

BID DOCUMENT

Supply and laying of D.I. (K-7) /MS/HDPE pipes, specials and valves along with making necessary connections to existing pipe line for proposed distribution network including supply, installation of Flow Meter at Inlet & outlet point of ESR with necessary accessories along with temporary road restoration for vehicular movement all complete as per direction of EIC for the proposed water supply scheme for 3(three) Zones within Khirpai Municipality under AMRUT 2.0 Scheme.

NOTICE INVITING e-QUOTATION No.:- WBMAD/NIQ -11/SE(S)/2025-26

Municipal Engineering Directorate



**GOVERNMENT OF WEST BENGAL
OFFICE OF THE SUPERINTENDING ENGINEER
SOUTH CIRCLE
MUNICIPAL ENGINEERING DIRECTORATE
MUNICIPAL AFFAIRS DEPARTMENT**

Kausallya, Opposite Kausallya T.O.P., Kharagpur, Dist- PaschimMedinipore, Mail ID:sesouth.med@gmail.com

NOTICE INVITING e-QUOTATION

Memo No.MED/SE(S)/342/W-6/06 Pt-III

Dated-25/09/2025

Notice Inviting e-quotation No.-WBMAD/NIQ -11/SE(S)/2025-26

The Superintending Engineer, South Circle, Municipal Engineering Directorate, on behalf of the Governor of West Bengal invites sealed competitive Bid on **Item rate Basis** (Two-part System) from reliable and resourceful Companies/Firms/Contractors having experience and acumen in Supplying & Laying works of Ductile Iron Pipes for water supply projects as noted below.

1.	Name of Work:	Supply and laying of D.I. (K-7) /MS/HDPE pipes, specials and valves along with making necessary connections to existing pipe line for proposed distribution network including supply, installation of Flow Meter at Inlet & outlet point of ESR with necessary accessories along with temporary road restoration for vehicular movement all complete as per direction of EIC for the proposed water supply scheme for 3(three) Zones within Khirpai Municipality under AMRUT 2.0 Scheme.
2	Scope of Work	<p>I. Supplying and delivery at site DI-K7 pipes conforming to relevant IS 8329: 2000 including free supply of polyethylene sleeves.</p> <p>The successful bidder shall have to submit following certificates of the bonafide manufacturers of pipes and specials from whom the bidder will supply the materials.</p> <ul style="list-style-type: none">• Procurement of DI pipes from bonafide manufacturers are only permitted. The previous experience certificate of the manufacturer• for supply of D.I. Pipes to Govt./PSU/reputable Private Sector bodies to be submitted, but such experience is not mandatory.• Certificate to ensure that the installed pipe manufacturing capacity of the factory is sufficient to cater to the tendered requirement.• Valid BIS certification of the manufacturer for each & individual diameter of pipe tendered.• External coating of the pipes will be bituminous /epoxy over zinc coating and inside cement mortar lining as per as per relevant IS Code,• Certificate from the reputable Govt. Institutions/Universities is essential for eligibility to participate to ensure desired hydraulic

		<p>smoothness of cement mortar lining in the DI pipe the minimum Hazen William's 'C' value of 140 corroborating the guideline of CPHEEO Manual for Water Supply and Treatment.</p> <ul style="list-style-type: none"> • Providing rubber gasket conforming to IS 5362:1985 for each of the joints admissible. • Third Party inspection (TPI) through RITES/MECON/EIL/PDIL of the pipe is mandatory before delivery of pipes. TPI report should cover (I) all the parameters as per relevant IS Code, (II) test to ensure rubber gasket quality as per IS code. The inspection charge is to be included in the quoted rates. • The sampling size will be guided as per relevant IS Code. • The manufacturer should have valid Certificate from Pollution Control Board. <p>II. Supply & delivery at working site of HDPE (Materials grade PE-100, PN-6) pipes conforming to IS 4984-1995 with latest revision & amendments, if any with necessary HDPE specials.</p> <p>III. Supply & delivery at working site of M S Pipe with coating as per relevant IS Code including fabrication of MS Pipe.</p> <p>IV. Laying of HDPE (PE100/PN6) , D.I. (K-7) and MS pipes as per drawing supplied by department with earth work in excavation in trenches, shoring (if necessary) of adequate width having minimum depth to keep the top surface of pipe 1.10 m below of the existing ground level in any kind of soil mixed and its flank etc., dewatering the trenches, preparing the bottom surface of the trenches for continuous bedding including sand filling (if necessary) Over-Ground installation to cross small ditches etc. supported with RCC pillars and fitting, fixing, jointing (all types of joints) specials etc. in position, cutting, chamfering of pipes as required, fitting in position, Thrust Blocks as per requirement, filling of the trenches with excavated materials, consolidating the same in layers, guarding trenches with temporary bamboo railing for safety where necessary, emergency horizontal auger boring (for roads other than NH and Railway) where necessary, making connection with existing pipe line hydraulic pressure testing and cleaning thoroughly the inner surface of pipe line including specials and valves by flushing with water and subsequently disinfection of the same pipe line by flushing again with water containing bleaching powder resulting in residual chlorine not less than 15mg/ltrs. after 24hrs. of such filling including laboratory testing of water samples obtain from the disinfected pipe line and disposal of water from the pipe line after completion of the work including all labour charges, tools and plants, all complete as per relevant IS code (latest edition) and direction of the E.I.C.</p> <p>V. Supplying & delivery at working site ISI marked CIDF sluice valve / Cast iron kinetic double orifice type air release valve conforming to relevant IS code with latest amendment including stacking and inclusive of Departmental inspection, packing charges, all taxes and duties as applicable and payable. Sluice valves conforming to IS 14846:2000, having seat tested to 10kg/sq-cm and body tested to 15kg/Sq-cm</p> <p>VI. Jointing (all types of joints) valves as per departmental approved specification for distribution pipe line including supply of all necessary materials, labour, carriage etc. all complete.</p> <p>VII. Construction of different dia. sluice valve & washout valve chamber as per drawing supplied by concerned division or standard drawing given by contractor and approved by E.I.C with brick work in cement mortar (6:1) over 15 cm. of PCC (6:3:1) with supply of approved quality (Heavy type) C.I surface box embedded in 100mm thick removable slab in (4:2:1).</p> <p>VIII. Sluice Valve and Air release Valve are to be supplied by agency from Kirlosker/IVC/L&T/Upadhyayas per relevant IS Code & Direction of EIC.</p> <p>IX. Connection work from the existing DI pipes with proposed HDPE pipe as required including excavation, cutting of CI/DI pipes, back filling, chamfering etc. including supply of specials and rubber gasket all complete.</p> <p>X. Filling the entire pipe line with water, testing hydraulically as per I.S 3114-1965 (Article-6) as per direction of EIC. Hydraulically testing of different types of pipes in sections should be for a head of water not less than 1/2 (Half) the pressure recommended by I.S or</p>
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		<p>corresponding pipe materials whether the gauge pressure will remain static for 30 minutes by filling water including supply of necessary equipment's such as generator sets, pumps gauges etc. All complete as per specification and instruction of E.I.C. [Water have to be arranged by the bidder himself and whole testing procedure will be accordance with as per IS : 3114 - 1965]. Hydraulic testing of MS pipe lines should be done under head of water not less than 60 m (6 kg/cm²).</p> <p>XI. Cleaning thoroughly the inner surface of pipe line including special & valves by flushing with water & subsequently disinfection of the same pipe line by flushing again with water containing bleaching powder resulting in residual chlorine not less than 10 mg / Ltr. after 24 hours of such filling including laboratory testing of water sample obtained from disinfected pipe line & disposal of water from the pipe line after completion of the work. The rate is including of cost of requisite water to be arranged by the Contractor.</p> <p>XII. All necessary test certificates of supplied materials should be submitted as per direction of E.I.C.</p> <p>XIII. Vendor list for all supplied materials (DI -K7 Pipe, HDPE Pipe, D.I. Fittings, Valves, Flow Meter etc., whatever necessary) need to be submitted for approval before execution.</p> <p>XIV. Dismantling all type of masonry including cement concrete, Bituminous Road, Pacca Road, stacking serviceable materials at site and removing rubbish as directed. Then Removal of rubbish, earth and other wastage should be disposed beyond the compound, work site as per relevant rules of Municipal/ Corporation/ Panchayat/local body and also as per direction of the E.I.C.</p> <p>XV. Making barricading in excavation trenches to avoid any accident by bamboo railing/ iron guard rail etc.</p> <p>XVI. In case any traffic block necessary permission should be obtained from the competent authority.</p> <p>XVII. Thrust block should be taken in provision as per site requirement and as per approved drawing of EIC.</p> <p>XVIII. Submission of completed drawing of whole network including showing Pipe length & dia, location details of valve chamber with as per direction of EIC in 5 (set).</p> <p>XIX. DI -K7 , HDPE, MS Pipe with all specials & fittings and rubber gaskets, Jackets, Sluice valve, Air Release valve, Flow Meter, Mechanical Joints etc., whatever necessary, will be supplied by agency at his own cost.</p> <p>XX. Temporary road restoration for vehicular movement as per direction of the EIC.</p> <p>XXI. Supplying, Instalation, Testing and Commissioning of Electromagnetic Flow Meter of different dia. pipeline at different location of Inlet & Outlet point of ESR including construction of Valve Chamber & Jointing site as per technical specification including supply of materials, labour, carriage etc. all complete and as per direction of EIC.</p>
3.	Location of Distribution Network:	Within Khirpai Municipality, District- PaschimMedinipore.

4.	Eligibility to Participate in the Bid.	<p>i) Having experience and technical acumen in a similar nature of work of minimum value of 1.00Crore as a single work in any Govt. / Board / Semi Govt. / Municipal Corporation / Statutory Authority /Govt. undertaking etc. organization during last 5 (five) years prior to the date of issue of the tender notice.</p> <p style="text-align: center;">OR</p> <p>ii) Having experience and technical acumen in 2(two) similar nature of works, each of minimum value of 0.75Crore in any Govt. / Board / Semi Govt. / Municipal Corporation / Statutory Authority /Govt. undertaking etc. organization during last 5 (five) years prior to the date of issue of the tender notice.</p> <p style="text-align: center;">OR</p> <p>iii) Intending tenderers should produce credentials of one single running work of similar nature as stated above which has been completed to the extent of 80% or more and amount of which is not less than the desired value as stated above (SI No.4(i))</p> <p style="text-align: center;">Similar nature of works must include Laying of pipe line etc. in any water supply related projects</p> <p><i>N.B.-(i).In case of running works, only those tenderers who will submit the certificate fromExecutive Engineer or equivalent competent authority will be eligible to participate in the tender. In the required certificate it should be clearly stated that the work is in progress satisfactorily and also that no penal action has been initiated against the agency i.e the tenderer.</i></p> <p><i>(ii).Credential certificate issued by the Executive Engineer or equivalent competent authority a State / Central Government, State / Central Government undertaking, Statutory / autonomous bodies constituted under the Central / State Statute, on the executed value of completed / running work will be taken as credential.</i></p> <p><i>iii)Payment certificate will not treated as Credential (Vide Ref No 04A/PW/O/10C-02/14 Dated 18.03.2015)</i></p> <p>4.2: -PAN Card, Valid Professional Tax deposit certificate, GST registration Certificate (GSTIN), EPF registration, ESI registration, Income Tax Return Receipt for the Latest Assessment year - etc. are to be accompanied with the Technical Bid document.</p> <p>4.3 -Valid Bank Solvency Certificate (Minimum1.00Crore) from any Nationalized Bank/Scheduled Bank (Issue date of the certificate should be within the preceding 1 (one) year from the date of publication of the tender)</p> <p>4.4 Annual Turn Over(Minimum 1.00 Crore in any one year during last 5 years) in3CB &3CD. The Audited Report should contain the signature, name, address, contact no./email ID and membership no., UDIN no. of Chartered Accountant clearly.</p> <p>4.5 In case of Proprietorship or Partnership Firms or Company the Tax Audited Report in 3CB & 3CDForm for the period upto last five years. The Audited Report should contain the signature, name, address, contact no./email ID and membership no., UDIN no. of Chartered Accountant clearly. [Non Statutory</p>
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5.	Documents to be produced in support of Credential for Bid Part-I (Pre-qualification Documents)	As mentioned in clause No.4 above (Eligibility to participate in the Bid). All documents in original to be produced in due course of time as & when asked by the Bid inviting authority.
6.	Earnest Money.	<p>2% of the Quoted Bid price in two parts, vise</p> <p>a) Rs.4.00 Lakh (Rupees Four Lakhs) as an initial Earnest Money Deposit shall accompany with Bid Proposal and may be remitted by selecting from either of the following payments modes: -</p> <p>i) Net Banking (any of the banks listed in the ICICI Bank Payment gateway) in case of payment through ICICI Bank Payment Gateway. Bank Acknowledgement Slip to be uploaded during online bid submission;</p> <p>ii) RTGS/NEFT in case of offline payment through bank account in any Bank and also to be documented through e-filling.</p> <p>(As per GO No. 3975-F(Y) dt. 28.07.2016 of Finance Deptt., Govt. of West Bengal). Every such Transfer shall be done on or after the date of publish of NleB. Any Bid without such Transfer of EM (Except exemption as per G.O.) shall be treated as informal and shall be automatically cancelled. Online transfer of Earnest Money receipt (Scanned copy) shall be uploaded as Statutory document)</p>

		<p>b) Earnest Money Deposit i.e. 2% of bid amount beyond the amount as mentioned in 6.a) shall have to be deposited by the L1 bidder after acceptance of Bid Proposal as demand draft in favour of the Executive Engineer, West Midnapore Division, M.E. Dte Payable at Medinipore.</p> <p>Additional Performance security deposit @10% of the accepted amount is to be deposited in due course as per GoWB norms if the accepted amount is found to be @80% or less than the tentative departmental cost in terms of GO No.4608 f(y) Dt.18.07.2018</p> <p>The amount of earnest money will be converted into security deposit in case of the L1 bidder.</p>		
7.	Cost price of Bid documents	<p>The intending Bidders shall not have to pay the cost of tender documents for the purpose of participating in e-tendering vide Notification No. 199-CRC/2M-10/2012 dated 21/12/2012 of the Secretary, Public Works Department, Government of West Bengal. However, the successful bidder shall have to pay the cost of contract documents as per notification no-452-A/PW/O/10C-35/10 Dated:26.07.2011 of PWD Govt of West Bengal only per set at the time of formal agreement.</p>		
8.	Date and Time Schedule	Sl. No.	Particulars	Date and Time
		a)	Date of uploading of NIB (Bid Documents(online) (Publishing date)	26.09.2025 at 10.00 A.M
		b)	Document download start date (online)	26.09.2025 at 10.00 A.M
		c)	Date of Pre Bid Meeting (offline) with the intending Bidders in the office of the Superintending Engineer, South Circle, Municipal Engineering Directorate.	08.10.2025 at 1.00 P.M
		d)	Both Technical and financial bid submission starting date(On line)	26.09.2025 at 10.00 A.M
		e)	Last date of submission of queries (To be reached at SE (South Circle)	NA
		f)	Document download closing date (online)	29.10.2025 at 3.00 P.M
		g)	Both Technical and financial bid submission (on line) closing date	29.10.2025 at 3.00 P.M
		h)	Date & place of opening of Technical Proposals(online)	31.10.2025 at 3.00 P.M
		i)	Date of uploading of list of technically qualified bidders (online)	To be notified later.
		j)	Date of opening of financial bid (online)	To be notified later.

		<p>k) Also if necessary for further negotiation through offline for final rate.</p> <p>To be notified later.</p> <p>* All bidders are requested to raise objection(s), if any, regarding the decision of TIA with respect to acceptance/non-acceptance of technical bid within these hours through official e-mail of TIA only. Failing which the objection(s) may not be considered.</p> <p>N.B.-i) Maximum 2 (two) representatives of each prospective Bidders shall be allowed to participate in Pre-Bid Meeting on production of authorization letter from the Bidder. During the Pre-Bid Meeting, the Bidders may seek clarifications and offer suggestions for consideration.</p> <p>ii)The bidders are requested to submit pre-bid queries in writing (word/excel format), to reach the TIA not later than 48 hour before the scheduled date and time of pre-bid meeting from their official Reply will be given only to the written queries so submitted.</p> <p>iii) In the event of the specified date of Pre-bid meeting or opening of Technical/Financial Bids as mentioned above being declared a holiday by Govt. of West Bengal or the office of Govt. of West Bengal being closed on any account, the event of specified date will be extended to the next working day</p> <p>iv) All intending bidders are requested to remain present in the chamber of the Tender Inviting Authority during opening of the Financial Bid, to witness the tender opening procedure.</p>
9	Time of completion	9 months from the date of issue of Work Order.
10	Site inspection & general information	Intending Bidders are required to inspect the site of the Project with particular reference to location and infrastructure facilities. They are to make a careful study with regard to availability of materials and their sources and all relevant factors as might affect their rates and prices. They are also acquainted with relevant IS specifications with latest amendments, CPHEEO manuals, Clauses & Sub Clauses of the Bid documents and to have fully acquainted with all details of

		workfront, communications, underground utility services, seasonal weather and its variation, labours, water supply, existing & proposed site levels, position and diversion of transportation and barricading, if required, electricity and any other general information including topological condition & existing level and level pertaining to and needed for the work to be completed in time properly. Note- HFL/LWL/HTL (High Tide Level) should be collected by the bidder.
11	Bid documents	A full set of Bid documents consists of 2 Parts. These are - PART I :- Containing all documents in relation to the name of the firm applied for and credential possessed along with all documents as depicted in Sl. No. 4 above and all corrigenda's of this NIT and forms for Declaration and Affidavits. PART II :- Containing the Following Document. BOQ
12	Validity of Bid	A Bid submitted shall remain valid for a period of 270 calendar days from the date set for opening of Bids. Any extension of this validity period if required will be subject to reciprocal concurrence of the Bidders & the TIA.
13	Withdrawal of Bid	A Bid once submitted shall not be withdrawn within the validity period. If any Bidder/Bidders withdraw his/their Bid(s) within the validity period then Earnest Money as deposited by him/them will be forfeited.
14	Acceptance of Bid	The "The Superintending Engineer, South Circle, M.E.Dte." will accept the Bid. He /She does not bind himself/herself to accept otherwise the lowest Bid and reserves to himself/herself the right to reject any or all of the Bids received without assigning any reason thereof.
15	Intimation	The successful Bidder will be notified in writing of the acceptance of his Bid. The Bidder then becomes the "Contractor" and he shall forthwith take steps to execute Formal Contract Agreement in appropriate FORM (W.B. form-2911 with the "The Superintending Engineer, South Circle, M.E.Dte." and fulfill all his obligations as required by the Contract.
16	Escalation of Cost	There will be no escalation in cost for materials or labour and the contract price mentioned in the contract stands valid till completion of the contract, and other obligation, if any.
17	Name & address of Engineer-In-Charge (EIC) of the Work	Executive Engineer, West Midnapore Division, Municipal Engineering Directorate, Department Of UD & MA, 29, East Avenue, Bidhannagar, West Midnapore, West Bengal, PIN-721101 Phone: (03222) 263484. E-mail ID – eewestmidnapore.med@gmail .com
18	Execution of Work	The Contractor is liable to execute the whole work as per direction and instruction of the Executive Engineer, West Midnapur Division of Municipal Engineering Directorate who is the Engineer in Charge of the work after due approval of "The Superintending Engineer, South Circle, M. E. Dte."
19	Payment	Payment will be made to the successful Bidder by the "The Executive Engineer, West Midnapore Division. M. E. Dte" periodically.

20	Influence	Any attempt to exercise undue influence in the matter of acceptance of Bid is strictly prohibited and any Bidder who resorts to this will render his Bid liable to rejection.
Following clauses are to be adhering to by the concerned Bidder during the process of Bidding.		
21		In case office faces sudden closure owing to reason beyond the scope and control of " The Superintending Engineer, South Circle, M.E.Dte.", any of last date/dates as schedule in SI. No 8 maybe extended up-to/to next and following working day without issuing further and separatenotice should the "The Superintending Engineer, South Circle, M.E.Dte ",feels it to benecessary and exigent.
22		Persons having authenticated and having registered Power of Attorney may be considered lawfully becoming to be acting on and for behalf of the Bidder.
23		Sufficient care has been taken to avoid variance in between the contents of the listed Documents in the Bid document. However, if there is any variance between the contents of different documents, the provision of documents appearing earlier in the list shall prevail over the same provided in the contents coming later.
24		Imposition of any duty/tax/rule etc. owing to change /application in legislations/enactment shall be considered as a part of the contract and to be adhering to by the Bidder/Contractor strictly.
25. a		Rates quoted by bidder shall be inclusive of statutory taxes and levies payable under respective statutes.
25. b		Bid Acceptance Authority is the "The Superintending Engineer, South Circle, M.E.Dte.
26		In case of any dispute arising from any clauses of similar nature between bid documents and Form No. 2911, the decision of the Superintending Engineer, Circle, M.E.Dte will be final and binding.
27		All usual deductions for taxes as applicable i.e. GST, IT, and Labour welfare cess etc. as applicable will be made from the bills from time to time as per prevailing Govt. orders and norms.
28		No conditional Bid shall be entertained.
29		In the event of e-Filing intending bidder may download the Bid document from thewebsite http://wb.tender.gov.in directly by the help of Digital Signature Certificate &necessary cost of Bid document (if any) may be remitted through online payment Gateway & same may be documented along with earnest money Deposit through e-Filing, (scanned copy to be submitted) (Details of which has been narrated in "Instruction to Bidders"). Technical Bid & Financial Bid both will be submitted concurrently duly digitally signed in the Website http://etender.wb.nic.in . Bid document may be downloaded from website & submission of Technical Bid/Financial Bid as per Bid Schedule.
30		The requisite Earnest Money, as specified in this NIEB may be remitted by selecting from either of the following payments modes: - i) Net Banking (any of the banks listed in the ICICI Bank Payment gateway) in case of payment through ICICI Bank Payment Gateway; ii) RTGS/NEFT in case of offline payment through bank account in any Bank and also to be documented through e-filling. Every such payment shall be made on or after the date of publish of NIEB. Any Bid without payment of requisite Earnest Money (Except exemption as per G.O.) shall be treated as informal and shall be automatically cancelled.

31	The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the site of works and its Surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the work as mentioned in the Notice inviting Bid, the cost of visiting the site shall be at the Bidder's own expense. Traffic management and execution shall be the responsibility of the Agency at his/her/their risk and cost.
32	Prospective applicants are advised to note carefully the minimum qualification criteria as Mentioned in 'Instructions to Bidders' before bidding.
33	During scrutiny, if it is come to the notice to Bid inviting authority that the credential or any other papers found incorrect/manufactured/fabricated, that Bidder will not be allowed to participate in the Bid and that application will be out rightly rejected without any prejudice.
34	Before issuance of the work order, the Bid inviting authority may verify the Credential & other documents with the original of the lowest bidder, if found necessary. After verification, if it is found that such documents submitted by the lowest bidder is either manufactured or false, in that case, L.O.A./ work order will not be issued in favour of the bidder under any circumstances.
35	If any discrepancy arises between two similar clauses on different notifications, the decision of "Superintending Engineer, South. Circle, M.E.Dte" is final & binding.
36	Contractor shall have to comply with the provisions of (a) the contract labour (Regulation Abolition) Act. 1970, (b) Apprentice Act. 1961 and (c) minimum wages Act. 1948 of the notification thereof or any other laws relating thereto and the rules made and order issued there under from time to time.
37	Where an individual person holds a digital certificate in his own name duly issued to him against the company or the firm of which he happens to be a director or partner, such individual person shall, while uploading any Bid for and on behalf of such company or firm, invariably upload a copy of registered power of attorney showing clear authorization in his favour, by the rest of the directors of such company or the partners of such firm, to upload such Bid. The power of attorney shall have to be registered in accordance with the provisions of the Registration Act, 1908.
38	Any legal matter will be settled within the jurisdiction of Hon'ble District Judges Court at Tamluk , Dist.- Purba Medinipore, West Bengal.
39	Bidder would be at liberty to point out any ambiguities, contradictions, omissions etc. seeking clarifications thereof or interpretation of any of the conditions of the Bid documents before the Bid Inviting Authority in writing 48 hours prior to Pre-Bid Meeting, beyond such period no representation in that behalf will be entertained by the Bid Inviting Authority.
40	The successful Bidder will remain liable for following with West Bengal Contract Labour (Regulation & Abolition) Act 1970 and necessary certificates from appropriate authority to be submitted within 07 (seven) days from the date of issue of work order, otherwise the work order will be cancelled.
41	Successful Bidder will have to submit requirement of all materials, work programme and Working drawing for laying and sectional drawing as per IS Specification for each dia. of pipe <u>after awarding work order by competent authority.</u>
42	Deduction of tax, royalty ,Labour welfare Cess& GST As per prevailing Govt. orders/norms or as per notification during work.
43	No mobilization Advance and Secured Advance will be allowed. Agencies shall have to arrange required land for installation of Plant & Machineries, (specified for each awarded work, storing of materials, labour shed, laboratory etc. at their own cost and responsibility nearest to the work site)

44	Payment will be made phase wise against each item of work as per BOQ of the bid document. Security Deposit will be deducted from each and every running account bill @8% as per prevailing Govt. Orders/Norms.
45	<p>Defect Liability Period- Defect liability period Should be followed as per prevailing Govt. Orders/Norms.. (As per Notification No. 5784-PW/L&A/2M-175/2017 dt. 12.09.2017 of Principal Secretary, PWD).</p> <p>Release of Security Deposit: As per prevailing Govt. Orders/Norms.</p>
46	In case of item rate tender, the technically qualified bidder, whose total offered price considering sum of offered prices of all the items of works taken together, stands lowest, will be considered for acceptance. In no case lowest bidder of individual items of works will be considered for acceptance for the corresponding items of works.
47	Tender inviting Authority may ask to submit justification of rate offered by the bidder.
48	The employer (Tender accepting authority) reserves the right to accept or reject any quotation and to cancel the quotation process and reject all quotations at any time prior to the award of contract without thereby incurring any liability to the affected Tenderers or any obligation to inform the affected Tenderers of the ground for employer's (Tender accepting authority) action.
49	<p>Technical Personnel-The prospective tenderer shall have in their full time engagement experienced technical personnel. (Authenticated documents in respect of qualification and engagement shall be furnished for Technical Evaluation) Civil Engineer (Minimum Diploma holders with min. 3 Yrs. of experience in construction field): 1 no.</p> <p>Note: 1) The bidder must be submitted the relevant document in proof of employment along with educational qualification & experience.</p> <p>2) Declaration as per annexed format from the end of the engineer also has to be submitted.</p>

Bid Evaluation Committee (BEC):

A Bid Evaluation Committee (BEC) has been constituted under the Superintending Engineer, South Circle, Municipal Engineering Directorate, Government of West Bengal.

The members of Bid Evaluation Committee:-

1. Superintending Engineer, South Circle, MED- Chairman
2. Executive Engineer, WestMidnapore Division, MED- Member.
3. Executive Engineer, South Circle, MED - Member.
4. Divisional Accounts Officer / Divisional Accountant, WestMidnaporeDivision, MED - Member.

The Bid Evaluation Committee will do the technical and financial evaluations and make recommendation to the tender accepting authority.

The bidders will have to meet all the minimum criteria regarding:-

Financial Capacity

Technical Capability

Experience / Credential

The eligibility of a bidder will be ascertained on the basis of his digitally signed documents in support of the minimum criteria as mentioned in (a), (b), (c) above with the help of his DSC and the declaration executed through prescribed affidavit in non-judicial stamp paper of appropriate value duly notarized. If any document submitted by a bidder is either manufactured or false, in such case the eligibility of the bidder/ tenderer will be out rightly rejected at any stage without any prejudice and further penal action may be taken against him as per rule.

In case there is any objection regarding prequalifying an agency, that should be lodged to the Chairperson & Convenor of the Bid Evaluation Committee

General notes:

- (a) No joint venture in the form of M.O.U. or in any shape will be accepted at any stage of tendering.
- (b) The Bidder should also upload Place of Registration, Principal Place of Business & Power of attorney of signatory of tender.
- (c) The annual turnover shall be based on audited balance sheets of last 5 (five) consecutive financial years.

- (d) The drawing and design to be submitted by the successful bidder in connection to the work for the components stated in the Bid.
- (e) Canvassing in connection with the e-tenders is strictly prohibited and the tenders submitted by bidder who take resort to canvassing will be liable to rejection.
- (f) Partnership Firms shall furnish the registered partnership deed and Companies shall furnish the Article of Association and Memorandum. [Non Statutory Documents]
- (g) In case of Proprietorship and Partnership Firms and Company, the Tax Audited Report to be furnished along with balance sheet and profit and loss account and all schedules forming the part of Balance Sheet and Profit & Loss Account in favour of applicant. No other name along with applicant name, in such enclosure will be entertained. [Non Statutory Documents]
- (h) Submission of Income Tax Acknowledgement Receipt for Current Assessment Year is mandatory.
- (i) Any legal matter will be settled within the jurisdiction of the Hon'ble District Judges' Court at Midnapore, Distt.-Paschim Medinipore, West Bengal.
- (j) The bidder would be at liberty to point out any ambiguities, contradictions, omissions etc. seeking clarifications thereof or interpretation of any of the conditions of the Tender documents before the Tender Inviting Authority in writing within the stipulated date and time as mentioned in this e-NIQ. Beyond such period no representation in this regard will be entertained by the Tender Inviting Authority. The Pre-Bid Meeting, if any, will be held at the Office of the Superintending Engineer, South Circle, M.E.Dte on Stipulated date & time.
- (k) Written clarification or amendments etc. as may be issued by the Tender inviting authority in pursuance to the presentation made by the Bidder shall be final and binding on the Bidder and shall form part of the Tender documents
- (l) Before issuance of the Acceptance / Work Order, the tender inviting authority may verify the credential & other documents of the lowest bidder if found necessary. After verification, if it is found that such documents submitted by the lowest tender is either manufactured or false in that case, work order will not be issued in favour of the lowest bidder under any circumstances.
- (m) In case of ascertaining authority at any stage of tender process or execution of work necessary registered irrevocable power of attorney is to be produced on demand.
- (n) In case of tie bid, L1 bidder will be selected following the prescribed procedure mentioned in the Memorandum No.-2320-F(Y), Dated-7.6.2022 of the Principal Secretary, Finance Department, Govt. of W.B.

Note: All addendum and corrigendum, if published through <https://wbtenders.gov.in> in relation to this tender, will have to be considered as parts and parcel of this comprehensive tender document. Bidders have to follow all publications carefully and it will be the responsibility of the bidder to finalize their quoted Rate before the date of final submission.

**Superintending Engineer
South Circle, M.E.Dte.**

CHAPTER-1
INSTRUCTION TO BIDDERS/BIDDERS
SECTION – A

1. General guidance for e-tendering

Instructions / Guidelines for Bidders for electronic submission of the tenders have been annexed for assisting them to participate in e-tendering.

2. Registration of Bidder

Any Bidder willing to take part in the process of e-tendering will have to be enrolled and registered with the Government e-procurement system, through logging on to <http://wbtenders.gov.in>. The Bidder is to click on the link for e-tendering site as given on the web portal.

3. Digital Signature certificate (DSC)

Each Bidder is required to obtain a class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders, from the service provider of the National Information's Centre (NIC) or any other bonafide service provider on payment of requisite amount. Details are available at the Web Site stated in Clause 2 of Guideline to Bidder. DSC is given as a USB e-Token.

4. The contractor can search and download NIB and Tender Documents electronically from computer once he logs on to the website mentioned in Clause 2 using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

5.Submission of Tenders.

General process of submission, Tenders are to be submitted through online to the website stated in Cl. 2 in two folders at a time for each work, one in Technical Proposal and the other is Financial Proposal before the prescribed date and time using the Digital Signature Certificate (DSC) the documents are to be uploaded virus scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

A. Technical proposal

The Technical proposal should contain scanned copies of the following further two covers (folders).

A-1. Statutory Cover Containing

1. Prequalification Document

- i. Prequalification Application (Sec-B, Form – I)
- ii. Scanned Copy online Transaction of earnest money (EMD) as prescribed in the NleB against each of the serial of work.

2. NleB with Bid Documents (downloads and upload the same Digitally Signed)

3. Technical Document (To be filled, scanned & digitally signed)

- i. Financial Statement (Section – B, Form – II).

ii. Affidavits((Ref:- format for general affidavit shown in “Y” Part “B” .)

iii. Bank Solvency Certificate.

iv. Form III & IV Of Section B.

A-2. Non statutory Cover Containing / My Documents

i. GST Certificate (up to date).

ii. Registration Certificate under Company Act. (if any).

iii. Registered Deed of partnership Firm/ Article of Association and Memorandum, if applicable.

iv. Power of Attorney (For Partnership Firm/ Private Limited Company, if any)

v. Tax Audit Report along with Balance Sheet and Profit and Loss A/c for the period up to last five years(year just preceding the current Financial Year will be considered as year – I)

vi. Clearance Certificate for the Current Year issued by the Assistant Registrar of Co-Op (S) (ARCS) bye laws are to be submitted by the Registered labour Co-Op(S) Engineers’ Co.-Opt.(S), if applicable.

vii. Credential: Scanned copy of Original Credential Certificate as stated in NleB

Intending Bidders should upload Non-Statutory documents as per following folders in My Document:

E-Bidding system of Government of West Bengal			
Bidder Document Sub Category Master			
Sl. No.	Category Name	Sub Category Name	Sub Category Description
A	CERTIFICATES	A1. CERTIFICATES	1. GST Certificate 2. E.S.I & EPF Registration Certificate.
B	COMPANY DETAILS	B1. COMPANY DETAILS	1. Proprietorship Firm (Trade License). 2. Registered Deed of partnership Firm 3. Registration Certificate under Company Act. (if any). Ltd. Company (Incorporation Certificate, Trade License) 4. Power of Attorney (For Partnership Firm / Private Limited Company, if any) 5. Society (Society Registration copy, Trade License)
C	CREDENTIAL	C1. CREDENTIAL1	Similar nature Work & Completion Certificates/certificate of running work along with work order, BOQ and payment certificate issued by competent authority (as per Sl. No. 3 of NleB)
D	EQUIPMENT	LABORTARYequipments& other MACHINERIES	1. List of Machineries and equipment necessary for field as well as laboratory test of all materials as per NleB
E	FINANCIAL INFO	E1. P/L & BALANCE SHEET 2011- 2012	P/L & BALANCE SHEET (as per NleB)
		E2. PAYMENT CERTIFICATE 1	Payment Certificate in support of valid Credential only to be submitted

		E3 PAYMENT CERTIFICATE 2	
F	MANPOWER	TECHNICAL PERSONNEL	List of technical personnel employed under the organisation (or on contact basis) in details with name, qualification, experience and, address with contact number.
G	DECLARATION	DECLARATION 1	1. Bank Solvency Certificate (As per NleB)
		DECLARATION 2	2. Valid Document in support of annual turnover as per NleB.
		DECLARATION 3	3. Corrigendum and additional document (if any).

B. Bid Evaluation

- i. Opening and evaluation of Bid :-No exemption from payment of EMD will be allowed.
- ii. Opening of Technical proposal: - Technical proposals will be opened by the Bid Inviting Authority electronically from the website using his/ her Digital Signature Certificate.
- iii. Cover (folder) of statutory documents (vide Cl. No. 5.A-1) should be opened first and if found in order, cover (Folder) for non-statutory documents (vide Cl. No.– 5.A-2) will be opened. If there is any deficiency in the statutory documents the Bid will summarily be rejected.
- iv. Decrypted (transformed in to readable formats) documents of the non-statutory cover will be downloaded and handed over to the Bid Evaluation Committee. Scrutiny of technical proposal and recommendation thereafter and processing of comparative statement for acceptance etc. will be made by the Municipal Engineering Directorate, under the department of Municipal Affairs, Govt. of West Bengal. Comparative Statement may be forwarded to appropriate authority depending on the value of the work as applicable as per existing norms and guidelines under AMRUT programme.
- v. Uploading of summary list of technically qualified bidders.
- vi. Pursuant to scrutiny and decision of the screening committee the summary list of eligible Bidder and for which their proposal will be considered and uploaded in the web portals.

C. Financial proposal

As per Sl. 9 Part II (a) , Bid Price / Price Schedule. To be uploaded digitally signed by the Bidder.

6. Financial capacity of a Bidder will be judged on the basis of working capital and available bid capacity as mentioned in the N.I.T. to be derived from the information furnished in FORM-I and II (Section-B) i.e., Application (for Pre-qualification) and Financial Statement. If an applicant feels that his / their Working Capital beyond own resource may be insufficient, he/they may include with the application a letter of guarantee issued by a Nationalised/Scheduled Bank to supplement the applicant. This letter of guarantee should be addressed to the Tender Inviting / Accepting Authority and should guarantee duly specifying the name of the project that in case of contract is awarded to the Bidder, the Bidder will be provided with a revolving line of credit. Such revolving line of credit should be maintained until the works are taken over by the Authority.

The audited Balance sheet for the last five years, net worth bid capacity etc. are to be submitted which must demonstrate the soundness of Bidder's financial position, showing long term profitability including an estimated financial projection of the next two years.

7. Penalty for suppression / distortion of facts:

Submission of false document by Bidder is strictly prohibited and in case of such act by the Bidder the same may be referred to the appropriate authority for prosecution as per relevant IT Act with forfeiture of earnest money forthwith.

8. REJECTION OF BID

The Employer (tender accepting authority) reserves the right to accept or reject any Bid and to cancel the Bidding processes and reject all Bids at any time prior to the award of Contract without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for Employer's (tender accepting authority) action.

The Bidder who's Bid has been accepted will be notified by the Tender Inviting and Accepting Authority through acceptance letter/ Letter of acceptance. The Letter of acceptance will constitute the formation of the Contract.

The Agreement in Printed Tender Form will incorporate all necessary documents e.g. N.I.B., all addenda-corrigendum, special terms and condition (Section –C), different filled-up forms (Section –B), Price Schedule and the same will be executed between the Tender Accepting Authority and the successful Bidder.

FORM —I
PRE-QUALIFICATION APPLICATION

To
The Superintending Engineer
South Circle, M.E.Dte.

Ref: Bid

For _____

Name of work _____

NleB No.:.....

Dear Sir,

Having examined the Statutory, Non statutory and NleB documents, I /we hereby submit all the necessary information and relevant documents for evaluation. The application is made by me / us on behalf of

_____ In the capacity _____
duly authorized to submit the order.

The necessary evidence admissible by law in respect of authority assigned to us on behalf of the group of firms for Application and for completion of the contract documents is attached herewith.

We are interested in bidding for the work(s) given in Enclosure to this letter.

We understand that:

- (a) Bid Inviting and Accepting Authority can amend the scope and value of the contract bid under this project.
- (b) Bid Inviting and Accepting Authority reserves the right to reject any application without assigning any reason.

Encl:- e-Filing:-

- 1. Statutory Documents
- 2. Non Statutory Documents

Date: -

**Signature of applicant including title
and capacity in which application is made**

N.B :-THIS APPLICATION MUST BE MADE IN THE LETTER HEADED PAD OF THE FIRM CLEARLY MENTIONING THE ADDRESS, E-MAIL AND CONTACT NUMBER OF THE FIRM.

AFFIDAVIT — "X"

(To be furnished in Non — Judicial Stamp paper of appropriate value duly notarized)

Work in progress				Work order issued but work not started		
Sl. No.	Name of the work with Tender No.	Tender Amount	% of work executed	Sl. No.	Name of the work with Tender No.	Tender Amount

Note: Applicant should enclose copy of work order & up-to-date work progress report duly certified by the concerned Executive Engineer.

Signature, name and designation
of Authorized Signatory

For and on behalf of
(Name of the Applicant)

AFFIDAVIT —"Y"

(To be furnished in Non — Judicial Stamp paper of a appropriate value duly notarized)

1. I, the under-signed do certify that all the statements made in the attached documents are true and correct. In case of any information submitted is proved to be false, incorrect or concealed, the application may be rejected and no objection/claim will be raised by the under-signed.
2. The under-signed also hereby certifies that neither our firm _____ nor any of its constituent partners had been debarred to participate intender by any directorate of Public Works Department during the last 5(five) years prior to the date of this NIT.
3. The under-signed also hereby certifies that neither our firm _____ nor any of its constituent partners have failed to executed more than one works contract under any directorate of Public Works Department and that neither our firm _____ nor any of its constituent partners was terminatedby any sub-rule under clause 3 of Tender Form no. 2911 and that neither our firm _____ nor any of its constituent partners was terminated under any clause of standard Bidding Documents by the Engineer-in-Charge/ Employer during last 3(three) years.
4. Certified that I have access to or have available liquid assets (aggregate of working capital, cash-in-hand, uncommitted Bank Guarantees) and/or credit facilities not less than 10% of the estimated cost put to tender. In this respect, I have attached necessary documents with this application. The under-signed would authorize and request any Bank, person, Firm or Corporation to furnish pertinent information as deemed necessary and/or as requested by the Department to verify this statement.
5. The under-signed understands and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the Department.
6. Certified that I have applied in the tender vide e-NIQno _____in the capacity of individual/ as a partner of a firm & I have not applied severally for the same job.
7. The under-signed also hereby certifies that the Bid shall remain valid for a period not less than 120 (One Hundred twenty) days, after the dead line date for Bid submission.
8. I, the under-signed, declare that all the statements made in the attached documents in respect of mode of ownership of machineries are true and correct. I shall arrange facilities for different types of day to day testing as per MoRTH, IRC & IS guideline at the working site at my own cost relate to work.
9. Certified that required specified machineries for the works under this NIT will be installed at the working site within 15(fifteen) days from the date of issue of Work Order.
10. I / we do hereby certify that I shall bring all requisite technical personnel and /or plants/ testing machineries / equipments for all the items of works as per relevant IRC / IS codes of practice and as per BOO and as per direction of the Engineer-In-Charge at the time of execution of work at site even if upon Technical evaluation I am declared as "qualified" without having all the requisite technical personnel and /or plants/ testing machineries / equipments at the time of submission of tender.
11. I, the under-signed do certify that all the statements made in the attached documents are true and correct. If any declaration submitted is found / ascertain to be incorrect / fabricated / misrepresented / fraudulent etc. accordingly tender will be liable to be cancelled / terminated immediately & I / my firm / company shall also be liable to prosecuted under section 197, 199 & 200 of Indian Penal Code, 1860 along with section-71 & section-73 of Indian Information & Technology Act 2008 & any other applicable law for the time being in force in addition to forfeiture of Earnest Money / Security Deposit.

Date :

Signature, name and designation
of Authorized Signatory

For and on behalf of
(Name of the Applicant)

Declaration of the Bidder

(Affidavit to be affirmed on a Non Judicial Stamp Paper of Rs. 10/- and enclosed with the Bid documents which is required to be submitted in time duly)

I,,son of, aged

about years by

occupation do hereby solemnly affirm and confirm as follow:

1. That, I am the of..... have
2. duly authorized by and competent to affirm this affidavit on behalf of the said Bidder.
3. That, I have inspected the site of work covered under NleB (NleB No)
circulated through Office memo bearing No -----dated and have made myself fully
acquainted with the site conditions existing level/proposed level and local conditions in and around the site
of work. I have also carefully and meticulously gone through the Bid documents. Bid of the above named
Bidder is offered and submitted upon due consideration of all factors and if the same is accepted, I on and
for behalf of the aforesaid Bidder, being lawfully and duly authorized, promise to abide by all the
covenants, conditions and stipulations of the Contractual documents and to carry out, complete the works to
the satisfaction of the Bid accepting Authority of the Work and abide by all instructions as may given by
the Engineer in Charge of the work time to time. I also hereby undertake to abide by the provisions of
Law including the provisions of Contract Labour (Regulation & Abolition) Act, Apprentice Act 1961,
West Bengal Sales Tax Act, VAT Act, Income Tax Act as would be applicable to the Contractor upon
entering into formal Contract / agreement with the Bid Inviting/Accepting authority.
4. That I declare that, no relevant information as required to be furnished by the Bidder has been
suppressed in the Bid documents.
5. That the statement above made by me is true to my knowledge.

Deponent

Solemnly affirmed by the said

Before me (1st class Judicial Magistrate
/ Notary Public)

DECLARATION OF TECHNICAL PERSONNEL

I,..... S/o, D/o, W/o.....residing at do hereby declare that I am a Civil Engineer having qualification, DCE/BCE/MCE and working in the capacity of (Designation) in the organisation namely, address-..... since DD/MM/YYYY.

Copy of my passed certificate has been attached herewith.

Signature with date.....

Name.....

Address.....

Mobile No.....

Email.....

FORM- III

STRUCTURE AND ORGANISATION

A.1 Name of applicant :

A.2 Office Address :

Telephone No. and Cell Phone No. :

Fax No. :

E mail :

A.3 Attach an organization chart showing the structure of the company with names of Key personnel and technical staff with Bio-data. :

Note: Application covers Proprietary Firm, Partnership, Limited Company or Corporation.

**Signature of applicant including title
and capacity in which application is made**

FORM — IV

C. DEPLOYMENT OF MACHINERIES (in favour of owner / lessee): -

(Original document of own possession arranged through lease deed to be annexed)

(If engaged before Certificate from E.I.C. to be annexed in respect of anticipated dated of release of Machineries.)

Name of Machine/ Instrument	Make	Type	Capacity	Motor / Engine No	Machine No.	Possession Status		Date of release/engaged
						Idle	Engaged	

For each item of equipment the application should attach copies of

- (i) Document showing proof of full payment,
- (ii) Receipt of Delivery,
- (iii) Road Challan from Factory to delivery spot, is to be furnished.

**Signature of applicant including title
and capacity in which application is made**

SECTION - C

Form - II

FINANCIAL STATEMENT

B.1 Name of Applicant :

B.2 Summary of assets and liabilities on the basis of the audited financial statement of the last five financial years.

(Attach copies of the audited financial statement of the last five financial years)

	1st Year (Rs. In lakh)	2nd Year (Rs. In lakh)	3rd Year (Rs. In lakh)	4th Year (Rs. In lakh)	5th Year (Rs. In lakh)
a) Current Assets : (It should not include investment in any other firm)					
b) Current liabilities : (It should include bank over draft)					
c) Working capital : (a) - (b)					
d) Net worth : (Proprietors Capital or Partners Capital or Paid up Capital + Reserve and surplus)					
e) Bank loan/ Guarantee : (As per clause G.2. with all sub clauses)					

B.3 Annual value of construction works undertaken :

Work in hand i.e. Work order issued Last five years	As on					

Signed by an authorized officer of the firm

Title of the officer

Name of the Firm with Seal

Date

Copy forwarded for information and with a request for wide publicity through the Notice Board to:

-

1. The Chairperson ,Board of Administrator, KhirpaiMunicipality,PaschimMedinipur.
2. The State Mission Director AMRUT, Subhanna, Saltlake.
3. The Chief Engineer(In-Charge), South Zone, M. E. Dte. BikashBhavan, Salt Lake, Kol.– 700 091.
4. The Addl. Chief Engineer (South), M. E. Dte. BikashBhavan, Salt Lake, Kol. – 700 091.
5. The District Magistrate, PaschimMedinipur.
6. The Executive Engineer, WestMidnapore Division, M.E.Dte.
7. Notice Board of this office.
8. Office File.

**Superintending Engineer,
South Circle, M.E. Directorate**

TENTATIVE TECHNICAL SPECIFICATION

(This is indicative and not exhaustive)

Laying OF pipe Line(DI/MS)	
1	Carrying DI/MS pipes with specials and valves and lowering placing in position and laying carefully inside the trenches in proper alignment and gradient etc. including earth work in excavation of adequate width as per specification having min. clear cover from top of pipe is 1.10mtr. below existing ground level in any kind of soil including mixed with boulder, road sub-grade and its flank, but excluding moorum and laterite and stone etc. without damaging the existing telephone/electric cable etc. (in case of damaged if any type of cable line during execution, necessary damaged charges as applicable by the respective authority will be borne by the agency in his own cost) preparing the bottom surface for continuous bedding of pipe line and laying pipes, fitting, fixing specials and valves with bailing out water if any including carriage of pipes, specials and valves from local deptt. store within 8KM and back filling the trenches with excavated earth in layers to original condition as per specification and direction of EIC. The surplus materials after execution of work are to be return to the deptt. store.
2	Filling the pipe line with water, testing hydraulically as per I.S 3114-1965 (Article-6) in section of a length not exceeding 500mtr. for head of pressure as per specification including supplying installing and fixing all equipments such as diesel pump set, blank flange, pressure gauge, valve, pressure pump and all other tools and plants including drilling topping and plugging of necessary holes to pipes, blocking ends providing temporary thrust block and subsequent blocking of holes and other jointing materials and dismantling and removal of the same including disposal of water etc. all complete as per specification and direction of EIC. The rate is inclusive of cost of requisite water to be arranged by the contractor (Recovery rate of water @ Rs.10.00/m ³ , if contractor used water from deptt. source).
3	Cleaning thoroughly the inner surface of pipe line including specials and valves by flushing with water and subsequently disinfection of the same pipe line by flushing again with water containing bleaching powder resulting in residual chlorine not less than 15mg/ltrs. after 24hrs. of such filling including laboratory testing of water samples obtain from the disinfested pipe line and disposal of water from the pipe line after completion of the work. The rates including of cost of requisite water to be arranged by the contractor) (The rate of water @Rs. 10/m ³ may be recovered, if the contractor used water from deptt. source).
4	Cutting DI pipe (all class & type) to required length with cutting device etc. and grinding the cutting portion with file as per direction and satisfaction of EIC.

5	Chamfering the spigot end of all type/class of DI pipe for proper using of push joint by means of grinder set at site for proper joint etc. all complete as per direction of EIC.
6	Making flange joint to DI/CI pipes, specials and valves where necessary with supply of required rubber insertion and nut bolts, washers etc. of approved quality and type all complete as per specification and direction of EIC (Nut and bolts shall be of TATA/GKW rate).
7	Cast iron kinetic double orifice type air release valve having small orifice elastic ball resting on gun metal orifice nipple large orifice vulcanite ball seating on moduled seat ring, valve with built-in-Kinetic features, isolating sluice valve mounted in horizontal position and operated by a metre wheel gearing:inlet faced and drilled to IS 1538 Table 4 & 6. valve suitable for maximum working pressure of 10 kg/CM ²
8	Cost iron double flanged manually operated sluice valves generally conforming to IS 14846 : 2000, having four faces and spindle nut of gunmetal. inside screw non- rising type quality gunmetal /AISI 410 spindle: seat tested to 10kg/CM ² and body tested to 15kg/CM ² , flanges flat faced and drilled to 1.S.: 1538 : 1993. Painted black all over with asphalt base paint. Valves tested by closed end method.
9	Cost iron double flanged manually operated sluice valves generally conforming to IS 14846 : 2000, having four faces and spindle nut of gunmetal. inside screw non- rising type quality gunmetal /AISI 410 spindle: seat tested to 10kg/CM ² and body tested to 15kg/CM ² , flanges flat faced and drilled to 1.S.: 1538 : 1993. Painted black all over with asphalt base paint. Valves tested by closed end method.
10	Construction of different dia Sluice valve /Air valve /Washout chamber in different sizes for village road where light traffic run and for main road where heavy traffic run as depts.approved drawing with 25cm thick brick work (1:6) over cement concrete (4:2:1) over a single B/F soling over 150mm.thick sand filling in foundation including earth work in excavation and disposal of excess earth from work site with RCC (1:1.5:3) cover slab 100mm / 150mm thick slab on top of chamber with 1% reinforcement in RCC cover slab with necessary opening for operation of valve all complete including cost of labour & materials as per Departmental Dwg. [Reinforcement type:- Other manufacturerers not specified]
11	Construction of Thrust Block
12	Bituminous pucca road (approx. 450mm depth) cutting by using gaiti, chisel, hammer etc. and picking up the with drawing excavated materials and remove the same within distance of 30mtr. at least all complete for fixing/crossing all dia of pipe line as per direction of EIC.
13	Removal of rubbish, earth etc. From the working site and disposal of the same beyond the compound, in conformity with the Municipal/ Corporation Rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer-In-Charge.
14	Submission of complete detailed drawing of distribution system, rising main etc. after execution of work showing position of different types of valves, fittings/specials sluice valve chamber with location, node to node wise in the sanctioned drawing as completion drawing of the water supply scheme as per direction and satisfaction of EIC. The list of dia wise fitting/specials, different pipes ;of valve used in the rising main should be shown in the completion drawing (not separate) with verified by SAE & AE in-charge of the scheme.

15	Making barricading of excavation trenches of road width upto 15mtr. to avoid any accident by providing 75mm dia bamboo post placed vertically & horizontally with the help of 6"size iron rail as per direction and satisfaction of EIC. (Applicable where critical situation arise and take up the work as per direction of EIC)
16	Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in ground floor as per relevant IS codes.
17	Hire and labour charges for shuttering with centering and necessary staging upto 4m using approved stout props and thick hard wood planks of approved thickness and required bracing for concrete slabs, beams, column lintel curved or straight including fitting, fixing and striking out after completion of works (upto roof of ground floor). (f) 25 mm to 30 mm shuttering without staging in foundation
18	Reinforcement for reinforced concrete work in all sorts of structure including distribution bars stirrups, binders etc initial straightening and removal loose rust if necessary cutting requisite length hooking and bending to correct shape placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction (i) Tor steel/Mild Steel.
19	Brick work with 1st class bricks in cement mortar (1:6) (a) In foundation and plinth

Supply & Laying of HDPE (Materials grade PE-100,PN-6) pipes With specials for Existing DI Pipe Connection in Distribution system for Proposed water supply scheme

1	Supplying HDPE (Materials grade PE-100) pipes conforming to IS 4984-1995 with latest revision & amendments if any with necessary HDPE specials (excluding cost of CIDF valves) including labour charges for earth work in excavation in any kind of soil including mixed soil with boulder, road sub-grade and aits flank but excluding moorum laterite or sand stone / hard rock cutting with chisel required including cutting road flank/ brick pavement etc. without damaging the existing telephone/electrical cable line etc.(in case of damage of any type of cable line by the agency at the time of execution necessary damage charge as applicable by the respective authority will have to be borne by the agency at his own cost) upto the depth (av.) so as to maintain 1.10m. earth cushion from top of the pipe upto G.L. including loading unloading carrying lowering laying fitting fixing carefully pipes, valves and specials with the all types of jointing materials in trenches maintaining proper levels and alignment jointing the pipes and specials by butt welding/ adopting suitable method (But weld jointing with help of hydraulic tack and trimming machines, Hitter etc. for reaching at necessary melting point of HDPE pipe so that joint can be monolithic) so as to facilitate the maintenance of pipe line locally as per conventional method in future. (A) Pressure Rating : PN 6 Laying of pipe line including cost of pipe, fittings/specials & valves.
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2	Filling the pipe line with water, testing hydraulically as per I.S 3114-1965 (Article-6) in section of a length not exceeding 500mtr. for head of pressure as per specification including supplying installing and fixing all equipments such as diesel pump set, blank flange, pressure gauge, valve, pressure pump and all other tools and plants including drilling topping and plugging of necessary holes to pipes, blocking ends providing temporary thrust block and subsequent blocking of holes and other jointing materials and dismantling and removal of the same including disposal of water etc. all complete as per specification and direction of EIC. The rate is inclusive of cost of requisite water to be arranged by the contractor (Recovery rate of water @ Rs.10.00/m ³ , if contractor used water from deptt. source). B) For UPVC/HDPE Pipe
3	Cleaning thoroughly the inner surface of pipe line including specials and valves by flushing with water and subsequently disinfection of the same pipe line by flushing again with water containing bleaching powder resulting in residual chlorine not less than 15mg/ltrs. after 24hrs. of such filling including laboratory testing of water samples obtain from the disinfested pipe line and disposal of water from the pipe line after completion of the work. The rates including of cost of requisite water to be arranged by the contractor) (The rate of water @Rs. 10/m ³ may be recovered, if the contractor used water from deptt. source). B) For UPVC/HDPE Pipe
4	Making barricading of excavation trenches of road width upto 15mtr. to avoid any accident by providing 75mm dia bamboo post placed vertically & horizontally with the help of 6"size iron rail as per direction and satisfaction of EIC. (Applicable where critical situation arise and take up the work as per direction of EIC)
5	Bituminous pucca road (approx. 450mm depth) cutting by using gaiti, chisel, hammer etc. and picking up the with drawing excavated materials and remove the same within distance of 30mtr. at least all complete for fixing/crossing all dia of pipe line as per direction of EIC. (width cutting for trench as per IS 7634 (Part 2) : 2012 , Table-3)
6	Dismantling all type of plain cement concrete works, stacking serviceable materials of site and removing rubbish as directed within a lead of 75mtr. for laying all dia pipe line in ground floor, upto 150mm thick. (width cutting for trench as per IS 7634 (Part 2) : 2012 , Table-3)
7	Removal of rubbish,earth etc. from the working site and disposal of the same beyond the compound, in conformity with the Municipal / Corporation Rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer in charge.
8	Construction of different dia Sluice valve /Air valve /Washout chamber in different sizes for village road where light traffic run and for main road where heavy traffic run as deptt.approved drawing with 25cm thick brick work (1:6) over cement concrete (4:2:1) over a single B/F soling over150mm.thick sand filling in foundation including earth work in excavation and disposal of excess earth from work site with RCC (1:1.5:3) cover slab 100mm / 150mm thick slab on top of chamber with 1% reinforcement in RCC cover slab with necessary opening for operation of valve all complete including cost of labour & materials as per Departmental Dwg. [Reinforcement type:- Other manufactureres not specified]
9	Submission of complete detailed drawing of distribution system, rising main etc. after execution of work showing position of different types of valves, fittings/specials sluice valve chamber with location, node to node wise in the sanctioned drawing as completion drawing of the water supply scheme as per direction and satisfaction of EIC. The list of dia wise fitting/specials, different pipes ;of valve used in the rising main should be shown in the completion drawing (not separate) with verified by SAE & AE in-charge of the scheme. The above drawing will be submitted in 5 copies. For UPVC/HDPE Pipe
10	Earth work excavation of foundation trenches or drain in all sort of soil including removing spreading or stacking the spoil within a lead of 75 mtr. As directed.The item including necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. Depth of excavation not exceeding 1,500 mm
11	Taking out CI/DI Pipes with specials and valves including staking the same with in a lead of 30m as per instruction of E.I.C.(Excavation,dewatering earth filling etc will be paid separately)Pipe above 150 mm diameter and up to 250 diameter Depth of Metre trench up to 2 Metre.

12	Earth work in filling in foundation trenches of plinth with good earth, in layers not exceeding 150mm including watering and ramming etc. layer by layer complete.
13	Filling in foundation or plinth by silver sand in layer not exceeding 150mm as per directed and consolidating same by through saturation with water ,ramming complete including the cost of supply of sand.
14	Cutting of CI/DI pipes for fitting with pipes and or special or similar or dissimilar or dissimilar materials at the time of laying without damaging any part of the required length including taking out of the broken pieces from the trench and restacking the same at the specified location as per direction of the EIC.
15	Chamfering the spigot end of CI/DI pipes for fitting with the socket of CI/DI pipes and /or specials in tyton jointed water mains or other wise using electric grinder as per specification and direction of the EIC.
16	Rubber gasket joint to CI/DI Pipes and specials all complete to makes the joint water tight as required hydrolic pressure as per specification and direction of the EIC.
17	All type of Ductile iron (D.I.), Special(viz.Bend, Tee,Taper, Tail piece etc.) size conforming to I.S. Specification No 9523/2000 with cement mortar lining (inside) and bituminous coating (outside).

SUPPLY & FIXING OF ELECTROMAGNETIC FLOW METER AT INLET AND OUTLET LOCATION OHRs ALONG WITH FLOW METER/ FLOW SENSOR OR FLOW TUBE FIXING CHAMBER

- There shall be one number of Full-bore Electromagnetic flow meter on the common delivery manifold. The flow meters are to be installed and commissioned for measuring the instant flow rates as well as the total flow for a period of time of the station passing throughout the common manifold. The flow rates shall be indicated in m³/hr& total flow in cubic meter. The flow sensor shall be suitable to measure Raw water. The flow meter shall be electromagnetic inline type to provide indication, totalization and signal transmission of the liquid. The display is required at the Control Desk around 50 mtr. away from the transmitter installation point on the pipe line. Amplification of signals, if necessary, are to be incorporated. The flow meter must be capable of measuring velocity of water upto 3 m / sec with accuracy of $\pm 0.5\%$. Flow sensitivity must be ± 0.3 m/s at any flow rate. The linearity of the instrument shall be 0.1% of scale. The sensor must have enclosure of class IP-68. The tenderer shall clearly indicate the position of flow sensor. The data sheet for flow sensor is as follows.

The flow meter will be full bore electromagnetic type should be capable to handle flow of Raw Water.

Type:- Pulsed DC electromagnetic.

Accuracy:- ± 0.5 % of measure value.

Repeatability:- ± 0.2 %

Size of flow meter:- As per designed diameter of the common delivery manifold.

Sensor type:- In line full bore electromagnetic.

	<p>Process connection:- Flanged type.</p> <p>Weather protection class:- IP68 NEMA 6 P or as per the specified by EIC.</p> <p>Minimum conductivity:- 20 us/cm</p> <p>Full scale velocity:- 1 to 5 m/sec.</p> <p>Process temperature:- 50 °C max.</p> <p>Process pressure:- 10 Bar max.</p> <p>Electrodes:- SS 316 L/ SS 316.</p> <p>Coil housing :- SS304</p> <p>Flange MOC:- Carbon steel .</p> <p>Flow sensor tube:- SS304</p> <p>Cable between sensor and transmitter: - Copper cable of single Length as required as per site condition between sensor and transmitter.</p> <p>Flow transmitter: - Microprocessor based, wall mounted.</p> <p>Type of display of transmitter: - Display should be LCD or LED type and the size should be suitable for making it visible from at least 6m distance.</p> <p>Output:- 4-20 mA DC</p> <p>Power supply: - 240 V AC 50 Hz and shall be supplied from the MCC cum PDB at an approximate distance of 50 m.</p> <p>Input: - From flow tube</p> <p>Web server: - The flow meter should be compatible for connection with web server for remote facility display facility.</p> <p>Protection class: - IP 68.</p> <p>Calibration shall be accredited according to ISO/IEC 17025.</p>
2.	<p>Fixing of Flow Tube at the delivery manifold, leak proof chamber of adequate dimension is to be constructed if required as per site condition with a rung-ladder of suitable length for getting down if necessary.</p>
3.	<p>Full-bore Electromagnetic flow meters are to be installed at inlet and outlet locations as per direction of EIC.</p>

SECTION — B

CONDITIONS & REQUIREMENTS FOR BIDDING

1. Submission of eBid document will not be allowed beyond the schedule time indicated in the eBidding.
2. Each Bidder shall upload his offer in envelopes (A-1-Statutory & A-2- non-statutory) & .xls sheet after digitally signed superscribing the name of the work, name & address of the bidder, NIB No and date of submission of the eBid.
3. Each page of the eBid documents, drawing etc. has to be digitally signed / initiated by the authorized signatory.
4. No eBid proposal will be entertained without the earnest money being submitted as indicated in the NIB. No interest will be allowed for the said earnest money and the Bid issuing authority will hold the same till finalization of the eBid.
5. Any conditional eBid will be liable for rejection.
6. The Bid inviting Authority reserves the right to reserve or amend the eBid documents prior to the date notified for submission of the eBid or also to extend the time mentioned in the NIB under intimation to the Bidders.
7. eBid once offered cannot be withdrawn within a period of 180 calendar days from the date set for opening of eBids. Any extension of this validity period if required will be subject to concurrence of the Bidders.
8. Bidders would be at liberty to point out any ambiguities, contradictions, omissions, etc. seeking clarifications thereof or interpretation of any of the conditions of the eBid documents before the Bid Inviting Authority by uploading his/her doubt within a period of Forty eight hours before the date of Pre bid meeting as per schedule.
9. Written clarification or amendments etc. as may be issued by the Bid Inviting Authority in pursuance to the representation made by the intending Bidders under Clause 10 above shall be final and binding on the Bidders and shall form a part of the eBid documents. Bid Inviting Authority however, reserves the right to have pre Bid conference with the intending Bidders if deemed necessary. Any point or irregularities or questions could not be raised after expiry of pre bid meeting.
10. Intending Bidders are required to inspect the site of the Project with particular reference to location and infrastructure facilities. They are to make a careful study with regard to availability of materials and their sources and all relevant factors as might affect their rates and prices. The Bidders must be acquainted with existing ground level (EGL),

Highest flood level (HFL), Finished ground level (FGL)/Proposed ground level (PGL), and other required levels.

11. If expenses incurred for site inspection and all activities in the preparation and uploading of the eBid shall be borne by the Bidders.

12. Extra claim or any concession on the ground of insufficient data or information and absence of knowledge of conditions prevailing at the site or situation arising during the execution of the work shall not be entertained.

13. eBid, which have been considered valid on the result of general examination (Prequalification stage) at the time of opening, shall be subjected to subsequent detail scrutiny. Notwithstanding the general examination carried out earlier, the Bid Inviting authority reserves the right of rejection of any eBid, which may be found to be defective during the detail scrutiny.

14. Bidders before uploading the eBid documents shall have to ensure that "Declaration by the eBidder" in the pro-forma set out in the eBid documents is to be filed separately with the eBid documents in the form of Affidavit to be affirmed by the same person signing the Bid documents.

15. The Bid inviting authority reserves the right to accept or reject any or all of the eBid received or to split up the work in groups or to relax any clause without assigning any reason thereof.

16. This set of Bid documents consists of:

- a. Detail Notice inviting Bid.
- b. Declaration by the eBidder.
- c. Main Bid Documents consists of PART I & PART II (Technical) & financial (.xls format)
- d. Tender Form No. 2911.

Superintending Engineer
..... Circle, M.E.Dte

SECTION — C

1.0 DEFINITIONS AND INTERPRETATION

- (1) In the Contract, as hereinafter defined, the following words and expressions shall have to be meanings hereby assigned to them, except where the context otherwise requires:
- (a) "Approved" means provisionally approved in writing, including subsequent written confirmation of previous verbal approval and "approval" means provisional approval in writing, including as aforesaid. However in spite of approval from Competent Authority contractor is solely responsible for design-cum-execution of the whole project as it is turnkey job.
 - (b) "Authority" means the TIA or his authorized representatives of Superintending Engineer, South Circle, MED
 - (c) "Bank" means the "State Bank of India" or any other Scheduled Bank.
 - (d) "Calendar day" means a period of twenty four hours extending from midnight to midnight.
 - (e) "Cash" includes cheque, bank drafts and any other payment voucher authorizing payment from any bank or treasury.
 - (f) "Contractor" means the person or persons, firm or Corporation who have entered into the contract for the performance of the work.
 - (g) "Contract price" means the sum as stated in the Bid submitted by the contractor subject to such additions thereto or deductions therefore as may be made under the provisions of; the contract documents and accepted by the Employer.
 - (h) "Constructional Plant" means all appliances or things of whatsoever nature required in or about the execution or maintenance of the works but do not include materials or other things intended to form or forming part of the permanent works.
 - (i) "District" or Khirpai Municipal Area means the area described as such in Schedule-I of the Act;
 - (j) "Drawings" means the drawings referred to in the Bid documents and any modification of such drawings approved in writing by the undersigned from time to time or approved in writing by the Superintending Engineer, South Circle, MED.
 - (k) "Employer" means the Superintending Engineer, South Circle, MED
 - (l) "Engineer in Charge" means the Executive Engineer, WestMidnapore Division of Municipal Engineering Directorate to whom the Superintending Engineer, South Circle, MED, delegate his Authority by the way of declaring him as EIC in the Bid documents.
 - (m) "Engineer's Representatives" means any Assistant Engineer or Assistant of the Engineer or any Clerk of works appointed from time to time by the Employer or the Engineer to perform the

duties set forth in Clause 2 hereof, whose authority shall be notified in writing to the Contractor by the Engineer-in Charge.

- (n) "Ground Level" means the level of the referred point of the exposed surface of the ground, road or pavement free from extraneous materials;
- (o) "Holidays" means a public holiday for the purpose of Section 25 of the Negotiable Instruments Act, 1881 or such other day on which the office of the Authority remains closed for the day;
- (p) "Local Authority" not only means a Municipal Corporation or Municipality or other authority legally entitled to the control or manage local funds but also includes the West Bengal State Electricity Board.
- (q) "Month" means English calendar month;
- (r) "Permanent Work" means the permanent works including equipment to be supplied, executed, erected and maintained in accordance with the Contract;
- (s) "Road" shall include a street, avenue, lane, by-lane or any other access routes over which a person authorized by a Local Authority has a right of way;
- (t) "Rupees" (or Rs. in abbreviation) shall mean Rupees in Indian Currency.
- (u) "Site" means the land and other placed on, under in or through which the Permanent. Works or Temporary Works are to be executed and any other lands and places provided or arranged by the employer for working space or any other purpose as may be specifically designated in the Contract as forming part of the Site,
- (v) "Specification" means the specification referred to in the Bid and any modification thereof or addition thereto as may from time to time be furnished or approved in writing by the Superintending Engineer, South Circle, MED.
- (w) "Store" means such storage areas including depot, go down, stockyard, dumping yard etc. maintained by the Authority) or where supply of any material for the construction or any work has been undertaken by any authorized agent, by such agent within the District.
- (x) "Temporary Works" means all temporary works of every kind required in or about the execution or maintenance of the Permanent Works.
- (y) "Bid Date" means the date fixed for receipt of Bids as per Notice Inviting Bids or as extended by subsequent notification(s).
- (z) "Bidder" means the person, or persons, firm or corporation submitting a Bid for the work contemplated either directly or through a duly authorized representative.
- (aa) "The Act" West Bengal Municipal Act, 1975
- (bb) "Time" expressed by hours of the clock shall be according to the Indian Standard Time.

- (cc) "Water main" means any pipe or conduit of cast iron, DI (Ductile Iron) pipe, steel or of any other material intended to convey or distribute water;
- (dd) "Works" shall include both Permanent Works and Temporary Works.
- (ee) "Work" means all of the work of the project called for or shown in the Bid documents including preparation, construction improvement and clean up.
- (2) Singular and Plural: Works importing the singular only also include the plural and vice versa where the context demands.
- (3) Headings or Notes: The headings and marginal notes in these Conditions of Contract shall be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.
- (4) Cost: The work "cost" shall be deemed to include overhead costs whether on or off the Site.

2.0 DRAWINGS

- 1) Custody of drawing: All the approved Drawings shall remain in the safe custody of the Executive Engineer, WestMidnaporeDivision, MED, one copy of original approved drawing and design to be submitted to Khirpai Municipality but one copy thereof shall be furnished to the Contractor free of charge. The Contractor shall provide and make at his own expenses any further copies required by him. At the Completion of the Contract, the Contractor shall return to the Executive Engineer, WestMidnapore Division, and M.E.Dte. All drawings as provided under the Contract.
- 2) Copy of drawing:- One copy of drawings to be kept on site. One copy of the Drawings furnished by the Contractor as aforesaid, shall be kept by the Contractor on the site and the same shall at all reasonable times be available for inspection and use by the Engineer and his/municipal Representatives and by any other persons authorized by the Engineer in writing.
- 3) Disruption of progress: The Contractor shall give written notice to Executive Engineer, WestMidnaporeDivision, MED whenever planning or progress of the works is likely to be delayed or disrupted order, including a direction instruction or approval is issued by the Superintending Engineer, South Circle, MED on recommendation of Executive Engineer within a reasonable time. The notice shall include details of the drawing or order required, and of why and by whom it is required and of any delay or disruption likely to be suffered if it is further delayed.

3.0 FURTHER DRAWINGS

The Executive Engineer, WestMidnapore Division, MED shall have full power and authority to supply to or demand from the Contractor, from time to time, during the progress of the Works, such further drawings as shall be necessary for the purpose of the proper and adequate execution and maintenance of the Works. The Contractor shall carry out and be bound by the same. Adequacy as determined by the Executive Engineer, WestMidnapore Division, MED shall be final and binding on the Contractor.

4.0 CONTRACT AGREEMENT

The Contractor shall, when called upon to do so, enter into and execute a Contract Agreement, to be prepared and completed in the form no. 2911 along with all other documents mentioned earlier with such modification as may be necessary.

4.1 *Security Deposit: The entire amount of such 10% (ten percent) of Security Deposit (Initial 2% EM + additional 8%) will be refunded without any interest only after expiry of Defect Liability Period as per PWD order No. 5784-PW/L&A/2M-175/2017 Dated: 12.09.2017, wherein, Construction of new building / new bridge / new culvert, the Defect Liability Period of the work shall be five years from the date of completion of the work;*

For work with five years Defect Liability Period:

- i) No security deposit shall be refunded to the contractor for 1st 3 years from the date of completion of the work;*
- ii) 30% of the security deposit shall be refunded to the contractor on expiry of four years from the actual date of completion of the work;*
- iii) The balance 70% of the security deposit shall be refunded to the contractor on expiry of five years from the actual date of completion of the work.*

5.0 INSPECTION OF SITE

The Executive Engineer, M.E. Dte. or his authorized person shall have made available to the Bidder with the Bid documents such data like its location, distance from fixed point including the layout drawing and location of the primary grid point, level drawing data, the source of filling the reservoir and the Bid shall be deemed to have been based on such data. But the Bidder shall be responsible for his own interpretation thereof. The Bidder may also undertake investigations at his own cost on such levels or any other levels prior to submission of his offer.

The Bidder shall also be deemed to have inspected and examined the site and its surroundings and information available in connection therewith and to have satisfied himself, so far as is practicable, before submitting his Bid; as to the form and nature thereof, including the sub-surface conditions, topographical level of proposed site, the hydrological and climatic conditions, the extent and nature of work and materials necessary for the completion of the Works, the means of access to the Site and the accommodation he may require and, in general 'shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Bid.

6.0 WORK TO BE TO THE SATISFACTION OF ENGINEER IN CHARGE

Save in so far as it is not legally or physically impossible, the Contractor shall execute and maintain the Works in strict accordance with the Contract to the satisfaction of the Executive Engineer, WestMidnapore Division, MED and shall comply with and adhere strictly to the Superintending Engineer, .South CircleCircle, MED's instructions and directions on any matter whether mentioned in the Contract or not touching or concerning the Works.

7.0 WORK PROGRAM

(1) Program to be furnished: Within thirty (30) calendar days, the Contractor shall, after the acceptance of his Bid, submit to the Executive Engineer, WestMidnaporeDivisionDivision, MED for his approval a program showing the order of procedure in which he proposes to carry out the Works. The Contractor shall, whenever required by the Executive Engineer, WestMidnaporeDivisionDivision,, MED, also provide in writing for his information, general description of the arrangements and methods, which the Contractor proposes to adopt for the execution of the Works.

(2) If at any time it should appear to the Executive Engineer, WestMidnapore Division, MED that the actual progress of the Works does not conform to the approved program referred in sub-clause (1) of this Clause, the Contractor shall produce, at the request of the Executive Engineer, WestMidnaporeDivision, MED, a revised program showing the modifications to the approved program necessary to ensure completion of the Works within the time for completion as defined in Clause 42 hereof.

(3) The submission to and approval by the Executive Engineer, WestMidnaporeDivisionDivision, MED of such program or the furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

8.0 CONTRACTOR'S SUPERINTENDENCE

The Contractor shall give or provide all necessary superintendence during the execution of the Works and as long thereafter as the Superintending Engineer, South Circle, MED may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor or a competent and authorized agent or representative approved of in writing by the Superintending Engineer, South Circle, MED, which approval may at any time be withdrawn, is to be constantly on the Works and shall give his whole time to the Superintendence of the same. If such approval be withdrawn by the Superintending Engineer, South Circle, MED, the Contractor shall, as soon as is practicable, having regard to the requirement of replacing him as hereinafter mentioned after receiving written notice of such withdraw, remove the agent from the works and shall not thereafter employ him again on the Works in any capacity and shall replace him by another agent approved by the Executive Engineer, WestMidnapore Division, MED.

Such authorized agent or representative shall receive, on behalf of the Contractor, direction and instruction from the Executive Engineer, WestMidnapore Division, MED or, subject to the limitations of Clause 2 hereof the Engineer's Representative. The agent or representative of the Contractor must be able to speak and communicate in English / Bengali. In the absence of the Contractor's designated agent or representative for a particular operation on any site of the works the Contractor's supervisory staff or sub-agent or leading hands shall be instructed to receive and carry out any instruction or direction issued or given by the Executive Engineer, WestMidnapore Division, MED or the EIC.

9.0 MATERIALS AND WORKMANSHIP

1) All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication, or on the Site or at such other place or places as may be specified in the Contract, or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used and shall supply samples or materials before incorporation in the Works for testing as may be selected and required by the Executive Engineer, WestMidnaporeDivision, MED, be it at site or at the manufacturer/Vendors premises or elsewhere.

2) COST OF SAMPLES: The Contractor at the cost and expense of him shall furnish all samples of materials as may be required by the Executive Engineer, WestMidnaporeDivision, MED.

3) COST OF TESTS: The cost of making any test shall be borne by the Contractor if such test is clearly intended by or provided for in the Contract and in the cases only of a test under load or of a test to ascertain whether the design of any furnished or partially finished work in appropriate for the purpose which it was intended to fulfill, is particularized in the Contract in sufficient detail to enable the Contractor to price or allow for the same in his Bid.

4) COST OF TESTS NOT PROVIDED FOR, ETC.: If the Executive Engineer, WestMidnapore Division, MED orders any test, which is either;

a) Not so intended by or provided for, or

b) (In the cases above mentioned) is not so particularized, or

c) Though so intended or provided for is ordered by the Engineer to be carried out by an independent person or organization at any place other than the Site or the place of manufacture or fabrication of the materials tested, then the cost of such test shall be borne by the Contractor, if the tests shows the workmanship or materials not to be in accordance with the provisions of the Contract or the Engineer's instruction.

10.0 INSPECTION OF OPERATIONS

The Engineer and any person authorized by him shall at all times have access to the Works and to all workshops stores and places where work is being prepared or from where material manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every facility for and every assistance in or in obtaining the right to such access.

11.0 EXAMINATION

1) Examination of work before covering up: No work shall be covered up or put out or view without the approval of the Engineer or the Engineer's Representative and the Contractor shall afford full opportunity for the Executive Engineer, WestMidnapore Division, MED or the Engineer's

Representative to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The Contractor shall give due notice to the Engineer's Representative where any such work or foundations is or are ready or about to be ready for examinations and the Engineer's Representative shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly attend for the purpose of examining and measuring such work or of examine such foundations

2) Uncovering and making openings: The Contractor shall uncover any part or parts of the Works or make opening in or through the same as the Engineer may from time to time direct and shall reinstate and make good such part or parts to the satisfaction of the Engineer If any such part or parts have been recovered up or put out of view after compliance with the requirement of sub-clause (1) of this Clause and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating and making good the same shall be, borne by the Employer, but in any other case all costs shall be borne by the Contractor.

12.0 CERTIFICATION OF COMPLETION OF WORK

1) Erection: Erection of Mechanical and electrical equipment shall be construed to have been completed where equipment in question is placed in position undergoes all necessary tests such as those for alignment, verticality, leak proof mess, insulation etc. as may be specified elsewhere in the Bid documents and put to operation.

2) Completion: Completion is a stage when the equipment and the structure as a whole are certified by the Employer. The date shall only be indicative for the purpose of reckoning the period of Maintenance Period and shall not be co-related with the release of any payment provided that non-continuous or sporadic functioning shall not be deemed as commissioning and also provided that non-commissioning of minor works, the decision on determination of major or minor works resting with the employer, shall not nullify the act of completion for the aforesaid purpose.

An item shall be considered as minor work where its non-completion may not in the opinion of the employer, stand in the way of commencement of plant operation.

13.0 MAINTENANCE

1) Defect Liability Period: As per Govt. Order.

2) Cost of Execution of work of repair, etc.: The repair work shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer, be due to the use of materials or workmanship not in accordance with the Contract, or to neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract. If, in the opinion of the Engineer, such necessity shall be due to any other cause, the value of such work shall be ascertained and paid for as if it was an additional work.

3) Remedy on contractor's failure to carry out work required: If the Contractor shall fail to do any such work as aforesaid requirement by the Engineer, the Employer shall be entitled to employ and

pay other persons to carry out the same, which in the opinion of the Employer, the Contractor was liable to do at his own expense under the Contract. In the said event, all expenses consequent thereon or incidental thereto shall be recoverable from the Contractor by the Employer, or may be deducted by the Employer from any sum due or which may become due to the Contractor.

14.0 CONTRACTOR TO SEARCH

The Contractor shall, if required by the Executive Engineer, WestMidnaporeDivision, MED in writing, search under the directions of the Engineer, for the cause of any defect, imperfection or fault appearing during the progress of the Works or in the period of Maintenance. Unless such defect, imperfection or fault shall be one for which the contractor is liable under the contract, the cost of the work carried out by the contractor in searching as aforesaid shall be borne by the Employer. If such defect, imperfection or fault shall be one for which the contractor is liable as aforesaid, the cost of the work carried out in searching as aforesaid shall be borne by the contractor and he shall in such case repair, rectify and make good such defect, imperfection or fault at his Own expense in accordance with the provisions of Clause 48 hereof to the satisfaction of the Engineer.

15.0 ALTERATIONS, ADDITIONS AND OMISSIONS

1) Variations: The Employer may make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be desirable, he shall have power to order the Contractor to do and the Contractor shall do any of the following:

a) Increase or decrease the quantity of any work included in the contract.

b) Omit any such work.

c) Change the character or quality or kind of any such work.

d) Change the levels, lines position and dimensions of any part of the Works and

e) Execute additional work of any kind necessary for the satisfactory completion of the works or for deriving satisfaction of the Employer. It is expressly provided that no such variation shall, in any way vitiate or invalidate the Contract, but the value, if any, of all such variations shall be taken into account in ascertaining the amount of the Contract Price.

2) Orders for variations to be in writing: The Contractor shall make no such variations without an order in writing from the Employer. Provided that no order in writing shall be required for insignificant increase or decrease in the quantity of any work where such increase or decrease is not the result of an order given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Schedule of prices. Provided also that if for any reason the Employer shall consider it desirable to give any such order verbally, the Contractor shall comply with such order and any confirmation in writing of such verbal order given by the Employer whether before or after the carrying out of the order, shall be deemed to be an order in writing within the meaning of this

Clause. Provided further that in the event of non-receipt of written confirmation from the Employer, the Contractor shall, within eleven working days, confirm the same from his end in writing to the Employer, and If such confirmation is not contradicted in writing within fourteen working days by the employer, it shall be deemed to be an order in writing by the Employer.

16.0 MEASUREMENT :For measurement, the metric system should be used.

17.0 WORKS TO BE MEASURED

The engineer shall, except as otherwise stated, ascertain and determine by measurement the value in terms of the Contract of work done in accordance with the Contract. He shall, when he requires any part or parts of the works to be measured, give notice to the Contractor's authorized agent or representative, who shall forthwith attend or send a qualified agent to assist the Engineer or the Engineer's Representative in making such measurement, and shall furnish all particulars required by either of them. Should the Contractor not attend, or neglect or omit to send his agent on two consecutive occasions, then in the third occasion the measurement shall be made unilaterally by the Engineer, which shall be taken to be the correct measurement of the work. For the purpose of measurement such permanent work as is to be measured by records and drawings at suitable intervals of such work and the Contractor, as and when called upon to do so in writing shall, within fourteen days, attend to examine and agree upon such records and drawings, with the Engineer or Engineer's Representative and shall sign the same when so agreed. If the Contractor does not so attend to examine and agree upon such records and drawings on two consecutive occasions they shall be taken to be correct. If, after examination of such records and drawings, the Contractor does not agree with the same or does not sign the same as agreed, they shall nevertheless be taken to be correct, unless the Contractor shall, within fourteen days of such examination, lodge with the for decision by the Engineer, a notice in writing giving details of the respects in which such records and drawings are claimed by him to be incorrect together with reasons thereof.

18.0 METHOD OF MEASUREMENT

The Works shall be measured but, notwithstanding any general or local custom, except where otherwise specifically described or prescribed in the Contract.

19.0 COMPLETION DRAWING

Completion drawing including detailed construction drawing shall have to be submitted in original with 5 (five) copies of prints of each. The original drawings shall be drawn on thick polyester film approved by the Engineer-in-Charge. Scale and size of drawings shall also be as specified by the Engineer-in-Charge. Soft copy of drawing copied in CD/DVD should be submitted in addition. No extra payment will be made for it. The Completion drawings are to be got approved by the Employer and shall have to be submitted before the issue of certificate of final acceptance.

Superintending Engineer, South Circle
Municipal Engineering Directorate

SECTION — D

GENERAL SPECIFICATIONS OF WORKMANSHIP AND MATERIALS FOR CIVIL WORK

1.0 GENERAL

1.1 General Materials

1.1.1 All materials used in the permanent works shall be of the best quality of the kind and to the approval of the Engineer-in-Charge. Any material not covered by these Specifications, shall comply with the relevant latest Indian Standard Specifications (Referred to as IS as revised or modified up-to the date one month prior to Tender date). British or American Standard Specifications shall be referred to in case any particular specification is not available in any of the aforesaid Specifications. For materials not specified in the aforesaid, direction of the Engineer-in-Charge shall be followed. All disputes shall be referred to the Employer, whose decision shall be final and binding.

1.1.2 Samples of materials to be supplied and used, by the Contractor in the works shall be to the prior approval of the Engineer-in-Charge. For this purpose, the Contractor shall furnish in advance representative samples in quantities and in the manner as directed by the Engineer-in-Charge for his approval. Materials brought to the Site, which in the option of the Engineer-in-Charge do not conform to the approved sample, shall, if so, directed by him, be removed by the Contractor from the Site and replaced by the materials of approved quality.

1.1.3 In spite of approval of the Engineer-in-Charge of any materials brought to the site, he may subsequently reject the same if in his opinion the materials have since deteriorated due to long or defective storage or for any reason whatsoever and is thereby considered unfit for use in the permanent works. Any material thus rejected shall be immediately removed from the Site at Contractor's cost and expense.

1.1.4 All materials brought to the Site shall be properly stored and guarded in the manner as directed by the Engineer-in-Charge and to his satisfaction.

1.1.5 The Engineer on written request of EIC may carry out test of materials as he may decide. The Contractor shall, at his cost and expenses, for this purpose supply requisite materials and render such assistance to the Engineer-in-Charge as he may require.

1.2 Workmanship

All works are to be carried out in proper workman like manner. Items of works not covered by these Specifications or by other tender documents shall be carried out as per best practice according to the direction of the Engineer-in-Charge and to his satisfaction. The relevant IS Specifications or in case of necessity British or American Standard Specifications shall be taken as guide for the purpose.

1.3 Works Included

The rates for all items, unless specifically stated otherwise in the Contract, must cover the cost of all materials, labours, tools, machinery, plant, pumps, explosives, scaffolding, staging strong props, bamboos, ropes, templates, pages and all appliances and operations whatsoever necessary for efficient execution of work.

1.4 Ground Conditions

The Contractor is to visit the site and ascertain local conditions, traffic restrictions and obstructions in the area and allow for extra expenses likely to be incurred due to any limitations whatsoever. The Finished ground level (FGL) have to obtained by the bidder prior to pre-bid meeting and quoting the rate by E.I.O in written.

1.5 Setting Out and Levelling

The Contractor is to set and level the works, and will be responsible for the accuracy for the same. He is to provide all instruments and proper qualified staff required for checking the Contractor's work.

1.6 Safety

The Contractor shall take, adequate precaution to provide complete safety for prevention of accidents on the site.

1.7 Keeping Works Free from Water

The Contractor shall provide and maintain at his own cost, electrically or other power-driven pumps and other plant and equipment to keep site excavated foundation pits and trenches free from surface as well as subsoil/leakage water from any other source thereof and continue to do so to the complete satisfaction of the Engineer-in-Charge till the site is handed over. Method of dewatering shall need approval of the Engineer-in-Charge but no payment whatsoever is allowed on this count.

1.8 Rubbish

1.8.1 The Contractor shall clear all rubbish, vegetation, roots, soda etc., and dump them in the area indicated to the satisfaction of Engineer-in-Charge. No separate rate shall be allowed for the above work.

1.8.2 After the work is completed, the Contractor shall clear the area surrounding the buildings, all hutments and excess stores and remnants of building materials such brick bats, metal, sand, timber, steel etc.

1.9 Bench Marks and Ground water Gauges

The Contractor shall protect surveyor's benchmarks and ground water gauges, zero-line marks and base line marks and base line marks from damage of movement during work.

1.10 Inspection

The Contractor shall inspect the Site of works and ascertain site condition and the nature of soil to be excavated.

1.11 Contractor's Staff

The Contractor must provide at all times efficient staff of trustworthy, skilful and experienced assistance capable of carrying out the work in accordance with the drawings and specification and to correct levels. The cost this establishment should be included in his rates.

1.12 Method of Measurement

Unless otherwise specified, the method of measurement for building works shall be as per IS: 1200.

2.0 EARTH WORK IN EXCAVATION & FILLINGS

2.1 General

Applicable provisions of Conditions of contract shall govern work under this section.

2.2 Excavation for Foundation, Trenches, Pit etc.

The excavation work shall be carried out in all kinds of Soil including Sand in workman like manner without endangering the safety of the nearby Structures or works without causing any hindrance to other activities in the area. The existence of old buildings, boundary walls, hutment, sewer lines, water lines, if any very close to the area of excavation should be given careful consideration while designing carrying out the excavation work. The excavation shall be done in such method as would technically be appropriate and befitting the site conditions subject to the approval of the Engineer-in-Charge. All foundation trenches shall be excavated to the full width and depths shown on the approved drawing or to such ordered to the Contractor. The Contractor shall not undertake any earthwork without having obtained prior approval from the Engineer-in-Charge to the methods he proposes to employ in order to execute the work in the most efficient manner. He shall not modify such methods without the approval of the Engineer-in-Charge. This approval, however, shall not in any way make the Engineer-in-Charge responsible for any consequent loss or damage.

2.2.1 Should any excavation be taken down the specified levels, the Contractor shall fill in such excavation at his own cost with concrete as specified for foundations, well rammed in position until it is brought up to the specified level.

2.2.2 The Contractor shall notify when the excavation is completed and no concrete or masonry shall be laid until the soil for each individual footing, rafts etc. is approved.

2.2.3 The Contractor shall keep the site clear of water at all times. To this end he shall provide arrangements for bailing and pumping or any special arrangements as required within his quoted prices.

2.2.4 All foundation pits shall be refilled to the finished ground level (formation level) with approved materials, which shall be suitably consolidated in layers to the satisfaction of the Engineer-in-Charge.

2.2.5 Nothing extra will be paid for bailing out water collecting in excavation due to rains, ordinary springs, leakage from any other sources etc., or any other reason.

2.2.6 For the work of excavation the Tenderer shall include in his quotation the shoring, sheeting, bracing and sheet piling (if required). The quotation shall also include the cost of compaction of foundation sub-base, removal and storage of excavated materials and back filling.

2.3 Shoring

Timber shoring whenever required shall be closed boarded with minimum 50mm thick good and seasoned timber planks of sufficient length driven side-by-side to the required depth. The gaps between adjacent timber planks shall such would not allow any flow of soil particles, if necessary, the sides of the planks shall be planed smooth to ensure this.

Sufficient numbers of bracing struts, walling etc. are to be provided to make the shoring rigid and non-yielding by earth pressure. Where necessary, sheet piling shall be done to ensure safety to the adjoining structures, if it is found that it is not feasible to protect the structure by timber shoring only. The Tenderer is strongly advised to inspect the site before tendering and apprise himself of the requirement of any Sheet piling in addition to the timber shoring before submitting his Quotation accordingly.

2.4 Back Filling

The space around the foundations in trenches or sites shall be cleared of all trash and loose debris and filled with approved excavated earth, all clods being broken up to the finished G.I. Filling shall be done in 200mm layers, each layer to be properly moistened and well rammed. Excavated materials which is surplus or which is consolidated unsuitable for back filling shall have to be

disposed of in spoil dumps as directed by the Engineer-in-Charge. No extra payment will be made for this.

3.0 CONCRETE

3.1 General

3.1.1 Applicable provisions of Conditions of Concrete shall govern work under this section. 3.1.2 All concrete work, plain or reinforced shall be carried out strictly in accordance with this specification and any working drawing or instructions given from time to time to the Contractor.

3.1.3 The Contractor's states shall allow for wastages in all materials as well as for all tests of materials and concrete.

3.1.4 No concrete shall be cast in the absence of the Engineer-in-Charge or any other person duly authorized by him. The Contractor's Engineer shall personally check that both the form work and reinforcement have been correctly placed and fixed, and shall satisfy himself that all work preparatory to the casting is completely ready, before informing the Engineer-in-Charge for final inspection and approval and for which purpose at least 24 hours' notice shall be given by the Contractor.

3.1.5 The Indian Standards wherever referred to herein shall be the latest addition of such standards.

3.2 CEMENT

The grade & brand of cement used for the work will be selected & approved by the E.I.C in writing before execution of work.

3.3 AGGREGATES

The fine and coarse aggregates shall conform to all provisions and test methods of IS: 383 and/or IS: 515. Samples of aggregates, proposed to be used in the work shall be submitted free of charge in sufficient quantities to the Engineer-in-Charge with sieve analysis and other physical and chemical analysis data for his approval. He will preserve approved samples for future reference. This approval will not in any way relieve the Contractor of his responsibility of producing of specified qualities.

3.3.1 Coarse Aggregates

Coarse aggregates for use all reinforced and other plain cement concrete works shall be crushed black granite trap stone obtained from approved source and shall consist of uncoated, hard, strong dense and durable pieces of crushed stone, and be free from undesirable matters, viz. Disintegrated stones soft, friable, thin, elongated or laminated pieces, dirt, salt, alkali, vegetable matter or other deleterious substances. The aggregates shall be thoroughly washed with water and cleaned before use to the satisfaction of the Engineer-in-Charge at no extra cost of the Employer.

The maximum size of coarse aggregates shall be as follows unless specified otherwise elsewhere.

Reinforced Concrete	20 mm
Plain Concrete	20 mm
Thin R. C. C. Members	
With very narrow space	12 mm.
Mat/Lean Concrete	20/40 mm.

(The actual size to be agreed by the Engineer-in-Charge)

Grading of coarse aggregates for a particular size shall generally conform to relevant I.S Codes and shall be such as to produce a dense concrete of the specified proportions and or strength and consistency that will work readily in position without segregation.

3.3.2 Fine Aggregates

Sand shall be clear River sand brought from approved source and consist of siliceous material, having hard, strong, durable uncoated particles, free from undesirable matters viz. dust lumps, soft or flaky particles or other deleterious substances. The amount of undesirable shall not exceed the percentage limits by weights as specified in relevant IS Codes. Washing of aggregates by approved means shall be carried out, if desired by the Engineer-in-Charge, at no extra cost to the Employer.

Coarse and fine sand shall be well graded within the limits by weight as specified in relevant IS Code. Fineness Modulus shall not vary by more than plus or minus 0.20 from that of the approved sample. Fineness Modulus for sand should not be less than 2.5.

3.4 REINFORCEMENT

3.4.1 The Contractor shall prepare and furnish to the Engineer-in-Charge, Bar Bending Schedules in considerations of the approved drawings for all R.C. C. works for review and checking by the Engineer-in-Charge well before taking up the work.

3.4.2 The High Yield strength deformed bar (HYSD) shall conform to IS: 1786-1990.

All steel for reinforcement shall be free from loose, oil, grease, paint or other harmful matters immediately before placing the concrete.

3.4.3 The Reinforcement shall be bent to the shapes shown on the approved drawings prior to placing and all bars must be bent cold. The Steel shall be placed in such a way that it is rigidly held in position while concrete is being cast. The correct clearance from the form shall be maintained by either pre-cast mortar blocks or by metal supporting chairs to be supplied by the Contractor free of charge.

The intersection of roads crossing one another shall be bound together with soft pliable with No. 16 to 18 SWG at every intersection so that reinforcement will not be displaced in the process of depositing concrete. The loops of binding wire should be tightened by pliers and welding of reinforcement for lapping & binding should be done if desired by E.I.C. No extra payment will be made for this purpose.

3.4.4 The work of reinforcement shall also be inclusive of stirrups distribution bars, binders, initial straightening and removing of loose rust, if necessary, cutting to requisite length, hooking and bending to correct shape, placing in proper position including supplying and binding with block annealed wire as stated in clause 3.4.3 above.

3.4.5 The brand of steel used for the work will selected & approve by the E.I.C. in writing before execution of work.

3.5 WATER

The Water shall be clean and free from Alkali oil or injurious amounts of deleterious materials. As far as possible, the water is of such quality that it is potable. If any chemical analysis of water is necessary and ordered, the same shall be carried out at an approved laboratory at the Contractor's cost and expenses.

3.6 CONCRETE PROPORTIONING

3.6.1 The concrete proportions shall be as indicated on the approved drawings and shall conform to IS: 456 & IS: 3370. The quality and character of concrete shall be governed by IS: 10262. It should be sampled and analysed as per IS: 1199. The concrete should stand the test specified in IS: 516.

3.6.2 The minimum cover of main reinforcement shall be as per relevant IS: Codes. Cover to any reinforcement of R.C.C. piles shall be minimum 65 mm in case in-situ and 50 mm in case of pre-cast piles. Suitable spacer blocks shall be provided at intervals not exceeding 1.2 m. throughout the length of the pile.

3.6.3 The workability shall be measured by slump. Slump for different grades of concrete shall not exceed following unless specifically permitted by the Engineer-in-Charge.

- i) For M 15 concrete - 3.75 cm.
- ii) For M 20 concrete - 2.50 cm.
- iii) For M 25 concrete — 2.00 cm

3.6.4 All concrete works shall be thoroughly compacted and fully worked around the reinforcement, around embedded fixtures and into corners of the form work.

The Concrete shall be thoroughly and shall be efficiently vibrated during laying. The use of mechanical vibrators shall comply with IS: 2608, IS: 2506 and IS: 456. Whenever vibration has to be applied externally, the design of formwork and deposition of vibration shall receive special consideration to ensure efficient compaction and to avoid surface blemishes.

3.7 WORKMANSHIP

3.7.1 All Concreting work shall be carried out according to the IS: 456, IS: 3370, and other related codes. It should, however, be noted that for every 15 M3 of concrete placed or for every one day's volume of concrete whichever is lower, a minimum of 3 (three) Cubes shall be kept for test purpose, and tested at the Contractor's cost and expenses at a Laboratory as approved by the Authority. The number of test cubes may, however, be altered at discretion of the Engineer-in-Charge. It is compulsory to test 3 (three) cubes in each case.

3.7.2 Structural Concrete

Design mix Concrete shall be on all concrete works except in case of Mud-mat concrete lean concrete where nominal mix concrete will be allowed.

Design mix Concrete will be used in Reinforced Concrete Structures and shall not be less than Grade of M25. The mix shall be designed to produce the grade of concrete having required workability and a Characteristic Strength not less than appropriate values given in IS: 456 - 2000. For mix design, procedure given in Indian Standard recommendation i.e., IS: 10262 with latest amendments shall be adopted. As long as the quality of materials does not change a mix design done earlier may be considered adequate for later work. Batching mixing, sampling and Strength Test of concrete shall be carried out in compliance with the relevant clause of IS: 456-2000 and all other relevant Indian Standards recommended therein. Proper admixtures of the mix design by the Contractor shall be used for works only after obtaining approval of mix design and written order thereafter of the Engineer-in-Charge. Mix design shall be entirely the responsibility of the Contractor and any approval by the Engineer-in-Charge shall not relieve him of his responsibility in respect thereof.

The Contractor shall prepare all the Calculations, Tabulations, Graphs etc. pertaining to Mix Design Test result and supply copies of such Calculations, tabulations, Graphs etc. required by the Engineer-in-Charge.

On proportioning concrete, the quantity of both cement and aggregate shall be determined by weight, where the weight of cement is determined on the basis of weight per bag a reasonable number of bags be weighed periodically to check the net weight or should be either weighed or measured by volume in calibrated tanks, all measuring equipment's shall be maintained in a clean serviceable condition and shall periodically checked for accuracy.

The grading of coarse and fine aggregates shall be checked frequently and frequency of testing shall be determined by the Engineer-in-Charge. Where weight batching is not possible or practicable, the quantities of coarse and fine aggregates may be determined by volume but cement in any case shall be weighed by weight only. If fine aggregate and volume batching is adopted, allowance shall be made for bulking. The bulking shall be determined in accordance with IS: 2386 (Part-III).

The Water-Cement Ratio shall be maintained to its correct value. Surface moisture content of aggregate shall be determined as per IS: 2386 (Part-III) and the amount of water to be added shall be adjusted accordingly to maintain the correct Water-cement ratio.

During the progress of work in order to ensure correct strength of concrete proper control should be exercised by the Contractor as specified in Specifications mentioned in the Clause 3.7.1 above. Test strength of every sample shall be determined in accordance with the recommendations of IS: 456-2000. If one out of ten consecutive test cubes shows a deficiency in strength up-to a maximum limit of 10%, the concrete will be deemed satisfactory. If two of the test cubes out of ten shows a deficiency in strength up to a limit of 10%, the concrete shall be deemed to be less satisfactory and a reduction of 1 % will be made on the cost of such concrete. If three out of ten test cubes show deficiency in strength up to a limit of 10%, a reduction of 5% will be made on the cost of such concrete. If more than three test cubes show a deficiency in strength up-to a limit of 10% a reduction of 10% will be made on the cost of such concrete. If more than five shows a deficiency in strength up-to a limit of 10%, the concrete shall be rejected. Such rejected concrete work shall have to be dismantled and replaced to the satisfaction of the Engineer-in-Charge by the Contractor free of cost to the Employer. No payment for the dismantled concrete, the relevant formwork and reinforcement, embedded fixtures etc. wasted in the dismantled portion, shall be made. In the course of dismantling, if any, damage is done to the embedded items or adjacent structures, the same shall also be made good free of charge by the Contractor to the satisfaction of the Engineer-in-Charge.

If the deficiency in strength of one-test cubes exceeds the 10% limit, a reduction of 5%) will be made on the cost of such concrete. if the deficiency in strength to two out of ten test cubes exceeds the 10% limit, a reduction of 10% will be made on the cost of such concrete. If the deficiency in strength of three out of ten test cubes exceeds the 10% limit, a deduction of 20% on the cost of such concrete will be made.

With permission of the Engineer-in-Charge for any above-mentioned grades of concrete, if the quantity of water has to be increased in special cases, cement shall also be increased proportionally to keep the ratio of water to cement same as adopted in trial mix design for each grade of concrete. No extra payment for additional cement will be made.

3.9 FORM WORK

3.9.1 The Form Work shall conform to IS: 456. Whenever necessary, shuttering must be provided.

The work shall also include providing all necessary staging, centring, shuttering & formwork for placing concrete. Shuttering may be of approved dressed timber true to line, not less than 37 mm. thick. Surface to be in contact with concrete are to be planed smooth. Alternatively, sufficiently rigid plywood shuttering or steel shuttering may be used. In every case, joints of the shuttering are to be such as to prevent the loss of liquid from the concrete. In timber shuttering the joints shall, therefore, be either tongued or grooved or the joints must be perfectly close and lined with draft paper polythene films or other types

of approved materials. In case of plywood or steel shuttering also the joints are to be similarly lined. All shuttering and framing must be adequately stayed and braced to the satisfaction of the Engineer-in-Charge for properly supporting the concrete, during concreting and the period of hardening. It shall be so constructed that it may be removed without shock or vibration to the concrete. No through bolts are allowed for holding the shuttering in water retaining structure.

3.9.2 Cleaning, Treatment and Removal of Forms

All forms shall be thoroughly cleaned of old concrete, wood shavings, saw dust, dirt and dust sticking to them before they are fixed in position. All rubbish loose concrete chippings, shavings, saw dust etc. shall be scrupulously removed from the interior of the forms before the concrete is poured. Formwork shall not be used/reused, if declared unit or unserviceable by the Engineer-in-Charge.

If directed by the Engineer-in-Charge, compressed air jet/or water jet shall be kept handy along with wire brushes, brooms etc. for the purpose of cleaning.

Before shuttering is placed in position, the form surface in contact with the concrete shall be treated with approved non-staining oil or composition. Care shall be taken that the oil or composition does not come in contact with reinforcing steel or existing concrete surface. They shall not be allowed to accumulate at the bottom of the shuttering.

Forms shall be struck in accordance with the relevant clause of IS: 456 or as directed by the Engineer-in-Charge. The Contractor shall record on the drawings or in other approved manner, the date in which the concrete is placed in each part of the work and the date on which the form work is removed there from and have this recorded checked and countersigned by the Engineer-in-Charge.

The Contractor shall be responsible for the safe removal of the formwork, but the Engineer-in-Charge may delay the time of removal if he considers it necessary. Any work showing signs of damage through premature removal of formwork or loading shall be entirely reconstructed without any extra cost to the Employer.

3.10 PROTECTION AND CURING OF CONCRETE

Newly placed concrete shall be protected by approved means; from rain, sun and wind and extreme temperature. Concrete placed below the ground level shall be protected from failing earth during and after placing. Concrete placed in ground containing deleterious substance shall be kept free from contact with such ground or, with water draining from such ground during placing of concrete and for a period of at least 3 (three) days or as otherwise directed by the Engineer-in-Charge, the ground water around newly poured concrete shall be kept to an approved level by pumping or other approved means of drainage at the cost of the Contractor. Adequate steps shall be taken to prevent flotation or flooding. Steps, as approved by the Engineer-in-Charge, shall be taken to protect immature concrete from damage by debris, excessive loading, vibration, abrasion, mixing with earth or other deleterious materials, etc. that may impair the strength and durability of the concrete. As soon as the concrete has hardened sufficiently for the surface to be marked it should be covered with Hessian, canvas, or similar materials and kept continuously wet for at least 7 (seven) days after final setting. This period may be extended at the discretion of the Engineer-in-Charge, up-to 14 (fourteen) days. Concrete slabs and floors shall be cured by flooding with water of minimum 25 mm depth for the period mentioned above.

Approved curing compounds may be used in lieu of moist curing with the permission of the Engineer-in-Charge. Such compound shall be applied to all exposed surface of the concrete as soon as possible after the concrete has set. No extra payment is allowed on such count.

3.11 CONCRETE FINISH

The Concrete surface on removal of form work shall be such that no finish is necessary, If, however, the surfaces is not satisfactory the Contractor shall, if so instructed, remove unwanted, projecting parts by chipping and smoothing the surface with cement rendering at his own expenses. The shutter marks shall invariably be removed by rubbing with carborandum stone. The Contractor shall therefore take all precaution for avoiding the shutter marks.

3.12 Contractor's Supervision

The Contractor shall provide constant and strict supervision of all the items of construction during progress of work, including the proportioning and mixing of the concrete and bending and placing of reinforcement. Any important operation such as concreting or stripping of form work adequate notice shall be given in advance.

The cement and sand shall be thoroughly mixed dry in specified proportions. Water shall then be added just sufficient to make a stiff and workable paste. The mortar shall be used within half an hour of mixing.

4.0 BRICK WORK

- 4.1 The Contractor shall build all brickwork uniformly no one portion being raised more than 1 meter above another at a time. The joints shall not exceed 12 mm. in thickness and should extend the full thickness of the brickwork. All joints shall be properly raked and the surface washed down.
- 4.2 All the bricks shall be kept fully immersed in water at lowest for a minimum period of six hours till they are completely soaked and only thoroughly soaked bricks shall be used in the work.
- 4.3 The Contractor shall keep wet all brickwork for at lowest 10 (ten) days after laying. The surface of unfinished work shall be cleaned and thoroughly wetted before joining new work to it.

Superintending Engineer
South Circle, M.E.Dte

