

**DELHI JAL BOARD
(GOVT. OF NCT OF DELHI)**

P/L Sewer Line in Bijwasan West.

TENDER DOCUMENT

**EXECUTIVE ENGINEER (C) DR.-XIV
DELHI JAL BOARD,
S.P.S.Najafgarh, NEW DELHI-110043.**



Name of work: **P/L Sewer Line in Bijwasan West.**

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**DELHI JAL BOARD: GOVT. OF NCT OF DELHI
OFFICE OF THE EXECUTIVE ENGINEER(C) DR. XIV
SEWAGE PUMPING STATION: NAJAFGARH
NAJAFGARH: NEW DELHI - 110043.**

PRESS NIT No.01(2018-19)/EE (C) Dr. XIV

On behalf of DJB, EE(C) DR-XIV invites online percentage rate tenders from eligible firms who have successfully completed similar types of works, in the prescribed bid documents under two bid system i.e. Part -A (Technical) & Part- B (Financial). The contractor shall have to abide by all NIT conditions, Guidelines, Memorandums, which have been issued time to time by Delhi Jal Board.

Date of pre bid meeting for S.No.1 & 2 : 25.05.2018 at 3:00 PM
Last date & time for tender download : 06.06.2018 at 3:00 PM
Last date and time for Online Submission of tender : 06.06.2018.2018 at 3:00 PM
Date/Time opening of Technical Bid : 06.06.2018 at 3:10 PM
Date/Time opening of Financial Bid : shall be opened later after finalization of eligibility of participating bidders

Detail of work:-

S.No.	Name of Work	Tender Amount	Earnest Money (Rs in lakh)	Tender Fees	Completion Period
1.	P/L sewer line in Kakrola Group of Colonies in Matiyala Constituency. No. 2018_DJB_	Rs.35,30,49,770.00	Rs.45,30,500/-	Rs.1500/- (Non Refundable)	30Months
2.	P/L Sewer Line in Bijwasan West No. 2018_DJB_	Rs.5,61,96,057.00	Rs.11,23,921/-	Rs.1500/- (Non Refundable)	14 Months

NOTE: Validity of tender is 180 days from the last date of submission of tender including extension if any. NIT along with all the terms & conditions is available on Web Site <http://delhi.govtprocurement.com>. Pre-bid meeting shall be convened in the office of S.E.(DR)P S & SW at JalSadanAnnexe, Lajpat Nagar, New Delhi-110024. Agencies may contact the office of EE (C) Dr-XIV for additional information/any clarification in regard to this NIT. Further hard copy of technical bid (one original & 2 photocopy) is to be submitted within 48 hrs of end of deadline of submission including extensions if any.

All corrigendum, addenda, amendments, pre-bid reply, time extension, if any to the above notification/ NIT will be published in e-procurement portal only. Bidders shall regularly visit the above site to keep themselves updated.

Ex. Eng. (C) Dr XIV

NO.DJB/EE(C) DR-XIV/2017/

DATED:-

Copy to:-

1. Vice chairman, DJB.
2. Secy to CEO / Mem. (A) / Mem. (F) / Mem. (Dr.) / Mem. (WS) / CVO.
3. C.E. (Planning) Water/ CE (DR) P- I/II, CE(South), CE SDW
4. Director SDM/ DOV
5. S.E. (DR)PR S&SW/ All SE(Dr)/SE(P)
6. All EE (Dr)/ EE(EDP)/ All AEs of this division.
7. Sr. AO (Proj) W – IV/ AAO (C) Dr XIV/HC/ Notice board.
8. D.M. to put up justification with the help of concerned A.E. as per guidelines
9. Chief Manager, Syndicate Bank, 43 Rani Jhansi Road Branch, New Delhi-55.
10. Consultant (PR) with 10 spare copies to publish the NIT in the appropriate newspapers. Online Tender has been uploaded to the website.
11. Notice Board, Jhandewalan, Phase-I&II/Notice Board of EE(C) DR-XIV.
12. Contractor Association, 36, Block-BA, Paschimi Shalimar Bagh, New Delhi-110088.
13. Contractor Welfare Association, WZ-485, 10B/Ist Floor, BasaiDarapur, New Delhi-55.

Ex. Eng. (C) Dr XIV

SECTION – II :-ADDITIONAL INFORMATION OF NIT

Subject: - Special information regarding eligibility criteria and other requirement for the work listed in NIT No.01(2018-19) of EE(C)Dr-XIV.

The bidder must be fully conversant with the documents to form part of contract agreement i.e. Instructions to bidders. Special Conditions, General Conditions, Specification, Clauses of contract, Safety codes, Model Rules, CPWD contractor labour regulations (Standard documents) available on web site. However these are not to be attached with tender documents.

The bidder shall submit the offer under two bid systems i.e. Bid part- A (**Technical**) & bid Part-B (**Financial**).

1. Bid part- A should contain scanned documents giving details of Earnest Money and Eligibility Criteria.
2. Earnest Money and Tender Fees Deposit: - Bidder shall submit the Earnest Money and Tender Fees electronically on or before the last date and time of bid submission in DJB EMD A/c No. 90231010012261 at Syndicate Bank, Rani Jhansi Road Branch, New Delhi (IFSC/RTGS Code No SYNB0009023) through Bidder's banker. While submitting EMD through RTGS mode, bidder must mention NIT No. , Item No., Name of Division, Closing Date and Time of Tender and Bidders Name and Address in the applicant details column in the RTGS form.

Bidder must upload the scanned copy of RTGS customer payment confirmation along with the Bid, before the date and time of closing of the bids. Bids submitted without the exact amount of EMD and as per requirements prescribed above shall be liable for rejection without any further notice. For any further assistance the bidder may contact Manager/ Sr., Syndicate Bank, 43, Rani Jhansi Road, New Delhi -110055, Contact No. 23528976.

3. The bidder shall have to submit the GST registration certificate and the Latest GST Return.
4. The bidder shall submit scanned copy of an undertaking on Rs.10 Stamp Paper Stating that the applicant has not been Debarred or black listed as on the date of submission of bid in any department. The date of undertaking must be after the date of issue of NIT.
5. Bidder should disclose if any of his close relative is engaged in this division or in DJB.
6. The bidder shall submit scanned copies of Power of Attorney authorizing the signatory of the Bid to submit the bid on behalf of the particular bidder.
7. Scanned copy of information about any litigation or arbitration resulting from the earlier contracts as executed by the bidder has to be submitted as per NIT/ Tender Document.
8. Undertaking regarding acceptance of all terms and conditions of NIT/ Tender document has also to be submitted.
9. Scanned copy of Pan Card and Mandate form has also to be given.
10. **Forfeiture of earnest money**
 - (1) If any bidder withdraws his tender/bid before the expiry of the validity period, or before the issue of letter of acceptance, whichever is earlier, or makes any modification in the

terms and conditions of the tender which are not acceptable to the department, then the Department shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely. This provision would naturally apply only to the lowest bidder once the earnest money of all the bidders except those of the lowest is refunded.

- (2)** If contractor fails to furnish the prescribed performance guarantee within the prescribed period, the earnest money is absolutely forfeited to the department **automatically without any notice.**

11. SUBMISSION OF BID DOCUMENTS

The bid submitted by the bidder shall comprise of two separate parts: **Technical Proposal Part 1 and Financial Proposal Part II.** The entire bid is to be submitted online through e-tendering procurement system of Delhi government website. Technical Proposal Part 1 shall contain details of the bidder's technical proposal and all related signed documents as per bid documents. Online (e-tender) Technical Proposal shall also contain the details of the earnest money as per direction given on the website and online (e-tender) Financial Proposal Part II shall contain the total cost of the work and the rates are to be quoted on the designated format of the website only. DJB shall not be liable for any matter in this regard.

The bidder needs not to upload the whole tender document on website. Duly signed relevant pages/Forms only, as mentioned below, have to be uploaded on the website. However the whole bid document duly signed along with the uploaded forms/pages shall form part of the contract agreement.

In addition to online submission of bids, bidder shall also submit hard copy of bidder's Technical Proposal Part-A as uploaded by him during Online submission of bid at the address given below, within the **48 hrs of end of deadline of submission including extensions if any.**

While submitting hard copies, bidder shall also submit an affidavit on non-judicial stamp paper of Rs. 50/- confirming: "These hard copies contain all documents related to Technical Proposal Part-A and Part-B as submitted by us during online bidding system for the work in question.

No additional papers other than those documents submitted during online bidding have to be submitted in hard copies". If there is any discrepancy between hard copies and soft copies submitted by bidder during online bidding, document available during online bidding shall be final and binding & DJB decision shall be final.

The Financial proposal shall be opened of only those bidders who have submitted the details of the earnest money along with technical proposal Part A. The date of opening the Financial Proposal shall be communicated later, after screening of the Technical Proposals.

12. Tenders/Bid will be received only online on the mentioned scheduled date and time. If any of the above dates happens to be holiday, the next working day will be considered for all purposes. Conditional tender shall not be considered.
13. Tender shall be valid for 180 days from the last date of submission of tender. The DJB reserves the right to reject any or all tenders without assigning any reason.
14. DJB registered contractors in appropriate class may participate in the bid if they full fill technical eligibility criteria. DJB register contractors are exempted from submission of documents related to financial eligibility criteria.

EXECUTIVE ENGINEER (C) DR-XIV

SECTION – III: INSTRUCTION TO BIDDERS

A. General

1. Scope of Bid.

Delhi Jal Board (herein after to be referred as the “Employer”) has proposed to execute the work for laying sewer line in **P/L Sewer Line in Bijwasan West.**

1.1 The successful bidder shall have to complete the works within the period mentioned in the NIT documents.

1.2 Throughout these bidding documents, the terms ‘bid’ and ‘tender’ and their derivatives (bidder/tender, bid/tender, bidding/tendering, etc.) are synonymous. Day means calendar day, Singular also means plural, where ever applicable.

1.3 The agency shall have to use its own resources to obtain Permission from other departments and authorities such as Traffic Police/CGWA/CGWB, and PWD/SMCD/DDA/DSIIDC/I&F department and road owning department for cutting etc. However, DJB shall assist only to the extent of issue of letter to the other department and thereafter the firm has to pursue the matter.

1.4 The agency will have to submit the challan/purchase vouchers of the main items such as DWC/HDPE pipes, cement, manhole cover frame etc. as procured by it for this work during the execution phase of the work.

1.5 The agency has to make its own arrangement of water for drinking and construction purpose.

1.6 The agency will have to install sufficient numbers of generators for lighting, welding and other site requirements.

1.7 The contactors will have to arrange his own cranes, Tool and Plant and any other requirement needed for the execution of work.

1.8 The agency will have to make a safe access to the different units/site locations for working and inspection purposes.

1.9 Private sewers/ MCD storm water drain has been laid in the center of the streets. The agency has to dismantle the existing network, if it is coming in the alignment. Extra or substitute items whatsoever required shall be executed as per the site requirement as per the applicable clause as mentioned in the tender document.

1.10 The agency will have to use all the necessary safety equipment’s during the execution of work to avoid any mishap.

1.11 If there is repetition of any clause or any two clauses are found to be contradictory, the most stringent will govern and decision of Engineer in charge shall be final & binding for the bidder.

2. One Bid per Bidder

2.1 Each bidder is permitted to submit only one bid.

2.2 The Bidder shall be deemed to have read and examined the Tender Documents before quoting the rates of all items in the Bill of Quantities and the schedule of Rates. The drawing(s), Specifications, Clauses and Conditions, etc are to be considered as explanatory of each other and no advantage shall be taken of any omission in Tender Documents. GST, labour cess etc. as applicable shall be paid by the contractor. Department will deduct from running account bills, the TDS as applicable. The bidder shall quote his rate considering all such taxes.

2.3 The bidder will be required to quote price as per bill of quantity.

The lowest price offered by any technically qualified bidder shall be the basis for selection of L-1. The bidder is bound to quote the rates otherwise the tender will be rejected outright. However DJB reserves the right to reject any tender without assigning any reason whatsoever.

3. Cost of Bidding

3.1 The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

4. Site Visit

4.1 The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for himself, on his own responsibility all the requisite information that may be necessary for preparing the bid and entering into a Contract for construction of the Works. The costs of visiting the site shall be at the bidder's own expense.

B. Preparation of Bids

5. Language of Bid

5.1 The bid and all correspondence and documents related to the bid exchanged by the bidder and the Employer shall be written in the English language.

6. Completion period

The period of completion for all the work under this contract shall be as mentioned in the NIT.

Eligibility Criteria

(Applicable for all projects with ECV (Estimated Contract Value) greater than INR 3 crores)

Checklist

S. No.	Constituent of Bidder	Bidder's Response
1.	i) Individual (submit Memorandum of Articles)	
	ii) Joint Venture (submit JV agreement)	
	iii) Wholly owned Indian subsidiary of a foreign firm (submit undertaking from Parent Company)	
2.	a) Financial Eligibility Criteria	
	i) Average Annual Construction Turnover details (<i>as per Format 1</i>)	
	ii) Net Worth details (<i>as per Format 2</i>)	
	iii) Profitability Details (<i>as per Format 3</i>)	
	iv) Available Bidding Capacity Details (<i>as per Format 4A, 4B & 4C</i>) calculation to be done by the bidder	
	v) Working Capital Details (<i>as per Format 5</i>)	
	vi) Litigation Details (<i>as per Format 6</i>)	
3.	Supportive Documents	
	i) Audited balance sheet and Profit & loss statements for past 5 years	
	ii) Declaration by the bidder on Rs 10/- stamp paper in original stating that the bidder's firm (s) is neither blacklisted nor debarred from any Indian government department as on the date of submission of bid	
	iii) Affidavit for the correctness of information submitted along with the bid (<i>as per Annexure 5</i>)	

General Eligibility Criteria

Eligible Applicants:

The tenders for this contract will be considered only from those bidders (proprietorship firms, partnerships firms, companies, corporations, consortia or joint ventures) who meet requisite eligibility

criteria prescribed as under:

JV (Joint Venture) conditions and conflict of interest

- (i)** In the case of a JV or Consortium, all partners of the group shall be jointly and severally liable for the performance of whole contract
- (ii)** A technically qualified non-Indian firm is permitted to bid only in a consortium arrangement or Joint Venture with its wholly owned Indian subsidiary or any other Indian firm, registered in India under The Companies Act, 1956. However, in both the cases, Indian Firm/Indian subsidiary shall be the lead member & and shall meet the financial eligibility criteria.
- (iii)** Bidders shall not have a conflict of interest that affects the Bidding Process. Any Bidder found to have a conflict of interest will be disqualified from the bid process. Bidders shall be considered to have conflict of interest that affects the Bidding Process, if:-
 - (a)** such Bidder (or any constituent thereof) and any other Bidder (or any constituent thereof) have common controlling shareholders (Control is defined by The Institute of Chartered Accountants of India Accounting under Standard (AS)21³.

Consolidated Financial Statements as:

- I The ownership, directly or indirectly through subsidiary (ies), of more than one-half of the voting power of an enterprise; or
- II Control of the composition of the board of directors in the case of a company or of the composition of the corresponding governing body in case of any other enterprise so as to obtain economic benefits from its activities.

(b) Bidder shall be liable for disqualification if any legal, financial or technical adviser, including but not limited to a consultant, of the Employer (DJB) in relation to the Project is engaged by the Bidder in any manner for matters related to or incidental to the Project and which will affect the bidding process thereof; DJB shall itself.

(c) publish the list of its legal, financial or technical adviser engaged by it for the said projects; or Such bidder has participated as a consultant in the preparation of design or technical specifications or any other tender related activity for the works; or

- 1 Wholly owned subsidiary defined as a company whose common stock is 100% owned by another company parent company).
- 2 Lead member is a member of the consortium nominated by the other members to lead the project in terms of responsibilities as well as to act as a primary interface between the Employer and the consortium. It shall be noted that being a lead member does not signify a participation interest in the project of more than 50% and any member with a participation interest in the project of more than 26% can be a lead member.
- 3 AS 21 can be accessed at http://220.227.161.86/265_accounting_standards_as21new.pdf

(d) Such Bidder applies for bid both as an individual firm and as a part of JV or consortium; or

- (e) A constituent of one consortium is also a constituent of another consortium; or
 - (f) Such Bidder submits more than one application in this bidding process
- (iv) In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously.
 - (v) If an Indian agent submits bid on behalf of Principal/OEM, the same agent shall not submit a bid on behalf on another Principal/OEM in the same tender.
 - (vi) A firm, who has purchased the tender document, if applicable, in its name, can submit the bid either as individual firm or in joint venture/ consortium. However in joint venture/ consortium:
 - (A) The members shall jointly fulfill the general and particular experience criteria as mentioned above. However, part qualification of individual technical criteria related to project capacity shall not be permitted (example: If the criteria is EPC experience of 10 MGD of water treatment plant, two members having EPC experience of 5 MGD of water treatment plant each shall not be qualified). Further, each member shall at least qualify one eligibility criteria (financial, general and particular).
 - (B) The lead member shall fulfill the financial eligibility criteria solely.
 - (C) Members having less than 26 % participation shall be termed as non-substantial members and shall not be considered for evaluation which means their financial capability and work experience will not be considered for evaluation of JV/ consortium.
 - (D) A copy of the Joint Venture Agreement (JVA) entered into by the members shall be submitted along with the bid as per the format attached. The JVA shall include among other things, the joint venture's objectives, percentage participation of each member, the role of each member in the joint venture operation, the commitment of the members to joint and several liability for due performance, recourse/ sanctions with the joint venture in the event of default or withdrawal of any partner(s).
 - (E) In any case, number of JV/ consortium members shall **not exceed 3 (three)**.
 - (F) For DBO projects: In case of JV/ consortium, change in constitution of percentage participation is allowed 2 years after commissioning/ commercial operation date. However, such a change shall be subject to written approval of Employer. Such approval shall be denied if
 - (i) members withdraw from the joint venture and the remaining members do not meet the qualifying requirements;
 - (ii) The new members to the joint venture are not qualified individually or as joint venture members. Change in constitution will be discouraged if it affects the continuity of Works.
 - (G) For non-DBO projects: In case of JV/ consortium, no change in constitution of percentage participation is allowed.

- (vii) Bidder (individual or any member in case of JV/ consortium) shall not have suffered bankruptcy/ insolvency during the last 3 financial years from the date of submission of bid.
- (viii) Any bidder which has been barred by the Central or State government, or any entity controlled by them (controlling stake) from participating in any project and the bar commence/subsists as on the date of issue of NIT and/ or submission of bid and/or any date before the issue of work order, the bidder shall not be eligible to submit the bid, either individually or as a member of consortium and if the bids are already submitted the same shall be rendered invalid.
- (ix) If the firm claiming Technical Eligibility Criteria for the works has completed any of the works in joint venture with any other company then, along with the experience certificates, the firm shall submit the joint venture agreement for that particular work. Experience certificates not accompanied by joint venture agreement shall not be considered for evaluation. The credit for the firm which has completed a work in joint venture is allocated as follows:
 - a) If the firm has completed the work as a Lead partner in the project then the firm can claim credit for the entire scope of work
 - b) If the firm has completed the work as a partner in the project then the firm can claim credit for the entire scope of the work in proportion to the stake (eg. if the capacity of the STP executed is 30 MGD and if the firm has executed the project as partner with a 40% stake then the firm can claim credit for (40%x30MGD) 12 MGD works. A statutory auditor certificate specifying the payments received for the project should be submitted. In the event of percentage participation in the project calculated through the statutory auditor certificate differs from the percentage in the JVA, the percentage participation calculated through payments received shall be considered for evaluation purposes.

Observations:-

Bidders are not required to furnish along with the bid any memorandum of understanding with any supplier prior to award of the contract. However, if a MOU is felt necessary, say to ensure tie up with a technology provider, the same has to be submitted with bid in which case, no withdrawal of the MOU shall be permitted later on and the vendor withdrawing the MOU will be blacklisted by Employer for a period of 2 years.

The bid shall remain **valid for a period of 180 (one hundred eighty) days** after the date of submission of bid including extensions if any. In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request in writing that the bidders extend the period of validity

for a specified additional period. At this stage, bidder may refuse to extend the validity of his bid without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of its bid security for the period of the extension

The value of EMD (earnest money deposit) to be submitted along with the bid will be:

(a) For Works with ECV (estimated contract value) up to Rs. 10 (Ten) crores: 2% (two percent) of ECV.

(b) For Works with ECV greater than Rs. 10 (Ten) crores: Rs. 20 lakhs plus 1% (one percent) of ECV in excess of Rs. 10 crores.

Further, EMD amounts up to Rs. 20 lakhs will have to be transferred through RTGS to Employer's accounts as mentioned in tender. EMD amounts greater than 20 lakhs will have to be submitted in form of bank guarantee (BG). Bidders are required to scan the original BG and upload the same in the e tendering portal of Employer along with their bids. The original BG will have to be submitted on next working day of last date of submission of bid (within office hours), but not before. If the bidder doesn't submit the original BG as stipulated here, it shall run the risk of forfeiture of the already submitted amount of 20 lakhs as EMD. Employer, if desired, will get the bank guarantee submitted for EMD verified from the bank. In case the verification reveals that the submitted BG is fraudulent, DJB will forfeit the amount of Rs 20 lakh submitted through RTGS.

(c) Bidders are also required to submit along with the bids a list of all works in accordance with Annexure 1 & II, executed or under execution, **during last 7 years as reckoned from the year in which this NIT has been issued** whether in Individual capacity or in JV/Consortium with another contractor or as a sub-contractor, as per the annexure format attached. Bidders should also submit an affidavit on non-judicial stamp paper of Rs. 100/- in original confirming that the details of all such works executed/under execution either being executed in their name or being executed as joint venture within India or abroad (bidder's share) have been provided in the Annexure 1 & II and is correct. In case of any concealment of information, the bidder's bid will be rejected. Please note that **the affidavit as mentioned above should be duly notarized and submitted along with the bid. No relaxation in this criteria is permitted.**

(d) The bidder shall have to submit certificate of registration under GST. Scanned copy of TIN No. as issued by GST department has to be uploaded along with the copy of the latest filed return. It is mandatory & failing to abide by it, the bid will be rejected being not in conformity.

Joint Venture Agreement for Consortium

(On Non – judicial stamp paper of Rs 100 duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this day of 201_____ (hereinafter) referred as" _____") and having office at _____

Party of the First Part

_____ (hereinafter) referred as" _____") and having office at _____

Party of the Second Part

_____ (hereinafter) referred as" _____") and having office at _____

Party of the Third Part

The parties are individually referred to as **Party** and collectively as **Parties. Whereas DELHI JAL BOARD (the "Employer")** has invited Proposals from interested Firms and/or Consortiums for Appointment of Private operator for _____ **Project[s]. AND WHEREAS** the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That M/s _____ who is the Lead Members of the Consortium commits to hold a minimum stake equal to __% of the Consortium at all times during the Contract Period.
2. That any dilution of participation interest by the Parties in the consortium shall be as per the provisions of the Contract.
3. That the Parties shall carry out all responsibilities as per terms of the Contract.
4. That the roles and the responsibilities of each Party at each stage of the Bidding shall be as follows:

Name of Consortium Member	Role (Leader Member or Member)	Percentage Share in JV/Consortium	Responsibilities

No changes in the percentage share in JV/consortium shall be allowed thereof, except in accordance with the provisions of the Contract document.

5. That the Parties affirm that they shall implement the Project in good faith and shall take all necessary steps to see the Project through expeditiously. They shall not negotiate with any

other party for this Project.

6. That the parties shall be jointly and severally liable for execution of the project.
7. In case of default of member(s) the following recourse shall be applicable:
8. That this MoU shall be governed in accordance with the laws of India and courts in Delhi, India shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

Name, Designation and Signature of

Authorized signatory of Party of the first part:

Authorized signatory of Party of the second part:

Authorized signatory of Party of the third part:

Witness 1:-

Witness 2:-

Financial Eligibility Criteria

The single entity or lead member, in case of a Joint Venture, should individually satisfy the following eligibility criteria completely

B.1 Annual Turnover as per Format 1

Minimum average annual construction turnover (defined as turnover from construction works) in immediate **last 3 years i.e. FY2014-2015, 2015-16, 2016-17**, to be 30% of the ECV

Note: - Specify the years for which the average turnover is to be calculated. For bids Announced in Q1 or Q2 of a financial year, data for penultimate financial year and its 2 preceding financial years will be demanded. For bids announced in Q3 or Q4 of a financial year, data for 3 preceding financial years will be demanded. Example: if a bid is announced in May 2011, then data for FY 2009-10, 2008-09 and 2007-08 will be demanded. And, if a bid is announced in Nov 2011, then data for 2010-11, 2009-10 and 2008-09 will be demanded)

B.2.1 Net Worth as per Format 2

Minimum Net Worth of the bidder for financial year **2016-17 should** be positive on or before the date of bidding. Net Worth is defined as: Net Worth = (Subscribed and Paid-up equity capital + Reserves) – (Revaluation reserves + miscellaneous expenditure not written-off + reserves not available for distribution to equity shareholder).

(Note: - Specify the year for which the net worth is to be calculated. For bids announced in Q1 or Q2 of a financial year, data for penultimate financial year will be demanded. For bids announced in Q3 or Q4 of a financial year, data for the preceding financial year will be demanded. Example: if a bid is announced in May 2011, then data for 2009-10 will be demanded. And, if a bid is announced in Nov 2011, then data for 2010-11 will be demanded)

Example:

Sources of Fund 100₹		Application of Fund	
Subscribed and Paid-up equity capital	100	Fixed Assets	200
Reserves Current	120	Assets	100
Retained Profits	50	Investments	35
Share Premium	50	Miscellaneous expenditure not written-off	5
Revaluation Reserves	10		
Reserves not available for distribution to equity shareholder	10		
Loans	100		
Other Payables	20		
	340		340

(all values in INR crores)

Net Worth = (Subscribed and Paid-up equity capital + Reserves) – (Revaluation reserves + miscellaneous expenditure not written-off + reserves not available for distribution to equity shareholder)

Net worth= (100 + 120) - (10+10+5) = Rs. 195 crores

B.2.2 Solvency

The solvency amount should be equal to 40% of the estimated cost of the work or more.

B.3 Profitability as per Format 3

Profit before tax should be positive in at least 3 (THREE) years, out of **last 5 (five financial years) i.e. 2016-17, 2015-16, 2014-15, 2013-14 and 2012-13.**

(**Note:-** Specify the years for which the profitability is to be checked. For bids announced in Q1 or Q2 of a financial year, data for penultimate financial year and its 4 preceding financial years will be demanded. For bids announced in Q3 or Q4 of a financial year, data for 5 preceding financial years will be demanded. Example: if a bid is announced in May 2011, then data for FY 2009-10, 2008-09, 2007-08, 2006-07 and 2005-06 will be demanded. And, if a bid is announced in Nov 2011, then data for FY 2010-11, 2009-10, 2008-09, 2007-08 and 2006-07 will be demanded)

B.4 Available bidding capacity as per Format 4A (applicable for all projects with ECV greater than INR 25 Cr.)

The bidder should have a minimum available bidding capacity of 100 % of the ECV

The available bidding capacity shall be worked out by the following formula

$$\text{Bidding Capacity} = (A * N^2) - B$$

where, A= Maximum value of construction works executed in any one year during the **last five financial years i.e. 2016-17, 2015-16, 2014-15, 2013-14 and 2012-13** taking into account the completed as well as works in progress (updated to the current price level), rate of inflation has been taken as 10% compounded per year). N = Number of years prescribed for completion of works for which bids has been invited). B= Value at current price level of existing commitments and ongoing works to be completed during the next 1 years (period of completion of work for which bids have been invited). Bidders will give a calculation for the same.

(**Note:-** Specify the years for which the value of construction works is to be checked. For bids announced in Q1 or Q2 of a financial year, data for penultimate financial year and its 4 preceding financial years will be demanded. For bids announced in Q3 or Q4 of a financial year, data for 5 preceding financial years will be demanded. Example: if a bid is announced in May 2011, then data for FY 2009-10, 2008-09, 2007-08, 2006-07 and 2005-06 will be demanded. And, if a bid is announced in Nov 2011, then data for FY 2010-11, 2009-10, 2008-09, 2007-08 and 2006-07 will be demanded)

Example:

1. For calculating "A" – let's assume the maximum value of construction turnover in last 5 financial years is Rs. 100cr in FY 2009-10. Then taking 10% as given inflation rate, the

present value of the maximum construction turnover in FY 2010-11 shall be Rs 110cr[= $100 \times (1+10\%)$].

2. For “N”, let’s assume the current project duration to be 3 years.
3. For “B”, let’s assume that value for existing commitments and ongoing work 2010-11, 2011-12 and 2012-13 be Rs. 100 cr., Rs. 150 cr. and Rs. 200 cr respectively. Then taking 10% as given discount rate, the current price level of existing commitments and ongoing works shall be Rs. 401.65 cr. [$=\{100/(1+10\%)^0\} + \{150/(1+10\%)^1\} + \{200/(1+10\%)^2\}$].

$$\begin{aligned} \text{Bidding Capacity} &= (A \times N^2) - B \\ &= (110 \times 3^2) - 401.65 = \text{Rs. } 258.35 \text{ cr.} \end{aligned}$$

B.5 Working Capital as per Format 5 (The bidder shall demonstrate that it has access to, or has available liquid assets (aggregate of working capital, cash in hand) and/or lines of credit sufficient to meet the construction cash flow requirements, minimum estimated as 15 % of ECV as on **31st March 2017**.)

(For estimated contract value; ECV \geq INR 100 Cr.) The bidder shall demonstrate that it has access to, or has available liquid assets (aggregate of working capital, cash in hand) and/or lines of credit sufficient to meet the construction cash flow requirements, minimum estimated as 10 % of ECV subject to a minimum of INR 15 Cr. Ason 31st March, 20XX.

(Note:- Specify the year for which the working capital is to be calculated. For bids announced in Q1 or Q2 of a financial year, data for penultimate financial year will be demanded. For bids announced in Q3 or Q4 of a financial year, data for preceding financial year will be demanded. Example: if a bid is announced in May 2011, then data for FY 2009- 10 will be demanded. And, if a bid is announced in Nov 2011, then data for FY 2010-11 will be demanded)

B.6 Litigation

Bidder shall submit along with the bid details of all pending litigation as per attached Format 6. The maximum possible legal liability arising out of all the pending litigation should not exceed 50% of net worth of the bidder.

Note: All the financial calculations required under clauses B.1 to B.6 shall be done by the Contractor and shall be certified by its statutory auditor, else the information will not be considered for evaluation.

Format 1 Information on Average Annual construction turnover:

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member,

including full postal address, telephone, faxes and e-mailaddress}

Individual bidder or lead member of a JV must fill in this form

Annual Turnover Data for the Last 3 years (Construction Only)	
Year	Amount (in INR)
Average Annual Construction Turnover	

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

The consortium turnover will include turnover achieved from construction and operation & maintenance activities

Format 2 - Information on Net-worth

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member,

including full postal address, telephone, faxes and e-mail address}

	Financial Information (in INR)	FY 2016-2017
1	Subscribed and Paid-up equity capital	
2	Reserves	
3	Revaluation Reserves	
4	Miscellaneous Expenditure not written off	
5	Reserves not available for distribution to equity Shareholder	
	Net Worth (1+2)-(3+4+5)	

Net Worth of the bidder **as on 31/03/ 2017**= (Amount in INR)_____

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

Format 3

Information on Profitability

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member, including full postal address, telephone, faxes and e-mail address}

Individual bidder or lead member of a JV must fill in this form

Profit Before Tax Data for the Last 5 Years	
Year	Amount (in INR)
2016-2017	
2015-2016	
2014-2015	
2013-2014	
2012-2013	

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

Format 4A

Information on Available Bidding Capacity

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member, including full postal address, telephone, faxes and e-mail address}

Individual bidder or lead member of a JV must fill in this form. Refer original Clause for clarification

Description	Value
Maximum value of construction works executed in any one year during the last five years updated to the current price level; A <i>Note:- Bidders to fill information in the Format 4B to providedetails of construction works in last 5 years</i>	(value in Indian Rupees)
Duration of Contract; N	(Value in years. To bespecifiedby Employer to avoidambiguity)
Value of existing commitment for next [N] years at currentprice level; B <i>Note:- Bidders to fill information in the Format 4C to providedetails of existing commitments</i>	(value in Indian Rupees)
Available Bidding Capacity = (A*N*2 - B)	(value in Indian Rupees)

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

Format 4B

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member, including full postal address, telephone, faxes and e-mail address}

Form to be filled for each of **last 5 financial years**

Form for FY 20XX-20XX

S. No.	Project Name	Brief Scope of Work	Contract Value (in INR)	Starting Date	Completion Date	Value of the works executed in FY 20XX-20XX (in INR)
1						
2						
3						
4						
Total value of Construction Work in FY 20XX-20XX (in INR)						

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

Format 4C

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member, including full

postal address, telephone, faxes and e-mail address}

S.No	Description of Work (include scope of work, location, technology used, etc.)	Postal Address of Client & details of Officer-in-Charge	Contract Value (in ⁴)	Starting Date	Scheduled Completion Date	Value of the work to be completed in [N] years (in INR)	Remarks
1							
2							
3							
4							
5							
Total (in INR)							

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

RBI exchange rate for the year of award to be referred for conversion in INR

**Format 5
Information on Working Capital**

*{To be printed on the authorized Letterhead of the Bidder or the Lead JV/Consortium Member,
Including full postal address, telephone, faxes and e-mail address}*

Working Capital Available with the bidder as on 31/03/2017 = (Amount in INR)_____

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

{To be printed on the authorized Letterhead of the Bidder or the Lead JV/ConsortiumMember including full postal address, telephone, faxes and e-mail address}

{To be provided for each firm/JV/consortium member}

S. No.	Name of Applicant/JV/Consortium member	Name of agency with which litigation and brief subject	Estimated financial liability	Present Status

{This format should be certified by the Statutory Auditor of the Bidder / lead member, in case of JV/consortium}

Technical Eligibility Criteria

Technical Eligibility General Conditions

- a. Bidders shall submit experience certificates as per the required format, in Annexure 1 and

Annexure 2, wherever relevant, to meet eligibility criteria.

- b. If a firm claiming technical eligibility through a project and the project is executed in consortium/ JV with other firm, then, along with the experience certificates, the firm shall submit the joint venture agreement entered into with the other partner and the contract agreement with the client for that particular work.
- c. All experience certificates (in original as well as an English translation copy) produced by overseas companies should be attested / apostil from the Indian Embassy in the country where the project was executed OR Embassy of the country (where project was executed) in India. The email id and telephone numbers of the concerned Embassy official attesting the documents shall also be mentioned. In case any certificate is found to be forged, the bid shall be rejected and the concerned firm is liable to be debarred from taking part in future tenders by Employer for a period of 1 year.
- d. All certificates uploaded on the e-procurement site and in hard copy (which is a true image of the uploaded certificate) shall be clearly legible. Any certificate found to be illegible or in deviation to the soft copy shall not be considered for evaluation purposes. Clarification may be sought in this regard.
- e. Operation & Maintenance experience, for the purpose of evaluation, shall be counted post commissioning only. In case there is overlap in the DLP and O&M period, benefit of both will be given for the period of overlap.

i. Technical Eligibility Criteria for Water/Wastewater Network System FOR LAYING OF PIPELINES FOR WORKS COMPRISING OF OPEN CUT AND TRENCHLESS/ MICROTUNNELLING WORK

Project Description	FOR LAYING OF PIPELINES FOR WORKS COMPRISING OF OPEN CUT AND TRENCHLESS/MICROTUNNELLING WORK
Type of Contract	Item rate, percentage rate or EPC (Engineering, Procurement and Construction)/ DB
Unit of Capacity	Length in meters
<p>(1) The bidder is required to have experience of such works either in water or sewerage sector as under:</p> <p>a) One completed & commissioned work of pipeline laying of cost not less than the amount equal to 60% of the estimated cost put to tender or more</p> <p style="text-align: center;">OR</p> <p>b) Two completed & commissioned works of pipeline laying of each costing not less than the amount equal to 40% of the estimated cost put to tender</p> <p style="text-align: center;">OR</p> <p>c) Three completed & commissioned works of pipeline laying of Each costing not less than the amount equal to 30% of the estimated cost put to tender</p> <p>The above works should have been completed in the last 7 years as reckoned from the month of issue of this NIT.</p>	
General Eligibility Criteria	
Particular Eligibility Criteria	<p>The bidder is required to have experience of such works similar to the proposed work as applicable in sewerage sector as under:</p> <p>water /sewerage work, having item of laying of pipe of at least 450mm internal dia having been laid via trenchless method in a single shot of at least length of 60 meter</p>
Bid Parameter	Capital Cost (Amount put to bid by the bidder for the project)
Bid Evaluation	Lowest Capital Cost as quoted by bidder
Key Performance Indicators	Quality Assurance Plan (The bidder will have to execute the project in accordance with the QAP and standard ³⁰ and specific technical specification as specified in the contract)
<p>³⁰ Standard is relevant BIS or any international standard as applicable to the project. In absence of standard available for project component good industry practice shall be applicable.</p>	

Annexure - 1: Total Work Experience in DJB type of Activities

Project Data Sheet Give list of all completed/ ongoing projects in last 7 years:

S. No.	Description	Details				
1.	Name of Project, Location					
2.	Description of work					
3.	Contract Value (in crores)	Civil Cost	E&M Cost	O&M Cost including Electricity, Manpower, Chemicals etc.	Business Model (Item Rate/ Percentage Rate/ EPC/DBO/PPP) (With Percentage financial contribution if any in CAPEX and OPEX)	Total Cost
	a) Awarded					
	b) Final Executed					
4.	Name of client, Postal Address, Phone/ Fax No./ E - mail					
5.	Designed Capacity/ Length					
6.	Treatment Process used, if Applicable					
7.	Technology Used if Applicable					
8.	Influent characteristics, if applicable					
9.	Effluent characteristics, if applicable					
10.	Applicable KPIs					
11.	Year in which KPI achieved					
12.	Other salient features, if any					
13.	Completion Dates	Date of award				
		Scheduled Starting Date				
		Scheduled completion date				
		Actual Completion date				

S. No.	Description	Details	
		Delay in months, if any	

		Reasons for delay, if any	
		Scheduled commissioning date	
		Actual commissioning date	
		Delay in months, if any	
		Reasons for Delay, if any	
		Defect Liability Period, Start Date	
		Defect Liability Period, End Date	
		Operation & Maintenance period, if applicable, Start Date	
		Operation & Maintenance, End Date	
14.	*Scope of work executed by Bidder's organization		
15.	Basis of Execution	<input checked="" type="checkbox"/> INDIVIDUAL	
16.	Details of lead member in case of JV	<input checked="" type="checkbox"/> CONSORTIUM / JOINT VENTURE	
17.	Details of other members in case of JV		

Actual scope of work done by the JV partner who is applying for this tender.

Certificate not as per above format will not be considered for evaluation

(Signature & official stamp of the bidder)

Note 1:- Separate data sheet has to be filled for individual projects.

Note 2:- The previous contracts against which experience is not claimed as part of eligibility for this tender can be self-certified.

Note 3:- Self attested copies of client certificates shall be enclosed.

Annexure – 2: Requirement to meet Technical Eligibility Criteria

The Contractor should submit the experience certificates from the respective clients containing the

following information:

1. Name of Work
2. Location
3. Scope of Work
4. Capacity
5. Cost of Work
6. Name of Client
7. Details of Client (Department, address, telephone number, email id)
8. Duration of Work
9. Scheduled date of start of Work
10. Scheduled date of completion of Work
11. Actual date of start of Work
12. Actual date of completion of Work
13. Delay, if any
14. Amount of penalty, if any
15. Present status of Work
16. Performance of Work

Annexure 3 Lowest life cycle summary -NOT APPLICABLE

Annexure 4 Format of Road restoration-NOT APPLICABLE

Annexure – 5: Affidavit to be filled by the bidder
(on a non-judicial stamp paper of Rs. 100)

From,

(Contractor's Details)

To,

**The Office of the Executive Engineer (C) DR - XIV
Delhi Jal Board, S.P.S. Najafgarh,
New Delhi – 110043.**

Contract: (Contract Name)

Dear Sirs,

I/We have annexed to this Bid the following documents:

- (i) Original Power of Attorney or other proof of authority of the person who has signed the Bid or Copy of Power of Attorney or other authority duly certified by a Gazetted Office or a Notary Public in proof of authority of the person who has signed the Bid
- (ii) Audited Balance sheet of the Bidder for the last 5 (Five) years
- (iii) Letter of award and completion certificates for the eligible projects
- (iv) Documents as per the eligibility criteria
- (iv) Any additional documents as listed below:

.....
.....

I/We hereby undertake that the statements made in the bid and the information given in Annexure referred to above are true in all respects and that in the event of any such statement or information being found to be incorrect in any particular, the same may be construed to be a misrepresentation entitling Delhi Jal Board to cancel the bid or terminate any resultant Contract.

I/We undertake that we have no conflict of interest as specified in the bidding documents for the above Contract and that if found otherwise, Delhi Jal Board can take all requisite measures, including but not limited to cancellation of bid or terminate any resultant Contract, as per provisions of Contract.

I/We further undertake as and when called upon by Delhi Jal Board to produce for its inspection, original(s) of the document(s) of which copies have been annexed hereto.

Yours faithfully,

(Signature(s) of the Bidder(s))

Name & Designation of authorized person signing the Bid on behalf of the

Bidder(s) Full Name and address of the Bidder(s)

SECTION – IV: TECHNICAL SPECIFICATIONS

1. Scope of Work

1.1 Delhi Jal Board (DJB) is implementing a work of **P/L Sewer Line in Bijwasan West.**

1.2 The principal items of works to be carried out under this contract are as following:

Providing, laying, jointing, testing and commissioning of sewers in area, including construction of manholes & appurtenances etc.

1.3 The location plan and alignment plan of the proposed sewer are shown in the enclosed drawing.

1.4 The work is described under this contract document shall include following works

- (i) The contractor is advised to inspect site before tendering to ascertain the quantum and cost of work and include this cost in their offer.
- (ii) Excavation or trenches and foundation for all works and other ancillary works in all sorts of strata with necessary dewatering, wherever applicable including refilling of trenches, disposal of surplus soil and clearance works.
- (iii) Cutting of roads after proper approval.
- (iv) Dewatering, if required, for satisfactory completion of works.
- (v) Construction of manholes.
- (vi) Restoration of roads.
- (vii) Removal of defects in laying and jointing of all sewers, fittings and manholes during defect notice period.
- (viii) Compliance of all safety rules at work sites.
- (ix) To take all safe guards to avoid accident at site, prevent loss to other pipe lines, telephone and electric cables and other government or private property/utility during all phases of working.
- (x) Utility shifting such as Electric pole/ Cables/ Telephone Pole/ Water Supply lines etc, if required to complete scope of works.
- (xi) Preparation of completion drawings.
- (xii) Third party inspection.

2. General Information

2.1 Location & Description of Work

The Delhi Jal Board (DJB), (hereinafter be referred to as the "Employer") has processed to execute the works detailed given in NIT, **P/L Sewer Line in Bijwasan West.**

Works to be kept Clear of Water

2.2.1 The contractor shall keep the works drained until the Engineer-in-Charge certifies that the whole of the work is substantially complete and shall ensure that so far as in practicable all work is carried out in dry condition. Excavated area shall be kept well drained and free from standing water.

2.2.2 The contractor shall construct, operate and maintain all temporary dams, watercourses and other works of all kinds, including pumping and well point dewatering that may be necessary, to exclude water from the works while they are in progress and till they are handed over to maintenance cell. This refers to surface water/ waste water that may enter into the excavated constructions work. It shall be further noted that disposal of surface/ sub-soil water/ wastewater away from the site into some existing drain/ nallah shall be done by Contractor at his own cost. No claim in this regard shall be entertained.

2.2.3 Notwithstanding any approval by the Engineer-in-Charge of the Contractor's arrangements for the exclusion of water/ waste water, the Contractor shall be responsible for the sufficiency thereof, and for keeping the works safe at all times, particularly during any floods or monsoon and for making good at his own expense any damage to the works, including any that may be attributable to floods shall be at the Contractor's own risk.

2.3 Discharge of Water into Existing Water Course

2.3.1 The Contractor shall make provision for the discharge or disposal from the works and temporary works of all water and waste water products howsoever arising and the methods of disposal shall be to the satisfaction of Engineer-in-Charge and of any Authority or person having an interest in any land or watercourse or in which waste may be so discharged

2.4 Prevention of Pollution

2.4.1 The contractor shall ensure that at all times during the construction of the works all reasonable precautions are taken to the satisfaction of the Engineer-in-Charge to prevent pollution of the Site end of the environment. In particular, the Contractor shall prevent pollution arising from the disposal or spillage of sewage, diesel, fuel, oil, liquid mud or from the disturbance of natural dust, aggregate dust or cement dust.

2.5 Effects of Weather

2.5.1 The contractor shall ensure that no damage occurs to the works during construction by arranging adequate protection for excavation or other works against the effects of drought, sunshine, wind or rainfall (including erosion and flooding). No work shall be performed when in the opinion of the Engineer-in-Charge such work is liable to be injuriously effected by the weather. The contractor shall have no claim against the Owner on account of loss alleged to have been sustained directly or indirectly by reason of the Engineer-in-Charge declining to permit such work to start or continue, or ordering any work damaged by the weather to be made good or removed and re-executed.

2.6 Work Methodology

2.6.1 The construction shall be in phase sequence as directed by Engineer-in-Charge.

2.6.2 Normally work should be taken up from downstream end.

2.6.3 Before starting the work, L-section of the work along the alignment up to connection point shall be prepared and bench mark be fixed at various intervals.

2.6.4 Before excavating the trench, the alignment of sewer line shall be approved by the Engineer-in-Charge.

2.6.5 Only such reach shall be given to the contractor, which can be controlled, keeping into consideration the availability of cement, labour and other material with the contractor.

2.6.6 The trial pits/ trenches shall be taken by the Contractor at his own cost, without being directed to do so, along the proposed sewer line alignment, in advance of the excavations for the purpose of

satisfying himself as to the location of underground obstructions or conditions, the contractor shall proceed with caution, in any excavation and shall use every means to determine the exact location of underground structures, pipelines, conduits etc., prior to excavation in the immediate vicinity thereof. The Contractor shall be solely responsible for the cost of protections or repair or replacement of any structure, pipeline/ storm water drain, conduit etc. above or below ground, which may be broken or otherwise damaged his operations.

3. Detailed Specifications

3.1 Civil Works

3.1.1 The work shall be carried out in accordance with the latest Central Public Works Department (CPWD) specification as on the date of receipt of tenders. The specific technical requirements given herein are supplementary to the said CPWD specification. In case of any variations between the CPWD specification and the specifications given herein, the latter shall prevail. In cases, where the CPWD specification and the specifications given below are silent about any aspect in respect any item of work, the work shall be carried out as per the relevant IS Code of Practice with up to date amendments and as per sound engineering practice as decided by Engineer-in-Charge

3.2 Earth work in Excavation

3.2.1 The setting out of works, carrying out confirmatory survey for checking the levels shall be carried out by the Contractor at his own cost. The construction methodology and sequence of work should be submitted by the Contractor within 15 days after the letter of acceptance and prior to start of the construction activities at site. The levels, slopes and diameters of sewers shall be as per the drawing. The excavation of the trench shall be done in accordance with the relevant clauses of excavation of CPWD Standard Specifications.

3.2.2 Applicable Codes

- a) The following Indian Standard Codes, unless otherwise specified herein, shall be applicable.
- b) In all cases, the latest revision of the codes shall be referred to:-

- . IS 14333 Code of practice for laying of HDPE pipes.
- . IS 4127 Code of practice for laying of Glazed Stoneware Pipes
- . IS 1200 Methods of Measurement of Building and Civil Engineering Works (Part I to Part 28)
- . IS: 16098 (Part-2) 2013 for DWC pipe

- c) IS 3764 Excavation Work – Code of Safety
- d) IS 2720 Methods of Tests for Soils

3.2.3 Excavation in Trenches

- a) Excavation shall be carried out as per the latest CPWD specifications applicable for the work. The side slope for excavation shall be decided by the Engineer-in-Charge depending upon the sub-soil strata and availability of land. In case of the space constraints restricted excavation width shall be allowed and the contractor shall carry out close/open timbering to keep the

- trench in position. The procedure and process of timbering/shoring etc. shall be as per CPWD specifications. The payment shall be made as per provision in the Bill of Quantities of the work.
- b) Excavation in soil: In firm soils, the sides of the trenches shall be kept vertical up to a depth of 1.5 meters from the bottom. For greater depths, allowing steps of 45 cms on either side after every 1.5 meters from the bottom shall widen the excavation profiles. Alternatively, the excavation can be done so as to give slope of 1:4 (1 horizontal: 4 vertical). Where the soil is soft, loose or slushy, the width of steps shall be suitably increased or sides sloped or the soil shored up as directed by the Engineer-in-Charge. It shall be the responsibility of the contractor to take complete instruction in writing from the Engineer-in-Charge regarding the stepping slopping or shoring to be done for excavation deeper than 2 meters.
 - c) Excavation in ordinary/ hard rock shall be carried out by crowbars, pickaxes or pneumatic drills and blasting operation shall not be adopted.
 - d) The line and level of trenches shall be as shown on the Drawings or as may be required by the Engineer-in-Charge. Before commencing Trench Excavation, the route of the trench shall be pegged out accurately and the ground levels shall be agreed with the Engineer-in-Charge. Strong sight rails shall then be fixed and maintained at each change of gradient and at as many intermediate points as may be necessary. On these rails shall be marked the centerline and the level to which the excavation is to be carried out, such rails being not more than thirty five meters apart.
 - e) In case of excavation for foundations or for laying of sewers/pipe lines/ drains in trenches or over areas, the bed of excavation shall be to the correct level or slope and consolidated by watering and ramming. If the excavation for foundation is done to a depth greater than that shown in the drawings or as required by the Engineer-in-Charge, the excess depth shall be made good by the contractor at his own cost with the concrete of the mix used for leveling/bed concrete for foundations. Soft/defective spots at the beds of the foundations shall be dug out and filled with concrete (to be paid separately) as directed by the Engineer-in-Charge.
 - f) Any widening or deepening of Trench Excavations necessary to accommodate curves, joints or bends in the pipe as shown on the drawings or when ordered by the Engineer-in-Charge shall be considered in the excavation but that required by the Contractor to provide extra working space for the construction thereof shall be held to be Excess Excavation (which is not paid for). Any excavation outside these limits which has not been ordered by the Engineer-in-Charge shall be held to be Excess Excavation. No length of Trench Excavation shall be started until the pipes to be laid in that length are available on the site.
 - g). In case the excavation is done wider than that shown on the drawings or as required by the Engineer-in-Charge, additional filling wherever required on this account shall be done by contractor at his own cost.
 - h). Excavation of final 150mm depth shall be done just prior to lean concrete.
 - i) The excavated earth shall be stacked sufficiently away from the edges of the trench as per provisions given in CPWD specification / IS code. The clear distance between the edge of the excavation and the stacked earth shall be 1.5 meter or half of the depth of excavation whichever is more. In case of space constraints, special permission of Engineer-in-Charge shall be taken.

- j). The trenches having more than 1.2 meter depth shall be provided with a ladder which shall extend from the bottom of the trench to at least 90 cm above the ground level for inspection by the contractor at his cost.
- k). During the excavation the natural drainage of the area shall be maintained. Excavation shall be done from top to bottom. Undermining or undercutting shall not be done.
- l). From safety point of view, where required, the trenches shall be provided with GI sheet barricading which shall be painted with red and white strips as directed. The payment shall be made only if the item is included in the bill of quantity otherwise the cost of the same shall be considered as inclusive in the offered rate.
- m). At no point of time the trench shall be allowed to be excavated in a continuous length beyond 5m. The excavated trenches shall remain fully barricaded and fitted with caution board/lamps as the case may be. The contractor will be fully responsible for any mishaps. The sign boards for diversion of traffic shall also be provided by the contractor.

3.2.4 Method of Excavation

- a) Excavation by manual methods only be employed at locations near existing pipe lines, sewer lines, underground cables, for finishing of trenches, narrow streets and at locations directed by Engineer-in-Charge or his representative. At all other locations excavation may be done by manual or mechanical appliances as practicable and safe.

3.2.5 Trial Pits or Trenches

- a) The Engineer-in-Charge may require trial pits or trenches be excavated well ahead of the trench excavation to such depths as he shall order to determine the alignment for the trench. Any further trial pits or trenches required by the Contractor to determine the position of underground services, sub-soils, drains or for any other reason shall be excavated and reinstated at the Contractor's expense.
- b) The Contractor shall arrange for the refilling and reinstatement of trial pits or trenches to be carried out immediately after the required information is obtained. The reinstatement to the surfaces of trial pits or trenches shall be carried out to the approval of the Engineer-in-Charge.

3.2.6. Trench Excavation in Roads and Footpaths

- a). All trench excavation and other work carried out within the limits of any road shall be completed as rapidly as possible and not more than half of the width of the carriageway shall be obstructed at a time. Road drains and grips shall be kept free from obstruction. All trench excavation and other work carried out within the limits of any road shall be completed as rapidly as possible and not more than half of the width of the carriageway shall be obstructed at a time. Road drains and grips shall be kept free from obstruction.
- b). In a event the Contractor shall take special precautions, which shall include the continuous support of the sides of the excavation, from the time when excavation is begun until the refilling of the trench is place, to ensure that there is no disturbance of the adjacent road or road foundation.
- c). Here excavated material has temporarily been deposited on grass margin or road pavement, the margin or road pavement shall on completion of refilling be restored entirely to its original condition and left free from loose stones.

3.2.7 Trimming Trench Excavations

- a) Where no bedding material is specified to be laid beneath the pipe the bottom of Trench Excavations shall be carefully boned in and trimmed true to grade with the aid of a straight edge at least six meters long so as to ensure a continuous support for the pipes. The trench bottom shall then be pricked over with a fork and any stones or flints either likely to cause the pipe to bed unevenly or to damage the pipe and its coating or greater than 20mm in size shall be picked out of the pipe bed and any holes so formed shall be filled in with soft material and trimmed to the correct level.
- b) Where no bedding material is specified, all shattered and loose material shall be removed from the bottom of the Trench Excavation so that the bedding material rests on a solid and clean foundation.

3.2.8 Disposing Material from Trench Excavation

- a). Subject to any specified requirements of the Contract, the Contractor shall make his own arrangements for the temporary storage of any excavated material, which is required for use in refilling Trench Excavations, including any necessary double handling. In this connection the Contractor shall have regard to the working areas available to him for the construction of the pipeline particularly where this is located in roads or in other places to which the public has free access. Any temporary tips alongside the Trench Excavations shall be to stable slopes and heights.
- b). Where the nature of the excavated material is suitable the Contractor's temporary storage as aforesaid shall include for the separate storage as the Engineer-in-Charge may direct of any of the various grades of material hereinafter specified for the refilling and surface reinstatement or Trench Excavation, namely, soft material, coarse material, hard material and topsoil.
- c). Any excavated material not required for or not suitable for use as refilling as aforesaid or for use elsewhere in the Works shall become property of the owner and shall be disposed off to the nearest specified area as per the defined leads.

3.2.9 Trenches not be left open

- a). Trench Excavation shall be carried out expeditiously and subject to conditions of the Contract, the refilling of Trench Excavations shall be commenced and completed as soon as reasonable practicable after the pipes have been laid and jointed.
- b). Pipe lying shall follow closely upon the progress of Trench Excavation and the Contractor shall not permit unreasonably excessive lengths of Trench Excavation to remain open while waiting testing of the pipeline. The contractor shall take precautions to prevent flotation of pipes in locations where open Trench Excavations may become flooded, and these precautions may include the partial refilling of the trench leaving pipe joints exposed while awaiting tests of the joints.
- c). If the Engineer-in-Charge considers that the Contractor is not complying with any of the foregoing requirements he may prohibit further Trench Excavation until he is satisfied with the progress of laying and testing of pipes and refilling of Trench Excavations.

3.2.10 Existing Service

- a) Where Trench Excavation is carried out close to or across the line of sewers, pipes, cables and other services, the Contractor shall, where necessary, provide temporary supports or slings and where such sewer, pipe, cable or other service is temporarily disturbed it shall be replaced for which nothing extra shall be paid (as per Clause 3.23 GCC “*Precaution during Execution*”) except for the provision made in Bill of Quantities.
- b) Where in the opinion of the Engineer-in-Charge, construction of the pipeline cannot reasonably be carried out unless the sewer, pipe, cable or other service is permanently severed or permanently diverted or permanently supported by concrete he shall order the Contractor to undertake such work.
- c) Notwithstanding any relevant information furnished by the Engineer-in-Charge, the contractor shall be responsible for ascertaining from his own inspection of the site and from the respective supply authorities and other public bodies the positions of all mains, pipes and cable whether underground or overhead, within or near the Site.

3.2.11 Hedges, Fences and Walls

- a). Where the Trench Excavation crosses barriers such as hedges, fences and walls, the Contractor, as temporary measure during construction of the pipeline, shall provide temporary fencing for any parts of such barriers as have had to be removed.
- b). After Trench Excavation has been reinstated; the Contractor shall carry out such work as the Engineer in-Charge may order for permanent restoration of such barriers.

3.2.12 Crossing Water courses etc.

- a). Where the pipeline crosses Nallah, culverts and other watercourses, the Contractor shall be deemed to have allowed for all the additional measures necessary for the proper construction of the pipeline at these crossing including maintaining the full flow of water across the trench.

3.2.13 Dewatering

- a). All excavations shall be kept free of water; Grading in the vicinity of excavations shall be controlled to prevent tidal and surface water running into excavated areas. Contractor shall remove by pumping or other means any water inclusive of rain water and subsoil water accumulated in excavation and keeps all excavations dewatered until the foundation work is completed and backfilled. Sumps made for dewatering must be kept clear of the excavations/trenches required for further work. Method of pumping shall be acceptable to the Engineer-in-Charge, but in any case, the pumping arrangement shall be such that there shall be no movement of subsoil or blowing in due to differential head of water during pumping. Pumping arrangements shall be adequate to ensure no delays in construction. When there is a continuous inflow of water and quantum of water to be handled is considered in the opinion of Engineer-in-Charge as large; well pint system, single stage or multistage, shall be adopted. The Contractor shall submit to Engineer-in-Charge his scheme of well pit system including the stages, the spacing, number and diameter of well points, headers etc., and the number, capacity and location of pumps for approval. Unless separately provided for in the bill of quantities, the cost of dewatering shall be included in the item rate for excavation and all other scope of work, wherever applicable.

3.2.14 Shoring

- a) Timber shoring shall be close or open type, depending on the nature of soil and the depth of pit or trench. The type of timbering shall be as acceptable to the Engineer- in-Charge. It

shall be the responsibility of the Contractor to take all necessary steps to prevent the sides of excavations, trenches, pits, etc., from collapsing.

- b) Timber shoring may be required to keep the sides of excavation vertical to ensure safety of adjoining structures or to limit the slope of excavations, or due to space restrictions or for other reasons. Such shoring shall be carried out, except in an emergency, only under instructions from Engineer-in-Charge.
- c) The withdrawal of the timber shall be done very carefully to prevent the collapse of the pit or . It shall be started at one end and preceded systematically to the other end. Concrete or masonry shall not be damaged during the removal of the timber. No claim shall be entertained for any timber, which cannot be retrieved.
- d) In the case of open timbering, the entire surface of the side of trench or pit is not required to be covered. The vertical boards of minimum 25cm x 4cm sections shall be spaced sufficiently apart to leave unsupported strips of maximum 50cm average width. The detailed arrangement, sizes of the timber and the spacing shall be subject to the approval of Engineer-in-Charge. In all other respects, specification for close timbering shall apply to open timbering.
- e) In case of large pits and open excavations, where shoring required for securing safety of adjoining structures, the method of shoring shall be submitted to the Engineer-in-Charge for his approval. If, the Engineer-in-Charge directs any timbering to be left-in, Contractor shall be paid for at an agreed rate for such left-in timbering.
- f) Unless separately provided for in the Bill of Quantities, shoring is deemed to have been included in the unit rates quoted for excavation. If separately provided in the Bill of Quantities the actual effective area of shored faces as approved by Engineer-in-Charge shall be measured in s.q.m. All planks, boards, walings, verticals, struts, props and all other materials required for shoring and subsequent safe dismantling and removal shall be deemed to be included in the quoted unit rates.

3.2.15 Sub Soil Water

- a). The excavation under sub-soil water shall be classified as excavation in saturated soil.
- b). The sub-soil water table is likely to be met with during the execution of work. For measurement of different items required to be executed at site, actual sub-soil water table shall be recorded in 3 pits dug along the specified length of alignment and the average steady water level shall be taken. The sub-soil water table shall be recorded by the department/Engineer-in-charge/ a team of Engineers and the contractor. The measurement of works/items as per Bill of Quantities executed under sub-soil water will be made/worked out with center of gravity i.e. the quantity will be calculated by multiplying the depth measured from top of sub-soil water level up to the center of gravity of cross-sectional area of the item.
- c). The contractor shall arrange sufficient number of diesel and Electric Pump for lowering down the water table below the required excavation level and to keep the excavation dry for sufficient period to enable getting of works executed. The contractor shall also arrange at his cost Diesel generator Sets of adequate capacity as a standby arrangement in good running condition including making pressure release holes if necessary and plugging the same subsequently to the satisfaction of Engineer-in-Charge. Pumping of sub-soil water shall be ensured to be continued to keep sub-soil water level well below the deepest construction level during execution to avoid floatation of the partially constructed structure due to uplift pressure of subsoil water. This arrangement shall be maintained till full structure has been constructed the uplift pressure due to sub-soil water.
- d). The sub-soil water pumped will be drained off to the proper disposal point. The drain shall be kept cleaned regularly. Contractor shall ensure hygienic conditions as per the guidelines and procedure of the health/sanitation department and nothing extra shall be paid on this account.
- e). While withdrawing the casing pipes of the bores, the space and the cavity so formed, the contractor

shall fill the same with sand at his own cost.

3.2.16 Refilling

- a. Refilling of the trenches shall proceed with the soft material free from stone and hard substance; compaction of the same shall be done as per CPWD specifications.
- b. In case of pipelines, soft material free from stones or hard substances shall first be used and hand pressed under and around the pipes to half their height. Similar soft material shall then be put into a height of 30cm above the top of the pipe and this will be moistened with water and well rammed. Filling in the remainder of the trench shall be done with excavated earth in regular horizontal layers each not exceeding 20cm in depth. All lumps and clods exceeding 8cm in any direction shall be broken. Each layer shall be watered and consolidated.
- c. Before and during the backfilling of a trench, precautions shall be taken against the floatation of the pipeline due to the entry of large quantities of water into the trench causing an uplift of the empty or the partly filled pipeline. Upon completion of the backfill, the surface shall be restored fully to the level decided by Engineer-in-Charge.
- d. Sheeting driven below the spring line of a sewer shall be withdrawn a little at a time as the backfilling progress. Some of the backfilled earth is forced into the void created by withdrawal of sheeting.

3.2.17 Cement

- a) The contractor shall procure ISI mark OPC (ordinary Portland cement) of 33 grade (conforming IS: 269) or above grade (conforming to IS: 8112) as required for the work only manufactures as approved by Ministry of Industry, Govt. of India, and holding license to use ISI certification mark for their product **whose name shall be got approved from Engineer-in-charge before use.** Test report from manufacturers for each lot purchased shall be submitted before use. Mandatory test of cement as required by CPWD specifications 1996-2002 or last edition of specification at Delhi (till date of receipt of tender) and as per provisions of relevant BIS codes shall also be got done by the Engineer-in-Charge as and when considered necessary supply of cement shall be taken in 50 Kg. bags bearing manufacturer's name and ISI markings samples of cement from the lot arranged by the contractor shall be taken by the engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case test result indicate that the cement arranged by contractor does not conform to the relevant BIS codes same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so. In case the quantity of cement required for the completion of entire work is less than 20 tones, Engineer-in-Charge may allow its purchase from the local dealers. In that case the entire lot will be purchased at one time and use of the same shall be allowed only after its testing as per clause 3.1.4.1 according to IS: 4031 Part II, III, V & VI, from the lab and on its conformity to required specification.
- b) The cement shall be brought at site in bulk supply of approximately 20-50 tons or as decided by the Engineer-in-Charge.
- c) The contractor shall construct cement godowns at the site of work for storing the materials sample against damages from sun, rain, dampness, fire, theft etc. the godown shall have a minimum storage capacity of 2000 bags of cement. Nothing extra shall be paid on this account.

The cement bags shall be stacked on pucca floor consisting of two layers of dry bricks and well-consolidated earth at a level of at least one-foot above ground level. These stacks shall be rows of 2 and 10 bags high with a minimum 0.75m clear space all round. The bags should be placed horizontally continuous in each line.
- d) Each godown shall be provided with a single door with two locks. The keys of one lock shall remain with 'Assistant Engineer-in-Charge of work' and that of the other lock with the authorized agent of the contractor at the site of work, so that the cement is issued from the godown according to the daily requirement with the knowledge of both the parties.

- e) The contractor shall facilitate the inspection of the cement godown by the Engineer-in-charge any time.
- f) The contractor shall supply free of charge the cement required for testing. The cost of tests shall be borne by the contractor.
- g) The actual issue and consumption of cement on work shall be regulated and proper account maintained as provided in the contract/ CPWD manual. The theoretical consumption of cement shall be worked out as per procedure prescribed in the contract and shall be governed by conditions laid therein.
- h) Cement brought to site and cement remained unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.
- i) The Assistant Engineer/Jr. Engineer-in-Charge and signed daily shall maintain the day to day receipt and issue accounts of cement by the contractor or his authorized agent.

3.2.18 Steel

- a) The contractor shall procure TOR/ TMT steel reinforcement bars conforming to relevant BIS code from the manufacturers as approved by the Ministry of Steel. The contractor shall have to obtain and furnish manufacturers test certificates to the Engineer-in-Charge in respect of all supplies of steel brought by him to the site of work. Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of work by the contractor at his cost within a week's time from written orders from the Engineer-in-Charge to do so
- b) The steel reinforcement shall be brought to the site in bulk supply of 10 tons or more or as decided by the Engineer-in-Charge.
- c). In case the requirement of the steel is less than 10 tones, the Engineer-in-Charge may allow its purchase from the local market but the same shall be allowed for use after its testing from the lab and its conformity to the required specifications.
- d) The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion. Bars of different sizes and lengths shall be store separately to facilitate easy counting and checking. Nothing extra shall be paid on this account.
- e). For checking nominal mass, tensile strengths, bend test, re-bend test, etc., specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below and as per CPWD specifications with up to date correction slips.

Size of Bar	For consignment below 10 tones	For consignment over 100 tones

Under 10 mm dia	One sample for each 25 tones or part thereof	One sample for each 40 tones or part thereof
10mm to 16mm dia.	One sample for each 35 tones or part thereof	One sample for each 45 tonnes or part thereof
Over 16mm dia.	One sample for each 45 tonnes or part thereof	One sample for each 59 tonnes or part thereof

- f). The contractor shall supply free of charge the steel required for testing. The cost of test shall be borne by the contractor. Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.
- g). Only standard weights of the steel for the measured quantity shall be payable. The overweight beyond standard weight shall not be considered for payment and the lower weight steel shall be rejected.

3.2.19 Bar Bending Schedule

It shall be the responsibility of the contractor to prepare bar bending schedule based on structure drawings for all RCC items of work.

3.3 Cement Concrete

- a) All concrete shall be mixed with mechanical mixer except otherwise allowed by the Engineer-in-Charge.
- b) The concreting of RCC work shall commence only after the formwork and steel Reinforcement have been inspected and approved by the Engineer-in-Charge.
- c) Nothing extra shall neither payable nor extra quantity of cement considered on account of use of cement slurry for continuation of concrete.

3.4 Specification of Pipes and Manhole frame and covers

3.4.1 Double Wall Corrugated (DWC) Polyethylene (PE) Pipes/ HDPE pipes:

Technical Specifications:-

- J) DWC pipe of class SN 8 structured wall polyethylene piping system (pipe with online/offline coupler and elastomeric sealing ring) with non-smooth external annular corrugated and smooth internal surface (double wall) for non-pressure underground sewerage and drainage application as per EN: 13476-3/IS 16098 (Prt-2):2013 shall be applicable.
- J) Lowering, laying and jointing of class SN 8 structure wall (external annular corrugated and smooth internal surface) polyethylene piping and fitting with the help of coupler (online/offline) attached with one end of pipes, sliding over the elastomeric sealing rubber ring placed on the specified valley of the corrugation at the spigot end, lowering the same into the trench, laying on the lower bedding (constructed at bottom of trenches) at prescribed gradient, depth and alignment, testing the water tightness of joints, ensuring the continuity test of

- specified pipe segment etc shall be done as per relevant IS code.
- J The pipe manufacturer should have valid BIS license for manufacturing of DWC pipe of all the required sizes as per IS 16098-2 (2013). The bidder shall include this valid license/acceptance of application along with their bid.
 - J The Material, Physical, Mechanical Characteristics and the Performance requirements shall be governed by above IS code and the other relevant IS standards that has been mentioned within.
 - J The Contractor shall be responsible for the performance tests at the Manufacturer's place in presence of the Engineer-in-charge or the authorized representative(s) of the client and/or by the authorized 'Third Party' deployed by the client. HDPE pipe shall conform to IS: 14333.

3.4.2 Specifications for Glazed Stoneware Pipes

All pipes with spigot and socket ends shall conform to Class SP1 of IS: 651/2007 or latest edition. These shall be sound, free from visible defects such as fine cracks or hair cracks. The glaze of the pipes shall be free from crazing. The pipes shall give a sharp clear note when struck with a light hammer.

The following information shall be clearly marked on each pipe:

- J Internal diameter;
- J **Class of pipe;**
- J Name of manufacturer or his registered trade-mark or both.

All pipes shall be ISI marked.

3.4.3 SFRC Frame and Cover

- (i) The manhole covers and frames shall be extra heavy duty (EHD - 35 grade designation) steel fiber Reinforced concrete (SFRC) and shall conform to IS 12592. These shall be provided as per site requirement. The contractor shall submit the names of manufacturer's of manhole cover and frame in order to check the ISI mark of the manufacturers and other details.
- (ii) Only ISI marked SFRC manhole frame and covers shall be used and shall bear the marking as under or as per approval of Engineer-in-Charge: Only ISI marked SFRC manhole frame and covers shall be used and shall bear the marking as under or as per approval of Engineer-in-Charge:
 - a) Sewer
 - b) Delhi Jal Board
 - c) Year of Manufacturing
 - d) Heavy Duty / Extra Heavy Duty
 - e) Name of Manufacturer
- iii) The manholes frame and covers brought at site shall also be checked thoroughly before put to use such as edges should not be broken, ISI marked, name of manufacturers and demarcation of third party. However, 2% of the material of each lot shall be broken at site in the presence of Engineer/ Assistant Engineer so as

to ascertain the quantity of steel as per ISI code. Proper record shall be maintained at site for the broken manhole frame and covers. In case the steel found as per ISI specifications, payment for the broken material shall be made to the contractor at the rate given in the BOQ after deducting the salvage value of steel.

3.5 Laying of Pipes

- 3.5.2 Laying of the pipeline shall be done as per relevant IS code/ CPWD Standard Specifications.
- 3.5.3 The bedding for sewer lines shall be provided as specified in the drawings and as per direction of the Engineer-in-Charge.
- 3.5.4 The pipes and specials shall be stacked along the alignment in advance with utmost care during transit so that they are not damaged. Any damage due to these reasons shall be Contractor's liability.
- 3.5.5 All the sewer lines are to be laid perfectly true both in alignment and to gradients specified. In case of spigot and socket pipe, the socket end of the pipe shall face upstream.
- 3.5.6 The sewer lines shall be laid such that the marking on pipes appears at the top of the pipes.
- 3.5.7 Properly fitted temporary wooden stoppers shall be provided to close the ends of all incomplete sewer line. The stoppers are only to be removed when pipes are being laid and jointed. Opening at end of day's work shall be capped and sealed.
- 3.5.8 Sewer pipe laying and jointing shall be started and completed only section wise as per the instruction of the Engineer-in-Charge. The sections shall be chosen from manhole to manhole.
- 3.5.9 The work of sewer line laying and manhole construction shall be done simultaneously so that hydraulic testing can be done efficiently. The construction of the works shall progress from downstream end (i.e.) the discharge point and proceed towards upstream.
- 3.5.10 In case contractor finds any discrepancy in the Ground Levels and/ or Inver Levels during the setting out of work he shall immediately bring it to the notice of the Engineer-in-Charge for necessary rectification before commencing the pipe laying works.
- 3.5.11 All the pipes shall be loaded/ unloaded with suitable arrangements with mechanical devices like cranes, chain pulley blocks etc. and will not be unloaded on tyres. The pipes shall be so stacked/ placed along the alignment that the flow of traffic is not affected.
- 3.5.12 Necessary levels as per L-section prepared by the contractor based on the Design Table shall be given by the contractor or his authorized site Engineer and the same will be checked by the site staff of the department before the contractor is allowed to proceed for excavation. Contractor shall be fully responsible for correct levels even after the execution of work. If they are found wrong, the work will be rejected and no payment for the defective work shall be made by the department. The contractor shall make good the work and the payment will be made only for the work done as per specifications.

3.6 Jointing of Glazed Stone Ware (GSW) Pipes

Jointing of glazed stone ware (GSW) pipes shall be done as per CPWD specifications and the relevant IS code.

3.6.1 Spigot and Socket Joint (Cement Joint)

The spigot of each pipe shall be slipped home well into the socket of the pipe previously laid and adjusted in the correct position. In each joint, spun yarn soaked in neat cement slurry or tarred gasket shall be passed around the joint and inserted in it by means of a caulking tool. More skeins of yarn or gasket shall be added if necessary and shall be well caulked. Yarn or gasket so rammed shall not occupy more than one-fourth of the depth of socket.

Cement mortar (1:1) shall be slightly moistened and carefully inserted by hand into the remaining space of the joint after caulking of yarn or gasket. The mortar shall then be caulked into the joint with a caulking tool. More cement mortar shall be added until the space of joint has been completely filled with tightly caulked mortar. The joint shall then be finished off neatly outside the socket at an angle of 45°.

The cement mortar joints shall be cured at least for seven days before testing.

The approximate quantities of cement required for each joint for certain common sizes of pipes are given below for guidance:

Nominal diameter of pipe (mm)	Cement (kg)
150	1.5
200	2.0
250	2.5
300	3.25
350	4.5
400	5.5
450	6.5

After jointing, extraneous material if any, shall be removed from the inside of the pipes and the newly joints shall be thoroughly cured.

3.6.2 Construction of Manholes

The construction of manholes shall be done as per drawings of the department. The contractor shall provide necessary template, formwork to achieve the proper shape and the size of manhole. The manhole shall be built in brick with extruded burntsewer bricks conforming to IS 4885 – 1988. The sizes of circular manholes proposed to be constructed are as under.

Depth 0.91 to 1.67 m	90 mm diameter
For depth 1.68 to 2.28 m	1220 mm diameter
For depth 2.29 to 4.16 m	1520 mm diameter

The manhole spacing in general shall be 15m or more, which will be specified in the construction and at every junction, change in direction or change in diameter of pipe. The manhole dimensions and other details shall be as per the drawings. The location of manholes shall be as per

drawing or layout given by the Engineer-in-Charge.

3.6.3 Fixing of Footrests

It shall be the responsibility of the contractor to fix footrests as per requirement in the walls of the manholes at the time of construction of manholes.

3.7 Testing of Sewer Lines

All pipes shall be tested before being put into commission as under:

- a) Hydraulic test shall be performed by filling the sewer line with water and raising the head to the required pressure. The required water level shall be maintained for sufficient time.
- b) In case of sewer line is laid below subsoil water level, its testing shall be done when all the well point equipment/ pumping units are removed from the trenches.
- c) 20% of the cost of laying of sewer line shall be withheld till such time the testing is done to the full satisfaction of the Engineer-in-Charge.

3.7.1 Field Hydraulic Test of Pipeline

- a. The Sectional Hydraulic Test shall be carried out after the pipeline section to be tested has been laid jointed and backfilled to a depth sufficient to prevent floatation.
- b. Each length of the pipeline to be tested shall be capped or blanked off at each end and securely strutted or restrained to withstand the forces which will be exerted when the test pressure is applied.
- c. The proper method of filling the pipeline with water shall be used. The length under test shall be filled making certain that all air is displaced through an air valve or any other appropriate mechanism. The test length shall then remain under constant moderate pressure as per testing method given in relevant IS code
- d. As per IS code, water required to build-up allowable drop in pressure during test will be treated as make up water.
- e. Notwithstanding the satisfactory completion of the hydraulic test, if there is any discernible leakage of water from any pipe or joint, the Contractor shall, at his own cost, replace the pipe, repair the pipe or re-make the joint and repeat the hydraulic test with cost including the cost of water.

3.7.2 Hydraulic testing of manholes and DWC pipes shall be carried out along with testing of pipe line which is mandatory. The contractor at his own cost shall arrange the required water for testing and other requirements. The testing shall also be checked by the senior officer of DJB.

3.8 CCTV Survey

a) For sewer lines of size 280mm dia and 315mm dia CCTV shall be carried out for length of 5 % and for the sewer having size more than 315mm dia but less than 680mm dia the CCTV survey shall be carried out to an extent of 10%. Disc test for the balance length shall be carried out to ensure that there is no missing link/ pardi/ debris in the line before release of the final payment. In case any defect is noticed in the sample length the entire length of the sewer line shall be checked with CCTV survey.

b) CCTV survey shall be carried out for the entire length of the sewer lines having size 680mm dia and above. The rates for the above shall be inclusive of the above operation and requirement one (1%) of the cost of the item of providing/laying/ jointing of the sewer line shall be kept on hold

till such time the testing is completed to the satisfaction of the Engineer-in-Charge.

3.9 Completion Drawings

3.9.1 The Contractor shall submit to the Engineer-in-Charge within two months of actual completion of the individual works but not later than the completion date of Contract, "as built Drawings" as specified below. These Drawings shall be accurate and correct in all respects and shall be shown to and approved by the Engineer-in-Charge.

3.9.2 The contractor, along with a soft copy in CD, shall supply completed and as built works certified drawings on six prints and one polyester film of appropriate size sheets. Plan with scale 1: 1000 (A1 Size) showing the roads along with other details such as property width, storm water drains, footpaths, location of electrical/ telephone poles along with all the dimensions wherever possible shall be prepared. The type of road, footpath details etc. shall be further elaborated in terms, of their dimensions and material used. Finally exact alignment of sewer, road side chamber and manhole details such as type and size of pipe, GL & IL at each manhole, dia of manhole, etc. shall be marked on the plan. Nomenclature of network shall be same as given in the network design drawing furnished to the Contractor during execution. The connection details at the existing outfall sewer shall be shown in plan and section.

3.9.3 The water pipe lines, valves, their sizes, material, depth etc. and other services which are encountered during the excavation and trial trench shall also be shown on the completion drawings.

3.11 Precautions to be observed for sewerage works during Monsoon

a) Works of construction of deep sewers shall be stopped during the monsoon season. However, the work of laying shallow sewer works inside lanes/ streets of the colonies can be taken up, provided SE is satisfied that continuation of the work in a length not exceeding 100m is not going to cause inconvenience to the public.

b) Immediately after showers, be it a working day or holiday, the Contractor and JE/AE must inspect works under progress or which have already been completed in the recent past and if there is any settlement in the filled earth, the same shall be immediately got attended by getting required back filling. If barricading is required, the same shall be got done immediately.

3.12 Handing Over

After the completion of the above work the same shall be handed over to the concerned maintenance wing of the department.

3.13 P/L/J SEWER LINES USING TRENCH LESS TECHNOLOGY

i) Auger boring method / Tunnel Boring / HDD / Pushing Method shall be adopted as per

requirement and diameter of pipe, and payment will be made as per B.O.Q. and no other claim on account of method will be entertained.

- ii) The Contractor shall submit to the Engineer-in-charge a detailed work plan and schedule before executing of work. The work plan shall include a description of all equipment to be used, down-hole tools, a list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable), a safety plan, traffic control plan (if applicable), an environmental protection plan and contingency plans for possible problems. Work plan shall be comprehensive, realistic and based on actual working conditions for this particular project. Plan shall document the thoughtful planning required to successfully complete the project.
- iii) Horizontal directional drilling using suitable boring device with cutting head to drill the horizontal bore, subsequently the pipe has to be pushed in the bore as it progresses, to keep the formation supported and to prevent any settlement of the road under speed restrictions. Each length of the pipe shall be firmly welded, so that the alignment is straight and thereby there is no hindrance to the pulling of underground cables through the pipes thereafter. The approximate length of HDD work is mentioned in BOQ. However, it may increase or decrease according to actual requirements to meet unforeseen contingencies.
- iv) The horizontal directional drilling has to be carried out at suitable depth as per site conditions.
- v) The contractor will be required to conduct GPR Survey, excavate trial trenches / pits where ever required, at right angles to the proposed trenchless route, or as directed by the Engineer-in-charge, to ascertain the location of the existing utilities of other agencies.
- vi) The contractor shall assess, ascertain and visualize all type of hindrances, unforeseen items and make all arrangements for complete removal of the same at his own cost and no extra payments shall be made on this account.
- vii) The contractor will be required to verify the utility services and underground structure by GPRS or any other suitable method as per direction of Engineer-in-Charge before start of work.
- viii) The pipe shall be inserted along with boring to keep the foundation supported to prevent any settlement of road.
- ix) The longitudinal movement and the level of pipe have to be checked after each push. It is generally observed that pipe tends to lift up at jacks end while pushing and has therefore to be rectified by shifting the jacks a bit below the central axis before applying future jack pressure.
- x) The bank above the pipe should be constantly tested by tamping with crow bars.
- xi) If the soil is sandy or loose, not more than 10 to 15 cm in depth should be excavated in front of the pipe at a time and the pipe should be pushed to occupy the space immediately.
- xii) In case, rock or any other obstruction is encountered during the execution of work, then, the particular alignment will be abandoned and boring shall be carried out at new location. The contractor will ensure proper compaction of the hole made either by leaving the inserted pipe in place duly plugging the ends or sand filling.

- xiii) The contractor will take full precautions during trenchless work to avoid damage to any underground service, cable etc.
- xiv) Sufficient number of sleepers' cribs and service span shall be kept ready at site for quick restoration of Traffic.
- xv) Excess earth or rubble remaining if any, after refilling the trenches should be removed at the contractor's cost to the satisfaction of the representative of the road owning agencies.
- xvi) The contractor will be entirely responsible for any damages caused in the course of boring work, to cable or any other assets of DJB or other organizations, he will have to make good the damages at his own cost. In case the cable of other underground utilities are damaged by the contractor, then the amount which becomes payable to other organization will be deducted from the running bills.
- xvii) The sub soil water level on the alignment is high therefore it may be required to lower down by suitable method, so that work is executed in perfectly dry condition on complete alignment.

Section - V

GENERAL CONDITIONS OF CONTRACT

Delhi Jal Board
General Conditions of Contract

Important note for Users:-

This is a new document. Though certain existing clauses have been retained in the document, these have been substantially edited to make them coherent with the overall structure. It is advised to read the clauses completely even if user is familiar with the provisions of an existing clause.

Following important existing clauses are rearranged as below:

Clause	Existing clause number	New clause number
Compensation for Delay	clause 2	clause 10.3
Time Extension for Delay	clause 5	clause 10.4
Payments due to variation in prices after receipt of tender	clause 10C, 10CA, 10CC	clause 14.1/ 14.2

Check List

The Engineer-in-Charge for the Contract shall ensure that specific information as required under the following clauses is provided along with the bid to the bidders.

Clause No.	Clause	Information required	Check
Clause 2.4.3	Compensation for delay in handing over the site	Specify the present status of site clearances as applicable to the Contract	(V)
Clause 8.1.1 (v)	Insurance Requirement	Presumptive valuation of existing assets	(V)
Clause 9.3	Dismantled Material	Specify the rates at which dismantled material shall be made available to the contractor	(V)
Clause 9.5 (ii)	Hire of plant & machinery	Attach list of plant and machinery and their hire rates available to the Contractor for works	(x)
Clause 10.2	Incentive for early completion	The clause shall be applicable only when DJB has a clear possession of land	(x)
Clause 12.10.3	Taxes	Attach list of items against which concessional rates/Form C is applicable	(V)
Clause 14.1.1/14.2.1	Payment due to variation in prices of material after receipt of tender	Check and confirm the coefficients for specific works	(V)
Clause 14.1.3	Payment due to variation in prices of material after receipt of tender	Specify the base rates for calculating price variation	(V)
Clause 15.3	Mobilization Advance	Check the applicability of mobilization advance for the project	(x)
Clause 16.1	Defect Liability Period	Check and confirm the defect liability period as applicable to the Works	(V)
Clause 17.6	Safety provisions for labour	Attach DJB's safety code as applicable to the Works	(V)
Eligibility Criteria Section A: Clause(iii)b	General Eligibility Criteria	Provide the detail of legal, financial and/or technical advisors/consultants engaged for the specific Works	(V)

Acronyms

ASTM	-	American Society for Testing and Materials
BG	-	Bank Guarantee
BIS	-	Bureau of Indian Standards
BOQ	-	Bill of Quantities
CE	-	Chief Engineer
CI	-	Cast Iron
CPCB	-	Central Pollution Control Board
CPHEEO	-	Central Public Health and Environmental Engineering Organization
CPWD	-	Central Public Works Department
CTE	-	Chief Technical Examiner
DBO	-	Design, Built, Operate
DJB	-	Delhi Jal Board
DLP	-	Defect Liability Period
DPCC	-	Delhi Pollution Control Committee
DSR	-	Delhi Schedule of Rates
E&M	-	Electrical & Mechanical
EE	-	Executive Engineer
EMD	-	Earnest Money Deposit
GCC	-	General Conditions of Contract
GI	-	Galvanized Iron
GIS	-	Geographical Information System
GNCTD	-	Government of National Capital Territory of Delhi
HDPE	-	High Density Polyethylene
HYSD	-	High Yield Strength Deformed
IEEMA	-	Indian Electrical and Electronics Manufacturers' Association
INR	-	Indian National Rupee
IPMA	-	Indian Pump Manufacturers Association
ISO	-	International Organization for Standardization
MDPE	-	Medium Density Polyethylene
MGD	-	Millions Gallons per Day
MoU	-	Memorandum of Understanding
MS	-	Mild Steel
MT	-	Metric Tonne
NHRC	-	National Human Rights Commission
NIT	-	Notice Inviting Tender
PERT	-	Program Evaluation and Review Technique
PHED	-	Public Health Engineering Department
PMS	-	Project Monitoring System
POL	-	Petroleum, Oil & Lubricants
QAP	-	Quality Assurance Plan
SE	-	Superintendent Engineer
T&P	-	Tools & Plants
VAT	-	Value Added

1.0 DEFINITIONS & INTERPRETATIONS

1.1 Definitions

“Commencement Date” means the date of commencement of the Works and shall generally be from the 10th day of issue of Work Order or unless otherwise specified in the Contract.

“Completion Certificate” means the certificate issued by the Engineer-in-Charge to the Contractor, on request after successful completion subsequent to Completion Date of Works, pursuant to clause 15.1.

“Completion Date” means the actual date of completion or commissioning of the Works, whichever is later, as recorded by the Engineer-in-Charge.

“Contract” means the present Contract Agreement, Letter of Intent, Work Order, Tender, Special Conditions of Contract, these Conditions, the Technical Specifications, the Drawings, the Schedules and such other documents as may be expressly incorporated in the present Contract Agreement.

“Contractor” means a person or a corporate body and the legal successor in title to such person whose bid to carry out the Works has been accepted by the Employer and the Contract is signed.

“Contractor’s Bid” means the completed bidding document submitted by the Contractor to the Employer.

“Contract Price” means the agreed price for executing the Works as defined in Letter of Acceptance/ Work Order, and includes any adjustments in accordance with the Contract, thereafter.

“Cost” means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

“Defects” means any part of the Works not completed in accordance with the Contract or completed with deficiencies and flaws and includes deficiencies, flaws, etc. developed during the execution of Works and during the Defect Liability Period.

“Defects Liability Period” means the period from the Completion Date as certified by the Engineer-in-Charge and specified in clause 16.1.

“Drawings” mean maps, drawings, plans, tracings or prints thereof, calculations and technical information of a like nature provided by the Employer to the Contractor or annexed to the Contract, and any modifications of such drawings and further drawings that may be issued by the Engineer-in-Charge from time to time or approved by the Engineer-in-Charge in writing and includes such other drawings as are made from time to time and furnished by the Contractor and approved by the Engineer-in-Charge.

“Employer” means the Board of the Delhi Jal Board (DJB), New Delhi, having its registered office at Varunalaya Complex, Jhandewalan, Karol Bagh, New Delhi, constituted through an Act of the Delhi Legislative Assembly on 6th April, 1998, acting through its Chief Executive Officer or any other officer so nominated by the Chief Executive Officer and shall include their legal successors and permitted assignees.

“Engineer-in-Charge” means the person appointed by the Employer, with due notification to the Contractor, who is responsible for signing the Contract, supervising the Contractor, administering

the Contract, release of payments due to the Contractor as per Contract provisions, and taking any other decisions as per provisions of Contract. Any other approval including, but not limited to, extension of time, imposition of damages/penalty, approval of additional scope, approval of any other deviations will be done as per extant delegation of power of Employer.

“Good Engineering Practice” means, Works carried out in accordance with the following standards/ specifications,

- J As specified in BIS, ISO or relevant standards of particular product
- J Work done as per norms of relevant work described in CPHHEO, PHED, CPWD, Electricity Board, amongst others.
- J Manufacturers’ instructional manual for construction, erection, O & M of respective products
- J Specification prepared drafted & approved by Engineer-in-Charge for
- J undertaking the work, if not specified in above

“Good Industry Practice” means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally and reasonably expected from a reasonably skilled and experienced Contractor engaged in the same type of undertaking as envisaged under this Contract and which would be expected to result in the performance of its obligations by the Contractor in accordance with this Contract, Applicable Laws and Applicable Permits in reliable, safe, economical and efficient manner.

“Letter of Acceptance” means the letter from the Employer or the Engineer-in-Charge, or a person nominated by them on their behalf for this purpose, to the Contractor, conveying acceptance of the Tender, subject to any modifications agreed to between the parties and includes advance acceptance of the tender.

“Materials” means all equipment, components, fittings, and other materials including consumables, raw materials etc. required to execute and complete the Works.

“Parties” means Employer or the Contractor or both, as the context requires. **“Physical Completion of Works”** means completion of construction of all physical structures such that it is ready to use for all intended purposes.

“Schedule” means the document(s) entitled schedule, completed by the Contractor and submitted with the Letter of Tender, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.

“Site” means the places provided by the Employer where the Works are to be executed and any other places as may be specifically designated in the Contract as forming part of the Site.

“Specification” means the specifications of the Works included in the Contract and any modification or addition of such Works and approved by the Engineer-in-Charge.

“Special Conditions of Contract” means terms and conditions that sets out the rights and obligations of the parties that are peculiar to a specific contract, or as necessitated by the circumstances of specific works, and that forms a part of the Contract as laid out in clause 1.4.

“Stipulated Date of Completion” means date of completion of the Contract as specified in the

Work Order.

“Stipulated Period of Completion” means the time period for completion of Contract as specified in the Work Order. This period shall start from the Commencement Date and shall end at the Stipulated Date of Completion.

“Sub Contractor” means a person or corporate body who has a Contract with the Contractor to carry out a part of the Works in the Contract.

“Taxes” means any Indian taxes and duties including excise duties, customs duties, goods & service tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, material, equipment and services incorporated in and forming part of the Works charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income;

“Variation” means any change to the Works which is instructed or approved as variation by Engineer-in-Charge, which causes a variation in the scope of work from what is contained in the Contract.

“Works” means permanent and/or temporary work to be executed by the Contractor in accordance with the Contract.

“Work Order” means the document of the Employer communicating its decision to award the Works to the Contractor at the agreed Contract Price and specifying the Commencement Date and Stipulated Date of Completion.

“Writing” means any hand-written, type-written or printed communication, email when followed by written confirmation, including facsimile transmission resulting in a permanent record in Contract.

1.2 Interpretation of documents

In this Contract, unless the context otherwise requires:

- (i) References to any legislation or any provision thereof shall include amendment or re-enactment or consolidation of such legislation or any provision thereof so far as such amendment or re-enactment or consolidation applies or is capable of applying to any transaction entered into hereunder;
- (ii) References to laws of India or Indian law or regulation having the force of law shall include the laws, acts, ordinances, rules, regulations, bye laws or notifications which have the force of law in the territory of India and as from time to time may be amended, modified, supplemented, extended or reenacted;
- (iii) References to a “person” and words denoting a natural person shall be construed as a reference to any individual, firm, company, corporation, society, trust, government, state or agency of a state or any association or partnership (whether or not having separate legal personality) of two or more of the above and shall include successors and assigns;
- (iv) The table of contents, headings or sub-headings in this Contract are for convenience of reference

- only and shall not be used in, and shall not affect, the construction or interpretation of this Contract;
- (v) The words “include” and “including” are to be construed without limitation and shall be deemed to be followed by “without limitation” or “but not limited to” whether or not they are followed by such phrases;
 - (vi) Reference to construction or “Building” including, unless the context otherwise requires, survey and investigation, design, developing, engineering, procurement, supply of Plant, Materials, Equipment, labour, delivery, transportation, installation, processing, fabrication, testing, commissioning and maintenance of the project (water/ waste water, networks, treatment and storage as applicable) including removing of Defects, if any, and other activities incidental to the construction and “construct” or “build” shall be construed accordingly;
 - (vii) References to “development” include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, up-gradation and other activities incidental thereto, and “develop” shall be construed accordingly;
 - (viii) Any reference to any period of time shall mean a reference to that according to Indian Standard Time;
 - (ix) Any reference to day shall mean a reference to a calendar day as per the Gregorian calendar;
 - (x) References to a “business day” shall be construed as a reference to a day (other than Sundays and other holidays for Employer) on which banks in [Delhi] are generally open for business;
 - (xi) Any reference to month shall mean a reference to a calendar month as per the Gregorian calendar;
 - (xii) References to any date, period or project milestone shall mean and include such date, period or project milestone as may be extended pursuant to this Contract;
 - (xiii) Any reference to any period commencing “from” a specified day or date and “till” or “until” a specified day or date shall include both such days or dates; provided that if the last day any period computed under this Contract is not a business day, then the period shall run until the end of the next business day;
 - (xiv) The words importing singular shall include plural and vice versa;
 - (xv) References to any gender shall include the other and the neutral gender;
 - (xvi) “lakh” means a hundred thousand (100,000) and “crore” means ten million (10,000,000);
 - (xvii) “indebtedness” shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;
 - (xviii) References to the “winding-up”, “dissolution”, “insolvency”, or “reorganization” of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the jurisdiction of law in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, reorganization, dissolution, arrangement, protection or relief of debtors;
 - (xix) Save and except as otherwise provided in this Contract, any reference, at any time, to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this sub clause shall not operate so as to increase liabilities or obligations of the Employer hereunder or pursuant hereto in any manner whatsoever;
 - (xx) Any agreement, consent, approval, authorization, notice, communication, information or report required under or pursuant to this Contract from or by any Parties or the Engineer-in-Charge shall be valid and effective only if it is in writing under the hand of a duly authorized representative of such Parties or the Engineer-in-Charge, as the case may be, in this behalf and not otherwise;
 - (xxi) The Schedules and Recitals to this Contract form an integral part of this Contract and will be in full force and effect as though they were expressly set out in the body of this Contract;

- (xxii) References to Recitals, Articles, clauses, Sub-clauses or Schedules in this Contract shall, except where the context otherwise requires, mean references to Recitals, Articles, clauses, Sub-clauses and Schedules of or to this Contract, and references to a Paragraph shall, subject to any contrary indication, be construed as a reference to a Paragraph of this Contract or of the Schedule in which such reference appears; and
- (xxiii) The damages payable by either Parties to the other of them, as set forth in this Contract, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Parties entitled to receive the same and are not by way of penalty (the "Damages")
- (xxiv) Time shall be of the essence in the performance of the Parties' respective obligations. If any time period specified herein is extended, such extended time shall also be of the essence.

1.3 **Ambiguities and Discrepancies**

In case of ambiguities or discrepancies within this Contract, the following shall apply:

- (i) Between two or more clauses of this Contract, the provisions of a specific clause relevant to the issue under consideration shall prevail over those in other clauses;
- (ii) Between the clauses of this Contract and the Schedules, the clauses shall prevail and between Schedules and Annexes, the Schedules shall prevail;
- (iii) Between any two Schedules, the Schedule relevant to the issue shall prevail;
- (iv) Between the written description on the Drawings and the technical specifications, the latter shall prevail;
- (v) Between the standard in CPWD manual and the relevant standard, the latter shall prevail;
- (vi) Between the dimension scaled from the Drawing and its specific written dimension, the latter shall prevail;
- (vii) Between any value written in numerals and that in words, the latter shall prevail; and
- (viii) For any discrepancy in the Contract relating to BOQ (Bill of Quantities), the nomenclature as given in CPWD manual/ DSR/ EMPLOYER analyzed rates, as the case may be, shall prevail, unless specified in the Contract.

1.4 **Order of precedence**

The Contract Agreement shall comprise the following documents in the given order of precedence:-

- (i) Agreement on non- judicial stamp paper
- (ii) Work order
- (iii) Letter of Acceptance
- (iv) Correspondence between parties
- (v) Corrigendum/ Addendum issued, including bidders' queries
- (vi) Special Conditions of Contract
- (vii) General Conditions of Contract
- (viii) Technical Specifications
- (ix) Accepted bid
- (x) NIT or any other document

1.5 **Correlation of document**

The Contract documents are complementary and what is called for by any one of them shall be as binding as if called for by all of them.

1.6 **Signing of Contract**

The Contract should be signed by either parties within 21 (twenty one) days of issue of Work Order or any such time period as decided by the Employer, failing which the Employer shall have the right to forfeit the Earnest Money deposited during the bidding stage. The Employer shall also have the right to forfeit the Performance Guarantee, submitted as per clause 6.1, in case Contractor fails to sign the Contract in the stipulated time. However, Employer shall give a notification of 10 days notice before forfeiting the Performance Guarantee. Further, the Contractor shall not be allowed to participate in retendering, if any, for the Works.

1.7 Communication

All notices, communications, references and representation by either Party to the Contract shall be in writing only.

1.8 Language

The Contract document shall be drawn up in English.

1.9 Law governing the Contract

The Contract shall be governed by the laws of India, including but not limited to laws of GNCTD and DWB act, in force and as amended from time to time and the Courts in Delhi shall have exclusive jurisdiction in all matters under the Contract.

1.10 Compliance with bylaws and regulations

The Contractor shall comply with the provisions of any statute relating to the Works, regulations and by-laws of any local authority and undertaking, including those controlling the utilities such as, but not limited to, roads, railways, telephones and power supply, in whose area / jurisdiction the Works is to be executed. The Contractor shall also comply with court directives, if any after signing of Contract.

2.0 ENGINEER-IN-CHARGE & ITS REPRESENTATIVES

2.1 Duties and authority of Engineer-in-Charge and its representatives

2.1.1 The Engineer-in-Charge shall carry out the duties specified or implied in the Contract including issue of instructions, decisions, certificates and orders, for administration of the Contract and expeditious and timely completion of the Work. Should the Engineer-in-Charge exercise any specific authority for which, as per the terms of his appointment, he has to obtain the approval of the Employer, the Contractor shall deem such approval to have been given by the Employer. Further, the Engineer-in-Charge may be assigned any other duty by the Employer in interest of Work.

Duties and Authority of Engineer-in-Charge's representative

- (i) The Engineer-in-Charge's representative shall be appointed by and be responsible to the Engineer-in-Charge and shall carry out such duties and exercise such authority as may be delegated to him by the Engineer-in-Charge including the duty to supervise the Works and to test and examine any materials to be used or workmanship employed in connection with the Works.

Provided that the Engineer-in Charge's representative shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract, or to order any work involving delay or any extra payment by the Employer, or to make any variation of or in the Works, except as expressly provided in the Contract.

(ii) The Engineer-in-Charge may, from time to time, in writing delegate to the Engineer-in-Charge's representative, any of the powers and authorities vested in the Engineer-in-Charge, and he may any time revoke such delegation. Any such delegation or revocation shall be in writing and the Engineer-in charge shall furnish to the Contractor and to the Employer, a copy of all such written delegation or revocation of powers and authorities. Any written instruction, decision or approval given by the Engineer-in-Charge's representative to the Contractor within the terms of such delegation, but not otherwise, shall bind the Contractor and he Employer, as though it had been given by the Engineer-in-Charge. Provided always as follows:

- (i) Failure of the Engineer-in-Charge's representative or his assistants, to disapprove any Works or materials shall not prejudice the authority of the Engineer-in-Charge or Employer thereafter, to disapprove such Works or materials or plant and order the pulling down, removal or breaking up or replacement thereof. The Engineer-in-Charge's representative shall have similar authority to disapprove any Works or material or plant passed by his Assistants, appointed in terms of provision of sub-clause 2.1.2 herein.
- (ii) If the Contractor shall be dissatisfied by reason of any instruction or decision of the Engineer-in-Charge's representative, or questions any communication of the Engineer-in-Charge's representative, he may refer the matter to the Engineer-in-Charge, who shall thereupon confirm, reverse or vary such decision or vary the contents of such communication. The Engineer-in-Charge's representative shall have similar authority to confirm, vary, and reverse any instructions and decisions issued by his Assistants, appointed in terms of sub-clause 2.1.2 herein.

2.1.2 The Engineer-in- Charge or his representative may appoint any number of persons to assist them in carrying out their duties under Sub-clause.

The Engineer-in- Charge or his representative shall notify to the Contractor the names, duties and scope of authority of such persons. Such persons/assistants shall have the authority to issue instructions / give decisions to the extent of duties assigned and powers delegated to them.

(i) Works to be executed under direction of Engineer-in-Charge

All Works to be executed under the Contract shall be executed under the direction and subject to the

approval of the Engineer-in-Charge. The Engineer-in-Charge shall be entitled to direct at what point or points and in what manner the Works are to be commenced and scheduled.

(ii) Instructions in writing

2.3.1 The instructions issued by Engineer-in-Charge shall be in writing or through email. However, if the Engineer-in-Charge issues any oral instructions to the Contractor, the Contractor shall comply with them. Provided that the Engineer-in charge shall confirm in writing the oral instructions within 2 [two] working days of issuing them.

2.3.1 In case the Contractor does not receive the written confirmation of the oral instruction within the time prescribed in Sub-clause 2.3.1, the Contractor shall seek the written confirmation of the oral instructions from the Engineer-in-Charge who issued the oral instructions. In case of failure of the Engineer-in-Charge to reply to the Contractor within 2 (two) days of the receipt of the communication from the Contractor, the Contractor shall not carry out the instruction.

2.4 Time Compensation for delay in handing over the site

2.4.1 The Employer shall ordinarily grant the Contractor the Right of Way which may, however, not be exclusive to the Contractor:

- (i) On the date(s) stated in Special Conditions of Contract; and
- (ii) In the event Special Conditions of Contract does not specify any time schedule for providing the Right of Way for any part of the Site, the Employer shall provide to the Contractor the Right of Way to such part(s) within 30 (thirty) days of the Start Date.

2.4.2 Where Right of Way of a part of the Site is not given within fourteen days of the date specified in sub-clause 2.4.1 for any reason other than Force Majeure or breach of this Contract by the Contractor, the Contractor shall be entitled to extension of time. The extension of time shall be equal to the period of delay in handing over the possession of the Site provided that if delays involve time overlaps, the overlaps shall not be additive.

2.4.3 The Special Conditions of Contract shall state the present status of all clearances, including land availability, obtained or awaited, as the case may be, indicating the expected dates of obtaining clearances.

2.4.4 The Contractor shall allow access to and use of the Site and/or the Works for laying/installing telegraph lines, electric lines or for such other public purposes as the Employer may require.

3.0 CONTRACTOR & CONTRACTOR'S OBLIGATIONS

3.1 Contractor and its representatives

3.1.1 A Contractor may be an individual, firm, company, corporation, Joint Venture, or consortium whether incorporated or not, who enters into the Contract with the Employer, and shall include his

heirs, his executors, administrators, successors, legal representatives, as the case may be.

3.1.2 Contractor's representative shall mean a person in supervisory capacity who shall be so declared by the Contractor and who shall be authorized under a duly executed power of attorney to comply with the instructions and to receive materials issued by the Engineer-in Charge to the Contractor for Works. He shall be capable of taking responsibility for proper execution of Contract

3.2 Subcontracting

3.2.1 Minimum of following activities shall be performed by the Contractor and shall not be subcontracted:

- (i) Project Management
- (i) Planning, Scheduling, Monitoring
- (iii) Quality Assurance

3.2.2 Prior approval of Employer shall be required before subcontracting any portion of Contract. The approval shall be based on competency of subcontractor to do similar kind of activity which is to be subcontracted.

3.2.3 Where the Contractor fails to comply with instructions under sub-clauses 3.2.1, the Engineer-in-Charge shall have the power to adopt the course specified in clause 11.1 and in the event of such course being adopted, the on sequences specified in the said clause 11.1 shall ensue.

3.2.4 The Contractor shall, at all times, be responsible and liable for all its obligations under this Contract notwithstanding anything contained in the agreements with its Sub- contractors or any other agreement that may be entered into by the Contractor, and no default under any such agreement shall excuse the Contractor from its obligations or liability hereunder.

3.3 Removal of worker or subcontractor by Employer

The appointment of key personnel and subcontractor for the Contract shall be authenticated by the Employer. The Engineer-in-Charge may require the Contractor to dismiss or remove from the Site any person or persons or sub-Contractor who is found to be incompetent or indulging in misconduct and the Contractor shall forthwith comply with such requirements within 21 days of such notice from the Engineer-in-Charge. Such person(s) shall not be employed again at Site without the written permission of the Engineer-in-Charge and the person(s) so removed shall be replaced as soon as possible by competent substitutes. The decision of Engineer-in-Charge shall be final and binding.

3.4 Contractor to keep Site clean

During the progress of Works, the Contractor shall keep the Site reasonably free from obstructions and shall store neatly any construction equipment and surplus materials and clear away and remove from Site any rubbish or temporary work no longer required. On completion of the Works, the Contractor shall clear away and remove from Site all construction equipment, surplus material and temporary work. He should leave the whole of the Site and Works in a clean and tidy condition to the satisfaction of the Engineer-in-Charge. Provided that where the Contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this Works done at the cost of the Contractor either departmentally or through any other agency. Before taking such action, the Engineer-in- Charge shall give ten days' notice in writing to the Contractor. It shall be the sole responsibility of Contractor to follow the provisions of Environment (Protection) Act, 1986 during the execution of Works and existence of this Contract.

3.5 Unauthorized occupancy at the construction site

It shall be the responsibility of the Contractor to see that the Site is not occupied by any unauthorized person during construction, and that Site is handed over to the Engineer-in-Charge with vacant possession of complete building or site, as applicable and free from all encumbrances. Provided that where such construction site is occupied illegally, and notwithstanding that the Works on the Site is executed by the Contractor, the Engineer-in-Charge shall have the option to refuse to accept the said site in that condition. Any delay in acceptance on this account will be treated as per provisions of clause 10.3, and the Contractor shall be liable to pay compensation for delays. Provided further that for such delay a levy up to maximum of 5% of Contract Price may be imposed by the Engineer-in-Charge whose decision shall be final both with regard to the justification and quantum of levy and shall be binding on the Contractor.

Provided further that the Engineer-in-Charge may require through a written notice removal of any illegal occupation of Site that comes into his/her knowledge at any time during the execution of the Contract.

3.6 Changes in firm's constitution to be intimated

Where the Contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or a Hindu Undivided Family business concern such approval shall likewise be obtained before the Contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the Works hereby undertaken by the Contractor. If the said previous approval is not obtained, the Contract shall be deemed to have been assigned in contravention of clause 3.2 hereof and hence shall be liable for cancellation in which case the Employer shall have the authority to forfeit the Performance Guarantee submitted for the Contract.

3.7 Indemnity by Contractor

3.7.1 Indemnity against All Actions of Contractor

The Contractor shall hold and save harmless and indemnify the Employer, from and against all actions, suits, proceedings, loss, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Employer, by reason of any act or omissions of the Contractor, his representative or his employees, in the execution of the Works or in the guarding of the same. All sums payable by way of compensation under any of these conditions, shall be considered as reasonable compensation payable to the Employer by Contractor, without reference to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

3.7.2 Indemnity against All Claims of Patent Rights and Royalties

The Contractor shall hold and save harmless and indemnify the Employer, its agents and employees from and against all claims and proceedings, for or on account of infringement by the Contractor of copyright, any patent rights, design trademark or name, secret process, patented or unpatented invention, articles or appliances manufactured or used for or in connection with the Works and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. Except where otherwise stated, the Contractor shall pay all royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

3.8 Employment of technical staff and employees

The Contractor shall employ a qualified engineer(s) for supervision of the Works as under:-

- For Works costing above Rs.50 lakhs - qualified graduate engineer(s) for the required domain
- For Works upto 50 lakhs - A recognized diploma holder engineer(s) for the required domain

Where the Contractor fails to employ the qualified engineer as aforesaid he shall be liable to pay a sum of Rs.20,000/- (Rupees ten thousand only) per week of default in the case of graduate engineer's and Rs.10,000/- (Rupees five thousand only) per week of default in the case of diploma holder. The technical staff of the contractor should be available at Site on full time basis, to take instructions.

The Contractor shall provide all necessary superintendence during execution of the Works and for as long thereafter as may be necessary for proper fulfilling of the obligations under the Contract.

The Contractor shall immediately after receiving Letter of Acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in- Charge the name, qualifications, experience, age, address and other particulars along with certificates, of the principal technical representative to be in charge of the work. Such qualifications and experience shall not be lower than specified in Special Conditions of Contract. The Engineer-in-Charge shall within 15 days of receipt of such communication intimate in writing his approval or otherwise of such a representative to the Contractor. Any such approval may at any time be withdrawn and in case of such withdrawal the

Contractor shall appoint another such representative according to the provisions of this clause. Decision of the Employer shall be final and binding on the Contractor in this respect. Such a principal

technical representative shall be appointed by the Contractor soon after receipt of the approval from Engineer-in-Charge and shall be available at Site within fifteen days of start of work. Where the Contractor (or any partner in case of firm/company) himself has such qualifications, it will not be necessary for the said Contractor to appoint such a principal technical representative but the Contractor shall designate and appoint a responsible agent to represent him and to be present at the Works whenever the Contractor is not in a position to be so present. All the provisions applicable to the principal technical representative under the clause will also be applicable in such a case to Contractor or his responsible agent. The principal technical representative and/or the Contractor shall on receiving reasonable notice from the Engineer-in-Charge or his designated representative(s) in charge of the Works in writing or in person or otherwise, present himself to the Engineer-in-Charge and/or at the Site, as required, to take instructions. Instructions given to the principal technical representative or the responsible agent shall be deemed to have the same force as if these have been given to the Contractor. The principal technical representative and/or the Contractor or his responsible authorized agent shall be available at Site at least two working days every week. These days shall be determined in consultation with the Engineer-in-Charge. The principal technical representative and/or the Contractor or his responsible authorized agent shall be present daily during important stages of execution of work, during recording of measurement of work and whenever so required by the Engineer-in-Charge by a notice as aforesaid and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative in the site order book and shall affix his signature in token of noting down the instructions and in token of acceptance of measurements.

There shall be no objection if the representative/agent looks after more than one Works and not more than three works provided these details are disclosed to the Engineer-in-Charge and he shall be satisfied that the provisions and the purpose of this clause are fulfilled satisfactorily. Where the Engineer-in-Charge, whose decision in this respect is final and binding on the Contractor, is convinced that no such technical representative or agent is effectively appointed or is effectively attending or fulfilling the provision of this clause, a recovery shall be effected from the Contractor as specified in Special Conditions of Contract and the decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded in measurement books shall be final and binding on the Contractor. Provided that if the Contractor fails to appoint a suitable technical representative or responsible agent and if such appointed persons are not effectively present or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the Works until such date as a suitable agent is appointed and the Contractor shall be held responsible for the delay so caused to the work. The Contractor shall submit a certificate of employment of the technical representative/responsible agent along with every account bill/fixed bill and shall produce evidence if at any time so required by the Engineer-in-Charge. The Contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper

supervision to the work.

The Contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.

3.9 Work Program Schedule

The Contractor shall within 10 days from the date of Work Order submit a detailed program for completion of Works within the stipulated period, in specified format, as categorized below, and covering all major activities.

☑ Bar Chart: for Contract Price Rs. 1,00,00,000 - Rs. 3,00,00,000 (Indian Rupees one crore to three crores only)

☑ Bar Chart and PERT chart: for Contract Price > Rs. 3,00,00,000 (Indian Rupees three crores only)

Non submission of above shall attract liquidated damages as described below:

☑ For projects with Contract Price < Rs.100 Crore: Rs. 1000/- per day

☑ For projects with Contract Price > Rs.100 Crore: Rs. 5000/- per day

Modifications suggested by the Engineer-in-Charge shall be incorporated in the work program schedule.

It shall be the responsibility of the Contractor to upload the approved work program schedule in the PMS (Project Monitoring System)

The Contractor shall ensure that the time schedule as laid down in the aforesaid work program schedule is adhered to. Provided that on failure to achieve milestone requisite action shall be taken as per the provisions given under Clause 10.3.

In the event of any rescheduling of milestone, it shall be responsibility of the Contractor to incorporate the same in work program schedule and resubmit the schedule within 10 days of receipt of such communication from the Engineer-in-Charge, failing which a liquidate damages of Rs. 1000/- per day shall be levied on the Contractor.

3.10 Site Office

(i) **For Contract Price above Rs. 50 Crores:-** Within 42 days of issue of Work Order the Contractor shall provide the site office with air-conditioning and false ceiling of 3nos. of cabins for the Engineer-in-Charge and staff and meeting room (total area approximately 80 sq. m.) with pantry and toilet facilities. Facilities shall include basic furniture, required office equipments i.e. Fax, photocopy, internet/email, computer with colour laser printer, software (MS Projects, MS office, Primavera, AutoCAD), Laptops (1 no.) and orderly staff including one English stenographer. The location and layout of the site office shall be approved by the Engineer-in-Charge before providing the same.

(ii) **For Contract Price between Rs. 3 to Rs. 50 Crores:-** Within 42 days of issue of Work Order the Contractor shall provide the site office with air- conditioning and false ceiling of 2nos. of cabins for the Engineer-in-Charge and staff (total area approximately 40 sq. m.) with pantry, toilet facilities

and basic furniture. The location and layout of the site office shall be approved by the Engineer-in-Charge before providing the same.

- (iii) **For Contract Price between 1 to 3 Crores:-** Within 30 days of issue of Work Order the Contractor shall provide the site office with for the Engineer- in-Charge and staff with total area approximately 30 sq. m. with toilet facilities and furniture. The location and layout of the site office shall be approved by the Engineer – in- Charge before providing the same.

Two nos. of 7-seater vehicle with driver, maintenance and fuel shall be provided for Contract Price greater than Rs. 75 Crores. If available, EMPLOYER shall provide the Contractor with space for site office at no charges. Otherwise, Contractor shall on his own arrange for space for site office at his cost. Contractor shall also be responsible to arrange a store for proper storage of material in a weather proof environment as required for a particular kind of material.

Note: -In case of supply projects there is no requirement of site office.

3.11 Sign Board/ Caution/ Diversion Board

The Contractor shall provide sign/ caution/ diversion board indicating complete name of work, date of start, date of completion, Contract Price, name of Employer, name of the Executive Engineer with office address and telephone number, name of the executive agency, at his own cost at the Site.

3.12 Benchmark

The Contractor shall establish at his own cost, at suitable points, additional reference points/lines, benchmarks as may be necessary. The Contractor shall remain responsible for the sufficiency and accuracy of all benchmarks and reference lines. The temporary benchmarks shall be connected with permanent standard benchmarks.

3.13 Responsibility of damage to person or property

- 3.13.1** The Contractor shall be responsible for all risks to the Works and for trespass and shall make good, at his own expense, all loss or damage to the Works themselves or to any other property of the Employer or the lives, persons and property of others from whatsoever cause in connection with Works until they are taken over by the Employer. In the event the Employer is called upon to make good any such costs, loss or damages, or to pay compensation, including that payable under the provisions of Workmen's Compensation Act or any statutory amendments thereof, to any person or persons sustaining damage as aforesaid by reason of any act, omission or negligence on the part of the Contractor the amount of any costs or charges, including costs and charges in connection with legal proceedings, which the Employer may incur in reference thereto, shall be charged to the Contractor.

The Employer shall have the authority to pay or to defend or compromise any claim or threatened legal proceeding or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or

desirable to ward off or mitigate the effect of such proceedings, as aforesaid. Any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.

- 3.13.2** The Contractor shall not disturb damage or pull down any hedge, tree, building etc. within the Site without the written permission of the Engineer-in-Charge.
- 3.13.3** In the event of any damage occurring to any work, life and property during the execution of Works included in the Contract clause due to settlement of ground slips, flooding from any sources Works included in the Contract clause due to settlement of ground slips, flooding from any sources breakage of water main/ sewer line or any other cause, the Contractor shall be solely responsible and must reconstruct, repair and make good all such at his own cost.
- 3.13.4** When the work is done near a place where there is risk of danger or accident, all necessary equipment's shall be provided and kept ready for use, all necessary steps shall be taken for prompt rescue of any person in danger and adequate provision shall be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- 3.13.5** If any accident occurs, the Contractor shall report to the Employer and Labor Commissioner under Workman's Compensation Act, within 24 hours of its occurrence.
- 3.13.6** Any compensation decided by the Labor Commissioner shall be borne by the Contractor.

3.14 Inconvenience caused to public

The Contractor shall not dump/deposit materials on Site which will seriously cause inconvenience to the public. The Engineer-in-Charge may require the Contractor to remove any materials which are considered by him to be of danger or inconvenience to public or cause them to be removed at the Contractor's cost.

3.15 Electricity for construction of Works

- 3.15.1** The Contractor shall arrange on his own, the electricity/power connection of required capacity for carrying out the Works only till Completion Date. The Employer shall issue the recommendation letter to concerned electrical authorities for getting the electrical power connection. In the event the authorities refuse to provide or sanction electric/power in favour of Contractor, the connection shall be applied for by the Engineer-in-Charge. All the steps in this regard including the required payments, if any, shall be made by the Contractor. The Contractor shall pay all the charges towards security installation, consumption of electricity/power till Completion Date.
- 3.15.2** The payment of final bill to the Contractor shall be made by Employer on submission of no dues/clearance certificate from the electric supply authority/the authority in charge of the electric

power.

3.15.3 The temporary electric fitting shall be provided and maintained as per the power sanctioning/maintaining authority rules and regulations by the Contractor at his own cost and nothing extra shall be paid by the EMPLOYER.

3.15.4 If for any reason of the feasibility or whatsoever the authorities are not in a position to sanction the electric connection, the Contractor shall make his own arrangements i.e. required numbers of generators etc. to execute the Works or in case the sanction of electric connection is delayed by the authority it shall also be the responsibility of the Contractor to arrange electricity and no claim whatsoever shall be entertained on this account.

3.15.5 The Contractor shall also make necessary arrangements of his own diesel generators for the Works, so that the same can be used by him during failure/non-availability of electricity/power. The quoted rates shall be inclusive of the POL (petroleum, oil and lubricants) cost and other miscellaneous expenditure including labour for running and maintaining, the generator. It shall be the Contractor's responsibility to obtain all approvals, consents and permissions from any of the authority as for example, CPCB/DPCC required for operating the generators in accordance with the statutory rules and regulations of the Government. No additional payment shall be made to the Contractor for the purposes of procuring all the applicable approvals, consents and permissions.

3.16 Supply of water

The Contractor shall make his own arrangements for water required for the Works and nothing extra will be paid for the same. The Contractor shall submit necessary proof such as tanker receipts, amongst others, if the water is arranged by him.

- (i) If Employer water is available, it shall be supplied to contractor for construction and drinking purposes and recovery @ 1% of the gross amount of Contract Price shall be made. The ferrule connection with the Employer's main and the pipe line upto the Site and adequate storage shall be provided by the Contractor at his own cost.
- (ii) In case the Employer is not able to make available Employer water due to non-availability, shortage of water or any other reasons, the Contractor will have to make his own arrangement of water as per standard by sinking tube well etc. for construction and drinking purposes.
- (iii) The water used by Contractor shall be fit for construction purposes and human consumption as per B.I.S standards IS 456-2000 and IS 3025 respectively.

- (iv) The water shall be tested from Employer laboratory before commencement of work and thereafter once in every 3 months till the completion of the work. The cost of testing shall be borne by the Contractor.
- (v) Water required for hydraulic testing shall be arranged by the Contractor and Employer will only facilitate the process of obtaining approvals or permissions as required.
- (vi) In case the Employer's water is not available as well as ground water at the Site is not found fit the Contractor may arrange the water from other source. The water of the said source shall be tested from the Employer's laboratory at Contractor's own cost and may be allowed to be used only when found suitable for use. Necessary arrangements for carrying the water by tankers and its storage at the Site shall be made by the Contractor at his own cost. Any statutory requirements of gistration/permissions for boring/installation of tube- wells either at the Site or seewhere shall be taken by the Contractor at his own cost and nothing shall be payable.

Water when supplied to the Contractor by the Employer shall subject to the following conditions:

The Employer do not guarantee to maintain uninterrupted, supply of water and it shall be incumbent on the Contractor to make alternative arrangements for water at his/their own cost in the event of any temporary break down in Employer water main so that the progress of his/their Works is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down.

3.17 Clearance of site

The Site shall be cleared off all malba/ debris and other waste materials after completion of Works and shall ensure removal of temporary structure erected for execution of Works including hutments put up by his laborers at site, if any, before handing over the Site to the Employer in workable condition. No final payment for the Works shall be made to the Contractor till full satisfaction of the Engineer-in-Charge.

3.18 Relics and treasures

All gold, silver, coins, oil and other minerals of any description, and all precious stones of all kinds, treasures, antiques, fossils and other similar things, which shall be found in or at site, shall be the property of the Employer, and the Contractor shall duly preserve the same to the satisfaction of the Employer, and shall from time to time deliver the same to such person or persons, as the Employer may appoint to receive the same.

3.19 Excavated materials

The Contractor shall not sell or otherwise dispose off, or remove, except for the purpose of

this Contract, sand, stone, clay, ballast, earth, rock or any other substance or materials, which may be obtained from any excavation made for the purpose of the Works, or any building or produce existing at the Site at the time of delivery of possession thereof. All such substances, materials, buildings and produce, shall be the property of the Employer; provided that the Contractor may with the permission of the Engineer-in-Charge use the same for the purpose of Works either free of cost or on payment of cost, as provided for under the Special Conditions of the Contract or in the absence of such conditions, as per mutually accepted terms and conditions.

3.20 Works during night, Sundays & National Holidays

Unless specifically provided in the Special Conditions of Contract, the Contractor shall not carry out any work between sunset and sunrise and/ or holidays without the prior permission of the Engineer-in-Charge. In case of any grave emergency or in order to avoid risk to property and life or to prevent damage to utilities or to restore them, work may be done at night also without the prior permission of the Engineer-in-Charge, but intimation to this effect should be sent to him immediately. No increase in rates or extra payments shall be admissible for night work.

The Contractor shall make adequate lighting and safety arrangements. He shall also be responsible for any claim on account of any injury to or loss of life, of any one, arising out of inadequate lighting and safety arrangements if work is done during night or holidays.

3.21 Care of work

Subject to the insurance obligations of the Parties, the Contractor shall bear full risk in and take full responsibility for the care of the Works and Materials, goods and equipment for incorporation therein from the Commencement Date until the Completion Certificate is issued, except and to the extent that any loss of or damage to the same shall arise out of any default or neglect of the Employer.

3.22 Employment of foreign nationals

The Contractor acknowledges, agrees and undertakes that employment of foreign personnel by the Contractor and/or its Sub-Contractors and their Sub-contractors shall be subject to grant of requisite regulatory permits and approvals including employment/residential visas and work permits, if any required, and the obligation to apply for and obtain the same shall and will always be of the Contractor. Notwithstanding anything to the contrary contained in this Contract, refusal of or inability to obtain any such permits and approvals by the Contractor or any of its Sub-Contractors or their sub-Contractors shall not in any manner excuse the Contractor from the performance and discharge of its obligations and liabilities under this Contract.

3.23 Precautions during execution

- (i) The Contractor shall comply with instructions issued by the Employer in respect of road

maintenance and inter utility code of conduct for excavating trenches across and along various roads and other places, in all respects. In case of non-compliance the contractor shall be liable to pay liquidated damages for various lapses as indicated below:

- a) Non-installation of boards on either ends of trenches: Rs. 500/- per day till implementation.
 - b) Non shoring of walls of trenches to prevent collapse of the excavated portion (beyond 1.5m) and where proper stopping not proved: Rs. 1000/- per day till the shoring is fixed.
 - c) Digging of trenches beyond a stretch of 500 mtr. for Electrical Authority and Employer and otherwise 1000 mtr. In case of telephone: Rs. 500/- per day till the damage is restored.
 - d) Non barricading of trenches of more than 1.5 mtr: Rs. 500/- per day till completed.
 - e) Excavation of trenches across and along roads during day time (at 8 AM to 8PM) without permission: Rs. 500/- per day.
 - f) Non removal of excess earth and other stones etc. which are causing inconvenience to the road users: Rs. 1000/- per day till completed.
 - g) Non consolidation of earth while back filling of trenches to the original level: Rs. 500/- per day till completed.
 - h) Non adherence to prescribed methodology for reinstatement of trenches: Rs.500/- per day.
 - i) Road cutting without writing or oral permission: Rs. 1250/- per day.
 - j) Non stacking of materials pipes etc. in an orderly manner during execution causing inconvenience to the road users: Rs. 1000/- per day.
- (ii) The contractor shall have to provide MS sheet barricading or as provided in BOQ up to a minimum height of 2 meters above ground level all around the Site of excavation and trenches as per direction of Engineer-in-Charge. Such barricading must be provided before taking up the excavation work and must remain in position till complete filling back of excavated trenches and resurfacing work, if any. The sheets must be painted in red & White stripes with fluorescent paint.
- (iii) Proper supporting of all underground services such as water mains, sewers, cables, drains and water and sewer connections shall be provided by the contractor without any additional cost. If the services /connections are damaged the contractor will be responsible for the restoration of the same to original specifications at his own cost.
- (iv) Imposition of liquidated damages by Employer shall not absolve Contractor from any other civil/ criminal liabilities.
- (v) Contractor should maintain first aid box, electric shock recovery devices, safety equipment such as breathing apparatus, safety personal protective equipment and/ or other safety equipment as per NHRC guidelines and/ or factory act. The Engineer-in-Charge shall decide to impose suitable damages as mentioned under Clause 17.6.

4.0 The Site

4.1 Site description

The Site shall comprise the real estate described in Special Conditions of Contract in respect of

which the right of way shall be provided by the Employer to the Contractor. The Employer shall be responsible to the Contractor for:

- (i). Acquiring and providing physical possession of the Site free from all encroachments and encumbrances, and free access thereto for the execution of the Contract; and
- (ii). Prior environment clearance for the Site as per the Environment Impact Assessment Notification 2006 under the Environment (Protection) Act, 1986, wherever applicable

Unless specifically mentioned in the Contract, the Contractor shall be responsible to obtain all the necessary permits, permissions and/or approvals from the relevant department/ authority in relation to execution and completion of Works. The Employer shall only facilitate the process and will reimburse the charges paid by the Contractor after due verification.

4.2 Inspection of site

- (i). The Employer shall have made available to the Contractor with the tender documents such data on hydrological and sub-surface conditions as may have been obtained by or on behalf of the Employer from investigations undertaken relevant to the Works and the tender shall be deemed to have been based on such data, but the Contractor shall be responsible for his own interpretation thereof.
- (ii). The Contractor shall 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 tender, as to the form and nature thereof, including the sub-surface conditions, 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 Tender.

5.0 SPECIFICATIONS & DRAWINGS

5.1 Works to be executed in accordance with Specifications, Drawings, Orders, etc.

5.1.1 The Contractor shall execute the whole and every part of the Works in the most substantial and workman like manner in every respect and in strict accordance with the specifications. The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions of the Engineer-in-Charge in respect of the work. The Contractor shall be furnished free of charge one copy of the Contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Employer specified in Special Conditions of Contract or in any BIS document.

5.1.2 The Contractor shall comply with the provisions of the Contract and with care and diligence execute and maintain the Works and provide all labour and materials, tools and plants for measurements and supervision of all Works, structural plans and other things of temporary or permanent nature

required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the Contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the Works and methods of construction.

5.2 Action in Case Work is not done as per Specifications

- 5.2.1 All work under or in course of execution or executed in pursuance of the Contract shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his representatives and assistants in charge of the Works and all senior officers, officer of the quality control division of the Employer, third party hired by Employer, and of the chief technical examiner's office. The Contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Contractor, either himself be present to receive orders and instructions or have his responsible agent, present for that purpose.
- 5.2.2 In the event it appears to the Engineer-in-Charge or his representative in charge of the Works or any nominated officer (as described above in this clause), that any work has been executed with unsound, imperfect, or unskillful workmanship, or is against Good Engineering Practice or with material or articles of a quality inferior to that contracted or otherwise not in accordance with the Contract, the Contractor shall, on demand in writing which shall be made during construction and upto six months after completion of the Works by the Engineer-in-Charge specifying the work, materials or articles complained (notwithstanding that the same may have been passed, certified and paid for forthwith) rectify, or remove and reconstruct the Works so specified in whole or in part, as the case may require, remove the materials or specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, the Contractor shall be liable to pay compensation at the same rate as under clause 10.3 of the Contract (for non-completion of the Works in time) for this default.
- 5.2.3 Provided that in such an event the Engineer-in-Charge may not accept the item of Works at the rates applicable under the Contract but may accept such items at reduced rates as the Employer may consider reasonable during the preparation of on-account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the Works outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same shall be final and binding on the Contractor.

5.3 Action where there are no Specifications

In the case of any class of work for which there is no such specifications as referred to in clause 5.2, such work shall be carried out in accordance with the CPWD/ Bureau of Indian Standards Specifications or any other applicable standards specific to the Works. Provided that where there is no such specification in CPWD/ Bureau of Indian Standards, the Works shall be carried out as per manufacturers' specifications. Provided further that where there are no such specifications as required above, the Works shall be carried out in all respects in accordance with Good Engineering Practice and Site requirements under the instructions and requirements as communicated by the Engineer-in-Charge.

5.4 Estimates

The estimate is based on CPWD's DSR as applicable to Employer, analyzed rates of Employer and in other cases on market rates. The Works shall be carried out as per CPWD specifications /latest editions of the specifications, with up to date (on the date of issue of NIT) correction slips, for work at Delhi and other specifications laid down by Indian or other standards (CPHEEO, ASTM, WRC, etc.) and best practices being followed by Employer.

5.5 Execution of work

- 5.5.1 The Works is to be carefully executed strictly in accordance with the approved drawing supplied to the Contractor or with such modifications as may be approved by the Engineer-in-Charge from time to time. Any additional amended, revised or detailed drawings that does not have a significant impact on the scope of work, issued by the Engineer-in-Charge or approved in writing by him during the progress of the Works are to be considered to form the part of the Works and as such being included in the Contract. No claim whatsoever shall be considered on this account.
- 5.5.2 The order of sequence of execution of Works and general condition of the Works shall be subject to the approval and direction of the Engineer-in-Charge. Any such approval or direction by the Engineer-in-Charge shall in no way relieve the Contractor of the responsibility for the proper and satisfactory execution of the Works according to the terms of Contract and within stipulated period. No claim of the Contractor whatsoever shall be considered on this account.
- 5.5.3 The information given in the drawing including the conditions of ground or the information regarding of the depth of water to be met with means of access, or any other such matter shall not relieve the Contractor from the fulfillment of the Contract.
- 5.5.4 The Contractor shall be responsible and must check and satisfy himself the accuracy of levels, lines positions, dimensions, sizes etc. of the finished Works in accordance with the Contract.

5.6 Contractor's understanding of documents

- (i) The Contractor shall be deemed to have satisfied himself, before tendering, as to the correctness and sufficiency of his tender for the Works and of the rates and prices stated in the priced bill of quantities and the schedule of rates and prices, if any, all of which shall, except insofar 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 the 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-in-Charge and if, in the opinion of the Engineer-in-Charge, such conditions or artificial obstructions could not have been reasonably foreseen by an experienced Contractor, then the Engineer-in-

Charge shall certify and the Employer shall pay reasonable additional cost to which the Contractor shall have been put by reason of such conditions in the following cases:

- a. For complying with any instruction which the Engineer-in-Charge may issue to the Contractor in connection therewith, and
 - b. For any proper and reasonable measures approved by the Engineer-in-Charge which the Contractor may take in the absence of specific instructions from the Engineer-in-Charge, as a result of such conditions or obstructions being encountered.
- (ii) The decision of the Employer as to the additional cost shall be final and binding.

6.0 PERFORMANCE GUARANTEE AND SECURITY DEPOSIT

6.1 Performance Guarantee

- (i) The Contractor shall submit an irrevocable Performance Guarantee of 5%(five percent) of the amount as specified in Clause 6.1 (iv), (v) and (vi) below, in addition to other deposits mentioned elsewhere in the Contract for his proper performance of the Contract, (not withstanding and / or without prejudice to any other provisions in the Contract) within 15 days of issue of Letter of Acceptance. This period can be further extended by Engineer-in-Charge up to a maximum period of 5 days on written request of the Contractor stating the reason for delays in procuring the Guarantee to the satisfaction of Engineer-in-Charge. This guarantee shall be in the form of Bank Guarantee from a scheduled bank of India as per the format attached with General Conditions of Contract.
- (ii) A Letter of Acceptance shall be issued in the first instance informing the Contractor of the decision of the Employer to accept his tender and the Work Order shall be issued only after the Performance Guarantee in prescribed form is received. In case of failure by the Contractor to furnish Performance Guarantee within the specified period Employer shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the Earnest Money absolutely and debar the Contractor to participate in the Works, if retendered
- (iii) The Performance Guarantee shall be initially valid up to 60 days beyond the Stipulated Date of Completion. In case the time for completion of Works gets enlarged the Contractor shall get the validity of Performance Guarantee extended within 30 days of receiving such notice from Engineer-in-Charge to cover such enlarged time plus 60 days. After recording of the Completion Certificate for the Works by the Employer, the Performance Guarantee shall be returned to the Contractor.
- (iv) For pure construction contracts (EPC, DB, etc.) the Performance Guarantee shall be calculated for capital construction cost only.
- (v) For pure O&M works, the Performance Guarantee shall be calculated for the complete value of O&M works which shall be reduced annually after adjusting the cost of O&M works for previous year. For

example, the total Contract Value for a 10 years O&M contract is Rs. 100 Crores i.e. Rs. 10 Crores for each year. Then, the Performance Guarantee for Year 1 shall be 5% of Rs. 100 Crores, for Year 2 shall 5% of Rs. 90 Crores, for Year 3 shall be 5% of Rs. 80 Crores and so on and so forth.

- (vi) For DBO contracts initially the Performance Guarantee shall be calculated for the capital construction cost. However, 2 months before the construction completion date, the Contractor shall submit another Performance Guarantee calculated for the total operation cost which shall be reduced annually after deducting the cost of one year of O&M works in the manner as described in Clause 6.1 (v).
- (vii) The cost of complying with the requirements of this clause shall be borne by the Contractor, unless the Contract otherwise provides.
- (viii) The Engineer-in-Charge shall not make a claim under the Performance Guarantee except for amounts to which Employer is entitled under the Contract (notwithstanding and / or without prejudice to any other provisions in the Contract) in the event of:
 - a. Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above within 30 days of receipt of notice from the Engineer-in-Charge, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.
 - b. Failure by the Contractor to pay Employer any amount due either as agreed by the Contractor or determined under any of the clauses / conditions of the Contract, within 30 days of the service of notice to this effect by Engineer-in-Charge.
 - c. In the event of the Contract being determined or rescinded under provision of any of the clause/ condition of the Contract the Performance Guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Employer.

6.2 Security Deposit

- (i) The Contractor shall permit Employer at the time of making any payment to him for Works done under the Contract to deduct a sum at the rate of 10% of the gross amount of each running bill till the sum along with the sum already deposited as earnest money, will amount to 5% of the amount specified under Clause 6.2 (ii), (iii) and (iv). Such deductions will be made and held by Employer by way of Security Deposit. The security deposit shall be in addition to the performance guarantee amount.
- (ii) For pure construction contracts (EPC, DB, etc.) the Security Deposit shall be calculated for capital construction cost only.
- (iii) For pure O&M works, the Security Deposit shall be calculated for the total value of O&M works. The deduction will be made from each running payment till such amount reaches 5% of the total value

of O&M works.

- (iv) For DBO contracts, initially the Security Deposit shall be calculated for the capital construction cost. However, upon completion of capital works, the Security Deposit will be calculated for complete O&M works and deduction shall be made from each running payment till such amount reaches 5% of complete value of O&M works. The Security Deposit collected during the capital construction phase shall be released upon successful completion of DLP and the Security Deposit collected during the O&M phase shall be released 60 days after successful completion of the O&M works.
- (v) The Security Deposit as deducted above can be released against Bank Guarantee issued by a scheduled bank, on its accumulations to a minimum of

Rs. 5 lakhs for Contract Value up to Rs. 3 Crore

Rs. 10 lakhs for Contract Value between Rs. 3 Crore and Rs. 25 Crore

Rs. 25 lakhs for Contract Value greater than Rs. 25 Crore

Subject to the condition that amount of such Bank Guarantee, except last one shall not be less than the stipulated amount. (For e.g. Suppose for a project the total Security Deposit deduction is Rs. 6 lakhs, to be deducted equally from running payment of 12 months. Hence a net deduction of Rs. 50,000 will be made from each running account bill. Till the 9th running bill a sum of Rs. 4.5 lakhs will be retained for Security Deposit. Then, in the 10th bill when the amount retained reaches Rs. 5 lakhs, the Contractor will submit a bank guarantee of Rs. 5 lakhs and will get the amount released. However, in the 12th bill (final bill) the amount retained will be only Rs. 1 lakh and hence the Contractor will submit a bank guarantee of Rs. 1 lakhs and will get the sum released.) Provided further that the validity of Bank Guarantee shall be 60 days beyond the completion of Defect Liability Period or Stipulated Completion Date plus 60 days in case of O&M contract. Validity of such bank guarantee shall be extended from time to time depending upon extension of Contract granted under provisions of clause 10.3 and clause 10.4. It shall be responsibility of the Contractor to timely renew the bank guarantee submitted as per provision of clause 6.1 and 6.2 or as required under any other clause of the Contract.

- (vi) All compensations or the other sums of money payable by the Contractor under the terms of this Contract may be deducted from, or paid by the sale of a sufficient part of his Security Deposit or from any sums which may be due to or may become due to the Contractor by Employer on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the Contractor shall within 10 days make good in cash the amount deducted from, or raised by sale of his Security Deposit or any part thereof. The Security Deposit shall be collected from the running bills of the Contractor at the rates mentioned above and the earnest money if deposited in cash at the time of tenders will be treated a part of the Security Deposit.

6.3 Refund of Security Deposit

The Security Deposit shall be returned to the Contractor on certification after the Engineer-in Charge has satisfied himself that all the terms of this Contract have been duly and faithfully carried out by the Contractor or 60 (sixty) days after successful completion of Defect Liability Period as per clause 16.1 and on submission of the following :

- (i) No demand/claim certificate of the Contractor for executed value of the Contract.
- (ii) Material and Payment reconciliation and no recovery certificate of the Engineer- in Charge.
- (iii) Labour clearance certificate of the Contractor issued by the labour officer as per clause 15.1.2.
- (iv) Statutory requirement compliance certificate of the Engineer-in-Charge.
- (v) Completion Certificate of the Engineer-in-Charge.
- (vi) Insurance Policy release certificate of the Engineer-in-Charge.
- (vii) Updated recording of the PMS reports
- (viii) Submission of all required GIS details, O&M plans, etc.
- ix) Any other requirement as per Contract.

7.0 REPORTING, INSPECTION & QUALITY

7.1 Quality Control Systems

7.1.1 The Contractor shall establish a suitable quality control mechanism to ensure compliance with the requirements of the Specifications and Standards in accordance with the provisions of this Contract (the "Quality Assurance Plan" or "QAP").

7.1.2 The Contractor shall, within 21 days of the issue of Work Order, submit to the Engineer-in-Charge and upload in the Employer's PMS (Project Monitoring System) for approval, the proposed Quality Assurance Plan which shall include the following:

- I. Organization, duties and responsibilities, procedures, inspections, documentation;
- II. Quality control mechanism including sampling and testing of materials, plant, project assets, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, proformas for testing and calibration; and
- III. Internal quality audit system

7.1.3 The Contractor shall provide and procure all reasonable assistance, documents, apparatus and instruments, fuel, consumables, water, electricity, labour, Material, samples, and qualified personnel as are necessary for examining and testing the Works and workmanship in accordance with the Quality Assurance Plan.

7.1.4 The cost of supplying samples and testing of Works and workmanship for the tests provided for in the Quality Assurance Plan or in the Contract shall be borne by the Contractor. Provided that the testing charges will be reimbursed to Contractor by Employer at actual on verification of proof submitted.

7.1.5 The Contractor shall on the directions issued by the Engineer-in-Charge carry out such tests including those not provided for in the Contract that are in accordance with the good and sound

industry practice to assess the quality of the Works or workmanship. The Contractor shall bear the cost of the tests and samples if the quality of the Works or workmanship is not in compliance with the Specifications and Standards. In any other case, the cost of test shall be a determined by the Engineer-in-Charge and shall be payable by the Employer.

7.1.6 It shall be the responsibility of the Contractor to attend to the defects pointed out/observation made by the senior officers of the Employer during their inspections in respect of the required quality of material, mandatory test for materials, items of the Works, fittings and on specifications of the work being executed.

7.2 Reporting, inspection and checking of Works

7.2.1 The Contractor shall enter the online progress reports in the format of project management system (for quality monitoring, physical and financial progress monitoring) on 1st and 15th of every month during the Contract. The Contractor shall have to upload DPR/ other report/ Bar or PERT Chart/ site photographs, amongst others, with date of submission by 8th and 23rd of every month. The Engineer-in- Charge shall verify the entries made. No payment shall be released if the progress has not been entered at the prescribed frequency and in the prescribed format. If so required, Contractor (for quality monitoring) may seek help of Engineer-in-Charge for getting 1 (one) person trained for the purpose.

7.2.2 The record of inspections carried out by the Chief Engineer/SE/EE and checking of the Works as per the check features as given in the Contract and a few samples shall be maintained at the Site for taking necessary action by the executing agency.

7.2.3 The stages of inspections for S.E./ C.E. are given as under: -

- i. Up to 3rd running bill
- ii. 4th to 6th bill
- iii. 7th to 9th running bill
- iv. And so on.

7.2.4 Sample check features (over and above the check features given in the Contract for reference of inspecting officers and compliance to the observations by the Contractor.

- i. To check the hindrance at Site and the hindrance register
- ii. To check the observations and instructions issued by the field staff on the siteorder book and compliance.
- iii. To check the adequacy of mandatory test being carried out, maintenance of testrecords in the proper format.
- iv. To check whether the samples are being filled by the competent officer, AE/JE and the field test are being carried out at the required frequencies.
- v. To check whether the water being used is tested and the number of test have been carried quarterly
- vi. To have a look (if applicable) at the cubes strength, Honey combing, cover to reinforcement, adequacy of Lap

length, filling of mortar in brick work, jointing of pipes, water tightness, quality of pipes, gradient, bedding under sewer line, workmanship etc.

7.2.5 For electrical & mechanical supply items, the inspection tests at manufacturers' work will be in accordance with Employer's specifications, BIS specifications and suppliers' norms, as applicable.

7.2.6 The Works valued Rs.200 lakhs and above may be subjected to inspection and checking by Chief Technical Examiner, Government of India (C.T.E.).

7.2.7 The Works is also liable to be inspected and checked by a 3rd party fixed by Employer /vigilance Wing of Employer or by any other statutory body. The Works may be checked by the agencies as mentioned above simultaneously, subsequently, jointly or independently and the Contractor shall be responsible for removing of all defects/deficiencies pointed out by them at its own cost.

7.2.8 The inspection by one agency/ team shall not absolve the Contractor of his responsibility to the defects pointed out by the other agencies and rectification thereto. Recoveries, if any, proposed by any of the inspection agency on account of short comings in respect of quality/quantity in the Works shall be recovered from the Contractor's payments or guarantees and deposits available with Employer.

8.0 INSURANCE

8.1 Insurance of Works

8.1.1 Requirements

Before commencing execution of Works, it shall be obligatory for the Contractor to obtain at his own cost stipulated insurance cover under the following requirements:

- i. Contractor's All Risk and Third Party Cover.
- ii. Liability under the Workmen's compensation Act, 1923, and other applicable labour laws.
- iii. Accidents to staff, Engineer-in-Charge, Supervisors and others who are not governed by Workmen's Compensation) Act.
- iv. Damage to material, machinery and Works due to fire, and theft.
- v. Damage to existing assets, in case of a rehabilitation project. Employer shall provide the valuation of existing assets before submission of bids.
- vi. The Contractor's equipment and other things brought onto the site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- vii. Any other risk to be covered by Insurance as may be specified by the Employer in the Special Conditions of Contract.

8.1.2 Policy in joint names of Contractor and Employer

The policy referred to under sub-clause 8.1.1 shall be obtained in the joint names of the Contractor and the Employer and shall inter-alia provide coverage against the following, arising out of or in connection with execution of Works, its maintenance and performance of the Contract.

- i. Loss of life or injury involving public, employee of the Contractor, or that of Employer and Engineer-in-Charge.

- ii. Injury, loss or damages to the Works or property belonging to public, Government bodies, local authorities, utility organizations, Contractors, Employer or others.

8.1.3 Currency of Policy

The policies shall remain in force throughout the period of execution of the Works and till the expiry of the Defect Liability Period.

The Contractor shall produce to the Engineer-in-Charge or his representative the various insurance policies obtained by him and also the rates of premium and the premium paid by him to ensure the adequacy of the insurance at all times and ensure that the policies continue to be in force.

8.1.4 Remedy on Contractor's Failure to insure

If the Contractor fails to effect or keep in force or provide adequate cover in the insurance policies mentioned in sub-clause 8.1.1, or any other insurance it might be required to effect under the Contract, then in such cases, the Employer may effect and keep in force any such insurance or further insurance and the cost and expenses incurred by Employer in this regard shall be deductible from payments due to the Contractor or from the Contractor's Performance Guarantee, Security Deposit or any other guarantees available with the Contractor.

9.0 MATERIAL & WORKMANSHIP

9.1 Materials supplied by Employer

9.1.1 Materials, which, Employer will supply, are provided in Special Conditions of Contract which, also stipulates quantum, place of issue and rate(s) to be charged in respect thereof. The Contractor shall be bound to procure them from the Engineer-in-Charge.

9.1.2 As soon as the Contract is awarded, the Contractor shall finalize the program for the completion of Works of this Contract and shall give his estimates of materials required on the basis of drawings/or Schedule of quantities of the work. The Contractor shall give in writing his requirement to the Engineer-in-Charge which shall be issued to him keeping in view the progress of Works as assessed by the Engineer-in-Charge, in accordance with the agreed phased program of Works indicating monthly requirements of various materials. The Contractor shall place his indent in writing for issue of such materials at least 7 days in advance of his requirement.

9.1.3 The material shall be provided within such timeframe as may enable the Contractor to complete the Works on the agreed Work Program Schedule. If there is any delay on part of the

Employer in the supply of material or stores due to a cause not attributable to the Contractor, the Contractor shall be eligible for extension of time as per clause 10.4. If a part of the materials only has been supplied within the period then the Contractor shall be bound to do so much of the work as may be possible with the materials and stores supplied in the aforesaid period. For the completion of the rest of the work, the Contractor shall be entitled to such extension of time as may be determined by the Engineer-in-Charge whose decision in this regard shall be final and binding on the Contractor.

- 9.1.4 Such materials shall be supplied for the purpose of the Contract only and the value of the materials so supplied at the rates specified in the aforesaid Schedule as and when materials are consumed in items of work (including normal wastage) for which payment is being made to the Contractor, from any sum then due or which may therefore become due to the Contractor under the Contract or otherwise or from the security deposit. At the time of submission of bills the Contractor shall certify that balance of materials supplied is available at Site in original good condition.
- 9.1.5 The Contractor shall bear the cost of getting the material issued, loading, transporting to site, unloading, storing under cover as required, cutting assembling and joining the several parts together as necessary. Notwithstanding anything to the contrary contained in any other clause of the Contract all stores/materials so supplied to the Contractor or procured with the assistance of the Employer shall remain the absolute property of Employer. The Contractor shall be the trustee of the stores/materials, and the said stores/materials shall not be removed/disposed off from the Site on any account and shall be at all times open to inspection by the Engineer-in-Charge or his authorized agent. Any such stores/materials remaining unused shall be returned to the Engineer-in-Charge in as good a condition in which they were originally supplied at a place directed by him, at a place of issue or any other place specified by him as he shall require, but in case it is decided not to take back the stores/materials the Contractor shall have no claim for compensation on any account of such stores/materials so supplied to him as aforesaid and not used by him or for any wastage in or damage to in such stores/ materials.
- 9.1.6 The Contractor shall submit along with every running bill (on account or interim bill) material-wise reconciliation statements supported by complete calculations reconciling total issue, total consumption and certified balance (diameter/section-wise in the case of steel) and resulting variations and reasons therefore. Engineer-in- Charge shall (whose decision shall be final and binding on the Contractor) be within his rights to follow the procedure of recovery in clause 9.6 at any stage of the Works if reconciliation is not found to be satisfactory.
- 9.1.7 The Contractor shall see that only the required quantities of materials are issued. Any such material remaining unused and in perfectly good/original condition at the time of

completion or determination of the Contract shall be returned to the Engineer-in-Charge at the stores from which it was issued or at a place directed by him by a notice in writing. The Contractor shall not be entitled for loading, transporting, unloading and storing of such unused material except for the extra lead, if any involved, beyond the original place of issue. The Contractor shall hand over the stores/ materials at such price as the Engineer-in-Charge shall determine, having due regard to the condition of the stores/materials. The price allowed for credit to the Contractor, however, shall be at the prevailing market rate not exceeding the amount charged to him, excluding the storage charge, if any. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of this clause, the Contractor shall in addition to being in contravention of the terms of the licenses or permit and/or for criminal breach of trust, be liable to Employer for all advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach. Provided that the Contractor shall in no case, be entitled to any compensation or damages on account of any delay in supply or non- supply thereof of all or any such materials and stores.

9.2 Materials to be supplied by Contractor

- 9.2.1 The Contractor shall, at his own expense, provide all materials, required for the Works other than those, which are stipulated, to be supplied by the Employer.
- 9.2.2 The Contractor shall, at his own expense and without delay; supply to the Engineer-in- Charge samples of materials to be used on the Works and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the Contract. The Contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in- Charge shall within 30 (thirty) days of supply of samples, intimate the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval fresh samples complying with the specifications laid down in the Contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-Charge shall be issued after the test results are received.
- 9.2.3 The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the Works any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-Charge. The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the Works or due to any corrective measures required to be taken on account of and as a result of testing of materials.
- 9.2.4 The Contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples for

such tests at such time and to such place or places as may be directed by the Engineer-in-Charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the Contract or specifications.

- 9.2.5 The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every facility and every assistance in obtaining the right to such access. The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default the Engineer-in-Charge shall be at liberty to employ at the expense of the Contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have require other proper materials to be substituted thereof and in case of default the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the Contractor.

9.3 Dismantled Material

The Contractor shall treat all materials (including bricks, scarp, stone soling, trees, etc.) obtained during dismantling of a structure, excavation of the Site, etc. as Employer's property and such materials shall be disposed off to the best advantage of Employer according to the instructions in writing issued by the Engineer-in-Charge. Further, the following material will be made available to Contractor, at the followingspecified rates or as circulated from time to time:

- i) Bricks: Rs 2500/ 1000 bricks
- ii) CI/ MS Scrap: Rs 25/ kg
- iii) Stone soling/ Hard Rock: Rs 553/ m³

9.4 Contractor to supply tools & plants etc.

9.5 Hire of plant and machinery

- i) The Contractor shall arrange at his own expense all tools, plant, machinery or equipment (hereinafter referred to as T&P) required for execution of the Works except for the Plant & Machinery listed in Special Conditions of Contract and stipulated for issue to the Contractor. If the Contractor requires any item of T&P on hire from the T&P available with the Employer over and above the T&P stipulated for issue, the Employer will, if such item is available, hire it to the Contractor at rates to be agreed upon between him and the Engineer-in-Charge. In such a case all the conditions hereunder for issue of T&P shall also be applicable to such T&P as is agreed to be issued.
- ii) Plant and Machinery when supplied on hire charges as shown in Special Conditions of

Contract shall be taken from the departmental equipment yard/shed and the Contractor shall bear the cost of carriage from the place of issue to the Site and back. The Contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him, and shall be responsible for all damage caused to the said plant and machinery at the Site or elsewhere during operation and otherwise during transit including damage to or loss of plant and for all losses due to his failure to return the same, soon after the completion of the Works for which it was issued. The Engineer-in-Charge shall be the sole judge to determine the liability of the Contractor and its extent in this regard and his decision shall be final and binding on the Contractor.

- iii) The plant and machinery as stipulated above shall be issued as and when available and if required by the Contractor. The Contractor shall arrange his work program schedule according to the availability of the plant and machinery and no claim whatsoever will be entertained from him for any delay in supply by the Employer. If such re-arrangement results in delay in completion of work, and such delay, in the opinion of Engineer-in-Charge are unavoidable, the contractor shall be entitled to shall be eligible for extension of time as per clause 10.4.
- iv) The hire charges shall be recovered at the prescribed rates from and inclusive of the date the plant and machinery made over up to and inclusive of the date of the return in good order even though the same may not have been working for any cause except major breakdown due to no fault of the Contractor or faulty use requiring more than three working days continuously (excluding intervening, holidays and Sundays) for bringing the plant in order. The Contractor shall immediately intimate in writing to the Engineer-in- Charge when any plant or machinery gets out of order requiring major repairs as aforesaid. The Engineer-in-Charge shall record the date and time of receipt of such intimation in the log sheet of the plant or machinery. Based on this if the breakdown occurs before lunch period or major breakdown will be computed considering half a day's breakdown on the day of complaint. If the breakdown occurs in the post lunch period of majorbreakdown will be computed starting from the next working day. In case of any dispute under this clause the decision of the Engineer-in-Charge shall be final and binding on the Contractor.
- v) The hire charges shown above are for each day of 8 hours (inclusive of the one hour lunch break) or part thereof.
- vi) Hire charges shall include service of operating staff as required and also supply of lubricating oil and stores for cleaning purposes. Power fuel of approved type, firewood, kerosene oil etc. for running the plant and machinery' and also the full time chowkidar for guarding the plant and machinery against any loss or damage shall be arranged by the Contractor who shall be fully responsible for the safeguard and security of plant and machinery. The Contractor shall on or before the supply of plant and machinery sign an agreement indemnifying the Employer against any loss or

damage caused to the plant and machinery either during transit or at Site.

- vii) Ordinarily, no plant and machinery shall work for more than 8 hours a day inclusive of one hour lunch break. In case of an urgent work however, the Engineer-in-Charge may, at his discretion, allow the plant and machinery to be worked for more than normal period of 8 hours a day. In that case the hourly hire charges for overtime to be borne by the Contractor shall be 50% more than the normal proportionate hourly charges (1/8th of the daily charges) subject to a minimum of half day's normal charges on any particular day. For working out hire charges for overtime a period of half an hour and above will be charged as one hour and a period of less than half an hour will be ignored.
- Viii) The Contractor shall release the plant and machinery every 7 (seventh) day for periodical servicing and/or wash out which may take about three to four hours or more. Hire charges for full day shall be recovered from the Contractor for the day of servicing/ wash out irrespective of the period employed in servicing.
- ix) The plant and machinery once issued to the Contractor shall not be returned by him on account of lack of arrangements of labour and materials, etc. on his part, the same will be returned only when they are required for major repairs or when in the opinion of the Engineer-in- Charge the Works or a portion of Works for which the same was issued is completed.
- x) Log Book for recording the hours of daily work for each of the plant and machinery supplied to the Contractor shall be maintained by the Employer and shall be countersigned by the Contractor or his responsible agent daily. In case the Contractor contests the correctness of the entries and/or fails to sign the Log Book, the decision of the Engineer-in- Charge shall be final and binding on him. Hire charges shall be calculated according to the entries in the Log Book and will be binding on the Contractor. Recovery on account of hire charges for road rollers shall be made for the minimum number of days worked out on the assumption that a roller can consolidate per day and maximum quantity of materials or area surfacing, the data for which shall be provided by Employer later on request. DJB may use GPS tracking devices for on-line monitoring of movements and recording of log book.
- Xi) In the case of concrete mixers, the Contractors shall arrange to get the hopper cleaned and the drum washed at the close of the work each day or each occasion. In case rollers for consolidation are employed by the Contractorhimself, log book for such rollers shall be maintained in the same manner as is done in case of departmental rollers, maximum quantity of any items to be consolidated for each roller-day shall also be same as in data under clause 9.5(x). For less use of rollers recovery for the less roller days shall be made at the stipulated issue rate.
- xii) The Contractor shall be responsible to return the plant and machinery in the condition in which it

was handed over to him and he shall be responsible for all damage caused to the said plant and machinery at the Site or elsewhere in operation or otherwise or during transit including damage to or loss of parts, and for all losses due to his failure to return the same soon after the completion of the Works for which it was issued. The Engineer-in-Charge shall be the sole judge to determine the liability of the Contractor and its extent in this regard and his decision shall be final and binding on the Contractor.

- xiii) The Contractor shall be exempted from levy of any hire charges for the number of days he is called upon in writing by the Engineer-in-Charge to suspend execution of the work, provided Employer plant and machinery in question have, in fact, remained idle with the Contractor because of the suspension.
- xiv) In the event of the Contractor not requiring any item of plant and machinery issued by Employer though not stipulated for issue in Contract any time after taking delivery at the place of issue, he may return if after 2 (two) days written notice or at any time without notice if he agrees to pay hire charges for 2 (two) additional days without, in any way, affecting the right of the Engineer-in-Charge to use the said plant and machinery during the said period of 2 (two) days as he likes including hiring out to a third party.

9.6 Return of material and recovery for excess material issued

- i) After completion of the Works and also at any intermediate stage in the event of non-reconciliation of materials issued, consumed and in balance (see clause 9.1), theoretical quantity materials issued by the Employer for use in the Works shall be calculated on the basis and method given hereunder:
 - a) Quantity of cement & bitumen shall be calculated on the basis of quantity of cement & bitumen required for different items of Works as shown in the schedule of rates mentioned in Special Conditions of Contract. In case any item is executed for which standard constants for the consumption of cement or bitumen are not available in the above mentioned schedule or cannot be derived from the same shall be calculated on the basis of standard formula to be laid down by the Engineer-in-Charge.
 - b) Theoretical quantity of steel reinforcement or structural steel sections shall be taken as the quantity required as per design or as authorized by Engineer-in-Charge, including authorized lap chairs etc. plus 3% wastage due to cutting into pieces, such theoretical quantity being determined and compared with the actual issues each diameter wise, section wise and category wise separately
 - c) Theoretical quantity of G.I. & C.I. or other pipes, conduits, wires and cables, pig lead and G.I./M.S. sheets shall be taken as quantity actually required and measured plus 2% for wastage due to cutting into pieces (except in the case of G.I./M.S. sheets it shall be 1.5%), such determination & comparison being made diameter wise & category wise.
 - d) For any other material as per actual requirements.
- ii) Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Special Conditions of Contract. The difference in the net quantities of material

actually issued to the Contractor and the theoretical quantities including such authorized variation, if not returned by the Contractor or if not fully reconciled to the satisfaction of the Engineer-in-Charge within 15 (fifteen) days of the issue of written notice by the Engineer-in-Charge to this effect shall be recovered at the rates specified in Special Conditions of Contract, without prejudice to the provision of the relevant conditions regarding return of materials governing the Contract. The decision of Engineer-in-Charge in regard to theoretical quantities of materials, which should have been actually used as per the standard schedule of rates and recovery at rates specified in Special Conditions of Contract, shall be final & binding on the Contractor. For non-scheduled items, the decision of the Engineer-in-Charge regarding theoretical quantities of materials, which should have been actually used, shall be final and binding on the Contractor.

- iii) Any action under this clause shall be without prejudice to the right of Employer to take action against the Contractor under any other conditions of Contract for not doing the Works according to the prescribed specifications.

9.7 Leveling instrument/ survey equipment

The Contractor shall always make available and accurate leveling instrument at the Site. Necessary levels shall be given by the Contractor or his authorized site engineer and the same will be checked by the site staff of the Employer.

9.8 Material brought at site

Materials brought at Site consisting of plant, machinery, tools, tackles, raw material etc. required for execution of Works shall not be removed except for use in the Works unless permission in writing is given by the Engineer-in-Charge. The Contractor shall be responsible for loss or damage such materials and goods.

10.0 SUSPENSION & DELAYS

10.1 Suspension of Work

10.1.1

- i) The Contractor shall within 3 days of receipt of the order in writing of the Engineer-in-Charge, (whose decision shall be final and binding on the Contractor) suspend the progress of the work or any part thereof for such time and in such manner as the Engineer- in-Charge may consider necessary so as not to cause any damage the work already done or endanger the safety in general thereof for any of the following reasons:
 - a. On account of any default on the part of the Contractor or;
 - b. For proper execution of the Works or part thereof for reasons other than the default of the

Contractor;

- c. For safety of the Works, public and or public property; or
- d. To avoid hindrance to other works; or
- e. As communicated by Engineer-in-Charge for any other reason.

The Contractor shall, during such suspension, properly protect and secure the Works to the extent necessary and carry out the instructions given in that behalf by the Engineer-In-charge.

- ii) If the suspension is ordered for reasons (b), (c), (d) or (e) in sub- Para (i) above:
 - a. The Contractor may be granted on merits an extension of time equal to the period of every such suspension plus 25% or 1 month, whichever is less, of period for mobilization and demobilization,
 - b. Further, the Contractor shall be compensated for any variation in price of material, labour, etc. as per provisions of clause 14.1 & 14.2.
- iii) If the Engineer-in-Charge orders for suspension of the Works or part of the Works for more than three months, when the suspension of the Works is ordered for reason as mentioned in sub-para (i) (b), (c), (d) or (e) hereinabove, the Contractor may serve a written notice on Engineer-in-Charge. The said notice issued by the Contractor shall be for requiring permission to proceed with the Works or part thereof in regard to which progress has been suspended. Within 15 [fifteen] days of receipt of such notification from Contractor the Engineer-in-Charge shall either grant the said permission OR shall explain in detail the reasons because of which work cannot be resumed for such suspended portions.
- iv) If the Engineer-in-Charge does not respond within the said time of 15 [fifteen] days, the Contractor, if he intends to treat the suspension:
 - a) Where it affects only a part of the Works as an omission of such part by Employer; or
 - b) Where it affects whole of the Works, as an abandonment of the Works by Employer shall within 10 days of expiry of said period of 15 days give notice in writing of his intention to the Engineer-in-Charge.

10.1.2 In the event of the Contractor treating the suspension as an abandonment of the Contract by Employer, the Contractor shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the

Works in full but which he could not derive in consequence of the abandonment. The Contractor shall, however, be entitled to such compensation, as the Engineer-in- Charge may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the Contractor provided the Contractor submits his claim supported by details to the Engineer-in- Charge within 30 days of the expiry of the period of 3 months. Provided, further, that the Contractor shall not be entitled to claim any compensation from Employer for the loss suffered by him on account of delay by Employer in the supply of materials as per the provisions of clause 9.1, where such delay is covered by difficulties relating to the supply of ewagons, force majeure including non-allotment of such materials by controlling authorities, acts of enemies of the state/country or any reasonable cause beyond the control of the Employer.

10.2 Incentive for early completion

—————*(for Contract Price more than Rs. 3 Crore only)*

~~In case, the Contractor completes the Works ahead of Stipulated Date of Completion, a bonus @ 1% (one per cent) of the Contract Price per month computed on per day basis, shall be payable to the Contractor, subject to a maximum limit of 5% (five per cent) of the Contract Price. The amount of bonus, if payable, shall be paid along with final bill after completion of work. Provided further that the provision for bonus shall not be applicable if there has been any modification or rescheduling of the Stipulated Date of Completion of the Contract, on any grounds.~~

10.3 Compensation for delays

In the event the Contractor fails to maintain the required progress in terms of clause 10.4 or to complete the Works and clear the Site on or before the Stipulated Date of Completion, he shall, without prejudice, to any other right or remedy available under the law to the Employer, on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or as the Engineer-in-Charge (whose communication in writing shall be final and binding) may communicate on the Contract Price for every completed day/month (as applicable) that the progress remains below that specified in clause 10.4 or that the Works remains incomplete. Provided that the same provision shall also apply to items or group of items for which a separate period of completion from that provided under clause 10.4 has been specified.

Compensation for delay of Works shall be @ 1.5% of Contract Price, for each month of delay to be computed on per day basis.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Contract Price or the Contract Price of the item or group of items of Works for which a separate period of completion is given.

- 10.3.2 The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other Contract with the Employer. In case, the Contractor fails to achieve a particular milestone mentioned in Special Conditions of Contract, or the rescheduled milestone(s) in terms of clause 10.4, the amount shown against that milestone shall be withheld, to be adjusted against the compensation to be levied for the final grant of extension of time. Withholding of this amount on failure to achieve milestones shall be automatic and without any notice to the Contractor. Provided that if the Contractor catches up with the progress of Works on the subsequent milestone(s), the withheld amount shall be released. Provided further that where the Contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. No interest, whatsoever, shall be payable on such withheld amount.

10.4 Time extensions for delay

The time allowed for execution of the Works as specified in the Special Conditions of Contract or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the Works shall commence from the 10th calendar day or such time period as mentioned in Work Order. Where the Contractor commits default in commencing the execution of the Works, the Employer shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely. Within 10 days of date of award of work, the Contractor shall submit a work program schedule as required under clause 3.9 for each milestone and get it approved by the Engineer-in-Charge. The Schedule shall be prepared in direct relation to the time stated in the Contract for completion of items of the Works. It shall indicate the forecast of the dates of commencement and completion of various sections of the Works and may be amended as necessary by Contract between the Engineer-in-Charge and the Contractor within the time prescribed in the Contract. To ensure good progress during the execution of the Works, the Contractor shall in all cases in which the time allowed for any Works, exceeds one month, except for special jobs for any work where a separate program has been agreed upon, complete the Works as per milestone given below:

1/8th Works in 1/4th time

3/8th Works in 1/2 time

3/4th Works in 3/4th time

Full Works in full time

10.4.2 Force majeure as defined under clause 10.5, or

- i. Delay on the part of other contractors or suppliers engaged by Engineer-in-Charge executing some other work not forming part of the Contract, or
- ii. Non-availability of stores, if provided by Employer or
- iii. Non-availability or break down of tools and plants, if being supplied or
- iv. supplied by the Employer, or
- v. Non-availability of Site as per clause 2.4
- vi. Any other cause, but not including predictable events such as rainy season, clearance of site, etc. which in the opinion of the Engineer-in-Charge is beyond the Contractors control.

Then upon the happening of any such event causing delay, the Contractor shall within 7 (seven) days give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use his best endeavors to prevent or make good the delay and shall undertake all delay mitigation measures to the satisfaction of the Engineer-in-Charge before proceeding with the Works. If neither Parties issues notice regarding the event within 7 (seven) days of occurrence of such event, the said event shall be deemed not to have occurred and the Contract will continue to have effect as such. It shall be the responsibility of the Contractor to record any hindrance and reasons thereof in the PMS within 7 (seven) days of occurrence of such event. Neither Parties shall by reason of such event be entitled to terminate the Contract or have claim for damages against the other in respect of such non-performance or delay in performance except as may be provided under provisions of clause 11.1.

- 10.4.3 Request for rescheduling of Milestones as specified in Special Conditions of Contract and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay. The Contractor may also, wherever feasible, indicate in such a request the period for which extension is desired. In any such case the Engineer-in-Charge may give a fair and reasonable extension of time and reschedule the milestones for completion of work. However, while according any such extension, the Contractor shall have to prove that the activity is lying on the critical path of the work program schedule as submitted under clause 3.9. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. The failure of the Contractor to apply in writing for the extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and such extension of time shall be binding on the Contractor.

10.5 Force Majeure

As used in this Contract, the expression "Force Majeure" or "Force Majeure Event" shall mean occurrence in India of any or all of Non-Political Event, Indirect Political Event and Political Event, as defined in clauses 10.5.1, 10.5.2, and 10.5.3 respectively, if it affects the performance by the Parties claiming the benefit of Force Majeure (the "Affected Party") of its obligations under this Contract and which act or event (i) is beyond the reasonable control of the Affected Party, and (ii) the Affected Party could not have prevented or overcome by exercise of due diligence and following Good Industry Practice, and (iii) has material adverse effect on the Affected Party.

10.5.1 Non-Political Event

A Non-Political Event shall mean one or more of the following acts or events:

- i. Act of God, epidemic, extremely adverse weather conditions, lightning, earthquake, landslide, cyclone, flood, volcanic eruption, chemical or radioactive radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site);
- ii. Strikes or boycotts (other than those involving the Contractor, Subcontractors or their respective employees/representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Site for a continuous period of 24 (twenty four) hours and an aggregate period exceeding 7 (seven) days in an Accounting Year, and not being an Indirect Political Event set forth in clause 10.5.2;
- iii. Any failure or delay of a Sub-contractor/Contractor but only to the extent caused by another Non-Political Event and which does not result in any offsetting compensation being payable to the Employer by or on behalf of such Contractor;
- iv. Any judgment or order of any court of competent jurisdiction or statutory authority made against the Contractor in any proceedings for reasons other than (i) failure of the Contractor to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or (iii) enforcement of this Contract, or exercise of any of its rights under this Contract by the Employer;
- v. The discovery of geological conditions, toxic contamination or archaeological remains on the Site that could not reasonably have been expected to be discovered through a site inspection; or
- vi. Any event or circumstances of a nature analogous to any of the foregoing.

10.5.2 Indirect Political Event

An Indirect Political Event shall mean one or more of the following acts or events:

- i. an act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage;
- ii. industry-wide or State-wide strikes or industrial action for a continuous period of 24 (twenty four) hours and exceeding an aggregate period of 7 (seven) days in an Accounting Year;

- iii. any civil commotion, boycott or political agitation which prevents construction of the Works by the Contractor for an aggregate period exceeding 7 (seven) days in an Accounting Year;
- iv. Any failure or delay of a Contractor to the extent caused by any Indirect Political Event and which does not result in any offsetting compensation being payable to the Employer by or on behalf of such Contractor;
- v. Any Indirect Political Event that causes a Non-Political Event; or
- vi.
- vii. Any event or circumstances of a nature analogous to any of the foregoing.

10.5.3 Political Event

A Political Event shall mean one or more of the following acts or events by or on account of any Government Instrumentality:

- a. Change in Law, only if consequences thereof cannot be dealt with under and in accordance with the provisions of clause 14.3;
- b. Compulsory acquisition in national interest or expropriation of any project assets or rights of the Contractor or of the Sub-Contractors;
- c. Unlawful or unauthorized or without jurisdiction revocation of, or refusal to renew or grant without valid cause, any clearance, license, permit, authorization, no objection certificate, consent, approval or exemption required by the Contractor or any of the Sub-contractors to perform their respective obligations under this Contract; provided that such delay, modification, denial, refusal or revocation did not result from the Contractor's or any sub-contractor's inability or failure to comply with any condition relating to grant, maintenance or renewal of such clearance, license, authorization, no objection certificate, exemption, consent, approval or permit.
- d. Any failure or delay of a Contractor but only to the extent caused by another Political Event and which does not result in any offsetting compensation being payable to the Employer by or on behalf of such Contractor; or
- e. Any event or circumstance of a nature analogous to any of the foregoing.

10.5.4 Effect of Force Majeure

Neither Party shall be considered to be in default or in breach of his obligations under the Contract to the extent that performance of such obligations is prevented by any circumstances of Force Majeure which arises after the date of the letter of Acceptance or the date when the Contract becomes effective, whichever is the earlier.

10.5.5 Notice of Occurrence

If either Parties considers that any circumstances of Force Majeure have occurred which may affect performance of his obligations he shall promptly notify the other Parties and the Engineer-in -Charge.

10.5.6 Performance to Continue

Upon the occurrence of any circumstance of Force Majeure the Contractor shall endeavor to continue to perform his obligations under the Contract so far as reasonable practicable. The Contractor shall notify the Engineer-in-Charge of the steps he proposes to take including any reasonable alternative means for performance which is not prevented by Force Majeure. The Contractor shall not take any such steps unless directed so to do by the Engineer-in- charge. Provided that if the Contractor incurs additional costs in complying with the Engineer-in-Charge's directions under this clause, the amount thereof shall be certified by the Engineer-in charge and added to the Contract Price.

11.0 TERMINATION OF CONTRACT

11.1 When can Contract be terminated

11.1.1 Subject to other provisions contained in this clause the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the Contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this Contract or otherwise, and whether the Completion Date has or has not elapsed, by notice in writing absolutely determine the Contract in any of the following cases, if the Contractor:

- a. Persistently neglects to carry out his obligations under the Contract and/or commits default in complying with any of the terms and conditions of the Contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in- Charge; or
- b. Having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the Works is being performed in an inefficient or otherwise improper un-workman like" manner shall omit to comply with the requirement of such notice for a period of seven days thereafter, or
- c. Has without reasonable cause, suspended the progress of the Works or has failed to proceed with the Works with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the Works by Completion Date and continues to do so after a notice in writing of seven days from the Engineer-in- Charge' or
- d. Fails to complete the Works within the Completion Date or items of Works with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the

Engineer-in-Charge, or

- e) Being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order; or
- f) Shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for Government; or
- g) Shall obtain a Contract with Government as a result of wrong tendering 'or other non-bonafide methods of competitive tendering; or
- h) Shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or
- i) Assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the Works, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire Works or any portion thereof without the prior written approval of the Employer
- j) doesn't start the Works within 1/8th of the stipulated time; or
- k) Is found to have a conflict of interest. Conflict of interest is defined in the general eligibility criteria shared with the Contractor during the bidding stage.

11.1.2 When the Contractor has made himself liable for action under any of the cases aforesaid, the engineer-in-Charge on behalf of Employer shall have powers:-

- i. To determine or rescind the Contract as aforesaid (of which termination or rescission notice in writing to the Contractor under the hand of Engineer-In- Charge shall be conclusive evidence). Upon such determination or rescission, the Earnest Money Deposit, Security Deposit already recovered and performance guarantee under the Contract shall be liable to be forfeited and shall be absolutely at the disposal of the Employer
- ii. "After giving notice to the Contractor to measure up the Works of the Contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and

to give it to another Contractor to complete the Works at risk and cost of the defaulting Contractor. The Contractor, whose Contract is determined or rescinded as above, shall not be allowed to participate in the tendering process for the balance Works besides initiating any penal action as per the provisions of Contract.

In the event of above course(s) being adopted by the Engineer-in-Charge, the Contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any material or entered into any engagements or made any advance on account or with a view to the execution of the Works or the performance of the Contract. And in case action is taken under any of the provision aforesaid the Contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this Contract unless and until the Engineer-in- Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

11.2 Contractor liable to pay compensation even if action not taken under clause 11.1.

In any case in which any of the powers conferred upon the Engineer-in-Charge by clause 1.1 thereof, shall have become exercisable and the same are not exercised, the non – exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the Contractor and the liability of the Contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause, he may, if he so desires after giving a notice in writing to the Contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the Contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the Works, or the Site thereof belonging to the Contractor, or procured by the Contractor and intended to be used for the execution of the workflow any part thereof, paying or allowing for the same in account at the Contract rates or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the Contractor.

11.3 'Cancellation of Contract in full or part

11.3.1 The Employer may, without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to Employer, by a notice in writing to cancel the Contract as a whole or only such item of Works in default from the Contractor due to occurrence of

any of the events mentioned in clause 11.1 above

The Engineer-in-Charge shall on such cancellation by the Employer have powers to:

- i. Take possession of the Site and any materials, constructional plant, implements stores, etc., thereon; and/or
- ii. Carry out the incomplete work by any means at the risk and cost of the Contractor,

On cancellation of the Contract in full or in part, the Engineer-in-Charge shall determine what amount, if any, is recoverable from the Contractor for completion of the Works or part of the Works or in case the Works or part of the Works is not to be completed, the loss of damage suffered by Employer. In determining the amount, credit shall be given to the Contractor for the value of the Works executed by him up to the time of cancellation, the value of Contractor's materials taken over and incorporated in the Works and use of plant and machinery belonging to the Contractor.

11.3.2. Any excess expenditure incurred or to be incurred by Employer in completing the Works or part of the Works or the excess loss or damages suffered or may be suffered by Employer as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Employer in law be recovered from any money due to the Contractor on any account, and if such moneys are not sufficient the Contractor shall be called upon in writing and shall be liable to pay the same within 30 days. If the Contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the Contractors' unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the Contractor under the Contract and if thereafter there be any balance outstanding from the Contractor, it shall be recovered in accordance with the provisions of the Contract.

11.3.3 Any sums in excess of the amounts due to Employer and unsold materials, constructional plant, etc., shall be returned to the Contractor, provided always that if cost or anticipated cost of completion by Employer of the Works or part of the Works is less than the amount which the Contractor would have been paid had he completed the Works or part of the Works, such benefit shall not accrue to the Contractor.

11.4 Termination of Contract on death of Contractor/ Partner

If the Contractor is an individual or a sole proprietary concern, and the individual or the

sole proprietor dies, or if the Contractor is a partnership concern and one of the partners dies, in that case unless the Employer is satisfied that the legal representative of the individual Contractor or of the sole proprietor, as the case may be, or in the case of a partnership firm, all surviving partners, are capable of carrying out and completing the Contract, the Employer shall be entitled to terminate the Contract as to its incomplete part. In that event, the Employer shall not be liable to pay any compensation to the legal heirs of the deceased Contractor and / or to the surviving partners of the Contractor's firm, on account of such cancellation of Contract. DJB's decision, as to whether the legal representatives of the deceased Contractor or surviving partners of the Contractor firm can or cannot carry out and complete the Contract, shall be final and binding on the parties. Any liability incurred by the deceased Contractor, or by the deceased partner of the contracting firm, before his death, shall be recovered from the legal representatives of the deceased Contractor or from the surviving partners of the said contracting firm as the case may be.

11.5 Termination due to Force Majeure Event

11.5.1 If a Force Majeure Event, as specified under clause 10.5, subsists for a period of 60 days or more within a continuous period of 120 days, either Parties may in its discretion terminate this Contract by issuing a termination notice to the other Parties without being liable in any manner whatsoever, save as provided in provisions of clause 11.1. Upon issue of such termination notice, this Contract shall, notwithstanding anything to the contrary contained herein, stand terminated forthwith; Provided that before issuing such termination notice, the Parties intending to issue the termination notice shall inform the other Parties of such intention and grant 15 (fifteen) days time to make a representation, and may after the expiry of such 15 (fifteen) days period, whether or not it is in receipt of such representation, in its sole discretion issue the termination notice.

11.5.2 In the event of the Contract being terminated under clause 11.5.1 on account of Force Majeure Event, the Engineer-in-Charge shall issue a payment certificate which shall include:

- i. An amount equal to the value of the construction work less payments outstanding against the Contractor up to less other recoveries due in terms of deducted at source in accordance with already made, less advance payments the date of issue of termination notice, the Contract, less taxes due to be applicable Law
- ii. The cost of plants and materials ordered for the Works which have been delivered to the Contractor. Provided that such Plants and Materials shall become property of Employer when paid for by the Employer and the Contractor shall place the same at the Employer's disposal
- iii. And the Contractor's cost of protecting and securing the Works.

12.0 MEASUREMENT & PAYMENTS

12.1 Measurement of work done

- 12.1.1** The Engineer-in-Charge shall, except as otherwise provided, ascertain and determine, by measurement, the value of Works done in accordance with the Contract. Measurement of all items having financial value shall be entered in measurement book and/or level field book so that a complete record is obtained of all Works performed under the Contract. All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the Contractor or his responsible agent from time to time during the progress of the Works and such measurements shall be signed and dated by the Engineer-in-Charge and the Contractor or their representatives as token of their acceptance. If the Contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.
- 12.1.2** If for any reason the Contractor or his responsible agent is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and the Employer shall not entertain any claim from Contractor for any loss or damages on this account. If the Contractor or his responsible agent does not remain present at the time of such measurements after the Contractor or his responsible agent has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to have been accepted by the Contractor.
- 12.1.3** The Contractor shall, without extra charge, provide all assistance with every instrument, labour and other things necessary for measurements and recording levels.
- 12.1.4** Except where any general or detailed description of the Works expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the technical specifications notwithstanding any provision in the relevant standard method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.
- 12.1.5** If any part of Works shall be covered up or placed beyond the reach of measurements without notice been given to the Engineer-in-Charge or without his consent being obtained in writing, the Works shall be uncovered at Contractor's expense, or in default thereof no payment or allowance shall be made for such Works or the materials with which the same was executed.
- 12.1.6** Engineer-in-Charge or his authorized representative may cause either themselves or another officer of the Employer to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.
- 12.1.7** It is also a term of this Contract that recording of measurements of any item of Works in the measurement book and/or its payment in the interim, on-account or final bill shall not be

considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any other measurements or defects noticed till completion of the defects liability period.

12.2 Payments of running bills

12.2.1 The payment of the monthly running bill for the Works shall be released in 90 days from the date of recording of pay order. No excuse for delay in completion of work/prolongation of the Contract shall however be entertained on account of the reason of delay in payment. The bidder therefore, must take into consideration of its financial capability to carry out and to continue the work without any hindrances.

12.2.2 In the event of the failure of Employer to release payment as per clause 12.2.1, the Employer shall be liable to pay interest @ 10% per annum computed for period beyond 90 days. Provided always, that no interest shall be payable on any amount disallowed or disputed by the Engineer-in-Charge or the Employer, even if such amount is later on determined to be payable to the Contractor, as a result of any process resorted to for the settlement of the dispute as per Contract.

12.2.3 It shall be the contractual obligations on the part of the Contractor to submit with each running bill photocopies of the:

- (i) Challans for the main items purchased for the Works like CI/DI/MS/RCC/PSC Pipes, E&M equipment, manhole frame and covers, footrests, sluice valves, fire hydrants and other fixtures and accessories used in the Works;
- (ii) Guarantee/ warranty certificates, wherever applicable;
- (iii) Manufacturer's test reports of cement, steel, MS plates, sluice valves etc.
- (iv) GIS maps of pipelines and other related key components (to be submitted only with the final bill)

Note: Contractor shall solely be responsible for the authenticity of the challans and other documents submitted along with each running and final bills.

12.2.4 The original challans shall be produced before the Engineer-in-Charge for verification, as and when desired by him.

12.3 Currency of payment

Unless specifically provided for in the Contract, all payments shall be in Indian rupees only. Unless specified otherwise, payment, if any, in foreign currencies, shall be made only to the extent and in the manner laid down in the Contract. In case of items of Works requiring payments in foreign exchange, the Contractor shall furnish the details in the Bill of Quantities. For such items, payments will be arranged in Foreign Currency.

12.4 Payment of Contractor's bills to banks

Payments due to the Contractor shall be made to his bank instead of direct to him. The Contractor shall submit to the Engineer-in-Charge: (1) an authorization in form of a legally valid document such as a power of attorney conferring authority on the bank to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by Employer or his signature on the bill or other claim preferred against Employer before settlement by the Engineer-in-Charge of the account or claim by payment to the bank, registered financial, cooperative or thrift societies or recognized financial institutions. While the receipt given by such bank; registered financial, cooperative or thrift societies or recognized financial institutions shall constitute a full and sufficient discharge for the payment, the Contractor shall whenever possible present his bills duly receipted and discharged through his bank, registered financial, cooperative or thrift societies or recognized financial institutions. Nothing herein contained shall operate to create any rights or equities vis-à-vis Employer in favor of the bank.

12.5 Payment of final bill

The final bill shall be submitted by the Contractor within three months of Completion Date or within one month of the date of issue of Completion Certificate furnished by the Engineer-in-Charge whichever is earlier. In case commissioning is delayed beyond a period of one year from the Physical Completion of the Works, the final bill shall be settled upon completion of the Defect Liability Period, as per clause 16.1(iii), or upon successful commissioning whichever is earlier. No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period specified herein under, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his representative, complete with account of materials issued by the Employer and dismantled materials.

12.6 Lump sum provisions in a composite tender

When the Contract Price is lump sum in respect of parts of the Works, the Contractor shall be entitled to payment in respect of the items of Works involved or the part of the Works in question at the same rates as are payable under this Contract for such items, or if the part of the Works in question is not in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Engineer-In-Charge shall be final and conclusive against the Contractor with regard to any sum or sums payable to him under the provisions of the clause

12.7 Withholding and lien in respect of sums due from Contractor

- (i) Whenever any claim or claims for payment of a sum of money arises out of or under the Contract against the Contractor, the Engineer-in-Charge or the Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under the Contract. In the event of the payment from such sums being insufficient to cover the claimed amount, the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount from the security deposit, if any. Further, for the purpose of this clause, the Employer shall be entitled to withhold and also have a lien to retain to the extent of the claimed amount

or amounts, from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under any other Contract with the Engineer-in-Charge or the Employer pending finalization of adjudication of any such claim

- (ii) The sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Employer will be kept withheld or retained as such by the Engineer-in-Charge or Employer till the claim arising out of or under the Contract is determined by the arbitrator (if the Contract is governed by the arbitration clause) or by the competent 'court, as the case may be and that the Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his Individual capacity or otherwise

- (iii) The Employer shall have the right to cause an audit and technical examination of the Works and the final bills of the Contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill. If as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the Contractor under the Contract or any work claimed to have been done by him under the Contract is found not to have been executed, the Contractor shall be liable to refund the amount of over- payment and it shall be lawful for Employer to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the Contractor was paid less than what was due to him under the Contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Employer to the Contractor, without any interest thereon. Provided that the Employer shall not be entitled to recover any sum overpaid, nor the Contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Engineer-in-Charge on the one hand and the Contractor on the other under any term of the Contract permitting payment for Works after assessment by the Engineer-in-Charge.

12.8 Rates

12.8.1 The tendered rate (%age rate tender/item rate tender) for all items of the Works shall be considered inclusive of all leads and lifts, unless otherwise specified by BOQ, skilled or unskilled labour & material required for working at all heights and depths, making any shape of the masonry as per the drawings, royalty fee, applicable GST Nothing extra shall be paid unless otherwise given in the description of item and no extra claim shall be entertained due to any reasons account.

12.8.2 Nothing extra shall be paid unless otherwise specified on account of cutting of grass, bushes, leveling of undulation in the ground, existence of drain and temporary structures etc. requiring removal and difficulty due to space constraints

12.8.3 Nothing extra shall be paid for working in foul conditions unless otherwise specified. The tendered

rates shall not be subject to any revisions for want of any information.

12.8.4 Nothing extra shall be paid for Works required as per Good Engineering Practice, BIS, manufacturer recommendation even if it is not specifically provided in the Contract.

12.9 Levy / Taxes payable by Contractor

All taxes, duties, levies, cess, etc. in respect of this Contract shall be payable by the Contractor and the Employer shall not entertain any claim whatsoever in this respect

- (i) The Contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar, etc. from local authorities
- (ii) Where pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the Employer and does not any time become payable by the Contractor to the State Government or Local authorities in respect of any material used by the Contractor in the Works, then in such a case, it shall be lawful to the Employer and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the Contractor.

12.10 Taxes

12.10.1 Unless otherwise specified in Special Conditions of Contract, the Contract Price shall be inclusive of all the taxes, duties, cess, etc.

For item rate and percentage rate tenders, the quantity of various materials and supplies/equipment's shall be worked out as per the Bill of Quantities (BOQ) prepared for working out the estimates of the project. For DBO projects, the quantity of various materials and supplies/equipment to be consumed shall be worked out based on the design & drawing submitted by the Contractor after award of work and that is subsequently released by Employer for execution of work. Such release of design and drawing by employer shall be periodic and commensurate with the work progress. The BOQ and the price break-up shall then be prepared by the Contractor for DBO projects and got approved by Employer. In case of any extra/ substitute item, necessary adjustment would be accordingly made to BOQ. Although Employer shall recognize the delivery challan for material and supplies/ equipments involved in execution of the work (supplied in course of inter-state trade) at the time of their receipt at the Site, the responsibility of their watch and ward shall continue to vest with Contractor, until the project is handed over to Employer. Also, the payment to Contractor shall be governed by the payment schedule as laid down in the tender document. To facilitate the Contractor account for the transactions, Employer shall with each payment issue a certificate specifying the quantity of material and supplies/ equipment consumed in achievement of a project milestone against which payment is released, based on the quantities worked out as mentioned above. Note: Recognition of delivery challan against the material and supplies at the time of their receipt at the project site should not be understood in any case, that the contractor can procure any quantity of material which is way beyond the quantity to be consumed (estimated using the common business prudence) and the shelf life of the material expires before it being used. Accordingly, material and supplies should be procured based on the progressive use of material and supplies/ equipments and the same shall correspond with the approved/ released design & drawing, and BOQ. Further, Employer shall not be responsible in any manner to recognise the

billing for any excess consumption of material and supplies/ equipments by the Contractor beyond the quantities worked out as per para 2 above, subject to permissible variation allowed under clause 13.3 of GCC. [Clause to be inserted in Pure Supply and E&M Contracts]

- i. **GST UNDER Works Contract:** The Contractor shall produce before the Employer a copy of his registration certificate under the GST along with other documents as required/mandated by the law.

13.0 ALTERATIONS, ADDITIONS & OMISSIONS

13.1 Deviations / Variation Extent and Pricing

13.1.1 The Engineer-in-Charge shall have power

- (i) To make alteration, omissions, additions, or substitutions in the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and
- (ii) To omit a part of the Works in case of non-availability of a portion of the Site or for any other reasons.

The Contractor shall be bound to carry out the Works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations omissions, additions or substitutions shall form part of the Contract as if originally provided therein. Any altered, additional or substituted Works which the Contractor may be directed to do in the manner specified above as part of the Works, shall be carried out by the Contractor on the same conditions in all respects including price on which he agreed to do the Works except as hereafter provided Instructions for any variations shall be communicated to the Contractor by the Engineer-in Charge in writing with a copy to the Employer

13.1.2 The time for completion of the Works shall, in the event of any deviations resulting in additional cost over the Contract Price be extended, if requested by the Contractor, as follows:

- (i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original Contract Price and
- (ii) Upto 25% of the time calculated in (i) above or as may be considered reasonable by the Engineer-in-Charge.

13.1.3 If any extra item of material and/ or labour is involved during execution of work, the Contractor shall have to execute the same as per the direction of Engineer-in-Charge and the payment shall be made as per applicable DSR plus/ minus Contractor's enhancement as applicable. In case, the extra item of material and/ or labour is not available in the schedule of rate, the Contractor will be paid analyzed rates based on either DSR with Contractor's enhancement (+/-) or prevailing market rates plus 15% Contractor's profit but without Contractor's enhancement.

13.1.4 In case of reduction of scope due to action under clause 13.1.1, the reduction in payments shall be

calculated based on schedule of rates for the Contract.

13.2 Foreclosure of Contract due to abandonment or reductions in scope of work

13.2.1 If at any time after issuance of Work Order, the Employer decides to abandon or reduce the scope of the Works for any reason whatsoever and hence not require the whole or any part of the Works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the Contractor and the Contractor shall act accordingly in the matter. The Contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the Works in full but which he did not derive in consequence of the fore closure of the whole or part of the Works.

13.2.2 The Contractor shall be paid at Contract rates full amount for Works executed at Site and, in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the Works to the full extent in view of the foreclosure:

- (i) Any expenditure incurred on preliminary site work, e.g. temporary access roads, temporary labour huts, staff quarters and site office, storage accommodation and water storage tanks.
- (ii) Employer shall not take over Contractor's materials or any part thereof either brought to Site or of which the Contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work). However, the Engineer-in- Charge/ Employer may consider providing cost for such materials as deemed reasonable. The cost shall, however, take into account purchase price, salvage value, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the Contractor.
- (iii) If any materials supplied by Employer are rendered surplus, the same except normal wastage shall be returned by the Contractor to Employer at rates not exceeding those at which these were originally issued less allowance for any deterioration or damage which may have been caused whilst the materials were in the custody of the Contractor. In addition, cost of transporting such materials from Site to Employer's stores, if so required by Employer, shall be paid by the Employer.
- (iv) Reasonable compensation for repatriation of Contractors site staff and imported labour to the extent necessary. The Contractor shall, if required by the Engineer- in-Charge furnish to him books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition. The reasonable amount of items on (i)and (iv) above shall not be in excess of 2% of the cost of the Works remaining incomplete on the date of closure, i.e., total stipulated cost of the Works as per accepted tender less the cost of Works actually executed under the Contract. Provided always that against any payments due to the Contractor on this account or otherwise, the Engineer-in-Charge shall be entitled to recover or be credited with any outstanding balances due from the Contractor for advance paid in respect of any tool, plants 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.

13.3 Permissible variation in Cement & Steel

After completion of the Works, the theoretical quantity of cement/ steel to be used in Works shall be calculated on the basis of statement showing quantity of cement/ steel to be used in different items of Works as provided in Schedule of Rates. In case any item is executed for which the standard coefficient for the consumption of cement/ steel are not available in the above mentioned statement or cannot be derived, the same shall be calculated on the basis of analysis by the Engineer-in-Charge. Over this theoretical quantity of cement/ steel, a variation up to 2% (two percent) and for steel, a variation up to 3% (three percent) plus/minus for Works shall be allowed. In the event of it being discovered that the quantity of cement/ steel used is less than the quantity required (allowing variation on the minus side as stipulated above), the portion of Works executed will be rejected and the same shall be demolished and reconstructed by the Contractor at his own cost. The decision of concerned Engineer-in- Charge, in this regard, shall be final and binding on the Contractor. Provided that, cement/ steel used in excess over permissible variation shall not be payable.

14.0 CHANGES IN CONTRACT PRICE

14.1 Payments due to variation in prices of material, POL and labour after receipt of tender for Item Rate/ Percentage Contract (Would apply for EPC/ DB/ DBO contracts also when exact quantity of material consumed is measured)

If during the operative period of the Contract, there shall be any variation in the prices of material (not being the material supplied by Employer as under clause 9.1 and/ or services rendered at fixed prices as under clause 9.5 and the material for which the price variation is being calculated for actual quantities used as under clause 14.1.3) and/ or in the wages of labour required for execution of Works and/ or in POL (fuel, oil and lubricant), the Contract Price shall be adjusted as per the provisions detailed below. For working out the percentages of the values of material, labour and POL components in the work, the total of these three components should be taken as 100. Standard labour, material & POL components indicated in the table below can be used for the Works related to water supply and wastewater projects.

14.1.1 Standard labour, material & POL components to be used for the Water and Wastewater Supply Projects:

Sr. No.	Description	(K) Percentage to be used for component		
		Labour (K1)	Material (K2)	Petrol, oil & Lubricant (K3)
1	River Head Works including approach bridges approach bunds, coffer dam etc.	40	55	5
2	Raw & Pure water pumping main, Leading Mains, Distribution System etc	25	70	5
3	WTP M.B.R (Elevated R.C.C) E.S.R. R.C.C G.S.R	40	55	5

4	Wastewater pumping main, Leading Mains, Distribution System etc	25	70	5
5	WWTP	40	55	5

14.1.2 Guiding formulae to be used to calculate Price Variation for different components of work

I. Formula for Labour Component

$$V = 0.85 \times W \times K/100 \times \frac{L-L_0}{L_0}$$

where;

V_L = Amount (in INR) of price variation for the labour component

W = Cost of Work done during the quarter under consideration **minus** the cost of the Bitumen, HYSD, Mild Steel reinforcement, Structural Steel, Mild Steel plates Cement, Liquid Chlorine, Alum/ PAC and CI/DI/HDPE/MDPE pipes as covered under Clause 14.1.3

K_1 = Percentage of labour component as indicated above

L_0 = Consumer Price Index for Industrial workers, published in the Reserve Bank of India Bulletin, as applicable to Delhi area for the month in which the tender was opened.

L_1 = Average of monthly Consumer Price Index for Industrial workers, published in the Reserve Bank of India Bulletin, as applicable to Delhi area for the quarter under consideration.

The standard percentages are indicative in nature and has to be verified and confirmed by the concerned Chief Engineer before issuing the tender document to the bidders

II. Formula for Material Component

$$V = 0.85 \times W \times K_2/100 \times \frac{M_1-M_0}{M_0}$$

where;

V_M = Amount (in INR) of price variation for the material component

W = Cost of Work done during the quarter under consideration **minus** the cost of the Bitumen, HYSD, Mild Steel reinforcement, Structural Steel, Mild Steel plates Cement, Liquid Chlorine, Alum/ PAC and CI/DI/HDPE/MDPE pipes as covered under Clause 14.1.3

K_2 = Percentage of material component as indicated above

M_0 = Relevant All India Wholesale Price Index as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce as valid on the base date.

M_1 = Average of relevant All India Wholesale Price Index as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce for the quarter under consideration.

III. Formula for POL Component

$$V = 0.85 \times W \times K_3 / 100 \times \frac{P_1 - P_0}{P_0}$$

Where;

- V_P = Amount (in INR) of price variation for the POL component
 W = Cost of Work done during the quarter under consideration **minus** the cost of the Bitumen, HYSD, Mild Steel reinforcement, Structural Steel, Mild Steel plates, Cement, Liquid Chlorine, Alum/ PAC and I/DI/HDPE/MDPE pipes as covered under Clause 14.1.3
 K_3 = Percentage of POL component as indicated above
 F_0 = All India Wholesale Price Index for High Speed Diesel as published by economic Advisor to Govt. of India, Ministry of Industry and Commerce as valid on the base date.
 F_1 = Average of All India Wholesale Price Index for High Speed Diesel as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce for the quarter under consideration.

14.1.3 Guiding formulae to calculate Price Variation in rupees for different material components as per actual quantities used

I. Formulae for Bitumen Component

$$V = T_1 \times H_0 \times \frac{H_{11} - H_{10}}{H_{10}}$$

where;

- V_H = Amount of price variation in Rupees to be allowed for HYSD / Mild Steel / Structural Steel / Steel Plates Component.
 H_0 = Basic rate of HYSD / Mild Steel / Structural Steel / Steel Plates Component in rupees per MT as considered in Tendered cost of work.
 H_{10} = Basic Wholesale Price Index for Stainless Steel & Alloys shall be the average Wholesale Price Index ascertained as above on the base date.
 H_{11} = Average Wholesale Price Index for Stainless Steel & Alloys ascertained as above during the period under consideration.
 T_1 = Tonnage of steel used in the permanent works for the period under consideration.

II. Formula for HYSD, Mild Steel reinforcement, Structural Steel, Steel Plates Component .

$$V_H = T_1 \times H_0 \times \frac{(H_{11} - H_{10})}{H_{10}}$$

where;

- V_H = Amount of price variation in Rupees to be allowed for HYSD / Mild Steel / Structural Steel / Steel Plates Component.
 H_0 = Basic rate of HYSD / Mild Steel / Structural Steel / Steel Plates Component in rupees per MT as considered in Tendered cost of work.
 H_{10} = Basic Wholesale Price Index for Stainless Steel & Alloys shall be the average Wholesale Price Index ascertained as above on the base date.
 H_{11} = Average Wholesale Price Index for Stainless Steel & Alloys ascertained as above during the period under consideration.
 T_1 = Tonnage of steel used in the permanent Works for the period under consideration

III. Formula for Cement component

$$V_c = T_2 * C_0 * \frac{(C_{11} - C_{10})}{C_{10}}$$

where;

V_c = Amount of price variation in Rupees to be allowed for Cement component

C_0 = Basic rate of Cement Component in rupees per MT as considered in Tendered cost of work.

C_{10} = Basic Wholesale Price Index for cement shall be the average Wholesale Price Index ascertained as above on the base date.

C_{11} = Average Wholesale Price Index for cement ascertained as above during the period under consideration

T_2 = Tonnage of cement used in the permanent works for the period under consideration.

IV. Formula for C.I./ D.I pipe component

$$V_{cd} = T_3 * D_0 * \frac{(D_{11} - D_{10})}{D_{10}}$$

where;

V_{cd} = Amount of price variation in Rupees to be allowed for C.I./ D.I. pipe component

D_{10} = Basic rate of C.I./ D.I pipe Component in rupees per MT as considered in Tendered cost of work.

D_{10} = Basic Wholesale Price Index for Pig-Iron shall be the average Wholesale Price Index ascertained as above on the base date.

D_{11} = Average Wholesale Price Index for Pig-Iron ascertained as above during the period under consideration

T_3 = Tonnage of C.I./ D.I pipe used in the permanent works for the period under consideration.

V. Formula for Liquid Chlorine Component

$$V = T_4 * LC * \frac{LC_{11} - LC_{10}}{LC_{10}}$$

where;

V_{lc} = Amount of price variation in Rupees to be allowed for Liquid Chlorine component

LC_0 = Basic rate of Liquid Chlorine Component in rupees per MT as considered in Tendered cost of work.

LC_{10} = Basic Wholesale Price Index for Liquid Chlorine shall be the average Wholesale Price Index ascertained as above on the base date.

LC_{11} = Average Wholesale Price Index for Liquid Chlorine ascertained as above during the period under consideration

T_4 = Tonnage of Liquid Chlorine used in the permanent works for the period under consideration

VI. Formula for Alum/ PAC Component

$$V = T5 \times A \times \frac{A1-A1}{A1}$$

where;

- VA = Amount of price variation in Rupees to be allowed for Alum/ PAC component
A0 = Basic rate of Alum/ PAC Component in rupees per MT as considered in Tendered cost of work.
A10 = Basic Wholesale Price Index for Basic Inorganic Chemicals shall be the average Wholesale Price Index ascertained as above on the base date.
A11= Average Wholesale Price Index for Basic Inorganic Chemicals ascertained as above during the period under consideration
T5 = Tonnage of Alum/ PAC used in the permanent works for the period under consideration

Note:- The basic rate considered in tender cost, applicable for price variation

1. Cement: Rs. 5700.00/ MT
2. HYSD & Mild Steel: Rs. 37750 / MT
3. M.S. Plate: Rs. 39000/ MT

Escalation of HDPE Pipe: The price variation of HDPE pipes shall be worked out based on the linear formula as

P= (A--B) x C, where P = Amount of price variation to be adjusted,

A= Latest rate of raw material (P54A001A) of GAIL on 15th of the month in which supplies have been made.

B = Base price of raw material as given in the tender document is Rs. 102100/MT.

C = Tonnage of HDPE pipes used in the permanent works for the period under consideration.

14.1.4The following conditions shall prevail

- i) Price Variation shall not be applicable for Contracts with original Stipulated Period of Completion less than 12 months.
- ii) For Contracts with original Stipulated Period of Completion greater than 12 months, Price Variation shall be applicable on the entire duration of Contract. No price variation will be made for Contracts where the extension in time is because of default of Contractor. The decision of Engineer-in-Charge shall be final and binding on the Contractor.
- iii) The base date for the purpose of this clause shall be 7 days before the last date of submission of final bid.
- iv) In case of extension in the date of completion of works, the compensation under price variation shall be limited to indices prevailing at the time of Stipulated Period of Completion or as prevailing for the period under consideration, whichever is less.
- v) Clause 14.1 is operative both ways, i.e. if the price variation as calculated above is on the plus side, payments on account of the price variations shall be allowed to the contractor and if it is on the negative side, the Employer shall be entitled to recover the same from the Contractor and the amount shall be deductible from any amounts due and payable under the Contract. vi) To the extent that full compensation for any rise or fall in costs to the Contractor is not entirely covered by the provision of this or other clauses in the Contract, the unit rate and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other actual rise or fall in costs.

14.1.5 For E&M (electrical & mechanical) tenders, price variation shall be made as per the latest publication and guidelines issued by IPMA/ IEEMA

14.2 Payments due to variation in prices of material, POL and labour after receipt of tender for EPC/ DB/ DBO contracts.

(Would apply for EPC/ DB/ DBO contracts when exact quantity of material consumed is not measured)

If during the operative period of the Contract, there shall be any variation in the prices of material (not being the material supplied by Employer as under clause 9.1 and/ or services rendered at fixed prices as under clause 9.5) and/ or in the wages of labour required for execution of Works and/ or in POL (fuel, oil and lubricant), the Contract Price shall be adjusted as per the provisions detailed below.

For working out the percentages of the values of material, labour and POL components in the work, the total of these three components should be taken as 100. Standard labour, material & POL components indicated in the table below can be used for the Works related to water supply and wastewater projects.

14.2.1 Standard labour, material & POL components to be used for the Water and Wastewater Supply Projects⁶

Sr. No.	Description	(K) Percentage to be used for component		
		Labour (K1)	Material (K2)	Petrol, oil & Lubricant (K3)
1.	River Head Works including approach bridges approach bunds, coffer dam etc.	40	55	5
2.	Raw & Pure water pumping main, Leading Mains, Distribution System etc	25	70	5
3.	WTP M.B.R (Elevated R.C.C) E.S.R. R.C.C G.S.R	40	55	5
4.	Wastewater pumping main, Leading Mains, Distribution System etc	25	70	5
5.	WWTP	40	55	5

14.2.2 Guiding formulae to be used to calculate Price Variation for different components of work

$$V = 0.85 \times W \times K / 100 \times \frac{L_1 - L_2}{L_1}$$

where;

V_L = Amount (in INR) of price variation for the labour component

W = Cost of Work done during the quarter under consideration

K_1 = Percentage of labour component as indicated above

L_0 = Consumer Price Index for Industrial workers, published in the Reserve Bank of India Bulletin, as applicable to Delhi area for the month in which the tender was opened.

The standard percentages are indicative in nature and has to be verified and confirmed by the concerned Chief Engineer before issuing the tender document to the bidders

L_1 = Average of monthly Consumer Price Index for Industrial workers, published in the Reserve Bank of India Bulletin, as applicable to Delhi area for the quarter under consideration.

II. Formula for Material Component

$$V = 0.85 \times W \times K / 100 \times \frac{M_1 - M_0}{M_0}$$

where;

V_M = Amount (in INR) of price variation for the material component

W = Cost of Work done during the quarter under consideration

K_2 = Percentage of material component as indicated above

M_0 = Relevant All India Wholesale Price Index as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce as valid on the base date.

M_1 = Average of relevant All India Wholesale Price Index as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce for the quarter under consideration.

III. Formula for POL Component

$$V = 0.85 \times W \times K / 100 \times \frac{P_1 - P_0}{P_0}$$

Where;

V_P = Amount (in INR) of price variation for the POL component

W = Cost of Work done during the quarter under consideration

K_3 = Percentage of POL component as indicated above

F_0 = All India Wholesale Price Index for High Speed Diesel as published by economic Advisor to Govt. of India, Ministry of Industry and Commerce as valid on the base date.

F_1 = Average of All India Wholesale Price Index for High Speed Diesel as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce for the quarter under consideration.

14.2.3 The following conditions shall prevail

- i) Price Variation shall not be applicable for Contracts with original Stipulated Period of Completion

- less than 12 months.
- ii) For Contracts with original Stipulated Period of Completion greater than 12 months, Price Variation shall be applicable on the entire duration of Contract. No price variation will be made for Contracts where the extension in time is because of default of Contractor. The decision of Engineer-in-Charge shall be final and binding on the Contractor.
 - iii) In case of extension in the date of completion of works, the compensation under price variation shall be limited to indices prevailing at the time of Stipulated Period of Completion or as prevailing for the period under consideration, whichever is less.
 - iv) The base date for the purpose of this clause shall be 7 days before the last date of submission of final bid.
 - v) The Clause 14.2 is operative both ways, i.e. if the price variation as calculated above is on the plus side, payments on account of the price variations shall be allowed to the contractor and if it is on the negative side, the Employer shall be entitled to recover the same from the Contractor and the amount shall be deductible from any amounts due and payable under the Contract
 - vi) To the extent that full compensation for any rise or fall in costs to the Contractor is not entirely covered by the provision of this or other clauses in the Contract, the unit rate and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other actual rise or fall in costs.

14.2.4 For E&M (electrical & mechanical) tenders, price variation shall be made as per the latest publication and guidelines issued by IPMA/ IEEMA.

14.3 Change in law

14.3.1 "Change in Law" shall mean the occurrence of any of the following:

- i) The enactment of any new Indian law and its entering into effect;
- ii) The repeal, modification or re-enactment of any existing Indian law;
- iii) A change in the interpretation or application of any Indian law by a judgement of a court of record which has become final, conclusive and binding, as compared to such interpretation or application by a court of record prior to the last date of submission of final bid; or
- iv) Any change in the rates of any of the Taxes or royalties on Materials that have a direct financial effect on the Contract;

14.3.2 If as a result of Change in Law, the Contractor suffers any additional costs for the execution of this Contract, save and except as expressly provided for in this clause 14.3 or in accordance with the provisions of this Contract, the Contractor shall, within 30 (thirty) days from the date he becomes reasonably aware of such addition in cost, notify the Employer with a copy to the Engineer-in-Charge of such additional cost due to Change in Law

14.3.3 If as a result of Change in Law, the Contractor benefits from any reduction in costs for the execution of this Contract, save and except as expressly provided for in this clause 14.3 or in accordance with the provisions of this Contract, the Contractor shall, within 30 (thirty) days from the date he becomes reasonably aware of such reduction in cost, notify the Employer with a copy to the Engineer-in-Charge of such reduction in cost due to Change in Law.

14.3.4 The Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by Engineer-in-Charge and further shall furnish such other information/document as the Engineer-in-Charge may require from time to time.

14.3.5 Where as a result of Change in Law, the Contractor suffers any additional costs for the execution of this Contract or benefits from any reduction in costs under clause 14.3.2 or 14.3.3 as the case may be, such additional or reduced cost shall be determined by the Engineer-in-Charge, after due consultation with the Employer and the Contractor, and shall be added to or deducted from the Contract. Engineer-in-Charge shall notify the Contractor accordingly, with a copy to the Employer

14.3.6 Any reduction in the tax cost due to the introduction of the Goods and Services Tax (GST) and complete fungibility of input credits across Federal and State taxes shall be passed on by the Contractor to the Employer. The quantum of benefit will be determined by a mutually agreed mechanism and the actual duty paying documents.

14.3.7 Change in Law shall be applicable on original Stipulated Period of Completion and where such period increases for reasons other than those attributable to the Contractor or as defined under clause 10.4.2 only

15.0 CERTIFICATES

15.1 Completion certificate

15.1.1 Within 10 (ten) days of the Physical Completion of the work, the Contractor shall give notice of such completion to the Engineer-in-Charge. Within 30 (thirty) days of the receipt of such notice, the Engineer-in-Charge shall inspect the Works and if there is no defect in the work, shall furnish the Contractor with a Completion Certificate, otherwise provisional certificate of Physical Completion indicating defects:

- i) To be rectified by the Contractor and/or
- ii) For which payment will be made at reduced rates, shall be issued

Provided that no Completion Certificate shall be issued, nor shall the Works be considered to be complete until the Contractor shall have removed from the Site all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the Site and cleaned off the dirt from site, shall have obtained clearance from labour officer as under clause 15.1.2 and not until the Works shall have been measured by the Engineer-in-Charge. If the Contractor shall fail to comply with the requirements of this clause on or before the date fixed for the Physical Completion of work, the Engineer-in-Charge may at the expense of the Contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the Contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

15.1.2 Immediately after Physical Completion of Works, the Contractor shall apply to the labour officer concerned for issue of clearance certificate against the Contract under intimation to the Engineer-in-Charge. On receipt of information from the Contractor, the Engineer-in-Charge shall also write to the labour officer concerned for issue of the clearance certificate. It shall be stipulated in the letter that the clearance certificate be given within a period of 30 days failing which it shall be presumed that there is no labour dispute against the Contract.

15.1.3 The Completion Certificate of Works referred to in clause 15.1.1 above shall not absolve the Contractor from his liability to make good defects, imperfections and shrinkages or faults, which may appear during the Defects Liability Period as per clause 16.1, arising in the opinion of the Engineer-in-Charge from materials or workmanship being not in accordance with drawings or specifications or instructions of the Engineer-in-Charge. These shall be amended and made good by the Contractor at his own cost. In case of default on the part of the Contractor, to so make good the defects or deficiencies, the Engineer-in-Charge may employ labour, plant and machinery and materials or appoint another agency or Contractor, to amend and make good such defects, imperfections, shrinkages and faults, and all expenses consequent thereto and incidental thereto, shall be borne by the Contractor and shall be recoverable from any moneys due to the Contractor under the Contract including the Performance Guarantee and/ or Security deposit amount or from any moneys payable to the Contractor by the Employer, under any other Contract.

15.2 Completion plans to be submitted by the Contractor

The Contractor shall submit completion plan, as built drawings and O&M (operation and maintenance) manuals, GIS details as required and as applicable within 30 (thirty) days of the completion of the work. In case, the Works involves creation of software, the source code and other user manual shall also be submitted by the Contractor.

In case, the Contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a minimum sum equivalent to 2.5% of the Contract Price or as may be fixed by the Engineer-in-Charge concerned and in this respect the decision of the Engineer-in- Charge shall be final and binding on the Contractor.

15.3 Mobilization advance

16.0 DEFECT LIABILITY AND MAINTENANCE

16.1 Defect Liability Period

(i) The Contractor shall be responsible for all the Defects in the Works or any part thereof, as the case

may be, during the execution of the Works and during the defects liability period.

- (ii) The Defect Liability Period for the Works shall be [1] year or as defined as per nature of work from the Completion Date .
- (iii) In case commissioning happens within 1 (one) year from the Physical Completion of the Works, the Defects Liability Period shall start from the commissioning date. However, if the commissioning is delayed beyond 1 (one) year, the Defects Liability Period shall be [2] years from the date of Physical Completion of the Works.
- (iv) The Security Deposit, submitted as per clause 6.2, shall be refunded if no defects are noticed during the Defect Liability Period or the Defects pointed out are removed.
- (iv) Contractor shall be responsible for security (watch and ward) of the project assets/ facilities for the period between Completion Date and commissioning

17.0 LABOUR LAWS

17.1 Recovery of Compensation Paid to Workman

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Employee's Compensation Act, 1923, Employer is obliged to pay compensation to a workman employed by the Contractor, in execution of the Works, Employer will recover from the Contractor the amount of the compensation so paid; and, without prejudice to the rights of the Employer under sub-section (2) of Section 12, of the said Act, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the Security Deposit or from any sum due to the Contractor whether under this Contract or otherwise. Employer shall not be bound to contest any claim made against it under sub-section (1) Section 12, of the said Act, except on the written request of the Contractor and upon his giving to Employer full security for all costs for which Employer might become liable In consequence of contesting such claim.

17.2 Ensuring Payment and Amenities to Workers If Contractor Fails

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract labour {Regulation and Abolition) Central Rules, 1971, Employer is obliged to pay any amounts of wages to a workman employed by the Contractor in execution of the Works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under clause 17.11 or under the Employer Contractor's Labour Regulations, or under the Rules framed by Employer from time to time for the protection of health and sanitary arrangements for workers employed by Employer's contractors. Employer will recover from the Contractor the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Employer under subsection (2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour Regulation and Abolition) Act, 1970, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the Security Deposit or from any sum due by Employer to the Contractor whether under this Contract or otherwise Employer shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the Contractor and upon his giving to the Employer full security for all costs for which Employer might become liable in contesting such claim.

17.3 Labour Laws to Be Complied By the Contractor

The Contractor shall obtain a valid license under the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The Contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986 and the Child Labour (Prohibition and Regulation) Rules, 1988

Any failure to fulfill this requirement shall attract the penal provisions of this Contract arising out of the resultant non-execution of the work.

17.4 Minimum age limit for labour

No labour below the age of 18 years shall be employed on the work.

17.5 Payment of Wages

- (i) The Contractor shall pay to labour employed by him either directly or through sub-Contractors, wages not less than fair wages as defined in the Employer's contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- (ii) The Contractor shall, notwithstanding the provisions of any Contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-Contractors in connection with the said work, as if the labour had been immediately employed by him.
- (iii) In respect of all labour directly or indirectly employed in the Works for performance of the Contractor's part of this Contract, the Contractor shall comply with or cause to be complied with the labour regulations made by central government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- (iv) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the Contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the Contract or non-observance of the Regulations.
- (v) Under the provisions of Minimum Wages (Central) Rules 1950, the Contractor is bound to allow to the labours directly or indirectly employed in the Works one-day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the Contractor by the

Engineer-in-Charge concerned. In the case of Union Territory of Delhi, however, as the all inclusive minimum daily wages fixed under notification of the Delhi Administration No.F.1 2(162) MWO/DAB/43884-91, dated 31-12-1979 as amended from time to time are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.

- (vi) The Contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefit Act, 1961, Factories Act, 1948 and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
- (vii) The Contractor shall indemnify and keep indemnified Employer against payments to be made under and for the observance of the laws aforesaid and the Employer Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-Contractors.
- (viii) The laws aforesaid shall be deemed to be a part of this Contract and any breach thereof shall be deemed to be a breach of this Contract.
- (ix) Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the Contractor to the workmen directly without the intervention of jamadar and that jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.
- (xi) The Contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the jamadar from the wage of workmen

17.6 Safety provisions for labour

In respect of all labour directly or indirectly employed in the Works for the performance of the Contractor's part of this Contract, the Contractor shall at his own expense arrange for the safety provisions as per Employer's safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the Contractor fails to make arrangement and provide necessary facilities as aforesaid he shall be liable to pay liquidated damages of Rs.200/-for each event of default subject to a maximum of 5% of Contract Value, and in addition the Engineer-in- Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the Contractor.

17.7 Submission of monthly record of labour

The Contractor shall submit by the 4th and 19th of every month, to the Engineering- Charge a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively

- (i) The number of labourers employed by him on the work,
- (ii) Their working hours,
- (iii) The wages paid to them,
- (iv) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them, and
- (v) The number of female workers who have been allowed maternity benefit according to clause 17.9 and the amount paid to them.

Failing which the Contractor shall be liable to pay to Employer a sum not exceeding Rs.1000/- for each default or materially incorrect statement. The decision of divisional officer shall be final in deducting from any bill due to the Contract the amount levied as fine and be binding on the Contractor

17.8 Compliance with health and sanitary arrangements for workers

In respect of all labour directly, or indirectly employed in the Works for the performance or the Contractor's part of this Contract, the Contractor shall comply with or cause to be complied with all the rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Employer and its Contractors.

Further, the Contractor is required to follow the Employer's Safety Code and guidelines published by National Human Rights Commission (N.H.R.C) attached with the tender.

17.9 Leave and pay for female workers

Leave and pay during leave shall be regulated as follows:

1. Leave:

- (i) In the case of delivery - maternity leave not exceeding 8 weeks. 4 weeks up to and including the day of delivery and 4 weeks following that day,
- (ii) In the case of miscarriage - up to 3 weeks from the date of miscarriage.

2. Pay

- i) In the case of delivery - leave pay during maternity leave will be at the rate of the women's average daily earnings, calculated on total wages earned on the days when full time work was done during a period of three months immediately preceding the date on which she gives notice that she expects to be confined.
 - ii) In the case of miscarriage - leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.
3. Conditions for the grant of Maternity Leave: No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave.
4. The Contractor shall maintain a register of maternity (benefit) and the same shall be kept at the place of work.

17.10 Noncompliance with labour rules & regulations

17.10.1 In the event of the Contractor committing a default or breach of any of the provisions of the

Employer, Contractor's labour Regulations and model rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Employer a sum as liquidated damages equal to Rs 200/- for each event of default per day subject to a maximum of 5% of the Contract Value. In the event of the Contractor defaulting continuously in this respect the liquidated damages may be enhanced to Rs.2000/- per event for each day of default subject to a maximum of 5 % of the Contract Value. The decision of the Engineer-in-Charge shall be final and binding on the Contractor.

17.10.2 Should it appear to the Engineer-in-Charge that the Contractor is not properly observing and complying with the provisions of labour regulations and model Rules and the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, for the protection of health and sanitary arrangements for work-people employed by the Contractor (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the Contractor requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the Contractor shall fail within the period specified in the notice to comply with and/observe the said Rules and to provide the amenities to the work-people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities hereinbefore mentioned at the cost of the Contractor. The Contractor shall erect, make and maintain at its own expense and to approved standards all necessary huts and sanitary arrangements required for its worker on the Site in compliance with the execution of the Works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the Contractor requiring that the said huts and sanitary arrangement be remodeled and/or reconstructed according to approved standards, and if the Contractor shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the Contractor.

17.11 Labour camps and huts

The Contractor shall at his/her own cost provide his/their labour with a sufficient number of huts (hereinafter referred to as the camp) of the following specifications on a suitable plot of land to be approved by the Engineer-in-Charge. In case adequate space is available, the Contractor shall provide labour camps at site, the Employer shall not charge anything for the same. If the space available is not sufficient to house the labour camp, the Contractor shall arrange the land beyond the Site as per his requirement. The Employer may extend help in getting permissions from the land owning agencies but it shall be the responsibility of the Contractor for arranging the same at his own cost. No excuse whatsoever shall be entertained.

i)

a) The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and the floor area to be provided will be at the rate of 2.7 sq.m. (30 sq.ft.) for each member of the worker's family staying with the labourer.

b) The Contractor shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.

c) The Contractor shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each hundred of the total strength, separate latrines and urinals being provided for women..

d) . The Contractor shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.

ii)

a. All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in- Charge. In case of sun-dried bricks, the walls should be plastered with mud gobi on both sides. The floor may be kutcha but plastered with mud gobi and shall at least 15cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the Contractor shall ensure that throughout the period of their occupation the roofs remain water-tight.

b. The Contractor shall provide each hut with proper ventilation.

c. All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.

d. There shall be kept an open space of at least 7.2m (8 yards) between the rows of huts which may be reduced to 6m (20 ft.) according to the available of Site with the approval of the Engineer-in-Charge. Back to back construction will be allowed,

iii) Water Supply: The Contractor shall provide adequate supply of water for the use of labourers.

iv) The site selected for the camp shall be high ground, removed from Jungle.

v) Disposal of Excreta: The Contractor shall make necessary arrangements for the disposal of excreta from the latrines by trenching or Incineration, which shall according to the requirements lay down by the Local Health Authorities. If trenching or incineration is not allowed the Contractor shall make arrangements for removal of the excreta through the Municipal Committee/Employer and inform it about the number of labourers employed so that arrangements may be made by such committee/authority for the removal of the excreta. All charges on this account shall be borne by the Contractor and paid direct by him to the Municipality/Employer. The Contractor shall provide one sweeper for every eight seats in case of dry system.

vi) Drainage - The Contractor shall provide efficient arrangements for draining away a sullage water so as to keep the camp neat and tidy.

vii) The Contractor shall make necessary arrangements for keeping the camp a sufficiently lighted to avoid accidents to the workers.

viii) Sanitation - The Contractor (s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Local Public Health and Medical Authorities.

- ix) On completion of the Works the Contractor shall remove hutments failing which the Employer will dismantle and clear the site at his risk and cost.

17.12 Employment of Controlled Area Labour Not Permissible

17.12.1 The Contractor shall not employ controlled area labour falling under any category whatsoever on or in connection with the Works or recruit labour from area within a radius of 32 km (20 miles) of the controlled area. Subject as above the Contractor shall employ imported labour only i.e., deposit imported labour or labour imported by Contractors from area, from which import is permitted.

17.12.2 Where ceiling price for imported labour has been fixed by State or Regional Labour Committees not more than that ceiling price shall be paid to the labour by the Contractor.

17.12.3 The Contractor shall immediately remove any labourer who may be pointed out by the Engineer-in-Charge as being a coal mining or controlled area labourer. Failure to do so shall render the Contractor liable to pay to Employer a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the Engineer-in-Charge about the number of controlled area labourer and the number of days for which they worked shall be final and binding upon all parties to this Contract.

17.12.4 It is declared and agreed between the parties that the aforesaid stipulation in this clause is one in which the 'public are interested within the meaning of the explanation in Section 74 of Indian Contract Act, 1872. Explanation: Controlled Area means the following areas:

District of Dhanbad, Hazaribagh, Jamtara – sub Division Under Santhal Pargana Commissionery, Districts of Bankura, Birbhum, Burdwan District or Bilaspur. Any other area, which may be declared a Controlled Area by or with the approval of the Central Government.

17.13 Apprentices Act Provisions To Be Complied With

The Contractor shall comply with the provisions of the Apprentices Act, 1961, Apprenticeship Rules, 1992 and other rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the Contract and the Engineer-in-Charge may, in his discretion, cancel the Contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

17.14 Labour disputes

17.14.1 The Contractor shall at all the times during the progress of Works take all requisite precautions and use his best endeavors for preventing any riotous or unlawful behavior by or among the workers and other employees at work and shall preserve peace and protection of the inhabitants and the security of property in the neighborhood of the Works.

17.14.2 In case of any disputes with labour (skilled or unskilled) and charges are claimed against the Contractor, the Engineer-in-Charge shall have the full authority to deduct the same from the bill of the Contractor, so as to enable him to settle the disputes.

18.0 MISCELLANEOUS CLAUSES

18.1 Dispute Resolution

18.1.1 Amicable Resolution

i) Save where expressly stated to the contrary in this Contract, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Contract (the “Dispute”) shall in the first instance be attempted to be resolved amicably with the Employer.

ii) In case of failure to amicably resolve the dispute under clause (i) above either Parties may require such Dispute be referred to a 3-member body consisting of Chief Secretary of the Government of NCT of Delhi or his representative, as Chairman, the Chief Executive Officer of the DJB, and a nominee representative of the Contractor for amicable settlement. Upon such reference, both the Parties shall be required by such three member body to meet at the earliest mutual convenience and in any event within 15 (fifteen) days of such reference to discuss and attempt to amicably resolve the Dispute. If the Dispute is not amicably settled within thirty days of such meeting between the Parties, either Party shall have liberty to take further action in accordance with the law.

18.2 If Relation Working in Employer then Contractor Not Allowed to Tender

The Contractor shall not be permitted to tender for Works in the Employer zone (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the junior engineer and Chief engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted Officer with Employer. Any breach of this condition by the Contractor would render him liable to be removed from the approved list of Contractors of this Employer.

NOTE: By the term “near relatives” is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters.

18.3 No Gazetted Engineer to work as Contractor/ Consultant within one year of retirement/resignation

No engineer of gazette rank or other gazette officer employed in engineering or administrative duties in an engineering department of the Government of Delhi shall work as a Contractor/ Consultant or employee of a Contractor/ Consultant for a period of one year after his retirement from government service without the previous permission of Employer in writing. This Contract is liable to be cancelled if either the Contractor/ Consultant or any of his employees is found at any time to be such a person who had not obtained the permission of Government of Delhi as aforesaid, before submission of the tender or engagement in the Contractor’s/ Consultant’s service, as-the case may be.

18.4 Corruption or fraudulent practices

18.4.1 Employer defines, for the purposes of this provision, the terms set forth below as follows:

- i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution, and
- ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive them of the benefits of free and open competition;

18.4.2 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract.

18.5 Use of Explosives

Subject to the Applicable Laws and the Applicable Permits, the Contractor shall comply with the following

- (i) the use of explosives by the Contractor shall be subject to the prior approval/authorization of the concerned Government Instrumentality;
- (ii) the Contractor shall at all times take all such safety measures as may be required for the importation, handling, transportation, storage and use of explosives and shall, at all times when engaged in blasting operations, post sufficient warning flagmen to the full satisfaction of the Engineer-in-Charge.
- (iii) the Contractor shall, by a notice in writing, 15 days prior to the blasting operation, notify all parties including Government Instrumentalities, private parties concerned or affected or likely to be concerned or affected by blasting operations for their prior approval; and
- (iv) The Contractor shall pay all license fees and charges which may be required for storage of explosives or in respect of any other matter related thereto.

All operations in which or for which explosives are employed shall be at the sole risk and responsibility of the Contractor and the Contractor shall indemnify the Employer in respect thereof.

Confidentiality and Publicity

The Contractor shall treat the details of the Contract as private and confidential save in so far as may be necessary for the purpose thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the previous consent in writing of the Employer. Publication of approved articles, photographs or similar materials shall carry acknowledgement to the Employer and state the name of the Engineer-in-Charge. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred for decision to the Employer, whose decision shall be final. Any advertising mentioning the subject of this Contract must be approved by the Employer prior to publication.

Individuals not personally Liable

No member or officer of the Employer nor the representative of Engineer-in-Charge nor any one of the respective staffs or the employees of the Employer shall be in any way personally liable for the acts or obligations of the Employer under the Contract or answerable for any default or omission of the Employer in the observance or performance of any of the acts, matters or things which are herein contained.

Limitation of Liability

Neither Parties shall be liable to the other Parties for loss of profit, loss of any Contract or for any indirect or consequential loss or damage which may be suffered by the other Parties in connection with the Contract, other than under clause 3.7 (Indemnity by Contractor) and Section 11 (Termination of Contract)

18.8.2 The total Liability of the Contractor to the Employer, under or in connection with the Contract, other than under clause 3.7 (Indemnity by Contractor), Clause 3.13 (Responsibility of damage to property and injury to persons) clause 3.15 (Electricity for construction of Works) and 3.16 (Supply of water) shall not exceed the Contract Price

18.8.3 This clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Parties. Further, this clause shall not limit any criminal action that may follow from any action.

18.9 Waiver and Consents Clause

Waiver by either Party of any default by other Party in the observance and performance of any provision of or obligations of or under this Contract

- (i) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Contract;
- (ii) shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and
- (iii) shall not affect the validity or enforceability of this Contract in any manner.

18.9.2 Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Contract or any obligation there under nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

18.9.3 Any such waiver or consent may be given subject to any conditions thought fit by the Party giving it and shall be effective only in the instance and for the purpose for which it is given

SECTION – VI: SPECIAL CONDITIONS OF CONTRACT (SCC)

NOTE: Special condition of contract shall prevail without any prejudice to the General Conditions of contract.

- 1 Scope of work may involve diversion of traffic, cartage, transportation, rehandling of pipes /

specials for drain & inter connections work using mechanical equipment's like Hydra etc. for placing pipe/ specials in position during work in addition to use of JCB for time bound excavation. Some of the work shall be executed during night when flow of traffic will be less. The payment shall be restricted to the applicable provision in the Bill of Quantity.

2. Clause 10.2 : (Deleted)
3. Clause 15.3 Deleted
4. Clause 16.1 The Defect Liability Period for the Works shall be [1] year from the Completion Date.
5. Clause 14.1 Deleted
6. The contractor shall pursue road cutting permission from the concerned road owning agency. RR Charges will be paid by DJB. However, contractor may also deposit the same in shape of DD or Pay order to expedite the work which will be reimbursed by DJB in next running bill submitted by the Contractor. In such case, estimate for RR charges shall be duly scrutinized and accepted by the department, prior to release of payment to the concerned agency. For the purpose of reimbursement of RR charges by DJB, contractor shall submit necessary proof/vouchers in original regarding the deposit of the amount. The Contractor through his own resources shall pursue and obtain permissions from traffic police for plying of trucks and cranes etc. on roads where movement of vehicles is not permitted during peak hours. No excuse for delay in completion of work at any stage due to above shall be entertained. However the DJB will assist the contractor in getting the permission by issuing recommendatory letters. If in the alignment it is necessary to remove Jhuggies / unauthorized construction, the Contractor shall pursue with the concerned authority for their removal so as to facilitate laying of the pipeline. Necessary payment made by the Contractor to the concerned department for this purpose shall be reimbursed by the Employer.
7. The contractor shall have to execute the work in some of the narrow lanes where restricted working space is available. Nothing extra shall be paid whatsoever on this account and if any damage to the existing structures occurs during execution of work, the responsibility of the same will be of the contractor.
8. In case the defects noticed are beyond the acceptable Limit, the contractor shall have to demolish / dismantle and rectify the same as per instructions of Engineer-in-charge.
9. Challans/ bills for the DWC pipes purchased for the Works to be submit with each running bill.
10. The contractor may have to re-survey the whole area to design the hydraulics. The scheme shall be re-designed and submitted to DJB for approval if felt necessary by the Engineer-in-charge. Nothing extra shall be paid to the contractor on this account.
11. **Safety and security of pipes/material supplied**
Safety and security of any pipe/material supplied by the contractor shall be responsibility of the contractor. In case of any theft/damages/mis-happening, DJB shall recover the cost from contractor's bill

12. Tendering procedure

The Bidder shall be deemed to have read and examined the Tender Documents before quoting the rates of all items in the Bill of Quantities and the schedule of Rates. The drawing(s), Specifications, Clauses and Conditions, etc. are to be considered as explanatory of each other and no advantage

shall be taken of any omission in Tender Documents.

SECTION - VII

PROFORMA OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE

Ref:

Bank Guarantee No..... ..

Date.....

To:

The Office of the Executive Engineer (C) DR - XIV
Delhi Jal Board,
JalSadan, Lajpat Nagar
Delhi - 110024
Tele No. - 011 - 29819163

Dear Sir,

1. In consideration of Delhi Jal Board (Govt. of NCT of Delhi), having its Registered Office at Varunalya Phase-II, Karol Bagh, New Delhi - 110005 (hereinafter referred to as the "Company" which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors) and having entered into a contract dated (hereinafter called the "Contract" which expression shall include all the amendments thereto) with M/s..... having its Head/Registered Office at..... (hereinafter referred to as the "Contractor" (which expression unless repugnant to the context or meaning thereof, shall include all its successors, administrators, executors and assigns) and the contract having been unequivocally accepted by the Contractor resulting in a contract bearingdated..... Valued at for (scope of work) and the Company having agreed that the Contractor shall furnish to the Company a performance guarantee for the faithful performance of the entire contract to the extent of **5% (five percent)** of the contract price, i.e. Rs..... (in word) we..... (bank)..... having its Registered Office at..... (hereinafter referred to as the "Bank" which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay on demand to the Company any money or all moneys to the extent of Rs..... (Rupees) in aggregate at any time without any demur, reservation, recourse, contest or protest and/or without any reference to the Contractor. Any such demand made, by the Company on the Bank shall be conclusive and binding notwithstanding any difference between the Company and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that Guarantee herein contained shall be irrevocable and shall continue to be enforceable till it is discharged by the Company in writing.
2. The Company shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee from time to time, to extend the time for performance of the contract by the Contractor, or vary the terms of the Contract. The Company shall have the fullest liberty without affecting this Guarantee to postpone, from time to time, the exercise of power vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner and either to enforce, or to forbear from enforce, any covenants contained or implied in the contract between the Company and the Contractor or any other course or remedy or security available to the Company. The Bank shall not be released of its obligations under these presents by any exercise by the Company of its liberty with reference to matters aforesaid or any of them or by reason of any other act or forbearance of other act or forbearance of other acts of Company or any other

indulgence shown by the Company or by any other matter or thing whatsoever, which under law would, but for this provision, have the effect of relieving the Bank.

3. The Bank also agrees that the Company at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Contractor and notwithstanding any security or other guarantee that Company may have in relation to the Contractor's liabilities.
4. The Bank further agrees that the guarantee herein contained shall remain in full force during the period that is taken for the performance of the contract and it shall continue to be enforceable till all the dues of the Company under or by virtue of this contract have been fully paid and claim satisfied or discharged or till the Company discharges the Guarantee in writing.
5. We further agree that as between us and Company for the purpose of this Guarantee any notice given to us by the Company and any amount claimed in such notice by the Company that the money is payable by the Contractor and any amount claimed in such notice by the company shall be conclusive and binding on us notwithstanding any difference between the Company and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We further agree that this Guarantee shall not be affected by any change in our Constitution or that of the Contractor or in the Constitution of the Company. We also undertake not to revoke this Guarantee during its currency or till the Company discharges the Guarantee in writing.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is limited to Rs.(Rupees.....) in aggregate and it shall remain in full force upto and including 60 (sixty) days after unless extended further, from time to time, for such period as may be instructed in writing by the Contractor on whose behalf this Guarantee has been given, in which case it shall remain in full force upto and including 60 (sixty) days after extended date. Any claim under this Guarantee must be received by us before the expiry of the 60 (sixty) days from or before the expiry of the 60 (sixty) days from the extended date. If no such claim has been received by us within the 60 (sixty) days after the said date/extended date, the Company's right under this guarantee will cease. However, if such a claim has been received by us within and upto 60 (sixty) days after the said date/extended date, all the Company's rights under this Guarantee shall be valid and shall not cease until we have satisfied that claim Dated this Day of200....

Yours faithfully,

Signature

Name and designation

Name of the branch

Attorney as per power of Attorney No.....Dated:.....

Note: This Guarantee/Undertaking is required to be stamped as an agreement according to the stamp duty prescribed either in New Delhi

Affidavit/ Indemnity (post Completion Date)

Name of the Work

W.O. no._ Dt._ against C.A
Division-

We M/s a company established as proprietorship/ partnership/ private limited do hereby solemnly affirm and declare that the contents given below from S. No. I to VI are correct and nothing has been concealed.

- I. That the above supply/ work order was awarded to us through (Tender/ without call of tender/ sealed quotation/ spot quotation/ repeat order/ any other mode) on the basis of.....(registered contractor/ manufacturer/ sole distributor dealer/ authorized dealer/ petty contractor)
- II. That there is no abnormality in the rate quoted/ offered for award of this work.
- III. That the purchase of entire quantity of materials supplied/ utilized during execution of work has been done from the(Manufacturer/ authorized dealer/ open market/local fabricator) as a(Contractor/ manufacturer/ sole distributor or dealer/ authorized dealer/ petty contractor) which meets the department's specifications in all respect.
- IV. That the purchase vouchers submitted along with our bill are genuine.
- V. That we have paid all taxes, duties claimed to the appropriate authorities as per norms.
- VI. That we executed the work/ Supply order strictly as per specifications of work/ Supply order issued to us.

Any evidence which proves false declaration at any stage, our firm shall be liable for suitable action as per government laws and rules/ regulations.

- 1.0 Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ horizontal and 1 vertical.)
- 2.0 Scaffolding of staging more than 3.6 m (12ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3ft.) high above the floor, or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 3.0 Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12ft.) above ground level or floor level, they should be closely boarded; should have adequate width and should be suitably fastened as described in (2) above.
- 4.0 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3ft.)

- 5.0 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 ft.) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (1 11/2") for ladder up to and including 3 m. (10 ft.) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm. (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or his may, with the consent of the contractor, be paid to compensate any claim by any such person.
- 6.0 Excavation and Trenching - All trenches 1.2 m. (4ft.) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 ft.) in length or fraction thereof. Ladder shall extend from bottom of the trench to at least 90 cm. (3ft.) above the surface of the ground. The sides of the trenches which are 1.5 m. (5ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m. (5ft.) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.
- 7.0 Demolition - Before any demolition work is commenced and also during the progress of the work,
- i) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - ii) No electric cable or apparatus which is liable to be a source of danger or cable or apparatus used by the operator shall remain electrically charged.
 - iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe
- 8.0 All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned: - The following safety equipment shall invariably be provided
- i) Workers employed on mixing asphalt materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
 - ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.
 - iii) Those engaged in welding works shall be provided with welder's protective eye. Shields.
 - iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - v) When workers are employed in sewers and manholes, which are in active use, the contractors shall

ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public, in addition, the contractor shall ensure that the following safety measure are adhered to

- a) Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.
- b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
- c) Before entry presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
- d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.
- e) Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
- f) The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.
- g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.
- h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
- i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.
- j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
- k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.
- l) The workers engaged for cleaning the manholes/sewers should be properly trained before allowing working in the manhole

- m) The workers shall be provided with Gumboots or non-sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
 - n) Workmen descending a manhole shall try each ladder stop or rung careful before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.
 - o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
 - p) The extents to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final
6. The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken:-
- a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
 - c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.
- 9.0 Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following: principles must be observed for such use:
- i). White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use
 - ii) Measures shall be taken, wherever required in order to prevent danger arising from the application of paint in the form of spray.
 - iii) Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping.
 - iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
 - v) Overall shall be worn by working painters during the whole of working period.
 - vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.
 - vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of DJB

- viii) DJB may require, when necessary medical examination of workers.
 - ix) Instructions with regard to special hygienic precautions to be taken in the painting
- 10.0 When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person In danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.
- 11.0 Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions
- I. These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.
 - II. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.
 - III. Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
 - IV. In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all pears referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which It Is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - V. In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractors machines the contractors shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.

12.0 Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, Insulating mats, wearing apparel, such as. gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

13.0 All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

14.0 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.

15.0 To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.

16.0 Notwithstanding the above clauses from (1) to (15) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force In the Republic of India

Safety Guidelines as per DJB circular dated 12.06.09

Following guideline /instructions should be adhered to in true spirit:-

1. The door may be fixed at the entry of the stair case and the open portion of the stair case of sump well should be protected by grill up to the height of 7 feet and compartments of the sump well should be covered with jallis/grating or should be barricaded property. Sewage pumping station should be secured by providing and fixing barbed wire fencing over the boundary wall.
2. An inspection register should be placed at the sewage pump house in which all the inspecting officers may record their observations. No unauthorized entry should be allowed.
3. Caution board showing the restricted entry area and name of components and moving mechanical part should be displayed.
4. The entry to all DJB infrastructures should be restricted to the person /persons authorized by DJB or having I.D cards issued by the chief security officer.
5. Just after entering the premises do's and don'ts should be displayed at prominent places in all four languages.
6. Even authorized visitors should be provided proper uniform /visitor badges helmet and relevant safety gear and given instruction before showing such infrastructure.
7. No person below 18 years age should be allowed on the premises where chances of emission of toxic gases are extensive.

NHRC Guidelines

NHRC issued guidelines on safety code for operation/maintenance of sewerage system vide letter No.1069/30/2001-2002/F.C. dated 18.11.02. Same shall form part of agreement and has to be strictly

followed during execution of work. Direction given by Hon'ble Supreme Court in the matter of National Campaign for Dignity & Right of Sewerage & Allied workers.

1. The medical examination and medical treatment will be given free of charge to sewer workers and the treatment will continue for all such workers found to be suffering from an occupational disease, ailment or accident until the workman is cured or until death.
2. The services of the sewer workers are not to be terminated, either by the respondents or the contractors engaged by them during the period of illness and they shall be treated as if on duty and will be paid their wages.
3. The respondents shall pay on the death of any worker including any contract worker, an immediate ex-gratia solatium of One lakh with liberty to recover the same from contractors, if permissible in law.
4. The respondents shall pay/insure payment of all statutory dues such as Provident Fund, Gratuity and Bonus to all the sewer workers including contract workers, as applicable in law.
5. The respondents shall provide as soon as possible modern protective equipment's to all the sewer workers in consultation with the petitioner organization.
6. The respondents shall provide soap and oil to all the workmen according to the present quota but on monthly basis and not at the end of the year.
7. The respondents shall provide all workmen including contract workmen with an accident-card-cum-wage-slip as set out in clause 8 of the CPWD/PWD(DA)/Delhi JalBoard Contractors Labour Regulations (for short "Labour Regulations").
8. The respondents shall authenticate by signing the payment of wages register for contract workers in terms of clause 5 of the Labour Regulations.
9. The Delhi Jal Board is directed to ensure that the ex-gratia payment in case of deaths of sewer workers has been paid to the families of deceased workmen and in case such compensation is not paid, release the same within a period of eight weeks

**MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY
ARRANGEMENTS FOR WORKERS EMPLOYED BY CPWD / DELHI JAL BOARD OR
ITS CONTRATORS**

4.1 APPLICATION

These rules shall apply to all buildings and construction works in charge of C.P.W.D./Delhi Jal Board in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contract work is in progress.

4.2 FIRST-AID FACILITIES

- i) At every work place there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.
- ii) The first-aid box shall be distinctly marked with a red cross on white back ground and shall contain the following equipment,
 - a) For work places in which the number of contract labour employed does not exceed 50 - Each first-aid box shall contain the following equipments

:-

- 1. 6 small sterilised dressings.
 - 2. medium size sterilised dressings.
 - 3. Large size sterilised dressings.
 - 4. 3 large sterilised bum dressings.
 - 5. 1 (30 ml.) bottle containing a two per cent alcoholic solution iodine.
 - 6. 1 (30 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
 - 7. 1 snakebite lancet.
 - 8. 1 (30 gms.) bottle of potassium permanganate crystals.
 - 9. 1 pair scissors.
 - 10. 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
 - 11. 1 bottle containing 100 tablets (each of 5 gms.) of aspirin.
 - 12. Ointment for bums.
 - 13. A bottle of suitable surgical antiseptic solution.
- b) For Work places in which the number of contract labour exceeds 50 - Each first-aid box shall contain the following equipments
 - 1. 12 small sterilised dressings.
 - 2. 6 medium size sterilised dressings.
 - 3. 6 large size sterilised dressings.
 - 4. 6 large size sterilised bum dressings.
 - 5. 6 (15gms.) packets sterilised cotton wool.
 - 6. 1 (60 ml) bottle containing two percent alcoholic solution iodine.
 - 7. 1 (60 ml) bottle containing salvolatile having the dose and mode of administration indicated on the label.
 - 8. 1 roll of adhesive plaster.

9. 1 snake bite lancet.
10. 1(30 gms.) bottle of potassium permanganate crystals.
11. 1 pair scissors.
12. 1 copy of the first-aid leaflet Issued by the Director General Factory Advice Service and Labour Institutes / Government India.
13. A bottle containing 100 tablets (each of 5 gms.) of aspirin.
14. Ointment for burns.
15. A bottle of suitable surgical antiseptic solution

- iii) Adequate arrangements shall be made for immediate recoupment of the equipment, when necessary.
- iv) Nothing except the prescribed contents shall be kept in the First-aid box.
- v) The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.
- vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment, in the work places where the number of contract labour employed is 150 or more.
- vii) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works. First-aid posts shall be established and run by a trained. The compounder shall be on duty and shall be available at all hours when the workers are at work.
- viii) Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

4.3 DRINKING WATER

- i) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.
- ii) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
- iii) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and waterproof.
- iv) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month

4.4 WASHING FACILITIES

- i) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.
- ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.
- iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

4.5 LATRINES AND URINALS

1. Latrines shall be provided in every work place on the following scale namely:-
 - a) Where female are employed there shall be at least one latrine for every 25 females.
 - b) Where males are employed, there shall be at least one latrine for every 25 males.
 2. Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100, and one for every 50 thereafter.
 3. Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.
 4. Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials and shall be cement cashed inside and outside/at least once a year. Latrines shall not be of a standard lower than borehole system.
 - a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women Only" as the case may be.
 - b) The notice shall also bear the figure of a man or of a woman, as the case may be.
 5. There shall be at least one urinal for male workers upto 50 and one for female workers upto fifty employed at a time, provided that where the number of male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereafter.
- (vi)
- a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary Condition at all times.
 - b) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities
- vii) Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.
- viii) Disposal of excreta :- Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm. layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).

- ix.) The contractor shall at his own expense, carry out all instructions issued to him by the Engineer-in-Charge to effect disposal of night soil and other conservancy work in respect of the contractor's workmen or employees on the site. The contractor shall be responsible for payment of any charges which may be levied by Municipal or Cantonment Authority for execution of such on his behalf.

4.6 PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 metres (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m. (6sft) per head. Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

4.7 CRÈCHES

- i. At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under at the age of six years. One room shall be used as a play room for the children and the other as their bedroom. The rooms shall be constructed with specifications as per clause v19H (ii) a, b & c.
- ii. The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.
- iii. The contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the bed room.
- iv. The contractor shall provide one ayah to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.
- v. The use of the rooms earmarked as crèches shall be restricted to children, their attendants and mothers of the children.

4.8 CANTEENS

- I. In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more are ordinarily employed an adequate canteen shall be provided by the contractor for the use of such contract labour.
- II. The canteen shall be maintained by the contractor in an efficient manner.
- III. The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.

- IV. The canteen shall be sufficiently lighted at all times when any person has access to it.
- V. The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour washed at least once in each year. Provided that the inside walls of tile kitchen shall be Semi-washed every four months.
- VI. The premises of the canteen shall be maintained in a clean and solitary condition.
- VII. Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.
- VIII. Suitable arrangements shall be made for the collection and disposal of garbage.
- IX. The dining hall shall accommodate at a time 30 per cent of the contract labour working at a time.
- X. The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one square meter (10 sft) per diner to be accommodated as prescribed in sub- Rule 9.
- XI.
 - a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.
 - b) Washing places for women shall be separate and screened to secure privacy
- XII. Sufficient tables stools, chair or benches shall be available for the number of diners to be commensurate as prescribed in sub-Rule 9
 - (xiii)
 - a)
 - 1. There shall be provided and maintained sufficient utensils crockery, furniture and any other equipment necessary for the efficient running of the canteen.
 - 2. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.
 - b)
 - 1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.
 - 2. A service counter, if provided, shall have top of smooth and impervious material.
 - 3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipments.
- Xiv. The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.
- xv. The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No Profit, No Loss' and shall be conspicuously displayed in the canteen.

- xvi) In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely :-
- a) The rent of land and building.
 - b) The depreciation and maintenance charges for the building and equipments provided for the canteen.
 - c) The cost of purchase, repairs and maintenance of equipments including furniture, crockery, cutlery and utensils.
 - d) The water charges and other charges incurred for lighting and ventilation.
 - e) The interest and amounts spent on the provision and maintenance of equipments provided for the canteen.
- xvii) The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

4.9 ANTI-MALARIAL PRECAUTIONS

The contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the Ming up of any borrow pits which may have been dug by him.

The above rules shall be incorporated in the contracts and in notices inviting tenders and shall from an integral part of the contracts. Government may, from time to time, add to or amend these rules and issue directions- it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

C.P.W.D. CONTRACTOR'S LABOUR REGULATIONS

5.1 SHORT TITLE

These regulations may be called the C.P.W.D./PWD (DA) / Delhi Jal Boards Contractors Labour Regulations.

5.2 DEFINITIONS

Workman means any person employed by/C.P.W.D/PWD (DA) / Delhi Jal Boards or its contractor directly or indirectly through a subcontractor with or without the knowledge of the Central Public Works Department/PWD (DA) / Delhi Jal Boards to do any skilled, semiskilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment are expressed or implied but does not include any person:-

- a) Who is employed mainly in a managerial or administrative capacity: or
- b) Who, being employed in a supervisory capacity draws wages exceeding five hundred rupees per manson or exercises either by thenature of the duties attached to the office or by reason of power's vested in him, functions mainly of managerial nature : or
- c) Who is an out worker, that is to say, person to whom any article or materials are given out by or on behalf of the principal employers to bemade up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of die trade or business of the principal employers and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal employer. No person below the age of 14 years shall be employed to act as a workmen.

Fair Wages means wages whether for time or piece work fixed and notified under the provisions of the Minimum Wages Act from time to time.

Contractors shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a subcontractor.

Wages shall have the same meaning as defined in the Payment of Wages Act.

- i) Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.
- ii) When an adult worker is made to work for more than 9 hours\on any day orfor more than 48 hours in any week he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.
- iii)
 - a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time irrespective of whether such worker is governed by the Minimum Wages Act or not.

- b) Where the minimum wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest. The worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.
- c) Where a contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day on one of the five days immediately before or after the normal weekly holiday and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

5.4 DISPLAY OF NOTICE REGARDING WAGES ETC.

The contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clear and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers giving the minimum rates of wages fixed under Minimum Wages Act, the actual wages being paid, the hours of work for which such wage are earned, wages periods, dates of payments of wages and other relevant information as per Appendix III'

5.5 PAYMENT OF WAGES

- I. The contractor shall fix wage periods in respect of which wages shall be payable.
- II. No wage period shall exceed one month.
- III. The wages of every person employed as contract labour in an establishment or by a contractor where less than one thousand such persons are employed shall be paid before the expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.
- IV. Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.
- V. All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
- VI. Wages due to every worker shall be paid to him direct or to other person authorized by him in this behalf.
- VII. All wages shall be paid in current coin or currency or in both.
- VIII. Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.
- IX. A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgment.

- X. It shall be the duty of the contractor to ensure the disbursement of wages in the presence of the Junior Engineer or any other authorized representative to the Engineer-in-Charge who will be required to be present at the place and time to disbursement of wages by the contractor to workmen.
- XI. The contractor shall obtain from the Junior Engineer or any other authorised representative of the Engineer-in-Charge as the case may be, a certificate under his signature at the end of the entries in the 'Register of Wages' or the "Wage-cum-Moster Roll" as the case may be in the following form :-

'Certified that the amount shown in column No..... has been paid to the workman concerned in my presence on at.....'

5.6 FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

i) The wages of a worker shall be paid to him without any deduction of any kind except the following :-

- (a) Fines
- (b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent
- (c) Deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to his neglect or default
- (d) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.
- (e) Any other deduction which the Central Government may from time to time allow.
- (ii) No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved of by the Chief Labour Commissioner.

Note : An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-1

- iii) No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.
- iv) The total amount of fine which may be imposed in any one wage period on a worker shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.
- v) No fine imposed on any worker shall be recovered from him by installment, or after the expiry of sixty days from the date on which it was imposed.
- vi) Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

5.7 LABOUR RECORDS

- i) The contractor shall maintain a Register of persons employed on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix IV)
- ii) The contractor shall maintain a Muster Roll register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix V).
- iii) The contractor shall maintain a Wage Register in respect of all work men employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix VI)
- iv) Register of accident - The contractor shall maintain a register of accidents in such form as may be convenient at die work place but the same shall include the following particulars :
 - a) Pull particulars of the labourers who met with accident.
 - b) Rate of Wages.
 - c) Sex
 - d) Age
 - e) Nature of accident and cause of accident.
 - f) Time and date of accident.
 - g) Date and time when admitted in Hospital.
 - h) Date of discharge from the Hospital.
 - i) Period of treatment and result of treatment.
 - j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
 - k) Claim required to be paid under Workmen's Condensation Act.
 - l) Date of payment of compensation.
 - m) Amount paid with details of the person to whom the same was paid.
 - n) Authority by whom the compensation was assessed.
 - o) Remarks
- v) The contractor shall maintain a Register of Fines the Form XII of the CL (R&A) Rules 1971 (Appendix-XI)

The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and omissions for which fines can be imposed (Appendix-X)

- vi) The contractor shall maintain a Register of deductions for damage or loss in Form XX of the CL (R&A) Rules 1971 (Appendix-XII)
- vii) The contractor shall maintain a Register of Advance in Form XXI of the CL (R&A) Rules 1971 (Appendix-XIII)
- viii) The Contractor shall maintain a Register of Overtime in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIV).

5.8 ATTENDANCE CARD-CUM-WAGE SLIP

- i) The contractor shall issue an Attendance card-cum-wage slip to each workman employed by him in the specimen format (Appendix-VII)
- ii) The card shall be valid for each wage period.
- iii) The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work

- iv) The card shall remain in possession of the worker during the wage period under reference. The contractor complete the wage slip portion on the reverse of the card at least a day prior the disbursement of wages in respect of the wage period under reference.
- v) The contractor shall obtain the stature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself

5.9 EMPLOYMENT CARD

The contractor shall issue an Employment Card in Form XIV of the CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker (Appendix-VIII).

5.10 SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a Service certificate in Form XIV of the CL (R&A) Central Rules 1971 (Appendix-IX)

5.11 PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6&7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge or Labour Officer or any other officers authorized by the Ministry of Urban Development t) Ms behalf

5.12 POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY

The Labor Officer or any person authorized by Central Government on their behalf shall have power to make enquires with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and the Provisions of there Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

5.13 REPORT OF LABOUR OFFICER

The Labor Officer or other persons authorized as aforesaid shall submit a report of result of his Investigation or enquiry to the Executive Engineer concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the contractor under Clause 13 of these regulations, actual payment to labourers wilt be made by the Executive Engineer after the Superintending Engineer has given his decision on such appeal

- i) The Executive Engineer shall arrange payments to the labor concerned within 45 days from the receipt of the report from the Labor Officer or the Superintending Engineer as the case may be

5.14 APPEAL AGAINST THE DECISION OF LABOUR OFFICER

Any person aggrieved by the decision and recommendations of the Labor Officer or other person so authorized may appeal against such decision to the Superintending Engineer concerned within 30 days from the date of decision, forwarding simultaneously a copy of his appeal to the Executive Engineer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor

5.15 PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

A workman shall be entitled to be represented in any investigation or enquiry under these regulations by :-

- a) An officer of a registered trade union of which he is a member.
 - b) An officer of a federation of trade unions to which the trade union referred to in clause (a) is affiliated.
 - c) Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed
- ii) An employer shall be entitled to be represented in any investigation or enquiry under these regulations by :-
- a) An officer of an association of employers of which he is a member.
 - b) An officer of a federation of associations of employers to which association referred to in clause (a) is affiliated.
 - c) Where the employer is not a member of any association of employers, by an officer of association of employer connected with the industry in which the employer is engaged or by any other employer, engaged in the industry in which the employer is engaged.
- iii) No party shall be entitled to be represented by a legal practitioner in any investigation or enquiry under these regulations.

5.16 INSPECTION OF BOOKS AND SLIPS

The contractor shall allow inspection of all the preserved labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorized by the Central Government on his behalf.

5.17 SUBMISSIONS OF RETURNS

The contractor shall submit periodical returns as may be specified from time to time.

5.18 AMENDMENTS

The Central Government may from time to time add to or amend the regulations and on any question as to the application / interpretation or effect of those regulations the decision of the Superintending Engineer concerned shall be final.

SECTION -VIII (BID FORM)

Contract No.:
.....

Bidders are not required to fill up all blank spaces in this Bid Form and furnish this letter in their company letter head duly signed by the authorized person, and only scanned copy of the same is to be submitted with technical proposal as a bid document.

The Office of the Executive Engineer (C) DR - XIV
Delhi Jal Board,
SPS Najafgarh,
New Delhi - 110043.

Dear Sir,

Sub:-P/L Sewer Line in Bijwasan West.

Having visited the site and examined the Bid Documents, Drawings, Conditions of Contract, Specifications, Schedules, Preamble to and the Pricing Schedules etc. including Addenda/Amendments to the above, for the execution of the above Contract, we the undersigned offer to procure engineered items, construct, complete, commission, operate and maintain the whole of the said Works for fifteen years after one year of defect liability period as given in Conditions of Contract and in conformity with the said Drawings, Special Conditions of Contract, Specifications, Preamble to and the Pricing Schedules, Schedules, Bidding Documents, including Addenda Nos. (Insert numbers).

we agree to execute the project within the available land area, as specified in the scope of the work.

1. Further, we agree that
 - a) if we fail to provide required facilities to the Engineer-in-Charge's Representative for carrying out the inspection and testing of materials and workmanship.
Or
 - b) if we incorporate into the works, materials before they are tested and approved by the Engineer's Representative.
Or
 - c) if we fail to provide required facilities according to the conditions/stipulations of the contract, the Engineer-in-charge will be at liberty to take any action as per the Conditions of the Contract.
2. We undertake, if our Bid is accepted to complete and deliver the Works including complete testing of all facilities in accordance with the Contract within 24 months, inclusive of monsoons, from the commencement date.
3. We agree to abide by this Bid for a period of 180 days from the latest date of submission of the Bids and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
4. In the event of our Bid being accepted, we agree to enter into a formal Contract Agreement with you incorporating the conditions of Contract hereto annexed but until
5. such agreement is prepared, this Bid together with your written acceptance thereof shall constitute a binding Contract between us.

6. We agree, if our Bid is accepted, to furnish Performance Security in the forms and of value specified in the Conditions of Contract for due performance of the contract.
7. We have independently considered the amounts of liquidated damages as specified in conditions of contract and agree that they represent a fair estimate of the damages likely to be suffered by you in event of the Work not being completed by us in time and for not meeting the performance standards during the operation & maintenance period.

We understand that DJB is not bound to accept the lowest or any Bid you may receive.

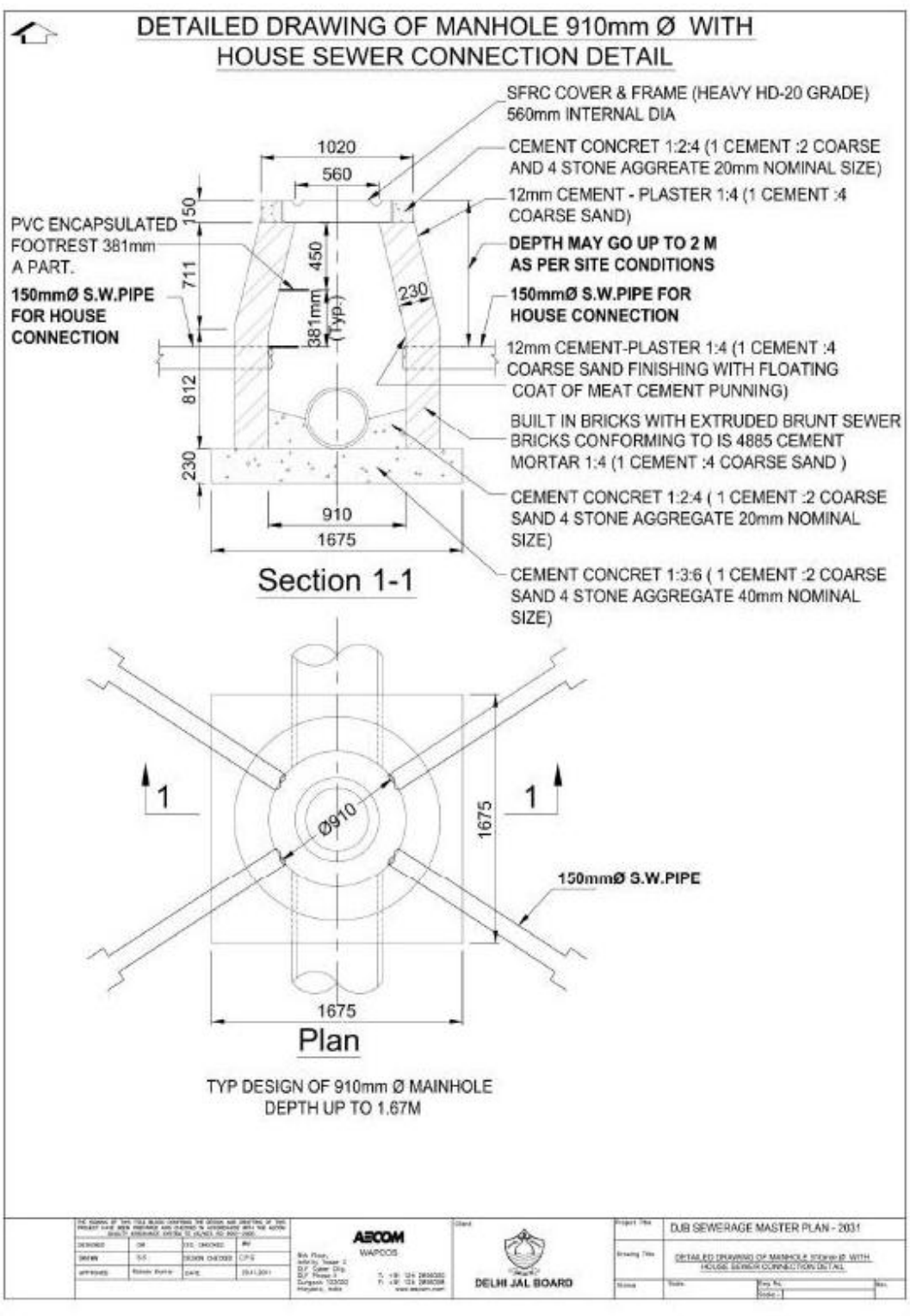
Dated this Day of 201 .

Company Seal

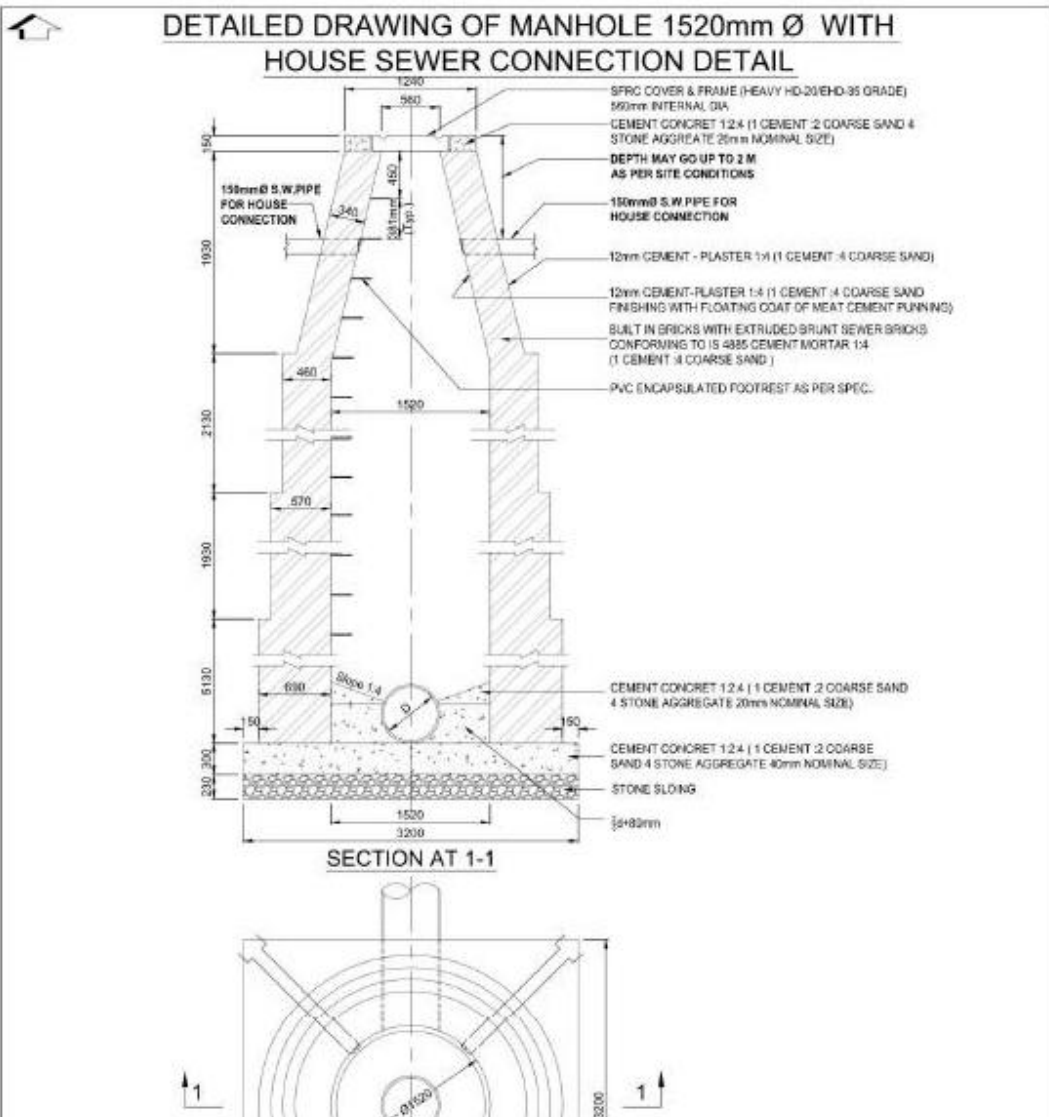
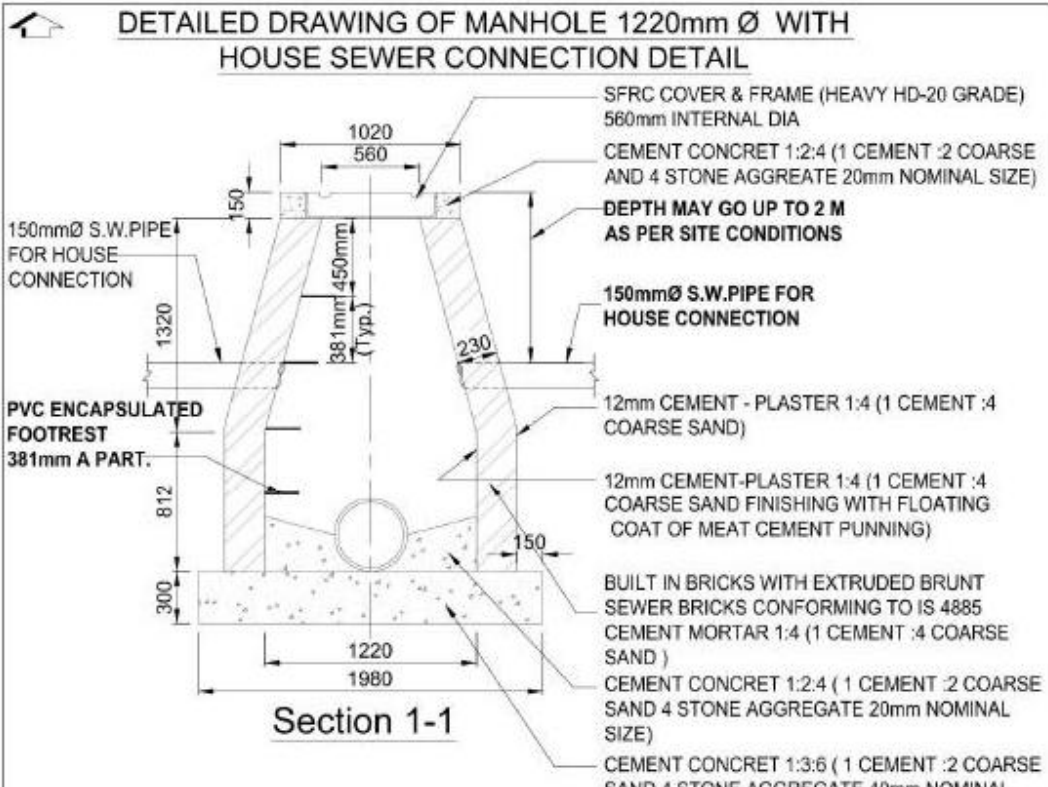
Signature of the Bidder

Section - IX

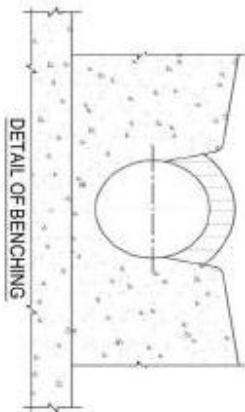
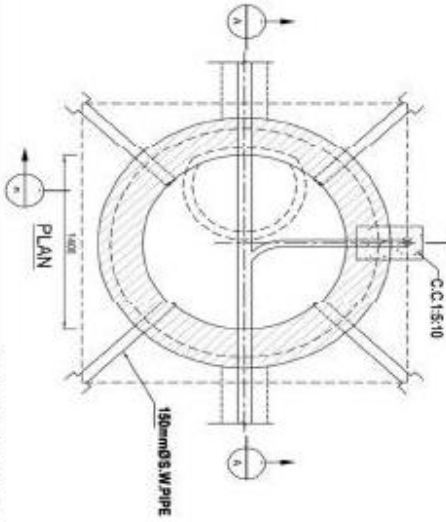
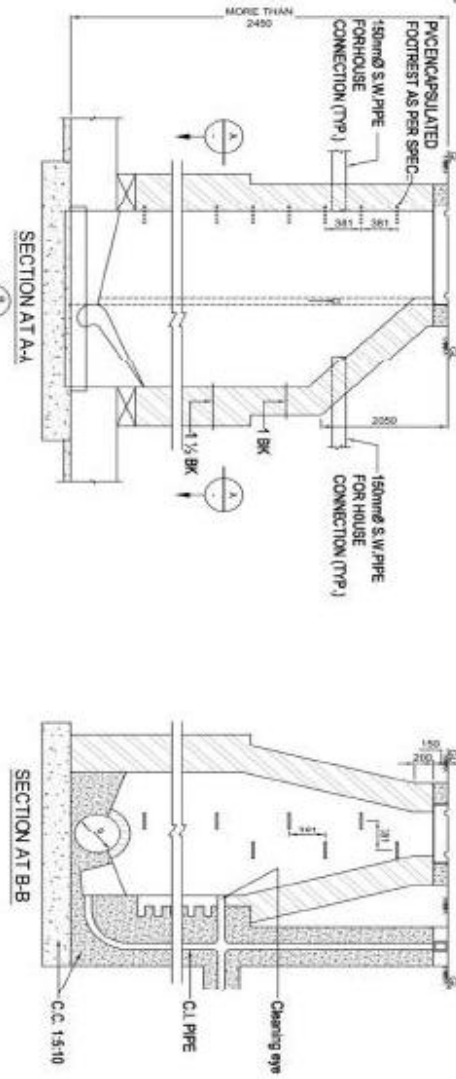
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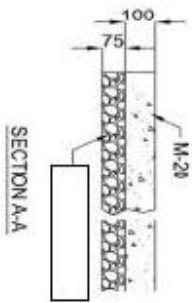
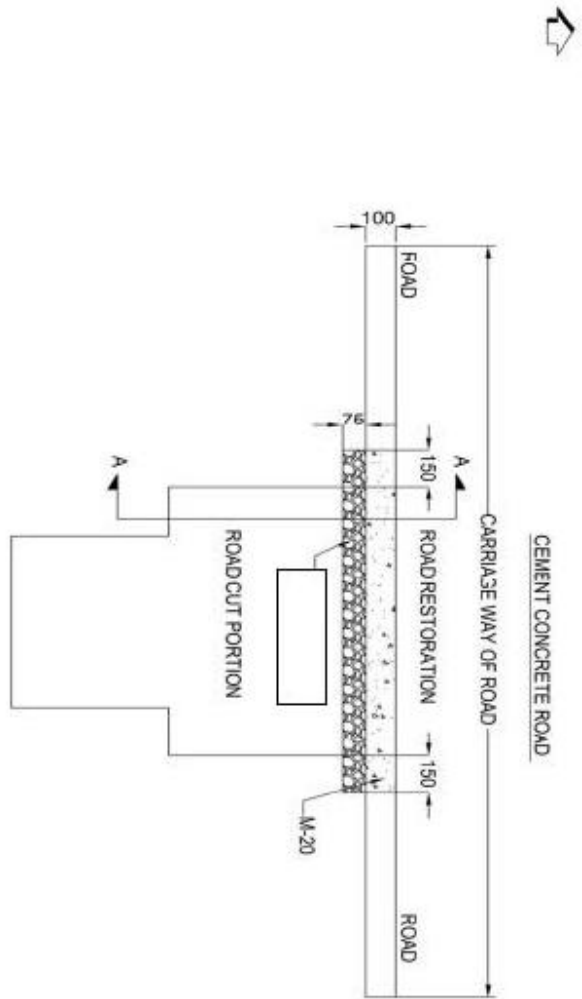
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DROP MANHOLE WITH HOUSE SEWER CONNECTION DETAIL



THE DIRECTOR GENERAL OF TECHNICAL SERVICES, GOVT. OF DELHI DEPARTMENT OF TECHNICAL SERVICES, DELHI OFFICE OF THE DIRECTOR GENERAL OF TECHNICAL SERVICES, DELHI OFFICE OF THE DIRECTOR GENERAL OF TECHNICAL SERVICES, DELHI OFFICE OF THE DIRECTOR GENERAL OF TECHNICAL SERVICES, DELHI		PROJECT NO. DAB SEWERAGE MASTER PLAN - 2031 DRAWING NO. SEWERAGE & WASTE WATER CONNECTION DETAIL SHEET NO. 1 OF 1	
PROJECT NAME DAB SEWERAGE MASTER PLAN - 2031	PROJECT NO. DAB SEWERAGE MASTER PLAN - 2031	DRAWING NO. SEWERAGE & WASTE WATER CONNECTION DETAIL	SHEET NO. 1 OF 1
PREPARED BY S. K. SINGH	CHECKED BY S. K. SINGH	DATE 01/11/2011	SCALE AS SHOWN
AUTHORITY DELHI JAL BOARD		PROJECT LOCATION DELHI	

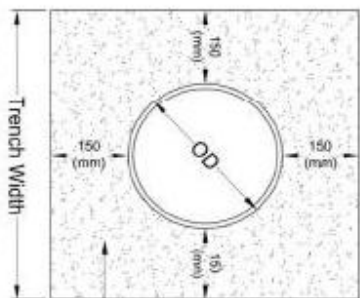


NOTE:-
All Dimensions are in mm

The Project is under the supervision of the Engineer-in-Charge, P.W.D., District Engineer, Delhi.		ATCOM CONSULTANTS 1-11/11, 11/11/11 DELHI-110008		Project No. DAB SERBIJAGE MASTER PLAN - 2001 Detail of Road Improvement	
DRAWN BY DATE	CHECKED BY DATE	SCALE DATE	PROJECT NO. DATE	SHEET NO. DATE	TOTAL SHEETS
APPROVED BY DATE	PROJECT NO. DATE	SHEET NO. DATE	TOTAL SHEETS	PROJECT NO. DATE	SHEET NO. DATE

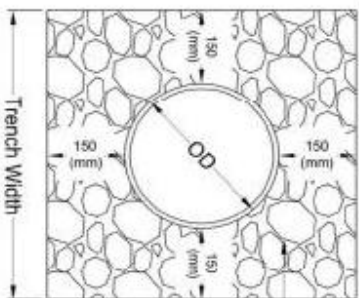
Bedding for HDPE Pipe in dry and sub soil water conditions.

In dry soil



Yamuna sand filling

Under sub soil water



Granular stone filling

Formula:- For width of bedding

Outer Dia(mm)+150 (mm)+150 (mm)

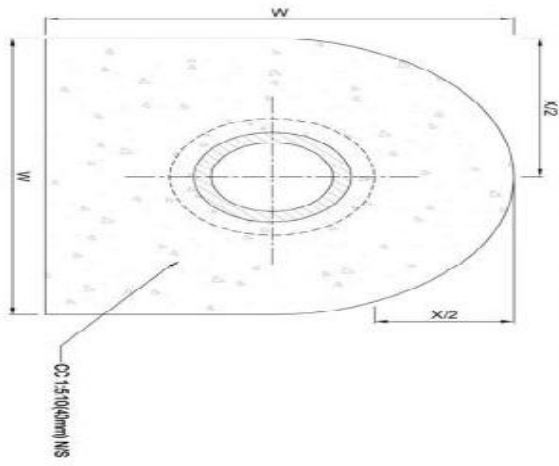
Example:-

280mm Outer Dia
 $280 \text{ (mm)} + 150 \text{ (mm)} + 150 \text{ (mm)} = 580 \text{ mm}$
 $= 0.58 \text{ mtr.}$

<p>THE BOARD OF ARCHITECTS, ENGINEERS AND SURVEYORS, DELHI</p> <p>REGISTERED ARCHITECT: DR. RAJESH K. SHARMA, 22, CONNAUGHT PLACE, NEW DELHI - 110054</p>		<p>PROJECT: DAB SEWERAGE MASTER PLAN - 2031</p> <p>PROJECT No. _____</p> <p>Sheet No. _____</p> <p>Scale _____</p> <p>Date _____</p>	
<p>DESIGNED BY: SUB</p> <p>CHECKED BY: DR. RAJESH K. SHARMA</p> <p>DATE: 24.11.2024</p>	<p>PROJECT NO: 22/03/2024</p> <p>DATE: 24.11.2024</p>	<p>PROJECT: DAB SEWERAGE MASTER PLAN - 2031</p> <p>PROJECT No. _____</p> <p>Sheet No. _____</p> <p>Scale _____</p> <p>Date _____</p>	<p>PROJECT: DAB SEWERAGE MASTER PLAN - 2031</p> <p>PROJECT No. _____</p> <p>Sheet No. _____</p> <p>Scale _____</p> <p>Date _____</p>



BEDDING ENCASING STONEMWARE PIPES



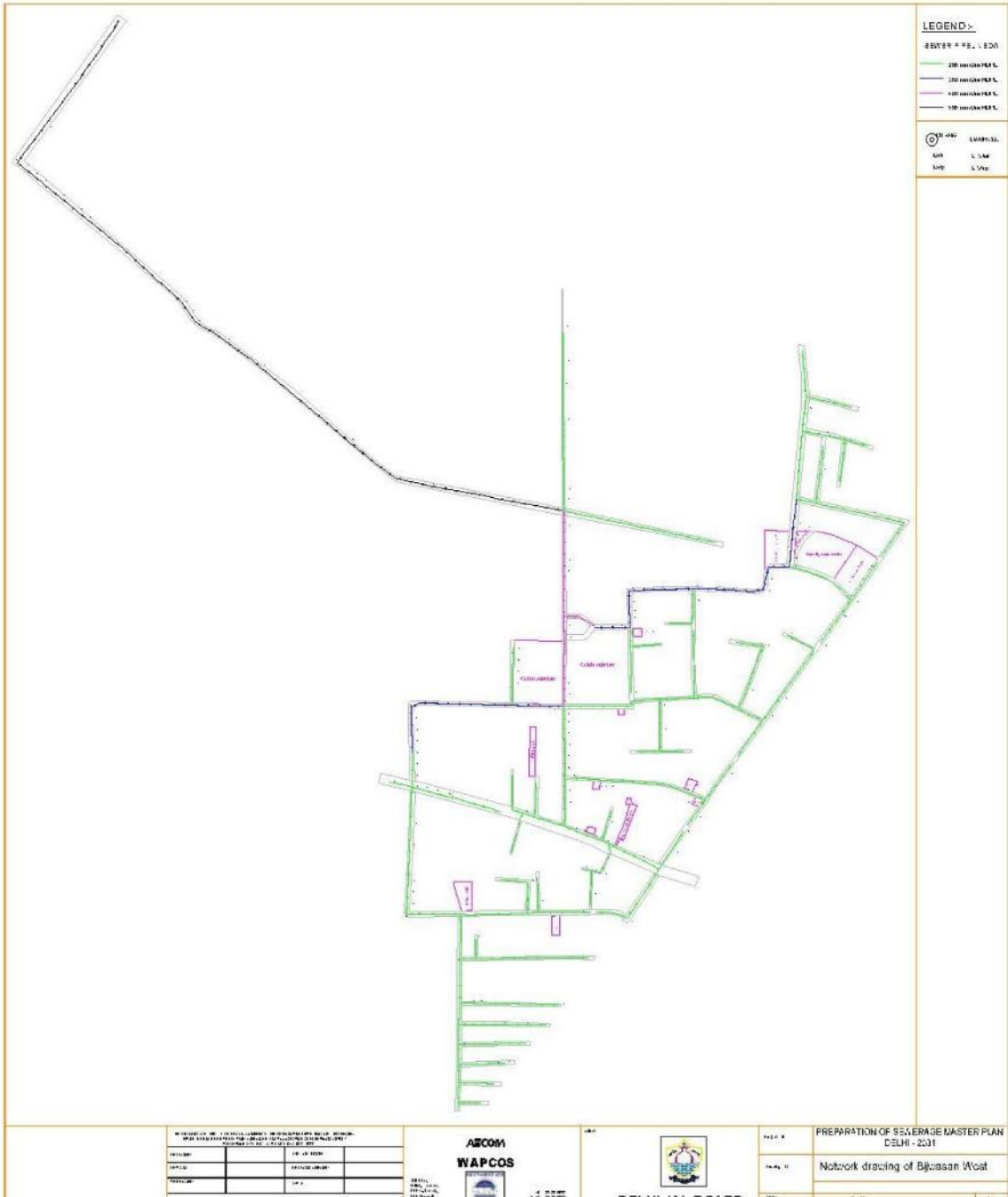
W = D+X Where D is the External Diameter of the pipe
 X = 300 up to Trench depth of 1200
 400 Trench depth more than 1200

T = 100 for pipes under 150, 140 Internal dia subject a
 min of 50mm and max 80mm for pipe more than 150 dia

MNI = Maximum water head

CONCRETE ALLROUND

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SECTION X:- BILL OF QUANTITY

PRESS NIT NO.01(2018-19) Item No.02

Name of Work:-P/L Sewer Line in Bijwasan West.

Item No.	Reference	Item Description	Quantity	Rate (Rs. Per Unit)	Unit	Amount (Rs.)
1.a	15.02.1 p-253	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. 1:3:6 or richer mix	2620.26	997.05	Cum	2612530.23
1.b	P.R.-16	Dismantling of flexible pavement(bituminous courses)by mechanical means and disposal of dismantled material upto a lead of 1km,as per direction of Engineer- in- charge	1896.89	204.50	Cum	387914.01
2	15.7.4 p-253	Demolishingdry brick pitching manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 meters lead as per direction of Engineer-in-charge. In cement mortar	237.75	842.75	Cum	200363.81
3	15.3 p-253	Demolishing R.C.C. work manually /by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 meter lead as per direction of Engineer- in- charge.	50.00	1454.55	Cum	72727.50
4	15.45p-253	Dismantling of pipe including excavation and refilling trenches after taking out the pipe, manually/ by mechanical means including stacking of pipes within 50 meters lead as per direction of Engineer in charge	200.00	183.05	Mtr.	36610.00
5	2.6.1 p-76	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be leveled and neatly dressed. All kinds of soil	14937.14	125.95	Cum	1881332.78
6	2.26.1 p-79	Extra for every additional lift of 1.5 m or part thereof. All kinds of soil.	8576.81	51.75	Cum	443849.92
7a		Trenchless Technique				
	P.R - 24	1) Installation of HDPE product pipe by HDD method including preparing and settling p to the plant and equipment preparing new pipe work material , installing new pipe work and commissioning system including all related civil and mechanical work like excavation , shoring/				

		shuttering etc. drilling, stringing, reaming and pulling back the new pipe-work on the designed bore path alignment, proper disposal of drilling fluid and restoration of site after completion all inclusive as per Ind STT: 101-2007: Code of practice for horizontal directional drilling technique suiting Indian condition.for following pipe diameter in mixed soil but excluding cost of pipes				
		500mm dia	264.00	3079.08	Mtr.	812877.12
		630mmdia	973.00	3352.80	Mtr.	3262274.40
8a	16.81 p-279	Providing and erecting 2.00 meter high temporary barricading at site as per drawing /direction of Engineer in charge which includes writing and printing , arrangement of traffic diversion such as traffic signals during construction at the site for day and night glow lamp reflective sign marking flags, caution tape as the directed by engineer in charge. The barricading provided shall be retain in posion at site continuously i/c shifting of barricading from one location to another location as many time as required during the excutation of the entire work till its completion. Rate include its maintenance for damages painting all incidentals laboursmaterial ,equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer in charge .	200.00	1577.05	Meter	315410.00
8b	2.6.1	Providing and fixing 2.0 m high corrugated GI sheet barricading with safedaballies of 100 mm dia 2.8 meter long post 30 cm girth(min.) for CGI sheet and every12th post to be strutted with ballies and fixing with nails etc. including excavation holes size of 0.30 x o.30 x 0.40 meters getting out the excavation soil and then returning the soil including consolidating by ramming, watering etc. disposal of surplus earth as directed within lead of 50.0 meter and lift of 1.5 meter and painting with bright red and white paint vertical strips 0.30 m wide and 1.25 m apart centre to centre as per drawing as directed by the Engineer-in-charge.	3000.00	34.70	Sqm.	104100.00
9	2.20.1,2 & 3 p-79	Open timbering in trenches including strutting and shoring complete (measurements to be taken of the face area timbered):				
		i) Depth not exceeding 1.5 m.	3069.40	55.90	Sqm.	171579.46
		ii) Depth exceeding 1.5 m but not exceeding 3 m.	649.83	60.00	Sqm.	38989.80
		ii) Depth exceeding 3 m but not exceeding 4.5 m.	735.24	66.75	Sqm.	49077.27

10	2.21.1,2 & 3 p-79	Open timbering in case of shafts, wells, cesspits, manholes and the like including strutting, shoring and packing cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered).				
		i) Depth not exceeding 1.5 m.	1869.15	48.70	Sqm.	91027.61
		ii) Depth exceeding 1.5 m but not exceeding 3 m.	1645.13	55.20	Sqm.	90811.18
		iii) Depth exceeding 3 m but not exceeding 4.5 m.	678.29	63.85	Sqm.	43308.82
		Extra for planking and strutting in open timbering if required to be left permanently in position				
		iv) Depth exceeding 4.5 m but not exceeding 6 m.	19.21	70.20	Sqm.	1348.54
11	2.16.1, 2 & 3 p-78	Close timbering in trenches including strutting, shoring and packing cavities (wherever required) complete. (Measurements to be taken of the face area timbered).				
		i) Depth not exceeding 1.5 m.	3069.40	108.55	Sqm.	333183.37
		ii) Depth exceeding 1.5 m but not exceeding 3 m.	649.83	115.05	Sqm.	74762.94
		iii) Depth exceeding 3 m but not exceeding 4.5 m.	735.24	129.80	Sqm.	95434.15
12	2.17.1,2 & 3 p- 78	Close timbering in case of shafts, wells, cesspits, manholes and the like including strutting, shoring and packing cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered).				
		i) Depth not exceeding 1.5 m.	1869.15	113.25	Sqm.	211681.24
		ii) Depth exceeding 1.5 m but not exceeding 3 m.	1645.13	127.25	Sqm.	209342.79
		iii) Depth exceeding 3 m but not exceeding 4.5 m.	678.29	141.95	Sqm.	96283.27
		Extra for planking and strutting in close timbering if required to be left permanently in position				
	RA	iv) Depth exceeding 4.5 m but not exceeding 6 m.	19.21	153.20	Sqm.	2942.97
13	P.R.-3	Repair/shifting existing houses water connection including GI fitting such as elbow,nipples,sockets,unions,ferrule etc.Allcomplete in all respect	1000.00	506.50	Each	506500.00

14	5.9.1p-98	Centering and Shuttering including strutting , propping etc.and removal of form for				
		Foundations,footing,bases of columns etc. for mass concrete	100.00	193.95	Sqm.	19395.00
15	4.1.2 p-88	Providing and laying in position cement concrete of specified grade excluding the cost of centering(in crossing of drain)				
		i) 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	5.00	5924.65	Cum	29623.25
16	5.1.2 p-97	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
		i) 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	5.00	6215.35	Cum	31076.75
17	5.22.3 p-100	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Cold twisted bars	500.00	56.60	Kg	28300.00
18	16.75p-278	Providing & Laying C.C pavement of miz M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid & finished with screen board vibrator, vacuum dewatering process & finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge	10.00	6912.15	Cum	69121.50
19	6.1.1 p-111	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth (in crossing of drain)				
		Cement mortar 1:4 (1 cement : 4 coarse sand)	15.00	4970.30	cum	74554.50
20	13.4.1 p-227	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	300.00	180.85	Sqm.	54255.00
21	13.18 p-228	Neat cement punning	300.00	42.60	Sqm.	12780.00
22(a) I	P.R.-22	Providing Laying & Jointing of SN 8 structured wall polyethylene piping systems (Pipe with online/offline coupler and elastomeric sealing ring) with non-smooth External Annular corrugated and smooth internal surfaces(Double wall) for non pressure underground sewerage and drainage application as confirm to IS 16098 (part-II): 2013 complete as specified and directed by Engineer-in-charge.				
		290 mm OD DWC HDPE Pipe - Providing SN 8 Double Wall Corrugated HDPE pipes as confirm ti IS 16098 (part-II):2013	4794.00	1258.10	Meter	6031331.40
		345 mm OD DWC HDPE Pipe- Providing SN 8 Double Wall Corrugated HDPE pipes as confirm ti IS 16098 (part-II):2013	597.00	1758.10	Meter	1049585.70

22(a)II	1.3.1	Providing, laying and Jointing High Density polythylene (HDPE) pipe of material grade PE 80, PN 4 for sewerage application as confirm to IS 14333:1996 (amended upto date) complete as specified as directed by Engineer-in-charge.				
	1.3.1.6.1	Providing HDPE pipe of material grade PE 80, PN 4 for sewerage application as confirm to IS 14333:1996 (amended upto date) suitable for butt fusion jointing.- 500 mm OD	264.00	6399.40	Rm	1689441.60
	1.3.1.8.1	Providing HDPE pipe of material grade PE 80, PN 4 for sewerage application as confirm to IS 14333:1996 (amended upto date) suitable for butt fusion jointing.- 630 mm OD	973.00	10111.70	Rm	9838684.10
22(b)		Providing butt fusion welding joint to PE-80,PN-4 HDPE pipe as per DVS 2207 Part II				0.00
	i)	500 mm OD wall thickness= 25.6 mm	44.00	152.40	meter	6705.60
	ii)	630 mm OD wall thickness=25.06	162.00	181.20	meter	29354.40
23		Laying and Jointing in trenches including testing				
	i)	290 mm OD DWC HDPE Pipe	4794.00	52.20	Meter	250246.80
	ii)	345 mm OD DWC HDPE Pipe	597.00	76.60	Meter	45730.20
24	2.27 p-80	Supplying, and filling in plinth with Jamuna sand under floor, including watering, Ramming,consolidating and dressing complete .				
		290 mm OD DWC HDPE Pipe	2268.07	917.75	Cum	2081521.24
		345 mm OD DWC HDPE Pipe	192.23	917.75	Cum	176419.08
25	P.R.-7	Construction of bundh with filled up earth in empty (PVC) cement bags excluding the cost of earth but i/c stacking, stitching and placing in position and removing the same etc. complete i/c the cost of empty (PVC) / cement bags.	200.00	10.30	Each	2060.00
26	0011 p-3	Hire charges of Pumpset of capacity 4000 litres/hour including cost of service of operating staff and supply of lubricating oil (650 +6.50=656.50+15%-755.00	500.00	755.00	8 hours p/d	377500.00
27	P.R.-5	De-silting of sewer line based on bucket system in running and under foul condition for depth not exceeding 1.5 m i/c removal of stones, brick bats, garbage such etc. and stacking the same on the bank of sewer line manhole at a distance upto 50m from centre of sewer line as per CPWD specification complete and lift upto 1.50 m.	100.00	452.90	Cum	45290.00

28	P.R.-4	De-silting of open Nallah (based on bucket system) in running and under foul condition for depth not exceeding 1.5 m i/c removal of silt, stones brick bats, garbage such etc. and stacking the same on the bank of Nallah at a distance upto 50 m from centre of Nallah complete i/c all lifts etc.	100.00	424.60	Cum	42460.00
29	19.21.3 p-360	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :				
		For pipes 350 to 450 mm diameter	6.00	674.15	Each	4044.90
30	P.R.-9a	Constructing brick masonry circular manhole 3'-00" internal dia(0.91 m) at bottom and 1'-10" or 0.56 m dia at top, depth upto IL 3 ft. or 0.91 m built in brick work with extruded burnt sewer brick (in FPS Size) conforming to IS-4885-1988 in curved in cement mortar 1:4 (1 cement : 4 coarse sand) excluding excavation but including 9" or (0.23 m) thick foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) including centering and shuttering and fixing SFRC manhole cover and frame (Heavy Duty) 560 mm internal dia fixed in cement conc. 1:1.5:3(1 cement : 1.5coarse sand : 3 graded stone aggregate 20 mm nominal size) and 12 mm thick cement plaster both inside and outside with cement mortar 1:4 (1 cement : 4 coarse sand) and inside plaster to be finished with a floating coat of neat cement. Making necessary channel in cement conc. 1:1.5:3 (1 cement : 1.5 coarse sand :3graded stone aggregate 20 mm nominal size) all complete as per departmental drawings and as directed by Engineer-in-Charge.	224.00	7804.00	Each	1748096.00
31	P.R.-9b	Extra per meter depth of 3'-0" dia or 0.91 m dia internal circular manhole beyond 3'-0" dia or 0.91 m up to 1L 5'-6" or 1.67 m depth built in brickwork (in FPS Size) with extruded burnt sewer bricks conforming to IS-4885-1988 in curved in cement mortar 1:4(1 cement : 4 coarse sand) 12 mm thick plaster both inside and outside with cement mortar 1 : 4(1 cement : 4 coarse sand) and inside plaster to be finished with a floating coat of neat cement and all complete as per departmental drawings and as directed by Engineer-in - charge.Cement required1 .35 qunitals/Meter depth	73.75	6096.80	Per m depth	449639.00

32	P.R.-10a	Constructing brick masonry circular manhole 4'-0" or 1.22 m internal dia at bottom and 1'-0" or 0.56 m dia at top, depth upto IL 5'-6" or 1.67 m built in brick work with extruded burnt sewer brick (in FPS Size) confirming to IS-4885-1988 in curved in cement mortar 1:4 (1 cement : 4 coarse sand) excluding excavation and soling, but including 12" or (0.30 m) thick foundation concrete 1:3:6(1 cement : 3coarse sand : 6 graded stone aggregate 40 mm nominal size) including centering and shuttering and fixing SFRC manhole cover and frame (Heavy Duty) 560 mm internal dia fixed in cement conc. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and 12 mm thick cement plaster both inside and outside with cement mortar 1:4 (1 cement : 4 coarse sand) and inside plaster to be finished with a floating coat of neat cement. Making necessary channel in cement conc. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) all complete as per departmental drawings and as directed by Engineer-in-Charge.Cement required 5.46 quintals/Each	77.00	16426.00	Each	1264802.00
33	P.R.-10b	Extra per meter depth of 4'-0" dia or 1.22 m dia internal circular manhole beyond 5'-6" dia or 1.67 m up to 1L 7'-6" or 2.28 m depth built in brickwork (in FPS Size) with extruded burnt sewer bricks conforming to IS-4885-1988 in cuved in cement mortar 1:4(1 cement : 4 coarse sand) 12 mm thick plaster both inside and outside with cement mortar 1 : 4(1 cement : 4 coarse sand) and inside plaster to be finished with a floating coat of neat cement and all complete as per departmental drawings and as directed by Engineer-in - charge. Cement required 1.62 QTL/meter depth	22.79	7616.80	Per m depth	173548.79
34	P.R.-11a	Constructing brick masonry circular manhole 5'-0" or 1.52 m internal dia at bottom and 1'-0" or 0.56 m dia at top, depth upto IL 7'-6" or 2.28 m built in brick work with extruded burnt sewer brick (in FPS Size) confirming to IS-4885-1988 in curved in cement mortar 1:4 (1 cement : 4 coarse sand) excluding excavation and soling, but including 12" or (0.30 m) thick foundation concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) including centering and shuttering and fixing SFRC manhole cover and frame (Heavy Duty) 560 mm internal dia fixed in cement conc. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and 12 mm	210.00	38209.00	Each	8023890.00

		thick cement plaster both inside and outside with cement mortar 1:4 (1 cement : 4 coarse sand) and inside plaster to be finished with a floating coat of neat cement. Making necessary channel in cement conc. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) all complete as per departmental drawings and as directed by Engineer-in-Charge. Cement required 13.71 Qunitals/Each				
35	P.R.-11b	Extra per meter depth of 5'-0" dia or 1.52 m dia internal circular manhole built in brickwork (in FPS Size) with extruded burnt sewer bricks conforming to IS-4885-1988 in cured in cement mortar 1:4(1 cement : 4 coarse sand) 12 mm thick plaster both inside and outside with cement mortar 1 : 4(1 cement : 4 coarse sand) and inside plaster to be finished with a floating coat of neat cement and all complete as per departmental drawings and as directed by Engineer-in - charge.(cost of providing and fixing of plastic encapsulated foot rest shall be paid separately)				
		i) Beyond 7'-6" or 2.28 m an up to 1 L 13'8" or 4.16 m (cement required 3.50 Qunital/meter depth)	82.85	17308.30	Per m depth	1433992.66
		ii) Beyond 13'-8" or 4.16 m an up to 1 L 20 -0" or 6.09 m (cement required 5.08 Qunital/meter depth)	169.71	24370.00	Per m depth	4135832.70
36	19.22p-360	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast iron drop pipe and bend encased all-round with cement concrete 1: 5:10 (1 cement : 5 finesand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:3(1 cement : 3 coarse sand) on inside of the manhole wall,lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement:1 fine sand) joints between sand cast iron tee and S.W. pipe, making required Channels complete as per standard design and specification.				
	19.22.2	150 mm dia sand cast iron drop connection.	13.00	8902.10	Each	115727.30
37	19.23.2 p-360	Extra for depths beyonds 60 cmof sand cast iron drop connection complete:	21.06	2589.00	Meter	54524.34

38	P.R.-13,14	Supplying and stacking at site precast concrete manhole with steel fibre of ISI marked conforming to IS 12592 part I of HD -20/ EHD -35 with matching frame of class EHD-35 IS: 12592 part II with 875 external dia and clear 560 mm internal dia				
		(i) HD- 20	500.00	920.00	Each	460000.00
		(ii) EHD-35	11.00	1225.00	Each	13475.00
39	2.25 p-79	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth	9909.47	125.75	Cum	1246115.85
40	19.16 p-359	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	2421.00	327.90	Each	793845.90
41(a)		Carriage of material by mechanical transport				
	1.1.1,2 & 3 p-62	Carriage of material by mechanical transport including loading, unloading and stacking at site upto 5.0 km lead				
		i) Lime, moorum, building rubbish	2882.94	119.33	Cum	344021.23
		ii) Earth	3016.60	149.17	Cum	449986.22
		iii) Manure or sludge	120.00	129.71	Cum	15565.20
41(b)	1.1.1,2 & 3 p-62	Carriage of material by mechanical transport including loading, unloading and stacking at site upto 10 km lead				
		i) Lime, moorum, building rubbish	480.49	162.73	Cum	78190.14

		ii) Earth	502.77	203.42	Cum	102273.47
		iii) Manure or sludge	20.00	176.86	Cum	3537.20
41(c)		Carriage of material by mechanical transport including loading, unloading and stacking at site upto 20km lead				
		i) Lime, moorum, building rubbish $119.33+(8.68*5)+(7.13*10)=234.03$	240.25	234.05	cum	56230.51
		ii) Earth $149.17*(10.85*5)+(8.91*10)$	251.38	295.52	cum	74287.82
		iii) Manure or sludge $129.71+(9.43*5)+(7.75*10)$	10.00	254.36	cum	2543.60
42(a)	1.2.1,2 & 3 p-65	Carriage of material by manual labour including loading unloading and stacking for lead upto 50m to 100				
		i) Lime, moorum, building rubbish	480.49	20.19	cum	9701.09
		ii) Earth	502.77	25.24	Cum	12689.91
		iii) Manure or sludge	20.00	21.95	Cum	439.00
42(b)	1.2.1,2 & 3 p-65	Carriage of material by manual labour including loading unloading and stacking for lead upto 250m				
		i) Lime, moorum, building rubbish $20.19*4=80.76$	480.49	80.76	Cum	38804.37
		ii) Earth $25.24*4=100.96$	502.77	100.96	Cum	50759.66
		iii) Manure or sludge $21.95*4=87.80$	12.00	87.80	Cum	1053.60
43	19.1p-354	Stone Ware Pipes and Fittings				
i	19.1.2	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 Cement: 1 finesand) including testing of joints etc. Complete:				
		150 mm Diameter	1226.00	327.05	Meter	400963.30
ii	19.2p-354	Providing and laying cement concrete 1:5:10(1 cement:5 coarse sand:10 graded stone aggregate 40 mm nominal size) all around of				

		S.W pipes including bed concrete as per standard design				
		150 mm Diameter	663.88	761.85	Meter	505776.98
					Total	Rs.5,61,96,057.04
					Amount put to Tender	Rs.5,61,96,057.00