes	

Documents required for Stage - Preliminary Stage

Sr No	Document Name	Mandatory
1	[1] D.D. of Tender Fee	Yes
2	[2] D.D. or F.D.R. of EMD	Yes
3	[3] Bank Solvency 20 Percent Estimated Cost Of Current Calendar Year of 2023	Yes
4	[4] Registered Certificate	Yes
5	[5] Pan Card Number	Yes
6	[6] G.S.T. Number	Yes
7	(7) The bidder shall have to submit valid certificate of registration for having EPF number and ESIC number.	Yes
8	[7] Other Required Document As per tender.	Yes

2. Commercial Stage

Form Id	Form Name	Form Mode	Submission Type	Mandatory	Action
4	Percentage Rate	Library-Secured	Single	Yes	

Documents required for Stage - Commercial Stage

Sr No	Document Name	Mandatory
1	Prise Bid	No

Evaluation Committee

Stage Types	Opening Committee	Decryptor		Stage Evaluator
		Primary Decryptor	Alternate Decryptor	
Preliminary Stage	Nitesh Bachubhai Vadhvaniya .(bmctpnbv)	Nitesh Bachubhai Vadhvaniya .(bmctpnbv)	N/A	Nitesh Bachubhai Vadhvaniya .(bmctpnbv)
Commercial Stage	Nitesh Bachubhai Vadhvaniya .(bmctpnbv)	Nitesh Bachubhai Vadhvaniya .(bmctpnbv)	N/A	Nitesh Bachubhai Vadhvaniya .(bmctpnbv)

Legends	
Icon	Description
	View