

**OFFICE OF THE
SUPERINTENDING ENGINEER
WEST CIRCLE
MUNICIPAL ENGINEERING DIRECTORATE
PATAL BAZAR, 3RD FLOOR, TINKONA
PURBA BARDHAMAN, PIN : 713101**



e-mail ID : sewestcircle1@gmail.com

Memo No. :- MED/SE(W)/541/W-267/2022 Pt.I Dated:-08.02.2024

NOTICE INVITING e-TENDER

Notice Inviting e-Tender No:25 of SE (WC)/MED/2023-24.

The Superintending Engineer, West Circle, Municipal Engineering Directorate, Patal Bazar, 3rd Floor, Tinkonia, Purba Bardhaman, Pin 713101 invites sealed competitive Bid on Turnkey Basis (Two part System) from reliable and resourceful Companies / Firms / Contractors having experience and acumen in construction work as noted below the eligibility and depicted hereunder for participating in the e-Bid.

1.	Name of Work:	Supplying & Laying of distribution network for Zone V with different diameter D.I. (K-7) Pipes, OPVC Pipes, HDPE Pipes & M.S. Pipes including all D.I., OPVC, and HDPE Specials valves, valve chambers including filling, hydro testing etc. all complete works for Water Supply Scheme within Memari Municipality, District Purba Bardhaman under AMRUT 2.0 Scheme.
2.	Scope of Work	Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7) Pipes conforming to IS 8329-2000 (Third revision) in standard length 4 m, 5 m, 5.50 m, 6 m for push-on joint (rubber gasket) with internal cement mortar lining and external protection by metallic zinc coating with finish layer of epoxy coating of outside as per IS: 8329-2000 specification with necessary jointing material rubber gasket (IS: 5382:1985) including transportation, loading unloading and stacking at site including free supply of polyethylene sleeves, Supplying HDPE (Materials grade PE-100) pipes conforming to IS 4984-1995 with latest revision & amendments if any Pressure Rating: PN 06 with necessary HDPE specials, Supplying PVC-O pipes conforming to IS 16647-2017 with latest revision & amendments if any & Laying of D.I. (K-7) Pipes, OPVC Pipes, HDPE Pipes & M.S. Pipes with all D.I. OPVC, and HDPE Specials & supplying, fitting & fixing of 10 mm th. M.S. Pipes with IS 3589 Fe 410, including earth work in excavation in trenches, shoring (if necessary) of adequate width having minimum depth to keep the top surface of pipe 1.00M below of the existing ground level in any kind of soil mixed with boulder, metal crust, concrete pavement, any road sub-grade and its flank etc., dewatering the trenches, preparing the

bottom surface of the trenches for continuous bedding including sand filling (if necessary), Jack pushing work at PWD Crossing with M.S. Casing & carrier pipe and over ground installation to cross small ditches etc. supported with RCC pillars as & when necessary and fitting, fixing, jointing (all types of joints) valves, specials etc. as per requirement, in position, cutting, chamfering of pipes as required, carriage of materials from departmental store to work site, constructing sluice valve chambers including supply and fitting in position sluice valve of different dia. & supply and fitting in position D.I. Specials 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 where necessary, removing the surplus materials from site including all labour charges, tools and plants, hydraulic pressure testing, cleaning and disinfection of pipes etc. complete in all respect as per IS 12288-1987 (latest edition) and excluding Permanent Roads Restoration and the instruction of E.I.C. (D.I. pipes, Specials, rubber gaskets and other materials like M.S. Pipe, Sluice valve, Air Release valve, Drain valve, D.I. Fittings, Mechanical Joints etc., where necessary, will be supplied by agency. The surplus and unused materials are to be removed and clean the sites at own cost.) **Note: Some Quantity of DI (K7) PIPE will be supplied by ULB.**

Approximate quantity of Pipes to be laid
ZONE -V

1) **HDPE Pipe Line:**

i)	110 mm dia.	42,100.00 m
ii)	125 mm dia. :-	260.00 m
iii)	140 mm dia. :-	210.00 m
iv)	160 mm dia. :-	785.00 m

2) **DI (K/7) Pipe Line:**

i)	150 mm dia :-	765.00 m
ii)	200 mm dia :- pipe supply)	1525.00 m (Excluding DI
iii)	250 mm dia. :- pipe supply)	405.00 m (Excluding DI
iv)	350 mm dia. :- pipe supply)	180.00 m(Excluding DI

3) **M. S. Pipe Line:**

i)	150 mm dia. :-	7.50 m
ii)	200 mm dia. :-	15.00 m

			<p>iii) 250 mm dia. :- 5.00 m</p> <p>iv) 350 mm dia. :- 2.50 m</p> <p>Total=46,260.00 m.</p>
3.	Location of Work:		Water Supply Scheme under AMRUT 2.0 within Memari Municipal area as per approved departmental drawing, Dist.- Purba Burdwan.
4.	Eligibility to participate in the Bid		<p>Having experience and technical acumen in Supplying & Laying Ductile Iron/ HDPE / OPVC Pipes with specials & M.S. Pipes in single contract having quantity (in meter) not less than the 40 % of total given quantity in Tender document or <u>at least 1.50 crore project value on similar nature</u> whichever is higher during last five financial years prior to the date of issue of this Notice in any Government Department/Board/Semi-Govt./Corporation/Statutory Authority / Undertaking etc.</p> <p>OR</p> <p>Having experience and technical acumen in Laying Ductile Iron/ HDPE / OPVC / M.S. Pipes with specials in single contract having total Tendered Value not less than the <u>1.50 crore</u> in Tender document during last five financial years prior to the date of issue of this Notice in any Government Department / Board / Semi-Govt. / Corporation / Statutory Authority / Undertaking etc.</p> <p>OR</p> <p>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 or <u>at least 1.50 crore project value on similar nature</u> whichever is higher and which is not less than the as stated above.</p> <p>Note: for running work, Quantity / Tender Value will be considered as 80% of the allotted work which is due to be completed in future.</p> <p>OR</p> <p>Intending tenderers should produce credentials of 2 (two) similar nature of completed work as stated above, each of the minimum 30% Quantity / Tendered Value not less than the <u>1.10 crore</u> during 5 (five) years prior to the date of issue of the tender notice.</p> <p>AND</p> <p>Having sufficient qualified technical personnel (to be employed under the firm for at lowest 2 consecutive years) with sound knowledge and experience in execution of similar nature of works.</p> <p>AND</p> <p>Bank solvency of not less than Rs. 2.00 Crore by the Banker issued on and after 01.09.2023 and valid for 12 months or after the date of publication of the NIT for 12 months from RBI approved Bank.</p> <p>AND</p> <p>Having annual turnover of at lowest Rs. 2.00 Core or above in any one year of last three Financial years.</p> <p>AND</p> <p>Current GST Registration Certificates, PAN Card, up to date Income Tax Return receipts etc.</p>
			<p>Note:</p> <p>a) Only works of nature depicted above completed</p>

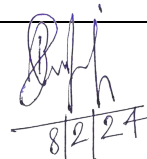
			successfully will be treated as credential.						
			b) The bidder has no adverse report, on any account, against their organization for any project worked during last 5 (five) years or working at present. This clause will lead for rejection of application, even after fulfilment of other eligibility criteria. However, the tender inviting authority reserves the right to relax the eligibility criteria if felt necessary for the interest of fair competition.						
5.	Documents to be produced in support of Credential for Bid Part-I (Prequalification Documents)		A successful performance and completion certificate supplemented with work order along with payment certificate issued by the competent authority shall have to be furnished in support of credibility in terms with eligibility criteria depicted in this Notice (Ref: Sl. No. 4 : Eligibility to participate in the Bid). Besides this, following documents shall have to be furnished:						
		a.	Particulars of ownership/partnership or Board of Directors pertaining to the Organization/Company/Firm						
		b.	Bank solvency of not less than Rs. 2.00 Crore by the Banker issued on and after 01.09.2023 and valid for 12 months or after the date of publication of the NIT for 12 months from RBI approved Bank.						
		c.	Valid documents in support of annual Turnover Rs. 2.00 Core or above in any one year of last three Financial years.						
		d.	P.F, & E.S.I Registration Certificate						
		e.	List of machines and equipment's necessary for field as well as laboratory test for all materials.						
		f.	Experience and address, fax & telephone nos., mobile no., & E-mail ID nos. of the firm.						
			<u>All documents in original to be produced in due course of time as & when asked by the Bid inviting authority.</u>						
6.	Earnest Money		2% of the Quoted Bid price in two parts, vise						
		a.	Rs. 4,00,000.00 (Rupees four Lakhs only) as an initial Earnest Money Deposit shall accompany with Bid Proposal and 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. Bank Acknowledgement Slip to be uploaded during online bid submission; ii) RTGS/NEFT in case of offline payment through bank account in any Bank and also to be documented through e-filling.						
		b.	a) Earnest Money Deposit i.e. 2% of bid amount beyond Rs. 4,00,000.00 (if any) shall have to be deposited after acceptance of Bid Proposal as demand draft in favour of Executive Engineer Burdwan Division, M.E.Dte. Payable at Burdwan and/or as per direction of TIA.						
7.	Cost price of Bid documents		NIL						
8.	Date and Time Schedule:-		<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Particulars</th> <th>Date and Time</th> </tr> </thead> <tbody> <tr> <td>a)</td> <td>Date of uploading of NIEB. and Bid Documents online) (Publishing Date)</td> <td>08/02/2024 at 06.00 p.m</td> </tr> </tbody> </table>	Sl. No.	Particulars	Date and Time	a)	Date of uploading of NIEB. and Bid Documents online) (Publishing Date)	08/02/2024 at 06.00 p.m
Sl. No.	Particulars	Date and Time							
a)	Date of uploading of NIEB. and Bid Documents online) (Publishing Date)	08/02/2024 at 06.00 p.m							

			b)	Documents download/sell start date (Online)	08/02/2024 at 06.30 p.m
			c)	Date of Pre-Bid Meeting with the intending bidders in the office of the Superintending Engineer, West Circle, Municipal Engineering Directorate, 3 rd floor, Patal Bazar Market, Purba Burdwan.	19/02/2024 at 1.00 p.m.
			d)	Bid submission start date (On line)	09/02/2024 at 10.00 a.m.
			e)	Bid Submission closing (On line)	07/03/2024 at 05.00 p.m
			f)	Bid opening date for Technical Proposals (Online)	11/03/2024 at 10.00 a.m
			g)	Date of uploading list for Technically Qualified Bidders (online)	To be notified later
			h)	Date and Place for opening of Financial Proposal (Online)	To be notified during uploading of Technical Evaluation Sheet of Bidders
			i)	Date of uploading of list of qualified bidders along with the offer rates through (on line),	To be notified later.
			j)	Also if necessary for further negotiation through offline for final rate.	To be notified later.
9.	Time of completion			Time of completion of the Contract is 12 (twelve) month 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 work front, 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.	
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 along with this NIeB and its all corrigenda's. And <u>Section A</u> : Description of the Project. <u>Section B</u> : Conditions & requirements for e-Bidding. <u>Section C</u> : General conditions of the Contract. <u>Section D</u> : General specifications of Workmanship and materials for Civil Works.	

			<p>& <u>Section E: ANNEXURES</u> Annexure under Section I : i. Drawing of Pipeline network (Annexure I)</p> <p>& PART II :-Containing the Following Document.</p> <p>Bid Price / Price Schedule. (.xls format)</p>
12.	Validity of Bid		A Bid submitted shall remain valid for a period of 240 calendar days from the date set for opening of Bids. Any extension of this validity period if required will be subject to concurrence of the Bidders.
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, West 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 "The Superintending Engineer, West Circle, M.E.Dte.," and fulfil 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, Burdwan Division, Municipal Engineering Directorate, Department of Municipal Affairs, Purta Bhavan (5th Floor), Dist: - Purba Burdwan, WEST BENGAL E-mail ID -eemedbwd@gmail.com
18.	Execution of Work		The Contractor is liable to execute the whole work as per direction and instruction of the Executive Engineer, Burdwan Division of Municipal Engineering Directorate who is the "Engineer in Charge" of the work under the control of "Superintending Engineer, west Circle, Municipal Engineering Directorate."
19.	Payment		Payment will be made to the successful Bidder by the Executive Engineer, Burdwan Division of Municipal Engineering Directorate.
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.
<p><u>Following clauses are to be adhering to by the concerned Bidder during the process of Bidding.</u></p>			
21.	In case office faces sudden closure owing to reason beyond the scope and control of "The Superintending Engineer, West Circle, M.E.Dte.", any of last date/dates as schedule in Sl. No 8 may be extended up-to/to next and following working day without issuing further and separate notice should the "The Superintending Engineer, West Circle, M.E.Dte.", feels it to be necessary 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.	Bid Acceptance Authority is the "The Superintending Engineer, West Circle, M.E.Dte."
26.	In case of any dispute arising from any clauses of similar nature between bid documents and Municipal Agreement Form the decision of the Superintending Engineer, west Circle, 3 rd floor, Patal Bazar Market, Purba Burdwan 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 (please refer cl.57 of section C).
28.	No conditional Bid shall be entertained.
29.	In the event of e-Filing intending bidder may download the Bid document from the website 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 cost of Bid documents and 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-filing. 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, west 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

	Burdwan, Dist.-Purba Burdwan, 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.	The participating bidder has to upload the drawing of respective zone showing diameter and location of Sluice valve (Sluice valve may be located at junction point and at the point where diameter of the pipe changes as per standard norms) and its chamber, end cap etc. as mandatory document under technical bid. If not uploaded, the bidder will be not allowed to participate in financial bid.
42.	The successful bidder has to provide detailed estimate along with rate analysis (if any) and drawing of respective zone along with sectional drawing for each diameter of pipe (in reference of drawing uploaded under technical document of this bid) for all works against each item as per the clause 4.0 of Section A & Items in BOQ(.xls format) with all necessary break up elaborately for justification of rates if asked by the concerned authority before acceptance of bid which will be treated as part of contract and the working drawing will also be prepared on the basis of this document later and will be sent for approval to competent authority. The total estimated cost against total quantity of pipe will be represented by unit rate for each item of work. For preparation of estimate, the agency may consult PWD Schedule, PHE Schedule and approved market rate.
43.	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 (on the basis of clause 41 of this section) after awarding work order by competent authority.
44.	The Approximate quantity of Pipes to be laid may deviate by (+/-) 10 % of the total quantity as given in sl no. 2 considering the actual site condition and scope of work.
45.	Payment will be made phase wise against each item of work as per clause 57 Of Section C of the bid document. Additional Security Deposit @ 8% (eight percent) will be deducted from each and every running bill. The entire amount of such 10% (ten percent) of Security Deposit (Initial 2% + additional 8%) will be refunded without any interest only after successful completion of the whole work in all respect as per clause 57 of section C after full satisfaction of E.I.C.
46.	Security Deposit @ 8% (eight percent) will be deducted from each and every running bill. The Security Deposit excluding operation and maintenance will be refunded 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 actual 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 1 st 3 years from the actual 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.



**The Superintending Engineer
West Circle, M.E.Dte.**

INSTRUCTION TO BIDDERS/BIDDERS
SECTION – A-I

1. General guidance for e-Bidding

Instructions/ Guidelines for bidders for electronic submission of the Bids have been annexed for assisting them to participate in e-Bidding.

2. Registration of Bidder

Any Bidder willing to take part in the process of e-Bidding will have to be enrolled and registered with the Government e-procurement system, through logging on to <https://wb.tender.gov.in> The Bidder is to click on the link for e-Bidding 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 Bids, 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 NIEB and Bid 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 Bid Documents.

5. Submission of Bids.

General process of submission, Bids 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. As per Sl. No. 4
- ii. Prequalification Application (Sec-B, Form – I)
- iii. Scanned Copy of online bank challan towards earnest money (EMD) as prescribed in the NIEB against each of the serial of work.

2. NIEB (download 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:-Declaration Of The Bidder)
- iii. Bank Solvency Certificate.
- iv. Form III & IV Of Section B.
- v. Declaration by the Bidder.

(The autocad drawing may be obtained from concerned divisional office after publishing of the bid document for showing locations of different items if required and sluice valve chambers and to be uploaded.)

A-2. Non statutory Cover Containing/My Documents

- i. Registration Certificate under Company Act. (if any).
- ii. Registered Deed of partnership Firm/ Article of Association and Memorandum
- iii. Power of Attorney (For Partnership Firm/ Private Limited Company, if any)
- iv. Tax Audit Report along with Balance Sheet and Profit and Loss A/c for the last five years(year just preceding the current Financial Year will be considered as year – I)
- v. 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)
- vi. List of machineries possessed by own/arranged through lease deed along with authenticated documents of lease / sub-lease / hire basis etc.
- vii. List of laboratory Instrument.
- viii. List of technical staff along with structure and organization (Section – B, Form – III).

Note: - Failure of submission of any of the above mentioned documents (as stated in A1 and A2) will render the Bid liable to be summarily rejected for both statutory and non-statutory cover.

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 Registration / ST Registration/ P.F/PAN / P. Tax Clearance Certificate 2. Income Tax Acknowledgement Receipt (Latest) 3.E.S.I Registration Certificate.
B	COMPANY DETAILS		
		B1. COMPANY DETAILS 1	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 along with work order and payment certificate issued by competent authority (as per Sl No. 4 of NIEB)
D	EQUIPMENT		
		D1.LABOURTARY	1. List of Machineries and equipment necessary for field as well as laboratory test of all materials as per NIEB
		D2. CIVIL MACHINERIES	
		D2. ELECTRICAL MACHINERIES	
		D2. MECHNANICAL MACHINERIES	
		D2. MISCELLENEOUS MACHINERIES	
E	FINANCIAL INFO		
		E1. P/L & BALANCE SHEET 2011-2012	P/L & BALANCE SHEET (As per NIEB)
		E2. PAYMENT CERTIFICATE 1	Payment Certificate in support of valid credential only to be submitted(as per NIEB)
		E3 PAYMENT CERTIFICATE 2	
F	MANPOWER		
		F1. TECHNICAL PERSONNEL	1. List of sufficiently qualified technical person (as per Sl No 4 of NIEB)
		F2. TECHNICAL PERSONNEL ON CONTRACT	1. 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 NIEB)
		DECLARATION 2	2. Valid Document in support of annual (As per NIEB)
		DECLARATION 3	3. Corrigendum and additional document (if any).

Note:- Failure of submission of any of the above mentioned documents (as stated in A1 & A2) will render the Bid liable to summarily rejected for both statutory & non statutory cover. All Corrigendum & Addendum Notices, if any, have to be digitally signed & uploaded by the contractor in the Declaration Folder of My Documents.

B. Bid Evaluation

i. Opening and evaluation of Bid :- If any Bidder is exempted from payment of EMD, copy of relevant Government order needs to be furnished (applicable in case of Registered Labour Co-Operative Society).

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 Evolution 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 Deptt. 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.

vii. While evaluation, the committee may summon the bidders and seek clarification / information or additional documents or original hard copy of any of the documents already submitted and if these are not produced within the stipulated time frame, their proposals will be liable for rejection.

C. Financial proposal

As per Sl. 11, 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 NIEB 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 first class Bank to supplement the applicant. This letter of guarantee should be addressed to the Bid 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 financial position, showing long term profitability including an estimated financial projection of the next two years.

7. Penalty for suppression / distortion of facts

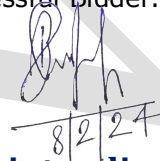
Submission of false document by Bidder is strictly prohibited and in case of such act by the Bidder the same may be referred to the appropriate authority for prosecution as per relevant IT Act with forfeiture of earnest money forthwith.

8. REJECTION OF BID

The Employer (Bid 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 (Bid accepting authority) action.

The Bidder whose Bid has been accepted will be notified by the Bid 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 Bid Form will incorporate all necessary documents e.g. NIEB., all addenda-corrigendum, different filled-up forms (Section -B), Price Schedule and the same will be executed between the Bid Accepting Authority and the successful Bidder.



**The Superintending Engineer
West Circle, M.E.Dte.**

BID

SECTION – B
FORM –I
PRE-QUALIFICATION APPLICATION

To
The The Superintending Engineer,
West Circle, M.E.Dte.,
Dist: -Purba Burdwan,
West Bengal,

Ref: - Bid for _____
_____ (Name of work) _____

NIEB

No.:

Dear Sir,

Having examined the Statutory, Non statutory and NIEB 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-Filling:-

1. Statutory Documents
2. Non Statutory Documents

Date: -

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

SECTION – B
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	As on 31.03.2024	As on 31.03.2023	As on 31.03.2022	As on 31.03.2021	As on 31.3.2020	As on 31.03.2019

Signed by an authorized officer of the firm

Title of the officer

Name of the Firm with Seal

Date _____

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
duly authorized by and competent to affirm this affidavit on behalf of the said Bidder.

2. That, I have inspected the site of work covered under NIEB (NIEB 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.

3. That I declare that, no relevant information as required to be furnished by the
Bidder has been suppressed in the Bid documents.

4. 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)

SECTION - B
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**

SECTION - B
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 If 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.**

Copy forwarded for information to-

1. The State Mission Director AMRUT, ILGUS Bhawan, HC Block, Sector-III, Saltlake, Kol106.
2. The District Magistrate, Purba Bardhaman.
3. The Joint Secretary, UD&MA for wide circulation in a day by National News Paper in Bengali, English and Hindi News Paper.
4. The Chairman, Memari Municipality.
5. The Chief Engineer (South), M.E.Dte., Bikash Bhawan, Saltlake, Kol-106.
6. The Chief Engineer KMDA (E/M), Unnayan Bhawan, Saltlake Kolkata,
7. The Superintendent Engineer KMDA (E/M), Saltlake Kolkata
8. The Executive Engineer, M.E.Dte. Burdwan Division.
9. The Executive Engineer(E/M), Bikash Bhawan, Salt lake Kol-106
10. The Divisional Accountant, Municipal Engineering Directorate, Burdwan Division
11. The Office Notice Board of Superintending Engineer, West Circle, for wide circulation.
12. The Guard File.


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

SECTION - A

DESCRIPTION OF THE PROJECT

1.0 GENERAL

Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7) Pipes conforming to IS 8329-2000 (Third revision) in standard length 4 m, 5 m, 5.50 m, 6 m for push-on joint (rubber gasket) with internal cement mortar lining and external protection by metallic zinc coating with finish layer of epoxy coating of outside as per IS: 8329-2000 specification with necessary jointing material rubber gasket (IS: 5382:1985) including transportation, loading unloading and stacking at site including free supply of polyethylene sleeves, Supplying HDPE (Materials grade PE-100) pipes conforming to IS 4984-1995 with latest revision & amendments if any Pressure Rating: PN 06 with necessary HDPE specials, Supplying PVC-O pipes conforming to IS 16647-2017 with latest revision & amendments if any & Laying of D.I. (K-7) Pipes, OPVC Pipes, HDPE Pipes & M.S. Pipes with all D.I. OPVC, and HDPE Specials & supplying, fitting & fixing of 10 mm th. M.S. Pipes with IS 3589 Fe 410, including earth work in excavation in trenches, shoring (if necessary) of adequate width having minimum depth to keep the top surface of pipe 1.00M below of the existing ground level in any kind of soil mixed with boulder, metal crust, concrete pavement, any road sub-grade and its flank etc., dewatering the trenches, preparing the bottom surface of the trenches for continuous bedding including sand filling (if necessary), Jack pushing work at PWD Crossing with M.S. Casing & carrier pipe and over ground installation to cross small ditches etc. supported with RCC pillars as & when necessary and fitting, fixing, jointing (all types of joints) valves, specials etc. as per requirement, in position, cutting, chamfering of pipes as required, carriage of materials from departmental store to work site, constructing sluice valve chambers including supply and fitting in position sluice valve of different dia. & supply and fitting in position D.I. Specials 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 where necessary, removing the surplus materials from site including all labour charges, tools and plants, hydraulic pressure testing, cleaning and disinfection of pipes etc. complete in all respect as per IS 12288-1987 (latest edition) and excluding Permanent Roads Restoration and the instruction of E.I.C. D.I. pipes, Specials, rubber gaskets and other materials like M.S Pipe, Sluice valve, Air Release valve, Drain valve, D.I. Fittings, Mechanical Joints etc., where necessary, will be supplied by agency. The surplus and unused materials are to be removed and clean the sites at own cost.

2.0 LOCATION

Water Supply Scheme under AMRUT 2.0 within at Zone VI Memari Municipal area as per departmental drawing, Dist.- Purba Burdwan.

3.0 DETAIL SCOPE OF WORKS

I. Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7) Pipes conforming to IS 8329-2000 (Third revision) in standard length 4 m, 5 m, 5.50 m, 6 m for push-on joint (rubber gasket) with internal cement mortar lining and external protection by metallic zinc coating with finish layer of epoxy coating of outside as per IS: 8329-2000 specification with necessary jointing material rubber gasket (IS: 5382:1985) including transportation, loading unloading and stacking at site including free supply of polyethylene sleeves for Water Supply Projects at Memari Municipality. (Approved make: Electrosteel /TATA /Jai Balaji / Rashmi/ Jindal)

II. The agency has to quote the rate on the basis of quantity of laying as per approved drawing and existing

condition of the site as unit rate diameter wise. The participating agency has to carefully inspect the site with the attached drawing and collect all data for preparation of justified estimate and thereafter evaluation of unit rate against each item of BOQ. The participating agency also includes the cost of all such items in estimating the total cost which is required to complete the work complete in all respect.

III. The work is to be executed as per related IS Specification, Municipal Agreement Form.7 and other specification laid down in the bid. The DI Pipes of different diameter and rubber gaskets will only be supplied by this Municipality. Sluice valve, Air Release valve, D.I. Fittings, Mechanical Joints etc., where necessary, will be supplied by agency and it should of reputed make and should be approved by the EIC.

IV. The contract comprises of laying of Distribution pipe line (D.I.Pipes (k/7) & M.S. Pipes as required) including all D.I. Specials and laying, fitting, fixing, jointing and all other works incidental thereto as desired and set-forth in the specification. Bidders are advised to inspect the site before tendering, extra claims on the ground of insufficient data and absence of knowledge about conditions prevailing at site shall not be entertained.

V. A network drawing is attached with the quotation in .pdf format. The agency has to collect the .dwg format (AutoCAD format) from the concerned division and plan everything on the drawing i.e., where additional work of shoring, BFS, RCC column, sand filling, Sluice valve and chambers etc. are required. **The whole planning thereof will be uploaded in .pdf format in a folder under Technical bid.** This will be one of criteria to judge the Technical ability of the participating agency. This will be the basis on which the successful bidder has to submit the details of estimate if asked for before acceptance of bid. The final drawing (6 copies) prepared on the basis of the above will be prepared after issuance of work order and will be approved by competent authority, if found correct.

VI. The work has to be carried out on the basis of the approved drawing and part drawing has to be submitted along with each R.A bill submitted by the Contractor.

VII. After completion of the work, a completion drawing (6 copies) in suitable scale with position of pipes (diameter wise and its length), specials/fittings, valves issued to him by Department or supplied by them have to be submit along with final bill. The final bill shall not be paid unless the said stipulation is complied with.

VIII. Care has been taken to make the uploaded drawing as correct as possible, nevertheless these drawings must be checked thoroughly by the tenderers' who will be held responsible for satisfactory work of the pipe connection with all its details. Any discrepancy noticed should be pointed out before the work is commenced. Under all circumstances, the contractor will be held responsible for the satisfactory completion. In case of any discrepancy between the drawing and the schedule of tender, the decision of the Superintending Engineer will be final and binding.

IX. The works are to be carried out strictly in accordance with approved drawing and specification supplemented by other detailed working drawings as the Engineer-in-Charge may sign, if necessary, from time to time. For any change, no extra claim will be entertained.

X. The pipes are to be laid as far as practicable along road flanks with lowest hindrances to the vehicular traffic. The contractors are to obtain the information regarding the layout and precise position of the underground Electric Main, Telephone or other Cables. No responsibilities in this respect will be taken by the Directorate. The contractor will have to cut metal road or bituminous road of any thickness where suitable Road flank is not available and its cost is included in the relevant items of the work.

XI. The trenches will have to be adequately protected against accidents continuously throughout day and night. Demonstrations of danger signals, red lamps and other signs as may be required at the vintage point and imperative upon the contractors in the interest of public safety.

XII. The contractors' will further shore up and support to the satisfaction of the Engineer-in-Charge, all Building

Works, Electric Mains, Telephone or Other Cables, Surface Storm Water, Drains, Ditches, Culverts, Water Sources, Water Mains and Other Pipes which may be or likely to be affected or endangered or disturbed by the works, being in the line thereof and continuous thereto.

XIII. The contractors' will be liable for and make good at their own expenses within a reasonable period of time to be fixed by the Engineer-in-Charge, all damages which may be occasioned to one or combination of items in building, walls, water mains and other pipes by or in consequence of the execution of the works or accident whatsoever, in the event of default (in lapse with respect to the time limit) it shall be lawful for the undersigned to employ other agency to make good the damages at the risk at cost of the contractors' after a 24 hours written notice period has elapsed. The expenditure amount in above situation will be deducted from the bills of agency.

XIV. In case of trenches in front of any holding so as to block its passage of communication, the contractors' will have to make for temporary arrangements to remove the difficulties by provision of wooden planks or otherwise and removing the same after the trenches are filled up.

XV. The tenderers will consider the conditions and adjust the extent of liabilities involved and quote their rate accordingly. Since no extra claims will be entertained separately on that account, inspection of sites prior to tendering, therefore, should be done by the tenderer.

Further "Laying of Pipes" shall also include excavation of trenches upto a depth ensuring a minimum cover of one metre over the top of the pipe.

XVI. Decision of the Engineer-in-Charge in this respect is final. The excavation shall have to be done through any materials (e.g. – soil, premixed road surface, concrete to roads etc.) with shuttering and dewatering as may be required to protect the trenches and facilitate the works during execution. This also includes cutting and removing trunks and roots of trees upto 20mm dia.

XVII. Cutting the pipes to sizes (except for damaged ends supplied by the Department, where necessary), lowering and placing them along trenches including laying, fitting and jointing with rubber gasket and / or solvent cement joint and/or D.T. joint as the case may be. Filling the trenches in layers of 15 cm, each layer being adequately watered and consolidated. The filling has to be done after completion of the joints and after affecting the hydraulic test as per specification.

XVIII. After removal of the surplus excavated materials (except road metal) after the trenches have been rammed to the satisfaction of the Engineer-in-charge, if any, serviceable materials such as bricks and stones, ballast and chips, stone-setting, asphalt etc. are available from roads and other road flanks along which the pipes have been laid for restoration of the same, contractor will arrange for stacking these materials properly and separately as per direction of Engineer-in-Charge for which, no extra payment will be entertained in this situation.

XIX. The contractors' rates for laying pipes will also include the cost of all the items of works mentioned with this Clause excepting that for which, a separate item has been provided in the schedule.

XX. In general, the pipes have to be laid below 1 metre from the existing ground level but if 1 metre cushion cannot be maintained anywhere to maintain the hydraulic gradient in the undulating terrain, (+/-) 10 % deviation in respect of such situation will be acceptable.

XXI. The contractor will provide his own arrangement for every cost, charges or expenses which may be claimed or any person public or private or Government concerned, occurred to the property of life of any such concern or person (as the case may be) by or in consequence of the execution of the said work or in respect of any labour of work, entitled upon said work for which, no extra payment will be allowed.

XXIII. EXCAVATION OF FOUNDATION, FILLING UP TRENCHES:

Foundation of trenches excavated as per drawing. The depth and width of trenches properly maintained during execution. The bed of trench is to be properly levelled and rammed. Any water accumulated in the trenches due to

sewage or rain water to be dewatered at the cost of contractor. The laying rate includes for excavation in whatever soil and stone, hard or soft, that may be found and breaking through any underground structure surface metalling, pegging and trimming and pumping, if necessary, for removal of water or muddy water, taking out mud keeping the top soil separately or unavailing of surplus materials, tapping and shoring excavated materials, matching temporary instalment and maintenance of surface and every other expense in strict conformity with the specification.

The excavated areas around the foundation structure are to be filled up properly to the required levels with the earth obtained from excavation. The filling should be done properly consolidated with Iron Rammer and sprinkling water. The cost of filling up the trenches includes relevant items of work for which, no extra payment will be made.

XIV. TECHNICAL SPECIFICATION AND GENERAL CONDITIONS OF DI PIPES

- 1) While furnishing the prices, Bidders are requested to quote their prices for different categories of pipes diameter wise for class K9 / k7 as per BIS Standard and prices shall be including all taxes & duties and all cost of loading, unloading and transportation at site within Burdwan Municipal town of West Bengal.
- 2) Centrifugally Cast (Spun) Ductile Iron Pressure Pipes (Class K9/ k7) for Water Supply Application with Socket and Spigot ends conforming to IS: 8329/2000 with latest Amendment.
- 3) D I Pipes should conform to ISI Marked embossed on the pipes D.I. Pipes Manufacturers should have valid BIS registration.
- 4) D.I. Pipes Manufacturers should furnish the name of the State where factory is situated.
- 5) Inspection may be carried out by Third Party Inspection (TPI) Agency as stipulated through RITES/MECON/EIL/PDIL.
- 6) Each pipe shall have to be cast or stamped or legibly painted on it with the approved mark as per relevant BIS specification (IS: 8329/2000) as follows.
 - a) The Manufacturer's name of Trade Mark.
 - b) The nominal diameter of pipe.
 - c) Class of pipe.
 - d) I.S.I. Certification mark.
- 7) Internal surface should quoted with cement mortar lining and external surface should have the protection by metallic zinc coating with finish layer of epoxy coating of outside as per IS 8329-2000
- 8) Rubber Gasket should be conforming to IS 5382: 1985.
- 9) Length of each pipe should be more than 4.0 m
- 10) Each pipe shall have to be cast or stamped or legibly and indelibly painted on it with the approved mark as per relevant IS specification (IS : 8329-2000) as follows :
 - i) Name of trade mark
 - ii) The nominal diameter of pipe
 - iii) Batch Number
 - iv) Class of pipe
 - iv) ISI certification mark
 - vi) The last two digits of the year of manufacturer
- 12) Materials supplied without inspection and stamping shall not be accepted and the same shall have to be replaced by the supplier at their risk and cost within seven (7) days from the date of receipt of such intimation.

XXVI.TIME OF COMPLETION:

The works for pipe line shall be completed in all respect by the contractors' within 08 (eight) months.

In the event of work being not completed within this stipulated period, the contractors' will be liable to pay a penalty as Clauses of Municipal Agreement Form. through which the tender will be accepted.

The contractor will show satisfactory cause for delay in starting work if the works are not started within 10(ten) days from the date of issue of work order. Otherwise, the contract will be terminated. The contractor will accordingly, prepare a time bound programme of execution with regard to all the items of work set-forth in a schedule and submit the same to the undersigned within 7(seven) days' from the date of work order.

For unsatisfactory progress of work, it will be the option of the undersigned/E.I.C. to withdraw the works out of the contractors' and to get the balance works done through any other agency at the risk and cost of the contractors'.

In case of recurrence of unsatisfactory progress, the undersigned/E.I.C. shall have the power to rescind the contract and to impose such penalties as have been specified in the Municipal Agreement Form.. The contractor may further be debarred from tendering for works under this Directorate.

Before starting the work, the contractor shall submit a target of progress schedule showing the different portions of work, he expects to complete against stages of time.

XXVII. SITE ORDER BOOK:

The contractor will produce Site order book at site before commencement of the work duly numbering the page herein shall be recorded the orders, instructing comments, sketches etc. as may be issued at site by the undersigned / Engineer-in-Charge or his authorized representative from time to time. The contractor also will comply with such order, instruction, sketches etc. and will maintain the site order book till the contract is fulfilled and will be required to produce the same on demand by the Engineer-in-Charge.

The site order book shall be a bound register full scape size of fifty pages in triplicate duly marked two pages in each unit of three should have perforation beside, so as to be easily detachable.

The contractors' or authorized representative (to be categorical named by the contractors') must sign any such orders, instructions, comments and sketches issued as a token acceptance in all three pages of the Site Order Book.

XXVIII. ACCIDENT OR INJURY TO WORKMEN:

The Employer shall not liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other; person in the employment of the Contractor or any sub-contractor, have and except any accident or injury resulting from any act or default of the employer, his agents, or servants. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, save and except as aforesaid and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

4.0 SPECIFICATION OF DIFFERENT ITEM OF WORKS TO BE EXECUTED

a) Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7) Pipes conforming to IS 8329-2000 (Third revision) in standard length 4 m, 5 m, 5.50 m, 6 m for push-on joint (rubber gasket) with internal cement mortar lining and external protection by metallic zinc coating with finish layer of epoxy coating of outside as per IS: 8329-2000 specification with necessary jointing material rubber gasket (IS: 5382:1985) including transportation, loading unloading and stacking at site including free supply of polyethylene sleeves for Water Supply Projects at Memari Municipality. (Approved make: Electrosteel /TATA /Jai Balaji / Rashmi/ Jindal)

Laying of D.I. pipes (K/7) with specials & supplying ,fitting & fixing of M.S. Pipes including earth work in

excavation in of adequate width as per relevant IS Code having minimum depth to keep the top surface of pipe 1.00M below of the existing ground level in any kind of soil mixed with boulder, metal crust, concrete pavement, road sub-grade and its flank etc., in position and carriage of materials from departmental store to work site, filling of the trenches with excavated materials, consolidating the same in layers, removing the surplus materials from site including all labour, tools and plants etc.

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 brone 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.

Pressure Rating : PN 6

b) Laying of M.S. / D.I pipes & specials over brick or concrete pillar or wall upto height of 2m above ground level aligning assembling etc. all complete including cost of all sal-ballah staging, bamboo scaffolding tools & plants specials for hoisting and positioning etc. all complete as per specification and direction of E.I.C.

c) Cutting M.S./D.I. (all types) by chisel/Hacksaw including rendering the surface smooth to make it suitable for rubber gasket/ rubber ring etc. complete as per direction of EIC. (for old line only).

d) Chamfering the spigot end of the M.S./D.I pipes for using in Tyton joints line or otherwise by means of electric grinder set at site as per direction of E.I.C

e) 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 / Hr. 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.

f) Supplying & delivery at working site CIDF sluice valve conforming to IS 14846-2000 (ISI marked), with latest amendment, including stacking and inclusive of Departmental inspection, packing charges, all taxes and duties as applicable and payable, Flanged drilled as per IS 1538-1993 with latest amendment all complete along with installation of the same as per direction of EIC.

(Approved make: Kirlosker/IVC/L&T/VAG/M&P/Upadhyay)

Class PN 1.0 with cap. (Sluice Valve to be supplied by agency)

g) Making flange joint to D.I pipes and specials and valves including dewatering of trenches, tools & plants, labour etc as per specification and instruction of E.I.C.

h) Hydraulically testing of different types of pipes in sections for a head of water not less than 1/2 (Half) the pressure recommended by I.S or 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]

i) Hire and labour charges for 75 mm dia bamboo railing on Jhau / Eucalyptus or other approved timber / bamboo posts 1.4 m above GL and 0.6 m below GL including tying strongly with coir ropes and boring holes for posts in any soil/ concrete surface / Bituminous surface packing the sides etc. including cost of restoration to the damages of the ground to its original condition as per direction of EIC after removing barricade. 75 mm dia bamboo railing and 100 mm dia bamboo posts @1.4 mtr apart. railing with 3 rows.

j) Dismantling all type of masonry including cement concrete, stacking serviceable materials at site and removing rubbish as directed within a lead of 75m in ground floor including roof.

k) Cutting sub -grade of road (concrete bituminous carpeting & consolidated Ballast/brick soling & other sub-grade materials by means of chisels/Hammer other equipments (for trenches & laying of pipe line.)

l) Emergency horizontal road crossing by Auger-boring including boring charge, pipe laying and jointing, making barricades, lighting arrangement etc. all complete as per direction of E.I.C for 100 mm dia to 500 mm dia pipes (including PWD Road). Horizontal road crossing by Jack pushing method including boring charge, pipe laying and jointing, making barricades, lighting arrangement etc. all complete as per direction of E.I.C for 100 mm dia to 500 mm dia pipes (Including National Highways and Railways crossing).

m) Construction of sluice 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 WCC (6:3:1) with supply of approved quality (Heavy type) C.I surface box embedded in 100mm thick removable slab in (4:2:1) including fitting, fixing and overhauling and instruction of E.I.C (Valves will be supplied by Agency).

n) Installation of CI Bolted collar as per IS 13382-1992 with latest amendment or end cap up to date including all taxes & other incidental charges what so ever, carriage, loading unloading & stacking at working site.

o) Hire and labour charges for shuttering with centring and necessary staging upto 4 mtr. using approved stout props for and thick hardwood planks of approved thickness with required bracing for concrete slabs , beams and columns ,lintels curved or straight including fitting , fixing and striking out after completion of works (upto roof of g.f), as per drawing, specification & direction of E.I.C.

p) Ordinary cement concrete (mix 1:2:4)) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any in ground floor as per relevant IS Codes.

a) Pakur variety. In ground floor

q) Reinforcement for all reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc. including supplying of rods, initial straightening and removal of rust (if necessary), cutting to requisite length, hooking & bending to correct shape (if necessary) placing in proper position & binding with 16 gauge black annealed wire at every intersection etc. complete as per drawing & specification including cost of wire.

r) 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.

a) Pakur variety. In ground floor

s) Single Brick Flat Soling of Picket Jhama bricks including ramming & dressing bed to proper level & filling joints with powder earth or local sand.

t) **Jack pushing work:**

i) Preparation of Drawing & Design for Entry Pit and Exit Pit for HDD work under National Highway/ Railway at desired depth and other necessary paper correspondence as per requirement of the concerned Authority and getting the approval of the same by the competent authority for the proposed HDD work.

ii) Construction of a Entry Pit and Exit Pit at desired depth for each and one valve chamber for HDD as per approved drawing of the concerned authority including excavation of earthwork and filling, reinforcement, Concreting (M 25), as per specification and direction of Engineer in Charge and all complete in all respect.

iii) Removing of rust with brushing and cleaning the external surface of MS carrier & casing Pipes of 200 mm, 250mm internal dia. & 300mm, 350mm internal dia. respectively and other as required applying one coat of approved primer over it and providing 2 coats of anti corrosive, non-toxic paint to all pipes and specials inside as per IS Specification & direction of Engineer in Charge.

iv) Fabrication of MS Specials viz. reducer, enlarger, tees, bends, puddles, bell mouth out of 10 mm thick MS barrel / MS spirally welded pipe including cutting of the barrel/spirally welded pipe to exact size & shape

including supply of 10 mm plate from SAIL / TISCO as per direction of Engineer in Charge.

v) Supplying and laying of MS carrier & casing Pipes of 200 mm, 250mm internal dia. & 300mm, 350mm internal dia. respectively and other as required pipe including lowering, inserting and jointing the same MS conduit as per the level and slope as shown in the drawing and as per the direction of the Engineer in Charge and complete in all respect (length of MS Pipe line at NH Road is approx. 66m. Final length are finalised as per direction and approval of EIC and approved drawing during execution of work.)

Vi) Filling of steel pipes & D.I. Pipes and specials with water by contractor and testing hydraulically the same under a head of pressure as per specification including supply of water and necessary equipments such as blank flanges, gauges, pump etc. required for the testing including providing suitable end thrust block and dismantling and removal of the same after completion of the testing, fixing special type of end cap, blank flanges and removal of the same after completion of the testing, welding, jointing, gas cutting etc. as necessary including of jointing materials, disposal of water after testing etc. all complete as per specification and direction of the Engineer in Charge.

vii) Supply, fitting & fixing 200 mm dia & 250 mm dia. CI Sluice Valve & 100 mm dia CI Air Valve as per requirement with necessary fittings and fixture including cost of 100 mm internal dia seamless steel pipe for as length not exceeding 10 M.

u) Permanent Restoration works of all roads to be done as per approved drawing and as per direction and satisfaction of E.I.C.

4.0 Limit of Contract

The limit of contract starts from preparation of complete drawing of respective zone showing diameter and length of pipe, Valves etc. and after approval of same by competent authority proper execution according to specification and after completion of the job preparation of final drawing and submission of the same to competent authority. In between the above, all the works required for successful completion of the component are in the scope of the above work.

**The Superintending Engineer
West Circle, M.E.Dte.**

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 (statutory and non-statutory)& .xls sheet after digitally signed super scribing 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 120 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 pr 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. Municipal Tender Form.

**The Superintending Engineer
West Circle, M.E.Dte.**

SECTION - C

General Conditions of Contract

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 approved in writing, including subsequent written confirmation of previous verbal approval and "approval" means 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 "The Superintending Engineer, West Circle, M.E.Dte." or his Authorized representative and the "directorate" means Municipal Engineering Directorate or its authorized representatives.

(c) "Bank" means the "State Bank of India" or any other Nationalized 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 there to 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 Burdwan 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 "Superintending Engineer, west Circle, M.E.Dte." from time to time.

(k) "Employer" means "The Superintending Engineer, West Circle, M.E.Dte."

(l) "Engineer in Charge" means the Executive Engineer, Purba Burdwan Division of Municipal Engineering Directorate.

(m) "Engineer's Representatives" means any Assistant Engineer or Sub-Assistant Engineer or any Technical Personnel 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 (EGL)" means the level of the referred point of the exposed surface of the ground, road or pavement free from extraneous materials and High Flood Level(HFL) or Finished Ground Level(FGL) is the referred top most point of the nearby road shown in site plan.
- (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 (ULB) or other authority legally entitled to the control or manage local funds but also includes the West Bengal State Electricity Distribution Company Ltd.
- (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 "Superintendent Engineer, West Circle Municipal Engineering Directorate, Further specification laid down in the P.W.D Schedule of Govt. Of West Bengal & all relevant IS codes with latest amendments will be implied after due approval from S.E (SC). In case of any ambiguity or completion of different schedule the decision of S.E (SC), will be final and bindings.
- (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, Company 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, 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 cleans 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 overhand costs whether on or off the Site.
- (5) Period of completion: The period of completion shall be 365 (Three sixty five Days) after issuing the work order.

2.0. ENGINEER IN CHARGE AND HIS REPRESENTATIVES

- (1) Duties and Powers of Engineer in Charge and his Representative - The Engineer shall carry out such duties in issuing decisions, certificates and orders as are specified in the Contract. Fixation and acceptance of rates for altered or substituted items of work or for additional items of work or their deletion shall however always rest with the same authority (by designation) as had accepted the original Bid.
- (2) Representative(s) shall be responsible to the EIC and his/their duties are to watch and supervise the Works and to test and examine any materials to be used or workmanship employed in connection with the works. He shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract, not, accept as expressly provided hereunder or elsewhere in the Contract, to order any work involving delay or any extra payment by the Employer, nor to make any variation of or in the Works.

(a) Failure of the Engineer's Representative to disapprove any work of materials shall not prejudice the power of the Superintendent Engineer, West Circle Municipal Engineering Directorate, thereafter to disapprove such work or materials and to order the pulling down, removal of breaking up thereof.

(b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's Representative he shall be entitled to refer the matter to the Superintendent Engineer, West Circle Municipal Engineering Directorate, who shall thereupon confirm, reverse or vary such decision.

3.0 ASSIGNMENT

The Contractor shall not assign the Contract or any part thereof, or any benefit or interest therein or there under, otherwise than a change in the Contractor's bankers of any money due or to become due under this contract, without the prior written consent of the EIC.

4.0 SUBLETTING

The Contractor shall not sublet the whole of the Works. Except where otherwise provided by the Contract, the Contractor shall not sublet any part of the Works without the prior written consent of the Superintendent Engineer, West Circle, Municipal Engineering Directorate, which shall not be unreasonably withheld and such consent, if given, shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of the said sub-contractor including his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen, provided always that the provision of labours on a piece-work basis shall not be deemed to be a subletting under this clause.

5.0 CONTRACT DOCUMENTS

(1a) Language: The Contract documents shall be drawn up in the English language. All correspondence, orders, notices etc. shall also be in English.

(1b) Law: The law of India and of the State of West Bengal shall apply to the Contract and the Contract is to be construed accordingly.

(2) Documents Mutually Explanatory: The several documents forming the contract are to be taken as mutually explanatory of one another but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Superintendent Engineer, West Circle Municipal Engineering Directorate, in terms of the provisions in Clause B-2.3 of the Conditions and Requirements for Bidding (omitted portion) who shall thereafter issue to the Contractor instructions thereon. Provided always that if, in the opinion of the Engineer, compliance with any such instructions shall involve the Contractor in any cost, which by reason of such ambiguity or discrepancy could not reasonably have been foreseen by the Contractor, the Engineer shall certify and shall pay such additional sum as may be reasonable to cover such costs with recommendation of the Superintendent Engineer, West Circle Municipal Engineering Directorate.

6.0 DRAWINGS

(1) Custody of drawing: All the approved Drawings shall remain in the safe custody of the Executive Engineer, Purba Burdwan Division, Municipal Engineering Directorate, 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, Purba Burdwan Division, Municipal Engineering Directorate, Govt. of West Bengal all drawings as provided under the Contract.

(2) One copy of approved drawing is 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 Representatives and by any other persons authorized by the Engineer in writing.

(3) Disruption of progress: The Contractor shall give written notice to EIC whenever planning or progress of the works is likely to be delayed or disrupted unless any further approval of drawing or order, including a direction instruction or approval is issued by Superintendent Engineer, West Circle Municipal Engineering Directorate, on recommendation of Executive Engineer Purba Burdwan Division, Municipal Engineering Directorate 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.

(4) The contractors should submit required design calculations along with drawing. If required by Superintendent Engineer, West Circle Municipal Engineering Directorate, / E.I.C the design shall be submitted in latest version of civil, Mechanical, & Electrical software's with their hard copies and soft copies (in CD).

7.0 ADDITIONAL COPIES OF DRAWINGS

The EIC 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 EIC shall be final and binding on the Contractor.

8.0 GENERAL OBLIGATION

Contractor's General Responsibilities - The Contractor shall, subject to the provision of the Contract, and with due care and diligence, execute and maintain the Works and supply all labour, including the supervision thereof, materials, equipment, Constructional Plant and machinery, tools and all other things whether of a temporary or permanent nature, required for such execution and maintenance, so far as necessary for providing the same is specified in or is reasonably to be inferred from the Contract. The Contractor shall take full responsibility for the adequacy, stability, safety & security or all Site operations and methods of construction, erection etc. During trial run and annual maintenance period the contractor has to assured safety and security of the whole plant by providing necessary guard/watchmen at his own cost.

9.0. 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 annexed with such modification as may be necessary.

10.0. GUARANTEE

The contractor shall stand guarantee for successful operation of the plant for 12 months from the date of successful commissioning of the pump and shall within the O&M period, after 3 months trial run remove/rectify/ make good any such deficiency forthwith at his own cost. During the guarantee period (after the trial run period) the firm's representative shall visit the site once in a month and advice in writing the Superintendent Engineer, West Circle Municipal Engineering Directorate, about the condition, state of health, and operation & maintenance procedure of the equipment.

The successful Bidder shall also give the following guarantee in respect of the equipment supplied by him.

- i) All equipment shall be free from any defects due to faulty design of the components, materials and/or workmanship
- ii) The equipment shall operate satisfactory. The performance and efficiency shall not be less than guaranteed values.
- iii) Formal acceptance of the work or equipment covered under the contract will not be made by the EIC until all the work done by the contractor has satisfactorily passed all tests required and run for a reasonable period to his satisfaction.

If during testing of work, including equipment prior of formal acceptance, the same or the material thereof must satisfy in respect of meeting the specification guaranteed or otherwise the Contractor shall replace all such equipment etc. in a condition which will meet the guaranteed performance and be up to the specification, in both material and workmanship.

Any such work shall be carried out by the contractor at his own expense, if such work shall, in the opinion of the Engineer-in-Charge, be necessary due to the use of materials or workmanship not in accordance with the contract and/or to the 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 the contractor shall fail to do any such work as per aforesaid requirement of the Engineer-in-Charge, the EIC shall be entitled to have such work carried out by its own workman, or by others hired for the purpose, and if such work is in the opinion of the Engineer-in-Charge for which the contractor should have carried out at the contractor's own cost, the department shall be entitled to recover from the contractor the supervision cost deemed fit together with the cost increased for the purpose and may deduct the same from any money due to or that may become due to the Contractor.

10.1 START-UP GURANTEES

Until such time as the equipment or material installed and erected under the contact is finally accepted by the Department in keeping with the terms and condition of this contract and associated specifications the responsibility for proper storage, testing, maintenance and efficient of the same shall be that of the contractor. Prior to start-up

contractor shall be required to service of the equipment and during start-up render such assistance as may be necessary or request for by the Employer.

When the equipment has not been manufactured by the bidder, Back to Back Guarantee shall be provided and the manufacturer recommendations for installation of the same shall be strictly adhered to and any defects developing due to faulty installation transportation and / or erection during start-up or during a period of one year from the date of commissioning shall be rectified, remedied or made good by the contractor through manufacturer, if considered by the Department, at his own cost. When the equipment has manufactured by the bidder himself, rectification within similar period is compulsory.

11.0. INSPECTION OF SITE

The EIC 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, topography together in the level, 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.

12.0 SUFFICIENCY OF BID AND ADVERSE PHYSICAL CONDITIONS, ARTIFICIAL OBSTRUCTIONS

The Bidder shall be deemed to have satisfied himself before Bidding as to the correctness and sufficiency of his Bid for the Works and of the rates and prices quoted in the Schedule of prices, which Bid rates and prices shall, except in so far as it is otherwise provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper execution and maintenance of the Works. If, however, during the execution of its Works the Contractor shall encounter physical conditions, other than Climatic conditions on the Site, or artificial obstructions, which conditions or obstructions could, in his opinion, not have been reasonably foreseen by an experienced contractor, the Contractor shall forthwith give written notice thereof to the Engineer and if, in the opinion of the Engineer, such conditions or artificial obstructions could not have been reasonably foreseen by an experienced contractor, then the Engineer shall certify and the EIC shall pay the additional cost to which the Contractor shall have been put by reason of such conditions, including the proper and reasonable cost with due recommendation of Superintendent Engineer, West Circle Municipal Engineering Directorate.

- a) Of complying with any instruction which the Engineer may issue to the Contractor in connection therewith, and
- b) Of any proper and reasonable measures approved by the EIC on recommendation of Superintendent Engineer west Circle Municipal Engineering Directorate, which the Contractor may take in the absence of specific instructions from the EIC as a result of such conditions or obstructions encountered.

13.0. 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 EIC and shall comply with and adhere strictly to the EIC's instructions and directions on any matter whether mentioned in the Contract or not touching or concerning the Works.

14.0. WORK PROGRAM

- (1) Program to be furnished: Within thirty (30) calendar days, the Contractor shall, after the acceptance of his Bid, submit to the EIC 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 EIC, 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 EIC 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 EIC, 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 EIC of such program or the furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

15.0. CONTRACTOR'S SUPERINTENDENCE

The Contractor shall give or provide all necessary superintendence during the execution of the Works and as long thereafter as the Superintendent Engineer, West Circle Municipal Engineering Directorate, 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 Chairperson, 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 Superintendent Engineer, Circle Municipal Engineering Directorate, 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 Superintendent Engineer, West Circle Municipal Engineering Directorate,. Such authorized agent or representative shall receive, on behalf of the Contractor, direction and instruction from the Superintendent Engineer, West Circle Municipal Engineering Directorate, 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 Superintendent Engineer, West Circle Municipal Engineering Directorate, or the EIC.

16.0. EMPLOYEES

(1) Contractor's Employees - The Contractor shall provide and employ on the Site in connection with the execution and maintenance of the Works with minimum 3 nos. HT operator with 3 nos. electrician shall be provided at the time of operation of the plant and guarding arrangement should be provided at night.

a) Such technical assistants as are skilled and experienced in their respective calling and such sub-agents, foreman and leading hands as arc competent to give proper supervision to the work they are required to supervise, and

b) Such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution and maintenance of the Works.

c) Employees covered under (a) and (b) may have to be provided with identity cards as specified by the EIC.

(2) The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Work any person employed by the Contractor in or about the execution or maintenance of the Works who, in the opinion of the Executive Engineer, Purba Burdwan Division, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose employment is otherwise considered by the Executive Engineer to be undesirable and such person shall not be again employed upon the Works without the written permission of the Executive Engineer. Any person so removed from the Works shall be replaced as soon as possible by a competent substitute approved by the Executive Engineer.

17.0. SETTING-OUT

The Contractor shall be responsible for the true and proper setting-out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing and for the correctness, subject as above mentioned, of the position levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances/and labour in connection therewith. If, at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor required to do so by the Engineer or the Engineer's Representative, shall at his own cost, rectify such error to the satisfaction of the Engineer or the Engineer's Representative, unless such error is based on incorrect data supplied in writing by the Engineer, in which case the expense of rectifying the same shall be borne by the Employer. The checking of any setting-out or of any line or level by the Engineer or the Engineer's Representative shall not in any way relieve the Contractor of his responsibility for the correctness thereof and the Contractor shall carefully protect and reserve all bench-marks, siph trails pegs and other things used in setting out the Works.

18.0. WATCHING AND LIGHTING

The contractor shall in connection with the works provide and maintain at his own cost all lights, guards, fencing, as and when/where necessary or as required by the EIC or the Engineer's Representative, for the protection of the works, contractor's employees, and employee's supervisor or for any other reason deemed fit by the Engineer.

19.0. WORKS & RISKS

(1) Care of Works: From the commencement of the Works until the date stated in the Certificate of Completion for the whole of the Works, pursuant to Clause 47 hereof, the Contractor shall take full responsibility for the care thereof. Provided that if the EIC shall issue a Certificate of Completion in respect of any part of the Permanent Works, the Contractor shall cease to be liable for the care of that part of the Permanent Works (O&M not counted) from the date stated in the Certificate of Completion in respect of that part and the responsibility for the care of that part shall pass to the EIC provided further that the Contractor shall take full responsibility for the care of any outstanding work which he shall have undertaken to finish during the period to Maintenance until such outstanding work is completed. In case any damage, loss or injury shall happen to the Works, or to any part thereof, from any cause whatsoever, save and except the expected risks as defined in sub-clause (2) of this Clause, while the Contractor shall be responsible for the care thereof the Contractor shall, at his Own cost, repair and make good the same, so that at completion the permanent Works shall be in good order and condition and in conformity in every respect with the requirements of the Contract and the EIC instructions. In the event of any such damage, loss or injury happening from any of the excepted risks, the Contractor shall, if and to the extent required by the EIC and subject always to the provisions of Clause 62 hereof, repair and make good the same as aforesaid at the cost of the Employer. The Contractor shall also be liable for any damage to the Works occasioned by him in the Course of any operations carried out by him for the purpose of completing any outstanding works or complying with his obligations under Clause 48 or 49 hereof.

(2) Expected Risks: The 'expected risks' are war, hostilities, invasion, act of foreign enemies, rebellion, revolution insurrection or military or usurped power, civil war or unless solely restricted to employees of the Contractor or of his sub- contractors and arising from the conduct of his workers, riot commotion or use or occupation by the EIC of any part of the Permanent Works, or a cause solely due to the Engineer's design of the Works, or ionizing radiations or contamination by radio-activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive, nuclear assembly or nuclear component thereof, pressure waves cause by aircraft or other aerial devices travelling at sonic or supersonic speeds, or any such operation of the force of nature as an experienced contractor could not foresee, or reasonably make provision for or insure against all of which are herein collectively recurred to as "the expected risks."

20.0. INSURANCE OF WORKS, ETC.

Without limiting his obligations and responsibilities under Clause 19 hereof the Contractor shall insure in the names of the Employer and the Contractor against all loss or damage from whatever cause arising, other than the expected risks, for which he is responsible under the terms of the Contract and in such manner that the Employer and Contractor are covered for the period stipulated in Clause 19(1) hereof and are also covered during the Period of Guarantee for loss or damage arising from a cause, occurring prior to the commencement of the Period of Guarantee, and for any loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 48 or 49 hereof.

- a) The Works for the time being executed to the estimated current contract value thereof together with the materials for incorporation in the Works at the replacement value.
- b) The Constructional Plant and other things brought on the Site by the Contractor to the replacement value of such Constructional Plant and other things. These shall include materials belonging to the EIC but issued to or intended to be issued to the Contractor for use in the Works. Such insurance shall be effected with an insurer and in terms approved by the Employer, which approval shall not be unreasonably withheld, and the Contractor shall whenever require, produce to the EIC or the Engineer's Representative the policy or policies of insurance and the receipts for payment of the current premiums.

21.0. DAMAGES

(1) Damage to persons and property: The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the EIC against all losses and claims in respect of injuries or damage to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution, operation and maintenance of the Works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation or damages for or with respect to :

- a) The permanent use of occupation of land by the Works or any part thereof.
 - b) The right of the EIC to execute the Works or any part thereof on over under, in or through any land.
 - c) Injuries or damage to persons or property which are the unavoidable result of the execution, operation or maintenance- of the Works in accordance with the Contract.
 - d) Injuries or damages to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, not being employed by the Contractor, or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the Contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the EIC, his servant or agents or other contractors for the damage or injury.
- (2) Indemnity of EIC: The Contractor shall indemnify the EIC against all claims, proceedings, damages, costs charges and expenses in respect of the matters referred to the provision to sub-clause (1) of this Clause.

22.0. INSURANCE

- (1) Third Party Insurance : Before commencing the execution of the Works the Contractor, but without limiting his obligations and responsibilities under Clause 21 hereof, shall insure against his liability for any material or physical damage, loss or injury which may occur to any property, including that of the EIC, or to any person, including any employee of the EIC, by or arising out to the execution of the Works or in the carrying out of the Contract, otherwise than due to the matters referred to in the proviso to Clause 21 (I) hereof.
- (2) Minimum Amount of third party insurance: Such insurance shall be affected with an insurer and in terms approved by the EIC, which approval shall not be unreasonably withheld, and for a lowest the amount started in the Appendix to the Bid. The Contractor shall, whenever required, produce to the EIC or the Engineer's Representative the policy or policies of insurance and the receipts for payment of the current premium. However, the Bidder should insure for an amount commensurate with the risk involved subject to the minimum amount prescribed elsewhere in the Bid.
- (3) Provision to indemnify Employer: The terms shall include a provision whereby, in the event of any claim in respect of which the Contractor would be entitled to receive It identify under the policy being brought or made against the The Superintending Engineer, West Circle, M.E.Dte. the insurer will indemnify the Employer against such claims and any costs, charges and expenses in respect thereof.

23.0. ACCIDENT, INJURIES

- (1) Accident or injury to Workmen: The EIC shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the employment of the Contractor or any subcontractor, save and except an accident or injury resulting from any act or default of the EIC, his agents, or servants. The Contractor shall indemnify and keep indemnified the EIC against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.
- (2) Insurance Against Accident, etc., to workmen: The Contractor shall insure against such liability with an insurer approved by the EIC, which approval shall not be unreasonably withheld, and shall continue such insurance during the whole of the time that any person is employed by him on the works and shall, when required, produce to the EIC or the Engineer's Representative such policy of insurance and the receipts for payment of the current premium. Provided always that, in respect of any person employed by any sub-contractor, the Contractor's obligation to insure as aforesaid under this sub-clause shall be satisfied if the sub-contractor shall have insured against the liability in respect of such persons in such manner that the EIC is indemnified under the policy, but the Contractor shall require such sub-contractor to produce to the EIC when required, such policy of insurance and the receipt for the payment of the current premium.
- (3) Notification to insurer: It shall be the duty of the Contractor to notify the insurers under any of the insurance referred to in Clause 20, 22 and 23 hereof any matter or count which by the terms of such insurance are required to be notified and the Contractor shall indemnify and keep indemnified the EIC against all losses, claims, demands, proceedings, costs, charges and expenses whatsoever arising out of or resulting from any default by the Contractor in complying with the requirements of this sub-clause whether as a result of the avoidance of such insurance or otherwise.
- (4) All Insurances at Contractor's cost - The insurances referred to in Clause 21, 22 & 23 hereof shall be entirely at the cost and expenses of the Contractor and be included within his rates.

24.0. REMEDY ON CONTRACTOR'S FAILURE TO INSURE

If the Contractor shall fail to effect and keep in force the insurance referred to in Clause 20, 22 and 23 hereof, or any other insurance which he may be required to effect under the terms of the Contract, then and in any such case the EIC may effect and keep in force any such insurance and pay such premium or premiums including fines as may be necessary for that purpose and from time to time and deduct double the amount so paid by the employer as aforesaid from any moneys due or which may become due to the Contractor or recover the same as a debt due from the Contractor.

25.0. (1) Giving of Notices and Payment of Fees:

The Contractor shall give all notices and pay all fees required to be given or paid by any National or State Statute, ordinance, or other law, or any rules regulation, or bye-law of any local or other duly constituted authority in relation to the execution of the Works and by the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works.

(2) Compliance with Statutes, Regulations, etc. - The Contractor shall conform in all respects with the provisions of any such Statute, Ordinance or Law as aforesaid and the Rules, regulations or bye-laws or any local or other duly constituted authority which may be applicable to the Works and with such rules and regulations of public bodies and companies as aforesaid and shall keep the EIC indemnified against all penalties, fines and liability of every kind for breach of any such Statute, ordinance of Law, regulation of bye law.

26.0. FOSSILS, TREASURE TROVE ETC.

All fossils, Any treasure trove, coins articles of value or object with antiquity and structures and other remains or things of geological or archaeological interest discovered on the site of the Works shall as between the Employer and the Contractor be deemed to be the absolute property of the Employer and shall be handed over to the owner.

27.0. PATENT RIGHTS AND ROYALTIES

The Contractor shall save harmless and indemnify the EIC from and against all claims and proceedings for or on account of infringement of any patent, rights, design Trade mark or name or other protected right in respect of any Constructional Plant, machine works, or material used for or in connection with the Works or any of them and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof in relation thereto. Except where otherwise specified, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensations, if any, for getting stone, sand, gravel, clay or other materials or equipment required for the works or any of them.

28.0. INTERFERENCE WITH TRAFFIC AND ADJOINING PROPERTIES

All operations necessary for the execution of the Works shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the convenience of the existing plant workers, member of the public, or the access to use and occupation of public or private roads, railways and footpaths to or of properties whether in the possession of the EIC or of any other person or local authority.

29.0. TRAFFIC

(1) Extraordinary Traffic: The Contractor shall use every reasonable means to prevent any of the highways, railways or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of this sub-contractors and, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of plant and material from and to the Site shall be limited, as far as reasonably possible, and so that no unnecessary damage or injury may be occasioned to such highways, railways and bridges.

(2) Special Loads: Should it be found necessary for the Contractor to move one or more loads of Constructional plant, machinery or pre-constructed units or parts of units of work over part of a highway, railway or bridge, the moving whereof is likely to damage any highway, railway or bridge unless special protection or strengthening is carried out, then the Contractor shall before moving the load on to such highway, railway or bridge give notice to the EIC or Engineer's Representative or the local authority of the weight and other particulars of the load to be moved and his proposals for protecting or strengthening the said highway, railway or bridge. The Contractor at his own cost and expenses shall carry out such proposals, including any modifications thereto that the Engineer or the local authority may require.

(3) Settlement of Extraordinary Traffic Claims: If during the Carrying out of the Works damage or injury to railways, railway or bridge occurs due to moving of one or more loads of Constructional Plant machinery or pre-constructed units or parts of units of work, the Employer shall conduct the necessary investigation for the purpose of

determining the Contractor's liability. If the damage is due to failure on the part of the Contractor to observe and perform his obligations under sub-clause (1) and (2) of this Clause then the restoration / repair of the damaged portion of road or structure certified by the Engineer or local authority to be due to such failure shall be undertaken by or be chargeable against the Contractor.

(4) Water-borne Traffic: Where the nature of the Works is such as to require the use by the Contractor of water-borne transport the foregoing provisions of this Clause shall be construed as though "highway" included a lock, dock, sea wall or other structure related to a waterway and "vehicle" included craft, and shall have effect accordingly.

30.0. RESTRICTION

(a) Restriction of Movements: The work shall have to be executed within the protected area of existing water works. The existing rules and regulation related to ingress and egress of labour and material shall have to be followed strictly in consultation with and as per direction of the EIC or the local authority as the case may be. No labour, Supervisor or Engineer of the contractor shall enter inside the treatment plant, pump house or any other existing installations without prior permission of concerned officers EIC.

(b) Opportunities for other contractors: The Contractor shall in accordance with the requirements of the EIC, afford all reasonable opportunities for carrying out their work to any other contractors employed by the Employer and their workmen and to the workmen of the employer and of any other duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works. If, however, the Contractor shall, on the written request of the EIC or the Engineer's Representative, make available to any such other contractor, or to the Employer or any such authority, any roads or ways for the maintenance of which the Contractor is responsible, or permit the use by any such of the Contractor's scaffolding or other plant on the Site, or provide any other service of whatsoever nature, the Employer shall pay to the Contractor in respect of such use or service such sum or sums if at all as shall, in the opinion of the Engineer, be reasonable.

31.0. CONTRACTOR TO KEEP SITE CLEAR

During the progress of the works the Contractor shall keep the site reasonable free from all necessary obstruction and shall store or dispose of any Constructional Plant and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.

32.0. CLEARANCE OF SITE ON COMPLETION

On the completion of the Works the Contractor shall clear away and remove from the site all Constructional Plant, surplus materials, rubbish and Temporary Works of every kind, and leave the whole of the Site and Works clean and in a workmanlike condition to the satisfaction of the Superintending Engineer, West Circle, Municipal Engineering Directorate.

33.0. LABOUR

(1) Engagement of labour: The Contractor shall make his own arrangements for the engagement of all labour, local or otherwise, and save in so far as the Contract otherwise provides, for the transport, housing, feeding and payment thereof.

(2) Supply of water: The Contractor shall, so far as is reasonably practicable having regard to local conditions, provide on the Site, to the satisfaction of the EIC representative, an adequate supply of drinking and other water for the use of the Contractor's staff and work people.

(3) Alcoholic Liquor or Drugs: The Contractor or his workmen shall not consume or sale or gift or be under the influence of any drug/narcotics or Alcoholic liquor within the vicinity of the Construction site.

(4) Arms and Ammunition: The Contractor shall not give, barter or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

(5) Festivals and Religious Customs: The Contractor shall in all dealing with labour in his employment have due regard to all recognized festivals days of rest and religious or other customs.

- (6) Epidemic: In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.
- (7) Disorderly Conduct etc.: The contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his employees or workers and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same.
- (8) Compliance with Laws, regulation etc. relating to labour: In respect of the engagement, employment, transport, payment, feeding, housing and working conditions of labour and all matters connected there with the Contractor shall at all times during the continuance of the Contract, comply in all respects with and carry out all obligations imposed on him by the provisions and requirements of the following statutes.
- (a) The Apprentices Act 1961 (Act 52 of 1961) and Rules and Regulations issued there under from time to time.
- (b) The Contract Labour Regulation and abolition Act 1970 (Act 37 of 1970) and Rules made there under (West Bengal Contract Labour Regulation and Abolition Rules 1972) from time to time.
- (c) The Payment of Wages Act 1936, the Minimum Wages Act 1948, the Employees Liability Act 1938, the Industrial Disputes Act 1947, the Maternity Benefits Act 1961, the Employees State Insurance Act 1948 including modifications thereto the Rules and Regulations framed there under from time to time.
- (d) Other existing National or State Statute, Ordinance or other Law or any Regulation or Bye-law of any local or other duly constituted authority which may be applicable, including any such Law, Regulation or Order that may be passed or ordered from time to time and come into force during the tenure of the Contract.
- (9) Employees Provident Fund: The Contractor shall comply with the provisions of the relevant Employees Provident Fund Act or Rules in force in the State along with the provisions of all rules and Regulations made there under from time to time, and shall in particular be responsible for the payment of all contributions as laid down under the Act/Rules.
- (10) Trade union rights: The Contractor shall recognize the freedom of all workmen employed by him in and for performance of the Contract to be members of registered Trade Unions and shall not in any manner prevent or discourage any such workman from becoming a member of a registered Trade Union or discriminate against any workmen who is a member of a registered Trade Union.
- (11) Local Labour: As far as possible local labour shall be engaged as unskilled labour.
- (12) Fair Wages - The Contractor shall in respect of all workers employed by him in and for the performance of the Contract pay rates of wages and observe the conditions of employment not less favourable than those provided under the relevant labour law as applicable to the State.
- (13) Medical Attendance: The Contractor shall provide, to the satisfaction of the Government or Local Authorities Concerned, adequate medical attendance for his employees and labour.
- (14) Report or Accident: The Contractor shall, within twenty-four (24) hours of the occurrence of any accident at or about the site or in connection with the execution of the Work, report such an accident to the Engineer. The Contractor shall also report such accident to the competent authority whenever law requires such a report.
- (15) Report required by Labour Commissioner: The Contractor shall submit, at the request of the Labour Commissioner or of the Assistant Commissioner of the State such returns as may be called for from time to time in respect of labour employed by the Contractor and by his subcontractors in the execution of the Contract. If so required, the Contractor shall furnish the names and address of all subcontractors to the Labour Commissioner. Statutory provisions in these regards are to be also complied with.
- (16) The Contractor shall be responsible for observance by his subcontractor of all the foregoing provision of sub-clause (1) to (15) of this Clause 33.

34.0. RETURNS OF LABOUR ETC.

The Contractor shall, if required by the EIC, deliver to the EIC, or at his office a return in detail in such form and at such intervals as the EIC may prescribe showing the supervisory staff and the number of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Constructional Plant as the Superintending Engineer, West Circle, Municipal Engineering Directorate or his Representative may require.

35.0. 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 EIC, 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 EIC.

(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 fulfil is particularized in the Contract in sufficient detail to enable to Contractor to price or allow for the same in his Bid.

(4) Cost of Tests not provided for, etc.: If the EIC 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, but otherwise the cost shall be borne by the Employer.

36.0. 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.

37.0. EXAMINATION

(1) Examination of work before covering up: No work shall be covered up or put out of view without the approval of the Superintending Engineer, West Circle, Municipal Engineer Directorate or the his authorized Representative and the Contractor shall afford full opportunity for the EIC 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 Superintending Engineer, West Circle, Municipal Engineer Directorate or his authorized Representative. 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.

38.0. REMOVAL

(1) Removal of improper work and materials: The EIC shall during the progress of the works have power to order in writing from time to time.

a) The removal from the Site, within such time or time as may be specified in the order, of any materials, which in the opinion of the Engineer, are not in accordance with the Contract.

b) The substitution of improper, substandard and unsuitable materials, and

c) The removal and proper re-execution, notwithstanding any previous test thereof or interim payment therefore, of any work which in respect of materials or workmanship is not in the opinion of the Engineer, in accordance with the Contract

(2) Default of Contractor in Compliance: In case of default on the part of the Contractor in carrying out such order, the Employer shall be entitled to employ and pay other persons to carry out the same and 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.

39.0. SUSPENSION

(1) Suspension of work: The Contractor shall, on the written order of the Engineer, suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work, so far as is necessary in the opinion of the Engineer. The extra cost incurred by the Contractor in giving effect to the Engineer's instruction under this Clause shall be borne and paid by the Employer unless such suspension is

a) Otherwise provided for in the Contract, or
b) Necessary by reason of some default on the part of the Contractor, or
c) Necessary by reason of climatic conditions on the Site, or
d) Necessary for the proper execution of the work or for the safety of workmen or Works of any part thereof in so far as such necessity does not arise from any act or default by the Engineer or the Employer or from any of the expected risks defined in Clause 19 hereof provided that the Contractor shall not be entitled to recover any such extra cost unless he gives written notice of his intention to claim to the Employer within twenty-eight days of the Engineer's order. The EIC shall settle and determine such extra payment and/or extension of time under Clause 43 hereof to be made to the Contractor in respect of such claim as shall in the opinion of the Employer be fair and reasonable.

(2) Suspension lasting more than 90 days: If the progress of the Works or any part thereof is suspended on the written order of the EIC and if permission to resume Work is not given by the EIC within a period of ninety days from the date of suspension then, unless such suspension is within paragraph (a), (b), (c) or (d) of sub-clause (1) of this Clause, the Contractor may serve a written notice on the Employer requiring permission within twenty eight days from the receipt thereof to proceed with the Works, or that part thereof in regard in which progress is suspended and, if such permission is not granted within that time, the Contractor by a further written notice so served may, but is not bound to, elect or treat the suspension where it affects part only of the Works as an omission of such part under Clause 50 hereof, or where it affects the whole Works as an abandonment of the Contract by the Employer.

40.0. COMMENCEMENT TIME AND DELAYS

Commencement of works: The Contractor shall commence the Works on Site within the period named in the Appendix to the Bid after the receipt by him of a written order to this effect from the Engineer and shall proceed with the same with due expedition and without delay, except as may be expressly sanctioned or ordered by the Engineer, or be wholly beyond the Contractor's Control. The successful contractor shall within four weeks from the date of issue of Letter of Intent furnish one or more drawing stating and showing the following:

- 1.0 Layout of cable trenches, cable trays showing the locations and levels together with position of hooks at the under site of the operating platform stating the maximum load required to be withstood.
- 2.0 Any other data that the Bid considers relevant for construction of civil structure.
- 3.0 Any other reasonable data that may be asked for.

41.0. POSSESSION

(1) Possession of site: Save in so far as the contract may prescribe, the extent of portions of the Site of which the Contractor is to be given possession from time to time and the order in which such portions shall be made available to him and subject to any requirement in the Contract as to the order in which the Works shall be executed, the Employer will, with the Engineer's written order to commence the Works, give to the Contractor possession of so much of the Site as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the Programmed referred to in Clause 14 hereof, if any, and otherwise in accordance with such reasonable proposals, of the Contractor as he shall, by written notice to the Engineer, make and will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with the said Programmed or proposals, as the case may be. If the Contractor suffers delays or incurs cost for failure on the part of the Employer to give possession in accordance with the terms of this Clause, the Employer shall grant an extension of time for the completion of the Works and certify such sum as, in his opinion, shall be fair to cover the cost incurred, which sum shall be paid by the Employer.

(2) Way leaves etc.: The Contractor shall bear all costs and charges for special or temporary way leaves required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional accommodation outside the site required by him for the purpose of the works.

42.0. TIME

(1) Time of Completion and progress of Works: The progress of the work shall conform to the approved Work Programmed in terms of Clauses 14 hereof, and subject to any requirement in the contract as the completion of any

section of the Works before completion of the whole, the whole of the Works shall be completed, in accordance with the provisions of Clause 47 hereof, within the time stated in the Contract calculated from last days of the period named in the Appendix to the Bid as that within which the Works are to be commenced, or such extended time as may be allowed under Clause 43 hereof.

(2) Failure in keeping to stages of work Programmed: If the Contractor does not keep to the approved program and continues at any stage to fail behind his schedule by as much as twenty percent (20%) of the said approved work programmed, within thirty (30) days from receipt by him of a written notice from the Engineer, or if in the opinion of the Engineer the delay will substantially affect operation activities or execution of a major work item and it is ascertained by the Engineer that the Contractor cannot remedy the occasion within the stipulated time, the Superintending Engineer, West Circle, M.E.Dte on recommendation of Engineer shall have full authority to undertake measures to recover from such adverse condition in terms of the provisions of Clause 62 thereof.

43.0. EXTENSION OF TIME FOR COMPLETION

Should the amount of extra or additional work of any kind or any cause of delay referred to in these Conditions, or other special circumstances of any kind whatsoever which may occur, other than through a default of the Contractor, be such as fairly to entitle the Contractor to an extension of time for the completion of the works, the EIC on recommendation of Engineer shall determine the period of such extension and shall notify the Employer and the Contractor accordingly. Provided that the Engineer is not bound to take into account any extra or additional work or other special circumstances unless the Contractor has within twenty-eight days after such work has been commenced, or such circumstances have arisen or as soon as is practicable, submitted to the Engineer full and detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.

44.0. NO NIGHT OR SUNDAY WORK

Subject to any provision to the contrary contained in the Contract, none of the Permanent Works shall, save as hereinafter provided, be carried on during the night or on Sundays, if locally recognized as days of rest, or other locally recognized equivalent without the permission in writing of the Engineer, except when the works is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, provided always that the provisions of the Clause shall not be applicable in the case of any work which it is customary to carry out by rotary of shifts.

45.0. RATE OF PROGRESS AND NIGHT WORK WHEN PERMITTED

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any section is at any time, in the opinion of the Engineer, too slow to ensure completion by the prescribed time or extended time for completion, the EIC on recommendation of the Engineer shall so notify the Contractor in writing and the Contractor shall thereupon take such steps as are necessary and the Engineer may approve to expedite progress as to complete the Works or such section by the prescribed time or extended time. The Contractor shall not be entitled to any additional payment for taking such steps. If as a result of any notice given by the EIC under this Clause, the Contractor shall seek the EIC permission to do any work at night or on Sundays, If locally recognized as days of rest, or their locally recognized equivalent, such permission shall not be unreasonable refused. When work at night has to be carried out, the Contractor shall, at his own cost and expense, make adequate arrangements for lighting and provide necessary facilities for safety etc. and comply with all stipulations as may have been imposed by the EIC in granting permission for night work.

46.0. DAMAGES FOR DELAY

(1) Liquidated Damages for Delay: If the Contractor shall fail to achieve completion of the Works within the time prescribed by Clause 42 hereof, then the Contractor shall pay to the Employer the sum stated in the Contract as liquidated damages for such default and not as a penalty for every day of part of a day which shall elapse between the time prescribed by Clause 42 hereof and the date of certified completion of the Works, the Employer may without prejudice to any other method of recovery, deduct the amount of such damages from any money in his hands, due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

(2) Reduction of liquidated Damages: If, before the completion of the whole of the Works any part or section of the Works has been certified by the Engineer as completed, pursuant to Clause 47 hereof, and occupied or used by the Employer, the liquidated damages for delay shall, for any period of delay after such certificate and in the absence

of alternative provision in the contract be reduced in the proportion which the value of the part or section so certified bears to the value of the whole of the Works.

(3) Extent of Liquidated Damages: The liquidated damages referred to in sub-clause (1) for delay of each day or part thereof, shall be at the rate of one percent (1 %) or such smaller amount as the Employer may decide, or the total value of the Contract Price excluding the value of such part or section of the works as may have been covered by certificate of completion in terms of the provisions of sub-clause (2) above, Provided however that in no case shall be total amount of liquidated damages exceed ten percent (10%) of the total Contract Price for whole Works.

(4) Liquidated Damage as Reasonable Compensation: The 'Liquidated damage' referred to in sub-clause (1) to (3) above, shall be considered as reasonable compensation to be applied to the use of the Employer without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

(5) No bonus for early completion: -The Contractor shall not be entitled to payment of any bonus for early completion of the Works.

47.0. 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, 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 is 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.

(3) Trial Run:-The Trial Run period shall be for three months including 72 hours with load operation of 8 hours at a stretch operation of all equipment as per specification and to the satisfaction of Engineer-in-Charge.

48. MAINTENANCE

(1) Maintenance Period: Maintenance period shall be for a period of one year counted from the date of certified commissioning i.e. after successful trial runs of 3 months. The Contractor shall provide spare parts at his cost required during the maintenance period.

(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.

49.0. CONTRACTOR TO SEARCH

The Contractor shall, if required by the EIC 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.

50.0. 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 days, confirm the same from his end in writing to the Employer, and If such confirmation is not contradicted in writing within fourteen days by the employer, it shall be deemed to be an order in writing by the Employer.

51.0. VALUATION

(1) Valuation of variations: All extra or additional work done or work omitted or substituted by order of the Employer shall be valued at the rates and prices set out in the Contract if, in the opinion of the Employer, the same shall be applicable as it is or with addition to or subtraction from an accepted item, if the contract does not contain any rates or prices applicable to the extra or additional work, then the rates or prices shall be obtained from the Applicable Circle, Public Works Department schedule of rates as was in vogue on the date of submission of the Bid. The same being escalated to an extent determined by comparing the cost of a similar item appearing in the Schedule of Prices with those in P.W.D. schedule. Where such rates are not available in P.W.D. Schedule of Rates, the market-analysed rate as approved by the Employer shall be final and binding. In case of such analysed rates, 10% profit including overhead consultant's fees, ST. Turnover Tax etc. shall be allowed. No other overhead, or other expenses shall be taken into account shall be considered to be inclusive of contractors profit.

(2) Variation Exceeding 20%: - If, on certified completion of the whole of the Works, it shall be found that a reduction or increase greater than twenty percent (20%) of the sum named in the Letter of Acceptance, excluding all fixed sums, provisional sums if any, results from

- a) The aggregate effect of all Variation Orders, and
- b) All adjustments upon measurement of the estimated quantities set out in the Schedule of Prices excluding all provisional sums, and adjustments of price made under Clause 66 (1) hereof but not from any other clause, of the Contract Price shall be adjusted by such sum as may be agreed between the Contractor and the Employer or, failing agreement, fixed by the Employer having regard to all material and relevant factors, including the Contractor's site and general overhead costs.

(3) Claims: The Contractor shall send to the EIC once in every month an account giving particulars, as full and detailed as possible, of all claims for any additional payment to which the Contractor may consider himself entitled and of all extra or additional work ordered by the Employer which he has executed during the preceding month. No final or interim claim for payment for any such work or expense will be considered which has not been included in such particulars. Provided always that the Employer shall at his discretion be entitled to authorize payment to be made for any such working expense, notwithstanding the Contractor's failure to comply with this condition, that the Contractor has, at the earlier practicable opportunity, notified the Employer in writing that he intends to make a claim for such work, provided always that a release of payment shall be preceded by the claim and valuation of variation, in that order.

52. PLANT TEMPORARY WORKS AND MATERIALS

1. Plant, etc. exclusive use for the works: All Constructional Plant, Temporary Works and materials provided by the Contractor shall, when brought to the Site be deemed to be exclusively intended for the execution of the Works and the Contractor shall not remove the same or any part thereof, except for the purpose of moving it from

one part of the Site to another, without the consent, in writing, of the Engineer which shall not be unreasonably withheld.

2. Removal of plant, etc.: Upon completion of the Works the Contractor shall remove from the Site all the said Constructional Plant and Temporary Works remaining thereon and any unused material provided by the Contractor to the satisfaction in the Engineer.

3. Employer not liable for damage to plant, etc. The employer shall not at any time be liable for the loss of or damage to any of the said Constructional Plant, Temporary Works or materials same as mentioned in Clause 19 and 62 hereof.

4. Octroi, Sales tax, VAT, Cess and other imposts. The Contractor shall pay Octroi, Sales Tax, VAT, Cess, Work Contract Tax and all other taxes, duties and charges as may be applicable from time to time in respect of materials purchased by him or plants and equipment brought to Site. No separate payment shall be made for all these and they shall be deemed to have been covered within the Contractor's rates for the finished items of work.

5. Temporary Works: At lowest fourteen (14) days in advance of taking up any temporary works, the contractor shall submit to the Engineer for approval complete drawings of all temporary works he may require for the execution of the Works. He shall, so required by the Engineer, submit his calculations relating to the strength of the temporary works proposed. Modifications that the Engineer may require shall be made by the Contractor at the latter's cost and expenses. At the discretion of the Engineer, a higher stress up-to a maximum of twenty five percent (25%) in excess of the stress normally allowed for permanent structures may be permitted in the design of temporary works. Notwithstanding the approval by the Engineer of any of the temporary works, the contractor shall remain wholly responsible for their adequacy, safety, proper maintenance and of all obligations in regard to such works specified or implied in the Contract, until the removal of such works.

53.0. APPROVAL OF MATERIAL, ETC. NOT IMPLIED

The operation of Clause 52 hereof shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein shall not interfere with rejection of any such materials at any time by the Engineer.

54.0. MEASUREMENT

For measurement, the metric system should be used.

55.0. 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.

56.0. 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.

57.0. PAYMENT TERM

Terms of Payment : Item wise break up

1 Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7) Pipes conforming to IS 8329-2000 (Third revision) in standard length 4 m, 5 m, 5.50 m, 6 m for push-on joint (rubber gasket) with internal cement mortar lining and external protection by metallic zinc coating with finish layer of epoxy coating of outside as per IS: 8329-2000 specification with necessary jointing material rubber gasket (IS: 5382:1985) including transportation, loading unloading and stacking at site including free supply of polyethylene sleeves, Supplying HDPE (Materials grade PE-100) pipes conforming to IS 4984-1995 with latest revision & amendments if any Pressure Rating: PN 06 with necessary HDPE specials, Supplying PVC-O pipes conforming to IS 16647-2017 with latest revision & amendments if any & Laying of D.I. (K-7) Pipes, OPVC Pipes, HDPE Pipes & M.S. Pipes with all D.I. OPVC, and HDPE Specials & supplying, fitting & fixing of 10 mm th. M.S. Pipes with IS 3589 Fe 410, including earth work in excavation in trenches, shoring (if necessary) of adequate width having minimum depth to keep the top surface of pipe 1.00M below of the existing ground level in any kind of soil mixed with boulder, metal crust, concrete pavement, any road sub-grade and its flank etc., dewatering the trenches, preparing the bottom surface of the trenches for continuous bedding including sand filling (if necessary), Jack pushing work at PWD Crossing with M.S. Casing & carrier pipe and over ground installation to cross small ditches etc. supported with RCC pillars as & when necessary and fitting, fixing, jointing (all types of joints) valves, specials etc. as per requirement, in position, cutting, chamfering of pipes as required, carriage of materials from departmental store to work site, constructing sluice valve chambers including supply and fitting in position sluice valve of different dia. & supply and fitting in position D.I. Specials 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 where necessary, removing the surplus materials from site including all labour charges, tools and plants, hydraulic pressure testing, cleaning and disinfection of pipes etc. complete in all respect as per IS 12288-1987 (latest edition) and excluding Permanent Roads Restoration and the instruction of E.I.C. (D.I. pipes, Specials, rubber gaskets and other materials like M.S Pipe, Sluice valve, Air Release valve, Drain valve, D.I. Fittings, Mechanical Joints etc., where necessary, will be supplied by agency. The surplus and unused materials are to be removed and clean the sites at own cost.) **Note: Some Quantity of DI (K7) PIPE will be supplied by ULB.**

Approximate quantity of Pipes to be laid

ZONE -V

4) **HDPE Pipe Line:**

v)	110 mm dia.	42,100.00 m
vi)	125 mm dia. :-	260.00 m
vii)	140 mm dia. :-	210.00 m
viii)	160 mm dia. :-	785.00 m

5) **DI (K/7) Pipe Line:**

v)	150 mm dia :-	765.00 m
vi)	200 mm dia :-	1525.00 m (Excluding DI pipe supply)
vii)	250 mm dia. :-	405.00 m (Excluding DI pipe supply)
viii)	350 mm dia. :-	180.00 m(Excluding DI pipe supply)

6) **M. S. Pipe Line:**

	v)	150 mm dia. :-	7.50 m	
	vi)	200 mm dia. :-	15.00 m	
	vii)	250 mm dia. :-	5.00 m	
	viii)	350 mm dia. :-	2.50 m	
Total=46,260.00 m.				
Break up (diameter wise):				
A	Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7)/HDPE/OPVC/MS Pipes			40%
B	Supply and delivery at site ISI Mark Socket and Spigot jointing system centrifugally cast DI (K7)/HDPE/OPVC/MS Specials			10%
C	After completion of D.I./ HDPE/OPVC/ MS Pipe laying work with specials including filing all respect (diameter wise).			35%
D	After hydro-Testing of the Pipeline in accordance with IS : 3114 - 1965			5%
E	After water charge from OHR and completion of whole work complete in all respect with necessary valves and valves chambers etc.			10%
Total =				100%
Note:				
<i>a) 2% of Earnest money deposited earlier will be converted into Security deposit after awarding the Contract and 8% of security deposit, will be recovered from each running account bill.</i>				
<i>b) The 100% of Security deposit or Retention money will be returned after successful completion of the whole awarded work without any interest as per prevailing Government Rules.</i>				
<i>c) For work with five years Defect Liability Period:</i>				
i) No security deposit shall be refunded to the contractor for 1 st 3 years from the actual 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.				

58.0. APPROVAL ONLY BY MAINTENANCE CERTIFICATE

No Certificate other than the Maintenance Certificate referred to in Clause 59 hereof shall be deemed to constitute final approval of the Works.

59.0. MAINTENANCE CERTIFICATE

(1) The Maintenance Certificate stating that the Works have been completed and maintained to the satisfaction of the Engineer, shall be issued by him within twenty eight days after the expiration of the period of Maintenance, or if different periods of maintenance shall become applicable to different sections or parts of the Works, the expiration of the latest such period, or as Soon thereafter as any works ordered during such period, pursuant to Clauses 4) and 48 hereof (shall have been completed to the Satisfaction of the Engineer). With regard to defects that may arise during the Period of Maintenance, the Contractor shall be responsible to carry out restoration/rectification of damages as are attributable to defects in works carried out under this Contract. The decision of the Employer in the regard shall be final and binding on the contractors.

2) Cessation of Employer's liability: The Employer shall not be liable to the Contractor for any matters or thing arising out of or in connection with the Contractor for any matters or thing arising out of or in connection with

the Contract or the execution of the Works, unless the Contractor shall have made a claim in writing in respect thereof before the delivery of the Maintenance Certificate under this Clause.

3) Unfulfilled obligations: Notwithstanding the issue of the Maintenance Certificate the Contractor and, subject to the sub-clause (2) of the Clause, the Contractor shall remain liable for the fulfilment of any obligation incurred under the provisions of the Contract prior to the issue of the Maintenance Certificate which remains imperforated at the time such Certificate is issued and for the purpose of determine the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties hereto.

60.0. REMEDIES AND POWERS

1) Default of contractor: If the Contractor shall become bankrupt, or have a receiving order made against him, or shall present his petition in bankruptcy, or shall made an arrangement with or assignment in favour of his creditors, or shall age to carry out the Contract under a committee of inspection of his creditors or, being a corporation, shall go into liquidation (other than a voluntary liquidation for the purpose of amalgamation or reconstruction), or if the Contractor shall assign the Contract, without the consent in writing of the Employer first obtained, or shall have an execution levied on his goods, or if the Engineer shall certify in goods, or if the Engineer shall certify in writing to the Employer that in his opinion the Contractor :

- a) Has abandoned the Contract, or
- b) Without reasonable excuse has failed to commence the Works or has suspended the progress of the Works for twenty eight days after receiving from the Engineer written notice to proceed, or
- c) Has failed to remove materials from the Site or to pull down and replace work for twenty eight days after receiving from the Engineer written notice that the said materials or work had been condemned and/or rejected by the Engineer under these conditions, or
- d) Despite previous warnings by the Engineer, in writing, is not executing the Works in accordance with the Contract, or is persistently or flagrantly neglecting to carry out his obligation under the Contract, or
- e) Has, to the detriment of good workmanship, or in defiance of the Engineer's instructions to the contrary, sublet any part of the Contract.

Then the Employer may, after giving fourteen day notice in writing to the Contractor, enter upon the Site and the Works and expel the Contractor therefore without thereby avoiding the Contract, or releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and powers conferred on the Employer or the Engineer by the Contract, and may himself complete the Works or may employ any other contractor or agency to complete the Works. The Employer or such other contractor may use for such completion so much of the Constructional Plant, Temporary Works and materials, which have been deemed to be reserved exclusively for the execution of the Works, under the provisions of the Contract, as he or they may think proper and the Employer may, at any time, sell any of the said Constructional Plant, Temporary Works used and unused materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to him from the Contractor under the Contract.

2) Valuation at date of forfeiture: The Engineer shall, as soon as may be practicable after any such entry and expulsion by the Employer, fix and determine expert, or by or after reference to the parties, or after such investigation or enquiries as he may think fit to make or institute and shall certify what amount, if any, had at the time of such entry and expulsion been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract and the value of any of the said unused or partially used materials, and Constructional Plant and any Temporary Works.

3) Payment after forfeiture: If the Employer shall enter and expel the Contractor any money on account of the Contract until the expiration of the Period of Maintenance and thereafter until the costs of execution and maintenance, damages for delay in completion, if any and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sums or sums, if any, as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount shall exceed the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly.

61.0. URGENT REPAIRS

If, by reason of any accident, or failure, or other event occurring to in or in connection with the Works, or any part thereof, either during the execution of the Works, or during the period of Maintenance, any remedial or other work or repair shall, in the opinion of the Engineer or the Engineer's Representative, be urgently necessary for the safety of

the Works and the Contractor in unable or unwilling at once to do such work or repair, the Employer may employ and pay other persons to carry out such work or repair as the Engineer or the Engineer's Representative may consider necessary. If the work or repair so done by the Employer is work which in the opinion of the Engineer, the Contractor was liable to do at his own expense under the Contract, all expenses properly incurred by the Employer in so doing shall be recoverable from the Contractor by the Employer, or may be deducted by the Employer from any sums due or which may become due to the Contractor. The Engineer or the Engineer's Representative, as the case may be, shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof in writing.

62.0. SPECIAL RISKS

Notwithstanding anything in the Contract contained:

- 1) No liability for war, etc., Risks- The Contractor shall be under no liability whatsoever whether by way of identity or otherwise for or in respect of destruction of or damage to the Works, same to work condemned under the provision of Clause 38 hereof prior to the occurrence of any special risk hereinafter mentioned, or to property whether of the Employer or third parties, or for or in respect of injury or loss of life which is the consequence of any special risk as hereinafter defined The employer shall indemnify and save harmless to Contractor against and from the same and against and from the same and against and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising there out or in connection therewith.
- 2) Damage to works, etc., by special risks - If the Works or any materials on or near or in transit to the Site, or any other property of the Contractor used or intended to be used for the purposes of the Works, shall sustain destruction of damage by reason or any of the said special risks the Contractor shall be entitled to payment for:
 - a) Any permanent work and for any materials so destroyed or damaged and so far as may be required by the Engineer, or as may be necessary for the completion of the Works, or the basis of cost plus such profit as the Engineer may certify to be reasonable;
 - b) Replacing or making good any such destruction or damage to the Works;
 - c) Replacing or making good such materials or other property of the Contractor used or intended to be used for the purposes of the Works.
- 3) Projectile missile etc.: Destruction, damage, injury or loss of life caused by the explosion or impact whenever and wherever occurring of any mine, bomb, shell, grenade, or other projectile, missile, ammunition, or explosive of war, shall be deemed to be a consequence of the said special risks.
- 4) Increase cost arising from special risks: The Employer shall repay to the Contractor any increased cost of or incidental to the execution of the Works, other than such as may be attributable to the cost of reconstructing work condemned under the provisions of Clause 38 hereof, prior to the occurrence of any special risk, which is howsoever attributable to or consequent on or the result of or in any way whatsoever connected with the said special risks, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall as soon as any such increase of cost shall come to his knowledge forthwith notify the Superintending Engineer, West Circle, Municipal Engineering Directorate thereof in writing.
- 5) Special Risks: The special risks are war, (whether war be declared or not), invasion, act of foreign enemies, the nuclear and pressure waves risk described in Clause 19(2) hereof, or in so far as it relates to the country in which the works are being or are to be executed or maintained, rebellion, revolution, insurrection, military or usurped power, civil war, or unless solely restricted to the employees of the Contractor or of his Sub-Contractor and arising from the conduct of the works, riot, commotion or disorder.
- 6) Outbreak of war: If, during the currency of the Contract, there shall be an outbreak of war, whether war is declared or not, in any part of the world which, whether financially or otherwise, materially affects the execution of the works, the Contractor shall, unless and until the Contract is terminated under the provisions of this Clause, continue to use his best endeavours to complete the execution of the Works. Provided always that the Employer shall be entitled at any time after such outbreak of war to terminate the Contract by giving written notice to the Contractor and upon such notice being given, this Contract shall, except as to the rights of the parties under this Clause and to the operation of Clause 64 hereof, terminate but without prejudice to the rights of either party in respect of any antecedent breach thereof
- 7) Removal of plant of termination: If the Contract shall be terminated under the provisions of the last preceding sub-clause, the Contractor shall, with all reasonable dispatch, remove from the Site all constructional Plant and shall give similar facilities to his Sub-Contractors to do so.
- 8) Payment if Contract terminated: If the Contract shall be terminated as aforesaid, the Contractor shall be paid by the Employer, in so far as such amounts or items shall not have already been covered by payments on account

made to the Contractor, for all work executed prior to the date of termination at the rates and prices provided in the Contract and in addition

- a) The amounts payable in respect of any preliminary items, so far as the work carried out or performed, and a proper proportion as certified by the Engineer of any such items, the work or service comprised in which has been partially carried out or performed.
- b) The cost of materials or goods reasonably ordered for the Works which shall have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery such materials or goods becoming the property of the Employer upon such payments being made by him.
- c) A sum to be certified by the Engineer, being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works in so far as such expenditure shall not have been covered by the payments in this sub-clause before mentioned.
- d) Any additional sum payable under the provisions of sub-clause (1), (2) and (4) of this Clause.

Provided always that against any payments due from the Employer under this sub-clause, the Employer shall be entitled to be credited with any outstanding balances due from the contractor for advances in respect of Constructional Plant and materials and any other sums which at the date of termination were recoverable by the Employer from the Contractor under the terms of the Contract and provided that if the termination be made in exercise of Clause C-60(1), no payment shall be released under Clause C-62(8) (a) to (d).

63.0. FRUSTRATION

Payment in event of Frustration: A war, or other circumstances outside the control of both parties, arises after the Contract is made so that either party is prevented from fulfilling his contractual obligations, or under the law governing the Contract, the parties are released from further performance, then the sum payable by the Employer to the Contractor in respect of the work executed shall be the same as would have been payable under Clause 62 hereof if the Contract had been terminated under the provisions of Clause 62 thereof.

64.0. SETTLEMENT OF DISPUTES

Settlement of Disputes: If any dispute or difference of any kind whatsoever shall arise between the Employer and the Contractor or the Engineer and the Contractor in connection with, or arising out of the Contract, of the execution of the Works, whether during the progress of the Works or after their completion and whether before or after the termination, abandonment or breach of the Contract, it shall be settled in the court of law having jurisdiction provided that such a recourse shall not be resorted to without exhausting all other reasonable avenues of redresser.

65. NOTICES

- (1) Contractor's local office and service of notices to contractor: The Contractor shall have a local office at or near the Site of Work full address thereof shall be intimated by the Contractor or his authorized Agent to the Employer as well as to the Engineer. All Certificates notice or written orders to be given by the Employer or by the Engineer to the Contractor under the terms of the Contract shall deemed to have been served by sending by post to or delivering the same to the Contractor's local office.
- (2) Service of notice to employer: All Notice to be given to the employer under the terms of the Contract shall be served by sending by Registered post or delivering the same to the address given below:

WEST CIRCLE, M.E.DTE.

P.O. - Burdwan, Dist. - Purba Burdwan

- (3) Change in Address of the Employer, the Engineer or the Contractor may change a nominated address to another address by prior written notice to the other two and in that event shall resume receiving of communication 28 days after delivery of such notice.

66. PRICE ADJUSTMENT

- (1) The prices to be paid to the contractor for the whole work shall remain firm during the stipulated Contract period or extension thereof and no price adjustment shall be allowed.
- (2) The statutory changes in price in the form of Taxes, duties etc. shall however be taken into account. For this purpose the taxes and duties prevailing on the last date of submission of the technical bid (or revised price bid, if applicable) shall be taken as the base. Such taxes and duties for different bought out items shall be specified by the contractor, falling which the assessment of the Employer shall be final and binding. Changes in price of Petrol, Diesel Lubricants, and Electricity etc. shall not be considered.

67.0. MISCELLANEOUS

Dangerous materials: Explosive, chemicals, combustible articles and items and similar materials intended for the Works shall be conveyed, stored and used by the Contractor and his sub-contractors In accordance with all laws, decrees, instruments, orders and regulations imposed by the Government or any of its instrumentalists. Observance of all safety provisions shall be the obligation of the Contractor and nothing herein shall release him from full responsibility for damage or injury to persons or properties resulting from his use of these dangerous materials.

68.0. CONTRACT CONFIDENTIAL

Except with the prior written approval of the Employer and to subject the such conditions as may be prescribed, the Contractor and/or any member of his organization shall not in any case communicate to any person or entity and information connected with the performance of the Services or in carrying out the Works not make public any information for the purpose of publication or advertisement. The Contractor shall treat all matters related to the Contract as private and confidential.

69.0. CONTRACTOR TO PROVIDE FACILITIES

The Contractor shall provide such labours, materials and other facilities that the Engineer or his Representative may require to assist them in carrying out normal tests and checks on materials and workmanship and in measurement of works.

70.0. INTERFERENCE WITH EXISTING FACILITIES

The Contractor shall carry out the works in such a way as to the minimum extent of interference to the use of existing facilities of any kind.

71.0. ACTS OF INFLUENCE

Neither the Contractor nor any of his Agents, Representatives, Employees or members of his organization shall commit any act which may influence the judgment or decision of the Employer or the Engineer or any their agents, representatives, employees or members of their respective organization. Any breach of this provision shall constitute a breach of Contract on the part of the Contractor and apart from penal measures against the Contractor according to the law the Employer shall have the Authority to take action for the Contractor's default in terms of the provisions of Clause 60 hereof.

72.0. INDIVIDUALS NOT PERSONALLY RESPONSIBLE

No personal liability shall be imposed on the members or the Employer or on the Engineer or their duly authorized representatives, agents or employees for acts performed or discharged in the exercise of their authorized duties or responsibilities or in carrying out their obligations by virtue of the provisions or scope of work contained in the Contract, if being understood that they are acting solely as agents and representatives of the Employer in good faith.

73.0. CONTRACT EMBODIES WHOLE ARRANGEMENT

The Contract becomes effective immediately on Issue of the letter of acceptance to the successful Bidder. The Contract (with annexure if any) as subsequently executed embodies the whole arrangement between the parties entering into the Contract All previous correspondence, negotiations, representation, explanations statements, promises or guarantees (whether oral or written) as are not included with the Contract as executed, shall normally be excluded in the interpretation of the Contract.

74.0. COMPLETION DRAWING

Completion drawing including detailed construction drawing shall have to be submitted in original with 6 (six) 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 as in Clause C-57 (6).

75.0. BIDDER SHALL VISIT THE SITE

Intending Bidder shall visit the site and make him thoroughly acquainted with the local site condition, nature and requirements of the works, facilities of transport condition effective labour and materials, access, delivery, loading, unloading and storage for materials and removal of unsuitable materials. The Bidder shall be deemed to be incorporated in their Bidder quotation for cost of procurement, carriage, freight and other charges as also for any special difficulties and including incorporation any or all inconveniences, police restriction for transport etc for proper execution of work as indicated in the drawing. The successful Bidder will not be entitled to any claim of compensation for difficulties faced or for losses incurred on account of any condition which existed before the commencement of the work or which in the opinion of the owner might be deemed to have reasonably been inferred to be so existing before commencement of work.

76.0 GOVERNMENT AND LOCAL RULES / LAW OF STATE

The contractor shall conform to the provisions of all local Bye-laws and Acts relating to the work and to the work and to the Regulations etc. of the Government and Local Authorities and of any company with whose system the structure is proposed to be connected. The contractor shall give all notices required by said Act, Rules, Regulations and Bye-laws etc. and pay all fees payable to such authority/authorities for execution of the work involved. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restorations etc. and shall indemnify the owner against such liabilities and shall defend all actions arising from such claims or liabilities.

77.0 STORE SHED

The Contractor shall provide at his own cost a store shed of adequate capacity for storing materials. The shed should be of such construction that it must protect the materials against deterioration. A raised platform well above the highest flood level shall be made for stacking cement in such a way that the cement procured earlier can be consumed first so as to avoid deterioration due to prolonged stacking. Any modifications to the store shed in suggested by the Superintending Engineer of West Circle of Municipal Engineering Directorate recommendation for better storing of materials that shall have to be carried out by the Contractor at his own cost.

78.0 LAND FOR CONTRACTOR'S ESTABLISHMENT

For the purpose of constructing Contractor's Store yard, go-downs, site office and ancillaries, he may utilize portion of the land belonging to the Employer at such location as would not interfere to execute other co works. For all these, the Contractor shall have to obtain the requisite permission of the Engineer. The Contractor shall for this purpose submit to the Engineer for his approval a plan of the proposed layouts for the site facilities. The Engineer reserves the right to alter and modify the Contractor's proposals as the Superintending Engineer of West Circle of Municipal Engineering Directorate may deem fit.

79.0 WATER AND ELECTRICITY FOR CONSTRUCTION

1. The Contractor shall have to make his own arrangement for supply of water and for electrical power that may be required for or in connection with the works. No payment on this account will be entertained. However, Municipality may assist in getting power.
2. Arrangement for supply of piped water may not be possible. The Contractor will have to make arrangement for supply of drinking water and water required for constructions works by sinking tube wells or other suitable alternatives. The Bidders shall investigate this matter during site inspection before submission of Bidders: No payment will be entertained on this account.
3. Nevertheless electrical power from usual supply agencies may not be continuously available due to various reasons including load shedding. In case of non-availability of electrical power the contractor will have to make his own arrangements for electrical power through generators. Contractor should include such aspects while quote his rate. No payment will be entertained on this account. When drawing power from the Municipality power point, the contractor shall have to bear the cost of electrical charges. The route of conveyance shall be subject to approval by the Engineer-in-Charge and will be in accordance with prevailing I.E. Rules.

80.0 FIRST-AID FACILITIES

The Contractor shall arrange for medical attentions to be promptly available when necessary. He shall for this purpose provide a number of First-Aid stations at suitable locations within easy reach of the workmen and other staff engaged in the Works. Each First-Aid station shall be properly equipped and will remain in charge of a suitably

qualified person. The Contractor shall also provide for transport of serious cases to the nearest hospital. All these arrangements shall be to the approval of the Superintending Engineer of West Circle of Municipal Engineering Directorate.

81.0 FIRE FIGHTING ARRANGEMENT / FIRE EXTINGUISHING ARRANGEMENT

The Contractor shall provide suitable arrangement for fire fighting / fire Extinguishing. For this purpose he shall provide requisite number of Fire Extinguishers and adequate number of buckets, some of which are to be always filled with sand and some with water. This equipment shall be provided at suitable prominent and easily accessible places and shall be properly maintained.

82.0 SAFETY MEASURES

The Contractor shall be responsible for the safety of all workmen and other persons entering or in the works and shall at his own expense and to the approval of the Superintending Engineer of West Circle of Municipal Engineering Directorate, take all measures necessary to ensure their safety. Such measures shall include the provisions of helmets (Specially where work at a height is involved), provision of gum-boots to workers engaged in cement concrete or other works, scaffolding or other measures required for working at a height, shall be strong and rigid and have to be provided with suitable and convenient access. Shoring required for deep excavation must be adequate and rigidly braced and strutted. The Contractor shall provide depending on the exigencies of the location and nature of work and other relevant factors, other safety measure that the Superintending Engineer of West Circle of Municipal Engineering Directorate may direct.

83.0 SUPERVISORY STAFF

The Contractor shall engage an experienced and qualified Site Manager to be in day-to-day charge of the work and he should be authorized to receive instructions from the Engineer. He shall receive orders given by the Engineer from time to time and shall act on them promptly. The Contractor shall, during working hours, maintain engineer and supervisors of sufficient training and experience to supervise the various items and operations of the work. Orders and directions as given to such engineers and supervisors or other staff of the Contractor shall be deemed to have been given to the Contractor. The Engineer of the Contractor responsible for this work, by whatever designation he may be known, but who will be specified on award of the Contract shall at least once in a fortnight inspect the works and shall discuss with the Engineer the conduct and progress of the work.

84.0 JOINT SURVEY

The Contractor shall satisfy himself regarding the correctness of the layouts, levels etc. as are shown in the drawings or given in the specifications. Before starting the work he shall also carry out at his own cost, survey of the whole work site jointly with the representative(s) of the Authority. Discrepancies noticed between drawings and the joint survey shall be informed in writing to the Superintending Engineer of West Circle of Municipal Engineering Directorate and got set right before execution of works. Such deviations as may arise out of the joint survey shall not violate the provisions of contract or entitle the Contractor to any extras in any way.

85.0 LAYOUT AND CHECKING

The contractor shall provide all labours, skilled and unskilled and all materials needed for carrying out, as directed, survey, laying out, setting out, checking of works, taking measurements, testing hydraulic and other structures, without any extra payment. The Contractor shall also provide approach and access to all the works and stores without any extra cost.

85. Reference Points

After the joint survey has been plotted and approved by the E.I.C. recommendation or his authorized representative, permanent base lines, cross line and bench marks shall be established by the Contractor so as to serve as reference points and "Dimensional Control Basis" of works. He shall prepare and submit a plan showing such reference points with their full description.

86.0 CO-OPERATION WITH OTHER CONTRACTORS

Some works in plant site, have been already done/are being done/will be done through other contractors. In the event of any such work the contractor shall have to work in full co-operation and in close co-ordination with other contractor/contractors. Any difficulty that may arise in this connection will have to be amicably settled by the

contractors amongst themselves. If that be not possible, the matter shall be referred to the Superintending Engineer of West Circle of Municipal Engineering Directorate whose decision shall be final and binding on all the parties.

However, the site allocated to the contractor may be fenced at the Contractor's cost provided any necessary access to others as it required is given. The contractor will be permitted to use only the access to the site as indicated on the site plan of Bidder Drawing.

87.0 APPROVAL OF MATERIALS AND EQUIPMENT TO BE USED

Samples in large enough quantity of materials and descriptive data therefore requiring prior approval shall be furnished by the contractor to the E.I.C. Municipal Engineering Directorate in good time before the collection of such materials and equipment so as to permit inspection and testing. The samples shall be properly marked to show the name of the materials, name of the manufacturer and place of origin and item for which it is to be used. Only upon approval, the materials of approved quality shall be brought to site. Samples approved shall be on exhibition at all times, properly stores and prevented from deterioration for the purpose of comparison with the materials brought to site of work from time to time for use in work.

88.0 CONSTRUCTION RECORDS

The Contractor shall keep and supply to the Engineer the up-to-date records of the dimensions and positions of all permanent works (showing therein any approved deviation between the drawing and the work as actually executed), The information available from the records must be adequate and complete to enable preparation of "as- made" drawing by the Contractor from these records.

89.0 PROGRESS PHOTOGRAPHS

The Contractor shall at his own cost and expense arrange to take periodic photographs to show the progress of work or interesting features thereof. The time and the position where from a photograph is to be taken should be as per direction of the Engineer or his Representative, Three copies of each of these photographs to an enlarged size of about 25 cm x 20 cm together with the CD/DVD, shall be supplied to the Superintending Engineer of West Circle of Municipal Engineering Directorate and these shall become the property of the Employer. Each photograph shall be suitably captioned with the date of the photograph, location and other relevant particulars, further prints and CD of the photograph, location and other relevant particulars shall not be kept by the Contractor or reproduced without written permission of the Employer. Digital Camera with 9.0 Mega pixels should be used for taking photos. Restrictions to photography or security restrictions that may be applicable to any particular area must be carefully and rigidly observed. The number of photographs (each consisting of three prints and the CD/DVD as aforesaid) for the complete works is not expected to exceed 100 (one hundred), No photograph of the plant and other installations shall be taken without prior approval of the concerned officers.

90.0 SATISFACTORY COMPLETION OF VARIOUS ITEMS

The sub-works included in the Schedule of Prices are job works on lump sum basis. The various items of the sub-work are to fit in perfectly in the whole plant in every respect so as to form effective working parts of the whole plant as per satisfaction of the Superintending Engineer of West Circle of Municipal Engineering Directorate. Each sub-work will be considered as complete when it is completed as per specifications and put into commission, as per standards, as a successful component part of the whole plant.

91.0 CHECKING QUALITY OF WORK

Should the Engineer consider it necessary to satisfy himself as to the quality of the work, the Contractor shall, at any time during continuance of the contract, offer sample of work done or if necessary pull down a reasonable part of the work enough for such inspection and testing as the Engineer may direct and the Contractor shall make good the same at his cost and to the satisfaction of the Engineer without any extra cost.

92.0 RECORDING MEASUREMENTS

Though the offer is on lump sum basis, the Contractor shall give not less than five days' notice, in writing to the Engineer, about the work which is proposed to be covered or placed beyond the reach of measurements so that measurements may be taken before the work is covered, bar bending schedule is to be provided five days before the casting date. If any work is covered without such written notice, the same shall be uncovered at the cost of the

Contractor and in default hereof no payment or allowances shall be made for such work. These requirements apply for all the component items executed for the sub-work for which lump sum price is quoted.

93.0 SITE ORDER BOOKS

1. For the purpose of quick communication between the Engineer or his Representative and the Contractor or his Agent or Representative, Site order Books shall be maintained at site in the manner described below. Any communication relating to the works may be conveyed through records in the Site Books. Such a communication from one party to the other shall be deemed to have been adequately served specified elsewhere in the General Conditions of Contract. Each Site Book shall have machine-numbered pages in triplicate and shall be carefully maintained and preserved.

2. The Contractor shall keep Site Books at various places Site work is being carried out so as to be readily available to the Engineer or his Representative. Any instruction or order which the Engineer or his Representative may like to issue to the Contractor may be recorded by him in the Site Book and two copies thereof taken by him for his record. The Contractor or his Agent or Representative may similarly maintain separate Site Book for any communication he may like to send to the Engineer or his Representative. Two copies thereof when sent to the Engineer's Representative and receipt obtained thereof, will constitute adequate service of the communication to the Engineer.

94.0 TECHNICAL ASSISTANCE

Training of Technical Personnel:-The Contractor shall undertake to train three technical personnel selected and sent by the ULB to the works of the Contractor. These engineers shall be given special training in the shop and drawing office where the equipment will be designed and manufactured and where possible in any other plant where Contractor's manufactured equipment of similar type is under installation tests or maintenance, to enable them to become fully familiar with the equipment being supplied by the Contractor. The period of training shall be as decided by the ULB but in any case, shall not exceed six months for any individual. During the period of training the Contractor shall arrange for reasonable accommodation of the engineers and transport from the place of accommodation to the works or plant. The Contractor's supervisory personnel at site shall continuously and intensively instruct and train an adequate number of the ULB authority operating and maintenance personnel at site during erection and commissioning of the plant to enable them to take over the operation and maintenance of the plant after the maintenance period. No extra payment shall be made by ULB for the training of personnel under this clause.

The Superintending Engineer

West Circle, M.E.Dte.

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 has 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 be obtained by the bidder prior to pre-bid meeting and quoting the rate by E.I.C 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 link 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 lowest 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

Cement shall conform for IS: 12269; 1987 Cement tests shall have to be carried out at Contractor's expense as and when directed. Cement, which has or practically set, shall not be used under any circumstances. The important structures should be constructed with the grade of cement not below 53 (Grade-53). No extra payment will be made for using Grade-53 cement or more grades available in departmental store.

The brand of cement used for the work will selected & approve 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 comers 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 M20. 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 reputed brand should be used to maintain workability and in making concrete for water retaining structures with prior approval of E.I.C.
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 least 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 least 10 (ten) days after laying. The surface of unfinished work shall be cleaned and thoroughly wetted before joining new work to it.

**The Superintending Engineer
West Circle, M.E.Dte.**

SECTION E

ANNEXURE –I

Drawing of Pipeline network

The copy of drawing is to be collected from the office of: -

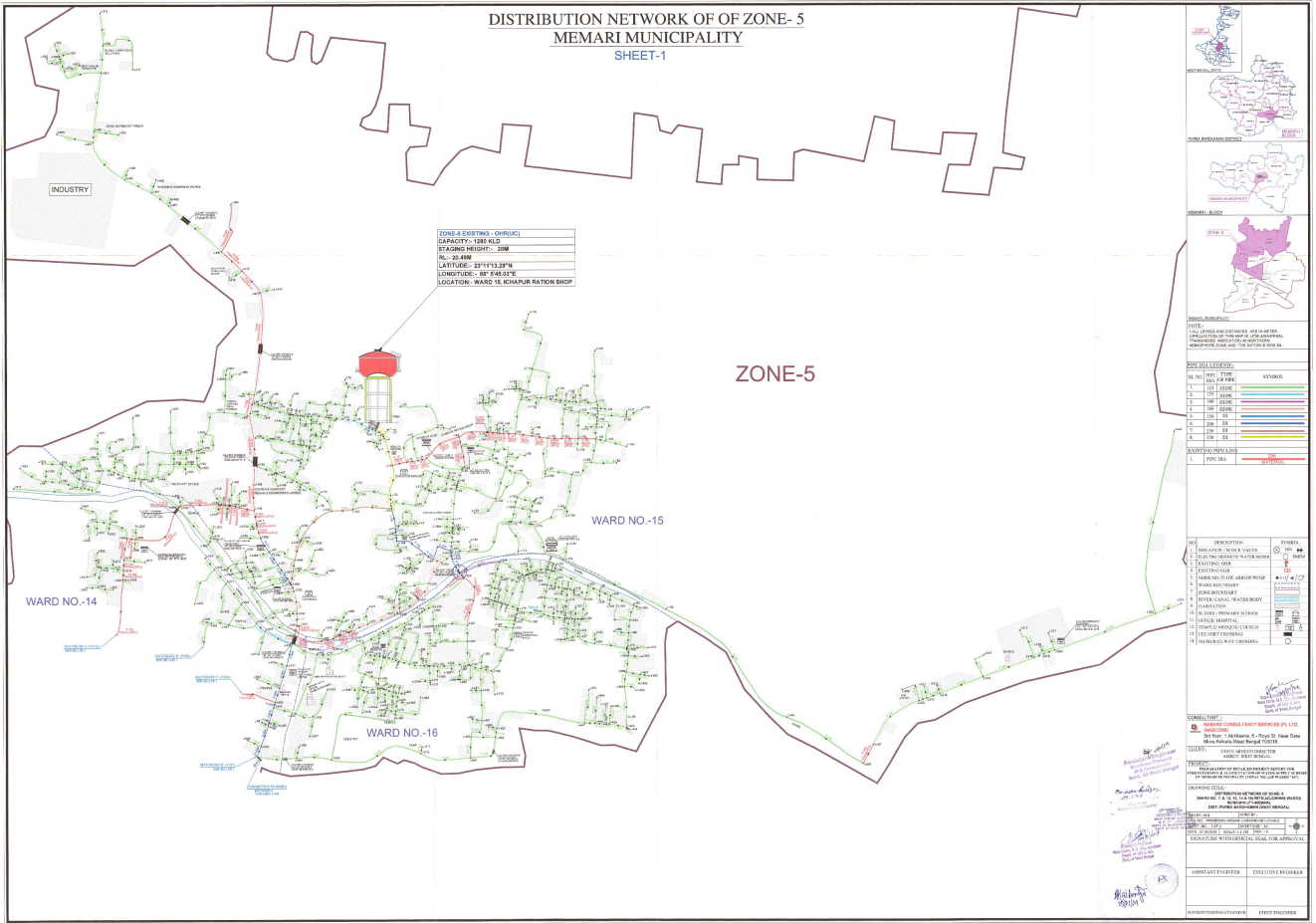
The Executive Engineer
Burdwan Division, Purta Bhavan
Municipal Engineering Directorate,
Department of Municipal Affairs,
Dist: - Purba Burdwan,
West Bengal,

**The Superintending Engineer
West Circle, M.E.Dte.**

BWV

BWV

**DISTRIBUTION NETWORK OF OF ZONE- 5
MEMARI MUNICIPALITY
SHEET-1**



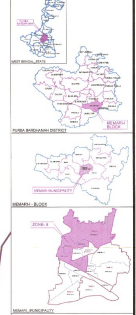
(ZONE 5 EXISTING CONDUIT)
 CAPACITY: 150 KLD
 STAGING HEIGHT: 20M
 No. 30.408
 LATITUDE: 25°11'11.27"N
 LONGITUDE: 88°54'45.0"E
 LOCATION: WARD 15, KHAMRUR RATION SHOP

ZONE-5

WARD NO.-14

WARD NO.-15

WARD NO.-16



SYMBOL LEGEND:

No.	SYMBOL	DESCRIPTION
1	(Green line)	150 KLD CONDUIT
2	(Red line)	150 KLD CONDUIT
3	(Blue line)	150 KLD CONDUIT
4	(Black line)	150 KLD CONDUIT
5	(Yellow line)	150 KLD CONDUIT
6	(Purple line)	150 KLD CONDUIT
7	(Light blue line)	150 KLD CONDUIT
8	(Light green line)	150 KLD CONDUIT
9	(Light red line)	150 KLD CONDUIT
10	(Light yellow line)	150 KLD CONDUIT
11	(Light purple line)	150 KLD CONDUIT
12	(Light light blue line)	150 KLD CONDUIT
13	(Light light green line)	150 KLD CONDUIT
14	(Light light red line)	150 KLD CONDUIT
15	(Light light yellow line)	150 KLD CONDUIT
16	(Light light purple line)	150 KLD CONDUIT
17	(Light light light blue line)	150 KLD CONDUIT
18	(Light light light green line)	150 KLD CONDUIT
19	(Light light light red line)	150 KLD CONDUIT
20	(Light light light yellow line)	150 KLD CONDUIT
21	(Light light light purple line)	150 KLD CONDUIT
22	(Light light light light blue line)	150 KLD CONDUIT
23	(Light light light light green line)	150 KLD CONDUIT
24	(Light light light light red line)	150 KLD CONDUIT
25	(Light light light light yellow line)	150 KLD CONDUIT
26	(Light light light light purple line)	150 KLD CONDUIT
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30	(Light light light light light yellow line)	150 KLD CONDUIT
31	(Light light light light light purple line)	150 KLD CONDUIT
32	(Light light light light light light blue line)	150 KLD CONDUIT
33	(Light light light light light light green line)	150 KLD CONDUIT
34	(Light light light light light light red line)	150 KLD CONDUIT
35	(Light light light light light light yellow line)	150 KLD CONDUIT
36	(Light light light light light light purple line)	150 KLD CONDUIT
37	(Light light light light light light light blue line)	150 KLD CONDUIT
38	(Light light light light light light light green line)	150 KLD CONDUIT
39	(Light light light light light light light red line)	150 KLD CONDUIT
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48	(Light light light light light light light light light green line)	150 KLD CONDUIT
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51	(Light light light light light light light light light purple line)	150 KLD CONDUIT
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54	(Light light light light light light light light light light red line)	150 KLD CONDUIT
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60	(Light light light light light light light light light light light yellow line)	150 KLD CONDUIT
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78	(Light light light light light light light light light light light light light light light green line)	150 KLD CONDUIT
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81	(Light light light light light light light light light light light light light light light purple line)	150 KLD CONDUIT
82	(Light light light light light light light light light light light light light light light light blue line)	150 KLD CONDUIT
83	(Light light light light light light light light light light light light light light light light green line)	150 KLD CONDUIT
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86	(Light light light light light light light light light light light light light light light light purple line)	150 KLD CONDUIT
87	(Light light light light light light light light light light light light light light light light light blue line)	150 KLD CONDUIT
88	(Light light light light light light light light light light light light light light light light light green line)	150 KLD CONDUIT
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90	(Light light light light light light light light light light light light light light light light light yellow line)	150 KLD CONDUIT
91	(Light light light light light light light light light light light light light light light light light purple line)	150 KLD CONDUIT
92	(Light light light light light light light light light light light light light light light light light light blue line)	150 KLD CONDUIT
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96	(Light light light light light light light light light light light light light light light light light light purple line)	150 KLD CONDUIT
97	(Light light light light light light light light light light light light light light light light light light light blue line)	150 KLD CONDUIT
98	(Light light light light light light light light light light light light light light light light light light light green line)	150 KLD CONDUIT
99	(Light light light light light light light light light light light light light light light light light light light red line)	150 KLD CONDUIT
100	(Light light light light light light light light light light light light light light light light light light light yellow line)	150 KLD CONDUIT

SYMBOL LEGEND:

No.	DESCRIPTION	SYMBOL
1	INDUSTRY	(Grey shaded area)
2	ROAD	(Black line)
3	RAILWAY	(Black line with cross-ticks)
4	WATER TOWER	(Red circle with white center)
5	WATER RESERVOIR	(Blue circle)
6	WATER TANK	(Blue circle with cross-hatch)
7	WATER PUMP	(Black circle with cross-hatch)
8	WATER VALVE	(Black circle with cross-hatch)
9	WATER METER	(Black circle with cross-hatch)
10	WATER CONNECTION	(Black line with cross-hatch)
11	WATER MAIN	(Black line)
12	WATER BRANCH	(Black line)
13	WATER FEEDER	(Black line)
14	WATER DISTRIBUTION	(Black line)
15	WATER CONDUIT	(Black line)
16	WATER PIPE	(Black line)
17	WATER TRENCH	(Black line)
18	WATER DUCT	(Black line)
19	WATER CULVERT	(Black line)
20	WATER TUNNEL	(Black line)
21	WATER CONDUIT	(Black line)
22	WATER PIPE	(Black line)
23	WATER TRENCH	(Black line)
24	WATER DUCT	(Black line)
25	WATER CULVERT	(Black line)
26	WATER TUNNEL	(Black line)
27	WATER CONDUIT	(Black line)
28	WATER PIPE	(Black line)
29	WATER TRENCH	(Black line)
30	WATER DUCT	(Black line)
31	WATER CULVERT	(Black line)
32	WATER TUNNEL	(Black line)
33	WATER CONDUIT	(Black line)
34	WATER PIPE	(Black line)
35	WATER TRENCH	(Black line)
36	WATER DUCT	(Black line)
37	WATER CULVERT	(Black line)
38	WATER TUNNEL	(Black line)
39	WATER CONDUIT	(Black line)
40	WATER PIPE	(Black line)
41	WATER TRENCH	(Black line)
42	WATER DUCT	(Black line)
43	WATER CULVERT	(Black line)
44	WATER TUNNEL	(Black line)
45	WATER CONDUIT	(Black line)
46	WATER PIPE	(Black line)
47	WATER TRENCH	(Black line)
48	WATER DUCT	(Black line)
49	WATER CULVERT	(Black line)
50	WATER TUNNEL	(Black line)

SCALE: 1:1000

DATE: 10/10/2024

PROJECT: MEMARI MUNICIPALITY WATER SUPPLY PROJECT

DESIGNER: [Signature]

CHECKER: [Signature]

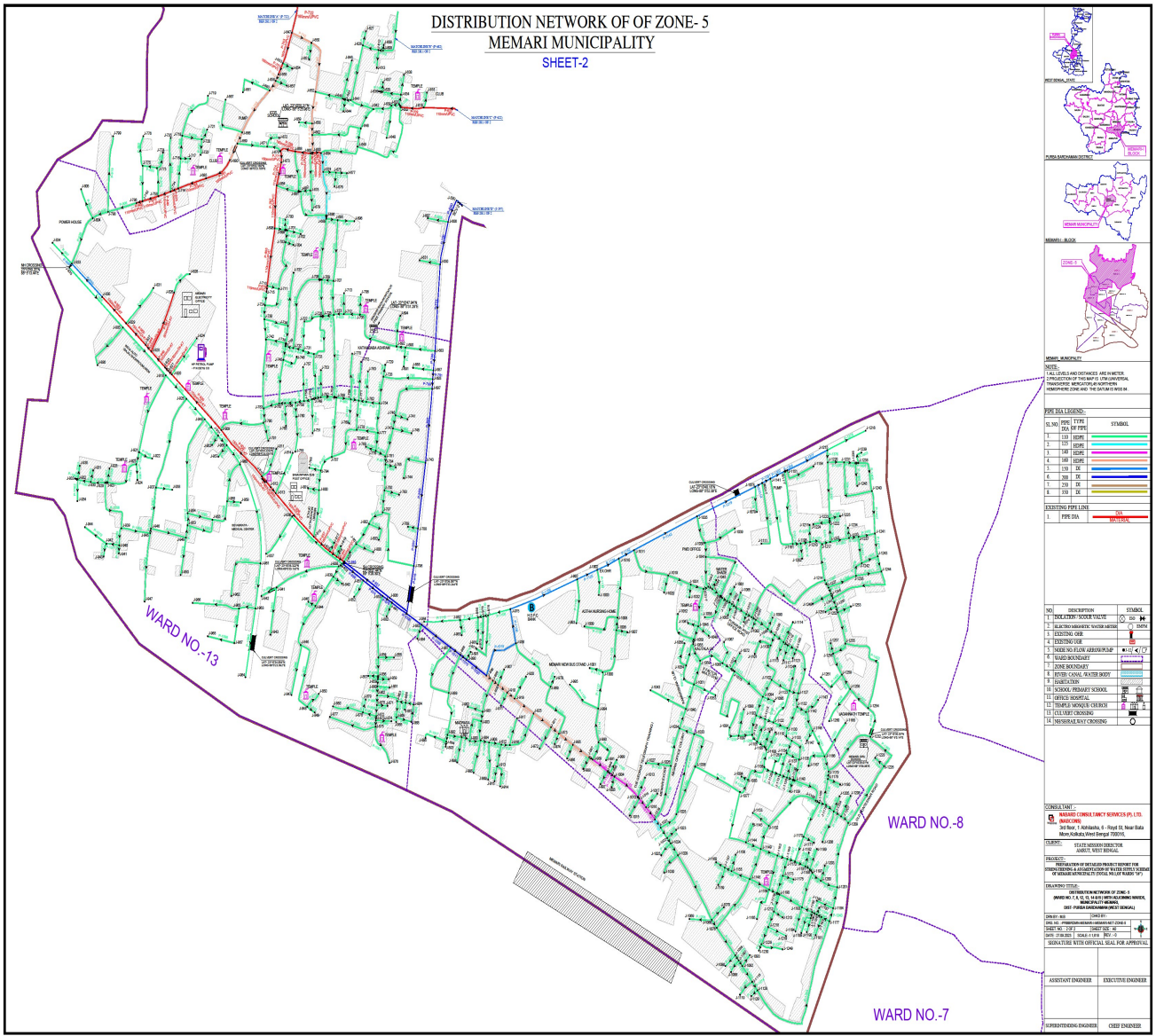
APPROVED BY: [Signature]

ASSISTANT ENGINEER **EXECUTIVE ENGINEER**

MEMARI MUNICIPALITY



**DISTRIBUTION NETWORK OF OF ZONE- 5
MEMARI MUNICIPALITY
SHEET-2**



NOTE:
1. ALL DIMENSIONS AND DISTANCES ARE IN METERS.
2. ALL DIMENSIONS AND DISTANCES ARE TO THE CENTER OF THE PIPE UNLESS SPECIFIED OTHERWISE.
3. ALL DIMENSIONS AND DISTANCES ARE TO THE CENTER OF THE PIPE UNLESS SPECIFIED OTHERWISE.

PIPE SIZES:

NO.	TYPE	SIZE	SYMBOL
1	100	100	
2	150	150	
3	200	200	
4	250	250	
5	300	300	
6	350	350	
7	400	400	
8	450	450	
9	500	500	

EXISTING PIPE LINES:

NO.	TYPE	SYMBOL
1	EXISTING	
2	PROPOSED	

NO. **DESCRIPTION** **SYMBOL**

1	100mm D.I.P.	
2	150mm D.I.P.	
3	200mm D.I.P.	
4	250mm D.I.P.	
5	300mm D.I.P.	
6	350mm D.I.P.	
7	400mm D.I.P.	
8	450mm D.I.P.	
9	500mm D.I.P.	
10	600mm D.I.P.	
11	750mm D.I.P.	
12	900mm D.I.P.	
13	1050mm D.I.P.	
14	1200mm D.I.P.	
15	1350mm D.I.P.	
16	1500mm D.I.P.	
17	1650mm D.I.P.	
18	1800mm D.I.P.	
19	2000mm D.I.P.	
20	2250mm D.I.P.	
21	2500mm D.I.P.	
22	2750mm D.I.P.	
23	3000mm D.I.P.	
24	3250mm D.I.P.	
25	3500mm D.I.P.	
26	3750mm D.I.P.	
27	4000mm D.I.P.	
28	4250mm D.I.P.	
29	4500mm D.I.P.	
30	4750mm D.I.P.	
31	5000mm D.I.P.	
32	5250mm D.I.P.	
33	5500mm D.I.P.	
34	5750mm D.I.P.	
35	6000mm D.I.P.	
36	6250mm D.I.P.	
37	6500mm D.I.P.	
38	6750mm D.I.P.	
39	7000mm D.I.P.	
40	7250mm D.I.P.	
41	7500mm D.I.P.	
42	7750mm D.I.P.	
43	8000mm D.I.P.	
44	8250mm D.I.P.	
45	8500mm D.I.P.	
46	8750mm D.I.P.	
47	9000mm D.I.P.	
48	9250mm D.I.P.	
49	9500mm D.I.P.	
50	9750mm D.I.P.	
51	10000mm D.I.P.	
52	10250mm D.I.P.	
53	10500mm D.I.P.	
54	10750mm D.I.P.	
55	11000mm D.I.P.	
56	11250mm D.I.P.	
57	11500mm D.I.P.	
58	11750mm D.I.P.	
59	12000mm D.I.P.	
60	12250mm D.I.P.	
61	12500mm D.I.P.	
62	12750mm D.I.P.	
63	13000mm D.I.P.	
64	13250mm D.I.P.	
65	13500mm D.I.P.	
66	13750mm D.I.P.	
67	14000mm D.I.P.	
68	14250mm D.I.P.	
69	14500mm D.I.P.	
70	14750mm D.I.P.	
71	15000mm D.I.P.	
72	15250mm D.I.P.	
73	15500mm D.I.P.	
74	15750mm D.I.P.	
75	16000mm D.I.P.	
76	16250mm D.I.P.	
77	16500mm D.I.P.	
78	16750mm D.I.P.	
79	17000mm D.I.P.	
80	17250mm D.I.P.	
81	17500mm D.I.P.	
82	17750mm D.I.P.	
83	18000mm D.I.P.	
84	18250mm D.I.P.	
85	18500mm D.I.P.	
86	18750mm D.I.P.	
87	19000mm D.I.P.	
88	19250mm D.I.P.	
89	19500mm D.I.P.	
90	19750mm D.I.P.	
91	20000mm D.I.P.	
92	20250mm D.I.P.	
93	20500mm D.I.P.	
94	20750mm D.I.P.	
95	21000mm D.I.P.	
96	21250mm D.I.P.	
97	21500mm D.I.P.	
98	21750mm D.I.P.	
99	22000mm D.I.P.	
100	22250mm D.I.P.	
101	22500mm D.I.P.	
102	22750mm D.I.P.	
103	23000mm D.I.P.	
104	23250mm D.I.P.	
105	23500mm D.I.P.	
106	23750mm D.I.P.	
107	24000mm D.I.P.	
108	24250mm D.I.P.	
109	24500mm D.I.P.	
110	24750mm D.I.P.	
111	25000mm D.I.P.	
112	25250mm D.I.P.	
113	25500mm D.I.P.	
114	25750mm D.I.P.	
115	26000mm D.I.P.	
116	26250mm D.I.P.	
117	26500mm D.I.P.	
118	26750mm D.I.P.	
119	27000mm D.I.P.	
120	27250mm D.I.P.	
121	27500mm D.I.P.	
122	27750mm D.I.P.	
123	28000mm D.I.P.	
124	28250mm D.I.P.	
125	28500mm D.I.P.	
126	28750mm D.I.P.	
127	29000mm D.I.P.	
128	29250mm D.I.P.	
129	29500mm D.I.P.	
130	29750mm D.I.P.	
131	30000mm D.I.P.	
132	30250mm D.I.P.	
133	30500mm D.I.P.	
134	30750mm D.I.P.	
135	31000mm D.I.P.	
136	31250mm D.I.P.	
137	31500mm D.I.P.	
138	31750mm D.I.P.	
139	32000mm D.I.P.	
140	32250mm D.I.P.	
141	32500mm D.I.P.	
142	32750mm D.I.P.	
143	33000mm D.I.P.	
144	33250mm D.I.P.	
145	33500mm D.I.P.	
146	33750mm D.I.P.	
147	34000mm D.I.P.	
148	34250mm D.I.P.	
149	34500mm D.I.P.	
150	34750mm D.I.P.	
151	35000mm D.I.P.	
152	35250mm D.I.P.	
153	35500mm D.I.P.	
154	35750mm D.I.P.	
155	36000mm D.I.P.	
156	36250mm D.I.P.	
157	36500mm D.I.P.	
158	36750mm D.I.P.	
159	37000mm D.I.P.	
160	37250mm D.I.P.	
161	37500mm D.I.P.	
162	37750mm D.I.P.	
163	38000mm D.I.P.	
164	38250mm D.I.P.	
165	38500mm D.I.P.	
166	38750mm D.I.P.	
167	39000mm D.I.P.	
168	39250mm D.I.P.	
169	39500mm D.I.P.	
170	39750mm D.I.P.	
171	40000mm D.I.P.	
172	40250mm D.I.P.	
173	40500mm D.I.P.	
174	40750mm D.I.P.	
175	41000mm D.I.P.	
176	41250mm D.I.P.	
177	41500mm D.I.P.	
178	41750mm D.I.P.	
179	42000mm D.I.P.	
180	42250mm D.I.P.	
181	42500mm D.I.P.	
182	42750mm D.I.P.	
183	43000mm D.I.P.	
184	43250mm D.I.P.	
185	43500mm D.I.P.	
186	43750mm D.I.P.	
187	44000mm D.I.P.	
188	44250mm D.I.P.	
189	44500mm D.I.P.	
190	44750mm D.I.P.	
191	45000mm D.I.P.	
192	45250mm D.I.P.	
193	45500mm D.I.P.	
194	45750mm D.I.P.	
195	46000mm D.I.P.	
196	46250mm D.I.P.	
197	46500mm D.I.P.	
198	46750mm D.I.P.	
199	47000mm D.I.P.	
200	47250mm D.I.P.	
201	47500mm D.I.P.	
202	47750mm D.I.P.	
203	48000mm D.I.P.	
204	48250mm D.I.P.	
205	48500mm D.I.P.	
206	48750mm D.I.P.	
207	49000mm D.I.P.	
208	49250mm D.I.P.	
209	49500mm D.I.P.	
210	49750mm D.I.P.	
211	50000mm D.I.P.	
212	50250mm D.I.P.	
213	50500mm D.I.P.	
214	50750mm D.I.P.	
215	51000mm D.I.P.	
216	51250mm D.I.P.	



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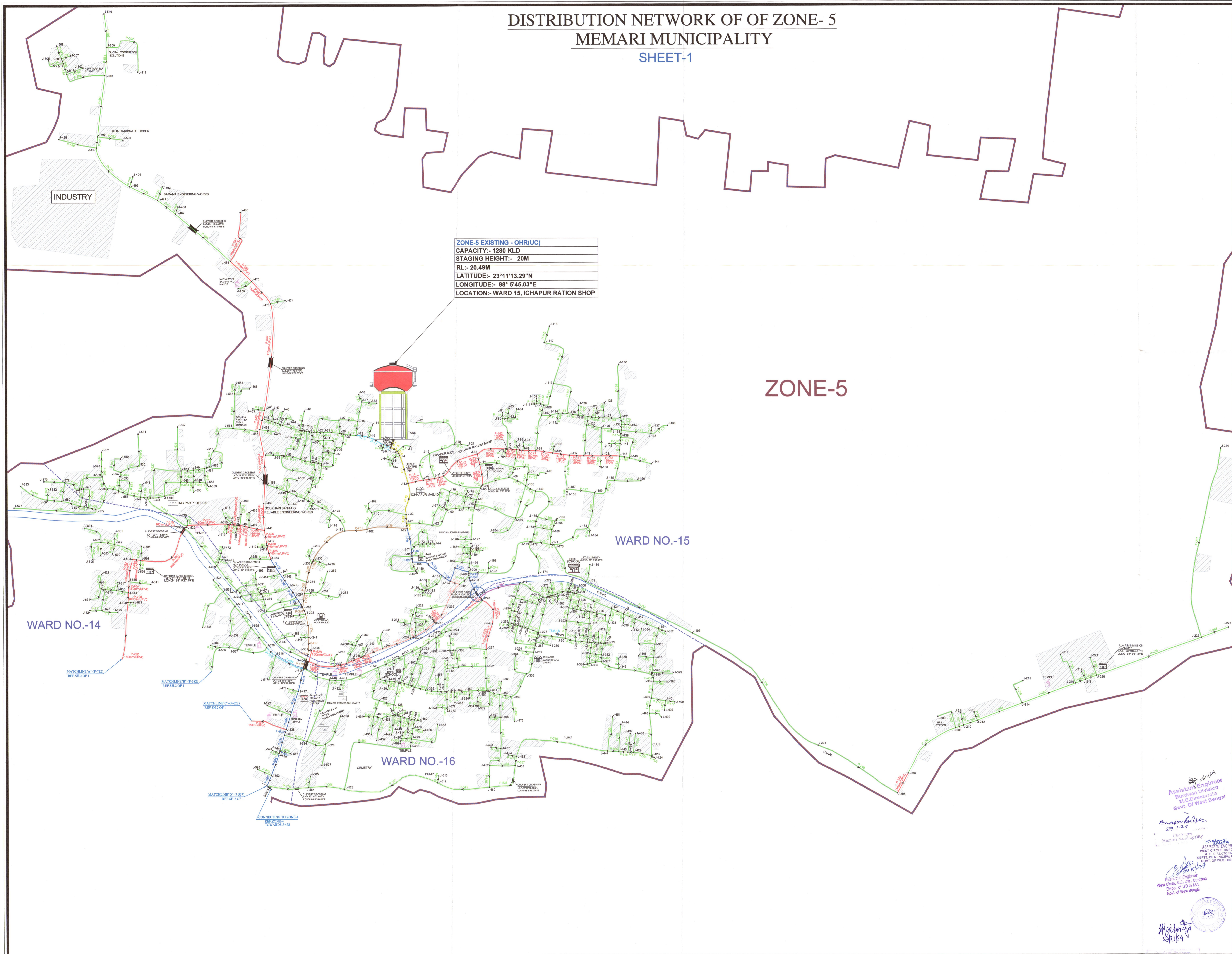
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DISTRIBUTION NETWORK OF OF ZONE- 5 MEMARI MUNICIPALITY

SHEET-1



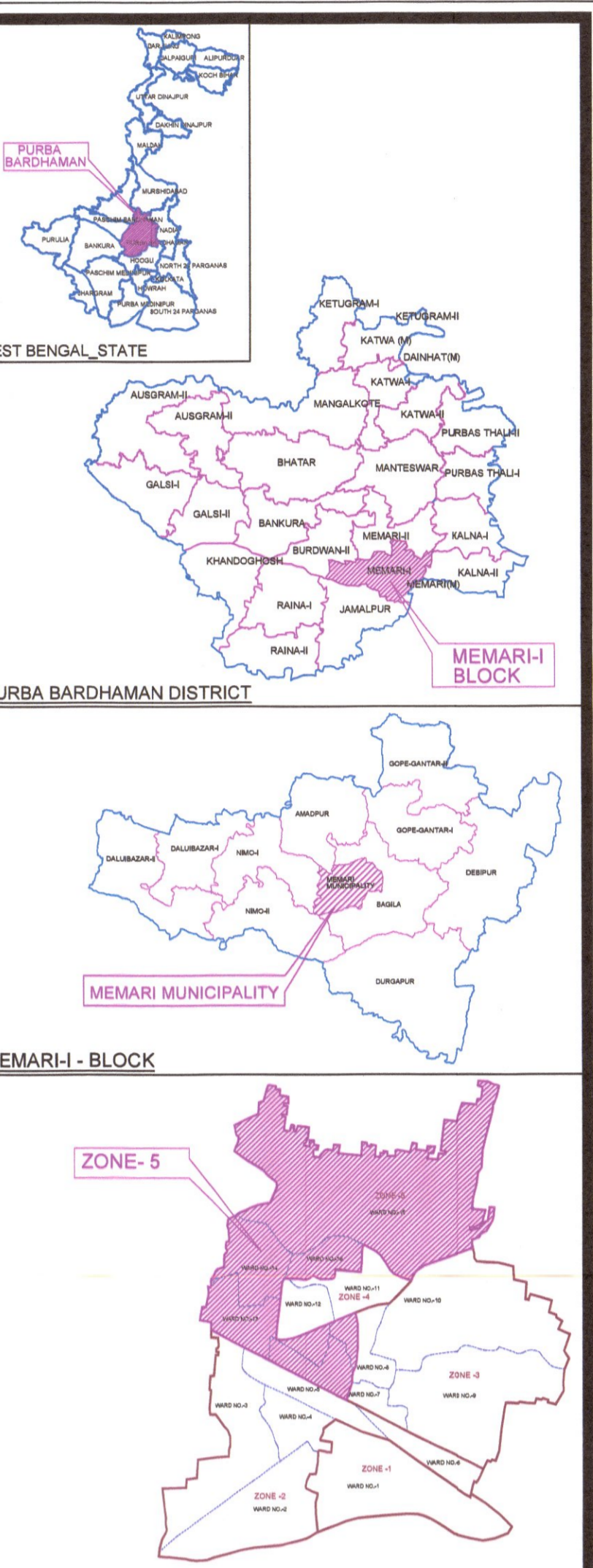
ZONE-5 EXISTING - OHR(UC)
 CAPACITY:- 1280 KLD
 STAGING HEIGHT:- 20M
 RL:- 20.49M
 LATITUDE:- 23°11'13.29"N
 LONGITUDE:- 88° 5'45.03"E
 LOCATION:- WARD 15, ICHAPUR RATION SHOP

ZONE-5

WARD NO.-15

WARD NO.-14

WARD NO.-16



NOTE:-
 1. ALL LEVELS AND DISTANCES ARE IN METER
 2. PROJECTION OF THIS MAP IS UTM (UNIVERSAL TRANSVERSE MERCATOR) AS NORTHERN HEMISPHERE ZONE AND THE DATUM IS WGS 84.

PIPE DIA LEGEND:-

SL.NO	PIPE DIA	TYPE OF PIPE	SYMBOL
1.	110	HDPE	
2.	125	HDPE	
3.	140	HDPE	
4.	160	HDPE	
5.	150	DI	
6.	200	DI	
7.	250	DI	
8.	350	DI	

EXISTING PIPE LINE

1.	PIPE DIA	DIA MATERIAL

NO.	DESCRIPTION	SYMBOL
1.	ISOLATION / SCOUR VALVE	
2.	ELECTRO MAGNETIC WATER METER	
3.	EXISTING OHR	
4.	EXISTING UGR	
5.	NODE NO.FLOW ARROW/PUMP	
6.	WARD BOUNDARY	
7.	ZONE BOUNDARY	
8.	RIVER CANAL / WATER BODY	
9.	HABITATION	
10.	SCHOOL / PRIMARY SCHOOL	
11.	OFFICE / HOSPITAL	
12.	TEMPLE / MOSQUE / CHURCH	
13.	CULVERT CROSSING	
14.	NH/SRAILWAY CROSSING	

CONSULTANT :-
NABARD CONSULTANCY SERVICES (P). LTD.
 (NABCONS)
 3rd floor, 1 Abhilasha, 6- Royd St, Near Bata Bore, Kolkata, West Bengal 700016.

CLIENT:-
 STATE MISSION DIRECTOR
 AMRUT, WEST BENGAL.

PROJECT:-
 PREPARATION OF DETAILED PROJECT REPORT FOR STRENGTHENING & AUGMENTATION OF WATER SUPPLY SCHEME OF MEMARI MUNICIPALITY (TOTAL NO.OF WARD:- 17).

DRAWING TITLE:-
 DISTRIBUTION NETWORK OF ZONE- 5 (WARD NO. 7, 8, 12, 13, 14 & 16) WITH ADJOINING WARDS, MUNICIPALITY-MEMARI, DIST- PURBA BARDHAMAN (WEST BENGAL)

DESIGNED BY	CHECKED BY
ASSTANT ENGINEER	EXECUTIVE ENGINEER
SUPERINTENDING ENGINEER	CHIEF ENGINEER

Signature
 Assistant Engineer
 Burdwan Division
 M.E. Directorate
 Govt. Of West Bengal

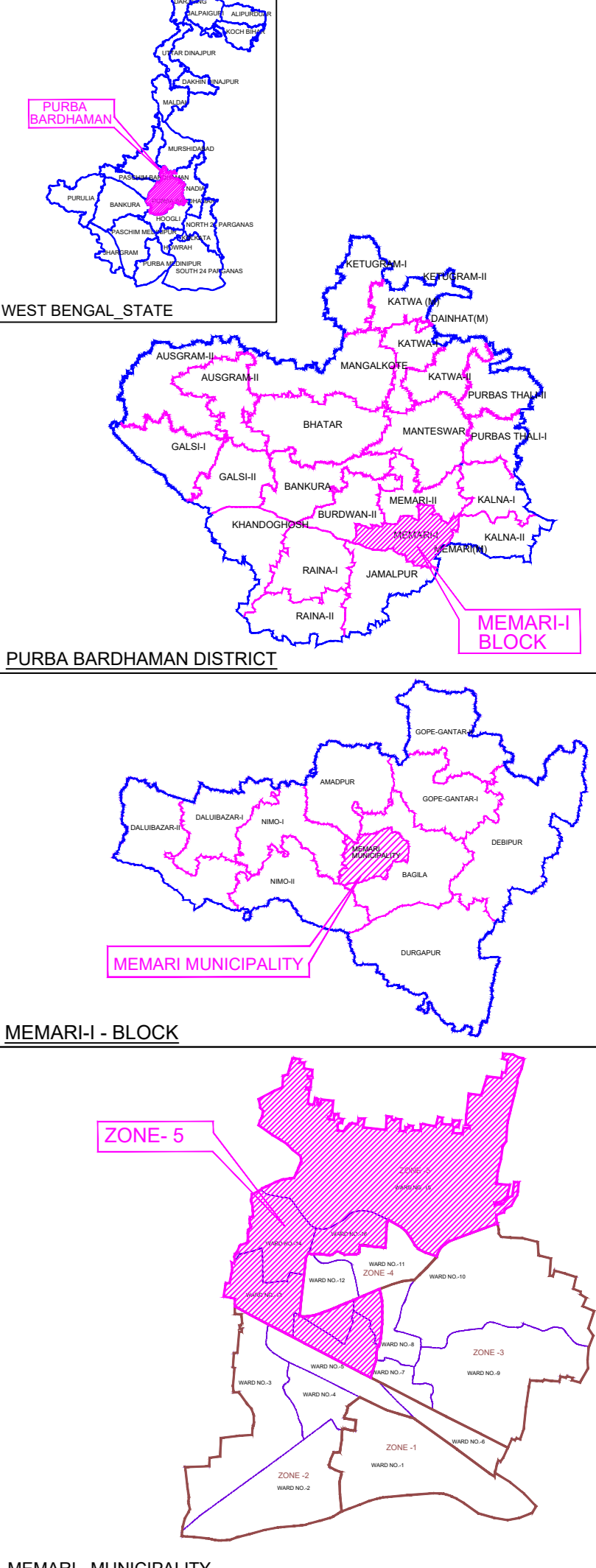
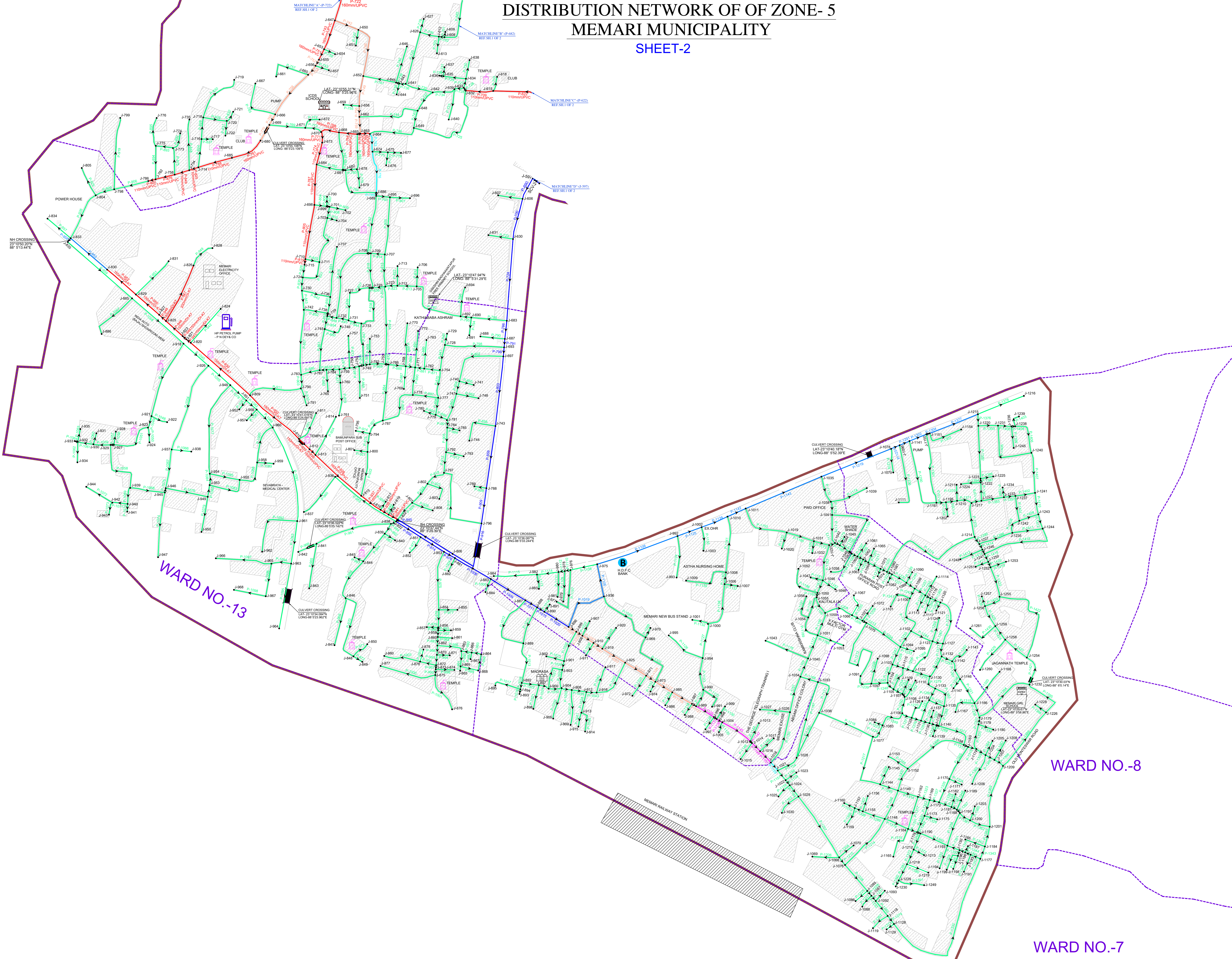
Signature
 Chairman
 Memari Municipality

Signature
 Executive Engineer
 West Circle, M.E. Div, Burdwan
 Deptt. of UD & M.A.
 Govt. of West Bengal

Signature
 Executive Engineer
 Burdwan Division
 M.E. Div
 Govt. of WB

Signature
 Superintending Engineer
 West Circle, M.E. Div, Burdwan
 Deptt. of UD & M.A.
 Govt. of West Bengal

DISTRIBUTION NETWORK OF OF ZONE- 5 MEMARI MUNICIPALITY SHEET-2



NOTE:-
1 ALL LEVELS AND DISTANCES ARE IN METER.
2 PROJECTION OF THIS MAP IS UTM UNIVERSAL TRANSVERSE MERCATOR/45 NORTHERN HEMISPHERE ZONE AND THE DATUM IS WGS 84.

SL.NO.	PIPE DIA OF PIPE	TYPE OF PIPE	SYMBOL
1.	110	HDPE	
2.	125	HDPE	
3.	140	HDPE	
4.	160	HDPE	
5.	150	DI	
6.	200	DI	
7.	250	DI	
8.	350	DI	

EXISTING PIPE LINE		DIA	MATERIAL
1.	PIPE DIA		

NO.	DESCRIPTION	SYMBOL
1.	ISOLATION / SCOUR VALVE	
2.	ELECTRO MEGNETIC WATER METER	
3.	EXISTING OHR	
4.	EXISTING UGR	
5.	NODE NO./FLOW ARROW/PUMP	
6.	WARD BOUNDARY	
7.	ZONE BOUNDARY	
8.	RIVER/ CANAL / WATER BODY	
9.	HABITATION	
10.	SCHOOL/ PRIMARY SCHOOL	
11.	OFFICE/ HOSPITAL	
12.	TEMPLE/ MOSQUE/ CHURCH	
13.	CULVERT CROSSING	
14.	NH/SH/RAILWAY CROSSING	

CONSULTANT :-
NABARD CONSULTANCY SERVICES (P), LTD.
(NABCONS)
3rd floor, 1 Abhilasha, 6 - Royd St, Near Bata More,Kolkata, West Bengal 700016,

CLIENT:-
STATE MISSION DIRECTOR
AMRUT, WEST BENGAL

PROJECT:-
PREPARATION OF DETAILED PROJECT REPORT FOR STRENGTHENING & AUGMENTATION OF WATER SUPPLY SCHEM OF MEMARI MUNICIPALITY (TOTAL NO.03 OF WARDS "16")

DRAWING TITLE:-
DISTRIBUTION NETWORK OF ZONE- 5 (WARD NO. 7, 8, 12, 13, 14 & 15) WITH ADJOINING WARDS, MUNICIPALITY-MEMARI, DIST- PURBA BARDHAMAN (WEST BENGAL)

DRN BY:- M.B
CHKD BY:-
SHEET NO. : 2 OF 2
DATE: 27.09.2023
SCALE: 1:1500
REV :- 0

ASSISTANT ENGINEER	EXECUTIVE ENGINEER
SUPERINTENDING ENGINEER	CHIEF ENGINEER