GOVERNMENT OF WEST BENGAL

OFFICE OF THE SUPERINTENDING ENGINEER, WEST CIRCLE
MUNICIPAL ENGINEERING DIRECTORATE
PATAL BAZAR, 3RD FLOOR, TINKONIA
PURBA BARDHAMAN, PIN:-713101
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Memo. No. MED/ SE (W) / 240 /W-284/2024 **Dated. 09.07.2024**

NOTICE INVITING e-TENDER

Notice Inviting e-Tender No: 05/ SE(WC)/MED/2024-2025

The Superintending Engineer, West Circle, Municipal Engineering Directorate, 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 with the eligibility as depicted hereunder for participating in the e-Bid.

1) Details of the Work:-

Sl. No.	Name of the work	Type of Tender	Departmental estimated cost (Tentative)	Initial Earnest Money (□)	Period of Completion of the work	Name of the concerned Division & Circle	Eligibility of bidder
1.	Implementation of augmentation and strengthening of water supply scheme within Rampurhat Municipality under AMRUT 2.0 which includes Sinking of River Bed Tube wells with Electro-Mechanical works , Supplying and laying of DI-K9 Rising Main, Construction of OHRs with Geotechnical investigation & Design of sub-structure, Construction of CWRs with Geotechnical investigation & Design & Electro-Mechanical works, Supplying & laying of Distribution pipe lines (DI-K7 and HDPE) with temporary road restoration, Jack Pushing works for NH/Rail crossing, Pipe carrying bridges, Pump Houses, Sub-Station Building, Staff Quarter and all other allied works complete in all respect, commissioning, trial run and O&M for 5 Years.	On Turnkey Basis	Rs 54.00 Cr	₹ 10.00 Lakh	730 days	O/o the Executive Engineer, Birbhum Division, MED under Superintending Engineer, West Circle, MED.	As stated under clause 3.0

2) Location of Work:- Rampurhat Municipal Area, District:- Birbhum.

3) Eligibility to participation of Bid:-

i) The prospective bidders shall have satisfactorily completed during the last 5(five) years prior to the date of issue of this NIT ***at least one work*** of similar nature (# **as defined below**) under the authority of State/Central Govt., State/Central Govt. undertaking, Statutory/Autonomous Bodies constituted under the statute of the Central/State Government and having a magnitude not less than 40% of Departmental justified cost.

OR

ii) The prospective bidders shall have satisfactorily completed during the last 5 (five) years prior to the date of issue of this NIT at ***least two works*** of similar nature (# **as defined below**) each, under the authority of State/Central Govt., State/Central Govt. undertaking, Statutory/Autonomous Bodies constituted under the statute of the Central/State Government and having a magnitude each of minimum value of 30% of Departmental justified cost.

OR

iii) The prospective bidders should produce credential ***at least one single running work*** of similar nature (# **as defined below**) which has been completed to the extent of 80% or more and value of which is not less than the value as mentioned in serial no. (i) above under the authority of State/Central Govt., State/Central Govt. undertaking, Statutory/Autonomous Bodies constituted under the statute of the Central/State Government. **In case of Joint Venture, credential for running work will not be considered.**)

Similar nature of works defined as:-

A) Construction of any major components of water supply project value of which is not less than the desired value at (i), (ii) and (iii) above

(B) Civil works including OHR/CWR and Electro-Mechanical works for pumping water in a single tender or multiple tender executed within last 5 years.'

Note:- for running work, only those tenderers who will submit the certificate of satisfactory running works from the concerned Executive Engineer or equivalent competent authority will be eligible for the tender. In the required certificate, it should be clearly stated that the work is in progress satisfactorily mentioning progressive value of the work and also that no penal action has been initiated against the executing agency, i.e. the tenderer.

N.B.: Estimated amount, Date of completion of project or percentage of physical progress of works for running works, Value of Work done, Salient feature & nature of the work executed is to be mentioned in the Credential Certificate. Date of Completion of project along with telephone number & detail address for communication of client must be indicated in the Credential Certificate. Payment Certificate will not be treated as Credential. Credential Certificate issued by the Executive Engineer or equivalent or competent authority of State/Central Govt., State/Central Govt. undertaking, Statutory/Autonomous Bodies constituted under the statute of the Central/State Government will be taken as Credential. However, Credential Certificate issued to sub-contractor by Central or State Govt. undertaking /Govt. Enterprise shall not be accepted.

ii) Executed value of completed/running work will be taken as credential & iii) BOQ and Work order of relevant work(s) are to be submitted.

AND

Annual Turn Over **(Minimum 40% of Tentative Departmental Cost in any one year within last 5 years)** in 3CB & 3CD format in duly authenticated by registered C.A. shall be submitted. The Audited Report should contain the signature, name, address, contact no./email ID and membership no., UDIN no. of Chartered

Accountant clearly. AND Having valid GST, P. Tax clearance Certificates, PAN Card and ESI and EPF registration certificates etc.
AND
Particular of ownership / partnership or board of directors pertaining to the organization / company / firm.
AND
In case of Proprietorship or Partnership Firms or Company the Tax Audited Report in 3CD/3CB Form for the last five years supported with Payment certificates, Income Tax return along with TDS certificates (Form 26AS) etc. are to be furnished along with balance sheet, trading account and profit & loss account and all schedules forming the part of Balance Sheet and Trading Account. Tax Audited report, Balance Sheet, Trading account and Profit & Loss Account including all schedules forming the part of Balance Sheet and Trading Account should be in favour of applicant. The Audited Report should contain the signature, name, address, contact no./email ID and membership no., UDIN no. of Chartered Accountant clearly. [Non Statutory Documents]
AND
Registered Unemployed Engineers' Co-operative Societies/ Unemployed Labour Co.-Op. Societies are required to furnish Certificate of Registration, Bye Laws, Tax Audit Report in 3CD/3CB Form supported with Payment certificates, Income Tax return for the last 5 years along with TDS certificates(Form 26AS) etc. along with balance sheet, trading account and profit & loss account, Registered Power of Attorney, Professional Tax deposit challan for the Financial Year 2022-23, PAN Card, valid Trade License, GST registration Certificate (GSTIN) with, EPF registration, ESI registration along with other relevant supporting papers. [Non Statutory Documents]
AND
A prospective bidder shall be allowed to participate in the particular Job either in the capacity of individual or as a partner of a firm. If found to have applied severally for a single job, all his applications will be rejected for that job, without assigning any reason thereof. A bidder (either in the capacity of individual or as a partner of a firm) & his/her co-partners of another firm will not be allowed to participate in the same work under a NIT.
AND
Corresponding address, fax & telephone numbers, contact mobile number and email number of the organization.
N.B. – 1. No joint venture, consortium etc will be accepted. Work completed as sub-contractor will also not be accepted as credential. 2. Successful bidder will have sufficient qualified technical personnel i.e. 2(two) BE/B-Tech (Civil) & 4 No. Diploma (civil) holder, Certified Electrical Supervisor with necessary valid Electrical licences (to be employed under the firm for at least 3 consecutive years) with sound knowledge and experience in execution of similar nature of works. List of machineries & equipment necessary for fields and list of technical personals employed under the organization in details with name, qualification, experience and address with contact number will have to be furnished by the successful bidder at the time of contract agreement.

BID CAPACITY:

The available Bid Capacity at the expected time of bidding (to be calculated on the basis of prescribed format (vide B.2./Section-B) of the prospective applicant *(in case of Sole Firm)* shall not be less than the Departmental justified cost.

Form–IIB in this respect is to be duly submitted along with uploaded Form-3CA/3CB,3CD in I.T. Portal for the last 5 (five) Financial Years starting from F.Y.2018-19 onwards for verification of Annual Turnover. All relevant data as mentioned in form IIB shall be available through UDIN verification <u>certified by the Statutory Auditor's Firm / Chartered Accountant with in tendering period.</u>

Registered Unemployed Engineers' Co-operative Societies/ Registered Unemployed Labour Co-Operative Societies are required to furnish **valid Bye Law, Current Audit Report, Copy of Resolution for constitution of Board** along with other relevant supporting papers.[Non-Statutory Documents].

4) Documents to be produced in support of Credential for Bid:-

As mentioned in Sl. No. 3 above.

Note: - Failure of submission of any of the above-mentioned documents will render the Bid liable to be summarily rejected.

All documents in original may need to be produced at any time of tender evaluation process, if desired by the concerned Superintending Engineer of MED, which may be communicated by the Tender Inviting Authority.

5) Earnest Money: -

a) 2% of the Quoted Bid price in two parts, an initial Earnest Money with Bid Proposal as mentioned under details of work and rest as mentioned below.

b) Initial earnest money is to be deposited 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.

c) Earnest Money Deposit i.e. 2% of bid amount beyond Initial Earnest Money (if any) shall have to be deposited by L1 Bidder after acceptance of Bid Proposal in the form of Bank Draft from any nationalised / scheduled Bank in favour of "Executive Engineer, Birbhum Division, MED", Payable at Suri and/or as per direction of TIA.

d) Additional Performance Security Deposit @ 10% of the accepted amount is to be deposited in due course as per GoWB norms if the accepted amount to be found to be @80% or less than the departmental justified amount in terms of GO No. 4608 f(Y) dated 18.07.2018.

6) Date and time schedule:-

Sl. No.	Particulars	Date & Time
1	Date of uploading of NIeB. and Bid Documents (online) (Publishing Date)	09/07/2024 at 06.00 p.m
2	Date of Pre-Bid Meeting with the intending bidders in the office of the Superintending Engineer, West Circle, Municipal Engineering Directorate.	16/07/2024 at 01.00 p.m.
3	Documents download start date (Online)	09/07/2024 at 06.30 p.m.
4	Documents download end date (Online)	06/08/2024 at 05.00 p.m.
5	Bid submission start date (On line)	10/07/2024 at 10.00 a.m.
6	Bid Submission closing (On line)	06/08/2024 at 05.00 p.m.
7	Bid opening date for Technical Proposals (Online)	09/08/2024 at 10.00 a.m.
8	Date of uploading list for Technically Qualified Bidder (online)	To be notified later
9	Date for opening of Financial Proposal (Online)	Minimum 48 Hours from the time of uploading the list for Technically Qualified Bidder(s)*
10	If necessary for further negotiation through off line for final rate	To be notified later
***All bidders are requested to raise objection(s), if any, regarding the decision of TIA with respect to acceptance/non-acceptance of technical bid within these hours through official e-mail of TIA only. Failing which the objection(s) may not be considered.**		

7) Cost price of Bid Document:- "Nil"

8) Time of completion:-

Time of completion of the Contract is 730 days from the date of issue of Work Order.

9) 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 of all relevant data with regard to availability of Sufficient Quantum of Water as per the Requirement for the project and all relevant factors as might affect the rates and prices. They should make themselves acquainted with the relevant IS specifications, 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 including High Flood level, labour, 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 which are needed for the work to be completed in scheduled time properly.

10) Bid documents:-

A full set of Bid documents consists of 2 Parts. These are;

a) Part I containing all documents in relation to the name of the firm applied credentials possessed by them, all documents as depicted in Sl. No. 4 along with this NIeB and its all corrigenda's.

AND

Section A: Description of the Project.

Section B: Conditions & requirements for Bidding.

Section C: General conditions of the contract.

Section D: General specifications of Workmanship & materials for Civil Works.

Section E: Specification for supply of Ductile Iron (K9) pipes & DI Fittings.

Section F: General technical specification.

Section G: General Technical Specification for RCC pile foundation

Section H: Annexures

b) Part II containing following documents; Bid Price / Price Schedule (BOQ).

11) 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.

12) 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 and necessary legal action will be applied as per Govt. order.

13) Acceptance of Bid: -

The Superintending Engineer, West Circle, Municipal Engineering Directorate will accept the Bid on recommendation of the Competent Authority. He does not bind himself 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.

14) 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 Superintending Engineer, West Circle, Municipal Engineering Directorate and fulfil all his obligations as required by the Contract.

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 operation and maintenance of the contract.

15) Name & address of Engineer-In-Charge (EIC) of the Work

Executive Engineer, Birbhum Division, M.E. Dte.

16) **Execution of Work:-**

The Contractor is liable to execute the whole work as per direction and instruction of the Executive Engineer, Birbhum Division, M.E.Dte., who is the Engineer in Charge of the work.

17) **Payment:-**

Payment will be made to the successful Bidder from the Executive Engineer, Birbhum Division, M.E.Dte.

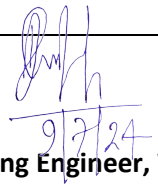
18) Influence:-

Any attempt to exercise undue influence in the matter of acceptance of Bid is strictly prohibited and any Bidder who resorts to this will render his Bid liable to rejection.

Following clauses are to be adhering to by the concerned Bidder during the process of Bidding.	
19.	In case office faces sudden closure owing to reason beyond the scope and control of the Superintending Engineer, West Circle, Municipal Engineering Directorate any of last date / dates as schedule in Sl. No 7 may be extended up-to / to next and following working day without issuing further and separate notice should the TIA feel it to be necessary and exigent.
20.	Persons having authenticated and having registered Power of Attorney may be considered lawfully becoming to be acting on and for behalf of the Bidder.
21.	Sufficient care has been taken to avoid variance in between the contents of the listed documents in the Bid documents. 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.
22.	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.
23.	Bid Acceptance Authority is the Superintending Engineer, West Circle, Municipal Engineering Directorate.
24.	In case of any dispute arising from any clauses of similar nature between bid documents and Municipal tender form, the decision of the Superintending Engineer, West Circle, MED and Engineers of E/M Section of MED will be final and binding.
25.	All usual deductions for GST, IT, and Labour welfare Cess etc. as applicable will be made from the bills from time to time which is inclusive in cl.57 of section C.
26.	No conditional / incomplete Bid shall be entertained.
27.	In the event of e-Filing intending bidder may download the tender document from the website http://wbtenders.gov.in directly by the help of Digital Signature Certificate free of cost. Technical Bid & Financial Bid both will be submitted concurrently duly digitally signed in the Website http://wbtenders.gov.in. Tender document may be downloaded from website & submission of Technical Bid/Financial Bid as per Tender Schedule.
28.	The requisite cost of Earnest Money, as specified in this NIeB shall be paid to ICICI bank by online internet bank transfer or NEFT or RTGS (as per GO No. 3975-F(Y) dt. 28.07.2016 of Finance Department, Govt. of West Bengal). Every such Transfer shall be done on or after the date of publish of NIeB. Any Bid without such Transfer of EM (Except exemption as per G.O.) shall be treated as informal and shall be automatically cancelled. Online transfer of Earnest Money receipt (Scanned copy) shall be uploaded as Statutory document.
29.	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 Tender, 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.

30.	The intending Bidders shall clearly understand that whatever may be the outcome of the present invitation of Bids, no cost of Bidding shall be reimbursable by the Corporation. The TIA reserves the right to reject any application for purchasing Bid documents and to accept or reject any or all the offered bid / bids without assigning any reason whatsoever and is not liable for any cost that might have incurred by any Bidder at any stage of Bidding.
31.	Prospective applicants are advised to note carefully the minimum qualification criteria as mentioned in 'Instructions to Bidders' before bidding.
32.	During scrutiny, if it is come to the notice to tender inviting authority that the credential or any other papers found incorrect / manufactured / fabricated, that Bidder will not be allowed to participate in the tender and that application will be out rightly rejected without any prejudice.
33.	Before issuance of the work order, the tender 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 manufacture or false, in that case, L.O.A. / work order will not be issued in favour of the bidder under any circumstances.
34.	If any discrepancy arises between two similar clauses on different notifications, the clause as stated in later notification will supersede former one in following sequence: i) 2911-(ii) (WB) tender form ii) NIeB/NIeT iii) Special terms & Condition iv) Detailed Scope of work. v) Financial bid
35.	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.
36.	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 tender 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 tender. The power of attorney shall have to be registered in accordance with the provisions of the Registration Act, 1908.
37.	Any legal matter will be settled within the jurisdiction of Hon'ble District Judges Court at Midnapore, Dist:- Paschim Medinipur, West Bengal.
38.	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.
39.	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 may be cancelled.
40.	The work is of Construction and subsequent operation and maintenance in nature, the Defect Liability Period of the work shall be Sixty months from the actual date of completion of the work. **For work with 5 Years Defect Liability Period:** (i) Security Deposit amount which is deducted from every running bill shall be refunded to the contractor as per Govt. norms vide PWD Order No. 5784-PW/L&A/2M-175/2017 dated 12.9.2017 for the item 1 of BOQ. (ii) S.D. Money shall be refunded after completion of success full maintenance and operation of 5 Years i.e. in the time of releasing of 5th year operation & maintenance cost.

41	The successful bidder has to provide detailed estimate along with rate analysis (if any) for all civil and electro mechanical works including planning, designing and drawings as per the clause 57 of Section C with all necessary break up elaborately for comparison of rate with departmental estimate if asked by the concerned authority before acceptance of bid which will be treated as part of the bid document.
42.	Clause 57 of Section C has been prepared on the basis of major items of the work so that contractor may get payment after completion of major items in a phase wise way . If any item the contractor feels as major item but not reflected in the clause will be pointed out during pre-bid meeting. All other items (if any) not shown in the payment schedule or in bid document but required for successful completion and commissioning of the project will be in the scope of Bidder.
44.	Agency's whole responsibility is to ensure that the require quantum of the water should available from the structure and for this extensive survey work to be done in all respect
45.	If there is any contradiction between any clauses of the NieB, decision of the Superintending Engineer, West Circle, MED will be final.
46.	Deviation in quantities of item 1.01 & 1.02 of BOQ may done as per PWD Rule 239 & other relevant GO.
47.	Job Card holders shall be mandatorily engaged where unskilled workers required.
48.	Successful contractor shall furnish certificate after completion of work that only Job Card holders where engaged where unskilled workers required.



Superintending Engineer, West Circle,
Municipal Engineering Directorate

SECTION – A

1. **General guidance for e-tendering**

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

2. **Registration of Bidder**

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

3. Digital Signature certificate (DSC)

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

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

5. Submission of Tenders.

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

A. Technical proposal

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

A-1. Statutory Cover Containing

1. Prequalification Document

i. Prequalification Application (Sec-B, Form – I)

ii. Scanned Copy online Transaction of earnest money

(EMD) as prescribed in the NIeB against each of the serial of work.

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

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

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

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

iii. Bank Solvency Certificate.

iv. Form III & IV Of Section B.

A-2. Non statutory Cover Containing / My Documents

i. GST Certificate (up to date).

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

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

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

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

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

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

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

E-Bidding system of Government of West Bengal			
Bidder Document Sub Category Master			
Sl. No.	**Category Name**	**Sub Category Name**	**Sub Category Description**
A	CERTIFICATES	A1. CERTIFICATES	1. GST Certificate 2. E.S.I & EPF Registration Certificate.
B	COMPANY DETAILS	B1. COMPANY DETAILS	1. Proprietorship Firm (Trade License). 2. Registered Deed of partnership Firm 3. Registration Certificate under Company Act. (if any). Ltd. Company (Incorporation Certificate, Trade License) 4. Power of Attorney (For Partnership Firm / Private Limited Company, if any) 5. Society (Society Registration copy, Trade License)
C	CREDENTIAL	C1. CREDENTIAL1	Similar nature Work & Completion Certificates along with work order and payment certificate issued by competent authority (as per Sl. No. 3 of NIeB)
D	EQUIPMENT	D1. LABORTARY	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
		E3 PAYMENT CERTIFICATE 2	
F	MANPOWER	F1. TECHNICAL PERSONNEL	1. List of sufficiently qualified technical person (as per Sl No 3 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 turnover 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 department of Municipal Affairs, Govt. of West Bengal. Comparative Statement may be forwarded to appropriate authority depending on the value of the work as applicable as per existing norms and guidelines under AMRUT programme.

v. Uploading of summary list of technically qualified bidders.

vi. Pursuant to scrutiny and decision of the screening committee the summary list of eligible Bidder and for which their proposal will be considered and uploaded in the web portals.

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.

Bid Evaluation Committee:

A Bid Evaluation Committee (BEC) has been constituted under the Superintending Engineer of concerned Circle, Municipal Engineering Directorate, Government of West Bengal, who is the tender inviting authority for all works beyond the tender accepting power of the Executive Engineers.

The members of Bid Evaluation Committee would be:-

1. Superintending Engineer, West Circle - Chairman
2. Executive Engineer, West Circle - Member
3. Assistant Engineer, West Circle-Member
4. Junior Engineer, West Circle - Member

The Bid Evaluation Committee will do the technical and financial evaluations of the bidders for different types of works and make recommendation to the tender accepting authority. The bidders will have to meet all the minimum criteria regarding:-

a) Financial Capacity

b) Technical Capability

c) Experience / Credential

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

C. Financial proposal

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

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

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

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

8. REJECTION OF BID

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

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

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

9/7/24

Superintending Engineer, West Circle,
Municipal Engineering Directorate

SECTION – B

FORM –I

PRE-QUALIFICATION APPLICATION

To

Superintending Engineer, West Circle,

Municipal Engineering Directorate

Ref: - Tender for_____

(Name of work) _____N.I. B. No.:

Dear Sir,

Having examined the Statutory, Non statutory and NIT documents, I /we hereby submit all the necessary information and relevant documents for evaluation. The application is made by me / we 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) Tender Inviting and Accepting Authority/Engineer-in-Charge can amend the scope and value of the contract bid under this project.

(b) Tender Inviting and Accepting Authority/Engineer-in-Charge reserves the right to reject any application without assigning any reason.

Enclose: - 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–IIA

B.2. FINANCIAL STATEMENT

B.2.1. Name of applicant:

B.2.2. Information of audited financial statements for the last year to demonstrate the current soundness of the bidder's financial position:

1. The bidder's networth for the last year calculated on the basis of capital, profit and free reserve available to the firm should be positive.

2. Bidders, who meet the minimum qualification criteria, will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under:

   Assessed Available Bid capacity=(AxNx2-B)= _____ where,

   A= Maximum value of engineering works in respect of projects executed in any one year during the last five years (updated to the price level of the year indicated in table below under note) taking into account the completed as well as works in progress. The projects include turnkey project / item rate contract / Construction works.

   N= Number of years (i.e,…….year) prescribed for completion of the works for which bids are invited. Please refer table for List of Schemes in page1.

   B= Financial liability of the bidder to be incurred for existing commitments and ongoing works during the period of the subject contract.

To calculate the value of "A"

i) A table containing value of Engineering works in respect to projects (Turnkey projects / item rate contract / Construction works) undertaken by the Bidder during the last 5 years is as follows:

Sl. No	Financial Year	Value of Engineering works undertaken w.r.t. projects (Rs. In Crore)	Updation Factor	Value updated to the price level of the year
(1)	(2)	(3)	(4)	(5)= Col (3) X Col (4)
1	Last Year Year-1		1.00	
2	Year before last year Year - 2		1.05	
3	Previous Year to		1.10	

	Year-2 Year-3			
4	Previous Year to Year-3 Year-4		1.15	
5	Previous Year to Year-4 Year-5		1.20	

ii) Maximum value of projects that have been undertaken during the F.Y----------out of the last five years and value thereof is Rs----------Crore (Rupees----------).

iii) Net worth for the last Financial year is (Rs in figure)_____.

Signature, name and designation of Authorised Signatory For and on behalf of ……..(Name of the applicant)	Name of the Statutory Auditor's Firm / Chartered Accountant Signature:- Seal of the Audit / Chartered Accountant Firm: Name of signatory (in capital):- Membership No.:- Firm Regn. No:- Date of Birth:- UDIN:- Mobile No.

NB:- All information sought w.r.t. Firm / Chartered Accountant is mandatory.

To calculate the value of "B"

3. A table containing value of all the existing commitments and on-going workings to be completed during the next 1.5 years (prescribed time for completion of the works for which bids are invited) is as follows:

Sl. No.	Name of the Project	Name of the Employer	Percentage of participation of Bidder in the project	Stipulated period of completion as per **Work Order with the start date**	Value of Contract as per Agreement /Work Order Rs…….	Value of work completed Rs…….	Balance value of work to be completed Rs…….	Anticipated date of completion	Financial Liability to incur for the said work / project during the period of the subject contract Rs…….
1	2	3	4	5	6	7	8	9	10
1									
2									
3									

…….

Signature, name and designation of
Authorised Signatory

For and on behalf of

……(Name of the Applicant)

Note:

1. All the documents to be submitted in support of above must be duly signed and sealed by the applicant / bidder and authenticated by Statutory Auditor‘s Firm.

2. Progression Certificate issued below the rank of Executive Engineer will not be

accepted.

3**. Last Financial Year2023-2024** will be considered as year–1.

Form–IIB

This is to certify that we have verified the consolidated financial statement of_____(Name of the Firm in which application is made) having its Registered Office at_____(address of the Firm). Based on our examination of Books and Records and other documentary evidences we certify that the financial data of the company given in the balance sheets are detailed hereunder for the financial year(s) as mentioned below are true and correct.

Sl, No.	Description	Financial Data for the last 5 audited Financial Year				
		Previous to Year 4 Year 5	Previous to Year 3 Year 4	Previous to Year 2 Year 3	Previous to Year 1 Year 2	Last Year Year 1
1	**Net Worth** (Calculated on the basis of capital, profit and free reserve available to the firm should be positive)					
2	**Working Capital**					
3	**Annual Turnover** (Engineering Works)					

Available Liquid Assets (Last Financial Year):

1.Working Capital =Rs_____

2.Uncommitted Bank Guarantees =Rs_____

3.Credit facilities =Rs_____

(Certificate to be submitted in **Form IIC**)

Total Liquid Assets = Rs_____

Signature, name and designation of Authorised Signatory	Name of the Statutory Auditor's Firm / Chartered Accountant

For and on behalf of ……..(Name of the applicant)	Signature:- Seal of the Audit / Chartered Accountant Firm: Name of signatory (in capital):- Membership No.:- Firm Regn. No:- Date of Birth:- UDIN:- Mobile No.

N.B:- ***THIS FORM (i.e. FORM-IIB) MUST BE PROPERLY MADE IN THE LETTER HEAD OF THE AUDITOR'S /CHARTERED ACCOUNTANT FIRM, CLEARLY MENTIONING THE ADDRESS, e-mail ID, and CONTACT NUMBER OF THE FIRM & should preferably be made in a single page else to be authenticated in each page similarly.***

NB:-i) <u>All information sought w.r.t. Firm / Chartered Accountant is mandatory.</u>

ii) **All relevant data as mentioned in form IIB shall be available through UDIN verification**

FORM–IIC

(Format for Credit Facility issued by the bank which is authorized to conduct Government business in West Bengal by Reserve Bank of India as notified by State Government from time to time and any other Bank which has been authorized by the State Government)

Ref.No:- ***Date:-***

Certified that we here by undertake to declare that a Credit Facility of Rs.....shall be provided to the agency..... (name of the agency)..... .for the execution of the work_____(name of the work)_____ (vide eNIT No-_____) if awarded by the competent authority / Tender Inviting Authority.

Signature of the Bank Authority

Designation:

Code No-

Counter Signed by the intending Bidder

NB:-Devoid of Ref. No:- & Date:-, may lead to non-acceptance of this document.

AFFIDAVIT "Y"

DECLARATION OF THE BIDDER

(Affidavit to be affirmed on a Non Judicial Stamp Paper of Appropriate Value And Duly Notarized)

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 NIB (NIB 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, GST 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 id:

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

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.

Successful agency shall have to make an agreement (in two copies) with the Superintending Engineer, West Circle, Municipal engineering directorate in the prescribed pro-forma by depositing requisite cost in cash stating that the agency is agreeable to supply the Pipe materials as and when require (as per the rates quoted and terms and conditions laid down in the quotation papers) to the Municipal engineering directorate with in the Municipal / Adjoining areas (as the case may be).

Superintending Engineer, West Circle,
Municipal Engineering Directorate

Memo. No. MED/ SE (W) / 240 (1-8) /W-284/2024 **Dated. 09.07.2024**

Copy Forwarded for information and favour of wide circulation to:

1. **The State Mission Director, AMRUT, SUBHANNA, Saltlake, Kol 106.**
2. **The Chief Engineer (South), M.E. Dte., Bikash Bhawan, Saltlake, Kol-106.**
3. **The Addl. Chief Engineer, South, M.E.Dte., Bikash Bhawan, Saltlake, Kol-106.**
4. **The District Magistrate, Birbhum.**
5. **The Chairman, Rampurhat Municipality.**
6. **The Executive Engineer, M.E. Dte. Birbhum Division.**
7. **The Executive Engineer(E/M), Bikash Bhawan, Salt Lake Kol-106**
8. **The Office Notice Board of Superintending Engineer, West Circle, for wide circulation.**

9/7/24

Superintending Engineer, West Circle,
Municipal Engineering Directorate

SECTION – A

DESCRIPTION OF THE PROJECT

Name of Work : Implementation of augmentation and strengthening of water supply scheme within Rampurhat Municipality under AMRUT 2.0 which includes Sinking of River Bed Tube wells with Electro-Mechanical works , Supplying and laying of DI-K9 Rising Main, Construction of OHRs with Geotechnical investigation & Design of sub-structure, Construction of CWRs with Geotechnical investigation & Design & Electro-Mechanical works, Supplying & laying of Distribution pipe lines (DI-K7 and HDPE) with temporary road restoration, Jack Pushing works for NH/Rail crossing, pipe crossing by HDD, Pipe carrying bridges, Pump Houses, Sub-Station Building, Staff Quarter and all other allied works complete in all respect, commissioning, trial run and O&M for 5 Years.

The General arrangement (Schematic diagram and index map) of proposed and existing infrastructure is attached in Annexure I of Section H which is to be followed and all necessary arrangement required to complete the project in comprehensive manner will be in the scope of bidder.

1.0 River Bed Tube wells

1.1 General

The work involves Sinking of 22 Nos. River Bed Tube wells of size 200 mm dia. And 50 mtr. Deep using PVC pipes and Fiber glass strainer at various locations in Brahmani River near Rampurhat Municipality, Provision of 4 Nos. Trial boring, yield test & electro-logging at proposed location for river bed tube wells, Surging of 10 Nos. existing tube wells and supply of chlorine for 5 years for all proposed and existing Tube wells.

1.2 LOCATION

Various locations of River bed of River Brahmani as directed by the EIC.

1.4 SCOPE OF WORK

1. Total 22 nos. River bed Tube well with 200mm dia and 50m depth each at river bed.

<table>
<tr><td>2</td><td>Trail Boring, yield test & electro logging at Proposed Location for river bed tube well
<table><tr><td>Washing and developing tube well with air compressor pump and engine for 8 (eight) hours continuous pumping per day with necessary arrangements for testing the yield in gallons per hour with 'V' notch including hire and labour charges for all tools and plants and scaffolding as required.</td></tr><tr><td>Electro-logging charge.</td></tr><tr><td>Provision for 40 mm dia. Trail boring up to a depth 30 m either on river bed or at the bank of the river with cost of labour, Hiring of all materials etc. including collection of sample of strata and testing of water to ascertain quality of water may be available from proposed tube wells.</td></tr></table></td></tr>
<tr><td>3</td><td>Supply and Delivery at site of Chlorine (for 5 years)</td></tr>
</table>

4	Surging of existing tube well with chemical treatment and bucket wash (prior to use of compressor machine) and developing the tube well with compressor machine at least 3 (three) days at 8 (eight) hours per day till the yield is obtained at least by 75% of the total specified yield of the tube well (measured by 'V' notch tank) and draw down is within the permissible limit of 10% variation and water so obtained after such washing and developing will be free from sand and bacteria for which test report from the Public Analyst is to be obtained. (The rate is inclusive of all labour and materials including hire charges of tools and plants and cost of materials.) (b) For tube well of size bigger than 100mm dia. with top enlargement to have yield of 6000 gallons per hour

Detailed scope of Tube Wells

Sl. No.	Description of Item
1	Labour for boring in river bed through any type for sinking tubewell of require dia by casing boring system including hire charges and labour for supply and sinking suitable dia casing 450mm to 300 mm dia upto full length of tubewell with necessary socket tools and plants, staging for pumping and making necessary arrangement for boring and also cost of withdrawing of casing pipe including jointing and lowering of pipe, strainer and other accessories etc. as per direction of E.I.C (as per IS:2800, 1979 pt-110)
	i) 200 mm dia
2	Development of the tubewell by Air Compressor and BHT/ other suitable pump and Yield Testing by BHT/ other suitable pumping machinery upto the satisfaction of EIC. It includes arrangement of all machinery, supply of fuel & lubricants, laborers, any others etc.
3	Collecting sample of water for bacteriological and chemical test from any depth at any time during execution of work including hire and labour charges for tools and plants and sterilising the equipments, paying all charges and fees, testing etc. complete in all respect as per direction.
4	Supply of PVC pipes & fittings Schedule 80 (medium duty) conforming to ASTMD - 1785 and threaded to match with GI Pipes as per IS : 1239 200 mm dia
5	Supplying, fibre glass strainer reinforced Epoxy resin slotted of 1 mm slot width in 6.1 m length of approved make and as per direction of the Engineer-in-Charge.
	a) 250/200 mm dia (7mm thick)
6	Supply of PVC pipes & fittings Schedule 80 (medium duty) conforming to ASTMD - 1785 and threaded to match with GI Pipes as per IS : 1239 (Part - I). (A) PVC Pipes (B)socket 200 mm dia
7	Supplying M.S. male / female adopter of approved make and brand for coupling of M.S. pipe and fibre glass strainers, as per direction of the Engineer - in - Charge.
8	Supplying at site & fitting, fixing of Following accessories corresponding to the dia. Of blank/slotted housing pipe as Specified , Details Below Including 2 coats of Bituminous Painting on all Sides completed. a) M.S bottom cap plug with hook for sealing the bottom of well assembly. i)200 mm dia.

9	Supplying, fitting and fixing 300 mm M.S. housing clamp of approved quality.
10	Supplying Fitting and fixing G.I. cap at top
	i) 200 mm dia
11	Supply and delivery of M.S .Centre guide (Special Type).
12	Supply and delivery of Bentonite Powder conforming to IS 6186 :1986
13	Supply and delivery of Washed gravels size ranging from 1.80 mm to 4.74 mm. conforming to IS 4097 : 1967

2. 4 Nos. Pump House for River bed Tube Well site and & 2 Nos for CWR(1 & 2) Site and 2 Nos Substation Building at CWR (1& 2) site Location

2.1 General

The work involves:

Description	Qty.	Unit
Sub Station Building for CWR-1	100.00	Sqm
Sub Station Building for CWR-2	220.00	Sqm
Pump House for CWR-1	80.00	Sqm
Pump House for CWR-2	80.00	Sqm
Staff Quarter 2 nos. at Jhonjhonia and Baidhra	160 (Appx)	Sqm
Pump House Without Sanitary Arrangement at Tube Well site Location (3m x 3.6 m)	2	Nos
Pump House With Sanitary Arrangement at Tube Well site Location (5.4m x 3.6 m)	2	Nos
Approach road for Pump House and CWR	As per requirement and direction of EIC	

Item Details of Pump House / Sub Station Building with necessary internal electrification works as per direction of EIC.

1	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75 m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete.
	(A) Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity) Below Footing
2	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand. Below Footing
3	Cement concrete with graded jhama khoa (30 mm size) excluding shuttering In ground floor and foundation. (a) 1:3:6 proportion Below Footing
4	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.
5	Brick work with 1st class bricks in cement mortar (1:6)
6	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work)
7	Hire and labour charges for shuttering with centering and necessary staging upto 4mm, using approved scout props and thick hard wood planks of approved thickness with required bracings for concrete slabs, columns, lintels, beams etc. curved or straight, including fitting, fixing and striking out after completion of works (upto roof of ground floor).a) 25 mm to 30 mm thick wooden shuttering as per decision and direction of the Engineer-in-Charge.
8	Reinforcement for reinforced concrete work in all sort of structures including distribution bars, stirrups, binders etc. including supply of rods, initial straightening and removal of loose rust (if necessary) cutting to requisite length, hooking and bending to correct shape, placking in proper position and binding with 16 gauge black annealed wire at every inter- section, complete as per drawing and direction.
9	25mm. thick damp proof course with cement concrete with stone chips (1:1.5:3) [with graded stone aggregate 10 mm nominal size] and admixture of water proofing compound as per manufacturer's specification followed by two coat of polymer based paint, (1st coat after 4 to 5 days of concrete laying and 2 nd coat just before brick masonry work) as directed (cost of water proofing compound & polymer based paint to be paid separately).(Chequering not required over concrete or painted surface).
	Total Outer Periphery
10	125mm thick brick work with 1st class bricks in cement mortar (4:1) in ground floor.

11	Artificial stone in floor, dado, staircase etc. with cement concrete (4:2:1) with stone chips, laid in panels as directed with topping made with ordinary / white cement (as necessary) and marble dust in proportion (2:1) including smooth finishing and rounding off corners and including application of cement slurry before flooring works, using cement @ 1.75 Kg /Sq.m. all complete including all materials and labour. 3 mm thick topping (High polishing grinding on this item is not permitted) with ordinary cement. a) 25 mm thick
12	Supplying, fitting & fixing 1st quality Ceramic tiles in walls and floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc. With Sand Cement Mortar (1:4) 20 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20kg/Sq.m. (a) Area of each tile upto 0.09 Sq.m (i) Coloured decorative
	For Floor
	For Toilet Room floor
13	Supplying, fitting & fixing 1st quality Ceramic tiles in walls and floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc. With Sand Cement Mortar (1:3) 15 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20kg/Sq.m.
	For Wall of Toilet Room
	Neat cement punning about 1.5mm thick in wall, dado, window, sill, floor etc. **NOTE: Cement 0.152 cu.m per 100 sq.m.**
14	Plaster (to wall, floor,ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking outs joints or roughening of concrete surface by chamfering etc. including throating, nosing and drip course where necessary (Ground floor). Excluding cost of chipping over concrete surface]
	i) With 1:6 cement mortar
	b) 20mm thick plaster.
	a) 15mm thick plaster.
	Inside Wall
	ii) With 1:4 cement mortar
	a) 10mm thick plaster.
	celling plaster
15	Wood work in door and window frame fitted and fixed in position complete including a protective coat of painting at the contact surface of the frame exluding cost of concrete, Iron Butt Hinges and M.S clamps. (The quantum should be corrected upto three decimals). (d) Sal : Local

16	Panel shutter for door and window as per design (Each panel consisting of single plank without joint)including fitting & fixing the same in position but excluding the cost of hinge and other fitting in Ground Floor(In case of non supply of single plank,penal rate of reduction of 20% will be made) 40 mm thick shutters with 19 mm thick pane of size 30 to 45 cm. sishu/Gamar/Champ/Badam/Bhola/Mogra/Hallak
17	Providing and fixing PVC Door Frame of size 50x47mm with a wall thickness of 5mm (± 0.2 mm) made out of single piece extruded PVC profile, with mitred cut joint sand joint with 2 nos. of PVC bracket of size 190 mm x 100 mm long arms of cross section size 35 mm x 15 mm & self driven self taping screws, the vertical door profiles to be reinforced with 40x20mm M.S. rectangular tube of 0.8 mm , including providing EPDM rubber gasket weather seal throughout the frame, including jointing 5 mm PVC frame strip with PVC solvent cement on the back of the profile. The doorframe to be fixed to the wall using 8 x100mm long anchor fasteners complete, all as per manufacturers specification and direction of Engineer -in- charge.
18	Supplying, Fitting & Fixing 30 mm thick both side prelaminated Factory made solid Panel PVC Door Shutter consisting of outer frame made out of M.S. tubes of 19 gauge thickness and size 19 mmx19 mm for styles, top and bottom rails, M.S. frame shall have cost of steel primers of approved make and manufacture, M.S. frame covered with 5 mm th. heat moulded PVC "C" channel of size 30 mm th, 70 mm width out of which 50 mm shall be flat and 20 mm shall be tapered in 45 degree angle on either sides forming styles; and 5 mm th. 95 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm tapered in 45 degree on the inner side to form top & bottom rail and 115 mm wide PVC sheet out of which 75mm shall be flat and 20 mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided either side of the panel with 10 mm (5 mmx2) th.,20 mm wide cross PVC sheet as gap insert for top rail and bottom rail sheet to be fitted in the M.S. frame welded/sealed to the styles &rails with 7 mm (5 mm+2 mm) th.x15 mm wide PVC sheet beading on inner side and joined together with solvent cement adhesive. An additional 5 mm th. PVC strip of 20 mm
	which is to be stuck on the interior side of the "C" channel using PVC solvent adhesive etc. complete excluding all necessary hardwares as per direction of Engineer-in-Charge.
19	Supplying fitting approved type ventilator in position after cutting holes in walls,setting in cement mortar,mending damages to wall and plaster and two coats of paint of approved brand sand shade .Payment of mending two damages of wall & plaster and painting to be made separately.R.C.C. ventilator of 20 mm thick - upto 0.10 sq.m. area
20	Supplying fitting, fixing- Openable steel windows as per IS sizes with side hung shutters and horizotal glazing bars with/without fixed type ventilators. [The extra rate admissible for the openable portion only] (p-82,i-33)
21	Supplying 1.5mm thick M.S. sheet fitted and fixed on one or both faces of M.S./ W.I. gate etc. with point welding at not more than 150mm apart complete in all respect as per design including cost of all labour and materials
22	(a) M.S or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and fixed with necessary screws and lugs in ground floor. (i) Grill weighing above 10 Kg./sq.mtr and up to 16 Kg./sq. mtr.

23	White washing including cleaning and smoothening surface thoroughly. (c) Three coats (on new works only).
	Inside Wall plaster
	Celling Plaster
24	Applying decorative cement based paint of approved quality after preparing the surface including scraping the same thoroughly (plastered or concrete surface) as per manufacturer's specification. (i) Two coats.
	Outside Wall plaster
25	(a) Priming one coat on timber or plastered surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.
26	(b) Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.
27	(A) Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary :
	(a) On timber or plastered surface :
	(b) On steel or other metal surface :(with any shade except white)
28	Supplying, fitting and fixing M.S. clamps for door and window frame made of flat bent bar, end bifurcated with necessary screws etc. by cement concrete(1:2:4) as per direction. (Cost of concrete will be paid (a) 40mm X 6mm, 250mm Length
29	Iron butt hinges of approved quality fitted and fixed with steel crews, with ISI mark.
	(i) 75mm. X 47mm. X1.70mm.
	(iii) 100mm. X 50mm. X 1.90mm.
	(A) Iron door ring of approved quality fitted and fixed with nut and washer complete. a) 50 mm dia.
30	Anodised aluminium barrel / tower / socket bolt (full covered) of approved manufactured from extruded section conforming to I.S. 204/74 fitted and fixed with
	(i) 150mm long x 10mm dia. bolt.
	(ii) 225mm long x 10mm dia. bolt.
31	i) Iron hasp bolt of approved quality fitted and fixed complete (oxidised) with 16mm dia rod with centre bolt and round (a) 200mm long.
32	Iron catch hook of approved quality fitted and fixed to shutter and chowkat. a) 6mm dia x 225 mm long.

33	Supplying , fitting and fixing hinge cleat in position excluding the cost hinge and other fiffitngs. b) with 75mm iron Butt-hinge iii) Sal : Local Sal
34	125mm long wooden buffer block i) With Sal siliguri
35	Number plaque of building (plaque size up to 225 mm x 225 mm) made of sand cement plaster (1 : 2) on face of wall or plinth with 50 mm size letters P.W.D and the number of the structure formed thereon (in sunk type) including painting the letters and the number complete as per direction.
36	R.C. shelves (1:1.5:3)) either precast or cast in situ with stone chips and necessary reinforcement upto 1% (0.8 % main and 0.2% distribution bars), shuttering etc. and 6 mm. thick cement plaster (4:1) including neat cement finishing and cutting chase fitting and fixing in position, mending good damages necessary complete. In ground floor (a) 37.5 mm thick panels .
37	Band moulding (horizontal-verticle) rectangular section made with cement plaster 1:4 complete. i) Projection upto 25 mm a)Depth or Width 75 mm to 100 mm.
38	Renewing throating, nosing or drip course moulding with 15 mm thick cement plaster(1:4)complete.(cement 0.7 kg/mtr.) In ground floor.
	Above Door & Window Chajja
39	Supplying,fitting and fixing Peet's valve fullway gunmetal standard pattern best quality of approved brand bearing I.S.I. marking with fittings . (tested to 21 kg/sq.cm.) (for water lines only).- 15 mm. dia.
40	Supplying,fitting and fixing Fan Hook for ceiling with 1 metre long 16mm dia rod complete including mending damages .Payment for damage and repair to be made separately.
41	Supplying, fitting and fixing bevelled edged mirror 5.5 mm thick silver red as per I.S. 3438 / 1965 together with brass C.P. hinges. (i) 450 mm X 300 mm

42	Construction of septic tank of different capacities as per approved drawing with 1st class brick work in cement mortar (1:4) including two 560 mm dia. R.C.C. manhole cover(heavy type)of approved make supplied, fitted and fixed in the 100mm thick R.C.C (1:1.5:3) top slab with necessary fittings, 20mm thick cement plaster (4 : 1) with neat cement finish to the internal surfaces and 15 mm thick cement plaster (4 : 1) to outside wall upto 200 mm below G.L floor finished with 25 mm thick grey artificial stone over 100 mm thick R.C.C(1:1.5:3) bottom slab including supplying, fitting and fixing all necessry specials, fittings, S.W. tees, C.I. foot rest etc.including excavation earth in all sorts of soil, shoring, bailing out and pumping out water as necessary, ramming, dressing the bed and fefilling the sides of the tanks with earth, removing spoils, filling up the chamber with clear water, removing foreign materials from the chamber and including constructing attached inspection pit as per approved drawing and connecting all necessary pipes, joints etc. with internal plaster work and artificial stone flooring is to be done with admixture of water proofing compound @ 0.5% by weight of cement with all costs of labour and materials.i) For 10 users.
43	Supplying, fitting and fixing Orissa pattern water closet in white glazed vitreous chinaware of approved make in position complete excluding 'P' or 'S' trap (excluding cost of concrete for fixing). i) 580mm x 440mm
44	Supplying, fitting and fixing E.W.C. in white glazed vitreous chinaware of approved make complete in position with necessary bolts, nuts etc.
45	Supplying, fitting and fixing 10 litre porcelain low- down cistern of approved make with either side or bottom inlet, side overflow, brackets complete with all internnal PVC fittings. White
46	Supplying, fitting and fixing approved brand P.V.C. CONNECTOR white flexible, with both ends coupling with heavy i) 600mm long.
47	Construction of circular soak well 2.5 metre deep in all types of sandy soils with dry brick work upto 1.6 metre from the bottom having 150 mm intermediate cement brick work (1:4) band all round and cement brick work (1:4) upto 0.90 metre from top with 20mm thick cement plastering (1:4) to inside face upto the depth of cement brick work, 15mm thick cement plaster (1:4) on outer face from top of the well upto G.L. and 6 mm thick cement plaster (1:4) on top of theR.C.C. cover slab including filling bottom 1.00 metre of inside of the well with brick metal (50 mm to 63 mm size) including R.C.C. cover slab of 100 mm thick with cement conc (1:1.5:3) with stone chips with necessary reinforcement and shuttering including one 560 mm dia. R.C.C. manhole cover (heavy type)of approved make supplied, fitted and fixed in the cover slab with necessary fittings, making nacessary arrangements for pipe connections, excavation of well including shoring, dewatering and removing the exess earth from the premises as per direction complete in all respect with all costs of labour and materials. With 250 mm thick dry brick work and 250 mm thick cement brick work (1:6) and 1.00m inside dia.

48	Constructing inspection pit of inside measurement 600 mm x 600 mm x upto 600 mm (depth)with 250 mm thick 1st class brick work in cement mortar (1:4)on all sides ,bottom of the pit consisting of 100 mm thick cement concrete(1:3:6)with stone chips over a layer of jhama brick flat soling,15 mm thick (1:4)cement plaster to inside walls and outside walls upto GL and 20 mm thick (1:4)plaster to bottom of the pit,providing necessary invert with cement concrete (1:3:6)with stone chips as per direction,neat cement finishing to entire internal surfaces, top of the pit covered with 100 mm thick RCC slab (1:1.5:3)with stone chips and necessary reinforcements upto 1% and shuttering including 6 mm thick cement plaster(1:4) in all external surfaces of the slab and one 560 mm dia RCC manhole cover of approved make supplied, fitted and fixed in the slab with necessary fittings,necessary earth work in excavation in all sorts of soil,filling sides of the pit with earth and removing spoils after work complete in all respects with all costs of labour and materials. -with pakur variety.
49	Supplying, fitting and fixing white vitreous china best quality approved make wash basin with C.I. brackets on 75 mm X 75 mm wooden blocks, C.P. waste fittings of 32 mm dia., one approved quality brass C.P. pillar cock of 15 mm dia., C.P. chain with rubber plug of 30 mm dia., approved quality P.V.C. waste pipe with C.P. nut 32 mm dia., 900 mm long approved quality P.V.C. connection pipe with heavy brass C.P. nut including mending good all damages and painting the brackets with two coats of approved paint.ii) 550mm x 400 mm size
50	Supplying, fitting and fixing bib cock or stop cock. (ii) Chromium plated Concealed Stop Cock (Equivalent to Code No. 514(A) & Model - Tropical / Sumthing Special of ESSCO or similar brand).
51	Supplying, fitting and fixing bib cock or stop cock. a) (i) Chromium plated Bib Cock short body (Equivalent to Code No. 511 & Model - Tropical / Sumthing Special of ESSCO or similar brand).
52	Supplying, fitting and fixing PVC pipes of approved make of (medium duty) conforming to ASTMD - 1785 and threaded to match with GI Pipes as per IS : 1239 (Part - I). with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, longscrew, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, making threads,fitting, fixing etc. complete in all respect including cost of all necessary fittings as required,jointing materials and two coats of painting with approved paint in any position above ground. (Payment will be made on the centre line measurements of total pipe line including all specials. No separate payment will be made for accesories, specials. Payment for painting will be made seperately)
	a) 25 mm dia.
	b) 15 mm dia.
	Supplying P.V.C. water storage tank of approved quality with closed top with lid (Black) - Multilayer

3.0 Over Head Reservoirs and Clear water reservoirs

3.1 General

Over Head Reservoirs: Construction of Over Head Reservoirs of capacity as mentioned below and as per enclosed drawing of Superstructure (as per IS:3370-2009 & others relevant Codes). However, Geotechnical investigation and design, drawing of sub-structure to be done by the contractor and work will be executed after approval of concerned Superintending Engineer.

Name Of Zone	Name of Ward	Capacity of Reservoir (Cum.)
Zone No.-4	Ward No. - 11	600.00
Zone No.-6	Ward No. - 15	750.00

Clear water reservoirs

Construction of CWR-1 (30 grade concrete and conforming to IS:3370-2009 & others relevant Codes) in the soil of safe bearing capacity minimum 75KN/m^2 including Geotechnical Investigation, Design, Drawing and Electro-Mechanical works complete in all respect.	2 x 350.00 cum
Construction of CWR-2 (30 grade concrete and conforming to IS:3370-2009 & others relevant Codes) in the soil of safe bearing capacity minimum 75KN/m^2 including Geotechnical Investigation, Design, Drawing and Electro-Mechanical works complete in all respect.	300.00 cum.
Proposed 300 cum CWR-2 is to be connected with adjacent 400 cum existing CWR and Existing Tube wells (10 nos.) are to be connected to the Existing CWR of 400 Cum capacity as per direction of EIC. Existing OHR of Zone V is to be filled up from existing twin CWR (capacity 300 cum each) of Gandhi Park	

3.2 Scope of works

Major components of work:

A. **Geo-Technical investigation work:** Soil investigation work will be conducted by the successful bidder as per direction of EIC. The soil test report to be vetted by reputed institution like IIT/NIT/Jadavpur University/ IIEST. However, a part of soil investigation report is being attached for ready reference and successful bidder has to undertake a soil investigation and conservative value of bearing capacity to be taken for foundation design purpose. Final decision will be taken by the Superintending Engineer, West Circle, M.E.Dte.

B. Sub-structure of OHR: Sub-structure means Pile, Pile cap etc. Detailed design & drawing of Sub-Structure (Foundation) of OHR to be prepared by the successful bidder as per soil investigation report & the departmental approved super-structure drawing and the design & drawing of the sub-structure to be

approved from the concerned Superintending Engineer, MED. A tentative drawing is being attached for ready reference only.

C. **Super-Structure of OHR:** Construction of Superstructure of the OHR i.e. from Tie beam level upto the top of structure to be done as per the departmental approved drawing (attached in Annexure-) & specification and direction of E.I.C. However minor correction in the super-structure may be done by the concerned Superintending Engineer during execution, if required.

D. **Construction of Guard Room**: A Guard room is to be constructed at site as per departmentally approved drawing (attached in annexure-), specification & direction of EIC.

E. **Land development**: Land development to be done as per specification & direction of EIC as mentioned in the annexure - .

F. **Approach Road**: Approach road to be done as per departmental drawing, specification & direction of EIC (Annexure-)

G. **Boundary Wall with Gate:** Boundary wall with gate to be done by the bidder as per the departmentally approved drawing, specification & direction of EIC (Annexure-)

H. Drainage System: A internal drain along with a for overflow /washout drain to be constructed and the outfall of the drains to be decided by the EIC. The internal drain may be brick masonry (minimum 250 mm X 300 mm inner section with 1st class 250 mm th. Brick work in cement mortar (1:4) over a layer of single brick flat soling, sand filling 100mm th. and 100 mm th. weak cement concrete (6:3:1) with graded stone ballast pakur variety (40mm size) including earth work in excavation, 15mm thick. Cement plaster (4:1) and neat cement punning all rounding the drain etc. all complete as per approved design, drawing and direction of the Engineer in-charge. (Ref. Deptt. Dwg) but however overflow/washout drain to be R.C.C in nature.

I. Head Works: All the Pipes (CIDF Class -B), valves, fittings etc. to be supplied by the agency within the premises of OHR. Valve chambers to be constructed by the bidder as per direction & specification of EIC.

J. **Internal electrification & Illumination Work:** Internal electrification of Guard room to be done with relevant IS standard with provision of 1 no. 20W LED Tube light, 1 No. 10 W LED bulb, 1 No. 5 W LED bulb, 1 no. ceiling fan & 2 no. bulk head bulb(20W). For yard lighting 2 nos. 120W LED flood light to be provided with 2 nos. post light at gate as per Direction & specification of EIC.

Major Items to be covered :

1	**Earth worfk in excavation** of foundation trenches or drains or septic tank soak well etc. in all sorts of soil (including mixed soil but excluding moorum and laterite or sand stone) including removing, spreading or stacking the spoils within a lead of 75 metre as directed,including trimming the bottom,side of trenches,levelling,dressing and ramming the bottom,bailing or pumping out water etc.as recuired complete.
2	Hire and laour charges for **shoring work** (including necessary close planks walling, framing, salbulla piling, strutting etc.) complete as per direction of EIC for foundation excavation.(vertical surface area in contact with supported earth is to be measured).(This item should be executed on specific direction of the EIC.)

3	**Earth work in filling** in foundation trenches or plinth with good earth in layers not exceeding 15 cm including breaking clods watering and ramming etc. layer by layer complete. With earth obtained from excavation of foundation
4	**Filling in foundation or plinth by silver sand** in layers not exceeding 150 mm. as directed and consolidating same by through saturation with water ramming complete, including the cost of supply of sand-By fine sand
5	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powder earth or local sand.
6	Supplying and **laying Polythene Sheet** (150gm/sq.m) over damp proof course or below flooring or roof terracing or in foundation trenches.
7	Cement concrete with graded stone ballast 40mm size excluding shuttering.-a) **6:3:1 proportion.--**i)In Ground Floor (A) [Pakur Variety]
8	Controlled cement concrete with well graded stone chips (20mm grade, Pakur/Chandil) excluding shuttering and reinforcement but including the cost for complete design of concrete mix as per IS-456 and relevant special publications, submission of job mix formula after preliminary mix design and after testing of concrete cubes & also taking of concrete cubes at every stage of casting at the site followed by testing as per direction of the E.I.C at the Govt../private Institution/Laboratories as decided by the E.I.C. Consumption of cement will not be less than 400 Kg. per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test and job mix formula in pile, pile cap, column, bracing, RCC heal beam bottom floor dome, conical wall (cantilever portion), bottom ring beam, shell wall walkway platform, top dome etc. including supply of all materials, casting vibrating with mechanical vibrators, curing etc. all complete as per drawing and specification --Pakur varity
	a) M 25 Grade
	b) M 30 Grade
9	**Reinforcement** for reinforced concrete work in all sorts of structures including distribution bars stirrups, binders etc. including supply of rods, initial straightening and removal of loose rust (if necessary) cutting to requisite length hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection complete in raft footing, columns. bracings, heal beam, ring beam, bottom dome, shaft, conical floor, roof, etc as per drawing and direction of EIC & including cost of wire (payment to be made on required quantity of reinforcement as per drawing and direction)-- Tor Steel HYSD(Fe-500) Make: TATA/SAIL/RINL
	i)for works in foundation,basement upto 4 meter from Ground level
	ii) above 4 meter from ground level and upto 20m top of heel beam
10	Hire and labour charges for 25mm to 30mm thick **wooden shuttering**, curved or straight without staging in foundation etc. & striking off after completion of works.-i) 25 to 30mm shutt.without staging in foundation
	ii) Steel shuttering shuttering or 9 to 12mm thick approved quality ply board shutteringin any concrete work--Foundation and upto 4m from GL
	iii) Steel shuttering shuttering or 9 to 12mm thick approved quality ply board shuttering in any concrete work From above 4m from GL to 24m ht.(bottom of the heel beam)

11	Hire and labour charges for shuttering of concrete work in over head R.C.C. reservoir on spearate R.C. frame structure including fitting fixing (for concrete works in heal beam, bottom floor dome, conical wall, cantilever portion, outer bottom ring beam, walkway, shell wall, top ring beam, top roof fome, latern wall, floor platform etc.) and striking off after completion of works. For Tank portion (From bottom of heal beam to top of reservoir)
12	Extra for staging beyond 4m [mode of measurement : area of unsupported horizontal projection(where staging beyond 4m is practically unavoidable) x mean height of staging]
13	Labour for Chipping of concrete surface before taking up Plastering work.
14	**15mm thick Plaster** (insde floor and wall of the tank.) with sand and cement mortar (3:1) including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary (Ground floor).[Excluding cost of chipping over concrete surface]
15	**15mm thick plaster** with sand and cement mortar (4:1) to all exposed surface of column, bracing, beam, wall, tank etc. Including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary (Ground floor).[Excluding cost of chipping over concrete surface]
16	**10mm thick plaster** with sand asnd cement mortar (3:1) inisde ceiling of the tank including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary (Ground floor).[Excluding cost of chipping over concrete surface] (28 Mtr. To 32 Mtr.)
17	**Neat cement punning** wall, dado window sills, floor, drain etc.
18	**Artificial stone floo**r in dado staircase etc. with cement concrete (4:2:1) with stone chips of approved quality laid in panels as directed including necessary leveling course with topping made with ordinary cement (white texture) and sand in proportion (2:1) including smooth finishing and rounding of corners including application of cement slurry before flooring work using cement @ 1.75 Kg./sq.m all complete including all materials and labour. -a) 3 mm thick topping (high polishing by grinding on this item is not permitted) with ordinary cement. i) 25 mm thick. For tank floor(i.e. Bottom spherical dome and bottom conical dome floor) At 5th floor level
19	Applying exterior grade acrylic primer of approved quality and brand on plastered or concrete surface on old or new surface to receive distemper or acrylic emulsion paint including scraping and preparing the surface throughly, complete as per manufacture's spec. and as per direction of EIC one coat--solvent based interior grade acrylic primer

20	Protective and decorative acrylic finish exterior paint of approved quality as per manufacturer specification and as per direction of EIC to be applied over a coat of cement based primer required. The rates includes the cost of materials labour, cost of scaffolding and all others incidental charges and including the cost of one coat of cament based primer required for new cement plastered surface.--Two coats--Premium 100% acrylic emulsion
21	Painting with ready mixed Black Japan of approved make and brand including smoothening surface Two Coat
22	Supplying, fitting, fixing 900 mm high G.I. pipe railing for R.C.C stair cat ladder walk wayfabrication,erection,welding of 40 mm G.I (NON TATA medium) pipe place at top of railing and2 nos 25 mm dia. G.I pipe (NON TATA medium) placed equally in between railing top & floor, vertical post of railling are 40 mm dia. G.I pipe (NON TATA medium) placed at 900 mm c/c . Theeach end of the vertical post is join by the 62 mm (25 mm X 6 mm X 0.062 m long) MS flat and 150 mm length (propes pipes) are grouted in concrete base of stair, walk way etc. All complete with supplying of all materials including hoisting up to the any height complete with 2 coats of painting with super gloss (Hi gloss) in any shade except white and black over a coat of primer complete as per direction of E.I.C.
23	Supplying at site filling ,fixing ,erecting and building in position where necessary 600mm.wide M.S. Cat ladder as per design consisting of 2nos.ISMC 150, 8mm.thick with necessary base plate of 8mm.thick 100mm.wide M.S. plate as steep @ 300mm.a/c supported on ISA 50x50x6 , ISA 60x60x8mm.thick both side as per requirement.900mm.ht. as post on one side/both side @ 1000 and ISA 45x45x6 as horiz. Runner to cover side railing including fabrication, welding ,drilling etc.as per drawing and direction and finished with two coats of synthetic enamel painting over a coat of primer etc. all complete as per direction of EIC. for cat ladder, railing of stair & platform, walkway etc.
24	Supplying at site hoisting, fitting, fixing erecting and building in position where necessary 450mm.wide ladder as per design consisting of 2nos. M.S.Plate of 8mm.thick with necessary base plate 60mm wide; and 16mm.dia M.S.round or square bar as steeps placed @ 300 c/c including fabrication, welding drilling etc. as per drawing and direction and finished with two coats of synthetic enamel painting over a coat of red lead primer etc. all complete as per;direction of the EIC
25	Horn gap lighting arrestor complete parts and pin insulators supplying, fitting fixing all complete as per direction of E.I.C.
26	Provision for embossing the name and capacity of reservoir with 20mm.thick (3:1) raised sand cement plaster with letter size 30cm x 20cm. on the outside of shell wall of the reservoir painted complete as pr direction of EIC
27	Making arrangement for water tightness test conforming to the provision laid in IS:3370(Pt-I) 1956 by filling with water upto top water level (TWL) as shown in the drawing and as per direction of EIC. . (if water is supplied by the Department rate shall be reduced as per prevailing departmental rate))
28	Disinfection and washing the tank and pipe connection including clearing the inside of the tank etc. complete as per direction of EIC.
29	Supplying hoisting, fitting fixing approved type water level indicator with copper float, guide pulley, wire boards etc. as per standard specification and direction and satisfaction of EIC
30	Supplying fitting and fixing in position reinforced cement polymer concrete manhole cover with matching frame as per IS-12592 (MD) a) 5MT load bearing capacity round manhole cover parovided with two nos. lifter hook with machining frame of size 550mm x 65mm(cover) and 650mm x 125mm(frame) opening 470mm and WT. 90KG. approx

31	(A)Earthing with 50mm.dia G.I. pipe3.64mm.thick x 3mtr. (10”-0”) long and l;1 x 4SWG G.I. (Hot dip)wire 4mtr. long 13mm. dia x 80mm.long G.I.Bolts, double nuts , washer including S&F 15mm.dia G.I.pipe protection (1mtr. long) to be filled with bitumen partly below ground level to an av. Depth of 3.65m below G.L. and restoring the surface duly rammed as per IEE rule
	ii)For Moorum soil
	b)By TATA Medium G.I.Pipe.
	c)Connecting the equipments to earth Bushbar including S&F G.I. (Hot Dip) wire of size as below on wall / floor with stables buried inside wall/floor as required and making connection to equipments with bolts, nuts, washer, cable lugs etc. as required and mending good damages as per IEE rule. i)No.8 SWG
32	Fitting, fixing Duck foot bend including construction of cement concrete(4:2:1) base with approved grade stone chips and including excavation of earth & filling etc. all complete in all respect as per direction of EIC.
33	Supplying mosquito proof net made of polythene (NETLON) size 75cm. X 75cm. for ventilator including fitting, fixing in the best sal wood frame of 8cm. X 5cm. cross section with necessary wooden batten fixing the assembly with necessary MS clamp in RCC wall at the lantern.
34	Supplying fitting and fixing door made with IRC febric mesh of 75mm x50mmx4.5mmx2.7mm on50mm x 50mm x 6mm angle iron frames all round and one 37.5mm x 6mm M.S. flat bar over the netting all round welded to angle iron frame and providing locking arrangements if necessary andwith two coats of synthetic enamel paint(Other than Hi-gloss) fitted and fixed with clamps or haskal doomney etc. complete at the lantern of R.C.C. over head reservoir.
35	Providing water thirable non-toxic expoxy coating (techoxy or equivalent brand of approved quality)2(two)finished coats over 2(two)of primer of same brand to the ceiling of roof dome including supply of requisite coating materials, cleaning of the substrate properly to make it free from dirt, paint, oil and grease, sludge, blister, loose plaster, fungus, moss and all other undesirable particles using wire brush, sand papers etc. including mending good all damages all complete as per direction of EIC & his satisfaction.
36	Bituminous filer of approved type in excavation joint between the shell wall & roof including finishing the top surface as per ;drawing, specification and direction of EIC.

PIPE WORK

37	Making flange joint to DI/CI pipes, specials and valves where necessary with supply of required rubber insertion and nut bolts, washers etc. of approved quality and type all complete as per specification and direction of EIC (Nut and bolts shall be of TATA/GKW rate).
38	Hoisting, erection ,placing connecting with pipes and specials CIDF pipes, specials) securing with building specials providing stays, clamps as required including cost of staging platform for the work etc. all complete in all respects as per drawing and direction of EIC.
39	Laying of CIDF /D.I Pipes with specials,valves etc. in trenches including excavation in all sorts of soil, moorum, soft rock and refilling the trenches after laying & jointing of pipes etc. all complete as per specification and direction of EIC.
40	Hoisting,fitting,fixing of C.I. bell mouth with puddle collar in RCC work as per drawing specification and direction of EIC all complete.

41	Construction of different dia Sluice valve /Air valve /Washout chamber in different sizes for village road where light traffic run and for main road where heavy traffic run as deptt. approved drawing with 25cm thick brick work (1:6) over cement concrete (4:2:1) over a single B/F soling over150mm.thick sand filling in foundation including earth work in excavation and disposal of excess earth from work site with RCC (1:1.5:3) cover slab 100mm / 150mm thick slab on top of chamber with 1% reinforcement in RCC cover slab with necessary opening for operation of valve all complete including cost of labour & materials as per Departmental Dwg. [Reinforcement type:- Other manufacturers not specified]
42	Supply and delivery of CIDF sluice valve (Special type) PW-1.00 of different dia make with CI double flanged non rusting spindle sluice valves conforming to IS 14846 -2000 with latest emended having body dome/bonnet and cover of C.I.Gr-F.G 210mtr. spindle of IS-6603 G.R-12/Gr-13 non-magnetic, nuts seat rings are of Gunonetal as per IS:318 LTB-2 flanges and drilled to IS:1538 Part IV & VI valves are suitable for max. working pressure of 10kg/cm2(seat test) and body tested to 15kg/cm2.N.B: The above item should be procured from the reputed manufactures as per deptt. approved vender list
43	Supply the following materials for connection of inlet, outlet, overflow, washout of OHR as per deptt. Drawings. (A) CIDF pipe Class-B as per I.S. 7181-1986 with latest revision.
	B) CIDF Duck foot bend as per I.S. 1538 1976 with latest revision
	C) CIDF Bell mouth pes. with puddle collar as per ISI 1538-1976 with latest revision
	(D) C.I.D.F 90˚ Bend as per I.S.1538 (Part-XXI)-1976 with latest amended
44	Commissioning the R.C.C. over head reservoir by operating of all category of sluice valves ,testing of hoisted pipe joints including repairing the leakage(s) if detected , including making inter connections, flange jointing/lead jointing with the newly laid rising main and distribution mainall complete as per direction of the EIC.
45	Supplying & labour for mixing of super plasticizer of approved make brand sika/cico conforming to IS-2645-1975 & IS-9130-1979 to be need in mortar admixture @ 0.20% by wt. of cement (i.e 100ml per 50kg of cement) for improving workability, reducing shrinkage and improvement of water tightness of the concrete.
46	Removal of rubbish, earth etc. from the working site and disposal of the same beyond the compound, in conformity with the Municipal / Corporation Rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer in charge
47	Construction of masonry drain 300 mm X 250 mm inner section with 1st class 250 mm th. Brick work in cement mortar(1:4) over a layer of single brick flat soling , sand filling 100mm th. and 100 mm th. weak cement concrete(6:3:1) with graded stone ballast pakur variety (40mm size) including earth work in excavation , 15mm th. Cement plaster(4:1) and neat cement punning all rounding the drain etc. all complete as per approved design , drawing and direction of the Engineer in-charge. (Ref. Deptt. Dwg)

4.0 Clear water rising main:

4.1 GENERAL

Laying of D.I. (K-9) pipes with all D.I. Specials and valves including Supply and delivery at site ISI marked Socket and Spigot jointing system centrifugally cast DI (K9) 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 bituminous /epoxy coating on outside as per IS: 8329-2000 specification with necessary jointing material rubber gasket (IS: 5382:1985) and M.S. Pipes including transportation, loading unloading and stacking at site including supply of polyethylene sleeves, including earth work in excavation in trenches, shoring (if necessary) of adequate width having minimum depth to keep the top surface of pipe 1.10 m below of the existing ground level in any kind of soil mixed 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 if required as per site condition with M.S. Casing & carrier pipe, Over-Ground installation to cross small ditches etc. supported with RCC pillars, Steel Bridge as & where 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 (if any), 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 / HDD (for roads other than NH and Railway) where necessary, removing the surplus materials from the site as per municipal rules in vogue 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 Temporary Roads Restoration as per enclosed drawing and the instruction of E.I.C. For Jack Pushing work under the NH, Rail etc. the necessary permission from the competent authority to be obtained by the agency on behalf of the concerned Division of MED. The bidder should facilitate the process including submission of drawings, fees and all other formalities in this regard. Only the charges / demand for Restoration fees Licence fee/NOC fees raised by NH/Railway Authority will be borne by the TIA/EIC.

[All materials like D.I. Pipes, MS Pipes, Sluice valve, Air Release valve, Drain valve, D.I. Fittings, Mechanical Joints etc., where necessary, will be supplied by agency.

Approximate quantity of D.I.Pipes (K9), M.S. Pipes, sluice valves and air release valves to be laid:

SI. No.	Pipe dia.	DI K9(Length)	Approx. no. of sluice valve	M.S(Length)	Approx. no. of air release valve
1	500 mm	-	3	-	-
2	450 mm	11505 m	23	115 m	5 Nos. (80 mm dia.) for 100 mm to 300mm dia. pipe, 7 Nos. (100 mm dia.) for 400mm & 450 mm dia. pipe.
3	400 mm	2555 m	5	25 m	
4	300 mm	2260 m	5	23 m	
5	250 mm	1475 m	3	15 m	
6	200 mm	1605 m	3	15 m	
7	150 mm	950 m	2	10 m	
8	100 mm	3018 m	6	30 m	

4.2 LOCATION

Rampurhat Municipality and adjoining area.

4.3 DETAIL SCOPE OF WORKS -IN GENREAL

I. 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.

II. The work is to be executed as per related IS Specification, Form No. 2911 and other specification laid down in the bid. The DI Pipes of different diameter and rubber gaskets will be supplied by the agency which should be procured directly from the Manufacturer only. Sluice valve, Air Release valve, D.I. Fittings, Mechanical Joints etc., where necessary, will be supplied by agency and it should of have reputed make and should be approved by the EIC.

III. The contract comprises of laying of Clear Water Rising Main network (D.I.Pipes K9) 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 he entertained. The M.S. pipes of requisite diameter also to be laid as per direction o f EIC.

IV. A tentative network drawing is attached with the bid document in .pdf format. The agency may collect the network 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 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. In that case any alternation /addition etc. done by the EIC and /or Superintending Engineer concerned will be final and the contractor will be bound to execute the work as per drawing approved by the SE concern.

V. 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.

VI. **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 etc. have to be submitted along with final bill. The final bill shall not be paid unless the said stipulation is complied with.**

VII. 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.

VIII. 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.

IX. 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 CC 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.

X. 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.

Xl. 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.

XII. 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.

XIII. 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.

XIV. 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 1.10 metre over the top of the pipe. For ditches /low land etc. pipes will be laid over RCC pillars as per specification and drawing duly approved by the EIC. Cost of which to be included by bidder in his quoted rate. Any Jack Pushing work or Steel Bridge is required for the laying work, to be constructed by the contractor. The contactor shall submit the detailed structural design and drawing which will be approved by the **Superintending Engineer, West Circle, M.E.Dte.**

XV. 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.

XVI. Cutting the pipes to sizes 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 15cm, 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 and at location where defects will be found during hydraulic tests. However, no trenches should be left open at the end of the day (at the time of closing of work).

XVII. 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.

XVIII. 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.

XIX. In general, the pipes have to be laid below 1.0 metre from the existing ground level but if 1.0 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.

XX. 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.

XXI. Pipe carrying steel bridge is to be constructed for crossing river and large drainage channel with adequate width and suitable foundation.

XXII. Soil Test to be conducted by the contractor at all the locations of pipe carrying steel bridge at his own cost. No's of Bore holes, depth of boring etc. to be decided by the Superintending Engineer, West Circle, MED.

XXIII. TEMPORARY ROAD RESTORATION:

Temporary Road Restoration is to be made suitable for vehicular movement and as per direction and satisfaction of E.I.C.

XXIV. 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.

XXV. TECHNICAL SPECIFICATION AND GENERAL CONDITIONS:

1. While furnishing the prices, Bidders should quote their rates including the cost of 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 the 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. Inspection may be carried out by Third Party Inspection (TPI) Agency as stipulated through RITES/M ECON/EI L/PDI L in respect of successful bidder.
5. 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

6. Rubber Gasket should be conforming to IS 5382: 1985.
7. 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
    v. ISI certification mark
    vi. The last two digits of the year of manufacturer
8. 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. RECOVERY OF MATERIALS:

For loss of damage of materials, if any supplied by Government or non-returning of surplus materials, recovery will be made from the contractor at the highest of the following rates:-

Fifty percent in excess of departmental stock rate or the rate at which Department buy the material from agency at the time of recovery of value.

Ten per cent in excess of market rate at the time of recovery of value. Decision of the ExecutiveEngineer/E.I.C. concerned in respect of market price is final and bindings.

The contractors' should carefully examine the materials supplied from Govt. Store regarding its quality and suitability. No complaint in this regard will be entertained once the materials have been supplied to and received by the Contractors.

XXVII. DEPARTMENTAL MATERIALS AND COST:

All the materials have to be supplied by the contractor.

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 inconsequence 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.

4.4 SPECIFICATION OF DIFFERENT ITEM OF WORKS TO BE EXECUTED

a) Laying of D.I. pipes (K9/K7) including supplying 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 1.10 M 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. Surplus materials out of excavation are to be cleared by the Agency within 20 Km. Radius of the Municipal boundary at his own cost.

b) Laying of **D.I** pipes & specials over brick or concrete pillar or wall upto height of 2m aboveground 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 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 D.I pipes for using in Tyton joints line or otherwise by means of electric grinder set at site as per direction of F.I.0

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 15381993 with latest amendment all complete along with installation of the same as per direction of EIC. All products must have BIS certification.
(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/ HDD** 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)Pipe carrying steel bridge of width 1.5 m or above is to be constructed with adequate foundation for crossing at various location (Appx. 11 no.s) in clear water rising main and distribution network.

p)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.

q)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

r) Reinforcement conforming to relevant IS code 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.

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) DI Specials should be approved make of Kejriwal Casting Ltd./L & T/Electro Steel Casting Ltd.

u) Temporary Restoration works of all roads is to be done as **suitable for vehicular movement** per enclosed drawing and as per direction and satisfaction of E.I.C.

5.0 Distribution pipe line

5.1 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 , PN- 06) pipes** conforming to IS 4984-1995 with latest revision & amendments if any with, Supplying **PVC-O pipes** conforming to IS 16647-2017 with latest revision & amendments if any & Supply , fabrication of **MS Pipe of SAIL/TATA/Jindal make** & **Laying of D.I. (K-7) Pipes, OPVC Pipes, HDPE Pipes &. M.S.** Pipes

along with supply of all D.I. OPVC, and HDPE Specials 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),HDD or **Jack pushing work at NH/SH/Railway 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, temporary road restoration for vehicular movement 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.).

(All the materials i.e. D.I-K7/ HDPE/OPVC/ MS Pipes and DT/Mechanical Joints, D.I./C.I. Specials, Valves and Rubber Gaskets & all types of specials & fittings have to be supplied by the contractor)

Approximate quantity (m) of pipe lines to be laid for Zone 1:

HDPE Pipes		Approx. no. of sluice valve	DI Pipe (K7)		Approx. no. of sluice valve	MS Pipe	
Dia.	Length		Dia.	Length		Dia.	Length
110mm(OD)	20416 m	41	100 mm	-	-	100 mm	-
125mm(OD)	-	-	150 mm	930 m	2	150 mm	20 m
140mm(OD)	-	-	200 mm	60 m	-	200 mm	-
160mm(OD)	-	-	300 mm	70 m	-	300 mm	-

Approximate quantity (m) of pipe lines to be laid for Zone 2:

HDPE Pipe		Approx. no. of sluice valve	DI Pipe (K7)		Approx. no. of sluice valve	MS Pipe	
Dia.	Length		Dia.	Length		Dia.	Length
110mm(OD)	18302 m	31	150 mm	230 m	-	150 mm	3 m
125mm(OD)	220 m	-	200 mm	130 m	-	200 mm	3 m
160mm(OD)	650 m	2	250 mm	1650 m	3	250 mm	18 m
-	-	-	300 mm	1945 m	4	300 mm	20 m

Approximate quantity (m) of pipe lines to be laid for Zone 3:

HDPE Pipes		Approx. no. of sluice valve	DI Pipe (K7)		Approx. no. of sluice valve	MS Pipe	
Dia.	Length		Dia.	Length		Dia.	Length
110mm(OD)	19689 m	33	100 mm	670 m	1	100 mm	8 m
160mm(OD)	3065 m	6	150 mm	1005 m	2	150 mm	10 m
-	-	-	200 mm	65 m	-	250 mm	3 m
-	-	-	250 mm	195 m	-	-	-

Approximate quantity (m) of pipe lines to be laid for Zone 4:

HDPE Pipes		Approx. no. of sluice valve	DI Pipe (K7)		Approx. no. of sluice valve	MS Pipe	
Dia.	Length		Dia.	Length		Dia.	Length
110mm(OD)	6907.00	13	150 mm	235 m	1	150 mm	3 m
-	-	-	200 mm	450 m	1	200 mm	5 m
-	-	-	250 mm	140 m	-	250 mm	3 m
-	-	-	300 mm	170 m	-	300 mm	3 m
-	-	-	350 mm	40 m	-	-	-

Approximate quantity (m) of pipe lines to be laid for Zone 5:

HDPE Pipes		Approx. no. of sluice valve	DI Pipe (K7)		Approx. no. of sluice valve	MS Pipe	
Dia.	Length		Dia.	Length		Dia.	Length
110 mm(OD)	21593 m	37	250 mm	865 m	2	250 mm	10 m
-	-	-	300 mm	20 m	-	-	-

Approximate quantity (m) of pipe lines to be laid for Zone 6:

HDPE Pipes		Approx. no. of sluice valve	DI Pipe (K7)		Approx. no. of sluice valve	MS Pipe	
Dia.	Length		Dia.	Length		Dia.	Length
110mm(OD)	25736 m	43	200 mm	390 m	1	200 mm	5 m
125mm(OD)	610 m	2	250 mm	710 m	1	250 mm	8 m
140mm(OD)	255 m		300 mm	80 m	-	-	-
160mm(OD)	170 m	-	-	-	-	-	-

5.2 LOCATION

Within Rampurhat Municipal areas.

5.3 DETAIL SCOPE OF WORKS

I. The agency has to quote the rate on the basis of quantity of supplying & laying as per Annexure - I and existing condition of the site as unit rate diameter wise. The participating agency has to carefully inspect the site and collect all data for preparation of justified estimate and thereafter quote their rates in the 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.

II. The work is to be executed as per related IS Specification, WBF 2911 and other specification laid down in the bid. All the materials (Pipes/Fittings/Valve/Any type of Joints) will be supplied by the agency.

III. The contract comprises of laying of the Distribution System and laying, fitting, fixing, jointing, distribution pipes 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.

IV. The successful bidder has to submit the details of estimate if asked for before acceptance of bid.

V. The work has to be carried out on the basis of the approved drawing supplied by the TIA/EIC and part completion drawing has to submit along with each R.A bill submitted by the Contractor.

VI. 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 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.

VII. 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.

VIII. 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.

IX. The pipes are to be laid as far as practicable along road flanks with least 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.

X. 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.

XI. 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.

XII. 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.

XIII. 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.

XIV. 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.

XV. 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.

XVI. Cutting the pipes to sizes ,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 15cm. each layer being adequately watered and consolidated. The filling has to be done after completion of the joints and after effecting the hydraulic test as per specification.

XVII. 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.

XVIII. 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.

XIX. In general, the pipes have to be laid below 1.1 metre from the existing ground level but if 1.1 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. However, if the minimum cushion lower than the above is to be maintained due to site condition then necessary approval of EIC need to be taken and reduced rate for the lesser excavation as per PWD SoR (valid at the time of execution) will be made.

XX. 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.

XXI. TEMPORARY ROAD RESTORATION:

Any types of Roads and other road flanks, along which the pipes have been laid, have to be restored (temporary) for vehicular movement.

XXII. EXCAVATION OF FOUNDATION, FILLING UP TRENCHES:

Foundation to be excavated as per drawing. The depth and width of trenches to be properly maintained. 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.

XXIII. SUPPLY OF PIPES AND CARRIAGE:

All the materials have to be supplied by the contractor.

XXIV.RECOVERY OF MATERIALS:

All materials supplied by the contractor should carefully examine regarding its quality and suitability. Any complaint in this regard will be liable for rejection of materials supplied by the Contractors.

XXV. MATERIALS AND COST:

All the materials i.e. D.I. Pipes, HDPE/ OPVC/ MS Pipes and DT/Mechanical Joints, D.I./C.I. Specials, Valves and Rubber Gaskets have to be supplied by the contractor.

XXVI.TIME OF COMPLETION:

The works for pipe line shall be completed in all respect by the contractors' within 365 days.

In the event of work being not completed within this stipulated period, the contractors' will be liable to pay a penalty as Clauses of WB form 2911 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 work order. Otherwise, the contract will be terminated. The contractor will accordingly, prepare a time bound programmes 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 WB 2911 tender 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 escape 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 inconsequence

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.

5.4 MAJOR ITEM OF WORKS TO BE EXECUTED

	Part - (A) :- for DI K-7 & M.S Pipes with Fittings & Valves
1	Supply & Delivery (at Site) of DI K-7 Pipes conforming to I.S-8329:2000 (included 18% GST) and carrying CI/DI pipes with specials (including supply of all types of D.I Ductile Iron specials) and valves and lowering placing in position and laying carefully inside the trenches in proper alignment and gradient etc. including earth work in excavation of adequate width as per specification having min. clear cover from top of pipe is 1.10mtr. below existing ground level in any kind of soil including mixed with boulder, road sub-grade and its flank, but excluding moorum and laterite and stone etc. without damaging the exisiting telephone/electric cable etc.(in case of damaged if any type of cable line during execution , necessary damaged charges as applicable by the respective authority will be borne by the agency in his own cost) preparing the bottom surface for continuous bedding of pipe line and laying pipes, fitting, fixing specials and valves with bailing out water if any including carriage of pipes, specials and valves from local deptt. store within 8KM and back filling the trenches with excavated earth in layers to original condition as per specification and direction of EIC.
2	Filling the pipe line with water, testing hydraulically as per I.S 3114-1965 (Article-6) in section of a length not exceeding 500mtr. for head of pressure as per specification including supplying installing and fixing all equipment such as diesel pump set, blank flange, pressure gauge, valve, pressure pump and all other tools and plants including drilling topping and plugging of necessary holes to pipes, blocking ends providing temporary thrust block and subsequent blocking of holes and other jointing materials and dismantling and removal of the same including disposal of water etc. all complete as per specification and direction of EIC. The rate is inclusive of cost of requisite water to be arranged by the contractor (Recovery rate of water @ Rs.10.00/m3, if contractor used water from deptt. source).
3	Cleaning thoroughly the inner surface of pipe line including specials and valves by flushing with water and subsequently disinfection of the same pipe line by flushing again with water containing bleaching powder resulting in residual chlorine not less than 15mg/ltrs. after 24hrs. of such filling including laboratory testing of water samples obtain from the disinfested pipe line and disposal of water from the pipe line after completion of the work. The rates including of cost of requisite water to be arranged by the contractor) (The rate of water @Rs. 10/m3 may be recovered, if the contractor used water from deptt. source).
4	Cutting DI pipe (all class & type) to required length with cutting device etc. and grinding the cutting portion with file as per direction and satisfaction of EIC.
5	Chamfering the spigot end of all type/class of DI pipe for proper using of push joint by means of grinder set at site for proper joint etc. all complete as per direction of EIC.
6	Making flange joint to DI/CI pipes, specials and valves where necessary with supply of required rubber insertion and nut bolts, washers etc. of approved quality and type all complete as per specification and direction of EIC (Nut and bolts shall be of TATA/GKW rate).

	All Types of D.I Ductile Iron (D.I) specials (viz. Bend, Tee, Taper, Tail piece etc), size conforming to IS specification No 9523/2000 With Cement mortar lining (inside) and bituminous coating (outside) (25% of payment will be held up till successful hydraulic testing)
8	Cast iron kinetic double orifice type air release valve having small orifice elastic ball resting on gun metal orifice nipple large orifice vulcanite ball seating on moduled seat ring, valve with built-in-Kinetic features, isolating sluice valve mounted in horizontal position and operated by a metre wheel gearing: inlet faced and drilled to IS 1538 Table 4 & 6. valve suitable for maximum working pressure of 10 kg/CM2
9	Cost iron double flanged manually operated sluice valves generally conforming to IS 14846 : 2000, having four faces and spindle nut of gunmetal. inside screw non- rising type quality gunmetal /AISI 410 spindle: seat tested to 10kg/CM² and body tested to 15kg/CM², flanges flat faced and drilled to 1.S.: 1538 : 1993. Painted black all over with asphalt base paint. Valves tested by closed end method.
13	Construction of different dia Sluice valve /Air valve /Washout chamber in different sizes for village road where light traffic run and for main road where heavy traffic run as deptt.approved drawing with 25cm thick brick work (1:6) over cement concrete (4:2:1) over a single B/F soling over150mm.thick sand filling in foundation including earth work in excavation and disposal of excess earth from work site with RCC (1:1.5:3) cover slab 100mm / 150mm thick slab on top of chamber with 1% reinforcement in RCC cover slab with necessary opening for operation of valve all complete including cost of labour & materials as per Departmental Dwg. [Reinforcement type:- Other manufacturers not specified]
7	Construction of Thrust Block
8	Bituminous pucca road (approx. 450mm depth) cutting by using gaiti, chisel, hammer etc. and picking uip the with drawing excavated materials and remove the same within distance of 30mtr. at least all complete for fixing/crossing all dia of pipe line as per direction of EIC. (width cutting for trench as per IS 3114 : 2004 , P-1, Cl-3.2)
9	Dismantling all type of plain cement concrete works, stacking serviceable materials of site and removing rubbish as directed within a lead of 75mtr. for laying all dia pipe line in ground floor, upto 150mm thick. (width cutting for trench as per IS 7634 (Part 2) : 2012 , Table-3)
9	Removal of rubbish, earth etc. From the working site and disposal of the same beyond the compound, in conformity with the Municipal/ Corporation Rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer-In-Charge. Total = Road dismantling qnty.
10	Submission of complete detailed drawing of distribution system, rising main etc. after execution of work showing position of different types of valves, fittings/specials sluice valve chamber with location, node to node wise in the sanctioned drawing as completion drawing of the water supply scheme as per direction and satisfaction of EIC. The list of dia wise fitting/specials, different pipes ;of valve used in the rising main should be shown in the completion drawing (not separate) with verified by SAE & AE in-charge of the scheme. The above drawing will be submitted in 5 copies.

11	Making barricading of excavation trenches of road width upto 15mtr. to avoid any accident by providing 75mm dia bamboo post placed vertically & horizontally with the help of 6"size iron rail as per direction and satisfaction of EIC. (Applicable where critical situation arise and take up the work as per direction of EIC)
12	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.
	Taking Consideration for damage structure
13	Hire and labour charges for shuttering with centering and necessary staging upto 4m using approved stout props and thick hard wood planks of approved thickness and required bracing for concrete slabs, beams, column lintel curved or straight including fitting, fixing and striking out after completion of woks (upto roof of ground floor). (f) 25 mm to 30 mm shuttering without staging in foundation
14	Reinforcement for reinforced concrete work in all sorts of structure including distribution bars stirrups, binders etc initial straighting and removal losse rust if necessary cutting requiste length hooking and bending to correct shape placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction (i) Tor steel/Mild Steel.
15	Brick work with 1st class bricks in cement mortar (1:6) (a) In foundation and plinth
16	Supplying and laying of M.S pipe
17	Temporary road restoration for vehicular movement
Part - (B) :- HDPE Pipes –(i) Supply and laying of HDPE pipe and (ii) connection of existing DI pipe with proposed HDPE pipe	
1	Supplying HDPE (Materials grade PE-100) pipes conforming to IS 4984-1995 with latest revision & amendments if any with necessary HDPE specials (excluding cost of CIDF valves) including labour charges for earth work in excavation in any kind of soil including mixed soil with boulder,road sub-grade and aits flank but excluding moorum laterite or sand stone / hard rock cutting with chisel required including cutting road flank/ brick pavement etc. without damaging the exisiting 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.

	(A) Pressure Rating : PN 6
2	Filling the pipe line with water, testing hydraulically as per I.S 3114-1965 (Article-6) in section of a length not exceeding 500mtr. for head of pressure as per specification including supplying installing and fixing all equipments such as diesel pump set, blank flange, pressure gauge, valve, pressure pump and all other tools and plants including drilling topping and plugging of necessary holes to pipes, blocking ends providing temporary thrust block and subsequent blocking of holes and other jointing materials and dismantling and removal of the same including disposal of water etc. all complete as per specification and direction of EIC. The rate is inclusive of cost of requisite water to be arranged by the contractor (Recovery rate of water @ Rs.10.00/m^3, if contractor used water from deptt. source**).**
	B) For UPVC/HDPE Pipe
3	Cleaning thoroughly the inner surface of pipe line including specials and valves by flushing with water and subsequently disinfection of the same pipe line by flushing again with water containing bleaching powder resulting in residual chlorine not less than 15mg/ltrs. after 24hrs. of such filling including laboratory testing of water samples obtain from the disinfested pipe line and disposal of water from the pipe line after completion of the work. The rates including of cost of requisite water to be arranged by the contractor) (The rate of water @Rs. 10/m^3 may be recovered, if the contractor used water from deptt. source**).**
	B) For UPVC/HDPE Pipe
4	Making barricading of excavation trenches of road width upto 15mtr. to avoid any accident by providing 75mm dia bamboo post placed vertically & horizontally with the help of 6"size iron rail as per direction and satisfaction of EIC. (Applicable where critical situation arise and take up the work as per direction of EIC)
5	Bituminous pucca road (approx. 450mm depth) cutting by using gaiti, chisel, hammer etc. and picking uip the with drawing excavated materials and remove the same within distance of 30mtr. at least all complete for fixing/crossing all dia of pipe line as per direction of EIC. (width cutting for trench as per IS 7634 (Part 2) : 2012 , Table-3)
6	Dismantling all type of plain cement concrete works, stacking serviceable materials of site and removing rubbish as directed within a lead of 75mtr. for laying all dia pipe line in ground floor, upto 150mm thick. (width cutting for trench as per IS 7634 (Part 2) : 2012 , Table-3)
	Total
7	Removal of rubbish,earth etc. from the working site and disposal of the same beyond the compound, in conformity with the Municipal /Corporation Rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer in charge.

8	Construction of different dia Sluice valve /Air valve /Washout chamber in different sizes for village road where light traffic run and for main road where heavy traffic run as deptt.approved drawing with 25cm thick brick work (1:6) over cement concrete (4:2:1) over a single B/F soling over150mm.thick sand filling in foundation including earth work in excavation and disposal of excess earth from work site with RCC (1:1.5:3) cover slab 100mm / 150mm thick slab on top of chamber with 1% reinforcement in RCC cover slab with necessary opening for operation of valve all complete including cost of labour & materials as per Departmental Dwg. [Reinforcement type:- Other manufactuerers not specified] i) 80 mm to 150 mm dia pipe
9	Submission of complete detailed drawing of distribution system, rising main etc. after execution of work showing position of different types of valves, fittings/specials sluice valve chamber with location, node to node wise in the sanctioned drawing as completion drawing of the water supply scheme as per direction and satisfaction of EIC. The list of dia wise fitting/specials, different pipes ;of valve used in the rising main should be shown in the completion drawing (not separate) with verified by SAE & AE in-charge of the scheme. The above drawing will be submitted in 5 copies.
	B) For UPVC/HDPE Pipe
10	Earth work excavation of foundation trenches or drain in all sort of soil including removing spreading or stacking the spoil within a lead of 75 mtr. As directed.The item including necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. (a) Depth of excavation not exceeding 1,500 mm
11	Taking out CI/DI Pipes with specials and valves including staking the same with in a lead of 30m as per instruction of E.I.C.(Excavation,dewatering earth filling etc will be paid separately)Pipe above 150 mm diameter and up to 250 diameter Depth of Metre trench up to 2 Metre.
12	Earth work in filling in foundation trenches of plinth with good earth, in layers not exceeding 150mm including watering and ramming etc. layer by layer complete.
13	Filling in foundation or plinth by silver sand in layer not exceeding 150mm as per directed and consolidating same by through saturation with water ,ramming complete including the cost of supply of sand.
14	Cutting of CI/DI pipes for fitting with pipes and or special or similar or dissimilar or dissimilar materials at the time of laying without damaging any part of the required length including taking out of the broken pieces from the trench and restacking the same at the specified location as per direction of the EIC.
15	Chamfering the spigot end of CI/DI pipes for fitting with the socket of CI/DI pipes and /or specials in tyton jointed water mains or other wise using electric grinder as per specification and direction of the EIC.
16	Rubber gasket joint to CI/DI Pipes and specials all complete to makes the joint water tight as required hydrolic pressure as per specification and direction of the EIC.

17	All type of Ductile iron (D.I.), Special(viz. Bend, Tee, Taper, Tail piece etc.) size conforming to I.S. Specification No 9523/2000 with cement mortar lining (inside) and bituminous coating (outside).
18	Temporary road restoration for vehicular movement

6.0 Dismantling Works

6.1 Description

Adequate safety measures to be taken during work period from the part of contractor. Any accident etc., if any, to be compensated by the Contractor as per prevailing laws and rules.

7.0 Electro-Mechanical Works

Details scope of Electro-Mechanical works will be as per Section I

8.0 Limit of Contract

The limit of contract starts from preparation of complete drawing 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.

Superintending Engineer, West Circle
Municipal Engineering Directorate

SECTION- B

CONDITIONS & REQUIREMENTS FOR BIDDING

1. **Submission of e-Bid document will not be allowed beyond the schedule time indicated in the e-Bidding.**

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 e-Bid.**

3. **Each page of the e-Bid documents, drawing etc. has to be digitally signed / initialled by the authorized signatory.**

4. **No e-Bid proposal will be entertained without the earnest money being submitted as indicated in the e-NIB. No interest will be allowed for the said earnest money and the Bid issuing authority will hold the same till finalization of the e-Bid.**

5. **Any conditional e-Bid will be liable for rejection.**

6. **e-Bids will be opened in presence of the Bidder or their authorized representatives who opt to be present.**

7. **The Bid inviting Authority reserves the right to reserve or amend the e-Bid documents prior to the date notified for submission of the eBid or also to extend the time mentioned in the e-NIB under intimation to the Bidders.**

8. **e-Bid once offered cannot be withdrawn within a period of 180 calendar days from the date set for opening of e-Bids. Any extension of this validity period if required will be subject to concurrence of the Bidders.**

9. **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 e-Bid documents before the Bid Inviting Authority by uploading his/her doubt within a period of seven days from the date of publishing of Bid documents. The bidder shall submit his/her queries in writing at least four working days in advance from the date of pre-bid meeting.**

10. **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 e-Bid documents. Bid Inviting Authority however, reserves the right to have pre-Bid conference with the intending Bidders if deemed necessary.**

11. 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.

12. If expenses incurred for site inspection and all activities in the preparation and uploading of the e-Bid shall be borne by the Bidders.

13. 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.

14. e-Bid, 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 e-Bid, which may be found to be defective during the detail scrutiny.

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

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

17. This set of Bid documents consists of:

a) Main Bid Documents consists of PART I & PART II (Technical) & financial (.xls sheet).

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 provisionally approved in writing, including subsequent written confirmation of previous verbal approval and "approval" means provisional approval in writing, including as aforesaid. However, in spite of approval from Competent Authority contractor is solely responsible for design-cum-execution of the whole project as it is turnkey job.

(b) "Authority" means the TIA or his authorized representatives of Superintending Engineer, West Circle, MED

(c) "Bank" means the "State Bank of India" or any other Scheduled Bank.

(d) "Calendar day" means a period of twenty four hours extending from midnight to midnight.

(e) "Cash" includes cheque, bank drafts and any other payment voucher authorizing payment from any bank or treasury.

(f) "Contractor" means the person or persons, firm or Corporation who have entered into the contract for the performance of the work.

(g) "Contract price" means the sum as stated in the Bid submitted by the contractor subject to such additions thereto or deductions therefore as may be made under the provisions of; the contract documents and accepted by the Employer.

(h) "Constructional Plant" means all appliances or things of whatsoever nature required in or about the execution or maintenance of the works but do not include materials or other things intended to form or forming part of the permanent works.

(i) "District" or Rampurhat Municipal Area means the area described as such in Schedule-I of the Act;

(j) "Drawings" means the drawings referred to in the Bid documents and any modification of such drawings approved in writing by the undersigned from time to time or approved in writing by the Superintending Engineer, West Circle, M.E.Dte.

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

(l) "Engineer in Charge" means the Executive Engineer, Birbhum Division of Municipal Engineering Directorate to whom the Superintending Engineer, West Circle, MED, delegate his Authority by the way of declaring him as EIC in the Bid documents.

(m) "Engineer's Representatives" means any Assistant Engineer or Assistant of the Engineer or any Clerk of works appointed from time to time by the Employer or the Engineer to perform the

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

(n) "Ground Level" means the level of the referred point of the exposed surface of the ground, road or pavement free from extraneous materials;

(o) "Holidays" means a public holiday for the purpose of Section 25 of the Negotiable Instruments Act, 1881 or such other day on which the office of the Authority remains closed for the day;

(p) "Local Authority" not only means a Municipal Corporation or Municipality or other authority legally entitled to the control or manage local funds but also includes the West Bengal State Electricity Board.

(q) "Month" means English calendar month;

(r) "Permanent Work" means the permanent works including equipment to be supplied, executed, erected and maintained in accordance with the Contract;

(s) "Road" shall include a street, avenue, lane, by-lane or any other access routes over which a person authorized by a Local Authority has a right of way;

(t) "Rupees" (or Rs. in abbreviation) shall mean Rupees in Indian Currency.

(u) "Site" means the land and other placed on, under in or through which the Permanent. Works or Temporary Works are to be executed and any other lands and places provided or arranged by the employer for working space or any other purpose as may be specifically designated in the Contract as forming part of the Site,

(v) "Specification" means the specification referred to in the Bid and any modification thereof or addition thereto as may from time to time be furnished or approved in writing by the Superintending Engineer, West Circle, MED.

(w) "Store" means such storage areas including depot, go down, stockyard, dumping yard etc. maintained by the Authority) or where supply of any material for the construction or any work has been undertaken by any authorized agent, by such agent within the district.

(x) "Temporary Works" means all temporary works of every kind required in or about the execution or maintenance of the Permanent Works.

(y) "Bid Date" means the date fixed for receipt of Bids as per Notice Inviting Bids or as extended by subsequent notification(s).

(z) "Bidder" means the person, or persons, firm or corporation submitting a Bid for the work contemplated either directly or through a duly authorized representative.

(aa) "The Act" West Bengal Municipal Act, 1975

(bb) "Time" expressed by hours of the clock shall be according to the Indian Standard Time.

(cc) "Water main" means any pipe or conduit of cast iron, DI (Ductile Iron) pipe, steel or of any other material intended to conveyor 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.

2.0 ENGINEERS 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.

The Executive Engineer, Birbhum Division, MED may delegate in writing to the EIC any of the power and authorities vested in the engineer and shall furnish to the Contractor and to the Employer a copy of all such written delegations of Power and authorities. Any Written instructions or approval given by Engineer's representative to the contractor within the terms of such delegation, but not otherwise, shall bind the Contractor as though it had been given by the Superintending Engineer, West Circle, MED, provided always as follows:

a) Failure of the Engineer's Representative to disapprove any work of materials shall not prejudice the power of the Superintending Engineer, West Circle, MED 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 TIA, who shall thereupon confirm, reverse or vary such decision.

ASSIGNMENT AND SUB LETTING

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 Superintending Engineer, West Circle, MED.

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 Executive Engineer, Birbhum Division, MED, which shall not be unreasonably withhold and such consent, if given, shall not relieve the Contractor form 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 labour 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 Executive Engineer, Birbhum Division, MED, who shall thereafter issue to the Contractor instructions thereon.

6.0 DRAWINGS

1) Custody of drawing: All the approved Drawings shall remain in the safe custody of the Executive Engineer, Birbhum Division, MED, one copy of original approved drawing and design to be submitted to Rampurhat Municipality but one copy thereof shall be furnished to the Contractor free of charge. The Contactor 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, Birbhum Division, and M. E. Dte. All drawings as provided under the Contract.

2) Copy of drawing: - One copy of drawings to be kept on site. One copy of the Drawings furnished by the Contractor as aforesaid, shall be kept by the Contractor on the site and the same shall at all reasonable times be available for inspection and use by the Engineer and his/municipal Representatives and by any other persons authorized by the Engineer in writing.

3) Disruption of progress: The Contractor shall give written notice to Executive Engineer, Birbhum Division, MED whenever planning or progress of the works is likely to be delayed or disrupted order, including a direction instruction or approval is issued by the Superintending Engineer, West Circle, MED on recommendation of Executive Engineer within a reasonable time. The notice shall include details of the drawing or order required, and of why and by whom it is required and of any delay or disruption likely to be suffered if it is further delayed.

7.0 FURTHER DRAWINGS

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

8.0 GENERAL OBLIGATION

(1) 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 and safety or all Site operations and methods of construction, erection etc.

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.

10.1 ***Security Deposit:***

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

For work with five years Defect Liability Period:

- ***i) No security deposit shall be refunded to the contractor for 1st 3 years from the date of completion of the work;***

ii) 30% of the security deposit shall be refunded to the contractor on expiry of four years from the actual date of completion of the work;

iii) The balance 70% of the security deposit shall be refunded to the contractor on expiry of five years from the actual date of completion of the work.

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 covered under the contract will not be made by the Superintending Engineer, West Circle, MED 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 prior of formal acceptance, the same there of must satisfy in respect of meeting the specification. 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 Superintending Engineer, West Circle, MED 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.

10.2 PERFORMANCE GUARANTEE

The contractor will have to entered into an agreement through banker to ensure performance guarantee on non-judicial stamps Rs.10/-. Suitable proforma will be supplied in due course of time.

11.0 INSPECTION OF SITE

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

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

12.0 SUFFICIENCY OF BID AND ADVERSE PHYSICAL CONDITIONS, ARTIFICIAL OBSTRUCTIONS

The Bidder shall be deemed to have satisfied himself before Biding 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 Executive Engineer, Birbhum Division, MED shall pay the additional cost to which the Contractor shall have been put by reason of such conditions, including the proper and reasonable cost.

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 Superintending Engineer, West Circle, MED on recommendation of Engineer in charge which the Contractor may take in the absence of specific instructions from the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED and shall comply with and adhere strictly to the Superintending Engineer, West Circle, MED'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 Executive Engineer, Birbhum Division, MED for his approval a program showing the order of procedure in which he proposes to carry out the Works. The Contractor shall, whenever required by the Executive Engineer, Birbhum Division, MED, also provide in writing for his information, general description of the arrangements and methods, which the Contractor proposes to adopt for the execution of the Works.

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

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

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

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

16.0 EMPLOYEES

(I) Contractor's Employees - The Contractor shall provide and employ on the Site in connection with the execution and maintenance of the Works

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 Executive Engineer, Birbhum Division, MED.

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, Birbhum Division, MED, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose employment is otherwise considered by the Executive Engineer, Birbhum Division, MED to be undesirable and such person shall not be again employed upon the Works without the written permission of the Executive Engineer, Birbhum Division, MED. Any person so removed from the Works shall be replaced as soon as possible by a competent substitute approved by the Executive Engineer, Birbhum Division, MED.

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, on hem), 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, sigh 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 Executive Engineer, Birbhum Division, MED or the Engineer's Representative, for the protection of the works, contractor's employees, employees 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division MED 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 Executive Engineer, Birbhum Division ,MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED but issued to or intended to be issued to the Contractor for use in the Works. Such insurance shall be affected with an insurer and in terms approved by the Employer, which approval shall not be unreasonably withheld, and the Contractor shall whenever required, produce to the Executive Engineer, Birbhum Division, MED or the Engineer's Representative the policy or policies of insurance and the receipts for payment of the current premiums.

21.0 DAMAGES

i) Damage to persons and property: **The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Superintending Engineer, West Circle, MED, his servant or agents or other contractors for the damage or injury.

2) Indemnity of Secretary: **The Contractor shall indemnify the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division ,MED, or to any person, including any employee of the Executive Engineer, Birbhum Division ,MED, 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) thereof.

2) Minimum Amount of third-party insurance - Such insurance shall be affected with an insurer and in terms approved by the Executive Engineer, Birbhum Division, MED, which approval shall not be unreasonably withheld, and for a least the amount started in the Appendix to the Bid. The Contractor shall, whenever required, produce to the Executive Engineer, Birbhum Division, MED or the Engineer's Representative the policy or policies or 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 lt1dcnJmty under the policy being brought or made against the Executive Engineer, Birbhum Division, MED, 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED, his agents, or servants. The Contractor shall indemnify and keep indemnified the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED is indemnified under the policy, but the Contractor shall require such sub-contractor to produce to the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 I) 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 111 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.

ii) 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 Executive Engineer, Birbhum Division, MED 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, ETC.

All fossils, coins articles of value or 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.

27.0 PATENT RIGHTS AND ROYALTIES

The Contractor shall save harmless and indemnify the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MEDor 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED.

b) Opportunities for other contractors: The Contractor shall in accordance with the requirements of the Executive Engineer, Birbhum Division, MED, 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 Executive Engineer, Birbhum Division, MED 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, MED.

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 Superintending Engineer, West Circle, MED 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 of1961) 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 workmen 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 LABOR ETC.

The Contractor shall, if required by the Superintending Engineer, West Circle, MED, deliver to the Superintending Engineer, West Circle, MED, or at his office a return in detail in such form and at such intervals as the Superintending Engineer, West Circle, MED 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, MED 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 Executive Engineer, Birbhum Division, MED, be it at site or at the manufacturer/Vendors premises or elsewhere.

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

3) COST OF TESTS: The cost of making any test shall be borne by the Contractor if such test is clearly intended by or provided for in the Contract and in the cases only of a test under load or of a test to ascertain whether the design of any furnished or partially finished work in appropriate for the purpose which it was intended to fulfil, is particularized is 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 Executive Engineer, Birbhum Division, MED orders any test, which is either;

a) Not so intended by or provided for, or

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

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

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

2) Uncovering and making openings: The Contractor shall uncover any part or parts of the Works or make opening in or through the same as the Engineer may from time to time direct and shall reinstate and make good such part or parts to the satisfaction of the Engineer If any such part or parts have been recovered up or put out of view after compliance with the requirement of sub-clause (l) 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MED and if permission to resume Work is not given by the Executive Engineer, Birbhum Division, MED 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 Contractors' 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:

5.0 6.0 Layout of cable trenches, cable trays showing the locations and levels together without position of hooks at the underside of the operating platform stating the maximum load required to be withstood.

7.0 Any other data that the Bid considers relevant for construction of civil structure.

8. 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.

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 Executive Engineer, Birbhum Division, MEDon 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 Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MEDon 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 Executive Engineer, Birbhum Division, MED under this Clause, the Contractor shall seek the Executive Engineer, Birbhum Division, MED 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 Executive Engineer, Birbhum Division, MEDin 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 form 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 alterative 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 (I %) 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 the 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 mess, insulation etc. as may be specified elsewhere in the Bid documents and put to operation.

2) Completion: Completion is a stage when the equipment and the structure as a whole are certified by the Employer. The date shall only be indicative for the purpose of reckoning the period of Maintenance Period and shall not be co-related with the release of any payment provided that non-continuous of 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 multify 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 equipments as per specification and to the satisfaction of Engineer-in-Charge.

48.0 MAINTENANCE

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

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

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 Eastern Circle, Public Works Department schedule of rates as was in vogue on the date of submission of the Bid. 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: not allowed.

c) Claims: 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.

52.0 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 or damage to any of the said Constructional Plant, Temporary Works or materials same as mentioned in Clause 19 and 62 hereof.

4)) GST, Cess and other imposts. The Contractor shall pay GST, Cess, 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 least 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. **PAYMENT**

Payment of RA as well as final bill will depend upon the availability of fund and no financial claim in case of any delay in payment will be entertained. Payment on supply without successful erection and commissioning will not be entertained. Materials which will be supplied should be supported by valid challans.

The bidder will notify the authority regarding the work being completed. The quantity and quality of executed work will be taken into account for the preparation of bill. The engineers shall field verify the work executed. Only the items which are successfully installed and commissioned will be taken in the preparation of bill.

All the applicable routine test, type test and other test reports shall be submitted along with the bill prayer.

The successful bidder will propose detailed payment break up schedule. The Superintending Engineer, West Circle will approve the payment break up schedule after necessary correction or modification as he/she deemed fit and which will be final. Payment will be made by the EIC as per payment break up schedule strictly. This schedule also will be the part of Contract agreement.

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

For work with five years Defect Liability Period:

- ***iv) No security deposit shall be refunded to the contractor for 1st 3 years from the date of completion of the work;***
- ***v) 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;***
- ***vi) 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's 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, Provided always that 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 Executive Engineer, ... Division ,MED 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 proceeding 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 (l), (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 ClauseC-62(8) (a) to (d).

63.0 FRUSTRATION

Payment in event of Frustration: A war, or other circumstances outside the control or both parties, arises after the Contract is made so that either party is prevent 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 within Birbhum District, 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:

(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.

66.0 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.

67.0 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.

68.0 CONTRACTOR TO PROVIDE FACILITIES

The Contractor shall provide such labour, 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.

69.0 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.

70.0 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.

71.0 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.

72.0 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.

73.0 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).

Superintending Engineer, West Circle
Municipal Engineering Directorate

SECTION – D

GENERAL SPECIFICATIONS OF WORKMANSHIP AND MATERIALS FOR CIVIL WORK

1.0 GENERAL

1.1 General Materials

1.1.1 All materials used in the temporary 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 material has since deteriorated due to long or defective storage or for any reason whatsoever and is thereby considered unfit for use in the temporary works. Any material thus rejected shall be immediately removed from the Site at Contractor's cost and expense.

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

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

1.2 Workmanship

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

1.3 Works Included

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

1.4 Ground Conditions

The Contractor is to visit the site and ascertain local conditions, traffic restrictions and obstructions in the area and allow for extra expenses likely to be incurred due to any limitations whatsoever. The Finished ground level (FGL) have to obtained by the bidder 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 pilling (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 soi1 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 pilling 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 property moistened and well rammed. Excavated materials which is surplus or which is consolidated unsuitable for back filling shall have to be disposed of in spoil dumps as directed by the Engineer-in-Charge. No extra payment will be made for this.

3.0 CONCRETE

3.1 General

3.1.1 Applicable provisions of Conditions of Concrete shall govern work under this section.

3.1.2 All concrete work, plain or reinforced shall be carried out strictly in accordance with this specification and any working drawing or instructions given from time to time to the Contractor.

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

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

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

3.2 CEMENT

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: 5l5. 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(1;2:4) 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 project 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 smoothening 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.

Superintending Engineer, West Circle

Municipal Engineering Directorate

SECTION - E

Specification for supply of Ductile Iron (K9) pipes & DI Fittings :

The successful L1 Bidder should supply DI(K9) Pipes & Fittings as per criteria as laid down in Annexure- I , II, & III

Annexure- I

Procurement of DI pipes from bonafide manufacturers with having:

I. The previous experience certificate of the manufacturer for supply of D.I. Pipes to Govt./PSU/reputable Private Sector bodies to be submitted, but such experience is not mandatory.

II. Certificate to ensure that the installed pipe manufacturing capacity of the factory is sufficient to cater to the tendered requirement.

III. Valid BIS certification of the manufacturer for each & individual dia meter of pipe tendered.

IV. External coating of the pipes will be bituminous /epoxy over zinc coating and inside cement mortar lining as per 15:8329:2000

V. Certificate from the reputable Govt. Institutions/Universities is essential for eligibility to participate to ensure desired hydraulic smoothness of cement mortar lining in the DI pipe the minimum Hazen William's 'C' value of 140 corroborating the guideline of CPHEEO Manual for Water Supply and Treatment.

VI. Providing rubber gasket conforming to IS 5362:1985 for each of the joints admissible.

VII. Third Party inspection (TPI) through RITES/MECON/EIL/PDIL of the pipe is mandatory before delivery of pipes. TPI report should cover (I) all the parameters as per IS: 8329:2000, (II) test to ensure rubber gasket quality as per IS code. The inspection charge is to be included in the quoted rates.

VIII. The sampling size will be guided as per relevant IS Code.

IX. The manufacturer should have valid Certificate from Pollution Control Board.

All the above noted documents to be submitted by the successful bidder to the concerned Superintending Engineer, West Circle for necessary approval prior to execution

Annexure-II

Procurement of DI fitting from bonafide manufacturers having:

I. Valid certificate from Pollution Control Board.

II. Valid BIS Certificate for their products as per BIS 9523/2000.

III. Previous Experience Certificate but that is not mandatory.

IV. Certificate / undertaking to ensure that the installed fittings manufacturing capacity of the factory is sufficient to cater to the tendered requirement.

V. The company should have fully equipped laboratory within house Microscope to check Modularity and spectrometer to check Chemical composition besides Tensile, hardness & elongation testing universal testing machine. The laboratory of the manufacturer should be accredited by NABL

VI. As per Clause 6.2 of IS: 9523 the Design of Socket and Rubber Gasket are not within the scope of the specification. So the manufacturer has to submit the Joint Performance report in line with the provisions laid down in ISO 2531 duly witnessed by any reputed Indian or International Inspection Agency. The accreditation of the Inspection Agency should be linked to National Accreditation Board of Certification Bodies (NABCB) for Indian Agencies or International Accreditation Forum (IAF) or European Cooperation for Accreditation (EA) or ANSI-ASQ National Accreditation Board (ANAB).

VII. Third Party Inspection (TPI) through RITES/MECON/EIL/PDIL of the fittings is mandatory before delivery of the fittings. TPI report should cover (i) all the parameters as per IS: 9523:2000, (ii) test to ensure rubber gasket quality as per IS code 5382:1985. The inspection charge etc is to be include

All the above noted documents to be submitted by the successful bidder to the concerned Superintending Engineer West Circle for necessary approval prior to execution

Annexure-III

The OPVC/HDPE pipes and specials are to be tested from CIPET (Bhubaneswar/Haldia/Chennai). Pipes of each diameter have to be tested after its delivery at site. Test pieces will be drawn by the officers of Concerned Division, ME Dte. and will be sent to CIPET for testing. Charge of testing, carriage of test pieces to the testing laboratory will be borne by the contactor. If any fault is detected in test report all the pipes of the same batch will be rejected and that is to be replaced by good quality pipes. No extra cost will be provided for the same.

SECTION – F

GENERAL TECHNICAL SPECIFICATION

1.0 SUB-SOIL REPORT

Sub-soil investigation is to be carried out by soil-experts engaged by the contractor at the site of all OHRs, CWRs and pipe carrying steel bridge.

The Bidder should satisfy himself about the adequacy of the data for the design of pile foundation. Records of such sub-sand investigation such as borehole logs, soil samples, SPT values etc., shall be done by the contractor duly witnessed and authenticated by the Engineer in Charge or his competent authorized representative.

In the event of variation in soil data between that of Bid inviting authority and those obtained by the contractor during execution, the more conservative values obtained from the two sets of reports shall be adopted for design without any extra claim over the quoted price as accepted by the Department, unless otherwise permitted by the undersigned.

2.0 BID DRAWINGS

All drawings are part of Bid & are attached in annexure.

3.0 DESIGN CRITERIA OF THE DESCRIBED PROJECT

3.1. Design standards

a)	**Loading Standards**	**IS: 875**
b)	**Earthquake Resistant Design**	**IS: 1893 & IS: 4326**
c)	**Reinforced and Plain Concrete**	**IS: 456, 2000**
d)	**Foundations**	**IS: 1080, IS: 2950 , IS: 2911 & IS: 2974**
e)	**Liquid Retaining Structures**	**IS: 3370**
f)	**Structural Steel**	**IS: 800**
g)	**Reinforcement Mild Steel**	**IS: 456 & IS: 432**
	Ribbed Tor Steel	**IS: 1786 & IS: 1139**
h)	**Masonry and Brickwork**	**IS: 1905 & ISS: 2212**
i)	**National Building Code of India**	**IS: 2910**
j)	**Design & Construction of Pile Foundation**	**IS: 2911**

(Considering the latest edition of the code)

If pile foundation is obligatory as per Report, piles shall be bored Cast-in-situ R. C. C. Piles. The design, construction and workmanship for these piles shall fully conform to and satisfy the requirements of IS: 2911 (Latest Edition). Concrete to be used in Piles shall be of M-25 Grade having Cement content not less than 400 kg/m^3. Reinforcement in piles shall be in conformity with the requirements contained in IS: 2911 (ii). The minimum area of Longitudinal Reinforcements shall be as per requirements and such requirements shall be provided for the full length of piles. For piles subject to Upward Tension, reinforcement shall be provided throughout the full length and such reinforcement shall be designed on the basis of upward load they are supposed to carry.

The safe working loads of the R. C. C. Cast-in-situ bored piles should be that as computed as per IS: 2911 on the basis of Sub-soil Parameters of the Site with a minimum Factor of Safety 2.5 (Compression) and 3.00 (Up lift) applied there on or that indicated in a table, whichever is less.

Pile termination levels shall be chosen carefully. The safe working load of the piles shall be substantiated by Routine Load Test. The Pile termination level shall not be reduced from that stated herein above unless otherwise permitted by the Engineer-in-Charge.

These Piles shall be designed for Seismic Condition also. The Importance factor for Seismic Analysis of Structure shall be 1.50. The Bidder shall include in his Lump Sum price the cost for Load Test of at least working pile (Routine Test) per 100 piles or part thereof. The testing should be as per Code Stipulations.

3.2. While designing the Foundation of different structures, the Bidder may use the Soil Investigation results enclosed in the Bid.

4.0 DESIGN DRAWING AND OTHER INFORMATIONS TO BE SUBMITTED BY THE CONTRACTOR (SUCCESSFUL BIDDER)

4.1. On the award of the Contract, Contractor shall executive the work as per Departmental drawing submitted with the Bid for Super-Structure work, However, Sub-Soil investigation should be done by the contractor prior to commencement of work. In the event of variation in soil data between that of Bid inviting authority and those obtained by the contractor during execution, the more conservative values obtained from the two sets of reports shall be adopted for design without any extra claim over the quoted price as accepted by the Department, unless otherwise permitted by the undersigned.

A tentative work Program in Network Diagram using CPM & Bar Chart technique is required to be submitted by the successful Bidder within a fortnight from the date of issue of the letter of acceptance. The drawings from foundation onward will have to be submitted by the successful Bidder successively as per the work Program to be approved by the Engineer-in-Charge. Adequate resources are to be mobilized during execution of the work, for which no extra payment shall be made.

4.2 Completion of Drawings and Other Documents to be submitted the Contractor. The Contractor shall submit within one month after the completion of all construction works the followings drawings and documents free of cost.

a) Six copies of all approved Completion drawings. These drawings shall be on black and white prints of thick paper and there shall be one transparency of each drawing. These drawings are to be submitted in a presentable form as directed by the undersigned In addition to this, CD/DVD's with folders of these drawings drawn in Auto CAD or scanned copies are to be submitted.

b) Three copies of final designs in properly bound from as directed by the Superintending Engineer, West Circle, Municipal Engineering Directorate.

4.3 Release of Security Deposit (Retention Money):- The Security Deposit (Retention Money) shall not be released until all the above-mentioned Completion Drawings and Documents (as per Clause 7.2) are submitted by the Contractor.

SUPERINTENDING ENGINEER, WEST CIRCLE

MUNICIPAL ENGINEERING DIRECTORATE

SECTION – G

GENERAL TECHNICAL SPECIFICATION FOR R.C.C. PILE FOUNDATION

1.0 GENERAL

The Design of the bidder should be based mainly on cast-in situ Bored reinforced concrete piles on driver piles on as per site situation so arises subject to the approval of EIC. Sub-sand or soil investigation was carried out by the Department and the summary report is placed in Annexure-I (Section – N). Interested bidders may have a look at the full report which will be available in the office of the undersigned. Beside this the bidder himself is to be carrying Soil investigation report and safer data has to be taken for Sub-structure design.

This information is given as a guidance and is indicative only, and for any variation in strata at any location at site during actual execution of work, the employer shall not be held responsible for shall the contract be null and void on this count. In case of any variation in cut off level, necessary adjustment of safe working load will be made as per IS stipulation. The specialist firm may quote any proprietary system of piling subject to approval of the Engineer-in-Charge consistent with the load, moment and forces to be encountered by each pile.

The Bidders shall submit with his bid drawings, calculations explaining his scheme draw up specification and submit the schedules of prices following the format of the schedules of prices accompanying this bid documents.

2.0 DESIGN AND CONCRETE QUALITY

2.1 The safe working loads of the RCC cart in site bored piles should be that as computed as per IS: 2911 on the basis of sub soil parameter of site with a minimum factor of safety 2.5 (compression) and 3.00 (up lift)

applied there on. For boring / driving pile under water IS stipulation as well as SWID/other Govt. organisation & Municipal Engineering Directorate suggestions will be strictly honoured. The grade of concrete of all types of R. C. C. pile shall be minimum M-25 / IS stipulation unless otherwise specified elsewhere. The cement content in concrete to piling work shall be minimum 400 kg/M^3 with ordinary Portland cement. Water cement ratio and slump shall be as per I. S. Specification for relevant piling work. Maximum size of coarse aggregate shall not exceed 20 mm.

2.2 Grading and other requirement of coarse and fine aggregates, water and concrete shall be as specified for reinforced cement concrete work under this Contract.

2.3 The average basis length of the piles is to be assumed from cut off level to the tip of the pile (however for piles with muff the basic length shall be from tip of the pile up to underside of muff). The final length with be decided by the contractor with approval of the Engineer on the basis of driving / boring resistance actually observed at site. It will be the responsibility of the contractor to prove by subsequent load test / pullout tests that the adopted length of pile shall carry the specified safe load, tension and the resulting deflections being within the permissible limits. In no case extra claim over the originally quoted price will be entertained for any increase in number / length / cross sectional area / reinforcement of piles and in the site of other foundation structures if requires if required at the time of execution after the load tests of piles. Similarly no deduction in payment will be made from the lump sum price quoted for decrease in number / length / cross-section of area / reinforcement and in the size of other foundation structures at the time of execution or after the load tests of piles provided that the complete safety of the Structures is fully assured.

3.0 SPECIFICATION FOR BOREDCAST-IN-CITU PILES

3.1 Unless specified otherwise in the following paragraphs, stipulations of relevant section of I. S. 2911 (latest edition) shall be followed. However in case of any conflict of stipulations laid here in and IS code of practice occurs, IS stipulations will stand as final subject to satisfaction of EIC.

The bidder shall submit within his bid the layout and number of piles based on allowable load carrying capacity, tension on the pile section design by him.

3.2 Boring equipment and accessories shall generally conform to IS: 2911 relevant section. Boring may be done by either rotary or percussion equipment or grassing equipment using reverse or direct non circulation method. In case of unstable soils the boring tools used shall be such that suction effects are minimized.

Stabilization of the sides of bore hole shall be done by the use of betonies slurry or casing. The size of cutting tool shall not be less than the diameter of the pile by more than 75 mm.

In case of boring with casing, the casting shall be used from the ground level. The casing shall be kept ahead of boring in cases where there is danger of carrying in due to subsoil entering into the borehole or where soil is loose.

While boring below sub-soil water, precaution shall be taken so that no boiling of the bottom of the hole occurs due to difference in hydrostatic head.

3.3 Concreting of bore holes shall start soon as possible after its completion. Should a borehole, be left without concreting for more than two hours it shall be cleaned thoroughly as directed by the Engineer-in-Charge before placing concrete. Concrete under water shall be placed by means of a termite pipe. It shall, however, be ensured that concrete entering the termite pipe does not get mixed up with the slurry and ¼ kg of granulated vermiculite shall be poured in the termite pipe before pouring concrete as directed by the Engineer.

3.4 The termite pipes and funnel shall be filled and lifted just 15 cm above bottom before releasing the concrete column to facilitate flushing out of the bottom. The concrete levels in the termite shall be checked every meter in order to judge the difference, if any, between the theoretical quantity that should have been placed and the actual quantity that has gone in. This is to locate the position of cut off during boring. In addition to the normal precautions to be taken in termite concreting as per relevant Section of IS: 2911 the following specifications shall be particularly applicable for the use of termite concrete in pipes.

i) The concrete shall be coherent, such in cement (not less than 400 kg/m^3) and of slump not less than 150 mm I S stipulations

ii) The hopper and termite shall be closed system.

iii) The termite shall be large enough with due regard to the size of the aggregate. For 20 mm aggregate the termite pipe shall be of diameter not less than 200 mm.

iv) The first charge of concrete shall be placed with a sliding plug pushed down the tube of it or with a steel plate of adequate charge to prevent mixing of concrete and water. However, the plug shall not be left in the concrete as a lump.

v) The termite pipe shall always penetrate into the concrete with an adequate margin of safety against withdraw of the pipe surged to discharge the concrete.

vi) The pile shall be concreted wholly by termite and the method of deposition shall not be charged way up the pile to prevent into laitance from being trapped within the pile.

vii) All termite tubes shall be scrupulously cleaned after use. Normally concreting of the piles shall be carried out without any interruption. In the exceptional case of interruption in concreting, but which can be resumed within 1 or 2 hours, the termite shall not be taken out of the concrete. Instead, it shall be raised and lowered slowly, from time to time to prevent the concrete around the termite from setting. Concreting shall be resumed by introducing a little richer (5% additional amount) concrete with a higher slump for easy displacement of the partly set concrete.

If the concreting cannot be resumed before final set of concrete already placed, the pile so cast may be rejected or accepted with modifications at the sole discretion of the Engineer-in-Charge or his representative.

In case of withdrawing of termite out of the concrete, either accidentally or to removed a blockage in the termite, the termite may be reintroduced in the following manner to prevent impregnation of laitance or sewer laying on top of the concrete already deposited in the bore.

The termite shall be gently lowered on the old concrete with very little penetration initially. A vermiculite plug shall be introduced in the termite. Fresh concrete of slump between 150 mm and 180 mm. shall be filled in the termite which will push the plug forward and will emerge out of the termite displacing laitance / sewer. The termite will be pushed further in steps, watering fresh concrete sweeping away laitance / scum in its way. When termite is buried by about 60 to 100 cm. concreting may be resumed.

3.5 The top of concrete in a pile shall be brought above the cut off level to permit removal of all laitance and weak concrete before capping to ensure good concrete at the cut off level for proper embedment into the pile cap. Where cut off level is less than 1.5 M. below the working level concrete shall be cast to a minimum of 500 mm above cut off level. For each additional 0.3 m. increase in cut-off level below the working level additional coverage of 50 mm. minimum shall be allowed. Higher allowance may be necessary depending on the length of the pile as directed by the Engineer-in-charge. When concrete is placed by using termite material, concrete shall be cast to the piling platform level to permit overflow of concrete for visual inspection or to a minimum of one meter above cut-off level. In the circumstances where cut off level is below ground water level the need to maintain pressure on the freshly laid concrete equal to or greater than water pressure shall be formed out and accordingly the length of extra concrete above cut-off level shall be determined and provided in works.

3.6 During piling, the sequence of construction and installation of piles shall as per direction of the Engineering-in-Charge.

3.7 In case defective piles are formed during construction, they shall be removed or left in place whichever is found convenient without adversely affecting the performance of the adjacent piles or the pile cap as a whole. Additional piles shall be provided at Contractor's cost to replace them as per direction of the Engineer-in-Charge and in this respect the Engineer-in-Charges' decision shall be final and binding upon the contractor. Any deviation from the designed location, alignment or local capacity of any pile shall be noted and adequate measures shall be taken well before concreting of the pile cap, etc. if the deviations are beyond the permissible limit. All such alternations shall be done at Contractor’s own cost and expenses and to the entire satisfaction of the Engineer-in-Charge.

3.8 Piles shall be installed accurately as per approved design and drawings. For vertical piles a deviation of 1.5 percent from vertical line shall not be exceeded. Piles shall not deviate more than 75 mm. or one tenth of diameter whichever is more (in case of piles having diameter more than 600 mm) from their designed positions at working level of the piling rig.

In case of piles deviating beyond the above mentioned limits and such an extent that the resulting eccentricity cannot be taken care of by a redesign of the pile cap & pile trees, the piles shall be replaced or supplemented by one or more additional piles by the contractor at his own cost and expenses along with any additional cost for pile cap, etc. being borne by him.

3.9 While manual chipping may be permitted after casting of pile, pneumatic chipping, if permitted by the

Engineer-in-Charge, shall not be started before 7 days under any circumstances.

3.10 Main longitudinal reinforcement in the length of the piles and links or spiral welded mild steels shall be provided as per the approved drawing. Longitudinal bars where possible shall preferably be in one length. Every care shall be taken in handling of the reinforcing cage so that its shape is not damaged.

3.11 When working adjacent to existing structure every care shall be taken to avoid any damage to such structures, in the case of bored piles care shall be taken to avoid effect due to loss of ground. In the case of deep excavations adjacent to piles proper protection shall be provided to safeguard against the lateral movement of soil stratum or releasing the confirming soil stress.

3.12 During piling work the following data shall be recorded along with any other data as may be directed by the Engineer-in-Charge. These data shall be submitted to the Engineer-in-Charge in triplicate copies on completion of installation of each pile.

i) Sequence of installation of piles in a group.
ii) Dimensions of the pile including reinforcement details and mark of the pile
iii) Details of mild steel liners where provided along with the details of stiffeners
iv) Depth bored and founding level along with a bore log depicting the nature of strata encountered during boring.

v) Time taken for penetration of every 15 cm during last 2 m depth before founding level.
vi) Method of cleaning bottom of hole at founding level before concreting.
vii) Time taken for concreting.
viii) Cement consumption and slump of concrete.
ix) Cut off level / working level / R. L. of top concrete, any other relevant / important observation.

3.13 During execution at any stage if any variation is required to be made to suit the site on EIC to be technically satisfied and His decision will be regarded as final.

3.14 Any of data / information given if not found reasonable (this will also include data of parameters) will be given during detail engineering. Bidders / contractor therefore revised to consult with manufacturer/ experts at his own cost, if so felt, to reach more in figure for Biding purpose. The same is also advised for any other data supplied. But in no case it will be treated as a Fault of Biding Authorities. If any found in Variance in same chapter / section or anywhere of bid document, is to be into the notice of the biding Authority & his interpretation/ decision will be consider as final.

4.0 LOAD TEST ON PILES

4.1 The load tests shall be carried out as per IS: 2911 unless specified otherwise in the following paragraphs. The tests shall be carried out on test pile and a selected representative pile as approved by the Engineer-in-Charge. Sufficient time shall be allowed before tests to permit adjustment on the soil conditions following disturbance from the method of installation. The period between installation of the test pile or any

other pile in the vicinity and the test loading of the pile shall be least 28 days.

4.2 The test load shall be applied by jacking against Kent ledge or any other structure approved by the Engineer-in-Charge. No working pile shall be permitted to be used for any loading for load test on pile. The design of the Kent ledge shall be such as to prevent instability, particularly in the event of a sudden change in the load reaction from the pile. The reaction from Kent ledge to be made available for the test shall be at least 25 percent more than the final test load to be applied. The test shall be carried out at cut off level or at maximum 1.5 m below G. L. as directed by the Engineer-in-Charge. Anchors, if provided, for load test shall be at specified distance away from test pile as per relevant I. S. Code of Practice and there shall be minimum two anchors at two ends of the pile. Details regarding the testing arrangement shall be submitted well in advance to the Engineer-in-Charge for his approval. Load tests shall only be undertaken after obtaining the approval.

4.3 The jack is to be hydraulically operated. The load applied to the pile shall be recorded either by a gauge in the hydraulic system or a proving ring duly calibrated from an approved laboratory before load tests. The sensitivity of the full load and in any event, the accuracy and sensitivity of the system is to be checked against an approved instrument.

A test certificate and fresh calibration chart as obtained from an approved laboratory for jack as well as pump supplying hydraulic power shall be produced before the Engineer-in-Charge well in advance before use for any load testing pile.

4.4 The settlement of the pile shall be recorded by three dial gauges recording to 0.02 mm and placed at equal distance around the test pile. The dial gauges shall be fixed on datum bars whose ends rest upon non-movable supports. The supports for datum bars with reference to which the settlement of the pile would be measured shall be at least 5d (d being the diameter of the circular pile of the side of the square pile) away and clear from the test piles, subject to a minimum of 1 .5 meters.

4.5 The testing equipment employed shall be capable of loading a pile to failure or to three times the design loading.

4.6 Before testing the top of the pile shall be clipped off carefully till sound concrete is encountered. The projecting reinforcement shall be cut or bent suitably and the top finished smooth and level with plaster of Paris, when required or as directed by the Engineer-in-Charge. A series 25 mm thick bearing plates shall be placed on the head of the pile for jack to rest as directed by the Engineer-in-Charge.

4.7 The Contractor shall have to perform rotating load test on working piles on load as decided and selected by the Engineer-in-Charge and the results must satisfy the requirements of the test. At least one working pile of each diameter shall be tested. The test shall be carried out at cut-off level or at such level as per direction of the Engineer-in-Charge. The Contractor shall also have to carry out initial test on a non-working test pile as described below:

A. ROUTINE TEST ON WORKING PILE:

Load on the pile in routine test shall be applied up to and a half times the estimated safe load carrying

capacity of the pile. The loading procedure and settlement observations shall be the same in initial test described hereinabove. The safe load on the pile shall be the minimum of the following:

a) Two third of the final load at which the total settlement attains a value of 12 mm unless it is specified that a total settlement different from 12 mm is permissible in a given case on the basis of nature and type of structure.
b) Fifty percent of the final load at which the total settlement equals one tenth of the pile diameter of size of the pile.

B. LATERAL LOAD ON WORKING PILE:

i) The Contractor shall have to carry out lateral load test on one vertical working pile. Reaction may be obtained from suitable set up as approved by the Engineer-in-Charge and hydraulic jack shall be inserted in between the loading set up and pile in order to apply the lateral load. Thrust pieces need be inserted on either end of the jack to fill up the gap. Lateral deflections shall be measured at cut-off level or at maximum 1.5 M below G. L. as directed by the Engineer-in-Charge by means of dial gauges fixed to immovable supports.

ii) Loading shall be applied in increments of about 20% of the estimated safe load till the rate of deflection reduces to 0.02 mm per hour in the case of clayey soil and 0.05 mm per hour in the case of sandy soils or 2 hours whichever is earlier.

iii) Displacements shall be measured by issuing at least two dial gauges spaced at 30 cm and kept horizontally one above the other on test pile. Where it may not be possible to place one of the dial gauges on the line of jack axis, then the two dial gauges shall be kept at a distance of 30 cm at a suitable height and the displacement interpolated at load point from similar triangles To fix dial gauges on the pile surface, uneven surfaces shall be chipped of and 25 to 30 mm square glass piece shall be fixed to provide a smooth surface. The dial gauge tips shall rest on the East portion of the glass plate.

iv) The safe lateral load shall be the least of the following:
a) Fifty (50) percent of the final load at which the total displacement increases to 12 mm.

b) Final load at which total displacement corresponds to 5 mm.

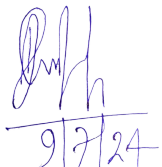
c) Load corresponding to any other specified displacement due to performance requirements.

4.8 All pile test data i.e., load, displacement and time shall be recorded in a suitable chart along with other information about the pile in a manner as directed by the Engineer-in-Charge.

From the data, curves shall be drawn showing load displacements and displacement time and safe load shall be indicated on the graphs.

AII data and curves shall be submitted to the Engineer-in-Charge in triplicate copies along with the originals.

If on load testing, it is found that the capacity of the pile is more than the designed capacity nothing shall be paid extra for such extra capacities.



SUPERINTENDING ENGINEER, WEST CIRCLE

MUNICIPAL ENGINEERING DIRECTORATE

Section – H

ANNEXURE – I

SCHEMATIC DIAGRAM AND INDEX MAP

9/7/24

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ANNEXURE –II

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ANNEXURE – III

DRAWING FOR SITE PLAN

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ANNEXURE – IV

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ANNEXURE – V

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ANNEXURES VI

i) Drawing of raw water rising main pipe line.

ii) Drawing of clear water rising main pipe line.

iii) Drawing of Valve Chamber.

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ANNEXURE – VII

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ANNEXURE – VIII

KEY PLAN SHOWING POSITIONS OF OHR'S

A key plan is attached herewith as Annexure VIII showing location of OHR"s. This is only a tentative drawing and the Bidder may take up his own survey regarding actual length of conveying main to be laid. It is also to be noted that the position of OHR"s as shown in this drawing if changed for any unforeseen reason, the design of pump & Motor will always be done considering the actual conditions of these factors and no additional payments in any circumstances will be paid to the contractor.

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ANNEXURE – IX

TENTATIVE LAY OUT OF SUB STATION BUILDING

A tentative lay-out of Sub Station building is attached herewith as Annexure IX.

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ANNEXURE – X

TENTATIVE GOOGLE VIEW OF THE AREA

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ANNEXURE - XI

LIST OF DEVIATIONS

The Bidders are advised to fill up the list of deviations, they indicate/sought for in their offer, showing the specifications & the deviations wanted backed by all clarifications & justifications.

If there is no deviation sought, the Bidder must indicate NIL in the list.

Sl. No.	Items	Details as per Bid specification	Details of the offer	Reason for which such deviation sought for with technical backup

Signature of Bidder

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ANNEXURE - XII

REQUIREMENTS ON SOIL REPORT

1. **The soil test report must include a detailed layer chart (single page) mentioning depth of each stratum, soil type, along with all soil parameter required for design (as shown below): (Also mention EGL- Existing Ground Level and FGL- Finished Ground Level).**

Depth (m)	Stratum-I	Soil Type (As per IS)	All parameters required for design (Also mention Table no. *I* Page no. of the report for each parameter)

	Stratum-II		
	Stratum-III		
	etc.		

2. Latest IS codes to be followed in all cases and are to be mentioned. Only conventional symbols of the relevant codes are to be used in such calculations. If any other reference is used, must be supplemented by their respective photocopies (pages).

   Different data/soil parameter those are used for calculations should be clearly referred (such as, Page no....., Table no..... of Soil Report).

3. A table showing pile capacities from 450mm diameter to 800mm diameter PILEs at an interval of 1m from 15 m to 30 m below FGL is to be provided (Vertical, uplift and 1ateral capacities).
   [Considering 2m C.O.L. from F.G.L.].

4. Sample calculations in detail for vertical, uplift and lateral capacities of PILEs are to be given for 500 mm dia pile only and for each stratum considering piles to be terminated within each stratum (i.e. if there are 5 stratum, there shall be 5 sets of calculations).

5. Soil test report must contain calculation for Shallow foundation even if it is very low.

6. Soil test report must contain clear recommendations about type of foundation to be adopted with justification.

9/7/24

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Signature Not Verified
Digitally signed by SISIR KUMAR CHANDA
Date: 2024.07.09 17:10:55 IST
Location: West Bengal-WB