

**WATER SUPPLY DIVISION, CIVIL ENGINEERING DEPTT.  
NEW DELHI MUNICIPAL COUNCIL  
ROOM NO. 231, SHAHID BHAGAT SINGH PLACE  
NEW DELHI**

**e-Procurement Tender Notice**

**Name of work: Selection of Contractor for Implementation of Continuous (24 x 7)  
Pressurised Water Supply in NDMC and Operation & Maintenance of the  
System for the Period of Five Years**

**Estimate Cost: - Rs. \_\_\_\_\_/-**

Date of release of tender through e-procurement solution : \_\_\_\_\_

Last date/time for receipt of tenders through e-procurement solution : \_\_\_\_\_ **upto 4.00 PM**

Further details can be seen at <http://govtprocurement.delhi.gov.in>

Note: - To participate in e-tender in NDMC registration with e-tendering system, Government of NCT of Delhi is mandatory.

Executive Engineer (W/S)  
NDMC, New Delhi

**WATER SUPPLY DIVISION, CIVIL ENGINEERING DEPTT.  
NEW DELHI MUNICIPAL COUNCIL  
ROOM NO. 231, SHAHID BHAGAT SINGH PLACE  
NEW DELHI**

**TENDER NOTICE**

No. EE (W/S)/D/\_\_\_\_\_

Date\_\_\_\_\_

1. Last date and time or downloading tender documents \_\_\_\_\_ 3.30 PM
2. Date and time for pre-bid meeting, if any \_\_\_\_\_ A/N \_\_\_\_\_
3. Date and time for submission of tender \_\_\_\_\_ upto 4.00 PM
4. Date and time of opening of tender \_\_\_\_\_ at 4.30 PM

Executive Engineer (W/S), invites online Item rate bids on behalf of NDMC from approved and eligible B&R Contractor (holding valid registration certificate of approved eligible category and class) of NDMC and those of appropriate category and class of CPWD, MES, BSNL, Railways, DDA, MCD, DJB and State PWD (B&R) registered under Sales Tax/Vat on works Contract Act for the work "**Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation & Maintenance of the System for the Period of Five Years**", with a time of completion of 24 months of construction works and 60 months of Operation and maintenance thereafter at the cost of bids (non refundable of Rs..... A sum of Rs. \_\_\_\_\_/- as earnest money shall have to be deposited in NDMC treasury through pay order/demand draft/banker cheque/deposit at Call Receipt/FDR of a scheduled bank in favour of Secretary, NDMC payable at local branch of Delhi/New Delhi. It should be ensured that the FDR is pledged in favour of the Secretary, NDMC. The scanned receipt of payment of earnest money and tender papers should be uploaded with the tender documents (online) otherwise the same are liable not be opened.

Eligible contractors may download the bid documents for reference only from Delhi Govt. E-procurement Portal <http://govtprocurement.delhi.gov.in> for bidding purpose. However, tenders shall be quoted through e-tendering only.

The bidder may inspect the site on any working day and may contact for any query or technical clarification to Executive Engineer (W/S)/Head of Department. Bidder shall upload the scanned pages of technical bid online. Bidders has to submit his bid in standard BOQ provided by NDMC available through e-tendering method on website. The duly filled up bid documents shall be submitted online on \_\_\_\_\_ upto 4.00 PM and the same shall be opened on the same day in presence of the tenderers or their authorized representative who may desire to attend. Technical Bid shall also be submitted in Hard ( one original & two duplicate ) at NDMC office on bid due date upto 4.00 PM.

NDMC reserves the right to reject the whole or any part of the bid without assigning any reason.

**Executive Engineer (W/S)**

# **New Delhi Municipal Council (NDMC)**



## **BIDDING DOCUMENT**

for the

### **Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation & Maintenance of the System for the Period of Five Years**

(Following single stage two envelope bidding procedure)

**Section 1 to 9  
Part I (Vol-1) – Technical Bid**

**Issued on:** \_\_\_/\_\_\_/2016

**Invitation for Bids No.:** NDMC/TENDER NO. \_\_\_\_\_

**Employer:** New Delhi Municipal Council

**State :** New Delhi

**Country:** India

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## **Section 1 - Instructions to Bidders**

## Section 1 - Instructions to Bidders

This Section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of contract.

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## Section 1 - Instructions to Bidders

### A. General

- 1. Scope of Bid**
- 1.1 In connection with the Invitation for Bids (IFB) indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of Works as specified in Section 6 (Employer's Requirements). The name, identification, and number of contracts of the international competitive bidding (ICB) are provided in the BDS.
- 1.2 Throughout this Bidding Document,
- (a) the term "in writing" means communicated in written form and delivered against receipt;
- (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
- (c) "day" means calendar day.
- 1.3 All work proposed for execution by contract will be notified in a form of invitation to tender pasted in public places and signed by the officer inviting tender or by publication in News papers as the case may be.
- This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender, and the amount of the security deposit and Performance guarantees to be deposited by the successful tenderer and the percentage, if any, to be deducted from bills.
- 1.4 The receipt of an accountant or clerk for any money paid by the contractor will not be considered as any acknowledgement or payment to the officer inviting tender and the contractor shall be responsible for seeing that he procures a receipt signed by the officer inviting tender or a duly authorized Cashier.
- 1.5 The memorandum of work tendered for and the schedule materials to be supplied by the department and their issue-rates, shall be filled and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderer without having been so filled in and incomplete, he shall request the officer to have this done before he completes and delivers his tender.
- 1.6 The tenderers shall sign a declaration under the officials Secret Act 1923, for maintaining secrecy of the tender documents drawings or other records connected with the work given to them. The unsuccessful tenderers shall return all the drawings given to them
- 2. Source of Funds**
- 2.1 The Employer indicated in the BDS has applied for or received Grant (hereinafter called "grants") under the [REDACTED] (hereinafter called "[REDACTED]") toward the cost of the project named in the BDS. The employer intends to contribute a portion of the funds (Other than grants to eligible payments under the contract(s) for which this Bidding Document is issued.



2.2 Not used.

**3. Fraud and Corruption**

3.1 In pursuance of anticorruption policy, Employer:

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

- (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
- (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
- (v) Anticorruption Policy including corrupt, fraudulent, coercive, or collusive practice, abuse, and obstructive practice.
- (vi) "obstructive practice" means (a) deliberately destroying, falsifying, altering or concealing of evidence material to an Employer investigation; (b) making false statements to investigators in order to materially impede an Employer investigation; (c) failing to comply with requests to provide information, documents or records in connection with an OAI investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or (e) materially impeding Employer's contractual rights of audit or access to information.

(b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;

(c) Not Used

(d) will have the right to require that a provision be included in bidding documents and in contracts funded by Employer, requiring Bidders, suppliers and contractors to permit Employer or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by Employer.

3.2 Furthermore, Bidders shall be aware of the provision stated in Subclause 1.15 and 15.6 of the Conditions of Contract.

**4. Eligible Bidders**

4.1 A Bidder may be a natural person, private entity, or government-owned enterprise subject to ITB 4.5—or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture. In the case of a Joint Venture,

(a) all partners shall be jointly and severally liable, and

- (b) the Joint Venture shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the Joint Venture during the bidding process and, in the event the Joint Venture is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services..
- 4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in the bidding process if any of, including but not limited to, the following apply:
  - (a) they have controlling shareholders in common; or
  - (b) they receive or have received any direct or indirect subsidy from any of them; or
  - (c) they have the same legal representative for purposes of this bid; or
  - (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
  - (e) a Bidder participates in more than one bid in this bidding process, either individually or as a partner in a joint venture, except for alternative offers permitted under ITB 13 of the Bidding Document. This will result in the disqualification of all Bids in which it is involved. However, subject to any finding of a conflict of interest in terms of 4.3(a)-(d) above, this does not limit the participation of a Bidder as a Subcontractor in another Bid or of a firm as a Subcontractor in more than one Bid; or
  - (f) a Bidder or any affiliated entity, participated as a Consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or
  - (g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer or Borrower as Engineer for the contract.
- 4.4 A firm shall not be eligible to participate in any procurement activities under an Employer-funded or Employer-supported project
- 4.5 Government-owned enterprises in the Employer's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Employer.
- 4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 4.7 Not used

- 4.8 Not used
5. **Eligible Materials, Equipment and Services**
- 5.1 Not used.
- 5.2 Not used.

**B. Contents of Bidding Document**

6. **Sections of Bidding Document**
- 6.1 The Bidding Document consist of Parts I in Volume 1 & Volume 2, and II, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

**PART I Bidding Procedures (Vol-1)**

- Section 1 - Instructions to Bidders (ITB)
- Section 2 - Bid Data Sheet (BDS)
- Section 3 - Evaluation and Qualification Criteria (EQC)
- Section 4 - Bidding Forms (BDF)
- Section 5 - Eligible Countries (ELC)

**PART I Requirements**

- Section 6 - Employer's Requirements (ERQ) (Vol-1)
- Section 6 – Employer's Requirements (ERQ) (Vol-2)

**PART I Conditions of Contract and Contract Forms (Vol-1)**

- Section 7 - General Conditions of Contract (GCC)
- Section 8 - Particular Conditions of Contract (PCC)
- Section 9 - Contract Forms (COF)

**PART II Price Bid**

- 6.2 The Invitation for Bids (IFB) issued by the Employer is not part of the Bidding Document.
- 6.3 The Employer is not responsible for the completeness of the Bidding Document and their addenda, if they were not obtained directly from the source stated by the Employer in the IFB.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.
7. **Clarification of Bidding Document, Site Visit, Pre-Bid Meeting**
- 7.1 A prospective Bidder requiring any clarification on the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS or raise his inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than 21 days prior to the deadline for submission of bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.

Copies of the specifications, designs and drawings and any other documents required in connection with the work signed for the purpose of Identification by the officer inviting tender shall also be open for inspection by the Contractor at the office of officer inviting

tender during office hours.

- 7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all 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.
- 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
- 7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 The Bidder is requested to submit any questions in writing, to reach the Employer not later than 1 week before the meeting.
- 7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.
- 7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

**8. Amendment of Bidding Document**

- 8.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding Document by issuing addenda.
- 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2

**C. Preparation of Bids**

**9. Cost of Bidding**

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

**10. Language of Bid**

- 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided

they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.

**11. Documents Comprising the Bid**

11.1 The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in ITB 11.2 and the other the Price Bid containing the documents listed in ITB 11.3, both envelopes enclosed together in an outer single envelope.

11.2 The Technical Bid shall comprise the following:

- (a) Letter of Technical Bid;
- (b) Bid Security or Bid-Securing Declaration, in accordance with ITB 19;
- (c) alternative Bids, if permissible, in accordance with ITB 13;
- (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (e) documentary evidence in accordance with ITB 17, establishing the Bidder's qualifications to perform the contract;
- (f) Technical Proposal in accordance with ITB 16;
- (g) Any other document required in the BDS.
- (h) The bidder shall give a list of both gazetted and non-gazetted NDMC officer s & employees related to him.
- (i) The contractor shall submit list of works which are in hand (progress) in the following form:-

Name of work	Name and particulars of Division Where work is being executed	Value of Work	Position of works in Progress	Remarks

11.3 The Price Bid shall comprise the following:

- (a) Letter of Price Bid;
- (b) completed Price Schedules, in accordance with ITB 12 and ITB 14;
- (c) alternative price Bids, at Bidder's option and if permissible, in accordance with ITB 13;
- (d) Any other document required in the BDS.

11.4 In addition to the requirements under ITB 11.2, Bids submitted by a Joint Venture shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all partners and submitted with the Bid, together with a copy of the proposed agreement.

**12. Letters of Bid, and Schedules**

12.1 The Letters of Technical Bid and Price Bid, and the Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section 4 (Bidding Forms). The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested and as required in the BDS.

- 13. Alternative Bids**
- 13.1 Unless otherwise indicated in the BDS, alternative Bids shall not be considered.
- 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS, as will the method of evaluating different times for completion.
- 13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the Employer's design as described in the Bidding Document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.
- 13.4 When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified in the BDS and described in Section 6 (Employer's Requirements). The method for their evaluation will be stipulated in Section 3 (Evaluation and Qualification Criteria).
- 14. Bid Prices and Discounts**
- 14.1 The prices and discounts quoted by the Bidder in the Letter of Price Bid and in the Bill of Quantities shall conform to the requirements specified below.
- 14.2 The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.
- Any person who submits a tender shall fill up the usual printed form, stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.
- The rate(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paise and considering more than fifty paise as rupee one.
- 14.3 The price to be quoted in the Letter of Price Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered. . Absence of the total bid price in the Letter of Price Bid may result in the rejection of the Bid.
- 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Price Bid, in accordance with ITB 12.1.
- 14.5 Unless otherwise provided in the BDS and the Contract, the rates and prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the Bidder shall furnish the indexes and weightings for the price adjustment formulas in the Tables

of Adjustment Data included in Section 4 (Bidding Forms) and the Employer may require the Bidder to justify its proposed indexes and weightings.

- 14.6 If so indicated in ITB 1.1, bids are being invited for individual contracts or for any combination of contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all contracts are submitted and opened at the same time.
- 14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
- 14.8 Sales-tax/ VAT (except service tax), purchase tax, turnover tax or any other tax applicable in respect of this contract shall be payable by the Contractor and NDMC will not entertain any claim whatsoever in respect of the same. However, in respect of service tax, same shall be paid by the contractor to the concerned department on demand and it will be reimbursed to him by the Engineer-in-charge after satisfying that it has been actually and genuinely paid by the contractor.

**15. Currencies of Bid and Payment**

- 15.1 The unit rates and the prices shall be quoted by the Bidder entirely in the currency specified in the BDS.
- 15.2 Bidders shall indicate the portion of the bid price that corresponds to expenditures incurred in the currency of the Employer's country in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).
- 15.3 Bidders expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country and wishing to be paid accordingly may indicate up to three foreign currencies in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).
- 15.4 The rates of exchange to be used by the Bidder for currency conversion during bid preparation shall be the selling rates for similar transactions prevailing on the date 28 days prior to the deadline for submission of bids published by the source specified in the BDS. If exchange rates are not so published for certain currencies, the Bidder shall state the rates used and the source. Bidders should note that for the purpose of payments, the exchange rates confirmed by the source specified in the BDS as the selling rates prevailing 28 days prior to the deadline for submission of Bids shall apply for the duration of the Contract so that no currency exchange risk is borne by the Bidder.
- 15.5 Foreign currency requirements indicated by the Bidders in the Schedule of Payment Currencies shall include but not limited to the specific requirements for
- (a) expatriate staff and labor employed directly on the Works;
  - (b) social, insurance, medical and other charges relating to such expatriate staff and labor, and foreign travel expenses;
  - (c) imported materials, both temporary and permanent, including fuels, oil and lubricants required for the Works;

- (d) depreciation and usage of imported Plant and Contractor's Equipment, including spare parts, required for the Works;
- (e) foreign insurance and freight charges for imported materials, Plant and Contractor's Equipment, including spare parts; and
- (f) overhead expenses, fees, profit, and financial charges arising outside the Employer's country in connection with the Works.

15.6 Bidders may be required by the Employer to clarify their foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Payment Currencies are reasonable and responsive to ITB 15.3 above, in which case a detailed breakdown of its foreign currency requirements shall be provided by the Bidder.

15.7 Bidders should note that during the progress of the Works, the foreign currency requirements of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor in order to reflect any changes in foreign currency requirements for the Contract, in accordance with Subclause 14.15 of the Conditions of Contract. Any such adjustment shall be effected by comparing the percentages quoted in the bid with the amounts already used in the Works and the Contractor's future needs for imported items.

**16. Documents  
Comprising the  
Technical  
Proposal**

16.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule, and any other information as stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.

**17. Documents  
Establishing the  
Qualifications of  
the Bidder**

17.1 To establish its qualifications to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section 4 (Bidding Forms).

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

17.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 32.

**18. Period of Validity  
of Bids**

18.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as nonresponsive.

18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended 28 days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its Bid.

**19. Bid Security/Bid  
Securing**

19.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, in original form, either a Bid-Securing Declaration or a bid



**Declaration**

security as specified in the BDS. In the case of a bid security, the amount and currency shall be as specified in the BDS.

19.2 If a Bid-Securing Declaration is required pursuant to ITB 19.1, it shall use the form included in Section 4 (Bidding Forms). The Employer will declare a Bidder ineligible to be awarded a Contract for a specified period of time, as indicated in the BDS, if the Bid-Securing Declaration is executed.

19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be, at the Bidder's option, in any of the following forms:

- (a) an unconditional bank guarantee,
- (b) an irrevocable letter of credit, or
- (c) a cashier's or certified check,

all from a reputable source from an eligible country as described in Section 5 (Eligible Countries). In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section 4 (Bidding Forms) or another form acceptable to the Employer. The form must include the complete name of the Bidder. The bid security shall be valid for 28 days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

19.4 Unless otherwise specified in the BDS, any Bid not accompanied by a substantially compliant bid security or Bid-Securing Declaration, if one is required in accordance with ITB 19.1, shall be rejected by the Employer as nonresponsive.

19.5 If a bid security is specified pursuant to ITB 19.1, the bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 42.

19.6 If a bid security is specified pursuant to ITB 19.1, the bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

19.7 The bid security may be forfeited or the Bid Securing Declaration executed,

- (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid, except as provided in ITB 18.2; or
- (b) if the successful Bidder fails to
  - (i) sign the Contract in accordance with ITB 41;
  - (ii) furnish a performance security in accordance with ITB 42;
  - (iii) accept the arithmetical correction of its Bid in accordance with ITB 33; or
  - (iv) furnish a domestic preference security, if so required.

19.8 The Bid Security or Bid Securing Declaration of a Joint Venture shall be in the name of the Joint Venture that submits the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the bid security or Bid-Securing Declaration shall be in the names of all future

partners as named in the letter of intent mentioned in ITB 4.1.

**20. Format and Signing of Bid**

20.1 The Bidder shall prepare one original set of the Technical Bid and one original set of the Price Bid comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID." Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the Technical and Price Bids, in the number specified in the BDS, and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialed by the person signing the Bid. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Employer shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the prescribed period of receiving such a request shall cause the rejection of the Bid.

In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power-of attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1952.

20.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

20.4 Use of correcting fluid, anywhere in tender document is not permitted. Such tender is liable for rejection.

**D. Submission and Opening of Bids**

**21. Sealing and Marking of Bids**

21.1 Bidders may always submit their Bids by mail or by hand. When so specified in the BDS, Bidders shall have the option of submitting their Bids electronically. Procedures for submission, sealing, and marking are as follows:

(a) Bidders submitting Bids by mail or by hand shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID," "ORIGINAL - PRICE BID," and "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID." These envelopes, the first containing the originals and the others containing copies, shall then be enclosed in one single envelope per set. If permitted in accordance with ITB 13, alternative Bids shall be similarly sealed, marked and included in the sets. The rest of the procedure shall be in accordance with ITB

21.2 and ITB 21.5.

- (b) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in the BDS.

21.2 The inner and outer envelopes shall

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Employer in accordance with BDS 22.1; and
- (c) bear the specific identification of this bidding process indicated in the BDS 1.1.

21.3 The outer envelopes and the inner envelopes containing the Technical Bid shall bear a warning not to open before the time and date for the opening of Technical Bid, in accordance with ITB 25.1.

21.4 The inner envelopes containing the Price Bid shall bear a warning not to open until advised by the Employer in accordance with ITB 25.7.

21.5 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

**22. Deadline for Submission of Bids**

22.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS.

22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

**23. Late Bids**

23.1 The Employer shall not consider any Bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

**24. Withdrawal, Substitution, and Modification of Bids**

24.1 A Bidder may withdraw, substitute, or modify its Bid – Technical or Price – after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be

- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION”; and

- (b) received by the Employer no later than the deadline prescribed for submission of Bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid or any extension thereof.

## 25. Bid Opening

25.1 The Employer shall open the Technical Bids in public at the address, on the date and time specified in the BDS in the presence of Bidders` designated representatives and anyone who chooses to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 21.1, shall be as specified in the BDS. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and the Price Bid are submitted together in one envelope, the Employer may reject the entire Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.

The tender for the work shall not be witnessed by a contractor or contractors who himself/ themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as Witnessing the tender, liable to summary rejection.

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening.

25.3 Second, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with ITB 25.1. No envelope shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.

25.4 Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB 25.1.

25.5 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded:

- (a) the name of the Bidder;
- (b) whether there is a modification or substitution;
- (c) the presence of a bid security or Bid-Securing Declaration, if required; and
- (d) any other details as the Employer may consider appropriate.

In the case of Item Rate Tenders, only rates quoted shall be considered. Any tender containing percentage below/above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words, then the rates quoted by the contractor in

words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount. In event no rate has been quoted for any item(s) leaving space both in figure(s), word(s), and amount lank, it will be presumed that the contractor has included the cost of this/these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.

In the case of any tender where unit rate of any item/items appear unrealistic, such tender will be considered as unbalance and in case the tenderer is unable to provide satisfactory explanation, such a tender is liable to be disqualified and rejected.

All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in figures as well as in words and the amount in figures only in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs. 2.15 P' and in case of words, the word, 'Rupees' should precede and the word 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only' it should invariably be upto two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Technical Bid are to be initialed by at least three representatives of the Employer attending bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB 23.1.

- 25.6 The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum, the name of the Bidder and whether there is a withdrawal, substitution, or modification; alternative proposals; and the presence or absence of a bid security or Bid-Securing Declaration, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.
- 25.7 At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Price Bids.
- 25.8 The Employer will notify Bidders in writing who have been rejected on the grounds of their Technical Bids being substantially nonresponsive to the requirements of the Bidding Document and return their Price Bids unopened.

25.9 The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders' representatives who choose to attend at the address, on the date, and time specified by the Employer. The employer will enter the amounts in any suitable form. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.

The tender for the work shall not be witnessed by a contractor or contractors who himself/ themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as Witnessing the tender, liable to summary rejection.

25.10 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded:

- (a) the name of the Bidder;
- (b) whether there is a modification or substitution;
- (c) the Bid Prices, including any discounts and alternative offers; and
- (d) any other details as the Employer may consider appropriate.

Only Price Bids discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Price Bid and Bill of Quantities are to be initialed by at least three representatives of the Employer attending bid opening. No Bid shall be rejected at the opening of Price Bids.

25.11 The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum, the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.

#### **E. Evaluation and Comparison of Bids**

#### **26. Confidentiality**

26.1 Information relating to the examination, evaluation, comparison, and post qualification of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on the Contract award is communicated to all Bidders.

26.2 Any attempt by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.

#### **27. Clarification of Bids**

27.1 To assist in the examination, evaluation, and comparison of the Technical and Price Bids, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response

shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Price Bids, in accordance with ITB 33.

27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.

**28. Deviations, Reservations, and Omissions**

28.1 During the evaluation of Bids, the following definitions apply:

- (a) "Deviation" is a departure from the requirements specified in the Bidding Document;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

**29. Preliminary Examination of Technical Bids**

29.1 The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.2 have been provided, and to determine the completeness of each document submitted.

29.2 The Employer shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected.

- (a) Letter of Technical Bid;
- (b) written confirmation of authorization to commit the Bidder;
- (c) Bid Security or Bid-Securing Declaration, if applicable; and
- (d) Technical Proposal in accordance with ITB 16.

**30. Responsiveness of Technical Bid**

30.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB11.

30.2 A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

- (a) if accepted, would:
  - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
  - (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or
- (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

30.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section 6 (Employer's Requirements) have been met without any material deviation, reservation, or reservation.

30.4 If a Bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material

deviation, reservation, or omission.

**31. Nonmaterial Nonconformities**

31.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid that do not constitute a material deviation, reservation, or omission.

31.2 Provided that a Technical Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Price Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

31.3 Provided that a Technical Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria).

**32. Qualification of the Bidder**

32.1 The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meet the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).

32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1.

32.3 An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Employer shall return the unopened Price Bid to the Bidder.

**33. Correction of Arithmetical Errors**

33.1 During the evaluation of Price Bids, the Employer shall correct arithmetical errors on the following basis:

(a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

(c) If there is a discrepancy between the bid price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Price Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Price Bid will be corrected.

(d) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a), (b) and (c) above.

33.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its Bid shall be disqualified and its bid security may be forfeited or its Bid-Securing Declaration executed.



33.3 In case the lowest tendered amount (worked out on the basis of quoted rate of individual items) of two or more bidders is same, then such lowest bidders may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub sections/ sub heads as the case may be, but. the revised quoted rate of each item of schedule of quantity for all sub sections /sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer.

If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more bidders received in revised offer is again found to be equal, then the lowest tender, among such bidders, shall be decided by draw of lots in the presence of SE of the circle, EE(s) in -charge of major & . or component (s) (also DOH in case Horticulture work is also included in the tender), EE(P) or EE(HQ) of the circle & the lowest bidders those have quoted equal amount of their tenders.

In case of any such lowest contract s in his revised offer quotes rat f any item more than their respective original rate quoted already at the time of submission of tender, then such revised offer shall be treated invalid. Such case of revised offer of the lowest bidder or case of refusal to submit revised offer by the lowest bidders shall be treated as withdrawal of his tender before acceptance and 50% of his earnest money shall be forfeited In case all the lowest contactors those have same tendered amount (as a result of their quoted rate of individual items), refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each lowest bidders.

Bidder, whose earnest money is forfeited because of non-submission of revised offer, or quoting higher revised rate(s) of any items'(s} than the irrespective original rate quoted already at the time of submission' of his bid shall not be allowed to participate in the re-tendering process the work.

**34. Conversion to Single Currency**

34.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified in the BDS.

**35. Margin of Preference**

35.1 Unless otherwise specified in the BDS, a margin of preference shall not apply.

**36. Evaluation of Price Bids**

36.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

36.2 To evaluate the Price Bid, the Employer shall consider the following:

- (a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including Daywork items, where priced competitively;
- (b) price adjustment for correction of arithmetic errors in accordance with ITB 33.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
- (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 34;
- (e) adjustment for nonconformities in accordance with ITB 31.3; and
- (f) application of all the evaluation factors indicated in Section 3

(Evaluation and Qualification Criteria).

- 36.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.
- 36.4 If this Bidding Document allows Bidders to quote separate prices for different contracts, and the award to a single Bidder of multiple contracts, the methodology to determine the lowest evaluated price of the contract combinations, including any discounts offered in the Letter of Price Bid, is specified in Section 3 (Evaluation and Qualification Criteria).
- 36.5 If the Bid, which results in the lowest Evaluated Bid Price, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.
- 37. Comparison of Bids** 37.1 The Employer shall compare all substantially responsive Bids to determine the lowest evaluated Bid, in accordance with ITB 36.2.
- 38. Employer's Right to Accept Any Bid, and to Reject Any or All Bids** 38.1 The Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

**F. Award of Contract**

- 39. Award Criteria** 39.1 The Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated Bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

In the event of a tender being accepted, a receipt for the earnest money shall thereupon be given to the bidder who shall thereupon for the purpose of identification sign' copies of the specifications and other documents mentioned in Rule-1. In the event of a tender being rejected, the earnest money shall thereupon be returned to the bidder remitting the same, without any interest.

- 40. Notification of Award** 40.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted.
- 40.2 At the same time, the Employer shall also notify all other Bidders of the results of the bidding. The Employer will publish in an English language newspaper or well-known freely accessible website the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the

contract awarded. After publication of the award, unsuccessful Bidders may request in writing to the Employer for a debriefing seeking explanations on the grounds on which their Bids were not selected. The Employer shall promptly respond in writing to any unsuccessful Bidder who, after publication of contract award, requests a debriefing.

40.2.1 If at any time after acceptance of the tender, Engineer-in-charge shall decide to abandon or reduce the scope of the works for any reasons whatsoever and hence not required the whole or any part of the work to be carried out, the Engineer -in-charge shall give notice in writing to that effect to the bidder and the bidder shall act accordingly in the matter.

The Engineer-in-charge shall take prior approval from the NIT approving authority before deciding to abandon or reduce the scope of the work in this regard.

40.3 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

**41. Signing of Contract**

41.1 Promptly after notification, the Employer shall send the successful Bidder the Contract Agreement.

41.2 Within 28 days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

41.3 On acceptance of the tender, the name of the accredited representative(s) of the bidder who would be responsible for taking instructions from the Engineer-in-charge shall be communicated in writing to Engineer -in- Charge.

**42. Performance Security**

42.1 Within 28 days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 36.5, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Employer.

42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid-Securing Declaration. In that event the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

The above provision shall also apply to the furnishing of a domestic preference security if so required.

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**Section 2**  
**Bid Data Sheet**

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## Section 2 - Bid Data Sheet

This Section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section 1 - Instructions to Bidders.

### A. General

ITB 1.1	The number of the invitation for Bids is: _____
ITB 1.1	<b>The Employer is: New Delhi Municipal Council</b>
ITB 1.1	<b>The name of the ICB is:</b> Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years <b>The Identification number of the ICB is:</b> _____
ITB 2.1	<b>Through Private Operator (PPP mode) based on Hybrid Annuity model</b>
ITB 2.1	<b>The name of the project is:</b> Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years
ITB 4.1	Add sub clause 4.1 (c) to 4.1 (d) as under:  (c) Bidder will have an option to submit bid in the form of proposed JV. However, on award of contract, JV bidder will form a Company for the contract execution before signing of agreement. JV partners will decide the lead partner before bid submission and will include the name in the JV agreement.  (d) JV bidder will form a Company under the provisions of the Indian Companies Act, 2013. The Memorandum and Articles of Association of the SPV company should incorporate following provisions in its Articles:  (i) JV Partner's share holding ratio in Company will be broadly the same as indicated in JV agreement while submitting bid.  (ii) No change/sale/dilution in shareholding ratio of JV partner in Company will be allowed during contract execution period. ( Min equity in JV should be 51% for lead partner and 26% for a partner with maximum key qualifications other than lead partner)  (iii) Directors on the Board of Company will be broadly in the same proportion as that of shareholding of JV partners.

	<p>(iv) No changes in the Memorandum and Article of Association, as to the above issues, can be made without prior written consent of NDMC.</p> <p>(v) Contract agreement will be signed within 60 day's time of issue of Letter of Acceptance, after forming company.</p> <p>(e) Provisions on Share holders Agreement of SPV</p> <p>(i) As per the conditions of Bid documents, SPV needs to be incorporated under the provisions of Companies Act, 2013 and rules framed thereunder. Formation of proposed SPV shall comply with the following conditions precedent, Shareholder agreement (SHA) between the shareholders of the proposed SPV shall be executed as per the draft format provided by the Authority. SHA shall be prepared so as to cover explicitly contractual obligations of JV partners constituting SPV.</p> <p>(ii) SHA shall be treated as integral part of the Bid document and construed as Articles of Association of the proposed SPV. The moment it becomes Articles of Association of SPV, it gets the status of bible for proposed company the rules, regulations and conditions of which ought to be followed by proposed SPV along with JV partners constituting SPV.</p> <p>(iii) Any alteration in such Articles of Association of proposed SPV shall require prior approval of Authority in writing.</p> <p>(iv) SHA shall be approved by the Board of Directors of JV partners and the certified copy of said Resolution shall be mandatorily needs to be provided to the authority. BOD of JV partner shall not have any authority to dilute the terms and conditions of SHA.</p> <p>(v) Performance of SPV shall be linked with the performance of JV partners constituting SPV. Any non performance of SPV shall be construed as non performance of JV partners.</p> <p>(vi) Board of Directors of proposed SPV shall comprise of representation from JV partners, so as to make them accountable for day to day affairs of SPV.</p> <p>(vii) Draft Share holder agreement as attached in Section 9 Contract Forms incorporating above provision are mandatory for successful bidder.</p>
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## B. Contents of Bidding Documents

<b>ITB 6.1</b>	<p><b>Add following at end of para 6.1:</b></p> <p>The Bidding Document is in Two Parts. Part-I is for Technical bid. Part -I is divided in 2 Volumes. Volume 1 includes Section 1 to 6 and Section 7, 8 &amp; 9. Volume 2 includes Section 6.23: Detailed Technical Specifications.</p> <p>Part-II is for Price Bid which includes Price Bid form, Preamble to Bill of Quantities and Bill of Quantities. .</p>
<b>ITB 7.1</b>	<p>For clarification purpose only, the Employer's address is:</p> <p>Attention: Executive Engineer (W/S) / Projects,  New Delhi Municipal Council,  Room No. 231, S.B.S. Place, Gole Market,  New Delhi – 110 001, INDIA  City: New Delhi  Country: India  Telephone: +91-9810076894.  Facsimile : _____</p>
<b>ITB 7.4</b>	<p>A pre-bid meeting shall take place at the following date, time, and location:</p> <p><b>Date :</b> _____</p> <p><b>Time:</b> 15:00 hrs</p> <p><b>Place: Chamber of CE, NDMC Office, Room No. 1501, 15<sup>th</sup> Floor, Palika Kendra, New Delhi</b></p> <p><i>Bidders are advised to either attend the pre-bid meeting, or to submit their queries by fax letter to Executive Engineer (Water Supply) or by e-mail to <a href="mailto:mkhanndmc2012@gmail.com">mkhanndmc2012@gmail.com</a>, <a href="mailto:seph.civil@ndmc.gov.in">seph.civil@ndmc.gov.in</a></i></p> <p>There will be no online pre-bid meeting.</p> <p>A site visit shall be organized by the Employer at the following date, time:</p> <p><b>Date :</b> _____</p> <p><b>Time:</b> 10:00 hrs</p>
<b>ITB 8.2</b>	<p>Add the following at end of ITB 8.2:</p> <p>Clarification to Bidder's queries and amendment will be notified either through writing / e-mail or posting on web sites <a href="http://govtprocurement.delhi.gov.in">http://govtprocurement.delhi.gov.in</a> e-bidding process, it is not possible to have correspondence in writing with the bidders who have downloaded the bid documents; Bidders are informed to check the portal at regular intervals for any such amendments to the Bid document. Employer will not be responsible, if bidder did not download the addendum from the website.</p>

### C. Preparation of Bids

ITB 10.1	The language of the bid is: <b>English</b>
ITB 11	<p><b>Replace sub clause 11.2 entirely with following:</b></p> <p>Technical bid shall be submitted in Envelope “A” and Envelope “B” and shall comprise the following:</p> <p><b>Envelope “A” - Bidder shall upload scanned copies of the following:</b></p> <ul style="list-style-type: none"> <li>• Letter of Technical Bid</li> <li>• Power of Attorney in original duly attested by Notary. In case of partnership firm / limited company / group of companies, a power of attorney for the person authorised to sign shall be issued by all the partners.</li> <li>• Bid document - Documentary proof for bid document cost paid for INR 20,000/- (Non- refundable) via electronically. Bid document cost shall be paid through e-payments method of NDMC. Visit to <a href="http://govtprocurement.delhi.gov.in">http://govtprocurement.delhi.gov.in</a> in/e help and download power point presentation for more details.</li> <li>• EMD - Documentary proof of EMD/ Bid Security as per ITB 19 of ITB. (It is to be paid through e-payments method of e-tendering of NDMC)</li> <li>• If applicable, a valid Joint Venture (JV) agreement legally notarized or attested by an appropriate authority in the bidder’s home country, specifying the work responsibility and financial stakes of each of Joint venture partners under the contract.</li> </ul> <p><b>Envelope –“B” will contain following:</b></p> <ul style="list-style-type: none"> <li>• documentary evidence in accordance with ITB 17 establishing the Bidder’s qualifications to perform the contract;</li> <li>• Technical Proposal in accordance with ITB 16;</li> </ul> <p><b>Documents submitted in envelope ‘A’ &amp; ‘B’ of <a href="http://govtprocurement.delhi.gov.in">http://govtprocurement.delhi.gov.in</a> website must be submitted in hard format (one original and 2 duplicate copy) in office of the Executive Engineer, NDMC</b></p>
ITB 11	<p><b>Add the following at end of ITB 11.3:-</b></p> <p>Bidder shall submit his bid in standard BOQ available through e-tendering method of NDMC on line at the web site <a href="http://govtprocurement.delhi.gov.in">http://govtprocurement.delhi.gov.in</a> without any modification and shall be digitally signed. Price bid shall not be submitted in Hard copy.</p> <p><a href="http://govtprocurement.delhi.gov.in">http://govtprocurement.delhi.gov.in</a> is a website established by NDMC for e tendering purposes.</p>
ITB 13.1	Alternative Bids shall not be permitted.
ITB 13.2	Alternative time for completion shall not be permitted.
ITB 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: <b>None</b>



<b>ITB 14.2</b>	<p>A) Bidders shall quote the fees / rates as per following</p> <p>i)DMA Establishment Cost shall be minimum 4% of the Contract Price (Evaluated Bid Price)</p> <p>ii) Operation &amp; Maintenance service fees shall be minimum 16% of total contract Price. As per BOQ,</p> <p>iii) The ratio of DMA Establishment Fees, Construction Works cost&amp; Operation and maintenance fees shall be in the ratio of 4:80:16</p> <p>Any increase in Construction Works cost shall be subject to comparison to the ratio above. In that case, Construction works cost will be reduced and adjusted with DMA Establishment Fees and Operation and Maintenance Fees proportionately by keeping the total Bid Price unchanged.</p> <p>B) The Bill of Quantities consists of three (3) Schedules:</p> <ol style="list-style-type: none"> <li>1. DMA Establishment (R2 Item 1 )</li> <li>2. Construction Works (R3 Item 2 to 192)</li> <li>3. Operation &amp; Maintenance Service Cost (R4 Item 193)</li> </ol>
<b>ITB 14.5</b>	The Price quoted by the bidder shall be subject to adjustment.
<b>ITB 14.7</b>	<p>Add the following at end of Sub ITB 14.7</p> <p><i>The bidders are informed that certain tax and duty exemptions are available as per the following GOI notifications:</i></p> <p>Excise Exemption as per Central Excise Notification no. 12/2012-CE dated 17-03-2012 issued &amp; updated by Government of India time to time is available on the materials like pipes, valves, specials, flow meter, instrument, etc. shall be availed under this project. Contractor shall be responsible to get the Exemption and liaison with concerned department. However, NDMC shall assist Contractor to obtain certification towards Exemption of Excise Duties. The responsibility for obtaining any such exemptions from the Competent Authority will remain with the Contractor and the Employer shall not in any way be responsible for admissibility of the claims or eligibility of the Contractor.</p>
<b>ITB 15.1</b>	The unit rate and the prices shall be quoted by the bidder in Indian Rupees (INR) only
<b>ITB 15.4</b>	Not Applicable
<b>ITB 18.1</b>	The bid validity period shall be 180(One hundred eighty) days.
<b>ITB 19.1</b>	<p>A bid security shall be required. Bid securing declaration shall not be accepted.</p> <p>Amount and currency of bid security shall be: INR 400 Lacs. as a part of the bid in its original form.</p>
<b>ITB 19.2</b>	Clause not applicable.

<b>ITB 19.3</b>	<p>Replace ITB 19.3 with the following:-</p> <p>The bid security shall be, paid e-payments method of e-tendering process of NDMC.</p> <p>Visit to <a href="http://govtprocurement.delhi.gov.in">http://govtprocurement.delhi.gov.in</a> in/e help and download power point presentation for more details. regarding e-payments process</p>
<b>ITB 20.1</b>	In addition to original of the Bid, the number of copies is: two
<b>ITB 20.2</b>	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: <b>Power of attorney</b>

#### D. Submission and Opening of Bids

<b>ITB 21.1</b>	<p>Replace the paragraph with following: Bidders will submit their bids electronically only.</p>
<b>ITB 21.1 (b)</b>	<p>“E-Tendering” means submission of a digitally signed bid (by a valid digital certificate which has been issued by a licensed Certifying Agency, as approved by Controller of Certifying Agency) which is stored in Time Stamped electronic sealed tender box.</p> <p>E tendering process of NDMC For submitting the Bid, the applicant has to enroll with e-tendering system of NDMC. For any other queries e-tendering, Applicant can contact Help Line No. +91_____ IT department While submitting the Bid through e-tendering system, the Applicant shall pay the cost of the RFP document Bidders has to submit the technical (part-I) and financial (Part-II) bid online</p>
	Employer reserves the right to verify original copies of scanned documents uploaded by bidders. Employer may seek additional documentary evidence on their technical proposals, which the bidders shall provide either online using the e-Procurement or in manual form.
<b>ITB 22.1</b>	<p>Replace ITB 22.1 with the following: <b>Bids shall be submitted electronically on website <a href="http://http://govtprocurement.delhi.gov.in">http://http://govtprocurement.delhi.gov.in</a> not later than 15:00 hours on ___/___ 2016</b> Bid opening date specified in the e-Procurement site shall be taken as the final date. Employer reserves the right to open bids on or after the announced bid opening date and time specified in the website. Bid submission and bid opening timelines will be defined as per the e-tendering server clock only.</p>

<b>ITB 25.1</b>	Delete ITB 25.1, 25.2, 25.3, 25.4 and 25.5 and replace with the following:- 1. The Employer shall open the technical bids online in public in the presence of Bidders or designated representative of the Bidders, who chose to attend at:- <b>Date :</b> _____ <b>Time: 15:30 hours</b> 2. <b>Location:</b> Office of the Executive Engineer, New Delhi Municipal Council, Room No. 231, S.B.S. Place, Gole Market, New Delhi – 110 001, INDIA 3. Bids are electronically opened in the presence of authorized Bid Openers. In first stage, Envelope A of the tenders, will be opened. The bidders' names, the presence (or absence) of Bid Security, Tender Fee and e bid Fee, will be announced by the Tender Opening Committee at the opening. Then the Envelope 'B' of technical proposals will be opened and evaluated. 4. The technical bids recorded and opened at the time of opening shall be considered for evaluation. 5. The Price Bids will remain unopened in the e-proc website and will remain encrypted, until the specified time of its opening 6. The letter of technical bid shall be initialed by the representatives of the employer attending the bid opening.
<b>ITB 25.10</b>	Add the following at the end of ITB 25.10 The Price bids will be opened electronically in the presence of authorized officials of Employer and the letter of price bids and the bill of quantities shall be initialed at the time of bid opening.

### E. Evaluation and Comparison of Bids

<b>ITB 27.1</b>	Add the following at the end of ITB 27.1:- Communication during bid evaluation for the purpose of clarification will be done electronically / in writing
<b>ITB 34.1</b>	The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: Indian Rupee The source of the selling exchange rate shall be: Reserve Bank of India The date for the selling exchange rate shall be: 28 days prior to bid submission deadline.
<b>ITB 35.1</b>	A margin of preference shall not apply.

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## **Section 3**

### **Evaluation and Qualification Criteria**

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## Section 3 - Evaluation and Qualification Criteria - Without Prequalification -

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 32 and ITB 36, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

### Table of Criteria

1.	<b>Evaluation .....</b>	<b>2</b>
1.1	<b>Adequacy of Technical Proposal .....</b>	<b>2</b>
1.2	<b>Multiple Contracts.....</b>	<b>2</b>
1.3	<b>Completion Time.....</b>	<b>2</b>
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1.5	<b>Technical Alternatives .....</b>	<b>2</b>
1.6	<b>Quantifiable Nonconformities, Errors and Omissions .....</b>	<b>2</b>
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2.	<b>Qualification .....</b>	<b>3</b>
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2.1.3	<b>Employer Eligibility.....</b>	<b>3</b>
2.1.4	<b>Government-owned Entity .....</b>	<b>3</b>
2.1.5	<b>United Nations (UN) Eligibility .....</b>	<b>3</b>
2.2	<b>Pending Litigation: Pending Litigation Criterion shall apply: .....</b>	<b>4</b>
2.2.1	<b>Pending Litigation and Arbitration.....</b>	<b>4</b>
2.3	<b>Financial Requirements.....</b>	<b>5</b>
2.3.1	<b>Historical Financial Performance .....</b>	<b>5</b>
2.3.2	<b>Average Annual Construction Turnover.....</b>	<b>6</b>
2.3.3	<b>Financial Resources Requirement .....</b>	<b>7</b>
2.4.1	<b>Contracts of Similar Size and Nature.....</b>	<b>8</b>
2.4.2	<b>Construction Experience in Key Activities.....</b>	<b>9</b>

## **1. Evaluation**

In addition to the criteria listed in ITB 36.2 (a) – (e) the following criteria shall apply:

### **1.1 Adequacy of Technical Proposal**

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Employer's Requirements).

Non-compliance with equipment and personnel requirements (other than mandatory experts manpower requirements) described in Section 6 (Employer's Requirements) shall not be grounds for bid rejection and such non-compliance will be subject to clarification and rectification prior to contract award. However non compliance with mandatory experts Manpower described in Section6 result in to bid rejection..

### **1.2 Multiple Contracts**

Not Applicable

### **1.3 Completion Time**

An alternative Completion Time, if permitted under ITB 13.2, will be evaluated as follows:  
NOT PERMITTED.

### **1.4 Operating and Maintenance Costs:**

Shall be as per quoted value in price bid

### **1.5 Technical Alternatives**

Technical alternatives , if permitted under ITB 13.4, will be evaluated as follows:  
NOT PERMITTED.

### **1.6 Quantifiable Nonconformities, Errors and Omissions**

The evaluated cost of quantifiable nonconformities, errors and/or omissions are determined as follows:

Pursuant to ITB 31.3, the cost of all quantifiable nonmaterial nonconformities or omissions shall be evaluated. The Employer will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of bids.

### **1.7 Domestic Preference**

If a margin of preference shall apply under ITB 35.1, the procedure will be as follows:  
**Not applicable**

## 2. Qualification

Unless specifically indicated otherwise, it is the legal entity or entities comprising the Bidder, and not the Bidder's parent companies, subsidiaries or affiliates, that must satisfy the qualification criteria described below.

### 2.1 Eligibility

Criteria	Compliance Requirements			Documents	
	Single Entity	Joint Venture		Submission Requirements	
All Partners Combined		Each Partner	One Partner		
<b>2.1.1 Nationality</b>					
Nationality in accordance with ITB Sub-Clause 4.2.	must meet requirement	must meet requirement	must meet requirement	not applicable	Forms ELI - 1; ELI - 2 with attachments
<b>2.1.2 Conflict of Interest</b>					
No conflicts of interest in accordance with ITB Sub-Clause 4.3.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
<b>2.1.3 Employer Eligibility</b>					
Not having been declared ineligible by EMPLOYER, as described in ITB Sub-Clause 4.4.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
<b>2.1.4 Government-owned Entity</b>					
Bidder required to meet conditions of ITB Sub-Clause 4.5.	must meet requirement	must meet requirement	must meet requirement	not applicable	Forms ELI - 1; ELI - 2 with attachments
<b>2.1.5 United Nations (UN) Eligibility</b>					
Not having been excluded by an act of compliance with UN Security Council resolution in accordance with ITB Sub-Clause 4.7.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid

**2.2 Pending Litigation: Pending Litigation Criterion shall apply:**

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Submission Requirements
		All Partners Combined	Each Partner	

**2.2.1 Pending Litigation and Arbitration**

All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50 percent of the Bidder's net worth calculated as the difference between total assets and total liabilities.	must meet requirement by itself or as partner to past or existing JV	not applicable	must meet requirement by itself or as partner to past or existing JV	not applicable	Form LIT - 1
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**2.3 Financial Requirements**

Bidder or Bidder’s Parent Companies, Subsidiaries, Special Purpose Vehicle (SPV) or Affiliates, must satisfy the qualification criteria described below:

**2.3.1 Historical Financial Performance**

Criteria	Compliance Requirements			Documents	
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Submission of audited financial statements or, if not required by the law of the Bidder’s country, other financial statements acceptable to the Employer, for the last 6 years (FY 2009-10 to 2014-15 or as per International practice) to demonstrate the current soundness of the Bidder’s financial position.	must meet requirement	not applicable	must meet requirement	not applicable	Form FIN - 1 with attachments
Return on investment should be positive for atleast three years in last five years.					
Bidder’s net worth for the last year calculated as the difference between total assets and total liabilities should be minimum INR 9600 Lacs.					

**Note:** Bidder or bidder’s parent companies, subsidiary Special Purpose Vehicle or Associates or Affiliates, must satisfy the qualification criteria.

Definition of Affiliate or Associate means as defined below

“**Affiliate**” or “**Associate**” Means, in relation to either Party {and/or Consortium Members}, a person who controls, is controlled by, or is under the common control with such Party {or Consortium Member} (as used in this definition, the expression “control means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person, whether by operation of law or by contract or otherwise)

**2.3.2 Average Annual Construction Turnover**

<b>Criteria</b>	<b>Compliance Requirements</b>			<b>Documents</b>	
<b>Requirement</b>	<b>Single Entity</b>	<b>Joint Venture</b>			<b>Submission Requirements</b>
		<b>All Partners Combined</b>	<b>Each Partner</b>	<b>One Partner</b>	
Minimum average annual turnover of last three years shall be INR 25800 Lacs	must meet requirement	must meet requirement	must meet 25 percent of the requirement	must meet 50 percent of the requirement	Form FIN – 2

Note: The present price level for turnover of the previous years' value shall be given weightage of 10% per year as follows:

S. No	Financial Year	Weightage
(i)	2015-16	1.00
(ii)	2014-15	1.10
(iii)	2013-14	1.21

**2.3.3 Financial Resources Requirement**

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Using Forms FIN – 3 and FIN - 4 in Section 4 (Bidding Forms), the Bidder must demonstrate access to, or availability of, liquid assets, <sup>1</sup> lines of credit, or other financial resources ( other than any contractual advance payments) to meet the Bidder’s financial resources requirement indicated in Form FIN-4.	must meet requirement	must meet requirement	must meet 25 percent of the requirement	must meet 50 percent of the requirement	Form FIN – 3 & FIN – 4

<sup>1</sup> *Liquid Assets mean cash and cash equivalents, short-term financial instruments, short term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables and other assets that can be converted into cash within ONE YEAR.*

## 2.4 Construction Experience

Bidder or Bidder's Parent Companies, Subsidiaries, Special Purpose Vehicle (SPV) or Affiliates, must satisfy the qualification criteria described below:

### 2.4.1 Contracts of Similar Size and Nature

Criteria	Compliance Requirements			Documents	
	Single Entity	Joint Venture		Submission Requirements	
All Partners Combined		Each Partner	One Partner		
1.Participation in at least (i) one contract in water supply distribution network where the value of the completed or substantially completed* work exceeds INR 31000 Lacs or (ii) Two contract in water supply sector where the value of the each completed or substantially completed work exceeds INR 19300 Lacs of Project cost or (iii) three contracts in water supply sector where the value of the each completed or substantially completed work exceeds INR 15500 Lacs of Project cost, within the last 7 years (from 1 April 2008 to date)	must meet requirement	must meet requirement	not applicable	not applicable	Form EXP - 1

\* substantially completed means (i) the contractor has completed the works but could not commission the same because of hindrances beyond the control of contractor or (ii) contractor has completed and commissioned the works atleast for the amount required for qualification, out of large size contract.

Note: 1. The entity claiming experience should have held, in the company owing the eligible project, a minimum of 26% (twenty six percent) equity during the entire year for which eligible experience is being claimed.

2. For present price level of cost of completed and commissioned works, the previous year value shall be given weightage of 10% per year as follows:

S. No	Financial Year*	Weight age
(i)	2015-16	1.00
(ii)	2014-15	1.10
(iii)	2013-14	1.21
(iv)	2012-13	1.33
(v)	2011-12	1.46
(vi)	2010-11	1.61
(vii)	2009-10	1.77
(viii)	2008-09	1.95

\*Financial Year 2008-09 means 1 April 2008 to 31 March 2009

**2.4.2 Construction Experience in Key Activities**

Criteria	Compliance Requirements			Documents	
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
For the above or other contracts executed during the period stipulated in 2.4.1 above, a minimum construction experience in the following key activities:	must meet requirements	must meet requirements	Must meet 2 key Activities	not applicable	Form EXP - 2
Experience in Water Consumer meter replacement or installation for atleast 7500 numbers in a single order					
Experience in Construction, Commissioning single or multiple DMAs and covering minimum 7500 numbers water connections with successful NRW reduction to 30% or less					
Successful experience of conversion and or O&M of 24x7 water supply for minimum 7500 connections with in the Project area.					
Experience in O&M for water distribution network in a City/Town for three years.					
Experience in Construction and Commissioning of water distribution network of minimum 200 km length.					
Experience in replacement or installing new House service connection of minimum 7500 numbers					
Experience in Instrumentation and SCADA installation & operation in water sector including flow, pressure, water quality etc..					

**Note:** 1. The entity claiming experience should have held, in the company owing the eligible project, a minimum of 26% (twenty six percent) equity during the entire year for which eligible experience is being claimed.

**Section 4 - Bidding Forms**  
**– Without Pre-qualification –**

This Section contains the forms to be completed by the Bidder and submitted as part of its Bid.

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### Letter of Technical Bid

***The bidder must accomplish the Letter of Technical Bid on its letterhead clearly showing the bidder's complete name and address.***

Date: .....

NCB No: \_\_\_\_\_

Invitation for Bid No.: \_\_\_\_\_

To:

The Executive Engineer (W/S) / Projects,  
New Delhi Municipal Council,  
Room No. 231, S.B.S. Place, Gole Market,  
New Delhi – 110 001, INDIA

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (b) We offer to execute in conformity with the Bidding Documents the following Works:  
**“Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years”**
- (c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2.
- (e) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3;
- (f) We are not participating, as a Bidder in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers submitted in accordance with ITB 13;
- (g) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by Employer, under the Employer's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;
- (h) We are not a government owned enterprise / We are a government owned enterprise but meet the requirements of ITB 4.5; \*

- (i) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by Employer.
  
- (j) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer's Requirements) and our technical proposal, or as otherwise agreed with the Employer.

Name .....

In the capacity of .....

Signed .....

Duly authorized to sign the Bid for and on behalf of .....

Date .....

---

\* Use one of the two options as appropriate.



**Letter of Price Bid**

*The bidder must accomplish the Letter of Price Bid on its letterhead clearly showing the bidder's complete name and address.*

Date: \_\_\_\_\_

NCB No: \_\_\_\_\_

Invitation for Bid No.: \_\_\_\_\_

To:

The Executive Engineer (W/S) / Projects,  
 New Delhi Municipal Council,  
 Room No. 231, S.B.S. Place, Gole Market,  
 New Delhi – 110 001, INDIA

**We, the undersigned, declare that:**

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;

(b) We offer to execute in conformity with the Bidding Documents and the Technical Bid submitted for the following Works: **“Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years”**

(c) The total price of our Bid, excluding any discounts offered in item (d) below is:

For Works .....

(d) The discounts offered and the methodology for their application are:

For Works .....

(e) Our bid shall be valid for a period of . . . . . days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;

(g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: \*

Name of Recipient	Address	Reason	Amount
.....	.....	.....	.....
.....	.....	.....	.....

(h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.

- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by Employer.

Name .....

In the capacity of .....

Signed .....

.....

Duly authorized to sign the Bid for and on behalf of .....

Date .....

---

\* If none has been paid or is to be paid, indicate "none"

**Bid Security**

**Bank Guarantee**

.....*Bank's Name, and Address of Issuing Branch or Office*<sup>1</sup>.....

**Beneficiary:** .....*Name and Address of Employer* .....

**Date:** .....

**Bid Security No.:** .....

We have been informed that . . . . . *name of the Bidder* . . . . . (hereinafter called "the Bidder") has submitted to you its bid dated . . . . . (hereinafter called "the Bid") for the execution of . . . . . *name of contract* . . . . . under Invitation for Bids No. . . . . ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we . . . . . *name of Bank* . . . . . hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . . . . *amount in figures* . . . . . (*amount in words* . . . . . ) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Letter of Bid; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB, or (iii) fails or refuses to furnish a domestic preference security, if required.

This guarantee will expire (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder, or (ii) twenty eight (28) days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458<sup>2</sup>.

.....*Bank's seal and authorized signature(s)* .....

-Note-

*In case of a joint venture, the bid security must be in the name of all partners to the joint venture that submits the bid.*

<sup>1</sup>All italicized text is for use in preparing this form and shall be deleted from the final document

<sup>2</sup> Or 758 as applicable.

## **Technical Proposal**

**Personnel**

**Equipment**

**Site Organization**

**Method Statement**

**Mobilization Schedule**

**Construction Schedule**

**Others**

**Personnel**

Bidders should provide the details of the mandatory key professional staff as well as proposed personnel and their experience records in relevant Information Forms below for each candidate:

**Form PER – 1: Proposed Personnel**

1.	<b>Title of position*</b>
	<b>Name</b>
2.	<b>Title of position*</b>
	<b>Name</b>
3.	<b>Title of position*</b>
	<b>Name</b>
4.	<b>Title of position*</b>
	<b>Name</b>
5.	<b>Title of position*</b>
	<b>Name</b>

\* As listed in Section 6 (Employer's Requirements).

**Form PER – 2: Resume of Proposed Personnel**

The Bidder shall provide all the information requested below with all details for each person without leaving any blanks.

<b>Position</b>		
<b>Personnel information</b>	<b>Name</b>	<b>Date of birth</b>
	<b>Professional qualifications</b>	
<b>Present employment</b>	<b>Name of employer</b>	
	<b>Address of employer</b>	
	<b>Telephone</b>	<b>Contact (manager / personnel officer)</b>
	<b>Fax</b>	<b>E-mail</b>
	<b>Job title</b>	<b>Years with present employer</b>

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

<b>From</b>	<b>To</b>	<b>Company / Project / Position / Relevant Technical and management experience</b>

**Equipment**

**Form EQU: Equipment**

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer’s Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

<b>Item of Equipment</b>		
<b>Equipment Information</b>	<b>Name of manufacturer</b>	<b>Model and power rating</b>
	<b>Capacity</b>	<b>Year of manufacture</b>
<b>Current Status</b>	<b>Current location</b>	
	<b>Details of current commitments</b>	
<b>Source</b>	<b>Indicate source of the equipment</b> <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured	

Omit the following information for equipment owned by the Bidder.

<b>Owner</b>	<b>Name of owner</b>	
	<b>Address of owner</b>	
	<b>Telephone</b>	<b>Contact name and title</b>
	<b>Fax</b>	<b>Telex</b>
<b>Agreements</b>	<b>Details of rental / lease / manufacture agreements specific to the project</b>	

**Site Organization**

1. The Bidder shall supply a table of personnel and a chart showing the proposed organization to be established for (i) carrying out the construction works during all phases of works like mobilization; DMA Establishment works, preparation of Service Improvement Plan; design & construction period (Implementation period) and operation and maintenance period separately.



### **Method Statement**

1. The project is for Selection of Contractor for Implementation of Continuous (24 x7) Pressurised **Water Supply in NDMC and operation and maintenance of the system for 5 years**. The Employer's indicative guidelines on Methodology is given in the Employer's Requirement which may be followed.
2. The bidder is required to submit Approach and Method Statement for carrying out work of **NDMC Continuous (24/7) Pressurised Water Supply Project** alongwith the technical bid. The bidder's approach and method statement shall be in line with the overall principle of the Employer. The Service Improvement Plan (SIP) for DNI shall be compatible with these concepts. The instrumentation capable of transferring the real time data to the SCADA system shall include the parameters of performance evaluation of the contractor during the operation, maintenance and service delivery. The bidder's methodology shall also spell out how the NRW and real losses will be measured within service area which starts from bulk supply points of the project boundary and ends at the consumers connection within NDMC command area. Proposed Central Monitoring System with system architecture level and diagram along with flow charts shall explained in detail.
3. **NA : Not applicable**
4. The activities for methodology shall also include following:
  - (i) Surveys or confirmatory surveys (as applicable) including topographic, geotechnical, RF surveys, underground utility surveys etc
  - (ii) Door to door consumer surveys and mapping of all properties showing water consumers & updating GIS base map
  - (iii) Review, verifications and updation of designs;
  - (iv) Preparation of SIP, including phasing of works, cost effective value Engineering and drawings
  - (v) Approval of SIP (may be in phases)
  - (vi) Implementation schedule along with methodology as per scope of works:
  - (vii) Operation Services:
  - (viii) Customer services;
  - (ix) Safeguard activities;

**Work plan:**

1. The Contractors will submit detailed work plan as part of Technical proposal covering all sections of work to achieve sectional and full work key milestones as shown in Employer's Requirement

**Mobilization Schedule**

2. The Bidder shall submit mobilization and de-mobilization schedule of personnel and equipments in detail for all phases of works. The mobilization schedule should include mobilization of skilled and unskilled manpower, different machineries and equipment, materials, as required in each Phase.

**Construction Schedule**

3. The Bidder shall prepare and submit overall construction schedule. The construction schedule shall be designed and documented in a series of tasks and task assignments complete with projected completion target dates with the aid of computer operated management software like Microsoft project office, Primavera or latest by using Gantt charts and PERT diagrams to allow all actors to know their contribution towards fulfilling the Employer's Requirement.

### **Bidders Qualification**

To establish its qualifications to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

**Form ELI – 1: Bidder’s Information Sheet**

<b>Bidder’s Information</b>	
<b>Bidder’s legal name</b>	
<b>In case of Joint Venture, legal name of each partner</b>	
<b>Bidder’s country of constitution</b>	
<b>Bidder’s year of constitution</b>	
<b>Bidder’s legal address in country of constitution</b>	
<b>Bidder’s authorized representative</b> (name, address, telephone numbers, fax numbers, e-mail address)	
<p><b>Attached are copies of the following documents.</b></p> <p><input type="checkbox"/> 1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2.</p> <p><input type="checkbox"/> 2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 20.2.</p> <p><input type="checkbox"/> 3. In case of Joint Venture, letter of intent to form Joint Venture or Joint Venture agreement, in accordance with ITB 4.1.</p> <p><input type="checkbox"/> 4. In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5.</p>	

**Form ELI – 2: Joint Venture Information Sheet**

Each member of a Joint Venture and Specialist Subcontractor must fill out this form separately

<b>Joint Venture / Specialist Subcontractor Information</b>	
<b>Bidder's legal name</b>	
Joint Venture Partner's or Specialist Subcontractor's legal name	
Joint Venture Partner's or Specialist Subcontractor's country of constitution	
Joint Venture Partner's or Specialist Subcontractor's year of constitution	
Joint Venture Partner's or Specialist Subcontractor's legal address in country of constitution	
Joint Venture Partner's or Specialist Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
<p><b>Attached are copies of the following documents.</b></p> <p><input type="checkbox"/> 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2.</p> <p><input type="checkbox"/> 2. Authorization to represent the firm named above, in accordance with ITB 20.2.</p> <p><input type="checkbox"/> 3. In the case of government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.</p>	

Specialist Subcontractor is a specialist enterprise engaged for highly specialized processes that can not be provided by the main Contractor.

**Sample Form of Joint Venture Agreement**  
(For Joint and Several Liability of Joint Venture Partner)

The members .....(referred hereinafter as ..... ) and .....  
(referred hereinafter as ..... ) have agreed to the following :

1. So as to bid collectively and, if the Contract is to be awarded to us, to complete and fulfill the work by concluding the Contract for the .....(*Job*), for which tenders have been sought by ....., the Members have established a Joint Venture in the form of ....., the members of which will have joint and several liability.
  
2. If the Contract is awarded to our Joint Venture, the Contract Agreement will be signed by .....and .....
  
3. .... which is the Member in Charge of our Joint Venture is fully authorized to act in the name and on behalf of our Joint Venture and we hereby attach the resolution adopted by each of us authorizing ..... to act on our behalf.
  
4. The ratio of participation in the joint venture by the Members is as follows :  
  
..... : % .....  
  
..... : % .....  
  
..... : % .....
  
5. Under the provision that all the Members will be jointly and severally responsible and liable to ..... the specific involvements and work subdivisions (if any) of the Members will be as follows :
  
6. The Agreement to form this Joint Venture is entered on ..... / ...../ 20 .....
  
7. This Agreement form for joint and several liability is an integral part of the Joint Venture Declaration and will be finalized in case the Contract is awarded to our partnership/legal entity prior to the signature thereof.
  
8. The composition of the constitution of the Joint Venture (or consortium) shall not be altered without the prior consent of the Employer.

.....  
(Signature)

.....  
(Signature)

.....  
(Signature)

**FORM TECH – 1 -Draft Form for Undertaking on Parent Company Guarantee  
(To be furnished in Company's letterhead)**

Name of Contract/Contract No.: \_\_\_\_\_

Name and address of Employer: \_\_\_\_\_  
\_\_\_\_\_ (together with successors and assigns)

We have been informed that \_\_\_\_\_(Name of Contractor) (hereinafter called the "Contractor") is submitting an offer for such Contract in response to your invitation, and that the conditions of your invitation require his offer to be supported by a parent company guarantee.

In consideration of you, the Employer, awarding the Contract to the Contractor, we \_\_\_\_\_ (name of parent company) irrevocably and unconditionally guarantee to you, as a primary obligation, (i) the due performance of all the Contractor's obligations and liabilities under the Contract, including the Contractor's compliance with all its terms and conditions according to their true intent and meaning; (ii) for the entire duration of the Contract, we will make available to the Contractor our technical capacity, expertise and resources required for the Contractor's satisfactory performance of the Contract; and (iii) that we are fully committed, along with the Contractor, to ensuring a satisfactory performance of the Contract.

If the Contractor fails to so perform his obligations and liabilities and comply with the Contract, we will indemnify the Employer against and from all damages, losses and expenses (including legal fees and expenses) which arise from any such failure for which the Contractor is liable to the Employer under the Contract,

This guarantee shall come into full force and effect when the Contract comes into full force and effect. If the Contract does not come into full force and effect within a year of the date of this guarantee, or if you demonstrate that you do not intend to enter into the Contract with the Contractor, this guarantee shall be void and ineffective. This guarantee shall continue in full force and effect until all the Contractor's obligations and liabilities under the Contract have been discharged, when this guarantee shall expire and shall be returned to us, and our liability hereunder shall be discharged absolutely.

This guarantee shall apply and be supplemental to the Contract as amended or varied by the Employer and the Contractor from time to time. We hereby authorise them to agree any such amendment or variation, the due performance of which and compliance with which by the Contractor are likewise guaranteed hereunder. Our obligations and liabilities under this guarantee shall not be discharged by any allowance of time or other indulgence whatsoever by the Employer to the Contractor, or by any variation or suspension of the works to be executed under the Contract, or by any amendments to the Contract or to the constitution of the Contractor or the Employer, or by any other matters, whether with or without our knowledge or consent.

This guarantee shall be governed by the law of the same country (or other jurisdiction) as that which governs the Contract and any dispute under this guarantee shall be finally settled under the Rules of Arbitration provided in the Contract. We confirm that the benefit of this guarantee may be assigned subject only to the provisions for assignment of the Contract,

Signed by: \_\_\_\_\_  
(signature)  
\_\_\_\_\_  
(name)  
\_\_\_\_\_  
(Position in parent company)

Signed by: \_\_\_\_\_  
(signature)  
\_\_\_\_\_  
(name)  
\_\_\_\_\_  
(Position in parent company)

Date: \_\_\_\_\_

***Note: A failure to furnish the Parent Company Guarantee (TECH-1) as appropriate, shall result in the rejection of the tender. (Refer formats attached in Section 4 Bidding Forms).***

**FORM TECH – 2 - Draft Form for Undertaking on Subsidiary Guarantee  
(To be furnished in Company's letterhead)**

Name of Contract/Contract No.: \_\_\_\_\_

Name and address of Employer: \_\_\_\_\_  
\_\_\_\_\_ (together with successors and assigns)

We have been informed that \_\_\_\_\_(Name of Contractor) (hereinafter called the "Contractor") is submitting an offer for such Contract in response to your invitation, and that the conditions of your invitation require his offer to be supported by a **Subsidiary** company guarantee.

In consideration of you, the Employer, awarding the Contract to the Contractor, we \_\_\_\_\_ (name of **Subsidiary** company) irrevocably and unconditionally guarantee to you, as a primary obligation, (i) the due performance of all the Contractor's obligations and liabilities under the Contract, including the Contractor's compliance with all its terms and conditions according to their true intent and meaning; (ii) for the entire duration of the Contract, we will make available to the Contractor our technical capacity, expertise and resources required for the Contractor's satisfactory performance of the Contract; and (iii) that we are fully committed, along with the Contractor, to ensuring a satisfactory performance of the Contract.

If the Contractor fails to so perform his obligations and liabilities and comply with the Contract, we will indemnify the Employer against and from all damages, losses and expenses (including legal fees and expenses) which arise from any such failure for which the Contractor is liable to the Employer under the Contract,

This guarantee shall come into full force and effect when the Contract comes into full force and effect. If the Contract does not come into full force and effect within a year of the date of this guarantee, or if you demonstrate that you do not intend to enter into the Contract with the Contractor, this guarantee shall be void and ineffective. This guarantee shall continue in full force and effect until all the Contractor's obligations and liabilities under the Contract have been discharged, when this guarantee shall expire and shall be returned to us, and our liability hereunder shall be discharged absolutely.

This guarantee shall apply and be supplemental to the Contract as amended or varied by the Employer and the Contractor from time to time. We hereby authorise them to agree any such amendment or variation, the due performance of which and compliance with which by the Contractor are likewise guaranteed hereunder. Our obligations and liabilities under this guarantee shall not be discharged by any allowance of time or other indulgence whatsoever by the Employer to the Contractor, or by any variation or suspension of the works to be executed under the Contract, or by any amendments to the Contract or to the constitution of the Contractor or the Employer, or by any other matters, whether with or without our knowledge or consent.

This guarantee shall be governed by the law of the same country (or other jurisdiction) as that which governs the Contract and any dispute under this guarantee shall be finally settled under the Rules of Arbitration provided in the Contract. We confirm that the benefit of this guarantee may be assigned subject only to the provisions for assignment of the Contract,

Signed by: \_\_\_\_\_  
(signature)  
\_\_\_\_\_  
(name)

Signed by: \_\_\_\_\_  
(signature)  
\_\_\_\_\_  
(name)

\_\_\_\_\_  
(Position in subsidiary company)

\_\_\_\_\_  
(Position in subsidiary company)

Date: \_\_\_\_\_

**Note: A failure to furnish the Subsidiary Company Guarantee(s) (TECH-2) as appropriate, shall result in the rejection of the tender. (Refer formats attached in Section 4 Bidding Forms).**



**Form LIT – 1: Pending Litigation and Arbitration**

Each Bidder must fill out this form under Criterion 2.2(b) of Section 3 (Evaluation and Qualification Criteria) to describe any pending litigation or arbitration formally commenced against it.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: \_\_\_\_\_

<b>Pending Litigation and Arbitration</b>			
<p><b>Choose one of the following:</b></p> <p><input type="checkbox"/> No pending litigation and Arbitration.</p> <p><input type="checkbox"/> Below is a description of all pending litigation and Arbitration involving the Bidder (or each Joint Venture member if Bidder is a Joint Venture).</p>			
Year	Matter in Dispute	Value of Pending Claim in INR Equivalent	Value of Pending Claim as a Percentage of Net Worth

**Form FIN – 1: Historical Financial Performance**

Each Bidder must fill out this form.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: \_\_\_\_\_

Financial Data for Previous 3 Years [INR]		
Year 1:	Year 2:	Year 3:

**Information from Balance Sheet**

<b>Total Assets (TA)</b>			
<b>Total Liabilities (TL)</b>			
<b>Net Worth = TA – TL</b>			
<b>Current Assets (CA)</b>			
<b>Current Liabilities (CL)</b>			
<b>Working Capital = CA - CL</b>			
<b>Most Recent Working Capital</b>		To be obtained for most recent year and carried forward to FIN-3 Line 1; in case of Joint Ventures, to the corresponding Joint Venture Partner's FIN-3	

**Information from Income Statement**

<b>Total Revenues</b>					
<b>Profits Before Taxes</b>					
<b>Profits After Taxes</b>					

- Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last 3 (Three) years, as indicated above, complying with the following conditions.
- Unless otherwise required by Section 3 of the Bidding Document, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries or affiliates.
  - Historical financial statements must be audited by a certified accountant.
  - Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

**Form FIN – 2: Average Annual Construction Turnover**

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each member of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed, converted to US Dollars at the rate of exchange at the end of the period reported.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: \_\_\_\_\_

<b>Annual Turnover Data for the Last 3 Years (Construction only)</b>			
<b>Year</b>	<b>Amount Currency</b>	<b>Exchange Rate</b>	<b>INR Equivalent</b>
<b>Average Annual Construction Turnover</b>			

**Form FIN – 3: Availability of Financial Resources**

Bidders must demonstrate sufficient financial resources, usually comprising of Working Capital supplemented by credit line statements or overdraft facilities and others to meet the Bidder’s financial requirements for

- (a) its current contract commitments, and
- (b) the subject contract.

In case of joint ventures, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner name below:

Joint Venture Partner: \_\_\_\_\_

<b>Financial Resources</b>		
<b>No.</b>	<b>Source of financing</b>	<b>Amount (INR equivalent )</b>
1	Working Capital (to be taken from FIN-1)	
2	Credit Line <sup>a</sup>	
3	Other Financial Resources	
Total Available Financial Resources		

<sup>a</sup> To be substantiated by a letter from the bank / banks issuing the available line of credit.

### Form FIN – 4: Financial Requirement for Current Contract Commitments

Bidders (or each Joint Venture partner) should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

In case of joint ventures, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner name below:

Joint Venture Partner: \_\_\_\_\_

<b>Current Contract Commitments</b>						
<b>No .</b>	<b>Name of Contract</b>	<b>Employer's Contact (Address, Tel, Fax)</b>	<b>Contract Completion Date</b>	<b>Outstanding Contract Value (X)</b>	<b>Remaining Contract Period in months (Y)</b>	<b>Monthly Financial Resources Requirement (X / Y)</b>
1						
2						
3						
4						
Total Monthly Financial Requirement for Current Contract Commitments						<b>INR</b> .....

**Form FIN – 5: Compliance Check of Financial Resources (Criterion 2.3.3 of Section 3)**

**Form FIN-5A: For Single Entities**

For Single Entities:	Total Available Financial Resources from FIN-3 (C)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN-4 (D)	Available Financial Resources net of CCC (C-D)	≥	Requirement <sup>a</sup>
(Name of Bidder)				≥	100% of Requirement from Section 3 - 2.3.3(b)

**Form FIN-5B: For Joint Ventures**

For Joint Ventures:	Total Available Financial Resources from FIN-3 (C)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN-4 (D)	Available Financial Resources net of CCC (C-D)	≥	Requirement <sup>a</sup>
One Partner:					
(Name of Partner)				≥	B(40%) of Requirement
Each (Other) Partner:					
(Name of Partner 1)				≥	A(25%) of Requirement
(Name of Partner 2)				≥	A(25%) of Requirement
(Name of Partner 3)				≥	A(25%) of Requirement
<b>All partners combined</b>			$\Sigma (C-D)^b =$	≥	100% of Requirement from Section 3 - 2.3.3(b)

**- Note -**

<sup>a</sup> Requirement for the subject contract is defined in Criterion 2.3.3(b) of Section 3. Value A is the required percentage of the subject contract, which each partner must meet; and value B is the required percentage of the subject contract, which one partner must meet. A and B values are defined in Criterion 2.3.3 of Section 3 (Evaluation and Qualification Criteria).

<sup>b</sup>  $\Sigma (C - D)$  = sum of available financial resources net of current contract commitments (CCC) for all partners.

**Form EXP – 1: Contracts of Similar Size and Nature**

Fill out one (1) form per contract.

<b>Contract of Similar Size and Nature</b>			
<b>Contract No: . . . . . of . . . . .</b>		<b>Contract Identification</b>	
<b>Award Date</b>		<b>Completion Date</b>	
<b>Role in Contract</b>	<input type="checkbox"/> <b>Contractor</b>	<input type="checkbox"/> <b>Management Contractor</b>	<input type="checkbox"/> <b>Subcontractor</b>
<b>Total Contract Amount</b>		<b>INR or equivalent</b>	
<b>If partner in a Joint Venture or subcontractor, specify participation of total contract amount</b>		<b>Percent of Total</b>	<b>Amount</b>
<b>Employer's Name</b> <b>Address</b> <b>Telephone/Fax Number</b> <b>E-mail</b>			
<b>Description of the similarity in accordance with Criteria 2.4.1 of Section 3</b>			
		The bidder has to provide details of similar contracts here.	

**Form EXP – 2: Construction Experience in Key Activities**

Fill out one (1) form per contract

<b>Contract with Similar Key Activities</b>		
Contract No . . . . . of . . . . .	Contract Identification	
Award Date		Completion Date
Role in Contract	<input type="checkbox"/> Contractor	<input type="checkbox"/> Management Contractor <input type="checkbox"/> Subcontractor
Total Contract Amount		INR or US\$ equivalent
If partner in Joint Venture or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Employer's Name Address Telephone Number Fax Number E-mail		
<b>Description of key activities in accordance with Criteria 2.4.2 of Section 3</b>		
	The bidder has to provide details of similar contracts here.	



**Bill of Quantities**

**(Provided in Part 2)**

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## **Section 5 - Eligible Countries**

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## **Section 5 - Eligible Countries**

**Single Entity / Lead Partner** Nationality – India

**JV Partner** - Eligible Countries includes all countries unless barred by Govt. Of India or Security Council of United Nations

**New Delhi Municipal Council (NDMC)**



**Section 6: Employers Requirements**

**Part-I (Vol-1) Technical Bid**

**BIDDING DOCUMENT**

for the

**Selection of Contractor for Implementation of Continuous (24x7)  
Pressurized Water Supply System in NDMC Command Area and  
Maintenance of the System for the period of Five years**

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## 6.1 Introduction

### 6.1.1 Brief History of Water Supply of NDMC Command area

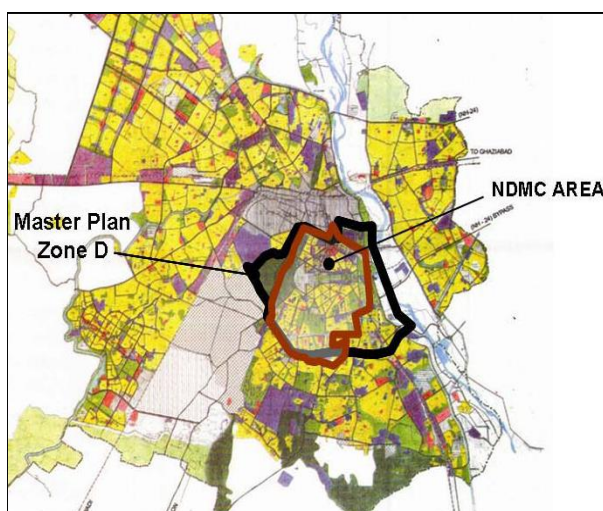
1. Delhi, the capital city of India is a rapidly growing metropolis. The National Capital Territory of Delhi extends over an area of 1486 Sq.km. (148,600 hectares). Of this about 525 Sq.km. are fully developed urban areas. This includes the area under the New Delhi Municipal Council (NDMC) and the Delhi Cantonment. The remaining area of 961 sq km in Outer Delhi consists of urban extensions and urbanized rural areas. At the time of preparation of this report, current overall population levels were estimated by DDA to be about 13.8 Million (1.38 Crores) in 2001. In Delhi, Infrastructure requirements pertaining to power, water supply, wastewater management, and transportation are the responsibility.

The state of Delhi is divided into three statutory urban regions - the Delhi Municipal Corporation (DMC), the New Delhi Municipal Council (NDMC) and the Delhi Cantonment Board.

2. New Delhi Municipal Council (NDMC) is the municipal corporation of the city of New Delhi, India,

and the area under its administration is referred to as the NDMC area. NDMC, covering an area of 42.74 km<sup>2</sup>, is governed by a council with a chairperson appointed by the central government .

NDMC is not densely populated but there is a floating population. The population of New Delhi Municipal Council had reached 2,32,255 as per consumer survey data, however, as per



provisional census data of 2012 it is only 1.45 lakhs. However, NDMC has a large floating population, being the Central Business District for Delhi city as a whole. The daily floating population in the NDMC area is reported to be as high as 15 lakhs.

New Delhi Municipal Council (NDMC) Water supply:

### 6.1.2 Existing Water Supply sources & Distribution

3. NDMC is directly responsible for complete water supply and sewerage services in areas under the jurisdiction of NDMC which accounts for 3 % of the total geographical area of Delhi. Present water demand for NDMC is 127.71 MLD (considering NDMC losses in the system) and prospective demand for the year 2033 2048 works out to be 122 MLD and 150 MLD respectively. The present



water supply to NDMC area is 133.75 MLD out of which DJB is supplying about 123.75 MLD and about 10 MLD is being supplemented through deep tube wells.

Sources of Water Supply:

**1) Treated Water Supply Through DJB, Metered Connections:**

NDMC receives its water supply from the Delhi Jal Board (DJB) at 13 nos. of locations through 19 nos. of tapping points. DJB has installed the flow meters to measure the quantum of water supplied to NDMC. Monthly joint Inspection is being carried out by DJB & NDMC staff to note the meter readings and pay accordingly to DJB. NDMC is receiving an average of 120 MLD & 124 MLD water from DJB.

**2) Ground Water Abstraction:**

As per the baseline study carried out during DPR stage (2011-12) there were 64 nos. for tubewells for drawing water for drinking purposes. The water drawn from the tube wells is pumped into the under ground reservoirs and in some cases directly feed to the distribution system. The ground water table is between 60 to 90 feet below Ground Level.

**3) Deep Bore Hand pumps:**

In addition to above, some 600 deep bore hand pumps have also been provided in different parts of NDMC area to meet water requirements in colonies.

**4) Private Abstraction of Ground water:**

Additionally, various establishments like Hotels, Restaurants and other buildings have drilled a number of tube wells.

**5) Water Supply to 33 Clusters:**

About 38 JJ Clusters exist in the NDMC area. Water supply is provided through water tankers, public water hydrants and deep bore hand pumps.

**6) Free Water Supply**

There are 30 Static water tanks for meeting water requirements of Delhi Fire Services.

Free unmetered water connections exist for such tank.

**6.1.3 Project Background & Objective**

4. As part of the on-going process of developing amenities and capacity building of its uninterrupted water supply & distribution system, NDMC intended to undertake study for NRW/ UFW with improvement in level of service to the water consumers and improvement of UN- interrupted water supply and appointed the Consultant for baseline study of the project area. Accordingly, Detailed Project Report for the project area was prepared by NDMC during 2011-12.

5. The overall objective of the NDMC Water Supply Project is to deliver a continuous, pressurized supply of safe water to the entire population of NDMC Command area while improving infrastructure services to its citizens. In this context, NDMC proposes to convert intermittent water supply system to continuous (24 x 7) water supply system covering a population of about 2.5 lakhs. The improvement work will be executed under either through NDMC own funding or through AMRUT project funding. NDMC intends to develop a 24 x 7 water supply for NDMC Command Area with the assistance of the Contractor who have experience of construction of infrastructure facilities and Operation & maintenance of water supply management system. The project would aim at improving Technical & commercial efficiencies and upgrading existing intermittent supply for continuous pressurized water supply & reduction in non-revenue & demand management to reduce the gross water consumption as per the norms.
6. The principal features of the project shall be as follows
  - i. Existing quantity of water supply: Existing total supply to NDMC command area is 125 MLD from DJB tapping points
  - ii. The project objectives to be achieved service level benchmark / performance targets as specified in section 8 of PCC for water supply services
7. The Scope of Services described hereunder is indicative and may not be exhaustive or complete. The Contractor shall undertake its own detailed investigation and verification of the Project Facilities and of the designs prepared by the Employer to ensure that specific objectives of the project can be achieved.
8. The Scope of Services shall include all technical, managerial, administrative, commercial, environmental, and social interventions as required in accordance with acceptable, prudent water utility construction and management practices, ensuring safe and sustainable drinking water supply services to the Consumers in the Service Area.

#### **6.1.4 Definitions**

9. The words, terms and expressions beginning with capital letters and defined under this Section 6, including those in Section 7 - General Conditions of Contract and those in Section 8 – Particular Conditions of Contract shall, unless the context otherwise requires, have the meanings described thereto/herein;

**“AMRUT”** means Atal Mission for Rejuvenation and Urban Transformation, the scheme launched by Govt. of India with the focus of the urban renewal projects to establish infrastructure that could ensure adequate robust sewerage networks and water supply for urban transformation;

**“Boundary Limits”** shall mean the boundary within which the Contractor has the responsibility of providing Services in accordance to the terms and conditions under this Contract;

**“BPS/UGR”** means Elevated Service Reservoir; GLSR (Ground Level service Reservoir), SR (Service Reservoirs), OHSR (Over Head Service Reservoir) has the same meaning as BPS/UGR;

**“Bulk Water”** means the treated bulk water supplied by the Employer to specific Supply Points of the project area;

**“Chief Engineer”** The terms Chief Engineer includes Additional Chief Engineer also.

**“Consumer” or “Customer”** means all entities (including individuals) to which/whom NDMC provides water services through the existing water distribution system and will supply through the newly developed system and includes all existing consumers at the time of the Commencement Date and entities which become consumers after the Commencement Date;

**“Contract Date”** means the date on which the contract is signed.

**“Contract completion date”** means the final takeover date that includes operation services.

**“Commencement Date”** means the stipulated date of commencement of contract indicated in Work Order. Work order is issued after signing of the agreement or as decided by the Employer.

**“Consumer Water Connection Points”** means the water connection points from which Consumers take delivery of water.

**“Construction Completion Date”** is the date when all Design & Construction works have been completed and commissioned.

**“Construction Plan” or “System Improvement Plan”** means the Contractor’s Plan for implementation of Design & Construction works.

**“CPHEEO”** means the Central Public Health and Environmental Engineering Organization under the Ministry of Urban Development, Government of India;

**“Customer Service Centers” or “CSC”** means the special infrastructure provided by Employer and furnished & operated by the Contractor to provide public relations services to consumers under this Contract;

**“Critical Measurement Points”** shall mean the locations as agreed by the Employer in the Construction Plan and also as added during the term of the Contract for undertaking measurement of flow and pressure in the water supply system for facilitating the monitoring of Minimum Service Levels stipulated in Schedule 7: Performance Targets & Standards as per Employers Requirement;

**“Design & Construction”** means the period commencing from contract commencement date to completion of design and construction of the permanent works.

**“DMA” or “District Metered Area (DMA)”** means a discrete area of water distribution network, created by closing boundary valves so that it remains flexible to changing demands.

**“DMA Start of Operations Date”** is the first date when water supply services in the first DMA will be based on a 24/7 basis of water supply operations also means “Initial Take Over date”

**“DPR”** means the Detailed Project Report of NDMC Water Supply Project for NDMC project Area prepared and approved by the Employer;

**“Electricity Department”** means the local service provider supplying electrical energy for Operation Service of the Facilities;

**“Engineer-in charge”** means the person named in this section 6 or Section 7 GCC or Section 8 PCC, is Executive Engineer, water supply of NDMC (or any other competent person appointed by him and notified to the Contractor, to act in replacement of the Engineer- in charge) who is responsible for supervising the execution of the Works and Services and administering the Contract.

**“Existing Assets”** means those infrastructure components, plant, machinery, equipment and any other units existing in the Service Area as on the Commencement Date;

**“Final Take Over Date”** means the date on which the Contractor finally takes over the entire water supply distribution system including from all BPS/UGRs and distribution system from BPS/UGRs to consumer end laid under this contract including existing & new consumers.

**“Government”** means Central Government / Delhi Government.

**“Initial Take Over Date”** means the date on which the Contractor takes over the first zone / DMA for operation and maintenance, after completing works of water distribution network and making house connections.

**“Mandatory Works”** means those works which are listed in the Bill of Quantities and are required to be constructed, installed or erected as the case may be and commissioned in line with the provisions of this Contract unless such works may require change of scope or design as agreed by the Parties as part of the Construction Plan / SIP Plan;

**“Mandatory key personnel”** means expert services to be provided by Contractor during construction as well as Operation & Maintenance period under this contract;

**“Minimum Service Levels”** means the levels of service to be maintained in the operation, maintenance and management and service delivery to consumers more so described in Schedule 7– Performance Targets & Standards in PCC;

**“Mobilization period”** means the period in which activities defined in Section 6 would be completed. It is the period commencing from the date of commencement of contract and extends up to 30 days.

**“NRW / Water Loss in a DMA”** A district metering area refers to a zone of a water supply network that can be isolated, and provided with input bulk meter, to measure input water quantity and consumer meters to measure consumption. The difference is used for assessing NRW/ Water Loss in the district metering area.

**“New Assets”** means those infrastructure components, plant, machinery, equipment, instruments and any other units procured, supplied, installed, erected, programmed and commissioned by the Contractor during the Contract Period other than those existing on the Commencement Date;

**“The N.D.M.C”** or NDMC means The New Delhi Municipal Council

**“Operation and Maintenance Plan”** means the plan for operating and maintaining the water supply system, submitted by the Contractor, and approved by the Engineer-in charge

**“Contractor”** or Operator is synonymous to the Contractor.

**“Performance Related Payment”** means payment to the Contractor based upon achievement of Performance Standards as per Schedule 5 & 7 of PCC

**“Performance Standards”** mean the Minimum Service Levels to be achieved and maintained by the Contractor during each period of the Contract set forth in Performance Targets & Standards in this Section 6;

**“Potable Water Specification”** means the water quality requirements of potable water to be supplied to the Consumers as stipulated under Recommended Guidelines for Physical and Chemical Parameters and Bacteriological Quality of Drinking Water, in the Manual on Water Supply and Treatment, CPHEEO, Government of India, Ministry of Urban Development, New Delhi;

**“Preparatory Period / Phase or System Improvement Plan period”** is the period commencing from the contract commencement date during which time the Contractor will prepare the Service Improvement Plan (SIP) for Selected Operational Zones within 90 days;

**“Project Facilities” or “Facilities”** means all existing and proposed infrastructure facilities including open lands, Pipelines, buildings, structures, Plant, machinery, softwares, and equipment under NDMC;

**“Project Information Memorandum” or “PIM”** shall mean the report prepared by the Employer detailing the Project as provided in Supplementary Information and available at the e-data room set up by the Employer;

**“Project Management Consultant” or “PMC”** means the agency appointed by the Employer to provide project management advisory services to the Employer;

**“PRV”** means Pressure Reducing Valve;

**“Scope of Services”** shall mean all those services to be provided by the Contractor in accordance to the obligations, activities, responsibilities and tasks in implementing the Project to achieve the Minimum Service Levels in accordance to the Employers Requirements and Contract Conditions;

**“Sectional Completion period”** means period between Initial takeover date and final Takeover date.

**“Services”** means all those activities, interventions, actions and tasks required as part of the implementation programme including all planning, verification & validation of detailed engineering design, procurement, construction, rehabilitation, operations, maintenance, and management in providing continuous pressurized water supply to the consumers of NDMC;

**“Service Area” or “Project Area”** means the area within NDMC administrative municipal boundaries which is approximately 42.74 sq. km. where NDMC is responsible for provision of water supply services to consumers.

**“Supply Points” or “Bulk water supply points”** means the points where the NDMC will supply Bulk Water to the Contractor;

**“Training Plan”** means a report containing the detailed NDMC staff training program;

## **6.2SCOPE OF SERVICES**

10. The Scope of Services (SoS) described hereunder is neither exhaustive nor complete and is indicative only. The Contractor shall undertake detailed investigation of the Project Facilities, study, make assessments and ascertain all by itself the required tasks, interventions, inputs, and

all other necessities to determine the complete Scope of Services for achieving the Minimum Service Levels as stipulated in Schedule –7 Performance Targets & Standards

The Services shall include all technical, managerial, administrative, commercial, social interventions as required in accordance to acceptable, prudent water utility management practices for ensuring safe and sustainable drinking water supply services to total number of 30000 Consumers in the selected operational zones / BPS command area within NDMC project /Service Areas of NDMC.

The Scope of Services during the each Period of the Agreement is detailed hereunder;

### 6.2.1 Scope of Contract for Design & Construction period:

11. The Scope of contract for design & construction and Operating period is detailed out in Table below.

**Table 1: Scope of Contract during Design & Construction Period**

S.N.	Components	Indicative Quantities
1.	Preparation of System improvement Plan SIP within specified period and according to the contract conditions. SIP Preparation & Implementation shall include but not limited to the Survey & investigations of existing assets, distribution network, mapping, freezing selected DMA/BPS command area boundaries, Hydraulic Modelling, ascertain the necessity and the extent of rehabilitation required. SIP submission for priority zones shall be within 60 days and other zones submission within 180 days from the commencement date.	
2.	Survey and investigations of transmission and distribution network for levels	Estimated length 450 to 550 kms
3.	Construction of New Pump House at Talkatora & Hasanpur Reservoir locations, including all required civil works, pumping machinery, Pipeline, Electro-Mechanical & Instrumentation SCADA system.	1) Talkatora Pump House (for Direct Distribution supply) :- Centrifugal pumps (3 nos.) capable of discharging 57.87 Lps. against total head of 42 mts suitable for Electric motor of 1500 RPM with VFD Drive



S.N.	Components	Indicative Quantities
		<p>2) Talkatora Pump House (BPS supply) :- Centrifugal pumps (3 nos.) capable of discharging 57.87 Lps. Against total head of 42 mts suitable for Electric motor of 1500 RPM with VFD Drive</p> <p>3) Hasanpur Pump House (for Direct Distribution supply ):- Centrifugal pumps (3 nos.)capable of discharging 57.87 Lps. Against total head of 35 mts suitable for Electric motor of 1500 RPM with VFD</p>
4.	<p>Design &amp; Optimization &amp; Construction of the Bulk Transmission System consisting of Treated Water Transmission Pipelines including Water Hammer/ Surge Protection /Control measures/equipments. It also includes all Valves, associated appurtenances and RCC chambers to be constructed along the alignment, including Trenchless crossing of Transmission Pipeline at National Highway, crossing of Nallas etc.</p>	<p>1. New line of 600 m &amp; 300 mm DI K9 is proposed from Hasanpur proposed centralized pumping station. This will link at staring points of the D/system of Nauroji Nagar, I-avenue, BD Block, K-block, Kidwai Nagar (E &amp; W), DT AIIMS.</p> <p>2. New line of 500mm dia is proposed, in parallel to existing line, from Palam to Sardar Patel Marg BPS.</p>
5.	<p>Supply, Laying, installation and commissioning of Feeder / Distribution Pipe Network length as indicated herein within tentative 28 DMA's of selected operational zones / BPS command area of NDMC. (30000 Connections)</p>	<p>i) Pure Water Distribution system of length 58 Km (including Di &amp;HDPE)</p>

S.N.	Components	Indicative Quantities
		ii) Horticulture purpose distribution / feeder pipelines of length 204.755 Km (HDPE).  iii) Non potable water use like flushing pipelines of length 218.052 km (HDPE)
6.	Distribution System- Replacement of pipes	68 km
7.	Rehabilitation of Existing UGR / BPS including replacement of pumping machinery at BPS having age more than 20 years	11 BPS
8.	Providing House Service Connections MDPE pipe on D.I pipe	Maximum 30000 nos.
9.	Providing House Service Connections MDPE pipe on HDPE pipe	
10.	Providing and Installing domestic customer meters without remote reading facility	
11.	providing and Installing domestic & commercial customer Fully AMR meters	
12.	Estimate for the work of providing and Installing Bulk Flow Meter  Estimate for the work of providing and Installing Electromagnetic Flow Meter	25 nos.  200 Nos.
13.	Providing & Fixing PRV Valves in NDMC	28 nos.
14.	Designing, manufacturing, providing, erecting and fixing altitude control valve for maintaining water level in the service reservoir	28 nos.

S.N.	Components	Indicative Quantities
15.	Finding invisible leaks in pipeline network, carrying out repairs and allied works in NDMC Command area	350 kms
16.	Automation / Instrumentation & Central SCADA system including PLC's & interfacing with existing & new instrumentation for distribution system management also with proposed STP's and integration etc. with real time monitoring facility and web enabled server data.	Covering all Bulk supply points, proposed Pumping stations at Hasanpur & Talkatora, proposed STP's, all BPS Command areas etc.

- Note:-**
1. Quantities indicated in the Table above are indicative and need to be confirmed by Contractor through a SIP.
  2. All components of implementation of SIP are to be understood including commissioning and duly approved by Engineer-in-charge / PMC.
  3. Quantities indicated for Horticulture & Flushing water (Dual piping) shall be executed like EPC contract and O & M of the same is excluded from the scope of Operator.

### 6.2.2 Scope of Operation & Maintenance period

12. From the design, construction completion date (which shall also mean sectional/ priority works completion date of priority zone) the Contractor shall take over the Operation and maintenance services from NDMC for the NDMC command area having 30000 number connections within selected DMA's/ BPS command area. Contractor shall be responsible for operation, maintenance and management of water supply in project / service area as detailed below. Contractor shall act as back office support to NDMC while managing the customer related services or complaints. The Scope of O&M shall include but not limited to the following:-

**Table 2: Scope of Works under Operation Phase**

No	Obligation	Period
1	Operation and Maintenance of infrastructure within the DMA's / BPS Command area, Established under this project including major and minor repairs.	from initial takeover date;
2	Operation and maintenance of newly constructed pump house at Hasanpur & Talkatora and Operating pumping system to fill all UGR/ BPS through transmission pipelines and operation of chlorination systems including arranging the gaseous chlorine, maintenance and	from initial takeover date;

	monitoring of system and maintaining the infrastructure from initial takeover date up to contract completion date.	
3	O & M of the distribution network for distributing water efficiently, equitably and minimizing water loss / non-revenue water (NRW), providing expert services for leak detection, reduction and maintaining the infrastructure on DMA basis	from initial takeover date
4	Updation of GIS based project map containing all pertinent attributes harmonizing with the existing GIS data base using suitable software. Transferring of all SCADA records in to GIS data base in approved format	from initial takeover date
5	Providing continuous (24 x7 ) pressurized water supply to the connected consumers and maintaining the infrastructure	from initial takeover date
6	Collection, providing water Samples to NDMC lab of treated water collected from UGRs/ BPS / consumer end to ensure that it meets the Potable Water Specification and monitor on regular basis;	from initial takeover date
7	Detecting and monitoring non-revenue connections and consumption and inform such connections to NDMC and install meters to measure consumption. Monitoring Unaccounted for Water throughout the service area by carrying out daily water balances and ensuring the physical losses are within prescribed limits from initial takeover date	from initial takeover date
8	Provide consumer service connections on approval or sanction by Employer (NDMC)	from initial takeover date
9	Operation and maintenance of SCADA, reporting and monitoring the computerised water supply management system with internet enabled web server facility and application software	from initial takeover date

13. The Scope of Services shall include all technical, managerial, administrative, commercial, environmental, and social interventions as required in accordance with acceptable, prudent water utility construction and management practices, ensuring safe and sustainable bulk drinking water supply services to total number of 30000 connections spread out in the NDMC Service Areas. The Scope of contract mentioned in Tables above is indicative only and the Contractor is required to undertake his own detailed investigation of the Project Facilities to determine the complete Scope of Services for achieving the Minimum Service Levels specified under Schedule 6.

### 6.3 Phasing of contract Works

14. The Contract is divided into two main categories ;

A] Design & Construction

B] Operation & Maintenance Phase spread over the contract period; from the stipulated date of Contract Commencement up to the Contract Completion Date.

#### **A] Design & Construction Works;**

Design & Construction scope of works includes mobilization, consumer survey, topographical surveys, investigations, mapping, preparatory works for DMA Establishment works, procurement of material / instrumentation and assessment of baseline NRW levels and investment and execution of rehabilitation plan / works and priorities as per approved service improvement plan (SIP).

##### **Phase-I:-**

1. Establishment of DMA's and Estimation of NRW levels
2. Replacement of House Service Connections
3. Instrumentation and SCADA works
4. Water Quality Sensors & Establishment of Central Monitoring System

##### **Phase-II:-**

5. Storage Capacity rehabilitation and remodeling of the system
6. Construction of New pumping stations at Hasanpur & Talkatora

##### **Phase-III:-**

7. Laying & Commissioning of Transmission Main Network
8. Laying and Commissioning of Distribution System Network

Design and Construction period includes various phase as mentioned above and completion of various project milestones as below;

- SIP should be approved & started for execution based on Employer's requirement / BOQ including priority work completion requirement.
- Detailed design, survey & investigations, drawings and cost estimates of work and improvement including proposed pump house and transmission system as a part of Value Engineering should be completed to meet the Performance Standards.
- Door to door consumer survey for 30000 number connections shall be completed

- Work plan, Methodology and timelines for implementation should be in line with the employers' broad concept /requirement, GCC & PCC.
- Detailing of integrated Contract Management Information System by using latest software like Primavera, Microsoft office architecture, data capture, management and reporting structures, protocols including all related hardware, software, installation; .
- Contractor Personnel deployment plan;
- Construction Plant and equipment deployment plan;
- Cash-flow for both parts;
- Detailed methodology for continuous monitoring of the performance of the Contractor in achieving and maintaining the Performance Standards for release of the eligible Operating Payments;
- Compliance matrix of contract and service requirement, O&M requirement and other requirement like social, environmental etc. complete

**B] O & M Phase includes;**

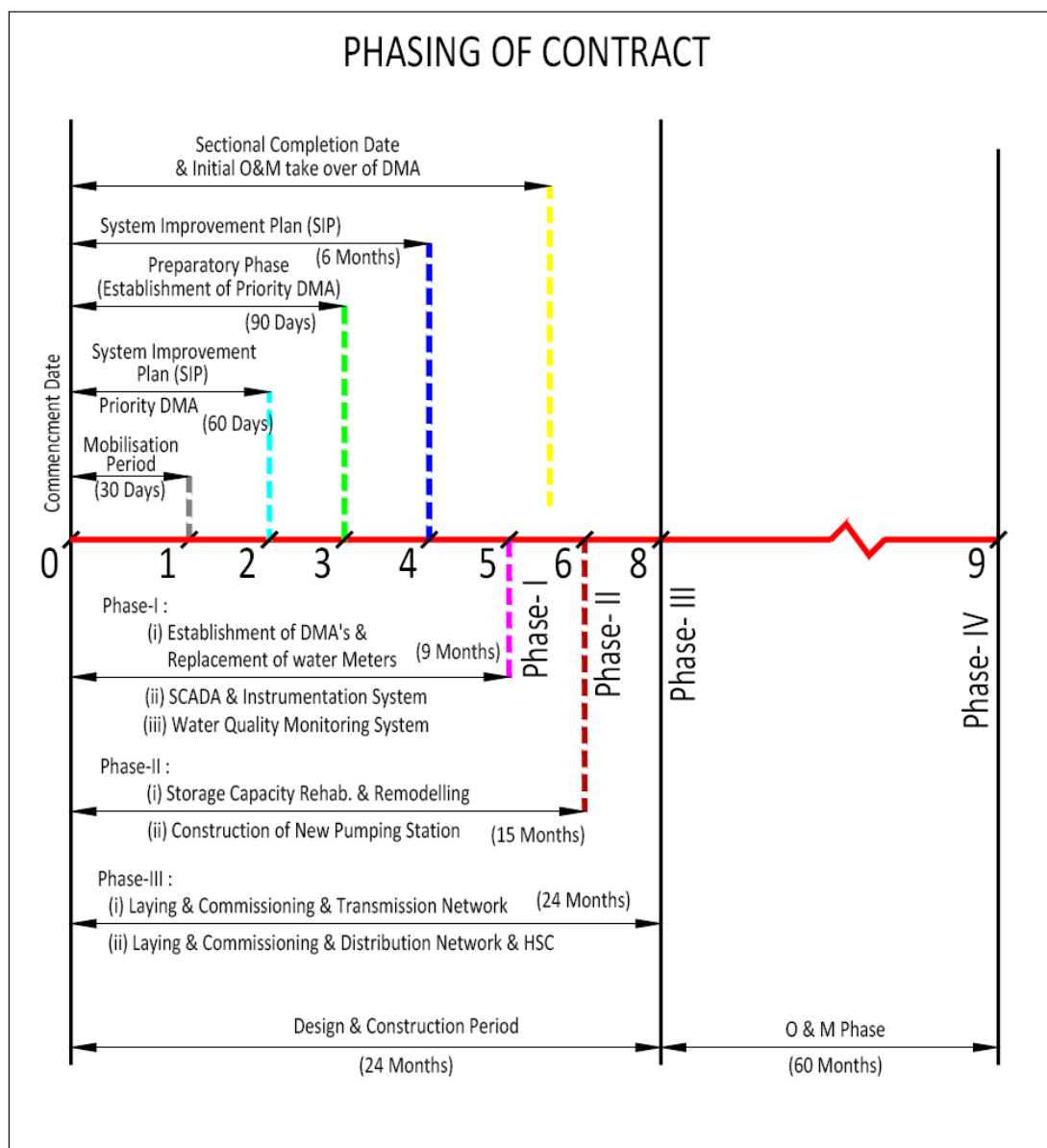
**Phase-IV:-**

Operation, Maintenance, Manage, Repairs , Hasanpur & Talkatora Pump House, SCADA & Monitoring and Service Delivery Period during the contract period as per the sectional / priority completion of work from initial takeover date (in case of sectional completion for priority DMA's ), till contract period.

During initial stages of Design and Construction period i.e. the Phase-I of the Contract period, Contractor shall mobilize his team and resources and set the project office in the project area with all necessary computers and associated peripeherals. As a priority, Contractor shall start the baseline studies in Priority DMA areas and simultaneously start the procurement of consumer water meters and instrumentation and automation equipments for establishing the Central Monitoring and Control Station i.e. Central SCADA Center (CSC) alongwith Water Quality Monitoring system. The phase wise works and priorities are explained under headings below;

Schematic Representations of the phasing of contract is indicated as below;

**Figure 1 : Phasing of Contract**



### 6.3.1 Mobilization Phase (30 days)

15. During mobilization period Contractor is required to:

- Develop & Establish a furnished project office at the space provided by NDMC for the purpose.
- Employ the staff required for starting the preparatory work
- Mobilise the team for survey and investigations
- Mobilise the teams for baseline studies of selected priority DMAs / Zones
- Mobilise team for surveys at proposed pump house locations

- Provide the computer hardware, software required for, mapping preparation, hydraulic modeling, project management etc. along with connectivity
- Provide vehicles to NDMC as per set up requirements
- Establish furnished Engineer-in charge office
- Start of Baseline study works for priority DMA's

### **6.3.2 Baseline study and SIP phase for Priority DMA's (60 Days)**

- Survey, investigations, mapping
- Door to door consumer survey
- Distribution network assessment
- Freezing of boundary of DMA / BPS command area
- Water inlet / outlet flow measurement
- Pressure measurement,
- Design, drawings, hydraulic modelling, System Improvement Plan

### **6.3.3 Preparatory Phase for DMA Establishment Phase (90 days)**

16. During the Preparatory Period, the Contractors required to:

- Be Familiar with the project site condition after required consultation
- Collect data and maps, reports, freezing of boundary etc.
- Conform/ conduct survey to ascertain the data, information, designs, existing services etc.
- Network mapping surveys and investigations , isolation of areas
- Install boundary valves, flow meters, zero pressure test etc.
- Conduct door to door survey and prepare data base of the existing properties with service connections details, using base map image of the service area
- Review the detailed project report in water supply provided by NDMC and prepare a Distribution Network Improvement Plan for water supply
- Prepare System Improvement Plan in water supply



- Prepare an asset inventory report, baseline water balance and strategy for improving services with a focus on improving Consumer services.
- Submit revised SIP after incorporating comments from the Employer

#### **6.3.4 Final System improvement Plan (180 days)**

17. Deliverables of Final SIP phase are:

- Final out put for survey, design, drawings, mapping etc.
- Design & development of proposed pump house with BOQ
- Hydraulically District network and frozan boundaries for DMA
- Completion all baseline studies, demand assessment etc.
- Hydraulic Network model built on Digital Elevation model (DEM)
- The results of flow and pressure management, water balance
- Improved pressure management plan, SCADA plan
- Implementation plan, procurement plan, design drawings, as built etc.

#### **6.3.5 Phase-I:-Establishment of DMA's and Assessment of NRW levels (270 days)**

18. Deliverables of Phase-I are:

- Validation of the Network like boundaries, pipeline network, valves etc.
- Customer awareness & Conservation programs for 30,000 connection consumers in the all DMA's.
- Flow and pressure measurements by installing flow and pressure measuring devices Completion all baseline studies, demand assessment etc.
- Replacement of consumer water meters for existing 30,000 connections
- Installation of Bulk water meters at all DJB tapping points and DMA's
- Establishment of the consumption in each of the DMA's zones
- Establishment of baseline UFW levels using the flow data from the DMA meters and the consumption assessed
- Assessment of the various baseline levels for NRW in the zones after Initial water Balance & Zero Pressure Test

- Procurement, installation and commissioning of SCADA & Instrumentation system for Central Monitoring and control
- Water quality Monitoring system in place

### **6.3.6 Sectional Completion of DMA or Requirements for Initial Take Over of DMA's**

19. Requirements of this phase are:

- Hydraulically district network establishment
- Completion of zero pressure test
- Completion of construction works
- Water balance
- Commissioning of selected DMA and etc.
- SCADA installed
- Achieving 24 x 7
- Commissioning of selected DMA Water loss detection & reduction.
- Taking over of O & M of DMA (initial take over date)

### **6.3.7 Phase-II:-Storage Reservoirs Rehab / Remodelling & Construction of PS ( 15 Months)**

20. Deliverables of Phase-II are:

- Rehabilitation of existing storage reservoirs within BPS command area.
- Replacement of worn out assets of Electrical and Mechanical at all the BPS
- Remodelling Plan of the water system by eliminating the 11 BPS
- Procurement, installation and commission of Electrical and Mechanical machineries at Hasanpur and Talkatora.
- Construction of Civil structure at Hasanpur and Talkatora
- Automation and Instrumentation along with water quality monitoring system
- Local SCADA system in place at each BPS / Pumping station

### **6.3.8 Phase-III:-Laying & Commissioning of Transmission & Distribution network (24 Months)**

21. Deliverables of Phase-III are:

- Completion of Laying of Transmission Mains upto BPS command area.

- Completion of Distribution Network in priority zones as well as in balance DMAs
- Laying of transmission mains from Proposed Pumping station @ Hasanpur & Talkatora for shifting of Command area as per Hydraulic Modelling
- Completion of laying of un-filtered water distribution network (dual piping) for use like flushing demand
- Completion of Replacement of House Service Connections activity in priority as well as balance DMA within the NDMC Command area
- Completion of Installation of Bulk water flow meters and water quality sensors at all DJB tapping points
- Integration of Bulk Tapping points with Central SCADA system for further monitoring and control

### **6.3.9Phase-IV:- Operating and Maintenance Phase**

22. During the Operating & Maintenance Phase, the Contractors required to:

- i. Annual Operating Plan (AOP) covering all operations, maintenance and management requirements new pump house & water supply & distribution system of DMAs of operational zones within NDMC command area for 30000 number of connections;
- ii. Emergency Response Plan (ERP);
- iii. Consumer Management Plan;
- iv. Standard Operating Procedures (SOPs) for routine operations and emergency responses;
- v. Pumping operations & maintenance plan
- vi. Water Quality Surveillance Program;
- vii. Energy optimization program;
- viii. Connections policy for all types of connections including services to the urban poor and treatment of illegal connections;
- ix. Network expansion policy;
- x. Detailing of an Integrated Management Information System (MIS) including computerised water distribution management software, its architecture, data

capture, management and reporting structures, protocols including all related hardware, software, installation, and operation and maintenance requirements; and

- xi. Periodic reporting plan including the formats for different performance reports.
- xii. The computer hardware and software improvement plan for continued operation of the MIS, instrumentation, SCADA system & Web Server etc.

#### **6.4 System Improvement Plan (SIPs) requirements**

- 23. Works of priority DMAs on immediate basis- The Contractor is required to validate and finalise and execute the works in selected or 5 DMAs on priority as specified by NDMC and shall be responsible to start baseline study of these selected DMA's and submit /prepare the SIP on immediate basis i.e. within 90 days from the commencement date. After approval of SIP all procurement and construction works of these priority DMA's shall be on top priority. The work of such DMAs should be completed within stipulated time as suggested in Contract Milestone.
- 24. In case of any interventions proposed in the SIP, which are not part of the DPR or those interventions which are part of the DPR but require improvement from conventional design practices, the Contractor shall provide sufficient explanation and justification as to how implementing such interventions would influence the achievement of the Performance Standards stipulated in the document.
- 25. In a situation where the Employer does not agree to the interventions proposed in SIP, there may be mutually agreed revision of the Performance Standards.
- 26. The Scope of Services during the implementation Period shall essentially comprise of implementing the approved SIP based on the hydraulic model prepared for water distribution based on DMA approach. SIP will be implemented in accordance to international best practice and industry standards and sufficient care shall be taken by the Contractor in minimizing supply interruptions, traffic disruptions and ensuring good and timely communications with the Consumers in the Service Area. During work execution, Contractor would be required to inform the residents, say, of a particular street, well in advance about the type of work, inconvenience expected, timelines for various works, etc. Contractor to have a strong Public Relations and Community Outreach team. Contractor will plan sequencing of activities to synchronize water pipeline works with other related works to minimize the road excavation and restoration in the streets.

27. All the Works and interventions proposed as part of the SIP shall be in conformity with the Specifications set out in the Employer's Requirements.
28. After implementation SIP plan and upon successful commissioning of DMA's for continuous water supply within stipulated constructed period or actual commissioning period whichever is earlier shall be handed over to Contractors for further Operation and Maintenance per DMA wise.
29. The Contractor shall submit the draft SIP within 90 days for Priority DMA first from the Contract commencement date and within next 90 days for complete DMA's / operational zones to allow the Employer to undertake a thorough review of the SIP and suggest amendments if any.

#### 6.4.1 Performance and Condition Grades

30. Performance grades shall define whether the Facility including pipelines is meeting the required quality standards or levels of service standards or is suitable for its function. Condition grades shall define the structural condition of the Facility & pipes. This may be from an assessment of the structural condition or from recording of the frequency of failures of the Facility. Contractor shall provide the Condition Assessment Report for pipes and facilities covered under the scope of this contract.
31. Following Table describes the meaning of some of the Grades of the Facilities. Detailed definition of these Facilities shall be formed within six months of commencement date, for each Part, in consultation with the NDMC.

**Table 3: Definition and grades of facilities**

Definition of Facilities		
Grade	Description	General Meaning
1	Good	Of sound structure with components that are operable and well maintained
2	Fair	As1, but showing some minor signs of deterioration Routine repair, refurbishment and maintenance required with review of condition in the medium term
3	Adequate	Functionally sound, but affected by minor cracking, staining or minor leakage. Some reduced efficiency and minor failures. Review of condition required in the medium term with action likely to be needed in the medium term to prevent deterioration to Grade 4
4	Poor	Condition has a significant effect on performance of the Facility with components requiring significant repair or maintenance to remain operational. Shall require major overhaul/replacement with in the medium term.

5	Bad	Condition of the Facility has a serious effect on its performance. Effective life of mechanical and electrical plant and other components is exceeded and incurring excessive repair and maintenance costs due to unreliability. Shall require major overhaul/replacement in the short term.
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#### 6.4.2 Timing Definitions and Differentiation between Facility Types

##### a) Performance Aspects

The Contractor shall develop a clear understanding of the exact meaning of the phrases 'Immediately', 'Short Term' and 'Medium Term' used in association with the performance Grades with the NDMC, within six months of appointed date of the Operating Period.

##### b) Condition Aspects

Different Facilities shall have different expected life span. Buildings or Civil (usually reinforced concrete structures) or pipes Facilities are expected to have a Facility life of 30 years. Electrical and Mechanical Facilities are expected to have a Facility life of 15 years. Bulk water mains would be expected to have Facility life in excess of 30 years, or may be taken as having an indefinite life.

The terms 'immediate', 'short term', 'medium term' need to describe approximately when major work shall be required related to the Facility's normal life.

Contractor shall provide the detailed justification for pipes replacement proposals with SIP. The pipe replacement proposal without sufficient investigation & justification shall be rejected. Contractor needs to prove by investigation report that pipe under proposed replacement schedule is beyond repair and accordingly it will be considered under SIP plan. The field investigation shall be witness by Engineer / PMC before approval of any such replacement proposal.

32. The Contractor shall review and validate the Detailed Project Report of the project area prepared by Employer which will enable him to prepare SIP:

- (i) in line with the Detailed Project Report (DPR)
- (ii) in compliance with the Draft Master Plan NDMC, if any,
- (iii) in compliance to the terms and conditions of the Project and Loan Agreements among NDMC, Government of India and Government of Delhi
- (iv) in coordination with the on-going and programmed activities of NDMC like SMART City initiatives, and Govt. of Delhi as the case may be.
- (v) Any deviations to the document, data provided by NDMC and consultation shall be highlighted and got approved as part of the SIP.

**6.5SIP Schedule& Key Milestones**

33. Schedule of various activities including priority zones for survey, design& SIP submission is shown in Table below:

**Table 4:** SIP Schedule & key milestones and Penalties

<b>S N</b>	<b>Activity</b>	<b>Target period for completion from contract commencement date</b>	<b>Amount of penalty to be recovered in case of delayed output</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Mobilisation on site	30 days	
2	Verification & validation of base map (provided by NDMC), finalisation of DMA boundaries, procurement plan of priority DMA's	60 days	Rs. 10,000 per day
3	Topographical survey and ground profiling of the service area, plot surveys and any other surveys and investigations to ensure accurate design.	60 days	Rs. 25,000 per day
6	Complete system design and drawings, preparation of abstract of final quantities and cost estimates for the designs	90 days	Rs. 75,000 per day
7	Preparing PERT chart, manpower, equipment, mobilisation plan, cash flow plan, detailed methodology of continuous monitoring etc.	60 days	-
8	Detailed O&M plan, Standard Operating Procedures and policies	60-90 days	Rs. 75,000 per day

<b>S N</b>	<b>Activity</b>	<b>Target period for completion from contract commencement date</b>	<b>Amount of penalty to be recovered in case of delayed output</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	plan, Performance measurement plan, Bulk Supply locational data base for water supply system.		
9	Compilation and submission of designs, hydraulic modelling in complete with SIP and procurement plan for priority zones	60-90 days	Rs. 75,000 per day
10	Complete designs, survey and all structural drawings for pump house and as built drawings for balance DMA's, Flow Charts, P & I diagram for all instrumentation & SCADA system	180 days	

34. Schedule of various activities of the Construction period (after Design) is shown in Table below:

**Table 5:** Construction / DMA Schedule & key milestones and Penalties

<b>S N</b>	<b>Target Period (end of quarter) for completion from contract commencement date</b>	<b>Target Activity: DMA establishment / No. of connection Completion (inclusive of all instrumentation &amp; SCADA works)</b>	<b>Target Activity: Transmission Main /Pipe Laying Completion</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1 <sup>st</sup> Quarter (Q1)	Door to door Consumer Survey, Network updation, hydraulic modelling, SIP, Procurement Plan, DMA Established	SIP & Procurement Plan



<b>S N</b>	<b>Target Period (end of quarter) for completion from contract commencement date</b>	<b>Target Activity: DMA establishment / No. of connection Completion (inclusive of all instrumentation &amp; SCADA works)</b>	<b>Target Activity: Transmission Main /Pipe Laying Completion</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
		(For Priority DMA's)	
2	2 <sup>nd</sup> Quarter (Q2)	2000 number connections & Submission of SIP for balance DMA's	Pipe procurement
3	3 <sup>rd</sup> Quarter (Q3)	6000 number connections	Laying & testing
4	4 <sup>th</sup> Quarter (Q4)	14000 number connections	Laying & testing
5	5 <sup>th</sup> Quarter (Q5)	24000 number connections	Laying & testing
6	6 <sup>th</sup> Quarter (Q6)	34000 number connections	Commissioning
7	7 <sup>th</sup> Quarter (Q7)	44000 number connections	
8	8 <sup>th</sup> Quarter (Q8)	30000 number connections	

Note :- 1. Based on total 30000 number connections within NDMC project area, the Contractor shall complete the DMA establishment works for minimum number of connections per quarter as shown in above. The figures per quarter (Q) indicate the cumulative number of connections that have to be operational (accepted by the Engineer-in-charge) before the end of the respective quarter.

2. DMA's works or DMA Establishment work specified above inclusive all works required for Successful Establishment of DMA inclusive of all civil, electrical, instrumentation & SCADA works

3. Pump House Design & Construction at Hasanpur & Talkatora Reservoir and Transmission main pipe laying construction works from reservoirs shall be implemented simultaneous to DMA Establishment works on Top Priority.
35. Contractor shall submit the outcome of each activity for review of Employer's Engineer-in-charge / Representative immediately after completion of the activity. Employer's Representative will review the outcomes on regular basis and will submit their review comments within 21 days of receipt of the document. Contractor will develop data bases for water supply hydraulic and water quality parameters and the daily Bulk inlet Supply at each BPS including hourly flows and total supply,
36. Contractor shall also submit the activity wise Monthly Report for monitoring by the employer. Progress of all activities will be reviewed on weekly basis for design part. Monthly basis during construction part and daily basis during operations part.
37. Contractor shall be responsible to submit Quality Assurance Plan (QAP) along with SIP Plan for approval of Engineer-in-charge / PMC before procurement of any material at site.
38. In case of delays in meeting timelines of design activities, penalty as per the sums indicated in column 4 and specified in Schedule 5 of PCC or specified elsewhere appropriate under this contract will be imposed and recovered from due payments. If the delays that occurred in activity milestones are covered by the Contractor within the stipulated or extended period for Compilation and submission of designs in complete, which is not attributable to Contractor, penalty imposed on account of such delays will be refunded.

## **6.6 Design Requirements**

### **6.6.1 Survey, Mapping, investigations etc.**

39. A detailed topographical survey, of the components involved as shown in the boundary limit, within the project area shall be carried out using Total Station equipment and the spot levels and the contours at 0.5 m interval shall be carried out & stored in editable digital format on the GIS base. Contractor will survey all underground utilities located within the Project Area up to 1.5 m depth and mark on GIS based maps and upgrade the same.

### **6.6.2 Recommended Design Norms**

40. Water Supply components are to be designed as per design norms given in Manual on Water Supply and Treatment, Published by CPHEEO, Ministry of Urban Development, Government of India.

### **6.7 Commencement Date**

41. The Contractor shall make a comprehensive assessment & due diligence of water supply distribution system in the NDMC Service Area and prepare a holistic and comprehensive System Improvement Plan (SIP) for transforming all BPS command area / DMA's of selected Operational Zones into continuous (24x7) pressurized water supply for NDMC command area. This will include baseline study of the water distribution system and network, updation / preparation of distribution network, condition assessment, consumer survey, validation of network data / details, finalizing the boundaries of operational zones, assessing operational feasibility of DMA's selected for converting into 24 x7 water supply, developing a working hydraulic network model, developing strategy for water loss reduction / leak detection, pipeline laying & replacement for improving services with a focus on optimization of performance of existing assets and improving Consumer services.

### **6.8 Project Area Boundary & Water sources**

42. DJB (Delhi Jal Board) is responsible for supplying drinking water to NDMC for its residents and commercial activities. The quantum of water received from DJB is of order of 120 to 125 MLD. The water is received through DJB Reservoirs at Jhandewalan, Talkatora, Hasanpur and Palam as well as through direct tappings from DJB transmission mains. The different WTP & Main UGR of treated water source to NDMC area are: 1) Jhandewalan UGR, 2)Tarkatora , 3) Hasanpur UGR, is being supplied water from Chandrawal WTP, 4) Palam UGR is being supplied water from Haidarpur WTP, 5) Hans Bhavan direct tapping on pumping main leading from Wazirabad WTP, 6) Nizamudin direct tapping from Sonia Vihar WTP. Water is being supplied to NDMC area from above sources at 13 Locations through 19 tapping points as listed below. Contractors scope includes project area boundary and bulk supply points onwards to the consumer meter.
43. The total area of the project area amounts to 42.74 sq km.
44. The mapping of the project area has shown that there is 470 km of length of feeders and water distribution network. Most of the pipes in the project area are of cast iron, PSC, DI, MS etc. for diameters above 100 mm. For smaller diameters, Galvanised Iron pipes have been used extensively. In terms of house service connections, the existing total approximates water connection in project area are 30000 Nos.
45. The project area comprises of three different administrative zones viz. Zone-1(Gole Market), Zone-2 (Jor Bagh) & Zone-3 (Vinaymarg) for civil operations and administration
46. The map below showing the location of NDMC command area with tentative locations of water sources

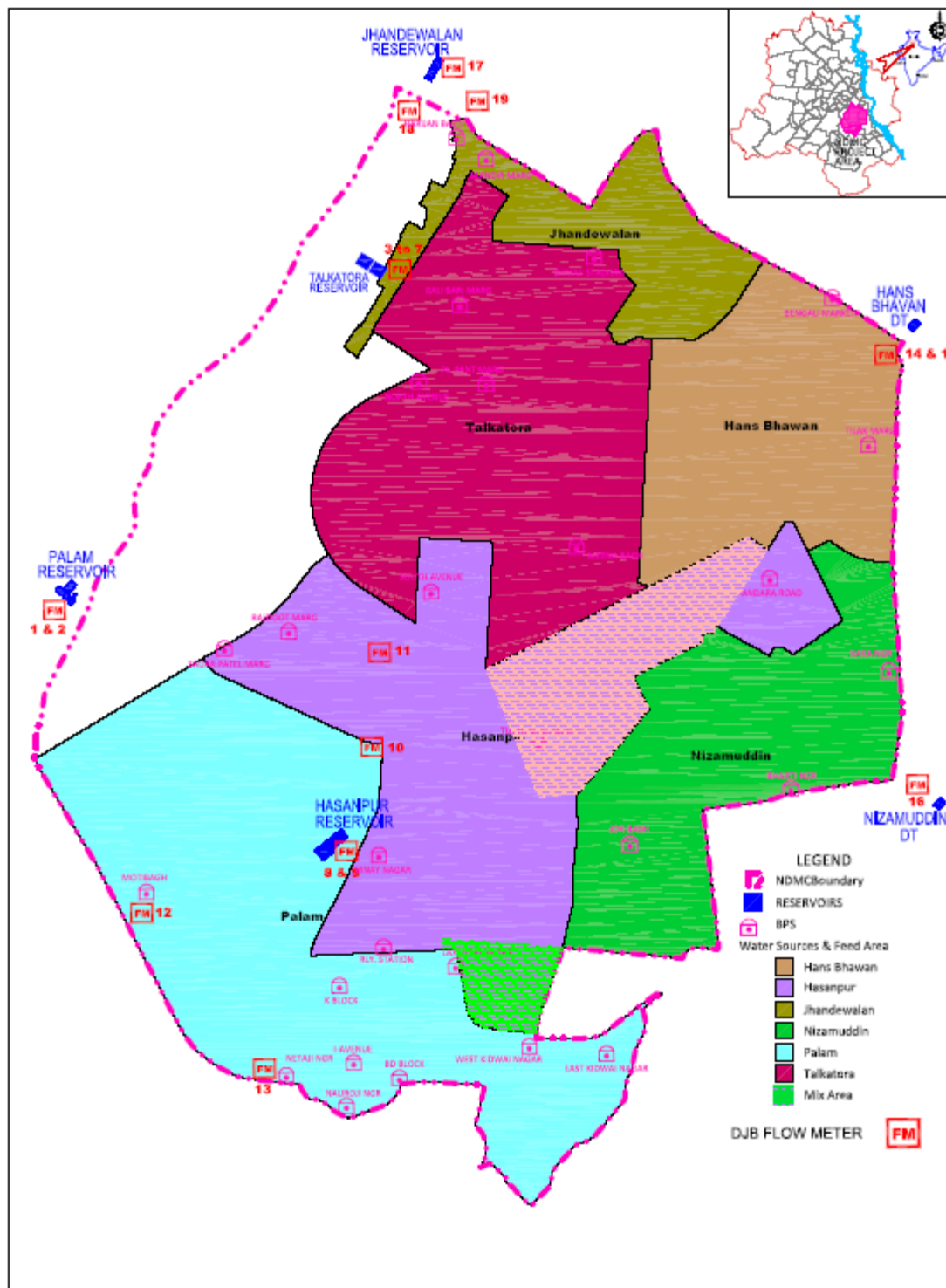


Figure 2: Water Sources

### 6.9 Distribution Scenario

47. The existing project area distribution network is served through 28 Nos of BPS, located in different parts of the project area, which receive treated water from DJB though, 19 Nos of inlet points. Details of Inlet point to NDMC command area & connected U/s WTP are indicated as following:

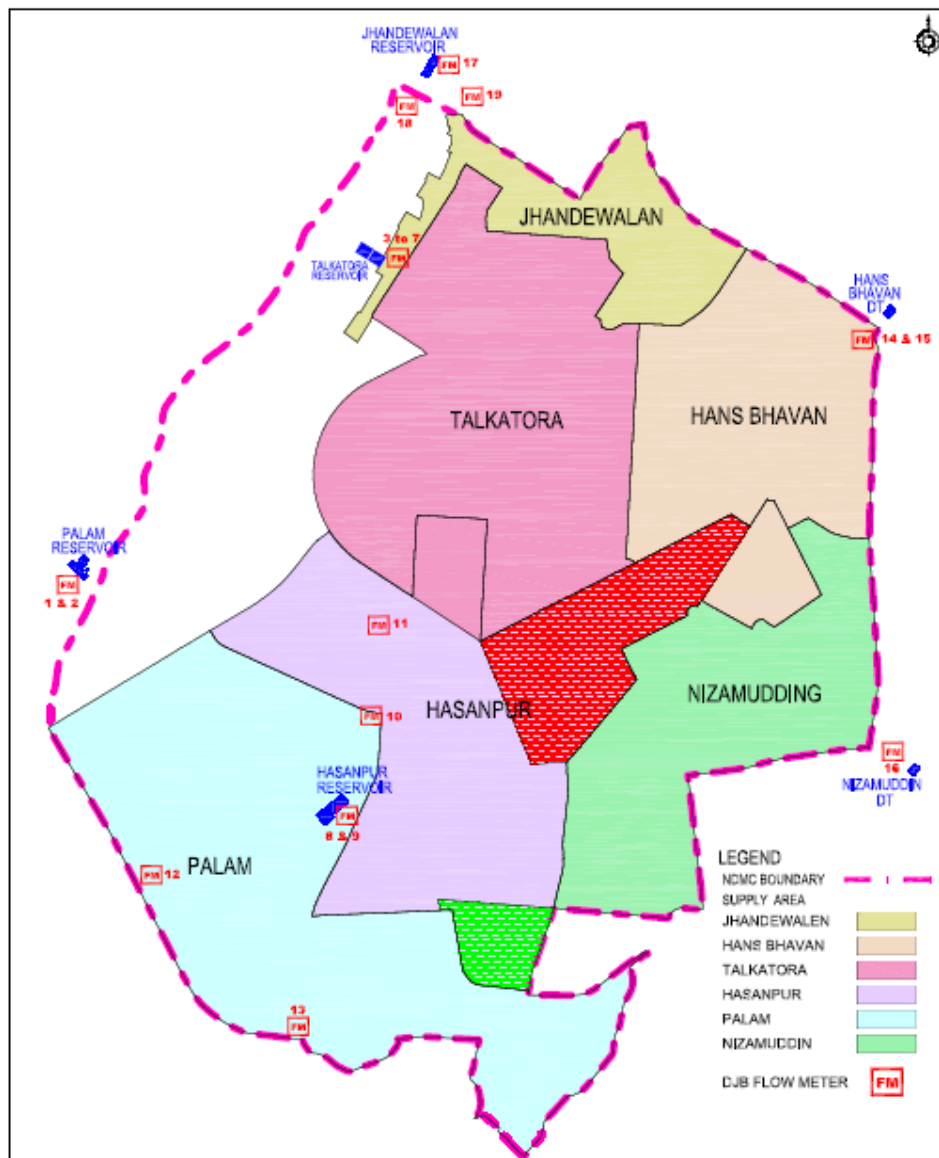
Sr. No.	Details Of DJB Reservoirs and Direct Tappings Points with inlet pipe size	Source and Destination details	
		Source	Destination
1	<b>Palam Reservoir</b>	Hyderpur WTP	
	450 mm (33")		Feed to NDMC area only
	400 mm (Cantt.) (27")		Feed to NDMC area only
	1000 mm (42")		Feed to DJB and NDMC. Moti Bagh & Netaji Nagar are the tapping points via 300 mm to 1000 mm
2	<b>Talkatora Reservoirs</b>	Chandrawal WTP	
	400 mm		Feed to NDMC area only
	500 mm		
	300 mm (P.H.) Rastrapati Bhavan		
	300 mm (Bye-Pass) Mandir Marg		
	300 mm (Lodhi Road) Kali Badi Marg		
3	<b>Hasanpur Reservoir</b>	Chandrawal WTP	
	500 mm		Feed to NDMC area only
	450 mm		Feed to NDMC area only
4	<b>Ashoka Hotel</b>		
	300 mm	Tapping to 650 mm dia pipe originating from Jhandewalan 700-675-650 mm to feed to Hasanpur	Feed to NDMC area & Hasanpur Reservoir
5	<b>Chanakyapuri</b>		
	200 mm	Tapping to 650 mm dia pipe originating from Jhandewalan 700-675-650 mm to feed to Hasanpur	Feed to Rajdoot Marg BPS & Hasanpur Reservoir
6	<b>Moti Bagh</b>		
	150 mm	Tapping to 1000 mm (42") line originating from Palam to feed to DJB and NDMC also.	Feed to NDMC area & DJB Area
7	<b>Netaji nagar</b>		
	150 mm	Tapping to 1000 mm (42") line originating from Palam to feed to DJB and NDMC also.	Feed to NDMC area & DJB Area
8	<b>Supreme Court</b>		
	150 mm	HansBhawan (Wazirabad WTP)	Feed to Supreme Court
9	<b>Sikandra Road</b>		
	600 mm	HansBhawan (Wazirabad WTP)	Feed to NDMC area
10	<b>Nizamuddin</b>		
	500 mm	Sonia vihar WTP	Feed to NDMC area
11	<b>Ring Road</b>		
	600 mm	Jhandewalan (Chandrawal)	Feed to NDMC area
12	<b>Rani Jhansi Road</b>		
	450 mm	Jhandewalan (Chandrawal)	Feed to NDMC area
13	<b>Bhooli Bhatyari</b>		
	100 mm	Jhandewalan (Chandrawal)	Feed to NDMC area

**Table 6: Supply & Sources**

**6.10 Bulk Supply point and Boundary Limits**

48. Scope of Contractors obligations starts from the Bulk Water Supply point i.e. DJB Inflow tapping point onwards for total 30000 number of connections including proposed pumping locations of Hasanpur & Talkatora. Boundary Limits for undertaking planning, validation of baseline data, verification of designs, construction, rehabilitation, distribution, operations, maintenance and management by the Contractor, include the water supply operational zones / BPS command area as marked / mentioned in DPR for NDMC area and extending up to the customer boundary limits including the customer meter if installed on the existing connections and up to the customer meter in all the new or rehabilitated connections of selected Operational zones.

Tentative Layout diagram of proposed Water supply of selected Operational Zones are as following;



**Figure 3: Tentative layout map of DJB Inlet Points and Operational zones**

Selected operational zones (Tentative) command area as indicated above are subject to change modify within 30000 number connections as per requirements of NDMC.

Details of BPS pumping stations operational within DMA's / operational zones is as following;

**Table 7: BPS Details**

Sr. No	Location of UGR pumps & motors installed prior to 1991	Capacity in ML	TWL	BWL	Centrifugal Pumps coupled with 1450 RPM Induction motor				Year Of Commissioning
					Pump Nos	HP	Approx Discharge (lps)	Head (meter)	
1	Laxmi Bai Nagar	1.35	215.830	212.530	1	50	89	30	1 set 1989
					2	50	89	30	2 set 2008
2	West Kidwai Nagar	2.00	212.400	209.400	3	50	60	30	2000, 2010
					2	100	140	40	
3	Jor Bagh	8.00	209.400	206.100	5	100	147.5	35	6 sets 1988
					3	50	77.78	35	2 sets 2007
4	K Block Sarojini Nagar	1.35	225.400	222.100	1	60	96	42	1 set, 1996
					1	60	96	42	1 set, 1997
					2	60	96	42	2 sets, 2004
5	Sarojini Nagar Railway Station	2.70	221.510	209.210	2	100	110	44	2 sets, 2000
					1	100	110	44	1 set, 2001
6	Bengali Market	3.40	207.400	204.100	3	60	70	45	3 sets, 2007
					1	100	75	30	1 set, 2002
					2	100	75	30	2 sets, 2004
7	Tilak Marg	8.00	204.400	201.100	2	50	60	30	2 Sets 25 yrs old
					5	100	60	38	5 sets, 1989
8	Pandara Road	1.35	202.400	199.100	3	50	60	40	3 sets, 2006
					1	40	45	35	1 set, 1997
9	Bharti Nagar	3.00	204.400	201.100	2	40	45	35	2 sets, 1998
					1	100	75	30	1 set, 2003, 2007
10	Tuglak Crescent	2.40	203.400	200.100	1	100	75	30	1 set, 2003, 2007
					1	100	75	30	
					3	100	75	30	3 sets, 1995
11	Vinay Marg	3.40	223.400	212.530	3	60	100	38	3 sets, 2003
					2	60	100	38	2 sets, 2004
					3	100	140	40	3 sets, 2003
12	Kaka Nagar	0.45	207.400	204.100	2	100	140	40	2 sets, 2000
					2	50	45	35	2 sets, 2007
13	Moti Bagh	2.05	233.400	230.100	2	30	28	45	1999
					3	60	70	45	3 sets, 1998
14	Mandir Marg	1.10	214.400	211.100	1	60	70	75	1 set, 2004
					3	30	68	24	3 sets, 1994
15	Pt. Pant Marg	1.10	213.400	210.100	1	12.5	28	24	1 set, 2003
					3	40	45	35	3 sets, 1998
16	North Avenue	0.80	212.850	209.550	1	40	45	35	1 sets, 2003
					2	20	26	38	2 sets, 2002
					2	20	26	38	2 sets, 2004
17	Shivaji Stadium	3.00	207.400	204.100	2	12.5	18	35	2 sets, 1985
					5	100	60	42	2010
18	Harijan Basti	0.60	216.400	213.100	2	20	22	40	2 sets, 2004
					2	20	22	40	2 sets, 2006
19	Netaji Nagar	2.05	221.400	218.100	3	40	45	35	2 sets, 1994
					3	50	45	40	3 sets 1998, 1
20	Rajdoot Marg	1.20	212.400	209.100	2	20	45	35	2 Sets, 1990
					2	30	45	35	2 Sets, 2001
21	Nauroji Nagar	0.25	220.400	217.100	2	40	45	40	3 sets, 2009
					3	30	68	24	3 sets, 2001
22	South Avenue	1.15	209.400	206.100	3	30	68	24	3 sets, 2007
					2	20	22	40	2 sets, 1999
23	B D Block Sarojini	0.45	218.740	215.440	3	40	45	40	2000
24	I-Avenue, Sarojini	0.25	223.400	220.100	2	40	45	40	2008
25	Sardar Patel Marg	3.45	214.400	211.100	5	100	140	40	2010
26	Kali Bari Marg	2.00	215.400	212.100	5	100	140	40	2010
27	East Kidwai Nagar	0.45			3	40	45	40	2010

Apart from filtered water supply from six sources through 28 nos. of BPS, NDMC also receives ground water source from of tube wells (apprx. 64 Nos.)

Note:-Details of pumping machinery as above is as per DPR 2010-11 which may vary as per actual assessment

#### **6.11 Proposed Re-modelling of the system**

49. As per DPR study, Talkatora, Hasanpur reservoirs are supplying water exclusively to NDMC areas along with Palam (partial supply) & Jhandewalan reservoir. However, NDMC does not have operational control over these reservoirs to manage the water supply within the areas and hence Storage capacity at Main UGR i.e. at Talkatora & Hasanpur (In control of DJB) remains unutilized. Also, there are too many booster pumping stations (BPS) in existing water supply system. There are 28 nos. of BPS in NDMC area apart from 64 nos. of tube wells to serve only 42.73 sq. km. area. It results in to blocking of huge area due to BPS installations with higher energy cost, O & M cost and establishment size. Hence, in order to simplify operation of existing complex water supply system by isolating water distribution zones & subzones, from respective source & UGR remodeling of existing water supply system is proposed as per below;

- Full utilization of existing Main UGR Talkatora & Hasanpur (in control of DJB).
- Use of existing pumping system @ Jhandewalan for pumping water to Hasanpur UGR to fullest extent without change in number of pumps, Q & H parameters
- To Minimize number of Downstream BPS or Direct tapping points, by centralized control from Main UGR, like Talkatora & Hasanpur UGR, thereby reducing establishment as well as Energy cost.
- Utilization of individual storage at BPS retained in system for mass balance of Inflow & out flow during peak & nonpeak hour supply.
- Mass Balancing of Supply & Demand in system, for converting existing intermittent supply system to 24 x 7 water supply scenario.
- 11 Nos of BPS are proposed to be dispensed which will save cost of O & M as well as making free, occupied land of BPS for other purpose.
- New centralized pumping stations at Talkatora & Hasanpur

For Re-modelling details and proposed system, Contractor may refer to Detailed Project Report of the project area and confirm the same through SIP. Handing over of Talkatora & Hasanpur Reservoir from DJB to NDMC is in process & NDMC will be responsible for permission to undertake the construction works by Contractor inside the said premises.



50. Boundaries of proposed BPS command area / DMA's (total 28 nos.) shown below are tentative and indicative only and may differ as per actual assessment. Finalization of boundaries of proposed DMA is responsibility of Contractor. Contractor while assessing the operational feasibility shall verify the boundaries of DMA's for hydraulically districts zones. In the process, if any adjoining area is being affected for water supply, it is in the scope of Contractors to make alternative arrangement of water supply for the area affected.

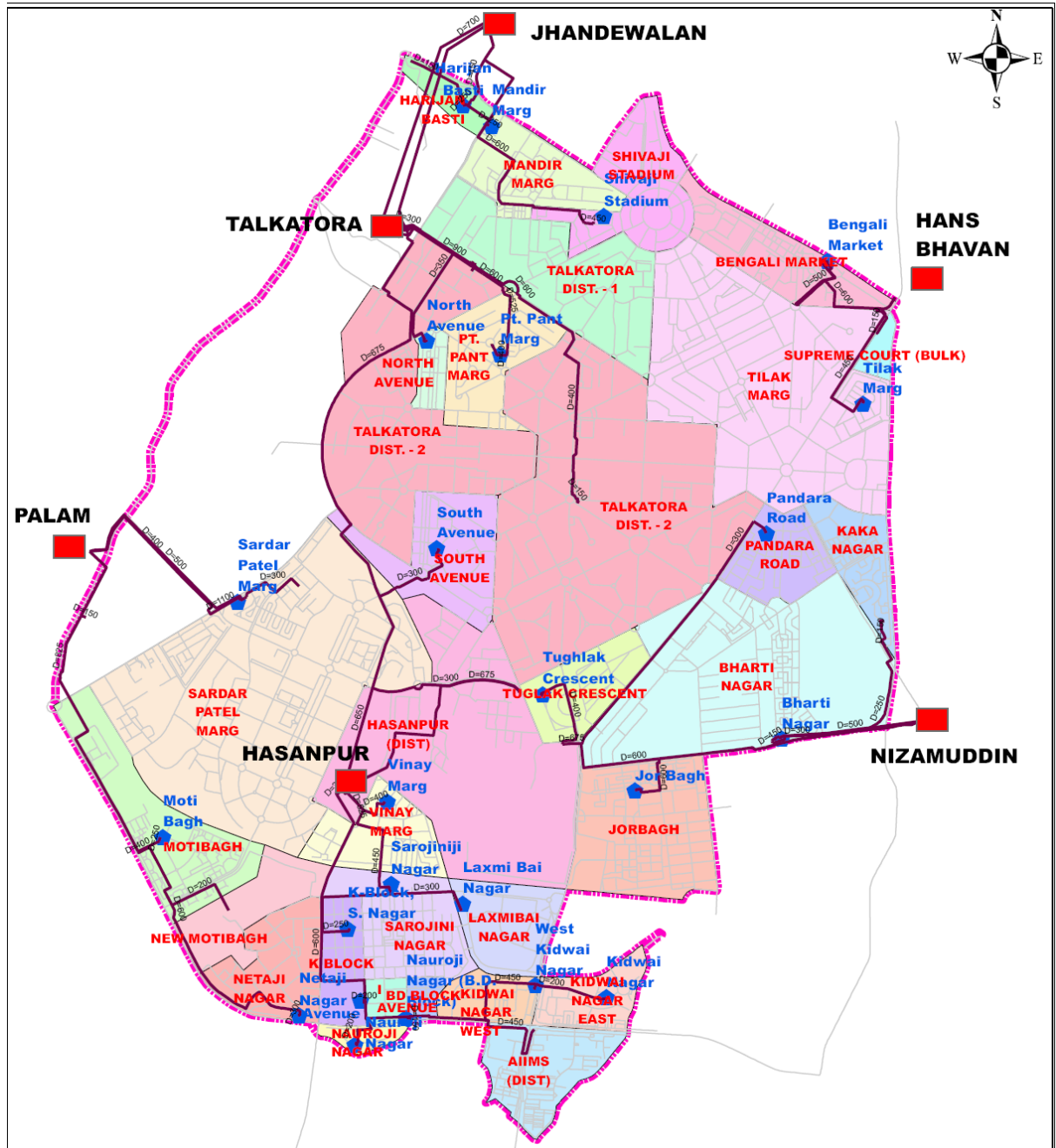


Figure 4 : Selected 28 nos. of DMA's (proposed) within Operational Zones

The NDMC project area under selected operational zones is within the existing jurisdiction of NDMC Command area which may decrease or increase at its sole discretion for total 30000 numbers of connections.

#### **6.12 Preparative Activities**

51. The Contractor shall establish contact with all relevant stakeholders and become familiar with the existing NDMC water supply system, and the applicable standards and guidelines for water supply design, and with past and current on-going works in the Service Area.
  
52. The Contractor shall satisfy itself to the nature and scope of work and the prevailing site conditions including all proposed construction works locations .
  
53. The contractor shall be deemed to have carefully examined the work & site conditions including labour, the general and the detailed specifications, schedules & drawings & shall be deemed to have visited the project area /site of the work & to have fully informed himself regarding the local conditions & carried out his own investigations to satisfy himself. In this regard, he will be given necessary information to the best of knowledge of Employer/NDMC, but without any guarantee about it. If the Contractor have any doubts as to the meaning of any portion of the general conditions, the special conditions, the scope of work, the specifications and drawings, or any other matter concerning the contract he shall, in good time before submitting his tender, set forth, the particulars thereof and submit them to the Engineer-in-charge in writing, in order that such doubts may be clarified authoritatively before or during pre-bid meeting. Once a tender is submitted the matter will be decided in accordance with the tender conditions.
  
54. The Contractor shall liaise with the NDMC , the local traffic police and other Government Agencies regarding governing laws and regulations in order to undertake studies and construction activities under the Contract such as:
  - 54.1. Environmental and social impact assessments and prevention, mitigation and monitoring of impacts during construction;
  - 54.2. Compensation for damages to property;
  - 54.3. Occupational health and safety including workers compensation;
  - 54.4. Consultation of beneficiary populations; and
  - 54.5. Signage for construction works.
  
55. There are several other water supply related works on-going or have been recently been completed by NDMC for the entire water supply system. The Contractor shall review all the

reports and ensure that the Construction Plan, the Operation and Maintenance Plan and the Training Plan to be prepared by the Contractor do not duplicate any measure already financed and implemented. The Contractor shall also ensure that investments proposed as part of the Construction Plan are well coordinated and scheduled so that it can be adequately implemented, constructed, managed, supervised, monitored and finally be evaluated in terms of its impact.

56. The Contractor shall make a comprehensive assessment of baseline data & details, drawings, designs provided under the Detailed Project Report of NDMC project area for capacity, performance and condition of existing water supply and distribution facilities.
57. The Contractor shall acquaint himself the Detailed Project Report (DPR) and relevant sections of the Hydraulic Modelling and drawings that have been prepared for the project and validate the improvement and construction plan mentioned in DPR.
58. The Contractor will prepare three Plans,
  - 58.1. Construction Plan describing implementation of all System Improvement Plan with emphasis on the time sequence followed for the implementation and completion of Works in the different Sections, taking into account the conversion of priority DMA's in continuous (24x7) pressurized water supply and laying of pipelines (primary mains to Selected DMA's) .
  - 58.2. Operation and Maintenance Plan, after successful commissioning of DMA's in continuous (24x7) water supply for selected operational zones;
  - 58.3. Training Plan, describing all NDMC staff training activities to be conducted.
59. A preliminary draft of the Construction Plan or SIP Plan shall be submitted by the Contractor with the detailed time program as required under the Section 7 [*General Conditions of Contract*], in sufficient detail to support the detailed time programme.
60. A draft of the three Plans shall be submitted by the Contractor to the Engineer-in-charge at least three (3) months from the Commencement Date for review and comments by the Employer. Any comments on the Plans will be furnished within one (1) month from receipt of the draft Plans and the final Plans shall be submitted by the Contractor at least five (5) months from the Commencement Date for approval.
61. Two types of office space shall be provided:

61.1. For all Works-related Services: The Contractor shall make its own arrangements for renting and acquiring sufficient land for erection of its own offices, facilities, as required, for carrying out test at site and of stores plus parking / maintenance area for vehicles and equipment to be used for the Works at its own expenses. It shall include provisions for the Engineer-in Charge as further detailed in the Technical Specifications.

61.2. For the Operation and Training Services: The Employer shall provide unfurnished office facilities to accommodate the Contractor's operation staff and of staff provided to the Contractor by NDMC. The cost of operations maintenance of the office shall be included in the Contractor's Operation fees.

The Contractor shall avail of existing facilities of NDMC for its stores, workshop, laboratory and water meter testing requirements during Operations.

62. The Contractor shall supply software for GIS, Hydraulic Modelling and maintenance management.

63. Contractors scope shall starts from DJB Inflow tapping Points onward upto consumer connections including transmission mains, all BPS & UGRs, distribution pipelines, instrumentation and SCADA System. Operation & Maintenance of tubewells are not covered under the scope of Contractor and shall be removed from the system in a phased manner.

#### **6.13DMA Establishment Requirements**

##### **6.13.1Assessment of Distribution System on DMA basis**

64. The distribution network assessment and updation shall be based on DMA's selected under NDMC area. During this phase of the work the Contractor shall study the water transmission and distribution network within the Service Area i.e. selected operational zones to establish and improve network management and for ensuring the minimum Service Levels as specified under this contract to the Consumers within the Service Area.

65. The Contractor shall review previous studies and reports; interview the existing key staff in the Service Area; line staff, other consultants, companies, and Contractors currently working on the distribution system in order to prepare a baseline report describing the water transmission and distribution system including water sources, boundary limits, storage, and supply zones; and their condition to include pipe materials, dimensions, age, and condition; extent of Consumer water connections, meters and their operating condition; current estimates of illegal connections.

66. Contractor shall review the Detailed Project Report for NDMC project area and shall immediately start working on priority DMA's which can be easily converted into continuous water supply and submit the procurement plan on immediate basis. It is assumed that the available information and drawings in DPR are indicative and Contractor shall validate such information on pipeline location,

length, diameters and materials on his own during baseline study. Contractor shall submit the condition Assessment Report of such network information.

67. The Contractor shall review the present network management practice and develop an improved robust network management practice for improving the services.

#### **6.13.2 Distribution Network Improvement on DMA basis**

68. The Distribution Network Improvement shall be executed based on priority DMA selected under operational zones / BPS command area. The Contractor shall finalise the boundaries of DMA while assessing the operational feasibility and proceed to isolate the same without affecting the adjoining areas for water supply. Contractor shall be responsible to provide alternative arrangement for such affected areas, if any, for water supply. The Contractor shall, set up hydraulically isolated District Metered Areas (DMAs) within the Service Area/ operational zone of each BPS/UGR. Each DMA comprising of about 500 -2000 consumer connections shall be considered as basic administrative unit for the purpose of sectional commissioning and management services. The Contractor shall design water supply distribution network on DMA basis to ensure equitable, continuous, pressurized water supply to the Consumers by using the hydraulic model and simulating both present (2015) and future (Year 2041) conditions,. Each DMA preferably have one inflow point and be isolated by installing valves / end plugs. DMA at entry point will be provided with a bulk flow meter. Each DMA will have at least five Critical Measurement Points (CMPs) for continuous logging of pressure, and the CMPs shall be such that they should be at the highest and farthest points from the command reservoir. The performance parameters of the Contractor including O& M period shall be started after successful commissioning of DMA's for continuous water supply. DMA wise monthly reports will be generated to assess the DMA performance. Monthly meter readings will be taken and data shall be provided to NDMC billing department. Contractor, Consultant / third Party also may suggest good management practices. Lessons learnt from other utilities/agencies will also be incorporated for better management services.

#### **6.13.3 Establishment of DMA's in Operational Zones**

69. The Contractor shall prepare the designs submit to the Employer and rehabilitate and build the distribution network for the priority operational zones while establishing DMA's in NDMC project area .Contractor shall immediately submit the procurement plan for these priority zones and start

executing the construction works. This activity will be simultaneous with baseline studies of other DMA's and shall be completed within three months from the commencement date.

70. The Works will be implemented DMA wise. The Contractor shall be allowed to do works for Selected DMA's of NDMC Project area simultaneously and subsequently. Operational zones indicated below are tentative and are subject to add / modify depending upon feasibility of bulk water supply or as specified by NDMC within 30000 numbers of connections. Works in priority DMA shall completed and commissioned first in parallel to construction works in other DMA's. DMA's depending on laying of express feeder or transmission main, construction works in such DMA's shall be simultaneous to other works
71. As per DPR, the estimated length of existing distribution network is around 500 km within the selected DMA's. New pipelines to be laid in the selected DMA's is around 58 km and length of 68 km, shall be replaced by new pipes and decommissioned to the satisfaction of the Engineer-in-charge and according to procedures approved by the Engineer-in-charge. However, circumstances such as design requirements, site conditions and structural conditions of the existing pipes can be reason for deviation from this policy.
72. The Contractor shall make arrangements for maintaining the service of the presently connected consumers at the current level during the execution of the Works or arrange for alternative arrangement for water supply at his own cost.
73. The Contractor shall also lay pipelines for the extension of the distribution network to the areas presently populated but uncovered in terms of piped water supply services.
74. All non-metallic pipelines or underground components installed in the frame of the Contract shall be provided with metallic ribbon or other means enabling their detection by metal detectors.
75. All installed pipelines and appurtenances shall be disinfected to the satisfaction of the Engineer-in-charge.
76. All Works involving excavation shall be finalized through reinstatement of the surface to the initial condition.
77. The Contractor shall make arrangements for maintaining the service of the presently connected consumers under selected operational zones though not covered under DMA's finalised at the current level during the execution of the Works.

78. All Works involving traffic blocking shall be coordinated timely with NDMC / traffic department and traffic diversion measures shall be implemented by the Contractor. The Contractor shall endeavour at any time to maintain the inconvenience caused by the construction works at the lowest possible level.

#### **6.13.4DMA Creations**

79. One of the main activities of this Contract is the Creation of District Metered Areas (DMAs) for 30,000 connections. The population projections and ward wise water demand as included in DPR will be applicable. The Contractor has to confirm the DPR and define DMA boundaries actually on ground, which have been selected in such a way that one DMA includes 500 to 2000 service connections. If needed the Contractor has to redefine the DMA boundaries. The total number of DMAs are tentative to 28 numbers & Contractor may revise as per site condition. Total area can be increased or decreased within total number of 30000 connections at sole discretion of NDMC/ Employer.

80. The scope of work for each DMA established includes (but is not limited to):

- 80.1. detailed site investigations, updating of distribution network drawings, complete with all trial holes that might be required to verify pipe connections (and the consequent re-instatement of road, sidewalk or any other surface);
- 80.2. Hydraulic modeling as basis for optimum DMA design and determination of feeder main diameter. The Contractor shall use either Water Gems or any equivalent software that has the same functionality or better.
- 80.3. Verification and finalisation of suggested DMA boundaries; locating of existing boundary valves, functioning and tightness checks of existing boundary valves, identification of location for additional boundary valves to be installed, identification of locations where the pipes will be disconnected and capped.
- 80.4. selection of location for DMA inflow chamber;
- 80.5. identification of customer service connections that have to be re-located from a trunk or distribution main outside the DMA (or in a neighboring DMA) to a distribution main inside the DMA.
- 80.6. site survey for DMA inflow point and location of underground assets
- 80.7. detailed design of:
  - i. all pipelines that have to be laid
  - ii. location and installation details of new boundaries valves

- iii. DMA inflow point arrangement design, pressure reducing valve chamber complete with all pipe work and structural design; inflow meter and PRV specifications; location and design of above ground instrumentation box
  - iv. standard design and map with location of all customer connections to be relocated
  - v. all other civil, mechanical, installation or plumbing works that might be required
  - vi. construction of PRV chamber, underground installation of electromagnetic flow meter, construction of above ground instrumentation box; including supply of all required pipes, materials, fittings and equipment, as per the specifications
- 80.8. construction of the critical point above ground instrumentation box; including supply of all required materials, fittings and equipment, as per the specifications
- 80.9. execution of all other civil, mechanical, installation or plumbing works, including supply of all required pipes, materials, fittings and equipment required for DMA establishment, as per the specifications;
- 80.10. for all works carried out: reinstatement of road and sidewalk surface
- 80.11. supply and installation of multiple channel data logger (two pressure and one flow channel) at the inflow point, setting up of data transfer to a central SCADA server (SMS, GPRS or similar data transfer); supply and installation of respective software
- 80.12. supply and installation of single channel data logger at the critical point (point with lowest pressure in the DMA), setting up of data transfer to a central server (SMS, GPRS or similar data transfer) with web enabled /cloud server facility alongwith application software.
- 80.13. execution of zero-pressure-test and execution of all subsequent investigations and works should the first zero pressure- test have failed until the test is successfully performed.
- 80.14. commissioning of PRV and controller
- 80.15. preparation of as-built drawings for all works executed.
81. Where hydraulically possible, DMAs shall be single feed as proposed in the DPR. In cases where it is advisable (for hydraulic or other reasons) to establish multiple feed DMAs, the same shall be subject to approval by the Engineer-in-charge.



82. The Contractor shall verify the DMA boundaries specified in the DPR, on the pipelines to be kept in use: locating of existing boundary valves, functioning and tightness checks of existing boundary valves, identification of location for additional boundary valves to be installed, and identification of locations where the pipes will be decommissioned. No consumer connection pipe shall cross a district boundary. If a boundary is in the middle of the road, the main needs to be on the side of the road of the district to which it belongs, or the boundary should be behind the line of houses.
83. The Contractor shall identify customer service connections that have to be re-located from a trunk or distribution main outside the DMA (or in a neighbouring DMA) to a distribution main inside the DMA.
84. In preparation of Sections of DMA Works, the Contractor shall undertake a Consumer Water Connection survey in the concerned DMA. The parameters to be surveyed will at least include: type of Consumer (residential, commercial, governmental, etc.), geo-location, type of structure or dwelling, type of existing water connection. The Consumer Water Connection survey will determine the present status of water supply to each Consumer, whether they have an authorized water connection, illegal water connection or no water connection. The data so collected shall be shared / submitted to NDMC for transfer to GIS for web enabled application software and will be used at the time of rehabilitation of existing consumer connections and while releasing new consumer connections in future. The structure of data base and details of the Consumer Connection survey shall be finalized in consultation with the Engineer-in-charge. NDMC shall provide the consumer connections list with unique ID of existing billing database for consumers of selected operational zones. Contractor shall maintain and update database of such consumers with same unique ID while pre-fixing any letter for further segregation / identification.
85. In preparation of Sections of DMA Works, the Contractor shall undertake a detailed site condition survey in each DMA. The survey data shall be sufficient to develop a comprehensive Geographical Information System (GIS) clearly showing the location of underground and over ground water supply assets and all physical features like roads, culverts, drains, nalas, electrical transformers and any other relevant features which would influence installation and maintenance of existing and/or new pipelines. All key elevations with geo-reference shall be captured in the survey and the DMA service area maps are to be prepared in 1:2000 scale.
86. For each DMA, the Contractor shall apply hydraulic modelling as basis for verifying the optimum DMA design and determination of feeder main diameter. Flow velocities should be less than or

equal to 1.5 m/s. Pressures shall not be less than 0.8 bar and should not exceed 2bar. The Contractor can use the hydraulic model used by the Employer or may use either Water Gems or any other software that has the same functionality or better and transfer the results to the GIS system. The data pertaining to reservoirs, pipes, valves and demand locations shall be included in the model. DMA specific hydraulic models shall be integrated into one Overall Hydraulic Network Model covering the entire Service Area.

87. A sufficient number of valves for future operation shall be provided for each DMA, in such a way to enable 4 or 5 steps for Step Test to be executed in leak detection campaigns.
88. The complete detailed design of the each DMA thus verified shall be submitted to the Engineer-in-charge for approval.
89. Public awareness programs planned to achieve people's participation in managing demand by using the continuously available water to their absolute need only and not to waste, and to communicate importance of metered system and its benefit
90. The Contractor shall construct the 5 pressure monitoring stations including protection encasement and data logger facility.
91. The Contractor shall construct the above ground instrumentation box at strategic locations, including supply of all required materials, fittings and equipment, as specified. However, if suitable place is not available for locating the above ground instrument box, the same may be placed in the Monitoring station chamber.
92. Monitoring stations and meters shall be installed at safe locations onto the sidewalk where possible. Optionally provision for GPRS/GSM automatic reading can be made. The Contractor shall supply and install a multiple channel data loggers (three pressure and one flow channel), setting up of data transfer to a central server (SMS, GPRS or other remote data transfer); supply and installation of respective software. The Contractor shall ensure that the software is compatible with SCADA and life flow monitoring software and integrate/interface the entire system with Central SCADA Server / web enabled application software for easy assessing and monitoring the information. Proposed SCADA system shall be compatible to integrate with existing SCADA of NDMC.
93. After the finalization of the construction, the DMA will be commissioned according to the requirements set out for Testing and commissioning of this Section.

### **6.13.5 Consumer Survey requirements**

94. A complete consumer survey to ground truth the footprints and the properties in the project area shall be carried out. It may happen that the base map image (available with NDMC) may give one footprint but the footprint may be divided in several properties internally either horizontally or vertically. The foot print shall be divided to show clear distinction.
95. The Contractor shall undertake a door-to-door survey of all properties whether connected to the network or un-connected and obtain the details in regard to name, address, number of resident members, categories of general residential households (independent housing, group housing connections, societies and apartments), urban poor households, government housing, non-domestic, commercial, institutional, religious places, industrial and fire services and any other category of resident, consumers income status in the Service Area ,availability of water connection, metering status, estimated consumption levels, alternate water supply arrangements, willingness to pay, etc. The Contractor shall get the data from NDMC billing department about the authorised water connection and their location of properties. The data collected from household survey shall be geocoded to the satellite image / base map. This database will be used for the water demand of each property to be collected at the junction of distribution network pipe and the system shall be designed and modelled accordingly.

### **6.13.6 Hydraulic Modelling requirements**

96. The Contractor shall develop a Hydraulic Network Model (HNM) for water supply system based on DMAs of Operational zones. The data related to water supply infrastructure like Reservoirs, Pumping Stations, rising mains and distribution system , valves and demand allocations shall be obtained through field baseline study and consumer survey captured on the network model.
97. The hydraulic network modelling by using latest soft-wares shall be carried out by collecting the actual property wise water demand allocated to the nearest junction. Following broad guidelines may be followed during hydraulic modeling:
- 97.1. The junction shall be placed at the branching out/ at the crosses at the valves and where there is a large straight length at every 200 m. The model shall be worked out by considering the domestic demand as 135 lpcd water supply and actual demand for commercial and industrial requirement.
  - 97.2. The hydraulic water use pattern for the day spread over 24 hours shall be based on the survey data captured through consumer habits of water use in different

- hours at present and by following the standard pattern, after continuous water supply is successfully implemented.
- 97.3. The storage reservoir capacities shall be modelled to verify the water level in various hours. It shall neither be empty nor overflow. The incoming flow at constant rate shall be decided accordingly.
- 97.4. The DMAs which are still to develop where the present water requirement is quite less as compared to the design demand, the present scenario with existing water demand shall be run and the incoming flow shall be adjusted accordingly.
- 97.5. The minimum pressure in the distribution network when full demand in the zone cum DMA is developed shall not be less than 8 m of water column at consumer meter point. The excessive pressure in the typical areas shall be managed using the appropriate pressure management techniques at distribution system level and other at the individual connection level.
- 97.6. All new connections shall considered and captured as additional demand in the model and updated model.
- 97.7. The hydraulic model shall be calibrated using set of observed data of pressure from sensors placed in distribution network at critical points of high and low pressures and flow from the consumer and bulk flow meters. The calibrated model shall be further validated using other set of live data. This validated model shall be used for the operation and management and while making decision for giving new connections and branches.

#### **6.13.7 Pipe laying requirements**

98. After validation of DPR data and completion baseline study of distribution pipeline network, Contractor shall carry out the old pipeline replacement programme and laying of new pipelines. The discarded pipelines may remain in the ground. The old pipe line shall be left open at both ends (not plugged) to ensure that it is not brought back into service.
99. For successful transformation and operation of DMA's selected for 24 x 7 water supply, strengthening of primary network is suggested in the DPR. Construction of transmission mains /primary network shall be executed on top priority. Contractor shall be responsible to submit the procurement and time schedule for works within 90 days from the commencement date.
100. The pipe network in the selected area is shown in Table below.

DIA	UPDATED LENGTH IN METER	%		DIA	UPDATED LENGTH IN METER	%
50	315	0.07		400	16466	3.50
75	397	0.08		450	18432	3.92
80	2410	0.51		500	6107	1.30
100	136314	28.98		525	1684	0.36
125	1984	0.42		600	28745	6.11
150	111973	23.80		650	4722	1.00
175	3267	0.69		675	6014	1.28
200	32723	6.96		700	672	0.14
225	5253	1.12		825	2190	0.47
250	30792	6.55		900	1039	0.22
300	56571	12.03		1100	361	0.08
375	2008	0.43		<b>TOTAL</b>	<b>470436</b>	<b>100</b>

**Table 8 : Length of existing pipes in selected area of distribution system**

The quantity shown above is indicative only (Source: DPR).

101. As per DPR, in order to improve the performance of the distribution system, pipe network rehabilitation proposed is as following:

**Abstract for Pipeline Network for NDMC Project Area**

Dia. in mm	Existing	Proposed Distribution		Proposed Pumping Mains		Total proposed Length immediate stage Yr.2027	Total Proposed Length Ultimate stage Yr.2042	Total Proposed Length
		New	Replacment	Yr.2027	Yr.2042			
100	122675	707	7372	0	0	8079	0	8079
150	104078	6614	13092	0	0	19706	0	19706
200	31373	7206	3703	132	466	11041	466	11507
225	3612	0	0	0	0	0	0	0
250	25830	2110	1842	0	0	3952	0	3952
300	52671	4468	977	2007	1014	7452	1014	8466
350	0	400	0	0	0	400	0	400
375	2009	0	0	0	0	0	0	0
400	16715	1091	41	37	0	1169	0	1169
450	14997	17	0	0	0	17	0	17
500	5413	0	0	1897	0	1897	0	1897
525	1701	0	0	0	0	0	0	0
600	28302	901	40	1384	0	2325	0	2325
650	4635	0	0	0	0	0	0	0
675	5721	0	0	0	0	0	0	0
700	3063	44	0	0	0	44	0	44
825	2120	0	0	0	0	0	0	0
900	924	0	0	0	0	0	0	0
1100	414	0	0	0	0	0	0	0
1200	16	0	0	0	0	0	0	0
<b>Total Leng</b>	<b>426269</b>	<b>23558</b>	<b>27067</b>	<b>5457</b>	<b>1480</b>	<b>56082</b>	<b>1480</b>	<b>57562</b>

**Table 9 : Indicative Length for New pipelines to be laid in selected areas**

The quantity shown above is indicative only and contractor is expected to do his own assessment & validate through baseline study and confirm the same while submitting SIP to Engineer-in-charge with condition assessment report for facilities covered under the scope of work.

Operation and Maintenance of above distribution network / pipeline laid / executed as per SIP shall be covered in Contractors O & M Plan.

102. Length of pipes to be replaced in selected area is 68 km (30% of 100 mm & 150 mm diameter pipelength) of existing distribution system

103. Ductile Iron class K7 pipes and HDPE pipes as per detailed specifications will be used for new distribution pipelines and MDPE pipe as per specifications will be used for consumer service pipe lines.

104. The Contractor has to plan and implement its pipe laying works in a detailed and strict manner as per approved SIP plan. The planning has to be coordinated with the Engineer-in-charge and NDMC. The expected date of decommissioning of the existing pipeline and the commissioning of the new pipeline together with the exact location of the old and new pipeline have to be properly documented.

105. Pipe laying and decommissioning of old pipes should be done in the following way:

105.1. Preparation of skilled labor, tools, fittings, dewatering pump, chlorine water solution (10 ppm), hoses, electric source, grinder, welding machine (where required) etc.

105.2. Excavation around the pipe at the pre-determined location of disconnection. It has to be ensured that there is enough working space according to the pipe diameter and the method of disconnection.

105.3. Marking on the pipe, showing the length of the existing pipe to be cut out. The length to be removed piece shall generally be of at least 1.5 meters.

105.4. Cutting the pipe perpendicular to the pipe centre line, using grinder, metal saw or cutter according to the pipe material. Extreme care is to be taken to avoid any dirt or foreign material entering the existing (and remaining) pipe.

105.5. Installation of the required fittings to plug the existing (and remaining) pipe. All new parts are to be submerged completely in the chlorine solution (10 ppm) for at least 15 minutes directly before being installed.

105.6. Installation of thrust block, where required.

- 105.7. Repair of any possibly damaged protection layer.
- 105.8. Greasing of bolts and washers and installing of the protective coat.
- 105.9. After the one week period, described hereafter, all temporary parts are to be removed.
- 105.10. The excavation shall be left open for about one week. During such time the pipe end has to be observed very frequently in order to ensure immediate recognition of a possible flow of water.
- 105.11. After the one week period and with the consent of the Engineer-in-charge and his approval on the appropriate form, the excavation shall be backfilled and the surface brought back to former condition.
- 105.12. If, at certain points or situations, public safety does not allow for leaving the pipe ends open for the mentioned time, other means shall be found to control the appearance of water at the pipe ends. Possible solutions, to be decided on from case to case could be the following:
- Plug the end where there are restrictions in a temporary form and leave only one end of the decommissioned pipe open.
  - A pipe connection in a side street can be used for observation.
  - A temporary pipe could be laid to the shoulder of the road to bring the possible water flow to the open.
  - Former house-connections could be prepared for observation, after the pipe ends are plugged temporarily.

**6.13.8 Pipe laying for Unfiltered water and non potable water application like flushing**

106. Apart from above pure water distribution system, NDMC has also prepared the DPR for Improvement & Revamping of Treated Waste Water Supply System of NDMC (commonly known as unfiltered water system) for Horticulture and Non Potable Water Application like flushing. As per the DPR, it is required to lay following quantities of new pipe length (HDPE) within NDMC command area which is covered in the Scope of Contractor. Wherever, it is required to lay parallel pipeline for pure water, unfiltered water and non potable water, it shall be laid in single excavation. For more details, Contractor may refer to Detailed Project Report of the unfiltered water system available with NDMC.

Proposed Horticulture Pipelength	
Diameter (mm)	Length (HDPE) (m)
110	53,007
160	77,020

200	24,341
250	17,136
315	11,725
400	2,023
500	7,378
630	3,388
800	4,891
1000	3846
<b>Total Length (m)</b>	<b>204755</b>
<b>Total Length (km)</b>	<b>204.755</b>

Table 10 :- Length of New Pipelines to be laid for Horticulture Purpose

Proposed Flushing Pipelength	
Diameter (mm)	Length (HDPE) (m)
110	82,892
160	72,800
200	22,541
250	16,698
315	13,703
400	7,881
500	1,537
<b>Total Length (m)</b>	<b>218052</b>
<b>Total Length (km)</b>	<b>218.052</b>

Table 11: Length of New Pipelines to be laid for non potable water application like flushing

In the event of multiple pipes laying for pure water, horticulture water & flushing water i.e. during parallel pipe laying single trench shall be used with necessary clearance between the pipes. In such scenario, width for the same shall be considered as per following ;

Pipe diameter for P1, P2, P3  
Permissible maximum width W1, W2, W3

Total Width Required =  $W1+W2+W3= W$

The rate of excavation shall be corresponding to pipe diameter for which permissible width is 'W'. In case there is no diameter of pipe for which permissible width is equal to 'W' then two or more size pipe whose cumulative width is equal to or near to W, the permissible rate of payment for excavation shall be equal to cumulative rate for such pipe size.



### **6.13.9 Consumer Service Connections requirements**

107. The scope includes replacement of total number of 30,000 Connections in selected or more operational zones. The actual number of connections may vary which may include many unauthorized ones. All existing service connections shall be replaced and new connections made up to 30000.
  
108. NDMC will provide information about the existing authorized consumers. Contractor will use this information for verification of the same during consumer survey and also for identifying unauthorized service connections in existence during the Consumer Connection surveys. The results of such verification of authorized connections and identified unauthorized connections will be submitted to the Engineer-in-charge and NDMC for further needful action.
  
109. Existing authorized Connections: Contractor will replace the existing service pipe lines from distribution main pipe lines to the consumer premises with new saddles, ferrule, stop cock, MDPE pipe, GI pipe above ground etc. as per detailed specifications for the authorized consumers from the newly laid distribution pipe lines under a DMA. The work shall include excavation and cutting of road surface as required, making connection with distribution line under pressure, installation of service pipe and accessories including water meter and refilling the ground and bringing the road surface to original condition. This work will be done DMA wise on completion and commissioning of transmission main feeding the DMA. A water meter with a meter box will be provided at the end of the consumer service pipe line securely inside premises of the Consumer as per detailed specifications.
  
110. New Service Connections: Contractor will provide new service pipe lines from distribution lines to the consumer premises with new saddles, ferrule, MDPE pipe, stop cock etc. as per detailed specifications for the unauthorized consumers from the newly laid distribution pipe lines under a DMA on receiving approval from NDMC . This work will also be done DMA wise on completion and commissioning of transmission main feeding a particular DMA. A water meter with a meter box will be provided at the end of the consumer service pipe line securely inside the premises of the consumer as per detailed specifications. The work shall include excavation and cutting of road surface as required, making connection with distribution line under pressure, installation of service pipe and accessories including water meter and refilling the ground and bringing the road surface to original condition. Contractor will also be responsible for providing new consumer service connections from time to time on receiving approval from NDMC for the

same. This will be an ongoing work during the entire contract period. The work of new service connections will be done as per detailed specifications within 3 days of receipt of approval from NDMC .

111. Services to the Urban Poor: In the case of urban poor areas in the Service Area, the Contractor, in accordance to the approved connections policy, shall undertake provision of individual. Such water connections shall also be provided with same specifications and procedures as mentioned above for regular consumer connections. However, the water meter and meter box shall be installed at a safe place as agreed with the Consumer and approved by NDMC .
112. Public Stand Posts: All public stand post shall be removed after providing individual connection or if NDMC instruct to install public stand post. All permitted public stand posts as per list to be provided by NDMC shall be rehabilitated and constructed with sturdy plumbing and good quality stopcocks and shall be provided with a Consumer meter for the purpose of accounting the consumption from the respective tap. The location and operation arrangement of each stand post will be determined in coordination with the future tap users. The Contractor is required to participate in the coordination process.
113. Bulk Water Supply Connections: In the case of bulk water supply connections of sizes equivalent or higher than 25mm dia. to bulk consumers such as apartments, housing societies or private layouts within the Service Area, the Contractor shall install a suitably sized, accurate consumption meter. The responsibility for providing saddles, service pipe, water meter and stop cock as per specifications will be of the Consumer but installation of saddle to the distribution main pipe and making connection and installation of water meter will be done by the Contractor.
114. Illegal Connections: The Contractor based on the findings from the Consumer Connection survey, and in accordance to the approved connections policy, shall identify the illegal or unauthorized connections and inform NDMC for regularization / disconnections of the connections. On approval and after payment of prescribed charges by the Consumer, the Contractor shall then rehabilitate the connection with good plumbing material and a Consumer meter. Final decision on regularisation or disconnection of such Consumers shall solely be the responsibility of NDMC and Contractor shall be more particular in bringing to the notice of NDMC such connections.

115. "Water Kiosk" are proposed under the project on pilot basis. Operators shall install and operate the Kiosk and arrange to supply water for the same. More water kiosk if desired by NDMC shall be installed within the project area.
116. The responsibility of the Contractor will be limited to providing service pipe line up to the water meter, water meter, stopcock and meter box in the consumer premises. All works beyond the water meter will be the responsibility of the Consumer, except for the public stand posts.
117. The Contractor shall set up and operate temporary Customer service points in those DMAs where Works are ongoing and Consumer Service Connections are being provided, to facilitate easy communication with Consumers.

#### **6.13.10 Testing and commissioning**

118. Testing of all materials, equipment and instrumentation shall be done as specified in the Technical Specifications. Installation of all electro-mechanical equipment shall be carried out strictly as per recommendations of the manufacturers. Pre-commissioning and trial run shall be undertaken as per detailed technical specifications covered under section 6.23 of this document.
119. Supplying for the first time water to the DMA, the Contractor has to check that none of the replaced pipelines is still supplied with water via another pipeline inside or outside the DMA. In case of water flowing from the replaced pipeline, the Contractor has to take all necessary measures to stop the supply of water to the replaced pipeline. The measures at least include:
  - 119.1. Valves in the immediate vicinity of the decommissioned pipe shall be closed to assess the location of the connection.
  - 119.2. Start digging out the decommissioned pipe from both ends until the unknown connection is found. The found pipe has to be followed until at least the border of the DMA, in order to isolate the DMA properly.
  - 119.3. Gather latest information from NDMC on valve settings and pump operations. If it becomes evident that the water comes through a connection from outside the district, it will be necessary to examine jointly with the Engineer-in-charge what changes in pump- or valve settings has been done recently.
120. Testing for commissioning of a completed DMA shall consist of flow measurements at DMA inlet and at all service connections to determine whether the target level of water loss, as specified in Schedule 7 of PCC [*Target Performance & Standards*], Parameter has been met.
  - 120.1. Simultaneous flow measurements shall be undertaken during a 24-hour period.

- 120.2. In case the actual water loss thus measured is more than twice the target level, the Contractor shall propose a work method, to be approved by the Engineer-in-charge, to determine the cause(s) of water loss.
- 120.3. The Contractor shall investigate the cause(s) of water loss accordingly and shall make the necessary rectifications.
- 120.4. The testing for commissioning shall then be repeated till the requirements are met & 24x7 water supply achieved in the project area.
- 120.5. Contractor shall be responsible to conduct the internal water audit / leak test at consumer premises. Contractor shall prepare and record the list of high water consumption consumers and perform the test.

#### **6.13.11 Meter Reading and Management requirements**

121. Meter reading of consumer meters is covered under the scope of Contractor. All Meter to be provided under this Contract Are AMR / AMI meters and hence Operator shall develop the system to read water meter readings on a periodic basis through latest technology available. The individual readings shall be downloaded at a central terminal of NDMC at regular intervals to create a billing schedule. Contractor shall be responsible to verify the volumetric consumption readings of DMA consumers during DMA / baseline study and also be responsible for spot / random checking as and when desired by NDMC.

122. The Contractor shall:

- i. Develop and implement: (i) meter reading procedures and arrangements; (ii) Digital record of meter readings (iii) meter reading control, and (iv) efficient and accurate meter reading system & technology;
- ii. During DMA study, read all consumer water meters of selected DMA consumers in accordance with requirements laid down under this contract.
- iii. develop a monitoring program of random spot-checks to ensure the accuracy of the -meter calibration and the meter reading process and provide written reports to the NDMC on the results of the monitoring programme;
- iv. read all Consumer Meters in accordance with the general instructions of the NDMC;
- v. register all Consumer Revenue Meters readings in the appropriate computer data base as desired by NDMC
- vi. Develop and implement a plan, the intent of which is to ensure that:
  - a. All consumer meters are in working condition
  - b. All consumer meters are accurate,

- c. All consumer meters are read,
- d. All consumer meters are in suitable and easily approachable locations,
- e. Problems related to unprotected and unsealed consumer meters are resolved,
- f. Develop and implement a program to estimate consumption in circumstances where metering problems exist, and
- g. Provide advice as to methods to improve the meter reading process to ensure greater accuracy;
- vii. Identify consumer meters which have not been read; and
- viii. Respond to reports of malfunctioning consumer revenue meters from Consumers.

### **6.13.12 Water Loss reduction & management Services**

123. The Contractor has to take all necessary action, provide all required services and materials and equipment and carry out all works required to achieve the main objective of the Contract and reduce water loss for total number of 30000 connections in selected DMA's of operational zones. The following (non-exhaustive) list summarizes the activities the Contractor is normally expected to carry out (without limiting the Contractor's obligations and the scope of work):

- a. no water loss reduction works shall be carried out prior to the 7-day inflow and pressure measurement baseline measurement to be carried out by the Contractor, jointly with and supervised by the Engineer-in-charge;
- b. leak detection surveys (using all kind of equipment and technologies, from simple sounding with a listening stick to leak noise correlators and leak noise loggers as appropriate, helium gas), note that all required leak detection equipment has to be provided by the Contractor (but will not revert to the Employer at the end of the Contract).
- c. pressure management: stabilizing, managing and reducing average DMA pressure using PRVs and controllers and various techniques as appropriate; when doing pressure reduction, the Contractor has to ensure that all the volume of water supplied to consumers in the DMA is the same or better than the baseline levels at the start of the project. Level of minimum pressure will depend on the type of housing and the general availability of tanks. Pressure management has to be done in close co-operation with the consumers in the DMA to reduce the risk of complaints. All required customer information and education is part of the Contractor's duties and cost for these activities covered under scope of services envisaged in this contract.

- d. Service connection replacement: it is anticipated that most of the service connections are leaking or are in bad condition and must be replaced. Detailed design, supply and installation complete with all fittings and road and sidewalk reinstatement are included. The Contractor shall decide which connections shall be replaced but in any case, if a leak is found on any part of the service connection, the entire connection including the pipe saddle shall be replaced
  - e. leak detection surveys, repairs and pressure fine-tuning shall be repeated and/or shall continue until an acceptable level of leakage is achieved. The acceptable level of leakage might vary from one DMA to the other, it is up to the Contractor to decide at which point the effort for further leakage reduction becomes prohibitively high;
  - f. continuous flow and pressure data logging and data transfer to the central server establishment of the Target Night Flow Level (TNFL) in m<sup>3</sup>/h after completion of all water loss reduction activities in a DMA and continuous monitoring of inflow, pressure and minimum night flow to become aware of new leaks; and
  - g. repeating of leak detection and repair should the minimum night flow exceed the tolerance limits .
  - h. detecting illegal connections: Should the Contractor find illegal connections he shall report them to the Employer.
124. The fixed and performance fee together cover all fixed cost, overheads, profit and all manpower, machinery, equipment, transport as well as all materials and works required to carry out all activities that might become necessary to achieve the objective of the Contract.
125. Water Audit for Consumer Connections:-Contractor shall identify the consumers with very high consumption of water and prepare the list and maintain the record of such consumers. While Establishment of DMA's, the list of such consumers shall be submitted to Engineer-in-charge for internal water audits within consumer premises. Contractor shall be responsible to carry out Internal water audit for such identified consumers and submit the Internal Water Audit Report to Engineer-in-charge with the consent of Consumer. Payments for this activity shall be as per Schedule 5 of PCC.

#### **6.13.13 Road Cutting and Restoration**

126. The Contractor shall take a timely action in accordance to the Approved Implementation Plan for obtaining the necessary permissions for road cutting from NDMC/ PWD / CPWD. A comprehensive list of locations with respective time schedules shall be provided to NDMC who intern shall assist the Contractor in obtaining the permissions.

127. The Operator shall adhere to the standards, specifications and all requirements in compliance to the prevailing Dig and Restore Protocols prescribed by NDMC / PWD / CPWD from time to time. On completion of work on pipelines, the Operator shall ensure standard refilling of the trench and inform NDMC for timely restoration of the road for minimizing inconvenience to the users and residents.

#### **6.14Key -Personal requirements (Mandatory Provisions)**

128. In general, staffing levels and qualifications are to be decided by the Contractor apart from minimum and mandatory personnel requirements specified in in this section. However, in order to make bids comparable, the following minimum number of experienced key-personnel has to be available for entire project period for the scope of services under this assignment. The number of man-months for each position is to be understood as the absolute minimum requirement. Evidence of the physical presence of these listed staff members have to be provided in the quarterly Progress Reports. Non availability of key persons shall result into imposition of penalty as per contract agreement.
129. It has to be understood that it might be necessary to bring significantly more specialists to the Site in order to achieve the objectives of the Contract. All costs of such additional personnel have to be included in the Contract Price.
130. Team Leader cum O & M specialist- having a minimum of 84 man-months of a person meeting the following minimum experience criteria shall be required during entire project duration:
- (a) 15 years experience with water distribution networks
  - (b) Technical University degree, for example Water and Sanitary Engineering, Civil Engineering or Mechanical Engineering
  - (c) Project Management & operation Experience
  - (d) 10 years of developing county experience
  - (e) 5 years experience with 24 x 7 water supply operations is mandatory
131. Water Loss / DMA and Pressure Management Specialist(s)- having a minimum of 84 man-months of one or more person(s) meeting the following minimum experience criteria shall be required during entire project duration:
- (a) 7 years experience with water loss / NRW leakage reduction projects, particularly with pressure reducing valves, Hydarulic Modelling, controllers, data loggers and similar
  - (b) 2 years developing country experience

132. Leak Detection Specialist(s)- having a minimum of 84 man-months of one or more person(s) meeting the following minimum experience criteria:
- (a) 7 years experience with leakage reduction projects, particularly with pressure reducing valves, controllers, data loggers and similar
  - (b) 2 years developing country experience

#### **6.15 Proposed Pumping Stations**

133. New Pumping stations are proposed at Talkatora and Hasanpur Reservoir locations within the project areas shall be constructed and commissioned during Capital works. Designing, detail Engineering, construction of facilities, providing installation and testing of equipment, instrumentation, electrical work and interconnecting piping, commissioning of plant performance, trials of completed plant, giving performance tests, and subsequent operation and maintenance for a period of five years after completion of defect liability period of one year are included in the scope work under this contract. Information about the design details, extent of requirement of equipment, instruments, electrical work, interconnecting piping, specifications etc. are given in this section of the Contract Document. Information furnished here spell out minimum requirement and is for the guidance of the Contractor. Contractor in their own interest are advised to visit the Site and make their own assessment about the requirement of various items for satisfactory completion of the work. Work under the contract will be executed as per the 'approved drawings', which will be prepared by the contractor and approved by Employer. Contractors are advised to frame their proposal following the guidelines and by including equipment, electrical items, interconnecting piping and valves, components of pumping station etc. as per the specifications given in the tender document. During the operation and maintenance period, contractor will operate and maintain the Pump House in such that water can be supplied to consumers of the project area meeting the stated quality requirement with respect to all parameters.

The site for the proposed pumping station is located at Hasanpur & Talkatora Reservoir within the project area which is presently in control of DJB. NDMC shall arrange to provide all necessary permissions for constructions works in the said premises from DJB.

#### **6.15.1 Mechanical & Electrical Design Requirements**

134. The contractor shall select suitable pumps for operation of clear water pumping in the specified operating range as per Hydraulic design and confirm through SIP. The type of pumps shall be Horizontal Split Casing type & all the pumps shall be provided with suitable motors and accessories. The pump shall have a stable head curve, i.e. the total head-capacity curve shall be



continuously rising towards the shut off head. The shut off head shall be at least 10% more than pump head at intersecting point of the pump curve with the upper range system head curve. A minimum overall (combined) efficiency as 81% for each clear water pump set and motor selection shall be made. The required pump NPSH at duty point shall be at least 0.5 meters less than the available NPSH. The horizontal split casing pumps shall be used with positive suction head. Pump must be suitable for operating in parallel over the entire operating range. The pump shall operate satisfactorily at any point between the maximum and minimum system resistance. The pumps shall be capable of reverse rotation up to 125% rated full speed of the drive motor, due to back flow of water, without damage or loosening of threaded components. The specifications for flanges shall be as per the relevant IS code. Spare parts supplied with the pump shall be identical to respective pump components and shall be from original manufacturer. Pumps shall run smooth without undue noise or vibration. Noise levels and velocity of vibrations shall be within acceptable limits. Noise level shall be limited to 85 dba at a distance of 2 m. Velocity of vibrations shall be within 4.5 mm/s as per relevant Hydraulic Institutes Standards and IS.

135. Power supply with adequate voltage shall be made available by NDMC at both the reservoir locations.

#### 6.15.2 Pumping Machinery Replacement

136. Replacement of existing Pumps and Motors at following pumping stations is proposed under this contract. It is in scope of Contractor to supply & deliver at site brand new pump set including energy efficient pump & motor of approved make and give test trial and commissioning, conforming to the latest ISS 1520 & ISS 5120. Work includes supply of necessary panel boards, VFD drives for SCADA, suction, delivery piping on the pump side, electrical cabling, including all accessories and associated civil, electrical & mechanical work etc.(including dismantling old pumps ) and as per detailed technical specification provided in Vol - II 6.23.172

1	<b>Mandir Marg BPS</b> (Flow :- 68 lps & Head 24 mtr , HP-90)	each set	3.00
2	<b>North avenue BPS</b> (Flow :- 26 lps & Head 38 mtr , HP-25)	each set	2.00
3	<b>Bengali market BPS</b> (Flow :- 60 lps & Head 30 mtr , HP-100)	each set	2.00
4	<b>Tilak Marg BPS</b> (Flow :- 60 lps & Head 40 mtr , HP-500)	each set	5.00
5	<b>Moti Bag BPS</b> (Flow :- 70 lps & Head 45 mtr , HP-180)	each set	3.00
6	<b>Netaji Nagar BPS</b> (Flow :- 45 lps & Head 35 mtr , HP-160)	each set	4.00

7	<b>Netaji Nagar BPS</b> (Flow :- 45 lps & Head 40 mtr , HP-150)	each set	3.00
8	<b>Jor bag BPS</b> (Flow :- 147.5 lps & Head 35 mtr , HP-500)	each set	5.00
9	<b>Bharti Nagar BPS</b> (Flow :- 75 lps & Head 30 mtr , HP-300)	each set	3.00
10	<b>Pandara Road BPS</b> (Flow :- 45 lps & Head 35 mtr , HP-40)	each set	1.00
11	<b>Pandara Road BPS</b> (Flow :- 45 lps & Head 35 mtr , HP-80)	each set	2.00

137. In Plant SCADA System shall be provided on all the BPS. Necessary Instrumentation to monitor pressure, flow, energy, water quality parameters with PLC and communication media. is required to procured under this contract
138. It is also proposed to perform the civil assessment of existing UGR's covered under the project area and suggest the Rehabilitation Plan under SIP programme for further execution and Implementation.

### 6.15.3 Instrumentation, in Plant SCADA Design Requirements

#### Instrumentation System

- a) Electronic instruments shall utilize solid state electronic components, integrated circuits, microprocessors, etc., and shall be of proven design.
- b) all instruments shall be suitable for continuous operation;
- c) all digital outputs shall be volt free;
- d) all instrumentation systems for use out of doors shall be protected to IP 65 for sensors and transmitters, while enclosures under submersible conditions shall be protected to IP68;
- e) all analogue displays shall be of the digital type with no moving parts utilizing back lit liquid crystal diode technology;
- f) For transmitting instruments, output signal shall be 4-20 mA DC linear having two wire system.
- g) Unless otherwise stated, overall accuracy of all measurement systems shall be  $\pm 0.5\%$  of measured value, and repeatability shall be  $\pm 0.5\%$ .
- h) After a power failure, when power supply resumes, the instruments and associated equipment shall start working automatically.
- i) The instruments shall be designed to permit maximum interchangeability of parts and ease of access during inspection and maintenance.

- j) The instruments shall be designed to work at extremes of the ambient conditions of temperature, humidity, and chlorine contamination that may prevail. The instruments shall be given enough protection against corrosion.
- k) Lockable enclosure shall be provided for the field mounted instruments wherever required.
- l) All field instruments, and cabinets / panel-mounted instruments shall have tag plates / name plates permanently attached to them.
- m) The performance of all instruments shall be unaffected for the  $\pm 10\%$  variation in power supply voltage and  $\pm 5\%$  variation in frequency simultaneously.
- n) All wetted parts of sensors shall be made out of non-corrosive material capable of working with chlorine content of 5 ppm.
- o) For all instruments (transmitting analogue signals) installed in the field, surge protection devices (SPDs) shall be provided at both ends of the connecting cable for the protection against static discharges / lightning and electromagnetic interference.
- p) Pressure transmitters shall be provided with two valve manifold and a test port, so that in situ calibration can be carried out.
- q) Two wire transmitters shall be provided with on-line test terminals.
- r) The ranges of all instruments shall be suitable for the application in the process.
- s) Instruments of similar type shall be of same make for appropriate inventory of spares, ease of maintenance and training.
- t) The Indian agents of imported equipment shall have establishment to provide after sales maintenance facilities.

### **SCADA System**

It is proposed to install and develop in Plant SCADA system at proposed pumping locations of Hasanpur & Talkatora. The SCADA shall be a fully dual redundant server integrated microprocessor based control and data acquisition system which will monitor, control, display, record and trend all assigned plant and water supply network inputs and outputs. The main process monitoring and control shall be by means of Visual Display Unit (min. 55 inch. LED monitor) based process operator workstations that shall be located in the central control room.

SCADA/HMI system shall be designed and implemented such that the failure of a central processor or HMI console does not inhibit continuous automatic control of the plant. In the event of such a failure, historical data shall be recoverable to a condition where a worst-case maximum of 15 minutes of historical data is lost.

## **6.16 Central Monitoring Station and SCADA Control System Design Requirements**

### **6.16.1 Proposed System objective**

139. Water distribution network management of DMA's & monitoring is possible using the subsystem referred as water distribution management system WDMS shall be implemented for the NDMC water supply system covered under NDMC project area for 30000 connections (DMA wise) by providing a central monitoring station located at NDMC office or any other location specified by NDMC within the project area. The intention is to measure, record and real time monitoring for the parameters like flow, level, pressure, pH, turbidity, conductivity, residual chlorine of Water distribution network at specific locations like distribution trunk mains, DMA Inlet and outlets points, BPS/UGR etc. along with pump SCADA operations & valve actuator control facility for which necessary input & output signals, sensors, PLC's / RTU's and transmitters etc. Shall be provided along with wireless Telemetry system / GPRS system to communicate the data/ information with Central Monitoring System. It is also proposed to retrieve real time data of effluent water quality parameters at Proposed STP locations which are upcoming / under tendering (apprx. 14 nos.) within NDMC command area so that parameters like TSS, pH, BOD, COD and Flow etc. can be monitored at Central Monitoring Station. The communications media shall be either Radio Telemetry or GPRS / GSM or hybrid of both can be used depending upon actual line of sight for data communication. The proposed Monitoring system shall have real time data retrieving, monitoring, recording and web enabled facility for displaying the information through application software besides of Central SCADA Server.
140. All the relevant data, graphs, trends shall be made available online to NDMC executives and field personnel using cloud services and apps developed for Android and IOS devices. Relevant Data to be made available to the citizens at large using website and apps. Dashboards to be developed along with minimum service standard for monitoring and information and variance, if any these parameters shall be notified to NDMC personnel automatically by SMS, email alerts.
141. Brief Description of proposed system & sub-works;
- i) Instrumentation for parameters like Pressure, energy, Flow, Level, pH, Turbidity, Conductivity, Residual Chlorine @ BPS
  - ii) Instrumentation connection with PLC Controllers to be operated either from HMI or from Local Control Panel

- iii) Control Elements like Valve Actuators will be connected to the PLC controller and can be operated either from HMI or from Local Control Panel
  - iv) Installation of Tower & Radio Frequency Module with Ethernet Communication which will communicate with Central Monitoring Station / control room through radio telemetry
  - v) GPRS /GSM Data loggers at key locations or remote locations specified by NDMC which will communicate with Central Monitoring Station / Master Control station through GPRS.
  - vi) New PLC Based control Panels for Local SCADA at BPS locations with HMI screen for user interface & data monitoring
  - vii) New SCADA Server with application Software with control
  - viii) Integration & interfacing with existing instrumentation or scope for future instrumentation
  - ix) Report Generation and Alert Notifications
  - x) User Interface like Dashboards, Cloud Application, Mobile Apps, Web server etc.
142. The scope of the works includes design, manufacture, testing at works (FAT), supply at site, storage at site, installation, erection & commissioning of radio telemetry with licence fee, RF survey, testing, programming, integrating with existing systems, providing, field testing (SAT) and development of integrated SCADA server and Monitoring system consisting of & Local SCADA & Central SCADA with cloud server facility, PLCs/ RTUs at various locations with HMIs, flow meters, pressure transmitters, chlorine analysers, data loggers and automation of valves through electrical actuator control within NDMC water supply distribution network.
143. The locations covered under the scope of proposed system for Integration and monitoring at Central Server locations are as following
- At DJB Bulk Supply points / feeder mains:
    - Tapping points of bulk supply
  - Proposed Pumping station locations
    - Hasanpur Reservoir & pumping station
    - Talkatora Reservoir & Pumping Station
  - At storage reservoirs/ BPS :
    - Flow, pressure, level, pH, turbidity, conductivity, residual chlorine
    - Water level.
    - Pumping data & energy
  - At DMAs (Tentative 28 Nos.):
    - Flow at the inlet point(s) (i.e. IMPORT) of each DMA;
    - Flow at the Outlet point(s) (I.e. EXPORT) of each DMA;

- Flow meters within DMA / sub-DMA
- Pressure at 5 Critical Measuring Points in each DMA.
- Monitoring & Outdoor Display Points in each DMA
- At STP locations
  - Proposed STP locations (14 Nos.) upcoming
- At remote valve locations
  - Valve actuators within all DMA's
  - Data loggers at remote locations for pressure & flow
- At Central Server Monitoring System

144. Proposed locations of upcoming STP's (under construction) within NDMC are as below;

SR.NO	Location of STPS	STP required as per Design Cap. In KLD	STP Proposed Under Tender Cap. in KLD	Existing STP Cap. In KLD
1	Sanjay Park Lake	1200	300	0
2	Park in Between satya Sadan and Railway Line Around Khushak Nallah	500	500	
3	Nehru Park	1200	500	
4	At Moti bagh junction of ring road and moti bagh	500	100	
5	Subhash Park at Netaji nagar	100	100	
6	Lodhi Garden	1200	500	
7	Bharti Nagar	1000	500	50
8	Developed Rose Garden at Shanti Park Towards Nyaya Marg	400	300	
9	Rose Garden At Shanti path towards niti marg	200	100	
10	Gole market in between junction of oeshwa road and R.K Ashram	200	200	
11	Gole Dak Khana	900	0	
12	Copernicus Marg	1500	0	
13	Shivaji stadium	600	0	
14	Mandi House	300	0	

Effluent water quality parameters like BOD, COD, pH, TSS, flow etc. are required to be monitored & displayed at specified points within NDMC area / DMA's. All above STP's are under tendering stages and required to be monitored after commissioning of STP's, however, provision for data interface, retrieval, integration and transfer to Central Monitoring Station for information display at specified locations @ Outdoor Display Points within each DMA's is envisaged under this project. The above information shall be displayed along with information related with water quality parameters like pH, Turbidity, conductivity, chlorine, flow etc. at

various display points as specified by NDMC. The Contractor is expected to provide outdoor video display monitors which will have GPRS communication / interfacing facility with Central Control Station for remote data display.

#### **6.16.2 Functional requirements of Instrumentation interfacing and Integration**

145. All existing and new instrumentation like flow meter, pressure sensor, residual chlorine, etc. (installed at various UGR / BPS locations) shall be integrated and interfaced with proposed SCADA system. These instruments can be monitored/operated either from the SCADA in the central control room or from local control panel.
146. Instrumentation Interfacing and integration includes commissioning, required development & programming for PLC or SCADA software as per the requirement of NDMC with actuator control facility and level, flow, pressure, residual chlorine for integration with central monitoring system.

#### **6.16.3 Functional Requirements of Central Monitoring System**

147. Contractor shall responsible to fulfil the following minimum functional requirements of proposed monitoring system
  1. The proposed system includes the central monitoring station, the local SCADA & PLC panels for the valve actuator operation and/or data acquisition from existing/new instrumentation.
  2. To provide continuous real time data monitoring of water inventory & inflows / outflow at each BPS/UGR & DMA.
  3. To create mathematical model for each BPS/UGR/DMA & use the same along with past data to derive demand curve for each BPS/UGR/DMA.
  4. To provide levels data of each BPS/UGR/ DMA continuously for 24 Hrs.
  5. Daily flow, Pressure data for all BPS/UGR/DMA with flow meter location by graphics display.
  6. Residual chlorine at the outlet of BPS/UGR
  7. Graphical trending diagrams of water balance (Pie Chart) of all BPS /UGR /DMA's within project area.
  8. Water Audit charts & LPCD for each zone /DMA-Bar chart
  9. To provide alerts, in case of emergency, to the appropriate authorities to quickly initiate actions for disaster management.
  10. Sending alarm SMS messages to NDMC engineers and authorities to connect them with the system on 24 x 7 basis.
  11. To generate, store historical data and print valuable data regarding water distribution

networkin, easy to analyze, digital form which can be used for distribution chain optimization.

12. Generation of bulk water audit report or any other as specified by NDMC (hourly / daily basis)

13. Water management system shall be web enabled with application software including all internet facility.

14. All the relevant data to be linked online on the cloud, link to which should then be made available on the NDMC website.

15. The relevant data on the cloud server shall also be accessible to users and citizens using Android and IOS apps.

148. The functions and features specified here with are the minimum acceptable requirements for the successful implementation of proposed Monitoring System. The provided system shall equal or exceed each requirement as specified by Engineer-in-charge or mentioned elsewhere in the contract. Contractor shall refer to Section 6.23 ; Detailed Technical Specifications of the instrumentation and specifications mentioned for proposed SCADA system

#### **6.16.4 Functional Requirements of SCADA/PLC Operation and control**

##### **Local : PLC / RTU Control**

149. All the logic for automatic operation of the valves using data from local instrumentation shall be programmed in the local PLC / RTU based panel and shall work irrespective of the connectivity with the central monitoring station. The status of each actuator and instrumentation shall be communicated online to the Central SCADA using Radio telemetry / GPRS.

##### **Local SCADA System**

150. A local SCADA system shall be provided for proposed pure water pumping stations at Hasanpur & Talkatora Reservoir and the locations of BPS (which are not by-passed) within NDMC command area. PLC system shall be interfaced with this local SCADA system to execute control functions after receiving plant parameters from the field instruments. The data from the first level system will be acquired by this system. The local SCADA System shall be located in the control room of pump house. Control panel board shall be provided to mount all instruments and house all components of the instrumentation and control systems to execute control



functions for the pumping operation and PC based software for dynamic viewing of the plant process and operations. It will offer all required supervisory control functions as well as provide GUI for plant personnel. The system shall have all the facilities such as communication ports and modules for interfacing, data recording and display with the Central Monitoring System at central control room of NDMC. Control of operation facility shall also be provided at Central Server Station. Operating system, database software, server & PCs, monitoring & display software, pump house resource planning software etc. and all other required peripherals shall be provided under this contract for achieving required functionality of the Local SCADA system.

### **Local Modes of operation**

#### Auto Control

It shall be executed as per the logic in the local PLC / RTU based on timings and or pressure, level and flow, residual chlorine settings

#### Manual Control

Manual control shall be executed using control elements like push buttons and selector switched to be provided on the control panel.

### **Remote : SCADA Control**

151. The SCADA software shall have the facility to remotely carry out manual operation and control of Valve Actuators for changing/ controlling the delivery pressure at the inlet and outlet of BPS/UGR. The BPS/UGR / GSR inlet / outlet Valve actuator operation will be integrated with SCADA System and timing / level based automatic filling system can be developed as per the requirements of NDMC. Valve Actuator operations within distribution system of DMA's shall also be integrated with SCADA system.
152. The Central Station has PC with SCADA software which will carry out real time data collection with facility of report generation, control facility for selected operation. The networking of different DMA locations and BPS /UGR locations with Central SCADA system shall be such that instantaneous status of all the locations shall be available on web through internet explorer via remote monitoring software. This is in addition to the centralized data collection. The system shall also generate SMS and e-mail alerts from the point of generation.

### **6.16.5 Proposed System Architecture**

153. The system shall be implemented using following Four levels of information system. First level shall consist of primary sensors such as pressure, flow, level sensors, energy meters, rpm

sensors, pH, turbidity, conductivity, residual chlorine etc. Field instruments which are located at various local stations within DMA's and BPS/UGRS/GSR, proposed pumping station locations will acquire each BPS/UGR & DMA information and will communicate the information to the next level of information processing system.

154. Second level shall consist of Analog/ Discrete Input Module which will communicate with the PLC/ RTU located at local stations.
155. Third level shall consist of SCADA monitoring software running on PC located at central Monitoring station office within project area. The system will communicate with all the existing BPS/UGRs & MBRs and vice versa through Radio Telemetry. Few locations of remote points for parameters like pressure, flow, Outdoor display etc. will directly communicate on GPRS system with central station. During each communication Telemetry system will get status of different parameters from the above Input modules. The telemetry will transfer information with main central SCADA system server. Whenever required it should be possible to start communication with specific above Input modules. The whole system can be monitored and controlled from single location. The Contractor can give the instructions to the local site through voice or SMS for taking corrective action from other end. In addition to that any alarming condition at local station is generated, is also displayed / informed immediately at Central station.
156. Fourth level shall consist of "WDM" Water Distribution Management software system which will run in typical client-server mode and will be Integrated with GIS software. Data acquired from BPS/UGR / GSR / Valve locations using level one hardware as well as data acquired by operator data entry shall be used as centralized water distribution system information data. MSSQL database or any other equivalent or higher technology data base server shall be used for information storage separately. It will consist of one server PC & one client PC. It is under the scope of this contract to provide all required latest software, configurations all other peripherals and licenses (unlimited) & the same shall be registered in the name of NDMC.

**Important Note:-**

- 1) For detailed specification of the instrumentation refer Section 6.23 : Detailed Technical specifications for the instrumentation.
- 2) The functions and features specified herewith are the minimum acceptable requirements for the instrumentation & proposed Monitoring & Control System. The provided system shall equal or exceed each requirement. Contractor shall visit to all locations covered in scope of work before and do his own assessment before tendering.
- 3) The extent of the instrumentation is indicated but not limited to that specified instruments and in the subsequent clauses mentioned elsewhere in the contract. Additional

instrumentation as appropriate to the requirements of specification shall be included. Consent letter from NDMC is necessary before the actual supply of instruments.

#### 6.16.6 PLC / RTU System

157. PLC / RTU shall comprise of necessary processors, input/output (I/O) modules, communication interface modules and man-machine interface (MMI) or HMI required to perform the desired functions with .

Adequate PLC handling capacity is need to be envisaged by Contractor considering the need to support Communication ports like serial RS 485, RS 232, Ethernet port and GSM cards and Ethernet connectivity, must be able to reprogram the external device connected to it and also support future add-ons cards, the memory (USB) and speed requirement.

PLC should be capable of the following

- Integrated Colour Graphic display with Touch/viewer screen and all specified memory units Built-in.
- Complete automation of valve operations.
- Accurate recording of all events
- Effective alarm management for the personnel concerned
- Complete remote surveillance.

The data generated at the PLC / RTU shall be transmitted on continuous basis to the Master PLC / RTU. The data from the PLC shall be transmitted over wireless network using Radio telemetry / GPRS.

Every PLC / RTU at BPS/UGR / GSR to be connected via an intelligent switch to wireless telemetry (reputed make) to be connected to the communication Modem.

The wireless communication shall enable seamless data transfer from each PLC / RTU to a centralized reception at the Central Control Room, wherein the data are stored in a suitable high-density storage data server.

The communication technology services require a service provider who shall set up and maintain necessary transmission devices at each location within DMA. The transmission set up at each station shall include necessary equipments like firewall, routers, etc. for network security. The data transmission over the entire wireless network shall be secured and same shall be envisaged by setting up required equipments at each transmission/reception points.

The communication network requires statutory requirements like licensing, royalty charges, structural design, lightening arrestor, aviation lamp etc. shall be considered. The communication network should be sufficient enough to handle the required traffic.

### 6.16.7 SCADA System

158. The SCADA shall be a fully dual redundant server integrated microprocessor based control and data acquisition system which will monitor, control, display, record and trend all assigned plant and water supply network inputs and outputs. The main process monitoring and control shall be by means of Large Visual Display Unit (3.5 meter x 2 meter) with single or multiple window screen based on Laser DLP technology suitable for 24 x 7 operating environment shall be located in the central control room.

### 6.16.8 End User Interface

159. There shall be three levels of End user Interface

#### i) Central Monitoring Station

The Central Monitoring Station shall have the following main components

1. Screens to display the layout schematic of the system as per actual configuration on the field
2. Online and historical trends plotted with respect to benchmark graphs. The benchmarks are to be arrived at using practical data over a reasonable period of time
3. Settings screen for important parameters like timing, pressure and flow, residual chlorine
4. User login and authentication screens
5. Dashboards of important KPIs as specified by the Engineer-in-charge in Charge
6. Bar graphs as per Engineer-in-charge to be plotted against Benchmark levels

#### ii) Cloud based web Pages

1. Important Data to be uploaded to the cloud using state of the art protocols like IOT drivers etc. and viewed using Http protocol. Any software/hardware/drivers required for the same shall be provided by Contractor
2. This shall be only in view mode and no changes shall be possible in this method
3. It should be possible to add a link to these webpages on the NDMC website. The link to be added by the customer using the services of the service provider/agency maintaining the website of NDMC

#### iii) Apps

1. Apps for IOS and android devices to be developed by the contractor
2. Apps to be downloadable by users/citizens if required
3. Screens of the apps to be developed as per Engineer in Charge requirements
4. No Changes to be possible using the apps.

### **6.16.9 Instruments and general requirements**

160. Under the Works component of the Contract, EMF Flow meters, bulk flow and pressure measurement devices, level measurement devices, chlorine analysers, data loggers etc. shall be installed to monitor water distribution. In addition, temporary pressure loggers shall be installed at 30 locations in the existing system. These pressure loggers can subsequently be used as permanent pressure loggers in the DMAs.
161. Most DMAs will have one single inlet point. In case of multiple inlet points, each point shall have a flow meter.
162. The Contractor shall design and install a Supervisory Control and Data Acquisition (SCADA) system that shall meet the following objectives:
  - 162.1. Data acquisition at all bulk flow meters installed storage reservoirs and DMAs, at all water level indicators installed at storage reservoirs and at all pressure loggers installed in all completed DMAs.
  - 162.2. Data acquisition at pressure loggers, temporarily installed in the existing distribution system, is recommended.
  - 162.3. Data acquisition at customer service connections shall not be included
  - 162.4. A telemetry / GPRS system to send the acquiring data to a centrally located supervisory system, including adequate security systems.
  - 162.5. A supervisory (computer) system with adequate back-up facilities to gather the acquiring data, and to feed a Historian (Database Management System / WDMS).
  - 162.6. The SCADA system shall be expandable to include the bulk flow meters to be installed in future, if any.
  - 162.7. The SCADA system shall allow for upgrading to include remote control in the future.
  - 162.8. The Contractor will make all necessary arrangements to ensure the continuous supply of accessories and instrumentation for the SCADA & control functions and the rate of supply of these materials shall be in such quantities and amount as would ensure successful implementation of the Central Monitoring System
163. The Contractor shall provide computer hardware and develop software for SCADA data analysis and reporting that shall meet the following objectives:
  - 163.1. Daily and monthly water balance for each water production, transmission and storage sub-system. Each sub-system typically consists of one storage reservoir
  - 163.2. Hourly and daily water balance of each storage reservoir, presenting inflow, water level fluctuations and outflow at each reservoir.

- 163.3. Daily and monthly water delivery at each DMA, at clusters of DMAs served from a single reservoir, and total water delivery to all selected DMAs.
  - 163.4. Daily and monthly water delivery to the existing distribution network.
  - 163.5. Hourly pressure logs at Critical Measuring Points in the DMAs.
  - 163.6. Water Balance of DMA with water audit report of each DMA
  - 163.7. Graphic presentation of all the above.
164. Further requirements and detailed technical specifications are provided in Vol-2of this document. The Contractor shall submit its proposed SCADA system as part of its Operations and Maintenance Plan for approval by the Engineer-in-charge.
165. The SCADA system shall be implemented step-wise following the completion of the relevant components of the Works. The SCADA system shall be fully operational at the completion of the entire Works.
166. It is the responsibility of the Contractor to do all the necessary activities required for grant of RF License at the startup of project.
167. The Contractor shall train NDMC staff in operating the SCADA system and related software.

### **6.17O&M Requirements**

#### **6.17.1Operations and Maintenance of Water Supply Services**

168. After completion of Design Construction DMA Establishment works in a zone of selected service area, the Contractor shall take over the management responsibilities of the Operations and Maintenance (O&M) of the water supply facilities of that respective DMA/ zone. The O&M tasks essentially comprise but not limited to the following.
- a. Providing & maintain water supply to the Consumers at the minimum service levels as per Schedule-7 without further deterioration
  - b. Water Demand Management
  - c. Operation & Maintenance of Hasanpur & Talkatora & all BPS
  - c. Emergency water supply
  - d. Network Operations and Management
  - e. Flow and pressure, SCADA monitoring & control
  - f. Repair of leaks and bursts and valves

- g. New Connections as per directives and approval by NDMC
- h. Consumer Services including attending to complaints received through NDMC and their resolution
- i. SCADA Information management (WDMS) and reporting
- j. Valve Operations through actuator control

#### **6.17.2O&M Period**

169. During this period, the Contractor shall continue to provide water supply services to the legal Consumers in the Service Area at the prescribed Minimum Service Levels. This shall include but not limited to all the tasks, operations, maintenance activities as listed above including attending to any new requirements for new connections, extended boundaries of Service Area etc complete.

170. The Contractor shall ensure continuous, pressurized water supply to all the Consumers and any interruptions shall be within the permissible limits as specified in the Schedule 7 Performance Standards.

171. The Contractor shall also implement all rehabilitation or service improvement works required in any extended area of the Service Area depending upon bulk water supply feasibility and hydraulic modeling or as necessary as mutually agreed between the Parties at same terms & conditions upto 25% of additional project area.

#### **6.17.3General requirements:-**

172. The Operator shall perform all the obligations under the Agreement with utmost care, effectively and efficiently and adapt the best practices in all operations and maintenance activities in accordance to the industry standards and in confirmation to the guidelines provided in the Manual on Water Supply and Treatment and the Manual on Operations and Maintenance of Water Supply Schemes published and amended from time to time by CPHEEO, Government of India.

The Operator shall undertake the operations and maintenance activities including but not limited to the tasks detailed in the following Table

#### **Operating Functions**

Basic Operating Functions shall be as following;

<b>Area of Operations</b>	<b>Key Operating Functions</b>
Pumping Systems	<ul style="list-style-type: none"> <li>▪ Conduct routine O&amp;M</li> <li>▪ Facility management</li> <li>▪ Asset maintenance</li> <li>▪ Flow and pressure monitoring</li> </ul>
Storage and Distribution	<ul style="list-style-type: none"> <li>▪ Conduct routine O&amp;M</li> <li>▪ Valve inspection</li> <li>▪ Compliance monitoring for pressure and quality</li> <li>▪ Flow measurement &amp; monitoring</li> <li>▪ Leak detection and repair</li> <li>▪ Storage tank inspection &amp; cleaning</li> <li>▪ Repairs, rehabilitation, expansion of networks</li> <li>▪ Replacement of assets as per maintenance schedule</li> </ul>
Consumer services	<ul style="list-style-type: none"> <li>▪ Install new connections</li> <li>▪ Conduct meter installations</li> <li>▪ Meter reading &amp; provide data to NDMC</li> <li>▪ Consumer complaints redressal, and monitor Consumer satisfaction as per instructions given by NDMC</li> </ul>

<b>Area of Operations</b>	<b>Key Operating Functions</b>
Water Safety	<ul style="list-style-type: none"> <li>▪ Water safety plan</li> <li>▪ Monitoring water quality</li> </ul>
Administration	<ul style="list-style-type: none"> <li>▪ Planning and coordination with other authorities</li> <li>▪ Procurement of materials, works and services</li> <li>▪ Project Management and supervision</li> <li>▪ Accounts and financial management, and training</li> <li>▪ Information recording and management</li> <li>▪ Regulatory reporting</li> <li>▪ Stores and Inventory Management</li> </ul>



In the above table, the key basic operating functions are only listed and there are many more routine O&M functions which the Contractor has to undertake at different time frequencies.

#### 6.17.4 Preventive Maintenance

173. The preventive maintenance tasks generally required in O&M of distribution systems are given in the following Table.

Chart Indicating Preventive Maintenance Schedule

Component	Daily Maintenance Tasks
Chlorination	Routine Maintenance <ul style="list-style-type: none"> <li>▪ Check leakage of Chlorine</li> <li>▪ Cleaning of chemical deposits</li> <li>▪ Check fuses and contacts</li> <li>▪ Check dosing pumps</li> </ul> Check condition of safety equipment
UGR	Routine Maintenance <ul style="list-style-type: none"> <li>▪ Check Algal growth</li> <li>▪ Clean tanks once in three months</li> <li>▪ Check for leakage</li> </ul>
Pipelines	Routine Maintenance <ul style="list-style-type: none"> <li>Check residual chlorine – Online</li> <li>Surveillance for leakage – pipe breaks and leaks - Daily</li> <li>Pipe flushing once in 6 months</li> <li>Swabbing and scraping once in three years</li> </ul>
Valves Actuators	Routine Maintenance <p>(A) Sluice valve and Knife gate valve</p> <ul style="list-style-type: none"> <li>▪ Check gland packing of the valve at least once in a month.</li> <li>▪ Ensure that packings inside the stuffing box are in good trim and impregnated with grease.</li> <li>▪ If necessary change the packing as often as necessary to ensure that the leakage is within limit.</li> </ul>

Component	Daily Maintenance Tasks
	<ul style="list-style-type: none"> <li>▪ Grease should be applied to reduction gears and grease lubricated thrust bearing once in three months.</li> <li>▪ Check tight closure of the valve once in 3 months.</li> <li>▪ A valve normally kept open or closed should be operated once every three months to full travel of gate and any jamming developed due to long disuse shall be freed.</li> <li>▪ Inspect the valve thoroughly for flaws in guide channel, guide lugs, spindle, spindle nut, stuffing box etc. once in a year.</li> <li>▪ Do not operate with oversize hand wheel or cap or spanner.</li> <li>▪ Do not operate under throttled i.e. partially open condition</li> </ul> <p>(B) Reflux (non-return) valve</p> <ul style="list-style-type: none"> <li>▪ Check proper operation of hinged door and tight closure under no-flow condition once in 3 months.</li> <li>▪ The valve shall be thoroughly inspected annually.</li> <li>▪ Condition of dampening arrangement should be thoroughly examined once in year</li> <li>▪ In case of dampening arrangement, check for oil leakage and replace oil once in a year.</li> </ul> <p>(C) Butterfly Valve</p> <ul style="list-style-type: none"> <li>▪ Check seal ring and tight shut-off once in 3 months.</li> <li>▪ Lubricate gearing arrangement and bearing once in 3 months.</li> <li>▪ Inspect the valve thoroughly including complete operations once in a year.</li> <li>▪ Change oil or grease in gearing arrangement once in a year.</li> </ul>
Connections	Routine Maintenance
SCADA System	Routine tests , System PLC's , Calibration of instrumentation etc. complete

Component	Daily Maintenance Tasks
Water Meters	Routine Maintenance <ul style="list-style-type: none"> <li>▪ Check for bulk meter accuracy – once in 6 months or as per requirement</li> <li>▪ Replace Consumer meters – once in 7 years</li> <li>▪ Replace bulk meters – once in 10 years</li> <li>▪ Calibration check from NABL labs once in 2 years</li> </ul>

### 6.17.5 General Obligations

174. The Contractor shall have the following general obligations as they may be applicable during the term of the Contract .

- (a) The Contractor shall perform the Services in accordance with this Contract, and carry out its obligations with all due diligence, efficiency, and economy, in accordance with generally accepted professional techniques and international best practices, and shall observe sound management principles, and employ appropriate advanced technology and safe methods. The Contractor shall always act in good faith, in respect of any matter relating to this Contract or to the Services, to the NDMC and shall at all times support and safeguard the NDMC's legitimate interest in any dealings with the Customers, sub-contractors or third parties;
- (b) The Contractor shall ensure that all materials and workmanship used in the course of the Contract shall be in accordance with the standard specifications. In absence of and appropriate specification, in accordance with the Indian National Standards or the International Standards Organisation as the case may be.
- (c) The Contractor shall develop, install, commission and maintain efficient and effective Integrated Information Management System (IIMS) comprising of all management needs including customer contact management, new connections, disconnections, reconnections, consumption and flow monitoring, demand management, asset management, inventory management, human resources management, monitoring of operating efficiency etc complete as required for efficient and effective operations and management of the water supply services.

- (d) The Contractor shall establish and operate a 24-hour customer service centre to be managed by NDMC to carry out the functions of customer relations, support and complaints in terms of this Contract including but not limited to response and redressal of complaints concerning leakages in the distribution system, water reduction, water quality, low pressure, and provide assistance in imparting education concerning use of water supply, installation of new connection, water usage and plumbing. The customer service centre should be operational during all times of year round the clock with appropriate staff.

The support staff to manage the centre shall be provided by Contractor.

- (e) The Contractor shall install Customer metering on all points of Customer supply and randomly check the calibration of meters installed for accurate reading to establish accurate water balance and monitor water losses;

The Contractor shall supply water to NDMC properties with metered connection

- (f) The Contractor shall permit the persons appointed and / or authorised by the NDMC to conduct. time to time audit of accounts and records of the Contractor relating to performance of the Contractor under the Contract after the Appointed Date subject to receipt of prior written intimation from the NDMC in this regard and shall fully co-operate with such auditors in the conduct of audit and review exercises and checks and shall provide all requested information to the auditors;

- (g) The Contractor shall on a periodical basis update the record of Facilities.

- (h) Neither the Contractor nor its employees shall indulge, either directly or indirectly, in any of the following activities:

- (i) during the term of this Contract, any business or professional which would conflict with the activities assigned to them under this Contract;
- (ii) NA

- (i) The Contractor shall undertake the measures as agreed under the Emergency Procedures as per para 6.11.9 herein in times of operational exigencies.
- (j) Any complaints received from the consumer through customer service centre shall be recorded and the appropriate remedial measures shall be effectively implemented to the satisfaction of the NDMC duly documented.
- (k) Any leakages observed in the distribution main shall be attended immediately and water supply restored within 12 Hours of the receipt of complaint for leakage.
- (l) The Contractor shall be responsible to maintain required quantities of spares for preventive maintenance, periodical maintenance and breakdown maintenance as enlisted hereafter in this document. The Contractor must also keep the minimum stock of spares for emergency repairs as required for prudent operational practices.

#### **6.17.6 Specific Obligations of the Contractor for Operations & Maintenance**

175. The Contractor shall have the following obligations:

- a) Prepare & implement operating and maintenance manuals, spare parts lists, recommended spares , warranty period from equipment suppliers and connected matters;
- b) identifying and procuring workshop equipment and capital spares for repairs as may be required, at his cost.
- c) select suitably qualified Suppliers of Spares, Consumables, and the external Contractors required during Operations.
- d) Set up a fully functional office with computers, personnel, equipment, furniture and communications and 24-hour customer service desk at locations / space provided or suggested by NDMC/ engineer. Customer service front office shall be managed by NDMC, while support staff for resolving the complaints or repairs shall be provided by Contractor.
- e) Contractor shall collect water sample for water quality check at BPS/ USR level, within distribution system as well as consumer end and submit it to NDMC laboratory for monitoring and reporting ,

f) The Contractor shall assist the NDMC in evaluating and verifying the reasonableness of the Operations and Maintenance Plan and answer all queries, explain the assumptions, projections, calculations etc. and shall make available all the concerned staff who had prepared the respective plans.

176. Notwithstanding the above obligations the Contractor shall have the following obligations during Operation & Maintenance

(a) Provide prudent management, operation and maintenance services as per the prescribed-standards of performance for existing as well as new assets created under this contract;

(b) Undertake efficient demand management and meet the entire demand for water as required during the time of operation;

(c) Co-ordinate with NDMC for ensured Bulk Supply volume at BPS/UGR inlet

(d) Contract management;

(e) connections, reporting defaulters, reconnecting as per the general conditions of contract.

(f) Manage and maintain the Integrated Management Information System (IMIS) to ensure efficient and transparent information, record keeping, and decision making. Under IMIS, set up a robust integrated information system comprising of the following areas:

(i) technical services such as service levels of NRW, water quality, consumption, pressure, losses, monthly real time water balance, SCADA etc.;

(ii) business services comprising, procurement, inventory management and human resource management;

(iii) Hydraulic network Modeling:- A hydraulic network model representing the water supply system for selected area of NDMC shall be developed using suitable software such as Water GEMS. The model shall be calibrated, reconciled and

- established and fully functional for continuous updating for management of the system;
- (iv) Asset Management Program including covering each type and category of asset, its servicing schedule, replacement frequency, etc. for all assets in water system including but not limited to:-
    - (A) Valve inspections
    - (B) Tank inspections
    - (c) Pipeline inspections
    - (D) Leak detection process .
    - (E) Leak repairs
    - (E) SCADA & Preventive maintenance of all existing and new mechanical, electrical and instrumentation equipment
  - (v) Set up operating and maintenance procedures for each of the unit operation including Standard Operating Procedures, Standard Maintenance Procedures, Emergency Procedures, Health and Safety Procedures etc incorporating Original Construction Contractor's Operating and Maintenance Manuals;
  - (g) Maintain effective and efficient customer complaints redressal system, the prescribed performance standards including awareness program, campaigns, trainings etc.;
  - (h) Undertake timely and cost effective asset management program;
  - (i) Maintain the automated water quality surveillance system;
  - (j) Operate and maintain all mechanical, electrical, instrumentation , SCADA Server & Monitoring and information technology installations, equipment, machinery etc as per the respective standard operating and maintenance procedures;
  - (k) Undertake preventive and breakdown maintenance for all pipelines, valves, appurtenances, mechanical, electrical and instrumentation equipment in relation to the above referred Facilities, along with appropriate documentation to facilitate warranty and insurance claims, if required;

- (l) Ensure effective and efficient planning, procurement and inventory management for all spares, equipments, consumables, instrumentations and PLC/SCADA system etc;
- (m) Provide robust security arrangements for all the facilities within the scope of this project, including restriction of entry of unauthorised persons;
- (n) Manage and maintain the water distribution management system (WDMS) for the water supply in the project area, including all, water storage facilities, flow measurement, pressure measurement and quality surveillance systems etc. complete;
- (o) Comply with all relevant local laws including environmental, industrial and labour laws;
- (p) Maintain healthy working relations with all stakeholders including the Water resources department, NDMC, NHAI, PWD, CPWD, DJB, MCD, State Pollution Control Board, and power utilities; etc.
- (q) Maintain detailed documentation and prepare periodical reports including monthly, quarterly and yearly reports for submission to NDMC including data on water balance, leakage levels, flow and pressure of water at designated check points, Import / Export point flow details, water loss / NRW level, service level, etc. complete as set out in.
- (r) Training of the operating personnel from NDMC or any other designated authority for taking over the system at the end of Contract Term;
- (s) To undertake emergency chlorination measures at times of outbreak of epidemics and any such emergency situations on behalf of NDMC;
- (t) Rectify all defects attributable to the Contractor and notify the NDMC of defects, developed within defect liability period of the commissioned components or equipments of Water supply system;
- (u) Follow all reporting requirements as specified by Engineer-in-charge;



- (v) Maintain the Performance Indicators, Quality Assurance, Standard & Safe Operation Procedures (SOPs);
- (w) To summarize, the services provided by the Contractor shall include the following:
- Operation of Facilities from inlet of service reservoir upto consumer end;
  - Provision for 24 hours a day operation and emergency cover;
  - Maintenance of the Facilities from inlet of service reservoir upto consumer end;
  - Ground and buildings maintenance;
  - Unscheduled and emergency maintenance;
  - New service connection surveys and estimates as per instructions of NDMC;
  - Making new service connections as per instructions of NDMC;
  - Investigation of illegal connections, install meter & measure and necessary reporting as per instructions of NDMC;
  - Quality surveillance programme;
  - Data collection and reporting;
  - Holding emergency exercises;
  - Incident management;
  - Safety inspections;
  - Supervision of subcontractors, enforcement of specifications;
  - Operational liaison;
  - Updating of the IMIS/ Computerised water management software system;
  - SCADA system operations / cloud facility
  - Preparation of all plans, procedures and budgets relating to operational matters, as required within the Contract.
  - Consumer awareness program, campaign, training, meetings, media interaction etc.
  - Any other work necessary to ensure the continued operation and availability of the system.
- (x) All instruments shall be maintained, checked, calibrated and serviced periodically and will always be kept in operating condition. The calibration shall be checked whenever necessary and corrected. Calibration data shall be submitted to the NDMC for approval. As a minimum, all instruments shall be calibrated once per year.

- (y) For the purpose of complying with the requirements of this contract, the Contractor will need to provide.:
  - i) An adequate and skilled workforce, supervisors, managers and technical support staff;
  - ii) Administrative and financial support staff and computer and business support systems;
  - iii) All necessary mobile plant and equipment, vehicles and incidental equipment;
  - iv) Health and Safety equipment and staff protective clothing as well as traffic and footpath barriers and signs;
  - v) Necessary chemicals and fuel;
  - vi) Stores suitably stocked with adequate spare parts and replenished within a store policy that recognizes frequency of use and delivery periods;
  - vii) Suitable depot and office premises.
  
- (z) The Contractor shall carry out the complete cleaning & disinfection of service reservoirs, master balancing reservoirs etc. once in a year.
  
- (aa) All SCADA and monitoring data shall be maintained and available on internet through application software.

#### **6.17.7 Standard Operating Procedures (SOP)**

177. Operating Instructions and Standard & Safe Operating Procedures (SOP) shall be formulated for each Site comprising of process equipment schedules, operation & maintenance data, sampling and analysis with frequencies etc. The operating parameters shall be optimised based on the data collected on commissioning of the facilities. All the activities in the preventive maintenance schedule shall be followed without any lapse. Indicative functions that are expected to be performed at each site are given below:

##### **Water Supply Network**

- (a) Take all relevant meter, flow, chlorine and pressure readings
- (b) Check operation of all equipment
- (c) Periodically check water meters and cross check readings

- (d) Check for Chlorine residual, flow and pressure at the Critical Measurement Points (CMPs)
- (e) Checking SCADA operations & monitoring functions

Water pumping stations/ BPS and transmission main

- (a) Check operation of all pumps
- (b) Take all relevant meter readings
- (c) To ensure compliance with agreed withdrawals and to bring to notice of the DJB any excess or short withdrawal
- (d) Check operation of all valves along the transmission main
- (e) Flow and pressure measurement
- (f) Checking operations of electrical & mechanical equipment
- (g) Check the power factor and power consumption

Feeder main pumping Stations

- (a) Inspect the overflow devices
- (b) Check operation of all pumps
- (c) Take all meter readings at such times of the day, as agreed with the NDMC
- (d) Check distribution of flows to feeder mains
- (e) Checking operations of electrical & mechanical equipment

**6.17.8 Maintenance and Repairs (Mechanical, Electrical and Instrumentation)**

**A] Management and Maintenance Plan**

178. A properly designed water system shall be capable of delivering desired output at all times. Considering that every mechanical system shall have to be given a downtime for maintenance purposes, the Contractor shall schedule a downtime of one hundred twenty hours, on a cumulative basis in a year for the water components or project facilities in consultation with the NDMC so as to minimise disruption in services.

- (A) Routine inspection and maintenance of all equipment;
- (B) Planned and scheduled maintenance (preventive);
- (C) Unscheduled maintenance (breakdown);

## **B] Routine Inspection and Maintenance of Equipment**

The Contractor shall carry out routine monitoring of the equipment and ensure that the equipment is properly maintained to meet the desired output. Typical tasks that shall be undertaken are :

### (A) Mechanical

- (a) Checking the lubrication and necessary follow-up
- (b) Replacing of glands that are leaking
- (c) Servicing as per supplier's instructions
- (d) Stripping down of pumps to observe clogging if any
- (e) Checking for unusual vibrations and noise

### (B) Electrical

- (a) Checking electrical contacts and wiring
- (b) Checking motor heating and noise level
- (c) Assessing efficiency of electrical equipment

### (C) Instrumentation

- (a) Cleaning and calibration of probe / sensors
- (b) Fault diagnosis
- (c) SCADA, PLC, RTU, Large Visual Display Unit etc.

These maintenance tasks shall be issued on a weekly basis through computer aided management system and the Contractor shall incorporate it in operating work schedule. All observations shall be recorded in the properly designed record system and would be analysed for initiating corrective actions, if any.

## **C] Planned and Scheduled Maintenance (Preventive)**

A work schedule chart listing identification of critical equipment, work assignment, timing shall be prepared. Critical equipment is defined as those items where failure would adversely affect the quality

and quantity of output or those that risk the safety of employees or customers. The schedule shall identify the responsible person / agency who shall be intended to complete the task e.g. in - house technician or specialist contractor etc.

The overall yearly plan schedule shall be issued to all parties to enable forward planning of anticipated manpower requirement and equipment down time. The indicative maintenance schedule is provided further in the following table. This shall be finalised during the preparation of the Operation and Maintenance Plan.

#### **D] Breakdown Maintenance**

The aim of routine and preventive maintenance is to keep breakdown to minimum for items of critical equipment which shall directly affect the performance of treatment processes. However certain breakdown may occur in spite of proper maintenance. The Contractor shall take the breakdown maintenance on top priority to keep disruption to the systems at a minimum level.

The Contractor shall have an option to call other available staff and also the services of the local skilled contractors should the breakdown occur.

#### **E] Spare Parts**

The Contractor shall store spares of all the critical equipment on respective sites and the inventory shall be assessed according to anticipated usage and in conformity with Annual Operating and Maintenance Plan.

The Contractor shall obtain consumable items required for maintenance e.g. grease, gaskets etc. from local suppliers, as and when required.

#### **F] Maintenance Report**

As part smart management of the maintenance activities, a Computer Aided Maintenance Management (CAMM) shall be implemented by the Contractor which shall be integrated with the IMIS system i.e. WDMS with the help of GIS. Appropriate proprietary CAMM packages shall be utilised by the Contractor for maintenance purposes. This package shall incorporate features such as Facility

details, maintenance history records, and scheduling of maintenance activities and updated regularly in GIS database. The use of such package shall allow the Contractor to predict when the maintenance activities need to be carried out.

Record of maintenance jobs carried out shall be reported in the record system, which shall provide the NDMC the past history, time and cost involved for each category.

#### **6.17.9 SCADA & Instrumentation system**

##### **General Activities**

179. Within the framework of the Contractor's responsibilities given in this document, the Contractor shall carry out the following activities. However, these shall not limit the requirement for other activities which otherwise are required as per term and conditions of Contract or to fulfill the Contractor's responsibilities or are essential as per good industrial practices. The Contractor shall be responsible for, but not limited to, the following:

- a) Providing the Centralized monitoring system & SCADA for NDMC including pure water Pumping station with all UGRs & BPS or as directed by NDMC engineer-in charge.
- b) Providing the required staff, but not less than the minimum as specified in this document
- c) Providing all required consumables and spare parts/ instruments required for functioning of plant and equipment.
- d) Maintenance of instrumentation (all field instruments) & control system, softwares, PCs, control room, radio telemetry system, UPS, A.C. etc. and all other works constructed in this Contract.
- e) Periodic calibration check of all supplied instrumentation and controls from reputed agencies and submitting the same document to NDMC engineers during the period of operation and maintenance.
- f) Reporting;
  - Repair history of all mechanical, electrical and instrumentation control equipment in and pure water pumping stations, water transmission mains;
  - Daily log of operations of all the important instrumentation & equipment
  - Daily start–stop operation of pumps with every hour readings for operating voltage, amperage and power factor;

- Hourly readings of pressure, flow rate and integrated quantity of water;
  - Hourly levels of sumps;
  - Daily list of alarms with time tag;
  - Logbook format and the data to be included in the logbook shall be decided during commissioning in consultation with NDMC;
  - Last periodic maintenance done for all equipment/buildings of the system;
- g) Providing required instrument spares and maintaining adequate inventory of required accessories or equipment itself for repair of system so that the all instrumentation and control equipments, softwares and communication system can work efficiently for the proper functioning of Central Monitoring System as per the guarantees given or minimum required efficiencies asked under this Contract, without any additional costs to department.
- h) Prior approval to the changes required to be carried out during O&M shall be obtained by the contractor from the NDMC engineer. The required changes shall be reported to NDMC well in time necessary drawing and literature for any changes shall be submitted to the employers representative.
- i) The Contractor shall be solely responsible for the safety and security of the goods in the store and will be responsible for any loss or damages in stores for any reason. He may opt for insurance cover against the value of the goods to be stored without any additional costs on the Department.
- j) Daily patrolling of each location, to identify and report the damages / defects if any.
- k) Periodic routine maintenance of structures/control room / chambers of each location of pumping station, UGRs etc. and others built in the Contract. Such maintenance must ensure adequate cleanliness, ventilation, illumination and structural safety. In addition to this, the general hygienic standards must be maintained and adequate plantation, horticultural activities must be taken up to maintain the total environment of the campus / building /room pleasant.
- l) Providing adequate manpower for monitoring / watch and ward of each location of, pumping stations, UGRs etc.
- m) Providing four wheeler vehicle as specified & as approved by engineer-in-charge for transportation facilities between various locations.

- n) Updating and periodic submissions of the operation and maintenance manual as defined in specifications for O&M works. The Contractor shall take up all periodic maintenance works provided in the approved O&M manual.
- o) Submission of Daily report (Water audit / Energy Audit / Water Balance).
- p) Insurance: The Contractor shall, without limiting his or the Employer's obligations and responsibilities, insure;
  - The work together with material and plant for incorporation therein, to the full replacement cost (term "cost" in this context shall include profit).
  - The Contractor's equipment and other things brought onto site by the Contractor, for a sum sufficient to provide for their replacement at the site.
  - The insurance shall be in the joint names of the Contractor and the Employer at the Contractor's cost and shall cover the Employer and the Contractor against all losses or damages from whatsoever cause arising from the start of the O&M until the date of completion of O&M in respect of the facility or any section or part thereof as the case may be.
  - Any amount not insured or not recovered from the insurer shall be borne by the Contractor

#### **6.17.10Emergency Action Plan**

180. The Contractor shall provide Emergency Plan of Action, as per the following:

- (i) The NDMC may, at its election, intercede and take, or direct the Contractor to take, any and all actions reasonably necessary to respond to an Emergency.
- (ii) The Contractor shall, upon learning of an Emergency or the probable occurrence of an Emergency, (1) immediately provide oral notice to the NDMC or its Authorized Representative of the same and (2) as soon as possible, but no later than twelve (12) hours, provide Notice to the NDMC or its Authorized Representative of such event or probable event; provided however, if Applicable Law shall provide for a more expeditious oral or written notice of any Emergency to the NDMC, the Contractor shall so comply by providing such notice to the NDMC or its Authorized Representative.
- (iii) The NDMC and Contractor or their Authorized Representatives shall coordinate with each another prior to, during and after the occurrence of an Emergency including 1) the planning and implementation of actions designed to prevent or mitigate damage to the



System and the environment and (2) the attendance of all meetings related to such planning and implementation.

- (iv) The Contractor shall **interact / liaison** and cooperate with appropriate departments of the public entities comprising the NDMC and other jurisdictions.
- (v) The Contractor shall supply standby employees from normal system staff ready to address an Emergency in an expeditious manner.
- (vi) Response Times and Emergencies:-

The Contractor commits itself to a high standard of effective response. To indicate commitment, the Contractor shall establish 'Standards of Service' which shall define the Contractor's response to any emergency with the intention of minimising the possible impact of an emergency or failure on the output of the Facilities. These standards shall be agreed with the NDMC and would typically include:

Situation	Response	Target Time
To any alarm or non-conformity during normal work time, or when the Facilities are being manned.	Any threat to public or personal health.	Immediate
	To attend to and assess the required action and the resources needed to effect remedial action. Effect first call repairs where possible	Immediate
	If the problem requires further resources, to have remedial work on site rectifying the problem	2 Hours
To any alarm Or non-conformity occurring outside normal Operating hours or when Facilities are unmanned	Any threat to public or personal health.	Immediate
	To attend to and assess the required action and the resources needed to effect remedial action. Effect first call repairs where possible	1 Hours
	If the problem requires further resources, to have remedial work on site rectifying the problem	2 Hours

181. A dedicated problem solving team shall be appointed by the Contractor and this team shall have the responsibility of tracking problems through to a satisfactory outcome.

Major events that threaten public, employee or process safety or security shall be managed directly by an Contractor's Representative, who shall have full authority to utilise whatever resources he considers fit to rectify any emergency situations. In performing these duties, this manager shall have full responsibility for ensuring proper and adequate communications with the NDMC and other relevant bodies.

#### **6.17.11 Permits**

182. Both the NDMC and the Contractor will be responsible for obtaining various permits, authorizations and consents to enable them to carry out their duties. These will include, but not be limited to the following:

1. Permits to be obtained by NDMC
  - a) Abstraction licences from various departments
  - b) Planning permissions
  - c) Public way-leaves that may be required from time to time
  - d) Discharge consents
  - e) Disposal licenses
  - f) Permissions to enter public and industrial properties
2. Permits to be obtained by the Contractor
  - a) Vehicle and plant licenses
  - b) Licenses to store
  - c) Health and Safety certificates
  - d) Fire certificate
  - e) Approval from Labour Inspector
  - f) Approval from District Health Officer
  - g) Insurance as appropriate
  - h) Licenses to carry out water operations

#### **6.17.12 Integrated Management Information System (IMIS)**

The Contractor shall establish, develop and maintain all Integrated Management Information System (IMIS) related to water Supply & distribution management (WDMS) & monitoring system. The IMIS shall be integrated with GIS and have capabilities for facility management, inventory management, operational job management and records and data management as well as all capabilities necessary for safe and efficient management, operation and maintenance of the Facilities.

#### **6.17.13 The Contractor's and the NDMC Responsibilities.**

183. Responsibilities are as following

- (a) The Contractor shall be establishing, keeping and maintaining the integrated management information system in consultation with the NDMC while integrating all water supply components with GIS under the scope of this contract. The Contractor shall collect and keep up to date information on the facilities, both above and below ground.
- (b) All Facilities taken over by the Contractor shall be entered into the computerised water management system for integration to further set up IMIS and further monitoring.
- (c) The Contractor shall verify all information in accordance with procedures agreed with the NDMC.
- (d) The Facility Register based on condition grade system shall be supported by operational information on compliance with Performance Standards, part wise.
- (e) The Contractor shall be responsible for operating the Facilities and the Conveyance System in the correct manner and for maintaining them in a professional manner.
- (f) The Contractor shall use the data to plan the Annual O&M Plan in consultation with the NDMC.
- (h) NDMC may use the information to gain an overall view of the Facility's value, performance and condition grades.

#### **6.17.14 Facility Register**

184. The Facility Register shall be a schedule (a computerized database, but also available on paper for ease of inspection) of the Conveyance System to be maintained under the responsibility of the Contractor as agreed with the NDMC. The Facility Register shall be used to perform, or support, the Services carried out by the Contractor

The format of the Facility Register shall be designed in consultation with the NDMC.

The NDMC shall have the right to verify the Facility Register and Contractor's procedures for keeping it up to date.

#### **6.17.15 Facility Numbering**

185. Each above ground Facility shall be given a unique number within the Facility register. Numbering system shall be designed in consultation with the NDMC. The number shall refer to the site and the type of Facility.

### Records to be Produced and Maintained

The scope of the Facilities to be included are summarised in following Table

Scope of the Facilities	
Type	Facilities
Management and General	Workshops Stocks Computers and associated equipment Land Vehicles Plant & machinery Service reservoir SCADA components Softwares

#### 6.17.16 Operational Job Management

186. The Contractor shall establish and maintain a suitable job management system, in consultation with the NDMC. This job management system shall provide detailed information on Facilities such as the type and make of motors, maintenance schedules etc.

#### 6.17.17 Record Drawings

Data on Facilities shall be mentioned on Record Drawings.

187. The NDMC shall ensure that the Contractor is given available Drawings of all Facilities. The Contractor shall accept the As-Built Drawings as per the scales and standards utilised by the Original Construction Contractor(s). The data can then be extracted and summarised on the IMIS. The Contractor shall establish and maintain up to date Record Drawings for both above ground and below ground Facilities.

188. The Contractor shall update the Record Drawings and Facility Register to include the Facilities taken over, together with any works that are subsequently undertaken. The Record Drawings shall be updated by the Contractor within 3 months of any modifications being carried out in the Facilities.

#### 6.17.18 Accuracy of Data.

189. The Contractors shall assign 'Confidence Grades' to the data to validate its accuracy. The Contractor shall develop the definitions of these grades and how they are to be used in consultation with the NDMC.

**6.17.19 Inventory Management**

190. The Contractor shall operationalise a computer based inventory management system to enable effective control of spares and consumables on the commencement of the Operations Period. This system shall use standard proprietary software and shall be linked by the Contractor to computerised water supply management software integrated with SCADA server. The Contractor shall provide monthly reports from this system to the NDMC.

**6.17.20 Water Quality**

191. The NDMC shall supply treated water that complies with the CPHEEO norms, presented in Schedules of Section 8 [Particular Conditions of Contract].

192. The Contractor shall collect all water samples relative to the system within the selected DMA's required by Applicable Law for physical-chemical and bacteriological analysis at NDMC laboratory and provide and submit in a timely manner all such test results to the Engineer-in-charge.

193. The Contractor shall propose its water sampling and analysis program as part of the Operations and Maintenance Plan. The program shall allow adequate monitoring of water quality and shall meet the minimum sampling and analysis frequencies as specified in CPHEEO manual or as per frequency interval below;

<b>location</b>	<b>Physical &amp; chemical parameters</b>	<b>bacteriological parameters</b>	<b>Heavy metals &amp; pesticides</b>	<b>residual chlorine</b>
at all Bulk Water supply points	monthly	weekly	annually	online
at all UGR/BPS	monthly	weekly	-	online

at service delivery points, randomly taken from Service Area, two per DMA.	monthly	daily	-	online
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194. During the Contract Period, i.e. upon completion and commissioning of selected DMA's for continuous (24 x7 ) pressurised water supply, when NDMC supply bulk water at specified points, If the quality of the supplied Bulk Water is not as per the CPHEEO norms, the Contractor shall immediately report to NDMC and the Engineer-in-charge. The Contractor shall in this regard take two spot samples of the water supplied. These samples are to be taken every day till such date that the Engineer-in-charge issues a notice to discontinue the sampling. One of the samples should be analyzed on site for chlorine residual. The other sample, taken in accordance with the sterile requirements for bacterial analysis, shall be analyzed at a laboratory of NDMC or any other laboratory approved by NDMC for the test parameters as CPHEEO norms. A representative of NDMC and the Engineer-in-charge shall be present, if they wish to, at the sampling and the sample for bacterial analysis should be divided in two for separate analysis at different approved laboratories, one portion for the Contractor and the other for NDMC .

195. Based on the results of the analyses, NDMC may advise the Engineer-in-charge to instruct the Contractor to temporarily discontinue the supply of Bulk Water.

196. The Contractor shall assist and advise the NDMC in all matters related to water and quality including, but not limited to, providing advice and assistance during the NDMC's discussions with the regulators and public health officials on water quality matters.

#### 6.17.21 Customer Service Management System

197. Customer service encompasses a broad range of activities. The Customer Service Management System shall include redressal of complaints reported by NDMC and required performance parameters are met (e.g. water pressure and flow, NRW, SCADA) and proper response are given to customer enquiries. The following provisions shall be integrated into the customer service management system:

- i) At least 24 hours advance warning of planned supply shut off for repairs and renewals
- ii) Advice Customers during emergencies
- iii) Recording and Responding to Customer Complaints received from NDMC.
- (iv) The strategy prepared by the Contractor shall include, but not be limited to, a comprehensive strategy to establish a Customer Service Centre,
- (vi) The NDMC's personnel at front office at customer service centre shall receive and handle all customer queries and complaints, including, but not limited to, queries and complaints related to
  - water bills;
  - malfunctioning or inaccurate meters;
  - meter readings;
  - water quality;
  - water pressure;
  - leakage and damaged pipes;
  - change in meter location;
  - changes in customer names; .
  - cancellation of connection by the customer
  - Web based SCADA / Monitoring information

#### **6.17.22 Meters and Meter Reading**

198. Providing meter reading data logged from the consumer meters at NDMC billing database terminal vest with the Contractor. This shall be used for issuing water bills to the consumers by NDMC. Such reading are subject to random spot checking by the Contractor, for verification or as the case may be.

#### **6.17.23 Meter Replacements / Refurbishment / Calibration by Contractor**

199. Scope includes following

- i) Failed equipments / instruments / meters shall be replaced by Contractor under defect liability period.
- ii) Contractor shall be responsible for calibration testing of Flow meters after every 2 years from NABL accredited labs or CWPRS or as specified by Engineer-in-charge
- ii) Complaints related to faulty water meters or inaccurate meter shall be notified to Contractor by NDMC. Contractor shall be responsible to un-install such meters and

provide it to meters testing bench facility of NDMC as per the instruction of Engineer-in-charge.

**6.17.24 Customer Service**

200. A 24 hour customer service desk shall be established by the Contractor and managed by NDMC. The customer service desk will be integrated with the computerised water supply management software established by Operator. This software shall be linked with existing Central Complaint Recording system of NDMC to have centralised database. All enquiries and customer complaints shall be recorded into the system along with resolution mechanism, time of resolution, action taken and feedback procedures. Space for establishing the office shall be provided by NDMC within DMA's under the scope of this contract within NDMC project area.

**6.17.25 Environmental Management Plan**

201. It shall be as per following table



**Environmental Management Plan**  
Environmental Management Plan for Selected Area of NDMC Project

Project Activity	Environmental Impacts	Mitigation Measures	Primary Responsibility
Bursts	Flooding and leakage of water in the influence Area during implementation	Appropriate shut off or bypass and leak control arrangements shall be ensured	Contractor
Replacing the valves	Temporary disruption of water supply to the consumer	Alternative supply arrangements such as supply through tankers shall be provided.	Contractor
Leak repair and replacement of mains	Disruption of water supply to the consumers during execution	-Alternative supply arrangements such as supply through tankers shall be provided.	Contractor
New pipelines or extensions	Disruption of traffic during execution	-Appropriate traffic diversion plans shall be prepared and implemented during construction	Contractor
Working in roads or restrictive places	Safety hazards to labour	-Adequate safety precautions such as helmets, safety shoes, gloves, etc. shall be provided to the labours	Contractor
Repair of pipelines	Disturbance to other utilities such as telephone cables and sewer lines etc.	-Scheduling activities in consultation with the other utility agencies and ensuring minimum disturbance to the utilities	Contractor
Construction or installation of new structures or equipments	Increased noise levels during construction	-Use of low noise generating equipment for all the activities, provision of personal protective equipment, ear muffs, etc. for the construction labour and avoiding construction activities during nights	Contractor
Replacement of service connection	Temporary disruption of water supply	Alternative supply arrangements such as supply through tankers shall be Provided.	Contractor
Provision of appropriate water meters & taps	Temporary disruption of water supply	Alternative supply arrangements such as supply through tankers shall be Provided.	Contractor

### **6.18 Consumer Awareness requirements & trainings**

202. Contractor shall undertake at his own cost, all measures which shall promote the benefits of project and create public awareness about 24x 7 water supplies. Contractor shall also appoint a Public Relation team for such programmes. Contractor shall ensure cordial communication between Contractor, NDMC, public representatives, NGOs, consumer forum, Media, other Government Authorities etc.
203. The public campaign for the project & water conservation while conversing DMA's in to 24x7 Water Supply shall be responsibility of Contractor
204. Contractor shall conduct internal water audit or leak test for consumers those having history of high consumption. Contractor shall maintain the list of such consumers and identify them. Contractor shall identify all visible leakages while closing all known taps during supply hrs for period of 1 or 2 hrs. at consumer premises. Contractors shall submit report to Engineer-in-charge after certification of same from consumer. Consumer shall be solely responsible for rectification of leakages within the premises of customer beyond consumer meter.
205. Contractor shall provide the checklist of probable leak points to consumers of DMA's as part of awareness programme.
206. Digging within the consumer premises shall be completed in a day time. Contractor shall provide advance notice & time table for his work within the premises / colony / societies.
207. Residents Welfare Association (RWA) / notified societies shall be informed about time table for digging & restoration work within the colony. The failure of Contractor to maintain the time table will attract penalty as decided by the Engineer-in-charge. The penalty shall not exceed Rs. 5000 per day per RWA colony / Society.

#### **6.18.1 Training Requirements**

208. Contractor will provide on the job training during operation services to the staff of Employer. Such trainings will be commenced 30 days prior to commissioning the first DMA. Also that in the last year of O&M period and before 180days from the date of handing over the assets back to the Employer, the Contractor shall organize detailed training to the identified staff in technical, commercial and financial aspects of water services provision to enable the Employer to build sufficient capacity and skills to manage the water services after the Contract Completion Date. Commencing from 120days before the Contract Completion Date, the staff either from Employer or from

a future Contractor will overlap and co-manage the operations to ensure continuity in service delivery.

### **6.19 Customer Services Requirements**

209. The Contractor shall start providing basic Customer services through Employer from the Operation Service Commencement Date. Contractor shall act as back office support to NDMC and shall provide services to consumers on behalf of NDMC. Contractor shall not exclusively interact with consumer or directly give any services to consumers. The Customer Service Management System shall have an interface with the Customer's premises to ensure required performance are met (e.g. water pressure and flow, NRW) and proper response are given to customer enquiries. The following provisions shall be integrated into the customer service management system:

- Advance warning of planned supply shut off or repairs and renewals
- Advice Consumers during emergencies
- Meter reading queries of Consumers
- Recording and Responding to Customer Complaints through NDMC only.

210. The Contractor shall receive and handle all customer queries and complaints forwarded by NDMC, including, but not limited to, queries and complaints related to:

- i. Water meter queries;
- ii. Malfunctioning or inaccurate meters;
- iii. meter readings;
- iv. water quality;
- v. water pressure / availability of water;
- vi. leakage and damaged pipes;
- vii. change in meter location;
- viii. changes in customer names;
- ix. cancellation of connection by the customer

#### **6.19.1 Customer Service Centers**

211. The Contractor shall develop and set up Customer Service Centres (CSC) that will be used to manage consumers related services. The number of CSC's will increase with the

number of DMAs completed and number of service connections provided. Ultimately there shall at least be one CSC for every 5000 to 7000 connections to facilitate receiving and resolving consumer requests received through NDMC in the areas of new connections, service deficiencies, etc. Contractors scope shall be limited to development of customer service centre and deployment of staff for operating the same shall be responsibility of NDMC. Contractors shall provide the required O & M Staff to perform the duties and responsibilities specified under this contract. Contractors shall be responsible to provide manpower and resources in attending, resolving and closing the consumer complaints received and forwarded by NDMC to Contractor.

- 211.1. The CSCs shall function between 8am to 8pm during all working days and between 8am to 1pm during public holidays including Sundays.
  - 211.2. The CSC shall be equipped hardware and software to facilitate continuous record of NDMCs forwarded complaints, monitoring the resolution, and reporting completion of necessary actions and tasks.
  - 211.3. Cost of operation of the CSC shall be included in the Contractor's Operation fees.
212. The first CSC shall be operational from the Operation Service Commencement Date., adequate space will be provided by the Employer.
213. The design of the CSCs will be approved by the Employer.

#### **6.20 Reporting Requirements**

214. The Contractor shall prepare and submit for approval, plans and periodic reports on those plans, progress of Works and Services, performance standards etc., including exceptional reports on emergencies if any. The reporting requirements shall be as instructed by Engineer-in-charge time to time. The Contractor shall as part of the Baseline System Improvement / Construction Plan, the Operations and Maintenance Plan and the Training Plan, develop the required formats for the periodic reports and also identify any critical reporting requirements in order to enable timely decision making by the Employer.
215. The Contractor shall prepare and submit for approval a System Improvement plan, Construction Plan defining and scheduling all Improvement Works. The Construction

Plan shall be finalized and approved within 6 months from the Commencement Date.

The Construction Plan shall include:

- 215.1. The results of the review and verification of the proposed water supply system of NDMC service area and transmission mains works & establishment works for DMAs covered under scope of work;
  - 215.2. Condition Assessment, RF survey, Survey & Investigations Report, Consumer Survey report, Hydraulic Modeling (all DMA's), frozen boundary map and proposed SCADA & web enabled system facility
  - 215.3. The results of the review and verification of the designs for DPR prepared by the Employer;
  - 215.4. The results of the review and verification of DMA boundaries including priority DMAs;
  - 215.5. Proposed construction schedule along with resource planning & SCADA Report/ Architecture;
  - 215.6. Cash flow requirements;
  - 215.7. Format for periodic construction reporting;
216. The Contractor shall prepare and submit for approval an Operations and Maintenance Plan, defining all operational services to be provided under the Contract. The Operations and Maintenance Plan shall be finalized and approved within 6 months from the Commencement Date. The Operations and Maintenance Plan shall include:
- 216.1. The Hydraulic Network Model developed by the Contractor
  - 216.2. The results of water quality survey sampling
  - 216.3. Results of Assets of water supply
  - 216.4. The results of consumer connection surveys
  - 216.5. Emergency Response Plan
  - 216.6. Energy Optimization Program
  - 216.7. Standard Operating Procedures for routine operations and emergency responses
  - 216.8. Format for periodic operation and maintenance reporting.
  - 216.9. First year plan Annual Operating Plan, covering specific water supply operations requirements and scheduled maintenance activities.

217. The Contractor shall prepare and submit for approval a Training Plan, defining all on-the job and class room training of NDMC staff to be conducted during the Project. The Training Plan shall be finalized and approved within 6 months from the Commencement Date.
218. Operation and Maintenance Manuals shall provide the details of the regular and periodic maintenance of Works, and shall ensure that at all times during the Operation Service Period, the Project Facilities are maintained in a manner that it complies with the Performance Standards. Such Operation and Maintenance Manuals shall include but not be limited to the following:
- 218.1. Intervals and procedures for the carrying out of inspection of all elements of the Section;
  - 218.2. Criteria to be adopted for deciding maintenance needs;
  - 218.3. Preventive maintenance schedule;
  - 218.4. Intervals at which the Contractor shall carry out periodic maintenance;
  - 218.5. Intervals for major maintenance and the scope thereof;
  - 218.6. Leakage management system;
219. Monthly Operating Performance Report (MOPR); Performance targets and standards report as per Schedule 7 of PCC. The MOPR shall also include: a detailed progress report on the implementation of the Operation and Maintenance Plan; monthly water account with details of water measured at bulk supply points, distribution and Performance Standards achieved or maintained during the month; exceptional reports on emergencies; financial information on project cash flows, etc.
220. Quarterly Operating Performance Report (QOPR). Performance report as per schedule 7 of PCC. The QOPR shall also include a brief summary of the relevant issues detailed in the Monthly Performance Reports including a summary analysis of the quality of water supplied, the number of Consumer connections, the performance of water meters, consumer complaint recording and handling on behalf of NDMC.

#### **6.21 Maintaining Performance Standards**

221. The performance standards for the Design construction works during the SIP implementation shall consist of i) quality of work as per specifications and ii) The time line for completion as per the milestones defined in under this contract. The liquidated

damages will be levied for non achievement of these milestones in time, as per the provisions in Section 8: Particular Conditions of Contract.

222. The measurement of the quality of work will be as per the tests laid down in the specifications of various items while the measurement of the achievement of milestones is based on the defined works and defined dates under this contract.
223. All works / services and materials, instrumentation to be provided/ required under this contract shall comply to 6.23 :Detailed Technical Specifications specified under this contract. Contractor shall be responsible for replacement of equipments under defect liability period during the contract period.
224. Payment of operation services will be in accordance to the procedures in Schedule –5 Contractor Payments attached to Section 8: Particular Conditions of Contract. Operation service contract will be governed by Performance Standards provided in Schedule 7– Performance Targets and Measurement attached to Section 8: Particular Conditions of Contract.

#### **6.22QUALITY ASSURANCE& CONTROL**

225. Contractor shall prepare detailed plan for this Contract for Quality Assurance and Quality Control and get it approved from the Employer’s Representative or Engineer-in-charge. The Contractor shall deploy adequate number of suitable experts whose sole responsibility shall be to strictly implement the QA/QC plan and conduct necessary tests to ensure highest quality standard. All other measures that the Contractor may feel necessary or as may be directed by the Employer’s Representative or Engineer-in-charge or his representative shall be followed.

##### **6.22.1Shop Drawings for equipment’s / works**

226. The Contractor shall prepare shop drawings before manufacturing, ordering, installing any equipment, materials etc. The shop drawings shall follow the design and detailed requirements as indicated by the Engineer-in-charge’s specifications and shall incorporate the fabrication details. Six copies of these shop drawings shall be submitted by the Contractor i.e. two copies to the Engineer-in-charge and Four copies to Consultants/ PMC. After due checking, the consultant will forward three copies to NDMC with his comments within seven days. The Engineer-in-charge shall, at his earliest convenience scrutinize these comments from consultant and return one copy to the Contractor with his comments/approval. Only on receipt of the approval of the shop drawings, further work shall be proceeded with by the Contractor. The Contractor

shall submit these shop drawings to the Engineer-in-charge at the earliest, but within 30 days from the award of work considering the overall time schedule, to allow the Engineer-in-charge reasonable time to scrutinize. Any plea of delay on this aspect, shall not be entertained, as per the Contractor's request.

**6.22.2 Drawings, Maintenance Manual etc. for works**

227. All the drawings, documents and data sheets as detailed below shall be delivered after checking & verifications from the consultants to the Engineer-in-charge for his approval. The approval of the drawings/data sheets/documents/ QAP by the engineer shall in no way relieve the Contractor from his obligations to get the drawings approved from the statutory bodies before execution of the work and provide a complete and satisfactory plant and installation as per intent and purpose as laid down in the specifications. Any omission and/or errors shall be made good or rectified whether or not the drawings were approved or not, at no extra cost to NDMC.

**6.22.3 PRE-DISPATCH INSPECTIONS OUTSIDE THE EMPLOYER'S CITY**

228. In the event the Contractor proposes to procure material which requires pre-dispatch inspection of the Employer's Representative from outside of the Employer's city, the Contractor will have to arrange and provide for the cost the travel to the Manufacturer's place, accommodation, local transport and food for the representatives of the Employer. Such costs will be incorporated in the tendered cost of such items and no separate payment will be made for the same.

**6.22.4 Material**

229. All material used shall be new and conform to the relevant specifications or standards or as per approved Quality Assurance Plan. Reconditioned parts/Equipments shall not be accepted.

**6.22.5 Working Conditions**

230. It will be the Contractor's responsibility to acquaint himself with the local prevailing conditions of temperature, humidity, rainfall, dust and other conditions. All the equipments supplied shall be suitable for satisfactory operation under such abnormal conditions as prevalent.

**6.22.6 Conformity to Specification**

231. The work is to be executed in accordance to the specifications (mentioned under this contract) and the relevant I.S. Codes.



#### **6.22.7 Approval of Materials**

232. All materials used on the work shall be new and of the best quality available, conforming to the relevant specifications specified under this contract and as per the good Engineering practices. Prior approval should be obtained in writing from the Engineer-in-charge or Employer's representative while approving the Quality Assurance Plan (QAP) for all materials proposed to be used.

#### **6.22.8 Shop Inspection and Testing**

233. Contractor shall depute the Third Party Inspecting Agency (TPIA) for the shop Inspection & Testing at his own cost for the items specified under this contract. TPIA shall be as per approved list of NDMC or as Specified in PCC.

234. The Engineer-in-charge or his appointed inspecting agent shall be entitled at all reasonable times during manufacture to inspect, examine and test in the Contractor's premises, the materials and workmanship, of all plant to be supplied under the contract and if part of the said plant is being manufactured on other premises, the Contractor shall obtain permission to inspect, examine and test the same at such premises for the Engineer-in-charge. Such inspection, examination and testing or waiving of the same shall not relieve the Contractor from any obligation under the contract. The Contractor shall give the Engineer-in-charge minimum 30 days' notice in writing of the date and the place at which any Plant will be ready for testing.

235. All instruments used for such tests shall be calibrated and certified by an approved testing authority and the calibration certificate shall be valid at the time of tests. The calibration certificate shall be produced by the Contractor, at the time of carrying out every test, showing the readings obtained, all calculations and full details of the calibration.

236. The expenses for shop inspection of finished equipment and witnessing of performance tests at manufacture's work as specified shall be borne by the Contractor. The charges towards to & fro travel, boarding, lodging etc for third party agency including their inspection fee shall be borne by Contractor. The expenses incurred for above shall be deemed to be included in the prices quoted for the equipment. The above arrangements shall be made in advance and intimated to the department before any inspection has to be carried out at the manufacture's works. The delay in the inspection due to any reasons whatsoever shall be attributable to the Contractor.

#### **6.22.9 Test Certificate**

237. All manufacturer's certificates of test proof sheets, etc. showing that the equipment, material also have been tested in accordance with the requirements of the NDMC, appropriate Indian Standard, Statutory requirement, other relevant standard specification or this specification are to be supplied free of charge on request. In case of dispute, NDMC or Employer shall have the right to get the material tested at the cost of the Contractor as per the specification. Materials, which are not supported by the test certificates or for which test results do not tally with relevant standard specifications, shall not be used.

#### **6.22.10 Quality Certificate of Equipment/ Material**

238. The Contractor shall be required to produce a manufacturer's quality certificates for the equipment and materials supplied by the Contractor. Notwithstanding the manufacturer's certificates, the engineer may ask for testing of materials in approved test houses. The test result shall satisfy the requirements of the relevant Indian Standards/ NDMC.

#### **6.22.11 Records & Usage of Equipment/ Material**

239. The Contractor shall maintain a detailed report of all equipment/materials received at the site in his stores or storage and working areas in the vicinity of the site and shall make such records available to the Engineer-in-charge at such times as the latter may reasonably require.

#### **6.22.12 FAILURE TO PASS TESTS AFTER COMPLETION**

240. The performance criteria, as specified in the tender are the minimum acceptable criteria, below which the works failing to pass tests after completion shall be rejected.

#### **6.22.13 SAFETY ASSURANCE**

241. The Contractor will take all measures required to maintain highest safety standards on the site. The measures taken will include all but will not be limited to the relevant provisions of the Indian Standards. The Contractor will prepare a safety plan for the project and have it approved from the Employer's Representative. The Contractor shall deploy a safety officer on each important site to ensure compliance.

#### **6.22.14 OPERATION AND MAINTENANCE MANUAL**

242. The Contractor, before commencement of the Tests on Completion, shall submit 6 (six) copies of the operation and maintenance manuals for the pipe line, Water Supply System (continuous), overhead service reservoirs, SCADA, Instrumentation, Consumer Services etc. covering all the project components in English language, containing descriptions, illustrations, sketches, drawings, sectional drawings, sectional arrangement view and manufacturer's parts numbers to enable the connections, functions, operation and maintenance of all components of the complete System to be easily followed and for all parts to be easily identified to facilitate ordering of the replacement parts.
243. On the date of Contract Completion or if the Contract is terminated, all the installations, works and equipment's placed under the Contractor's responsibility shall be handed over to the Employer, at no cost, in good working order, barring normal wear and tear. The Employer may perform any inspections, tests from expert appraisals he shall find necessary with a view to checking that system is in good working order. For the status of plant & machinery NDMC may deploy the third party for investigations.

**The Contractor shall also submit the following information while handing over water supply system / Equipments / SCADA / softwares:**

- a) A write up about the system, sufficient in detail to enable the staff of NDMC to operate the water supply in smooth & trouble free manner and to maintain, and continue the services.
- b) Six sets of detailed drawings and specifications in respect of wearing parts and parts likely to be damaged. For parts where submission of detailed drawings & specifications will be possible, parts catalogue of equipments will be acceptable.
- c) Six sets of List of control components giving their type, designation.
- d) Six sets of manufacture's catalogues of the main equipment and accessories.
- e) Schedule in quadruplicate, of the items of which the Contractor is not manufacturer or manufacturer's authorized dealer. This should contain the specifications of each item and the agency from which these items are purchased.
- f) Maintenance/instruction manual furnished by the manufacturer.
- g) All licenses, passwords and keys etc.
- h) The Contractor shall keep a permanent record of pumping Operations (logbook). This logbook shall be kept at MCC and remote site locations and shall be handed over to the Employer.

**6.23 Construction Requirements: Detailed Technical Specifications**

*Provided in Volume 2*

Note:-The Detailed Technical Specifications provided in Volume 2 under Section 6.23 separately shall supplement the Technical Specifications specified as above. Whenever there is a conflict, the provisions of Detailed Technical Specifications under Section 6.23 shall prevail over other.

### **6.24 Supplementary Information**

The following list is not exhaustive but shows some of the main reports that are available as part of the electronic data room (EDR) available with NDMC. Participating Bidders can obtain the information by seeking the necessary permission from the Employers representative.

- a) Detailed Project report on NDMC Continuous (24 x7) water Supply Project \_  
Main report (Volume-I) (NDMC Project Area)
- b) Detailed Project report on NDMC Continuous (24 x7) water Supply Project \_  
Pipe report (Volume-II)
- c) Detailed Project report on NDMC Continuous (24 x7) water Supply Project \_  
Drawings report (Volume-III)
- d) Detailed Project report on NDMC Continuous (24 x7) water Supply Project \_  
Appendices report (Volume-IV)
- e) Project Area Bas Map (2011-12)
- f) NDMC water tariff notifications
- g) Detailed Project Report on Improvement & Revamping of Treated Waste Water  
Supply System of NDMC for Horticulture and Non Potable Water Application  
(Main Report –Volume-I)
- h) Detailed Project Report on Improvement & Revamping of Treated Waste Water  
Supply System of NDMC for Horticulture and Non Potable Water Application  
(Cost Estimates –Volume-II)
- i) Detailed Project Report on Improvement & Revamping of Treated Waste Water  
Supply System of NDMC for Horticulture and Non Potable Water Application  
(Design & Drawings Report –Volume-III)

## 6.25 Drawings

244. Employer's Drawings. The List of drawings is provided as a guideline of the specifications and work of the Bidding Document. All data and information furnished in the drawings by the Employer is given in good faith as a part of approved Detailed Project Report for the service area, but the Employer does not guarantee their completeness and accuracy. The drawings shall be verified and corrected by the Contractor before submitting the System Improvement Plan the Engineer-in-charge / NDMC.
245. Contractor's Drawings. All completion drawings provided by the Contractor shall be on standard size sheets, prepared on computer with Auto CAD or equivalent and shall show particulars in a title block located in the lower right hand corner, in addition to the name of the Contractor and equipment manufacturer, date, scale, drawing, revision number (RO for drawings submitted initially, R1, R2 etc., for drawings submitted subsequently). A blank space shall be provided for the Engineer-in-charge's approval stamp and provision shall be made for details of revisions to be recorded. All drawings submitted by the supplier shall use the English language. All drawings shall be clearly and fully cross-referenced to the other drawings as relevant.

## 6.26 Personnel Requirements

### 6.26.1 During Construction Period

246. The table below presents the Contractor's key personnel required during design & construction period, minimum numbers of staff required for each key position, educational and working experience requirements.

Using specified forms in Section 4 [*Bidding Forms*], the Bidder must demonstrate it has key personnel that meet the specified requirements.

**Table 12 : Personnel Requirements – construction period**

Sr. No	Position	Minimum Number Required	Professional requirements		
			Education level	Total Working Experience	Working Experience in similar assignments
<b>General Management and Construction Staff</b>					
1	Project Manager	1	Graduate Engineer with specific experience in implementation of water	15 years	10 years

			supply improvements in urban areas.		
2	Planning and Material Engineer	1	Graduate Engineer	10 years	5 years
3	Procurement cum Quality Assurance Engineer	1	Graduate Engineer	10 years	3 years
4	Construction Supervisors	3	Graduate Engineers in civil/ electrical/ mechanical/ engineering	7 years	3 years
5	Water supply network design / hydraulic Engineer	1	post Graduate Engineer in civil/ hydraulic engineering	7 years	5 years
6	Customer Administration	1	Graduate with post graduate diploma in social or environmental science	7 years	3 years
7	Instrumentation Engineer	1	Graduate Engineers in instrumentation /SCADA engineering	7 years	3 years

Note:- List above is minimum and Contractor shall deploy the staff over and above to perform his obligations as specified under this contract

#### 6.26.2 Mandatory Requirements

247. The Table below presents the Key-personnel mentioned under Section 6 of Employers requirements are mandatory requirements of Employer during design and Construction as well as Operations period i.e. for entire 84 months of contract. Price Bid shall be inclusive of Cost of expert services desired under this contract. Non availability of mandatory key personnel shall be result into deduction of penalty amount and recovery of such cost as specified in Section 8 of Particular Conditions of Contract. CV's of proposed key Personnel shall be provided under Section 4 : Bidding Form.

Table 13 : Mandatory Key Experts

Sr. No	Position	Minimum Number Required	Professional requirements Working Experience
1	NRW cum DMA Management Specialist	1	As specified employers Requirement
2	Operation and Maintenance Specialist	1	As specified in employers Requirement
3	Leak Detection Specialist	1	As specified in employers Requirement

Payments for such services are specified in Schedule 5 :Contractors Payments of Section 8 of Particular Conditions of Contract(PCC).

**6.26.3 During O & M Period**

248. Existing water supply of NDMC is being managed by following NDMC staff;

<b>Existing Staff of Water Supply (NDMC)</b>	
Executive Engineer	1
Assistant Engineer	7
Sr. Assistant	2
A.A.O.	1
Junior Engineer	13
Head Draftsman	1
Head Assistant	1
Clerical Assistant	1
Jr. Assistant Clerk	2
Typist	3
Pump Attendant	11
Pump Driver	54
Fitter	9
Fitter GR-II	3
Water Meter(Mec.)	1
Meter Repairer	1
Pump Mechanic	1
Beldar	202
Driver	20
Driver Cum Fitter	1
Driver (HMT)	1
Jr. Steno	1
Driver (LMV)	7
LMV Driver Cum Fitter)	1
Chowkidar	28
Peon	1

While taking over the O & M of water supply of NDMC, Contractor shall be responsible to utilize existing staff of NDMC those are operating BPS pumping operations. Pump Driver and attendant will follow the instructions of Contractor to operate the BPS pumping as per given schedule of Contractor. Such staff will remain employee of NDMC only.

249. The table below presents the Contractor's key personnel (indicative) required during Operation and maintenance period, minimum numbers of staff required for each key position, educational and working experience requirements.

**Table 14 : Personnel Requirements during O & M Period**



Section-6: Employers Requirements

Sr. No	Position	Minimum Number Required	Professional requirements		
			Education level	Total Working Experience	Working Experience in similar assignments
<b>Centralized Operational Staff</b>					
1	Operational Manager	2	Graduate Engineer with experience in water distribution management system with 5 years O & M experience	10 years	5 years
2	Network Engineer	1	Graduate Engineer with experience in water distribution system / modeling	5 years	3 years
3	Asst. Network engineer	2	Graduate Engineer with experience in water distribution system	3 years	2 years
<b>Leak Detection Team &amp; O &amp; M</b>					
4	Leak Detection Engineer	28	Graduate engineer	3 years	1 years
5	Maintenance Team	20	Pipe repairs expe	-----	-----
6	Valve Operators	28	Water distribution experience	----	-----
7	Pump Operators	38	Experience of similar works	01 years	01 years
8	Fitter	13	Experience of similar works		
9	Instrumentation Engineer	01	Experience of similar works	3 years	2 years
10	Operators for SCADA & Central monitoring system	03	Experience of operating SCADA	3 years	2 years
11	Software Programmer/ Developer	01	Experience of similar works	3 years	3 years
<b>Customer Complaints Supervisor</b>					
11	Public Relation Officer	1	Graduate with post graduate diploma in social or environmental science	7 years	5 years
12	PRO Assistant	4	Similar Work Experience	3 years	2 years
13	Office manager	2	Similar Work Experience	3 years	2 years
14	Supervisor – customer complaint	10	Similar Work Experience		

Note:- List above is minimum and Contractor shall deploy the staff over and above to perform his obligations as specified under this contract

**6.27 Minimum Set up Requirements**

250. During DMA establishment, the Contractor is expected to provide the expert management support services while completing the engineering study, survey & investigations, fixing boundary valves & isolating the area, capacity building & trainings to NDMC staff, computers peripherals, transport, necessary tools equipment's etc. The list of minimum set, tools & equipment etc. required for the project is indicated below;

	Qty.
Furnitures	Lump sum
Interiors	3 Offices
PC's	10
Printers Small Color	3
Bulk Printing machine	1
Communications	5
Networking Costs	3
Sign Boards, Leaflets	3
<b>Software</b>	
Water Gems software	1
GIS software	1
Auto CAD and other accessory softwares	3
<b>Equipments</b>	
Leak Noise Correlator	1
Leak detection ground phones	6
Pipe locaters	2
Air Compressor + Jack hammer	2
Pipe Welding Sets	3
Mobile Generator	1
Portable dewatering pumps	2
Portable Flow meter	2
Vehicles (SUV) - Equipped with all tools & tackle for routine maintenance	3
Inventory for Connections	100

**Note:-** List above is indicative for management support services expected from Contractor during contract period. Contractor shall procure equipment's / softwares, expert services over and above required for successful completion of his obligations specified under this contract.

251. Apart from above, during the entire contract period till taking over of the works by NDMC, the contractor shall provide two new brand AC vehicles of TATA Safari/Scorpio/XYLO/Innova or equivalent make Vehicles, for the NDMC. The vehicle shall be provided with fuel, driver & maintenance for a running of at least 3000 Kms per month within a fortnight from the date of commencement of the work. The cost of this facility is incidental to the work and deemed to be included in the offer given by contractor.

### **6.28 Proposed Instrumentation**

252. Indicative list of instrumentation & automation system is listed below. The requirement is minimum and subject to increase or decrease as per the actual requirement of proposed SCADA system. NDMC is not binded for the consumption of all the items as specified. Additional instrumentation as appropriate to the requirements of system shall be provided. Consent letter from NDMC is necessary before the actual supply of instruments.

Section-6: Employers Requirements

Indicative Automation & Instrumentation																								
Sr.NO	Proposed Instrumentation Locations	Status	Pressure Sensor at Suct. & delivery					Pressure point Interfac ing at flow meter	Resi dual Chlo rine	Level Meas urement	Ph / Turbi dity/ Con ductivity	PLC / Con trol Panels	PLC/ RTU	RF Mod em	GPRS Datal ogger	GPR S Mo dem	Out door Display	Inte rfac ing	AC	Loc al Sca da PC	Energ ymet er	UPS	RP M Me ter	Surge Protector
			No. of	elivar	BPS outle	DM A	Tota l																	
1	B D BLOCK T-11	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
2	BENGALI MARKET T-23	BPS to continue	5	5	1	4	10	2	1	1	1	1	1	1	4	1	1	1	1	1		1	1	
3	BHARATI NAGAR T-19	BPS to continue	5	5	1	4	10	2	1	1	1	1	1	1	4	1	1	1	1	1	5	1	5	1
4	Bhuli Bhatiyari (DT)	Tapping points			1		1	2	1		1				1			1				1	1	
5	bULK (POLO GROUND DT Palam)	Tapping points			1		1	2	1		1				1			1				1	1	
6	Bulk NBSS Limited	Tapping points			1		1	2	1		1				1			1				1	1	
7	DT AIIMS	Tapping points			1		1	2	1		1				1			1				1	1	
8	HARIJAN BASTI T-25	BPS to continue	4	4	1	4	9	2	1	1	1	1	1	1	4	1	1	1	1	1	4	1	4	1
9	Hasanpur Dist					4	4	2	1		1				4			1				1	1	
10	Hasanpur R-1					0	0	2										1				1	1	
11	I Avenue	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
12	JOR BAGH T-18	BPS to continue	8	8	1	4	13	2	1	1	1	1	1	1	4	1	1	1	1	1	8	1	8	1
13	K block T	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
14	KAKA NAGAR T-20	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
15	KALIBARI T-27	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
16	KIDWAI NAGAR E T-13	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
17	KIDWAI NAGAR W T-13	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
18	LAXMIBAI NAGAR T-15	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
19	Mandir marg	BPS to continue	4	4	1	4	9	2	1	1	1	1	1	1	4	1	1	1	1	1	4	1	4	1
20	MEENA BAGH T-32	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
21	Moti bag UGR	BPS to continue		0	1	4	5	2	1	1	1	1	1	1	4	1	1	1	1	1		1	1	
22	NAUROJI NAGAR T-7	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
23	NETAJI NAGAR T-5	BPS to continue	4	4	1	4	9	2	1	1	1	1	1	1	4	1	1	1	1	1	7	1	7	1
24	NORTH AVENUE T-28	BPS to continue	6	6	1	4	11	2	1	1	1	1	1	1	4	1	1	1	1	1	6	1	6	1
25	PANDARA ROAD T-21	BPS to continue	3	3	1	4	8		1	1	1	1	1	1	4	1	1	1	1	1	3	1	3	1
26	PT.PANT MARG T-29	To be by passed after capex		0	1	4	5	2	1	1	1		1		4		1	1				1	1	
27	RAJDOOT MARG T-2	BPS to continue	4	4	1	4	9	2	1	1	1		1	1	4	1	1	1	1	1		1	1	
28	Sardar Patel UGR	BPS to continue	5	5	1	4	10	2	1	1	1	1	1	1	4	1	1	1	1	1	5	1	5	1
29	SAROJINI NAGAR RLY T-1	BPS to continue	6	6	1	4	11	2	1	1	1	1	1	1	4	1	1	1	1	1	6	1	6	1
30	SHIVAJI STADIUM T-24	BPS to continue	5	5	1	4	10	2	1	1	1	1	1	1	4	1	1	1	1	1	5	1	5	1
31	SOUTH AVENUE T-30	BPS to continue	6	6	1	4	11	2	1	1	1	1	1	1	4	1	1	1	1	1	6	1	6	1
32	supreme Court	Tapping points		0	1		1	2	1		1				1			1				1	1	
33	Talkatora DT	Tapping points		0	1		1	2			1				1			1				1	1	
34	Talkatora Reservior	Tapping points		0	1		1	2	1						1			1				1	1	
35	TILAK MARG T-22	BPS to continue	8	8	1	4	13	2	1	1	1	1	1	1	4	1	1	1	1	1	8	1	8	1
36	TUGHLAK CRESCENT T-31	BPS to continue	5	5	1	4	10	2	1	1	1	1	1	1	4	1	1	1	1	1	5	1	5	1
37	VINAY MARG T-4	BPS to continue	7	7	1	4	12	2	1	1	1	1	1	1	4	1	1	1	1	1	7	1	7	1
38	PUMPING AT HASANPUR	BPS to NEW	3	3	1		4	2	1	1	1	1	1	0	1	1	1	3	1	3	1	3	2	
39	PUMPING AT TALKATORA (DT)	BPS to NEW	5	5	1	4	10	2	1	1	1	1	1	0	1	1	1	3	1	5	1	5	2	
40	PUMPING AT TALKATORA (FEED)	BPS to NEW	3	3	1		4	2					1				1	3	1	3	1	3	2	
41	Central Control Server (NDMC HQ)											1		1		1		3	3		1		2	
<b>TOTAL</b>			<b>96</b>	<b>96</b>	<b>38</b>	<b>120</b>	<b>254</b>	<b>78</b>	<b>37</b>	<b>30</b>	<b>37</b>	<b>20</b>	<b>30</b>	<b>20</b>	<b>114</b>	<b>20</b>	<b>30</b>	<b>40</b>	<b>26</b>	<b>23</b>	<b>90</b>	<b>40</b>	<b>90</b>	<b>45</b>

**Section-7**  
**General Conditions of Contract**

## Section 7 - General Conditions of Contract

The GCC in this Section, read in conjunction with the Particular Conditions of Contract in Section 8 and other documents listed therein should be a complete document expressing all the rights and obligations of the contracting parties.

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# General Conditions

## A. Contract and Interpretation

### 1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned them:

“Bill of Quantities” means the priced and completed Bill of Quantities forming part of the Bid and to be executed with in Construction Period.

“Completion Date” is the date of completion of the Works and Services as certified by the Engineer in accordance with GCC Sub-Clause 32.

“Construction Period” or “Design & Construction phase” means the initial period of contract where Construction Works to be completed with in the period as per PCC

“Construction Works” means activities including the replacement of main pipelines and the installation of customer meters, Bulk meters, SCADA and other works that are covered under Bills of Quantity including works for DMA Establishment and Water Loss Management.

“Contract” is the Contract between the Employer and the Contractor to execute, complete and maintain the Works and Services. It consists of the documents listed in GCC Clause 3.

“Contract Commencement Date” means date as per PCC

“Contractor” is the party whose Bid to carry out the Works and Services has been accepted by the Employer.

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

“Contract Price” is the price stated in the Letter of Acceptance and subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.

“days” are calendar days; “months” are calendar months.

“defect” is any part of the Works and Services not completed in accordance with the Contract.

“Defects Liability Certificate” is the certificate issued by the Engineer upon correction of defects by the Contractor.

“Defect Liability Period” means the period calculated from the Completion Date where the Contractor remains responsible for



	<p>remediating defects.</p> <p>“Design &amp; Construction Period” means same as Construction Period or ‘Design &amp; Construction Phase’</p> <p>“District Meter Area (DMA)” is a small hydraulically discreet part of the water distribution network, usually comprising less than 3,000 service connections may be higher in exceptional cases, generally with one but sometimes with two or more inflow points equipped with bulk water meters.</p> <p>“DMA Establishment Works” are specific and clearly defined civil works the Contractor is required to carry out during the initial Construction Period of the Contract, as defined in Section 6, Employer’s Requirements.</p> <p>“DMA inflow chamber” is the chamber with all pipework, bypass, valves and other fittings, pressure-reducing valve, magnetic flow meter, data logger and above-ground box.</p> <p>“Drawings” include calculations and other information provided or approved by the Engineer for the execution of the Contract.</p> <p>“Dispute Board” (DB) means the person or persons named as such in the PCC appointed by agreement between the Employer and the Contractor to make a decision on or to settle any dispute or difference between the Employer and the Contractor referred to him or her by the parties pursuant to GCC Clause 53 hereof.</p> <p>“Employer” means the person named as such in the PCC and includes the legal successors or permitted assigns of the Employer.</p> <p>“Employer’s Requirements” means entire Section 6 of RFP document and is a part of Contract</p> <p>“Engineer” means the person named in the PCC (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Engineer) who is responsible for supervising the execution of the Works and Services and administering the Contract.</p> <p>“Equipment” is the Contractor’s machinery and vehicles brought temporarily to the Site to construct the Works.</p> <p>“ Final take Over Date” as defined in GCC Clause 32 hereof</p> <p>“GCC” means the General Conditions of Contract.</p> <p>“ Initial take Over Date” as defined in GCC Clause 32 hereof</p> <p>“Letter of Acceptance” means the formal acceptance by the Employer of the Bid and denotes the formation of the Contract at the date of acceptance.</p> <p>“Materials” are all supplies, including consumables, used by the</p>
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Contractor for incorporation in the Works and the provision of Services.

“Maintenance Phase” is a period of time after the Establishment of DMAs with in the Construction Period during which the water loss levels have to be maintained and the Contractor has to prepare for the final take-over of the works and system to O&M Phase.

“Mobilization Phase” is a period of time from the signing of the Contract to allow the Contractor to mobilize his team for the execution of the Works and Services.

“O&M Phase” is a period immediately after Construction Period and till contract completion date as per PCC. The contractor Obligations with in this Phase are as per contract.

“PCC” means the Particular Conditions of Contract as per Section 8 & schedules attached to it.

“Pipe Replacement, Meter Installation and Unforeseen Works” also called as “Construction Works” are activities including the replacement of main pipelines and the installation of customer meters and other works that are not covered under DMA Establishment and Water Loss Management.

“Project Manager” means any person nominated by the Contractor and approved by the Employer in the manner provided in GCC Sub-Clause 25.2 hereof to perform the duties delegated by the Contractor.

“Service Level” means Contractors obligations as per Employers Requirements related to water supply service obligations including Water loss Reduction targets, achieving & maintaining Continuous pressurized water supply and resolve non commercial customer complaints with in a specified time period.

“SIP” means Service Improvement Plan to improve Service Level as per scope of contract

“Start Date” is given in the PCC. It is the latest date when the Contractor shall commence execution of the Works.

“Site” is the area defined as such in the PCC.

“Subcontractor,” is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

“Water Loss Reduction and Management Services” means all interventions under the Contract which shall be carried out by the Contractor in order to achieve the annual minimum water loss levels& other Service Levels as defined in the Contract and receive the respective payments therefore.

	<p>“Water Loss Reduction Phase” is the period of time after the Mobilization Phase during which the Contractor has to complete SIP, DMA Establishment Works &amp; Construction Works of individual DMA or Sub DMA&amp; Maintenance Phase and Up to final take over date.</p> <p>“Work Order” is an order issued by the Engineer to the Contractor authorizing the execution of Construction Works &amp; Services as per contract.</p> <p>“Variation” is the instruction given by the Engineer which varies the Work.</p> <p>The “Works&amp; Services” are what the Contract requires the Contractor to construct, install, operate and turn over to the Employer, as defined in the PCC.</p> <p>“year” means 365 days</p>
<p><b>2. Interpretation</b></p>	<p><b>2.1</b> In the Contract, except where the context requires otherwise:</p> <ul style="list-style-type: none"> <li>(a) words indicating one gender include all genders;</li> <li>(b) words indicating the singular also include the plural and words indicating the plural also include the singular;</li> <li>(c) provisions including the word “agree”, “agreed” or “agreement” require the agreement to be record in writing;</li> <li>(d) the word “tender” is synonymous with “bid”, “tenderer” with “bidder” and “tender documents” with “bidding documents”; and</li> <li>(e) “written” or “in writing” means hand-written, type-written, printed or electronically made, and resulting in a permanent record.</li> </ul> <p>The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.</p> <p><b>2.2</b> Entire Agreement</p> <p>Subject to GCC Sub-Clause 24.4 hereof, the Contract constitutes the entire agreement between the Employer and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.</p> <p><b>2.3</b> Amendment</p> <p>No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of</p>

	<p>each party hereto.</p> <p><b>2.4 Independent Contractor</b></p> <p>The Contractor shall be an independent contractor performing the Contract. The Contract does not create any agency, partnership, joint venture or other joint relationship between the parties hereto. Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Subcontractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Employer, and nothing contained in the Contract or in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives or Subcontractors and the Employer.</p> <p><b>2.5 Non-Waiver</b></p> <p><b>2.5.1</b> Subject to GCC Sub-Clause 2.5.2 below, no relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect or restrict the rights of that party under the Contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.</p> <p><b>2.5.2</b> Any waiver of a party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.</p> <p><b>2.6 Severability</b></p> <p>If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.</p>
<p><b>3. Documents Forming the Contract</b></p>	<p><b>3.1</b> The documents forming the contract shall be interpreted in the following order of priority:</p> <ul style="list-style-type: none"> <li>(a) Agreement</li> <li>(b) Letter of Acceptance</li> <li>(c) Contractor's Bid</li> <li>(d) General Conditions of Contract (GCC)</li> </ul>

	<p>(e) Particular Conditions of Contract (PCC)</p> <p>(f) Employer’s Requirements</p> <p>(g) Drawings</p> <p>(h) Bill of Quantities</p> <p>(i) Any other document listed in the PCC as forming part of the Contract</p> <p><b>3.2</b>Acceptance of conditions compulsory before tendering the work</p> <p>Any contractor who does not accept these conditions shall not be allowed to submit the tender for works. The submission of tender means acceptance of all conditions of contract.</p>
<p><b>4. Communications</b></p>	<p><b>4.1</b> Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:</p> <p>(a) in writing and delivered against receipt; and</p> <p>(b) delivered, sent or transmitted to the address for the recipient’s communications as stated in the Contract Agreement.</p> <p>When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Engineer or the other Party, as the case may be.</p>
<p><b>5. Law and Language &amp; Other Provisions</b></p>	<p><b>5.1</b>The Contract shall be governed by and interpreted in accordance with laws of the country specified in the PCC.</p> <p><b>5.2</b> The ruling language of the Contract shall be that stated in the PCC. <b>5.3</b> The language for communications shall be the ruling language unless otherwise stated in the PCC.</p> <p><b>5.3</b>Measurements and Arithmetic Conventions: All measurements and calculations shall be in metric system and calculations done to 2 decimal places, with the third digit of 5 or above being rounded up and below 5 being rounded down.</p> <p><b>5.4</b> Ambiguities and Discrepancies: In case of ambiguities or discrepancies within this Agreement, the following shall apply:</p> <p>a. between two Articles of this Agreement, the provisions of specific Articles relevant to the issue under consideration shall prevail over those in other Articles;</p> <p>b. between the written description on the drawings and the specifications and standards, the latter shall prevail;</p> <p>c. between the dimension scaled from the drawing and its specific written dimension, the latter shall prevail; and</p>

d. between any value written in numerals and that in words, the latter shall prevail.

**5.5 Operating Licence :**

Together with the Letter of Acceptance, the Employer shall issue to the Contractor the Operating Licence or equivalent legal authorization to enable the Contractor to operate and maintain the Works during the Operation Service Period.

The Operating License shall automatically come into full force and effect upon the issue of the Readiness Certificate upon completion of the Design & Construction works under Sub-Clause 32.2 [Initial take over date] and shall remain in force until the issue of the Contract Completion.

The Operating Licence shall only extend to those parts of the Site which it is required to occupy for the purposes of carrying out the Works and Operation Service as set out in the Contract. The Operating Licence granted pursuant to this Sub-Clause shall not operate nor be deemed to operate as a tenement or a demise of the Site or any part thereof. The Contractor shall not have or be entitled to any estate right, title, or interest in the Site. The licence shall immediately terminate upon the termination of this Contract for whatever reason.

**5.6 Assignment:** Neither Party shall assign the whole or any part of the Contract or any benefit or interest in or under the Contract.

**5.7 Care and Supply of Documents:** Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Employer's Representative six copies of each of the Contractor's Documents.

The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Employer's Requirements, the Contractor's Documents, and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.

If a Party becomes aware of an error or defect of a technical nature in a document, which was prepared for use in executing the Works, the Party shall promptly give Notice to the other Party of such error or defect.

**5.7 Compliance with Laws:** The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated

	<p>in the Employer's Requirements:</p> <ul style="list-style-type: none"> <li>a. the Employer shall have obtained (or shall obtain) the planning, zoning, building permit, or similar permission for the Permanent Works and for the Operation Service, and any other permissions described in the Employer's Requirements as having been (or being) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so;</li> <li>b. the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all further permits, licenses and approvals, as required by the Laws, in relation to the design, execution and completion of the Works and Operation Service and the remedying of any defects; and the Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so; and</li> <li>c. the Contractor shall at all times and in all respects comply with, give all notices under, and pay all fees required by any licence obtained by the Employer in respect of the Site or the Works or Operation Service, whether relating to the Works or Operation Service on or off the Site.</li> </ul> <p><b>5.8</b> Joint and Several Liability: If the Contractor constitutes (under applicable Law?) a joint venture, consortium or other unincorporated grouping of two or more persons:</p> <ul style="list-style-type: none"> <li>a. these persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;</li> <li>b. these persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and</li> <li>c. the Contractor shall not alter his composition or legal status without the prior consent of the Employer.</li> </ul>
<p><b>6. Corrupt Practices</b></p>	<p><b>6.1</b> Anticorruption Policy requires bidders, suppliers, and contractors under, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Employer:</p> <p>defines, for the purposes of this provision, the terms set forth below as follows:</p> <ul style="list-style-type: none"> <li>(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;</li> </ul>

	<p>(ii) “fraudulent practice” means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;</p> <p>(iii) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;</p> <p>(iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.</p> <p>(f) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract; and</p> <p>(g) will sanction a firm or an individual, at any time, in accordance with Employer’s Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in Employer-financed or Employer-administered activities or to benefit from an Employer-financed or Employer administered contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive or other prohibited practices; and</p> <p>(h) will have the right to require suppliers and contractors to permit the Employer or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by the Bank.</p>
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**B. Subject Matter of Contract**

<p><b>7. Scope of Works and Services</b></p>	<p><b>7.1</b> Unless otherwise expressly limited in Section 6, Employer's Requirements, the Contractor's obligations cover the design, execution and maintained of all Works, provision of all equipment and materials and the performance of all Services required to reduce water losses, provide continuous pressurized potable quality water supply and provide support services to Employer for timely resolution of customer complaints within the Site specified in the Employer's Requirements. The Works and Services include the (i) Design &amp; Construction Phase Works includes preparation of SIP, DMA Establishment Works, Construction Works, Water Loss Reduction and , (ii) O&amp;M Services with performance standards in waterloss reduction, Continuous pressurized water supply, faster resolution to customer complaints (excluding billing, collection &amp; commercial issues ) and maintaining water quality.</p> <p>Construction Works including Pipe Replacement, Meter Installation and Unforeseen Works in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in Section 6, Employer's Requirements. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labor, materials, equipment, construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Employer, as set forth in Section 6, Employer's Requirements.</p> <p><b>7.2</b> The execution of Construction Works shall be requested by the Engineer who will issue a Work Order defining the requested works to be carried out by the Contractor, based on the activities and prices in the Bill of Quantities. The Work Order shall specify the activities to be carried out and the corresponding price. The contractor shall confirm his acceptance by signing the Work Order.</p> <p><b>7.2.1</b> Work Orders shall be issued in writing and shall include the date on which the Work Order was issued and signed by the Engineer. Two (2) copies of the Work Order shall be transmitted to the Contractor by the Engineer, and the Contractor shall immediately countersign one (1) copy including the date of acceptance, and return the same to the</p>
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	<p>Engineer.</p> <p><b>7.2.2</b> If the Contractor has any objection to a Work Order, Project manager shall notify the Engineer of his reasons for such objection within ten (10) days of the date of issuing the Work Order. Within five (5) days of the WaterLoss Manager’s objection, the Engineer shall cancel, modify or confirm the Work Order in writing.</p> <p><b>7.3</b>The Contractor shall, unless specifically excluded in Section 6, Employer’s Requirements perform all such work and/or supply all such items and materials as being required for attaining completion of the Works and Services.</p>
<p><b>8. Phases of the Contract</b></p>	<p><b>8.1</b> The Contract is divided into two phases:</p> <p>(a) Design &amp;Construction Phase –the period of time given to the Contractor as specified in the PCC from the signing of the Contract to construction completion period it includes Mobilization, SIP, Construction Works, Establishment of DMAs, Pipe Replacement, Meter Installation and Unforeseen Works for Waterloss reduction, conversion to continuous pressurized water supply and O&amp;M from Initial Take over date for DMAs commissioned before final takeover date as defined in contract. At the end of Construction Phase, the Contractor will receive a Certificate of Completion following the requirements of GCC Clause 32</p> <p>(b) O&amp;M Phase – the period of time as specified in the PCC which begins from Final take Over Date as defined in PCC after the receipt of the Certificate of Completion by the Contractor as per GCC Clause 32 for which the Contractor is obligated to maintain the Service levels as specified in the PCC. At the end of the O&amp;M Phase the Contractor will receive a Taking-Over Certificate following the requirements of GCC Sub-Clause 33.1</p>
<p><b>9. Time for Commencement and Completion</b></p>	<p><b>9.1</b> The Contractor shall commence the Works and Services within the period specified in GCC Clause 8 and the PCC and without prejudice to GCC Sub-Clause 35.2 hereof, the Contractor shall thereafter proceed in accordance with the time schedule specified in the PCC.</p> <p><b>9.2</b> The Contractor shall attain completion of the Works and Services or of a part where a separate time for completion of such part is specified in the PCC, within the time stated in the PCC or within such extended time to which the Contractor shall</p>

	<p>be entitled under GCC Clause 48 hereof</p> <p><b>9.3 Bar Chart</b></p> <p>The contractor shall be required to submit a detailed programme for completion of work within the stipulated period including the period for flushing, disinfection and commissioning of pipeline in the form of a Bar Chart, covering all major activities and indicating milestones to the Engineer within 30days from the date of award of work. Modifications suggested by the Engineer shall be incorporated in the Bar Chart. It will be ensured by the contractor that the time schedule as laid down in the aforesaid Bar Chart is adhered to. Action for not achieving the milestones as mentioned in the Bar chart shall be taken as per the provisions given in the Clauses of contract.</p>
<p>10. Contractor's Responsibilities</p>	<p><b>10.1</b> The Contractor shall design and carry out the Works and Services, including associated purchases and/or subcontracting, necessary to comply with the requirements established in Section 6, Employer's Requirements with due care and diligence.</p> <p><b>10.2</b> The Contractor confirms that it has entered into this Contract on the basis of a proper examination and interpretation of the data relating to the Works and Services provided by the Employer, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site if access thereto was available and of other data readily available to it relating to the Works and Services as of the date twenty-eight (28) days prior to bid submission. The Contractor understands that leak detection might be technically difficult given the low-pressure situation in the Site. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve it of its responsibility for properly estimating the difficulty or cost of successfully performing the Works and Services.</p> <p><b>10.3</b> The Contractor shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which such authorities or undertakings require the Contractor to obtain in its name and which are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported contractor's equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GCC Sub-Clause 11.4 hereof and that are necessary for the performance of the Contract.</p>

**10.4** The Contractor shall comply with all laws in force in the country where the Works and Services are to be implemented. The laws will include all local, state, national or other laws that affect the performance of the Contract and bind the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GCC Sub-Clause 11.1 hereof.

**10.5** Any materials and services that will be incorporated in or be required for the Works and Services and other supplies shall have their origin in an eligible country as defined under Section 5, Eligible Countries. Any subcontractors retained by the Contractor shall be from an eligible country as specified in Section 5, Eligible Countries.

**10.6** The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Bank, if so required by the Bank.

**10.7** If the Contractor is a joint venture or consortium of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfillment of the provisions of the Contract and shall designate one of such persons to act as a leader with authority to bind the joint venture or consortium. The composition or the constitution of the joint venture or consortium shall not be altered without the prior consent of the Employer.

**10.8** The Easementary Rights are granted to the Contractor for the purpose of fulfilling the obligations of the Contractor under this Agreement and not for any other purposes.

**10.9** The Contractor shall not part with or create any Encumbrance on the whole or any part of the Service Area.

**10.10** Contractor and Employer shall prior to transfer of the Project Facilities shall

(a) Jointly create and agree upon an inventory of Existing Assets, their condition and status, current performance indicators. This would act as the baseline inventory for implementation of the Project. The details arrived from this joint survey shall be as per Employers requirements.

**10.110 & M Obligations of Contractor**

10.11.1 The O&M of a zone of selected area shall vest with Employer till Initial take over date of the zone. There after the O&M of the zone shall vest with the Contractor and O&M obligations shall be carried out by operation.

- i. The Contractor shall during the O&M Period, undertake all services relating to operation and maintenance of the Project Facilities in conformity with Employer's Requirements. During development period the obligations shall vest with Employer.
- ii. The Contractor shall along with the Approved Implementation Plan, submit to the PMC & Employer a plan for operation and maintenance of the Project Facilities ("O&M Plan") in conformity with the Employers Requirements and Performance Standards.
- iii. The O&M Plan shall set out in detail the standards, schedules, procedures, type, periodicity and other details of the operation and maintenance activities to be carried out for the Project during the Agreement Period so as to meet the Employer's Requirements as well as details of the management information system to be incorporated, reports to be submitted and procedure for reviews, including developing a mechanism for grievance redressal.
- iv. Within 30 days of receipt of the O&M Plan, the PMC & Employer shall review the same and convey its comments/observations to the Contractor on the O&M Plan, including the need, if any, to modify the same. If the comments/observations of the PMC & Employer require the O&M Plan to be modified, the Contractor shall suitably modify the O&M Plan. The O&M Plan shall be finalized with mutual consent.
- v. Notwithstanding any review or failure to review by the Contractor or the comments/ observations of the PMC & Employer, the Contractor shall be solely responsible for the adequacy of the O&M Plan and the conformity thereof with the Performance Standards, Employer Requirements and shall not be relieved or absolved in any manner

	<p>whatsoever of any of its obligations hereunder.</p> <p>vi. The Contractor shall within a reasonable period inform Employer details of its key personnel responsible for O&amp;M and subsequent changes, if any, from time to time.</p> <p>vii. The Contractor shall incorporate good management practices and appropriate technologies required for meeting the Performance Standards.</p> <p>viii. The Contractor shall, during the Agreement Period;</p> <p>a. have requisite organization and designate and appoint suitable officers / representatives as it may deem appropriate to supervise the Project, to deal with the PMC &amp;Employer and to be responsible for all necessary exchange of information required pursuant to this Agreement;</p> <p>b. for the purposes of determining that the Project Facilities are being maintained in accordance with the Employer's Requirements, the Contractor shall with due diligence carry out all necessary and periodical Tests in accordance with the instructions and under the supervision of the PMC &amp;Employer. The Contractor shall maintain proper record of such Tests and the remedial measures taken to cure the defects or deficiencies, if any, indicated by the Test results.</p> <p>c. conduct all Tests to ascertain compliance with Employer's Requirements.</p> <p>suspend forthwith the whole or any part of the O&amp;M activities upon receiving a written notice from the PMC &amp;Employer, who may require the Contractor to suspend the activities in whole or part if in the reasonable opinion of the PMC &amp;Employer, the operations are being carried on in a manner that is not in conformity with the Employers Requirements.</p> <p>ix. The Contractor shall as per pre agreed format record the system performance and periodically provide the same to PMC &amp;Employer.</p> <p>In the event the Contractor has failed to operate and maintain the Project in accordance with the Employers Requirements, and such failure has not been remedied despite a notice to that effect issued by the PMC &amp; Employer(<b>"Notice to Remedy"</b>), Employer may, without prejudice to any of its other rights /remedies under this Agreement, be entitled to operate and maintain the Project or cause to repair and maintain the Project Facilities at the risk and cost of the Contractor. The Contractor shall reimburse all 150% of the costs incurred by Employer on</p>
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account of such operation and maintenance or repair and maintenance within 7 days of receipt of Employer claim therefor.

x. The Contractor shall be deemed to be in material breach of Employers Requirements if the PMC &Employer acting reasonably and in accordance with the provisions of this Agreement, has determined that due to breach of its obligations by the Contractor:

a. there has been failure / undue delay in carrying out scheduled / planned maintenance or the scheduled / planned maintenance has not been carried out in accordance with the Employers Requirements;

b. the maintenance of the Project Facilities or any part thereof has deteriorated to a level which is below the acceptance level prescribed by the Employers Requirements;

c. there has been a serious or persistent let up in adhering to the Employer's Requirements and thereby the Project Facilities or any part thereof is not safe for operations;

d. there has been persistent breach of Employers Requirements. For avoidance of doubt, persistent breach shall mean:

i. any breach of Employers Requirements by the Contractor which has not been remedied by the Contractor despite a Notice to Remedy in respect thereof issued by the PMC &Employer ;

ii. recurrence of a breach by the Contractor, during the pendency of Notice to Remedy by the PMC &Employer requiring the Contractor to remedy a breach, and

iii. repeated occurrence of a breach notwithstanding that earlier breach has been remedied pursuant to Notice to Remedy or otherwise.

Upon occurrence of a material breach of Employers Requirements, Employer shall, without prejudice to and notwithstanding any other consequences provided therefore under this Agreement, be entitled to terminate this Agreement as per clause 50.2.

### 10.11.2 General Obligations

The Contractor shall

- a. from the Initial Take Over Date of a zone of selected service area, undertake all services relating to operation and maintenance of the Project Facilities in conformity with Employers Requirements.
- b. supply Treated Water to Consumers within the Selected Service Area and shall meet its Performance Standards.
- c. identify Critical Measurement Points in the distribution network, in consultation with PMC & Employer for installation of pressure measurement data loggers.
- d. carryout repair to any leakages in the distribution network during O&M.
- e. repair or replace the defective water meters or in the events where the water meters are damaged due to mis-handling or negligence of the same by Consumer, to repair or replace it and advice Employer to collect charges for the same from such Consumer as per the Applicable Law..
- f. During O&M period only, carry out the following activities in the Service Area:
  - i. Undertake repairs and maintenance of the Project Facilities, at its own cost and expense.
  - ii. Ensure that the Treated Water shall be supplied at a positive pressure being never less than 8 (Eight) meters after Final take Over date, measured at all the Critical Measurement Points in the Selected Service Area at all times.
  - iii. Continuously log pressure readings at all pressure-metering points installed at Critical Measurement Points, which shall also include a point where pressure is routinely experienced at the minimum level in the Service Area, and monitor continuous pressured water supply on a daily basis in accordance with the prudent utilities practice.
  - iv. Upon instructions by Employer, provide connection to a property within a period of seven (7) days from such instruction.
  - v. carry on basic plumbing and shall replace, as per instructions



of the Employer, illegal property water connections with legal connections where the property owner accepts to legitimize the connection, and if the property owner does not so opt to legitimize the connection, to facilitate in disconnection of such unauthorised connections by Employer.

vi. be expected to co-operate with Employer in the implementation of the communications program to foster ownership of the Project by the local stakeholders and encourage their support for the work. The Contractor shall disseminate to the Consumers the communication materials prepared by the Employer by effecting their availability at the Consumer Service Centers established in the Service Area. The communication material shall include information on significance of safe quality water supplied including water conservation and benefits of continuous water supply to the Consumers. The Contractor shall do nothing that would hinder the work of those involved in implementing the communications program.

vii. report to Employer in respect of unauthorized water connections. Within 30 days or as per policy of Employer of such intimation Employer shall undertake remedial actions by way of either regularizing the unauthorized connections or disconnecting such properties from the network within the Service Area and initiate proceedings as necessary for collecting the dues from such connections. Contractor shall provide the plumbing support.

viii. Set up water quality surveillance program to undertake daily, weekly and monthly testing of water quality at Consumer taps for checking the residual chlorine content and also chemical and bacteriological quality of the supplied water.

#### 10.11.3 Other Operation and Maintenance Obligations

The Contractor shall

a. achieve the Performance Standards in accordance with the Employers requirements.

b. ensure that the total water losses including Leakage Losses

are minimized and are in adherence to the Performance Standards as set out in Employers requirements.

c. set up three Consumer Service Centre (Back Office) in the Selected Service Areas, at an appropriate location designated by Employer, which would have a minimum of three (3) operational dedicated phone lines for receiving the complaints from EMPLOYER.. The effective and consumer oriented functioning of service centre shall vest with Employer Contractor shall provide support to Employer to undertake prudent consumer grievance redressal mechanisms, which shall be duly documented.

d. Customer Services shall continue with Employer. Contractor shall be responsible for back office support to resolve the complaints (other than commercial complaints and billing issues) within specific time limit in the contract. Attend the consumer complaints received through Employer by personal visit of consumer, letters, telephone calls, emails, sms, etc. and respond to the consumer through Employer's designated officers / staff within 24 hours from the time of receipt of such complaint and resolve the complaint within 5 working days from the time of receipt of the said complaint. Any complaints related to no water or poor quality water shall be attended within 6 hours from the time of receipt of complaint and resolved within 24 hours.

e. initiate innovative steps without additional cost to Employer, to improve system efficiency i.e. efficiency in Consumer service (non commercial), non-revenue water management and manpower deployment etc. in water supply and distribution.

f. maintain daily records of the following and submit the same to Employer and the PMC & Employer by the 10th day of every Month or in case the 10th day of a Month is a holiday then on the following working day of such Month:

i. Quantum of Treated Water as measured at the Inlet/outlet of ESR/GSR/DMA's

ii. Results of the residual chlorine measurement in the network and the periodical measurement for chemical and

	<p>bacteriological analysis of the water supplied to the Consumers</p> <p>iii. Quantum of Treated Water supplied to the Consumers based on the Water Supply and Consumption Statement</p> <p>iv. Estimation of the Leakage Losses and</p> <p>v. Pressure at the Critical Measurement Points</p> <p>vi. Redressal of Consumer complaints.</p> <p>g. provide to the Employer, a report on the project operational data ("Project Operational Data"), including technical and cost data, , in relation to the period of twelve weeks commencing from the Initial Takeover Date and for every subsequent period of twelve weeks commencing from expiry of the previous twelve week period. The last report on Project Operational Data should represent the period from expiry of the previous twelve-week period to the expiry of the Agreement. Every report on Project Operational Data shall include description of service levels, state of Project</p> <p>h. Facilities, physical improvements carried and consequent investments made, operational issues including Consumer service, and, maintenance of records, connections and disconnections.</p> <p>continuously log pressure readings at pressure-metering points installed at Critical Measurement Points on the distribution network as approved by the Employer including a point where pressure is routinely experienced at the minimum level in Service Area and to measure and monitor continuous pressured water supply on a daily basis in accordance with the Prudent Utility Practice.</p> <p>i. take necessary action as may be appropriate and in accordance with Prudent Utility Practices in the event of an emergency or risk of danger or damage to persons or property (including the Project Facilities). GIS based asset information system:- The Contractor shall update the information every quarter on regular basis.</p> <p>j. During the subsistence of a Water Shortage Period, Contractor shall undertake such measures so as to minimize the supply interruptions to the Consumers</p>
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#### 10.11.4 O&M Cost Obligation

The O&M fees includes following O&M Cost obligation with other contractual obligation within the project area.

- (i) Establishment cost.
- (ii) Maintenance & repairs of Project facilities
- (iii) O&M obligations under this contract from initial take over date.

#### 10.11.5 Obligation to make connections to a water main

(i) Employer shall forward to Contractor the eligible application form of consumer seeking connection. The Contractor shall prepare the estimate as per approved rates of Employer for providing water connection in which the cost of plumbing upto water meter and water meter shall be included. Apart from inclusion of applicable cost and charges in accordance with Employer's water supply bye laws, the cost shall also include the cost of road cutting if any and restoration to original or better condition thereof. The demand note for the above cost shall be issued by the Employer to the intending consumer. On payment to Employer by intending consumer the cost of new connection as per demand note and receipt of a copy of agreement from the Employer, the Contractor shall provide such connection within seven days upon completion of all connection work and affixation of a metering device. The Employer shall reimburse to the Contractor the cost of providing water connection. The Contractor shall be fully responsible for the restoration of road cutting to the original or better condition thereof.

#### 10.11.6 Joint inspection prior to contract completion

Not less than six months prior to the expiry date of the Operation Service Period, the Employer's Representative and the Contractor shall carry out a joint inspection of the Works and, within 28 days of the completion of the joint inspection, the Contractor shall submit a report on the condition of the Works identifying maintenance works (excluding routine maintenance works and the correction of defects), replacements and other works required to be carried out to satisfy the requirements of the Operation and Maintenance Plan after the Contract Completion Date. The Contractor shall submit a programme for carrying out such works over the remainder of the Operation Service Period.

Following receipt of the Contractor's report, the Employer's

	<p>Representative may, throughout the remainder of the Operation Service Period, instruct the Contractor to carry out all or part of the works identified in the Contractor's report at contractor's cost.</p> <p>Upon satisfactory completion of the items identified in this Sub-clause the Employer shall instruct the Contractor to commence the Tests Prior to Contract Completion.</p> <p>10.12 Changes in constitution of firm to be notified</p> <p>In case of tender by partners, any changes in the constitution of a firm shall be forthwith notified by the contractor to the Engineer - in - Charge for his information. Change in JV partners are not allowed .</p>
<p>11. Employer's Responsibilities</p>	<p><b>11.1</b> The Employer shall apply due diligence to ensure the accuracy of all information and/or data to be supplied as described in Section 6, Employer's Requirements,</p> <p><b>11.2</b> The Employer does not warrant the accuracy of data specifically, the water distribution network drawings, water loss levels, and general conditions of the infrastructure.</p> <p><b>11.3</b> The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in Section 6, Employer's Requirements. The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in the PCC.</p> <p><b>11.4</b> The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which (a) such authorities or undertakings require the Employer to obtain in the Employer's name, (b) are necessary for the execution of the Contract, including those required for the performance by both the Contractor and the Employer of their respective obligations under the Contract, and (c) are specified in Section 6, Employer's Requirements.</p> <p><b>11.5</b> If requested by the Contractor, the Employer shall use its best endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the</p>

Contractor or Subcontractors or the personnel of the Contractor or Subcontractors, as the case may be, to obtain.

**11.6 Grant of Rights to The Contractor**

11.6.1 Subject to and in accordance with the terms and conditions set forth in this Agreement, Employer hereby authorizes the Contractor:

- a. To investigate, study, design, engineer, procure, construct, augment, rehabilitate, operate and maintain the Project Facilities and to exercise and / or enjoy the rights, powers, benefits, privileges, authorizations and entitlements as set forth in this Agreement to provide the Services in Service Area as per Employers requirements.
- b. To enter upon and use the Service Area as per Employers requirements during the Agreement Period of as per PCC including all rights of way and easements relating to the Project and access to the Project Facilities, including the Existing Assets, so that the Contractor, its agents, sub-contractors and any third party it might designate may perform its rights and obligations under this Agreement, including the right to conduct any kind of work in the streets and other public places of the Service Area, in order to have access to the Project Facilities.
- c. To receive Treated Water to ESR / OHR to supply in a zone of selected areas wherein Construction works are completed in all respect, without interruption in accordance with the provisions of this Agreement. The maximum quantum of treated water supply quantum contemplated by Employer in the year through shall be as given in Employers requirements but shall not be less than the domestic demand at lpcd rate specified in PCC and add non domestic demand as assessed after completion for consumer survey by Contractor.. *Employer shall arrange additional water provided Contractor meets the revised yearly target as per Employers requirements.*
- d. To fulfill its obligations under this Agreement, the Contractor shall have the right to undertake activities either by itself or through subcontracting arrangements as per PCC.
- e. To exercise such other rights as Employer may determine as being necessary or desirable and which it consents to in writing,

for the purposes incidental and necessary for the provision of the Services having regard to the needs of the Consumers.

- f. (i) Undertake Construction works in accordance with contract
- (ii) To receive payment based on the accepted bid of the Contractor
- g. Provided that the Contractor may, with the prior written consent of Employer, carry out suitable temporary or permanent modifications to the Existing Assets.

#### 11.7 Actions in support of Contractor

Employer ensures the maintenance of law and order at the Project Facilities, and provide, at no cost to the Contractor such police personnel, as may be necessary, for the maintenance or reinstatement of law and order at the Project Facilities and further alert and warn Contractor of any information or intelligence it may receive relating to a threat towards the security of the Project Facilities.

#### 11.8 Specific Obligations

Employer shall

- a. Provide the Contractor the permission to repair and replace the Project Facilities which the Contractor is responsible for, and the right to lay new water mains on behalf of Employer, including the right of way to carry out the Services;
- b. Handover to the Contractor, the “as-built drawings” and all other technical and financial information of the Existing Assets and Consumers in the Service Area as available on the Appointed Date;
- c. Receive applications for approvals of new connections, reconnection and disconnections in the Service Area and inform the Contractor for further action within a reasonable time;
- d. During the period upto taking over of each zone of selected area, the obligation to supply water to the Service Area shall be that of the Employer and the Contractor shall not be held responsible for the same;

11.9 Continue existing/ arrange for electricity connection / disconnection for project facilities as per requirements of Contractor and pay the bills to service provider.

11.10 The Employer shall allow the Contractor to utilize the space (or spaces) for stores and workshop on free occupation basis.

11.11 Employer shall provide spaces from the available premises.

11.12 Cost of Obligation

- a. Employer to share hundred percent of Employer's estimated cost for Construction Works.
- b. Replacement cost of old pipes of after Final take Over date unless it is replaced by Contractor during Construction period.
- c. Energy cost for entire contract period for pumps & project facilities handed over to Contractor.
- d. Bulk water cost for entire contract period in project areas.
- e. Payment to Contractor as per contract.
- f. Road repairs & restoration fees to concerned authorities during contract period.
- g. Capital cost outside the project area for improvement of water supply or for whatsoever reasons.
- h. To full fill the Employer obligation as per this contract.

11.13 Water Shortage Period

1 A Water Shortage Period shall commence when Employer has failed to supply designated quantity of Treated Water to the reservoirs for zones of selected area for any of the following reasons not attributable to the negligence of Contractor: If supply is reduced by more than 10% on any given date shall be termed as water shortage.

- i. Employer notifying the commencement of a Water Shortage Period or
- ii. The determination by Contractor of shortage of water and certification thereof by the Employer



	<p>Employer shall notify the commencement of a Water Shortage Period to the Consumers through suitable means, which shall be deemed to have commenced from the first hour of such notification.</p> <p>The Water Shortage Period shall cease when the Employer notifies and supplies the designated quantity of Treated Water to the zone of selected area.</p> <p>Provided that during a Water Shortage Period or otherwise, Employer shall have rights to direct the Contractor to modify the water supply and regulate the allocation of potable water among the Consumers.</p> <p>11.14 O&amp;M of a zone / existing project facilities till the initial take over date.</p>
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**C Payment**

<p><b>12. Contract Price</b></p>	<p><b>12.1</b> The Contract Price shall be included in Section 4, Bid Forms.</p> <p><b>12.2</b> Subject to GCC Sub-Clauses 10.2, 11.2 and 43 hereof, the Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.</p> <p><b>12.3 Payment</b></p> <p>The Contractor must understand clearly that the rates quoted are for completed items of work &amp; include all taxes, levy &amp; duties etc., cost due to labour, all leads &amp; lifts involved &amp; scaffolding, plants, supervision, service roads, dewatering, power, etc. &amp; to include all expenses to cover the cost of night &amp; round the clock work as &amp; when required &amp; no claim for additional payment beyond the prices or rates quoted will be entertained. The contractor will not be entitled subsequently to make any claim on the ground of any representation or on any promise by any person or on the ground of any failure on his part to obtain all necessary information for the purpose of making, his tender &amp; fixing the several prices &amp; rates therein &amp; shall not relieve him from any risks or liabilities arising out of or</p>
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	<p>consequence upon the submission of the tender.</p>
<p><b>13. Terms of Payment</b></p>	<p>13.1 The Contract Price for the Design &amp; Construction Works and O&amp;M Services shall be paid as follows:</p> <p>(a) Design &amp; Construction Works</p> <p>(i) Construction Works: Monthly bill payment as per unit price included in Bills Of Quantity against actual measurement; as per methods &amp; terms defined in PCC.</p> <p>(ii) for every DMA established as per the size of DMAs submitted through number of connections; as per methods &amp; terms defined in PCC</p> <p>(b) O&amp;M Services:</p> <p>O&amp;M payment shall be made from Initial take over date as per number of registered connections in all DMA's taken over by contractor for O&amp;M</p> <p>(i) Fixed Fee: a definite lump sum to be paid in two installments i.e. 50% of fixed fees monthly and balance fees will be paid quarterly along with performance fees as defined in Schedule 5 of PCC;</p> <p>(ii) Performance Fee: as per Schedule 5 of PCC shall be paid quarterly.</p> <p>13.1. (i) The Payment for Construction Works</p> <p>The payment of monthly R.A. bill is normally released in 30 days from the date of acceptance of the bill recorded in the measurement book. No excuse for delay in completion of work / prolongation of the contract shall be entertained on account of the reason of delay in payment. The bidder therefore, must take into consideration of his / their financial capability to carry out and to continue the work without any constraints.</p> <p>It shall be the contractual obligations on the part of the contractor to submit with each running bill photocopies of the</p> <hr/> <p>(i) Purchase vouchers / bills for the main items purchased for the works like CI/DI/MS/RCC/PSC Pipes, meter, manhole frame and covers, footrests, sluice valves, fire hydrants and other fixtures and accessories used in the works;</p> <hr/> <p>(ii) Guarantee certificates, wherever applicable;</p> <p>(iii) Manufacturer's test reports of cement, steel, MS plates, sluice valves etc.;</p> <p>(iv) Insurance policy for the labour working at site.</p>

- (v) Copy of the inspection note / observations / compliance of the observations shall be placed on record with the running bills before passing of running account bills.
  - (vi) At the time of final bill, clearance from state labour department will be required.
  - (vii) Labour license from labour office for construction works.
- The original vouchers shall be produced before the Engineer for verification, as and when desired by him.
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### **13.2 Monthly Statements**

**13.2.1** The Contractor shall submit to the Engineer monthly statements of the value of Works and Services in GCC Sub-Clause 13.1 (a) to (a) in separate items for the corresponding monthly in a form acceptable to the Engineer.

**13.2.2** The Engineer shall check the Contractor's monthly statement and certify within twenty one (21) days the amount to be paid to the Contractor.

**13.2.3** The Engineer may exclude any item certified in a previous certificate of payment or reduce the proportion of any item previously certified in any certificate in the light of new information.

**13.3** Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Engineer in accordance with GCC Clause 13.2, within forty two (42) days from the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest as mentioned in **PCC**.

**13.4** If an amount certified is increased in a later certificate of payment or as a result of an award by the Dispute Board, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute. The interest rate shall be determined as per GCC Sub-Clause 13.3.

**13.5** The Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

**13.6** No payment made by the Employer herein shall be deemed to constitute acceptance by the Emany part(s) thereof.

	<p><b>13.7</b> In the event that the Employer fails to make any payment by its respective due date or within the period set forth in the Contract, the Employer shall pay to the Contractor interest on the amount of such delayed payment at the rate(s) stated in GCC Sub Clause 13.3 for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.</p> <p><b>13.8</b> The currency or currencies in which payments are made to the Contractor under this Contract shall be specified in the PCC subject to the general principle that payments will be made in the currency or currencies in which the Contract Price has been stated in the Contractor's bid.</p> <p><b>13.9</b> Lump sums in estimates</p> <p>When the estimate on which a tender is made includes lump sums in respect of parts of the work the contractor shall be entitled to payment in respect of the items of work involved or the part of work in question at the same rates as are payable under this contract of each item, or if the part of work in question is not in the option of the Engineer capable of measurement, the Engineer may as his discretion pay the lump sum amount entered in the estimate and the certificate in writing of the Engineer shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provision of this clause.</p> <p><b>13.10</b> Contractor's percentage whether applied to net or gross amount of bill</p> <p>The percentage referred to in the contract price shall be deducted from/ added to the gross of the bill before deducting the value of any stock issued.</p> <p><b>13.11</b> All quarry fees, royalties and ground rent for stacking materials if any should be paid by the contractor.</p> <p>(a) When the work is carried in the proximity to any place where there is a risk or drawing all necessary equipment shall be provided and kept ready for use and all necessary steps shall be taken for the prompt rescue of any person in danger.(c) Adequate provisions shall be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.</p> <p><b>13.12</b>Method of payment</p> <p>Payments to contractors shall be made as defined in PCC</p>
<b>14. Measurement</b>	<b>14.1</b> DMA Establishment Works will be measured on number of connections in respective DMA established by the Contractor

and approved by the Engineer as per PCC.

**14.2**O&M Services will be measured in accordance with the methodology described in PCC

**14.3**Construction Works will be measured on the basis of the agreed Work Orders and in accordance with the unit of measurement used for the unit prices of items included in the Bill of Quantities as per PCC

**14.3.1** Payment on intermediate certificate to be regarded as advances

No payment shall be made for any work, estimated to cost less than rupees one thousand till after the whole of work shall have been completed and a certificate of completion given. But in the case of works estimated to cost more than rupees one thousand the Contractor shall on submitting a monthly bill therefore be entitled to receive payment proportionate to the part of the work than approved and passed by the Engineer, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the Contractor. All such intermediate payments shall be regarded as payment by way of advance against the final payment only and not as payment for work actually done and completed and shall not preclude the Engineer from requiring any bad, unsound imperfect or unskillful work to be removed or taken away and reconstructed, or re-erected nor shall any such payment be considered as an admission of the due performance of the contract or any part thereof in any respect or the occurring of any claim nor shall it conclude, determine or effect in any other way powers of the Engineer as to the final settlement and adjustment of the accounts or otherwise, or in any other way vary or effect the contract. The final bill shall be submitted by the Contractor within one month of the date fixed for the completion of the work, otherwise the Engineer-in Charges certificate of the measurements and of the total amount payable for the work shall be final and binding on all parties.

**14.3.2** Payment on reduced rates on account of items of work not accepted as completion as per discretion of Engineer

The rates of several items of work estimated to cost more than Rs. 1000/- agreed to within, shall be valid only when the item concerned is accepted as having been completed fully in accordance with the sanctioned specifications. In case where the item of work are not accepted as so completed by the Engineer-in Charge may make payment on account of such item at such reduced rates as he may consider reasonable in the preparation of final or on account bills.

	<p><b>14.3.3 Bill to be submitted monthly</b></p> <p>A bill shall be submitted by the Contractor in each month on or before the date fixed by the Engineer for all work executed in the previous month and the Engineer shall take or cause to be taken the requisite measurement for the purpose of having the same verified and the claim, so far as it is admissible, shall be adjusted, if possible, within 10 days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer may depute a subordinate to measure up the said work in the presence of the contractor or his duly authorized agent whose countersignature to the measurement list shall be sufficient warrant, and the Engineer may prepare a bill from such a list which shall be binding on the contractor in all respects.</p> <p><b>14.3.4 Bill to be on printed forms</b></p> <p>The contractor shall submit all bills on the printed forms to be had in the application at the office of the Engineer. The charges to be made in the bill shall always be entered at the rates specified in the tender or in the case of any extra work ordered in pursuance of these conditions, and not mentioned or provided for in the tender at the rates hereinafter provided for such work.</p>
<p><b>15. Variations</b></p>	<p><b>15.1</b> Items of the Construction Works for which no rate or price has been entered in the Bill of Quantities will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract except if it is a Variation ordered by the Engineer in accordance with PCC.</p> <p><b>15.2</b> The Contractor shall provide the Engineer with a quotation for carrying out the Variation when requested to do so by the Engineer. The Engineer shall assess the quotation, which shall be given within seven days (7) of the request or within any longer period stated by the Engineer and before the Variation is ordered. If the work in the Variation corresponds with an item description in the Bill of Quantities the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work. If the Contractor's quotation is unreasonable, the Engineer may order the Variation and make a change to the Contract Price, which shall be based on the Engineer's own forecast of the effects of the Variation on the Contractor's costs</p>
<p><b>16. Advance Payment</b></p>	<p><b>16.1</b> The Employer shall make advance payment to the Contractor of the amounts and by the date stated in the PCC, against</p>

	<p>provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest will not be charged on the advance payment</p> <p><b>16.2</b> The Contractor is to use the advance payment only to pay for equipment, materials, and mobilization expenses required specifically for the execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Engineer.</p> <p><b>16.3</b> The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works and Services on a payment basis as indicated in the PCC.</p> <p><b>16.4</b> All amounts whatsoever which the contractor is liable to pay to the Corporation in connection with the execution of the work including the amount payable in respect of (i) materials and or stores supplied /issued hereunder by the Corporation to the Contractor (ii) hire charges in respect of heavy plant, machinery and equipment given on hire by the Corporation to the contractor for execution by him of the work and/or on which advances have been given by the Corporation to the contractor shall be deemed to be arrears of the Land Revenue and the Corporation may without prejudice to any other rights and remedies of the Corporation recover the same from the contractor as arrears of revenue.</p>
<p><b>17. Price Adjustment</b></p>	<p><b>17.1</b> Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the PCC. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due and shall be paid as defined in PCC.</p>

<p><b>18. Retentions and Deductions</b></p>	<p><b>18.1</b> The Employer shall retain a percentage indicated in the PCC from each payment due to the Contractor for Design &amp; Construction Works and O&amp;M services.</p> <p><b>18.2</b> On completion of the Works &amp; Services end of the O&amp;M Phase and the calculation of the Final Contract Achievement in Section 6, Employer's Requirements, the total amount retained as per GCC Sub- Clause 18.1 shall be repaid to the Contractor.</p> <p><b>18.3</b> Penalty &amp; Deductions against failure to meet project miles stone during Design &amp; Construction Phase shall be as per employers requirement.</p> <p><b>18.4</b> On the date stated in taking over certificate as per GCC sub clause 33. Design &amp; Construction Works and O&amp;M as per GCC Sub-Clause 18.4, fifty percent (50%) of the total amount retained shall be immediately repaid to the Contractor and the other fifty percent (50%) shall be repaid six (6) months thereafter and after the Engineer has certified that all defects, if any, notified by the Engineer to the Contractor have been corrected before the end of this period.</p> <p><b>18.6</b> At the final take over date, the Contractor may substitute retention money with an "on demand" Bank guarantee.</p> <p><b>18. 7</b> The deduction on account of performance standards as per PCC Schedule 5 is non refundable deduction for contractor</p> <p><b>18.9</b> If key personal are not available for continuous period of 15 days, upto 10 % of DMA establishment / O&amp;M services payment will be deducted from Contractor payment for the corresponding period.</p> <p><b>18.10 Road Maintenance and Inter-Utility Code of Conduct</b></p> <p>The contractor shall be under contractual obligations to follow the provisions under the contract for road maintenance and inter-utility services. Under the contract as stipulated in the conditions contractor is required to provide proper G.I. sheet barricading, provide board indicating the name of work etc, to take up the work in the limited stretches, removing the surplus earth / malba so as to avoid any bottle neck to the flow of traffic and inconvenience to the public, and take all necessary precautions for the safety of the trenches, workers, prevention of damage to the property, service etc. etc. Proper road maintenance and inter-utility code of contract to be followed by the contractor shall be subjected to the check by the Engineer of the area or any of the other authorities. In case of any lapse noticed necessary penalty as per details given hereunder shall be imposed on the contractor, which shall be final and binding.</p>
a)	Non-installation of Boards on either ends of   Rs. 500/- per day till



	trenches	implementation.
	b) Non shoring of walls of trenches to prevent collapse of the excavated portion. (Beyond 1.5 m and where proper stepping is not provided.)	Rs. 1000/- per day till the shoring is fixed.
	c) Digging of trenches beyond a stretch of 500 m for Employer and others while 1000m in case of telephones.	Rs. 500/- per day till the damage is restored.
	d) Non barricading of trenches with the depth of more than 1.5 meter.	Rs. 500/-per day till completed.
	e) Excavation of trenches across and along roads during day time(8 AM to 8 PM) 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 consolidating the earth while back filling into the trenches to the required level	Rs. 500/- per day till completed.
	h) Non-submission of prescribed forms for re-instatement of trenches	Rs. 500/- per day
	i) Road cutting without permission	Rs. 1250/- per day
	j) Non-stacking of materials pipe etc. in an orderly manner during execution causing inconvenience to the road users.	Rs. 1000/- .
	k) Failure to observe provisions of para 5.4.3 of the code.	Rs. 250/- till completed
<b>19. Final Statement and Final Payment Certificate</b>	<b>19.1</b> The Contractor shall supply the Engineer with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within fifty-six (56) days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within fifty-six (56) days a schedule that states the scope of the corrections or additions that are necessary. If the Final Statement is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a Final Payment Certificate.	
<b>20. Discharge</b>	<b>20.1</b> Upon submission of the Final Statement, the Contractor shall give to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after the payment due under the Final Payment Certificate issued pursuant to GCC Clause 19 has been made and the performance security referred to in GCC Sub-Clause 21.3, if any, has been returned to the Contractor.	

<p><b>21. Securities</b></p>	<p><b>21.1 Issuance of Securities</b></p> <p>The Contractor shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner and form specified below.</p> <p><b>21.2 Advance Payment Security</b></p> <p><b>21.2.1</b> The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security in an amount equal to the advance payment calculated in accordance with the PCC, and in the same currency or currencies.</p> <p><b>21.2.2</b> The security shall be in the form provided in the bidding documents or in another form acceptable to the Employer. The amount of the security shall be reduced in proportion to the value of the Works and Services executed by and paid to the Contractor from time to time, and shall automatically become null and void when the full amount of the advance payment has been recovered by the Employer. The security shall be returned to the Contractor immediately after its expiration.</p> <p><b>21.3 Performance Security</b></p> <p><b>21.3.1</b> The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security for the due performance of the Contract in the amount specified in the PCC.</p> <p><b>21.3.2</b> The security shall be denominated in the currency or currencies of the Contract, or in a freely convertible currency acceptable to the Employer, and shall be in one of the forms of bank guarantees provided in the bidding documents, as stipulated by the Employer in the PCC, or in another form acceptable to the Employer.</p> <p><b>21.4</b> Unless otherwise specified in the PCC, the security shall be reduced by half on the date of completion of the take over date as per GCC sub clause 33. The Security shall become null and void, seventy two months after final take over date or one hundred and eighty (180) days after Taking Over certificates, whichever occurs first; provided, however, that if the Defects Liability Period has been extended on any part of the Works pursuant to GCC Sub-Clause 37.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Contractor immediately after its expiration.</p>
<p><b>22. Taxes and Duties</b></p>	<p><b>22.1</b> Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges</p>

assessed on the Contractor, its Subcontractors or their employees by all municipal, state or national government authorities in connection with the Works and Services in and outside of the country where the Site is located.

**22.2** If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in the country where the Site is located, the Employer shall use its best endeavors to enable the Contractor to benefit from any such tax savings to the maximum allowable extent.

**22.3** For the purpose of the Contract, it is agreed that the Contract Price specified in the Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date twenty-eight (28) days prior to the date of bid submission in the country where the Site is located. If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the Contractor, Subcontractors or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction therefrom, as the case may be, in accordance with GCC Clause 44 hereof.

**22.4** Employer would indemnify Contractor for paying service tax liability over Contractor's remuneration or part of its remuneration. However Contractor shall be responsible for payment of service tax on services of sub-contractor appointed by Contractor.

**22.5** In case of materials that may remain surplus with the contractor from those issued for the work contracted for, the date of ascertainment of the materials being surplus will be taken as the date of sale for the purpose of Sales Tax and the Sales Tax will be recovered on such sale

**D. Intellectual Property**

<p><b>23. Copyright</b></p>	<p><b>23.1</b> The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.</p>
<p><b>24. Confidential Information</b></p>	<p><b>24.1</b> The Employer and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this GCC Clause 24.</p> <p><b>24.2</b> The Employer shall not use such documents, data and other information received from the Contractor for any purpose other than the operation and maintenance of the Works. Similarly, the Contractor shall not use such documents, data and other information received from the Employer for any purpose other than the design, procurement of Plant, construction or such other work and services as are required for the performance of the Contract.</p> <p><b>24.3</b> The obligation of a party under GCC Sub-Clauses 24.1 and 24.2 above, however, shall not apply to that information which</p> <ul style="list-style-type: none"> <li>(a) now or hereafter enters the public domain through no fault of that party</li> <li>(b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto</li> <li>(c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.</li> </ul> <p><b>24.4</b> The above provisions of this GCC Clause 24 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of</p>

the Works or Services or any part thereof.

**24.5** The provisions of this GCC Clause 24 shall survive termination, for whatever reason, of the Contract.

**E. Execution of Works and Services**

<b>25. Representatives</b>	<p><b>25.1 Engineer</b></p> <p>If the Engineer is not named in the Contract, then within fourteen (14) days from the signing of the Contract, the Employer shall appoint and notify the Contractor in writing of the name of the Engineer. The Employer may from time to time appoint some other person as the Engineer in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of the Works and Services. Such appointment shall only take effect upon receipt of such notice by the Contractor. The Engineer shall represent and act for the Employer at all times during the performance of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Engineer, except as herein otherwise provided. All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Engineer, except as herein otherwise provided.</p> <p><b>25.1.1 Project Monitoring</b></p> <ul style="list-style-type: none"> <li>• Appointment of Project Management Consultant (PMC)             <ul style="list-style-type: none"> <li>a. Employer has appointed to perform functions and duties or part of it as assign to Engineer.</li> <li>b. The term of the PMC shall continue till the completion of contract of PMC, or until such date as renewed thereon at the discretion of the Employer.</li> <li>c. In the event Employer decides not to renew the term of the PMC or in the absence of PMC for any reason whatsoever, Engineer shall assume the functions of the PMC.</li> <li>d. The PMC shall consult and seek approvals from Engineer, wherever deemed necessary, for discharge of its duties and functions.</li> </ul> </li> </ul>
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	<ul style="list-style-type: none"><li>• <b>Payments to PMC</b> All fees, costs, charges and expenses payable to the PMC in accordance with the terms of its appointment shall be paid by Employer.  However any expenses on account of field test or witness of test etc. i.e. travelling, accommodation out side the project city shall be responsibility of contractor</li> <li>• <b>Duties and Functions of the PMC</b> The PMC shall discharge its duties and functions substantially in accordance with the terms of reference set forth in PMC contract.</li></ul> <p><b>25.2Key -Personal requirements (Mandatory Provisions)</b></p> <ol style="list-style-type: none"><li>1. In general, staffing levels and qualifications are to be decided by the Contractor apart from minimum and mandatory personnel requirements specified in in this section, the following minimum number of experienced key-personnel has to be available for entire project period for the scope of services under this assignment. The number of Key man-months for each position is to be understood as the absolute minimum requirement. Evidence of the physical presence of these listed staff members have to be provided in the quarterly Progress Reports. Non-availability of key persons shall result into imposition of penalty as per contract agreement.</li><li>2. It has to be understood that it might be necessary to bring significantly more specialists to the Site in order to achieve the objectives of the Contract. All costs of such additional personnel have to be included in the Contract Price.</li><li>3. Project Manager cum O &amp; M specialist- having a minimum of 84 man-months of a person meeting the following minimum experience criteria shall be required during entire project duration:<ol style="list-style-type: none"><li>(a) 15 years experience with water distribution networks</li><li>(b) Technical University degree, for example Water and Sanitary Engineering, Civil Engineering or Mechanical Engineering</li><li>(c) Project Management &amp; operation Experience</li><li>(d) 10 years of developing county experience</li><li>(e) 5 years experience with 24x7 Water supply operations in</li></ol></li></ol>
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	<p>large city</p> <p>4. Water Loss / DMA and Pressure Management Specialist(s)- having a minimum of 84 man-months of one or more person(s) meeting the following minimum experience criteria shall be required during entire project duration:</p> <p>(a) 7 years experience with water loss / NRW leakage reduction projects, particularly with pressure reducing valves, Hydraulic Modelling, controllers, data loggers and similar</p> <p>(b) 2 years developing country experience</p> <p>5. Leak Detection Specialist(s)- having a minimum of 84 man-months of one or more person(s) meeting the following minimum experience criteria:</p> <p>(a) 7 years experience with leakage reduction projects, particularly with pressure reducing valves, controllers, data loggers and similar</p> <p>(b) 2 years developing country experience</p> <p><b>25.2.1</b> If the Project Manager and other Key -Personals is not named in the Contract, then within fourteen (14) days from the signing of the Contract, the Contractor shall appoint the Water Loss Manager and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Water Loss Manager shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefore, then the Contractor shall appoint a replacement within fourteen (14)days of such objection, and the foregoing provisions of this GCC Sub-Clause 25.2.1 shall apply thereto.</p> <p><b>25.2.2</b> The Project Manager shall represent and act for the Contractor at all times during the performance of the Contract and shall give to the Engineer all the Contractor’s notices, instructions, information and all other communications under the Contract. All notices, instructions, information and all other communications given by the Employer or the Engineer to the Contractor under the Contract shall be given to the Project Manager or, in its absence, its DMA Specialist, except as herein otherwise provided. The Contractor shall not revoke the appointment of the Project Manager and Other Key Personals without the Employer’s prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Key - Personalsr, pursuant to the procedure set out in GCC Sub-</p>
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	<p>Clause 25.2.1.</p> <p><b>25.2.3</b> The Project Manager may, subject to the approval of the Employer which shall not be unreasonably withheld, at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation Section may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Project Manager, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Engineer.</p> <p>Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GCC Sub-Clause 25.2.3 shall be deemed to be an act or exercise by the Key -Personals.</p> <p><b>25.2.4</b> From the commencement of the Contract at the Site until completion of the O&amp;M Phase, the Project Manager shall supervise all work done at the Site by the Contractor and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Project Manager is absent from the Site, the DMA Specialist to act as deputy. Whatsoever be the reason all three key personal shall not leave the project city at same period and ensure the availability of minimum one key person at project city.</p> <p><b>25.2.5</b> The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC Sub-Clause 30.4. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Site.</p> <p><b>25.2.6</b> If any representative or person employed by the Contractor is removed in accordance with GCC Sub-Clause 25.2.5, the Contractor shall, where required, promptly appoint a replacement.</p>
<p><b>26. Work Program</b></p>	<p><b>26.1 Contractor’s Organization</b></p> <p>At the start of the Mobilization Phase the Contractor shall supply to the Employer and the Engineer a chart showing the proposed organization to be established by the Contractor for carrying out the Works and Services. The chart shall include the</p>

identities of the key personnel and the curricula vitae of such key personnel to be employed as included in the Contractor's Bid. The Contractor shall promptly inform the Employer and the Engineer in writing of any revision or alteration of such an organization chart. Failure by the Contractor to deploy the key personnel as included in the Contractor's Bid within the period as specified in the Program of Performance in GCC Clause 26.2 entitles the Employer to deduct a penalty if indicated in the PCC.

**26.2 Program of Performance**

Within three (3) months from the start of the Design & Construction Phase, the Contractor shall submit to the Engineer a detailed program of performance of the Contract, made in a form to be agreed with the Engineer, and showing the sequence in which it proposes to design and carry out the Works and Services. The Contractor shall update and revise the program as and when appropriate or when required by the Engineer, but without modification to the Time for Completion given in the PCC and any extension granted in accordance with GCC Clause 48, and shall submit all such revisions to the Engineer.

**26.3 Quarterly Progress Report**

The Contractor shall monitor progress of all the activities specified in the program referred to in GCC Sub-Clause 26.2 above, and supply a quarterly progress report to the Engineer together with the quarterly statement as per GCC Sub Clause 13.2.

The progress report shall be in a form acceptable to the Engineer and shall indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken.

**26.4 Progress of Performance**

If at any time the Contractor's actual progress falls behind the program of performance referred to in GCC Sub-Clause 26.2, or it becomes apparent that it will so fall behind, the Contractor shall, at the request of the Employer or the Engineer, prepare and submit to the Engineer a revised program, taking into account the prevailing circumstances, and shall notify the Engineer of the steps being taken to expedite progress so as to attain completion of the Works and Services within the Time for Completion under GCC Sub-Clause 9.2, any extension thereof entitled under GCC Sub-Clause 48.1, or any extended

	<p>period as may otherwise be agreed upon between the Employer and the Contractor.</p> <p><b>26.5 Procedures</b></p> <p>The Contract shall be executed in accordance with the Contract Documents including the procedures given in the Forms and Procedures in Section 6, Employer’s Requirements.</p> <p>The Contractor may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with the provisions contained in Section 6, Employer’s Requirements.</p>
<p><b>27. Subcontracting</b></p>	<p><b>27.1</b> The Contractor may subcontract activities listed in the PCC. Activities not in listed in the PCC may be subcontracted with the prior approval of the Engineer. Such approval by the Engineer to subcontract the activity shall not relieve the Contractor from any of its obligations, duties or responsibilities under the Contract.</p> <p><b>27.2</b> For items or parts of the Works and Services that are small as listed in the PCC, the Contractor may employ Subcontractors as it may select, at its discretion.</p> <p><b>27.3</b> Each sub-contract shall include provisions which would entitle the Employer to require the sub-contract to be assigned to the Employer under GCC Sub Clause 27.4 (if and when applicable), or in event of termination by the Employer under GCC Sub Clause 50.2.</p> <p><b>27.4</b> If a sub-contractor's obligations extend beyond the expiry date of the relevant Defects Liability Period and the Engineer, prior to that date, instructs the Contractor to assign the benefits of such obligations to the Employer, then the Contractor shall do so.</p>
<p>28. Design <b>Responsibility</b></p>	<p><b>28.1 Specifications and Drawings</b></p> <p><b>28.1.1</b> The Contractor shall execute the basic and detailed design and the engineering work in compliance with Section 6, Employer’s Requirements, or where not so specified, in accordance with good engineering practice.</p> <p>The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Engineer or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.</p> <p><b>28.1.2</b> The Contractor shall be entitled to disclaim responsibility</p>

for any design, data, drawing, specification or other document, or any modification thereof provided or designated by or on behalf of the Employer, by giving a notice of such disclaimer to the Engineer.

**28.2 Codes and Standards**

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of bid submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied subject to approval by the Employer and shall be treated in accordance with GCC Clause 47.

**28.3 Approval/Review of Technical Documents by Engineer**

**28.3.1** The Contractor shall prepare and furnish to the Engineer the documents mentioned in Section 6, Employer's Requirements for its approval or review.

Any part of the Works covered by or related to the documents to be approved by the Engineer shall be executed only after the Engineer's approval thereof.

GCC Sub-Clauses 28.3.2 through 28.3.7 shall apply to those documents requiring the Engineer's approval, but not to those furnished to the Engineer for its review only.

**28.3.2** Within fourteen (14) days after receipt by the Engineer of any document requiring the Engineer's approval in accordance with GCC Sub-Clause 28.3.1, the Engineer shall either return one copy thereof to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons therefore and the modifications that the Engineer proposes.

If the Engineer fails to take such action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Engineer.

**28.3.3** The Engineer shall not disapprove any document, except on the grounds that the document does not comply with the Contract or that it is contrary to good engineering practice. If the Engineer disapproves a document, he shall specify the reasons for his decision.

**28.3.4** If the Engineer disapproves the document, the Contractor shall modify the document and resubmit it for the Engineer's approval in accordance with GCC Sub-Clause 28.3.2. If the Engineer approves the document subject to modification(s), the Contractor shall make the required modification(s),

	<p>whereupon the document shall be deemed to have been approved.</p> <p><b>28.3.5</b> If any dispute or difference occurs between the Employer and the Contractor in connection with or arising out of the disapproval by the Engineer of any document and/or any modification(s) thereto that cannot be settled between the parties within a reasonable period, then such dispute or difference may be referred to a Dispute Board for determination in accordance with GCC Sub-Clause 53.3 hereof. If such dispute or difference is referred to a Dispute Board, the Engineer shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Engineer's instructions, provided that if the Dispute Board upholds the Contractor's view on the dispute and if the Employer has not given notice under GCC Sub-Clause 53.3 hereof, then the Contractor shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the Dispute Board shall decide, and the Time for Completion shall be extended accordingly.</p> <p><b>28.3.6</b> The Engineer's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Engineer.</p> <p><b>28.3.7</b> The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Engineer an amended document and obtained the Engineer's approval thereof, pursuant to the provisions of this GCC Sub-Clause 28.3.</p> <p>If the Engineer requests any change in any already approved document and/or in any document based thereon, the provisions of GCC Clause 47 shall apply to such request.</p>
<p><b>29. Customs</b></p>	<p><b>29.1</b> The Contractor shall, at its own expense, handle all imported materials and Contractor's equipment at the point(s) of import and shall handle any formalities for customs clearance, subject to the Employer's obligations under GCC Sub-Clause 11.4, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Employer, the Employer shall take all necessary steps to comply with such laws or regulations. In the event of delays in customs clearance that are not the fault of the Contractor, the</p>

	Contractor shall be entitled to an extension in the Time for Completion, pursuant to GCC Clause 48.
30. Execution of Works and Services	<p><b>30.1 Setting Out/Supervision</b></p> <p><b>30.1.1 Bench Mark</b></p> <p>(a) The Contractor shall be responsible for the true and proper setting-out of the Works in relation to benchmarks, reference marks and lines provided to it in writing by or on behalf of the Employer.</p> <p>(b) If, at any time during the progress of the Works, any error shall appear in the position, level or alignment of the Works, the Contractor shall forthwith notify the Engineer of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Engineer.</p> <p><b>30.1.2 Contractor's Supervision</b></p> <p>The Contractor shall give or provide all necessary superintendence during the installation of the Works, and the Water Loss Manager or its deputy shall be constantly on the Site to provide full-time superintendence of the installation. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.</p> <p><b>30.1.3 Site Office</b></p> <p>The contractor shall construct a temporary site office for supervisory staff of the department and shall also provide necessary furniture including electricity as per requirement of the Engineer- in-charge. No extra payment for this shall be made on this account.</p> <hr/> <p>Employer may consider request for space required for storage of pipes, equipments and other material, etc if any space constraints are encountered at site of works. However, Tenderer himself will have to identify suitable land / premises under the control of Employer and shall have to segregate the same if required. No extra charges of any kind will be payable to the Contractor on this account. At the same time Employer shall not recover any storage charges from the contractor. After the successful completion of works, it will be the responsibility of the contractor to remove all the material / pipes / equipment from the said premises as per the directions of Engineer before final payments are released.</p> <p><b>30.1.4 Contractor to supply plant, ladder, scaffolding etc</b></p>

The contractor shall supply at his own cost all materials (except such special material, if any as many in accordance with the contract, be supplied from the Engineering Departmental Stores), plant tools appliances implements, ladders, cordage, tackle scaffolding and temporary works requisite or proper for the proper execution of the work, whether, in the original, altered or substituted form and whether including in the specification or other documents forming part of the contract or referred to in these conditions or not and which may be necessary for the purpose of satisfying or complying with the requirement of the Engineer in -Charge as to any matter as to which these conditions, he is entitled to be satisfied, or which he is entitled to require together with the carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work or the material, failing which the same may be provided by the Engineer at the expenses of the contractor and the expenses may be deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof. The contractor shall provide all necessary fencing and lights required to protect the public from accidents, and shall also be bound to bare the expenses of defense of every suit, action or other legal proceedings, that may be brought by any person for injuries sustained obeying to neglect of the above precautions, and to pay any damages and costs which may be avoided in any such suit actions or proceedings to any such person, or which may with consent of the contractor to be paid for compromising any claim by any such person. List of machinery in contractor's possession and which they propose to use on the work should be submitted along with the tender.

(a) the contractor shall provide suitable scaffolds and

working platforms gangways and stairways and shall comply with the following regulations in connection therewith: -(a)Suitable scaffolds shall be provided for workmen for all works that cannot be safely done from a ladder or by other means.(b)A scaffold shall not be constructed, taken down or substantially altered except-

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

(i)As far as possible by competent workers possessing

adequate experience in this kind of work. (c) All scaffolds and appliances connected therewith and ladders shall (i)Be sound of material, (ii)Be of adequate strength having regards to the loads and strains to which they will be subjects, and (iii)Be maintained in proper condition (d) Scaffolds shall be so constructed that no part thereof can be displaced inconsequence of normal use. (e) Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed. (f) Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the Scaffolds. (g) Scaffolds shall be periodically inspected by a competent person. (h) Before allowing a scaffold to be used by his workmen the contractor shall, whether the scaffold has been erected by his workmen or not, take steps to ensure that it complies fully with the regulation herein in specified. (i)Working platform, gangways, stairways shall (ii)Be so constructed that no part of thereof can sag unduly or unequally. (iii)Be so constructed and maintained having regard to the prevailing conditions as to reduce as far as practicable risks of persons tripping or slipping, and (iv)Be kept free from any unnecessary obstruction. (j) In case of working platform, gangway, working places and stairways at a height exceeding three members. (i)Every working platform and every gangway shall be closely boarded unless other adequate measures are taken to ensure safety.(ii)Every working platform and gangway shall have adequate width and(iii)Every working platform, gangway, working place and stairway shall be suitable fenced. (k) Every opening in the floor of a building or in a working platform shall accept for the time and to the extent required to allow the excess of persons for the transport for shifting of materials to be provided with suitable means to prevent the fall of persons or materials. (l) When persons are employed on roof where there is a danger of falling from a height exceeding 3 meters. Suitable precautions shall be taken to prevent the fall of persons or material. (m) Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places. (n) Safe means of access shall be provided to all working platforms and other working places. (o) The contractor(s) will have to make payments to the laborers as per minimum wages Act.

(b) The contractor shall comply with the following regulations as regards the hoisting appliances to be used by him. (a)Hoisting machine and tackle, including the attachments anchorages and supports shall, (i)Be of good



mechanical construction, sound material and adequate strength and free from patent defect and (ii) Be kept in good repair and in working order. (b) Every rope used in hoisting or lowering materials or as a mean of suspension shall be of suitable quality and adequate strength and free from patent defect. (c) Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before used and be reexamined in position at intervals to be prescribed by the Corporation. (d) Every chain, ring, hook, shackle swivel and pulley block used in hoisting and lowering materials or as a mean of suspension shall be periodically examined. (e) Every crane driver or hoisting appliance Contractor shall be properly qualified. (f) No person who is below the age of 18 years shall be control of any hoisting machine, including any scaffold which, or give signals to the Contractor. (g) In case of every hoisting machine and of every chain, ring, hook, shackle, swivel pulley block used in hoisting or Lowering or as a mean of suspension, the safe working load shall be as ascertained by adequate means.

(a) Every hoisting machine and all gear referred to in preceding regulation shall be plainly marked with the safe working load. (b) In the 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. (c) No part of any hoisting machine or of any geared referred to in regulation (g) above shall be loaded beyond the safe working load except for the purpose of testing. (d) Motors, gearing transmissions, electric wiring and other dangerous part of hoisting appliances shall be provided with efficient safeguards. (e) Hoisting appliances shall be provided with such means as will reduce to minimum, and the risk of the accidental descent of a load (f) Adequate precautions shall be taken to reduce to a minimum the risk of any part of a suspended load becoming accidentally displaced

**30.2 Staff and Labor**

**30.2.1 Engagement of Staff and Labor**

(a) Except as otherwise stated in Section 6, Employer's Requirements, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, housing, feeding and transport.

- (b) The Contractor shall employ the key experts staff named in the Contractor's Bid, to carry out the functions stated in Section 6, Employer's Requirements. However, the Contractor may replace the key staff in the Contractor's Bid provided that their relevant qualifications and abilities are substantially equal or better than those in the Contractor's Bid and provided further, that the Engineer approves the same.
- (c) The Contractor shall provide and employ on the Site in the installation of the Works and Services such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.
- (d) The Contractor shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labor and personnel to be employed on the Site into the country where the Site is located. The Employer will, if requested by the Contractor, use his best endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel.
- (e) The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor's personnel employed on the Contract at the Site to the place where they were recruited or to their domicile. Its shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor.

**30.2.2 Removal of Staff**

The Engineer may request the Contractor in writing to remove any member of the Contractor's staff and labor, including the Contractor's key staff, stating the reasons therefore, and the Contractor shall ensure that the person leaves the Site within seven (7) days and has no further connection with the work under the Contract. The Contractor must replace the key staff within 15 days from receipt of the Engineer's written request. Failure to do so entitles the Employer to deduct a penalty if

specified in the PCC.

**30.2.3 Persons in the Service of Employer**

The Contractor shall not recruit, or attempt to recruit, staff and labor from amongst the Employer's Personnel or representatives.

**30.2.4 Labor Laws**

(a) The Contractor shall comply with all the relevant labor Laws applicable to the Contractor's personnel, including laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

(b) The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst its employees and the labor of its Subcontractors.

(c) The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.

**30.2.5 Rates of Wages and Conditions of Labor**

(a) The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Employers whose trade or industry is similar to that of the Contractor.

(b) The Contractor shall inform the Contractor's personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages and allowances as are chargeable under the laws for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws.

(c) Wages to be paid to the skilled and unskilled labourers engaged by the Contractor. The contractor shall pay the labourers skilled and unskilled according to the wages prescribed by the Minimum Wages Act of 1948 applicable

to the area in which the work of the contract is located. The contractor shall comply with the provisions of the Apprentices Act 1961 and the 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, 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 provision of Act. The contractor shall pay the labourers skilled and unskilled according to wages prescribed by Minimum Wages Act applicable to the area in which the work lies.

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

**30.2.6 Working Hours**

(a) No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the PCC, unless:

(i) the Engineer gives consent, or

(ii) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer.

(b) If and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Time for Completion and requests the Engineer's consent thereto, the Engineer shall not unreasonably withhold such consent.

(c) This GCC Sub-Clause 30.2.6 shall not apply to any work which is customarily carried out at night or by rotary or double-shifts as stated in the PCC. For this reason, the Employer's consent is deemed granted for all leak detection and related activities which are necessarily conducted during night hours.

(d) The work is likely to be executed during night also. Nothing extra shall be paid on account of it.

**30.2.7 Facilities for Staff and Labor**

(a) Except as otherwise stated in Section 6, Employer's Requirements, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's personnel. The Contractor shall also

provide facilities for the Employer's personnel as stated in the Specification.

(b) The Contractor shall not permit any of the Contractor's personnel to maintain any temporary or permanent living quarters within the structures forming part of the permanent works.

(c) Labour Camp and Hutments: It shall be the responsibility of the contractor to make his own arrangement for labour camp and hutments at the site. In case adequate space is available, the contractor shall provide labour camps there. Employer shall not recover any space charges from the contractor. 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.

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On completion of the work the contractor shall remove hutments failing which the department will dismantle and clear the site at his risk and cost.

The contractor shall at all the times during the progress of work 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 the work and shall preserve peace and protection of the inhabitants and the security of property in the neighborhood of the work.

If the contractor or his working people or servants break, deface, injure or destroy any part of building in which they may be working, or any building, road, road curb, fence, enclosure, water pipe, cables, drains electric or telephone post or wires, trees, grass or grasslands, or cultivated ground contiguous to the premises on which the work or any part is being executed or if any damage shall happen to the work while in progress, from any cause whatsoever, the contractor shall make the same good at his own expense or in default the Engineer cause the same to be made good by other workman and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof

or of a sufficient portion thereof.

**30.2.8 Health, Safety & Welfare**

**(a) Compensation under Workmans Compensation Act:**

The contractor shall be responsible for and shall pay any compensation to his workmen payable under the Workmens Compensation Act 1923 (VIII of 1923) (hereinafter called the said Act) for injuries caused to the workmen. If such compensation is payable paid by corporation as principal under sub section (1) of section 12 of the said Act on behalf of the contractor under subsection (2) of the said section. Such compensation shall be recovered from contractor amount or through performance security.

(b) the contractor shall be responsible for and shall at the expenses of providing medical aid to any workmen who may suffer abodily injury as a result of an accident. If Corporation does it and incurs expenses the same shall be recoverable from the contractor forthwith and such expenses deducted from the contractor without prejudice to any other remedy of Corporation for any amount due or that may be due to the contractor.

(c) The contractor shall provide all necessary personal safety equipment's and first aid apparatus available for use of persons employed on site and shall maintain the same condition suitable for immediate use at any time and shall comply with the following regulations in connection therewith. (a) The workers shall be required to use the equipment so provide by the contractor shall take adequate steps to ensure proper use of the equipment by those concerned.

(d) The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

(e) The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be

qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the performance of the Contract, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

(f) The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer may reasonably require.

**30.2.9 Funeral Arrangements**

In the event of the death of any of the Contractor's personnel or accompanying members of their families, the Contractor shall be responsible for making the appropriate arrangements for their return or burial, unless otherwise specified in the SCC

**30.2.10 Records of Contractor's Personnel**

The Contractor shall keep accurate records of the Contractor's personnel, including the number of each class of Contractor's personnel on the Site and the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis in a form approved by the Engineer and shall be available for inspection by the Engineer until the Contractor has completed all work.

**30.2.11 Supply of Foodstuffs**

The Contractor shall arrange for the provision of a sufficient supply of suitable food if required by the PCC at reasonable prices for the Contractor's personnel for the purposes of or in connection with the Contract.

**30.2.12 Supply of Drinking Water and Sanitation**

The Contractor shall so far as reasonable, having regard for local conditions provide on the Site and at its expense, adequate supply of drinking water for the use of Contractor's and Employer's personnel and representatives, together with sanitary facilities (portable toilets or latrines), to the satisfaction of the Engineer.

**30.2.13 Measures against Insect and Pest Nuisance**

The Contractor shall at all times take the necessary precautions to protect the Contractor's personnel employed on the Site from insect and pest nuisance, and to reduce their danger to health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate

insecticide.

**30.2.14 Alcoholic Liquor or Drugs**

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter or disposal by Contractor's personnel.

**30.2.15 Arms and Ammunition**

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's personnel to do so.

**30.2.16 Prohibition of All Forms of Forced or Compulsory Labor**

The Contractor shall not employ "forced or compulsory labor" in any form. "Forced or compulsory labor" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

**30.2.17 Prohibition of Harmful Child Labor**

The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

**30.2.18 Employment of female labour**

The employment of female labors on works in neighborhood of soldiers barracks should be avoided as far as possible. The contractor shall employ the labor registered with the nearest employment exchange.

30.2.19 The contractor shall duly comply with the provision of the Apprentices Act(III of 1961) the rules made there under and the orders that may be issued from time to time under the Act the said Rules.

30.2.20 No contractor shall employ donkeys or other animals with breeching of string or thin rope the breeching must be at least three inches wide and should be of tape (Nawar).No animals suffering from sores lameness or emaciation or which is immature shall be employed on the work.

30.2.21 The Engineer or his agent is authorized to remove from the work any person or animal found working which does not satisfy these conditions and no responsibility shall be accepted by Corporation for any delay caused in the completion of work by such removal.



30.2.22 If Government declares a state of scarcity or famine to exit in any village situated within 10 miles of the work, the contractor shall employ upon such parts of work, as are suitable for unskilled labour ,any person certified to him by the Executive Engineer, or be any person to whom the Executive Engineer may have delegated this duty in writing to be in need of relief and shall be bound to pay to such person wages not below the minimum which government may have fixed in this behalf. Any disputes which may arise in connection with the implementation of this clause shall be decided by the Executive Engineer whose decision shall be final and binding on the contractor.

30.2.23 The contractor shall employ at least 80 percent of the total number of unskilled labour to be employed by him on the said work from out of the persons ordinarily residing in the district in which site of the said work is located. Provided, however; that if the required number of unskilled labour from that district is not available, the contractor shall in the first instance employ such number of persons as in available and thereafter may with previous permission in writing of the Executive Engineer of the said work, obtain the rest of the requirement of unskilled labour from outside district.

### **30.3 Contractor's Equipment**

**30.3.1** All of Contractor's equipment brought by the Contractor onto the Site shall be deemed to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without the Engineer's consent that such Contractor's equipment is no longer required for the execution of the Contract.

**30.3.2** Unless otherwise specified in the Contract, upon completion of the Works and Services, the Contractor shall remove from the Site all equipment brought by the Contractor onto the Site and any surplus materials remaining thereon.

**30.3.3** The Employer will, if requested, use its best endeavors to assist the Contractor in obtaining any local, state or national government permission required by the Contractor for the export of the Contractor's equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.

**30.3.4** The contractor shall provide list of machineries i.e. horizontal boring machines, equipments, tools and plants, heavy capacity big size pumps for dewatering and pumping

out water, specialized and latest technology machines, JCB, Crane and Generator etc. Required for the trench less work, in the owner ship or collaboration of the firm.

**30.4 Site Regulations and Safety**

The Employer and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Contractor shall prepare and submit to the Employer, with a copy to the Engineer, proposed Site regulations for the Employer's approval, which approval shall not be unreasonably withheld.

Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety, gate control, sanitation, medical care, and fire prevention.

No blasting shall be allowed. Edges in the trench shall be got rounded off to prevent the damage of pipes.

**30.5 Opportunities for Other Contractors**

**30.5.1** The Contractor shall, upon written request from the Employer or the Engineer, give all reasonable opportunities for carrying out the work to any other contractors employed by the Employer on or near the Site.

**30.5.2** If the Contractor, upon written request from the Employer or the Engineer, makes available to other contractors any roads or ways the maintenance for which the Contractor is responsible, permits the use by such other contractors of the Contractor's equipment, or provides any other service of whatsoever nature for such other contractors, the Employer shall fully compensate the Contractor for any loss or damage caused or occasioned by such other contractors in respect of any such use or service, and shall pay to the Contractor reasonable remuneration for the use of such equipment or the provision of such services.

**30.5.3** The Contractor shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other contractors. The Engineer shall determine the resolution of any difference or conflict that may arise between the Contractor and other contractors and the workers of the Employer in regard to their work.

**30.5.4** The Contractor shall notify the Engineer promptly of any defects in the other contractors' work that come to its notice, and that could affect the Contractor's work. The

Engineer shall determine the corrective measures, if any, required to rectify the situation after inspection of the Works. Decisions made by the Engineer shall be binding on the Contractor.

**30.6 Emergency Work**

If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Works, the Contractor shall immediately carry out such work.

If the Contractor is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine is necessary in order to prevent damage to the Works. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done and the reasons therefore. If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense under the Contract, the reasonable costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer. Otherwise, the cost of such remedial work shall be borne by the Employer.

**30.7 Site Clearance**

**30.7.1 Site Clearance in Course of Performance**

In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor's equipment no longer required for execution of the Contract.

**30.7.2 Clearance of Site after Completion**

After Completion of the Works, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site in a clean and safe condition.

**30.7.2.1 Clearance of Site**

The site shall be cleared off all malba / debris etc. after completion of work and shall ensure removal of temporary structure erected for execution of works, hutments put up by his laborer at site, if any before handing over site to the department in workable condition. No final payment for the work shall be made to the contractor till full satisfaction of

the Engineer.

**30.7.3 Measure for prevention of fire**

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The contractor shall not set fire to any standing jungle, trees, bush woods or grass without a written permit from the Executive Engineer. When such permit is given, and also in all cases when destroying cut or dug up trees bush wood, grass etc. by fire; the

contractor shall take necessary measure to prevent such fire spreading to or otherwise damaging surrounding property. The contractor shall make his own arrangements for drinking water for the labors employed by him.

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**30.8 Watching and Lighting**

The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Works, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.

**3.8.1 Watch and Ward**

Adequate arrangements shall be made for lighting, Chowkidar etc. to safeguard against accidents & suitable passageways shall be provided wherever needed during the progress of the work for access to the site/ buildings.

It shall be responsibility of the contractor to watch & ward all fittings and fixtures till such time the possession of the work is handed over to Engineer.

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Wherever necessary the contractor shall at his own cost provide adequate temporary fencing to the whole or part of the site for the safety, convenience of workmen, public, live stock and for execution of works. Nothing extra shall be paid on this account unless otherwise specified in the Bill of Quantity.

**30.9 Environmental Mitigation Measures**

**30.9.1 Site Environmental Plan**

The Contractor shall prepare a detailed Site Environmental Plan (SEP) for the work site, base camp, etc., showing arrangements for disposal of sanitary and other waste, location of fuel, oil and lubricant depots, sheds for equipment, labor and housing facilities, etc., prior to the construction for approval of the Engineer.

The contractors SEP shall also take into account the implementation of all measures stated in Environmental

Management Plan and the Environmental Monitoring Plan in Section 6, Employer's Requirements.

**30.9.2 Safety, Security and Protection of the Environment**

The Contractor shall take all necessary precautions against pollution or interference with the supply, or obstruction of the flow of, surface or underground water. These precautions shall include but not be limited to physical measures such as earth bunds of adequate capacity around fuel, oil and solvent storage tanks and stores, oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fueling areas and kitchens, the establishment of sanitary solid and liquid waste disposal systems, the maintenance in effective condition of these measures, the establishment of emergency response procedures for pollution events, and dust suppression, all in accordance with normal good practice and to the satisfaction of the Engineer. Should any pollution arise from the Contractor's activities he shall clean up the affected area immediately at his own cost and to the satisfaction of the Engineer, and shall pay full compensation to any affected parties.

**30.9.3 Protection of Trees and Vegetation**

The Contractor shall ensure that no trees or shrubs or waterside vegetation are felled or harmed except for those required to be cleared for execution of the Works. The Contractor shall protect trees and vegetation from damage to the satisfaction of the Engineer. No tree shall be removed without the prior approval of the Engineer and any competent authorities. Should the Contractor become aware during the period of the Contract that any tree or trees designated for clearance have cultural or religious significance he shall immediately inform the Engineer and await his instructions before proceeding with clearance. In the event that trees or other vegetation not designated for clearance are damaged or destroyed, they shall be repaired or replaced to the satisfaction of the Engineer, who shall also impose a penalty to twice the commercial value of any timber affected, as assessed by the Engineer.

**30.9.4 Use of Wood as Fuel**

The Contractor shall not use wood as a fuel for the execution of any part of the Works, including but not limited to the manufacture of bricks for use in the Works, and to the extent practicable shall ensure that fuels other than wood are used for cooking, and water heating in all his camps and living accommodations.

**30.10 Sign Board**

The contractor shall provide board indicating complete name of work, date of start, date of completion as per work order / actual, cost of work, name of the department, name of the Executive Engineer with office address and telephone number & name of the executing agency at his own cost at the site of work and at the site office.

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Sign Board showing “Men at work” and “Work in Progress” & “EMPLOYER Work” are to be provided by the contractor at work places at his own cost.

**30.11 Additional Conditions**

In the event of any restrictions being imposed by the Security agencies, EMPLOYER, Traffic or any other authority in the working area or movement. The contractor shall strictly follow such restrictions and nothing shall be excused from doing the stipulated work on this account. The loss of time on this account, if any, shall have to be made by generating additional resources etc. other restrictions are given as under:-

- a) The movement of trucks and vehicles shall be regulated in accordance with rules and Regulations as approved by competent authority.
- b) The Contractor shall inform in advance, the truck registration numbers, ownerships of the trucks, names and address of the drivers for necessary action by the security agency.
- c) Names and address of laborers/staff etc. Working at site shall be furnished to EMPLOYER in advance.
- d) The laborers/staff should not be changed too frequently once the verification of the character and antecedents is done.
- e) Uniform: The Contractor shall provide two Pairs of Uniforms (Winter and Summer) to his workers while on duty. The workers shall always be in uniform. Workers and Supervisors must wear neat and clean ironed

uniform (including proper name badges).

f) After verification of antecedents of workers, identification badges will be issued to them by the contractor. The cost of badges and uniforms etc would be borne by the contractor. Workers shall wear Identity Card and Uniform while on duty.

g) The contractor shall be responsible for behavior and conduct of his laborers. No labourer with doubtful integrity or having a bad record shall be engaged by the concessionaire.

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h) The workers of the contractor should strictly observe code of conduct and manner befitting security. If any employee of the Contractor fails to absolve proper conduct, the contractor shall be liable to remove him from deployment, immediately in receipt of the instructions of the EMPLOYER.

i) The Contractor shall be responsible for the conduct and behavior of its workers employed for the work.

j) The EMPLOYER shall not be responsible for any compensation, which may be required to be paid to the worker(s) of the Contractor consequent upon any injury/mishap.

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**30.12 Leveling Instrument/Survey Equipments**

The contractor must always make available an accurate leveling instrument at the site of work. Necessary levels will be given by the contractor or his authorized site engineer and the

same will be checked by the site staff of the department.

**30.13 Execution of Work**

The work is to be carefully executed strictly in accordance with the approved drawing submitted by the contractor or with such modifications as may be approved by the Engineer from time to time. Any additional amended, revised or detailed drawings that may be issued by the Engineer or approved in writing by him during the progress of the work are to be considered to form the part of the work and as such being included in the contract. No claim whatsoever shall be considered on this account.

The order of sequence of execution of the work and general condition of the work shall be subject to the approval and direction of the Engineer whose approval or direction shall however in no way relieve the contractor of the responsibility for the proper and satisfactory execution of the work according to the terms of contract and within stipulated period. No claim of the contractor whatsoever will be entertained on this account.

The information given in the drawing including the conditions of ground or the information regarding 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. The contractor is liable to check all the points mentioned in the drawing.

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The contractor shall establish at his own cost at suitable points additional reference points lines Bench marks as may be necessary. The contractor will be responsible and must check and satisfy himself the accuracy of levels, lines positions, dimensions, sizes etc. of the finished work in accordance with the contract.

**30.14 Materials Brought at Site**

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

All the material / chemicals / consumables brought at site shall be protected suitably, duly wrapped / packed and stored so as to avoid any damage during loading / transportation / unloading & handling due to weather conditions etc. at any stage.

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**30.15 Covering of Works**

No work will be covered or put out of view without approval of the Engineer or his representative and the contractor shall afford full opportunity for the Engineer or his representative to examine and measure any work which is about to be covered up or put out of view.

**30.16 Inconvenience to Public**

The contractor shall not dump / deposit materials on site, which will seriously cause inconvenience to the public. The Engineer may require the contractor to remove any materials, which are considered by him to be of danger, or to cause inconvenience to public and have them to be removed at the contractor's cost.

The bidder shall visit the site and examine the availability of space in detail for execution of the work and deployment of machinery. The Contractor has to ensure that the general public/ tourist are not hindered in any manner while operate and maintain the project.

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The project is required in Public Place in EMPLOYER area as define herein which is a sensitive and high footfall/ crowded area. The concessionaire shall follow the security and safety requirements in his day-to-day work as per site condition.

**30.17 Responsibility of Damage to Person or Property**

The contractor will be absolutely and solely responsible for any accident that may occur during the progress on the work and for injury or damage to the persons or property of any description whatsoever which may be caused by or result from the execution of the work. The contractor shall at his own expenses take all necessary and timely precautions against injury or accident to the work or any person or property and shall forth-with protect and support all such structures or properties or electric poles or the things which may be effected by the execution of the work and make good any damage so caused. In the event of the accident to any person or persons or death or injury of any descriptions to any person, structure, animal or things the contractor will be solely responsible for the same and will indemnify Employer for the same.

In the event of any damage occurring to any work, life and property during the execution of work 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 will be solely responsible and must reconstruct, repair and make good all such at his own cost.

When the work is done near a place where there is risk of danger/ accident, 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 sustained during the course of the work.

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If any accident occurs the contractor shall report to the Employer, within 24 hours of its occurrence.

### **30.18 Contractor to Indemnify**

The contractor shall be liable for and shall also indemnify the Employer against all liabilities, losses, claims, demands, proceedings, damages, costs, charges and expenses and further agrees to defend, indemnify and hold the NDMC harmless from any penalty whatsoever in respect of any injury, accident or damage to any property or to personnel during the execution of work or by the action of any central or state or local authority for violation by the contractor or sub-contractor engaged on the work.

### **30.19 Electricity**

The contractor shall pursue / arrange at his own cost the electricity / power connection of required capacity for carrying out the construction works. In the name Executive Engineer, the Employer will issue the recommendation letter to concerned electrical authorities for getting the power connection. The persuasion, the formalities, the required monthly payments shall be made by the contractor and he will bear all the charges towards security installation, consumption of electricity / power etc. till completion of the work. The photocopy of the paid bills shall be enclosed with Running account bills in confirmation of timely payments made by the contractor to concerned electrical authorities.

The payment of final bill to the contractor shall be made by Employer on submission of no dues / clearance certificate from the Electric Power authority / the authority in-charge of the Electric power.

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.

	<p>In case concerned Power authority is not in a position to sanction the electric connection, the contractor shall make his own arrangements i.e. required numbers of generators of adequate capacity to execute the work or in case the sanction of electric connection is delayed by the authority it shall also be on to the part of the contractor to arrange electricity at his own cost and no claim whatsoever shall be entertained on this account.</p> <p><b>30.20 Generator Set</b></p> <p>Generators arranged by the contractor for the work shall be operated and maintained for use at his own cost during non-availability of power. It shall be contractor’s responsibility to obtain approvals &amp; permissions from any statutory authority in accordance with the statutory rules &amp; regulations.</p> <hr/> <p>The quoted rates shall be inclusive of POL cost and other miscellaneous expenditures to be incurred for running &amp; maintaining the generator set.</p> <p><b>30.21Records &amp; Usage of Equipment/ Material</b></p> <p>The Contractor shall maintain a detailed report of all equipment/materials received at the site in his stores or storage and working areas in the vicinity of the site and shall make such records available to the Engineer at such times as the latter may reasonably require.</p> <p><b>30.23</b>The running and maintenance charges of machines i.e. cost of fuel, battery, lubricants, replacement of parts etc. shall be borne by the Contractor.</p> <hr/> <p>All machines provided by Contractor shall be exclusively for use in Project Area.</p>
<p>31. Test and Inspection</p>	<p><b>31.1</b> The Contractor shall at its own expense carry out on the Site all such tests and/or inspections of the Works as are specified in Section 6, Employer’s Requirements, as well as tests not explicitly listed but required by the Engineer, and in accordance with the procedures described in Section 6, Employer’s Requirements.</p> <p><b>31.2</b> The Employer and the Engineer or their designated representatives shall be entitled to attend the aforesaid test and/or inspections.</p> <p><b>31.3</b> Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Engineer. The Contractor shall obtain</p>

from any relevant third party or manufacturer any necessary permission or consent to enable the Employer and the Engineer or their designated representatives to attend the test and/or inspection.

**31.4** The Contractor shall provide the Engineer with a certified report of the results of any such test and/or inspection.

If the Employer or Engineer or their designated representative fails to attend the test and/or inspection, or if it is agreed between the parties that such persons shall not do so, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Engineer with a certified report of the results thereof.

**31.5** The Engineer may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of Works and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.

**31.6** If any DMA Establishment Works, Construction Works fail to pass any test and/or inspection, the Contractor shall either rectify or replace such Works or part thereof and shall repeat the test and/or inspection upon giving a notice under GCC Sub-Clause 31.3.

**31.7** If any dispute or difference of opinion shall arise between the parties in connection with or arising out of the test and/or inspection of the Works or part thereof that cannot be settled between the parties within a reasonable period of time, it may be referred to a Dispute Board for determination in accordance with GCC Sub-Clause 53.3.

**31.8** The Contractor shall afford the Employer and the Engineer, at the Employer's expense, access at any reasonable time to any place where the Works are being installed, in order to inspect the progress and the manner of installation, provided that the Engineer shall give the Contractor a reasonable prior notice.

**31.9** The Contractor agrees that neither the execution of a test and/or inspection of Works or any part thereof, nor the attendance by the Employer or the Engineer, nor the issue of any test certificate pursuant to GCC Sub-Clause 31.4, shall release the Contractor from any other responsibilities under the Contract.

**31.10** No part of the Works shall be covered up on the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Engineer whenever any such parts of the Works are ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.

**31.11** The Contractor shall uncover any part of the Works, or shall make openings in or through the same as the Engineer may from time to time require at the Site, and shall reinstate and make good such part or parts.

If any parts of the Works or foundations have been covered up at the Site after compliance with the requirement of GCC Sub-Clause 31.10 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.

**31.12 Testing of Construction**

- i) The contractor shall carryout mandatory tests of materials as specified in the Indian standard code/ PWD Specifications and maintains the record of the test accordingly.
- ii) Test shall be got done from any of the following laboratories as directed by the Engineer.
  - PWD Laboratory
  - Government Laboratory
  - Government Engineering College
  - Any other laboratory as approved by Engineer in case the tests are not done in the first three laboratories.
- iii) Testing of cubes to the extent of 10% of due tests for crushing strength, shall be carried out from a laboratory as above. For the balance 90% due tests the Contractor may however be allowed by the Engineer to have his own lab at site and cube testing may be carried out in this lab, subject to approval by Engineer.
- iv) Samples of various materials required for testing shall be provided free of charge by the Contractor. Testing charges shall be borne by the Contractor along with expenditure required to be incurred for taking the samples,

conveyance, packing etc.

Even if the site laboratory is setup, more than 10% of total mandatory tests required for various items shall have to be got tested from outside laboratory approved by the Engineer. Materials

### 31.13 Samples and Testing of Materials

a) All materials to be used on work, such as structural steel, nuts and bolts, paints, cement, lime, bricks, aggregates, steel, structural and high tensile steel, bearings, expansion joints, stones, asphalt, woods, tiles, etc. shall be got approved in advance from Engineer and shall pass the test and analysis required by him, which will be (a) as specified in the specifications of the items concerned and / or (b) as specified by the India Road Congress Standard Specifications and code of practice for Roads and Bridges or (c) I.S.I. specification (wherever and whenever applicable) or (d) such recognised specifications acceptable to the Engineer as equivalent thereto or in the absence of such authorised specification (e) such requirements / tests and / or analysis as may be specified by the Engineer-in- Charge in the order of precedence given above.

b) The Contractor shall establish a well equipped field laboratory at his cost for testing of construction materials like sieve analysis moisture content flakiness index & compressive strength of concrete cubes, testing of cement, aggregates etc. for testing as specified in MoRT&H Specification for road & bridges.

c) The Contractor shall at his risk and cost make all arrangement and/or shall provide for all such facilities as the Engineer may require for collecting, preparing, and forwarding required number of samples for tests or for analysis at such time and to such place or places as may be directed by the Engineer and bear all charges and cost of testing including transport.

Such samples shall also be deposited with the Engineer-in Charge till these are sent for testing. Samples of material shall also be preserved during the construction period.

The Contractor shall, if and when required, submit at his cost the samples of materials to be tested or analysed and if so directed shall not make use or incorporate in the work any materials until required tests have been made & the test results of the materials are finally accepted by Engineer-in Charge.

The contractor shall arrange for necessary testing equipment and conduct the testing in consultation with Employer

	<p>Engineers before commencement of work and after completion of wearing course. Tests for Bituminous work must be performed in Third Party Laboratory approved by Employer and the cost such tests shall be borne by contractor.</p> <p>In case of non-conformance to the quality control checks in accordance to the quality assurance plan for Hot-mix &amp; other works related works, 10% of the value of work shall be deducted from RA bill.</p> <p><b>31.14 Third Party Inspection</b></p> <p>Third Party inspection agencies as defined in PCC, approved by Employer is applicable for this work. Contractor has to bear all the cost required for testing, sampling &amp; inspection as per procedures &amp; rules of third party. Testing &amp; inspection shall be done as per approved QAP of Employer.</p> <p><b>31.15 Defects Pointed Out by the Other Agencies</b></p> <hr/> <p>The inspection of one agency / authority / team shall not absolve the contractor of his responsibility on 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 work shall be recovered from the contractors payment otherwise he shall be responsible to reimburse the amount of all such recoveries which will be final and binding.</p>
<p>32. Certificate of Sectional Completion, Initial Take Over Date &amp; Final Take Over Date</p>	<p><b>32.1 Certificate of Completion :</b> At the end of the DMA Establishment Phase when the Design &amp; construction Works &amp; water loss reduction phase have been substantially completed for respective DMAs or Sub DMAs in accordance with Section 6, Employer’s Requirements, the Contractor shall request the Engineer to issue a Certificate of Sectional Completion for Design &amp; Construction Works, and the Engineer within twenty one (21) days from receipt thereof, either issue to the Contractor a Certificate of Sectional Completion or give instructions in writing to the Contractor specifying all the conditions to be complied with and all the work which are required to be done by the Contractor before the issuance of such Certificate. Upon deciding that the work is complete, the Engineer shall thereafter issue a Certificate of Sectional Completion to the Contractor.</p> <p><b>32.2 Initial Take Over date :</b> If Certificate of sectional completion is issued by Engineer to any construction works or part of it including DMA establishment works or Sub DMA establishment works as per clause 32.1 above, before the completion of</p>

	<p>Design &amp; Construction Period as specified in PCC. Contractor shall take over the O&amp;M of such DMAs or Construction works and eligible for payment as per O&amp;M period till completion of Construction period or Final take Over date , whichever is earlier.</p> <p><b>32.3</b> Final take Over date : Completion of Design &amp; Construction period or commencement of O&amp;M Phase whichever is later shall be paid according to O&amp;M payment from Final take Over date.</p> <p><b>32.4</b> Virtual Completion</p> <p>The Contractor shall not be eligible for receipt of the virtual completion certificate until all tests have been completed and accepted by the various statutory bodies and all other authorities apart from the Engineer till the project is commissioned as intended by the competent authority.</p>
<p>33. Taking Over Certificate</p>	<p><b>33.1</b> At the end of the O&amp;M Phase, the Contractor may give notice to that effect to the Engineer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer to issue a Taking-Over Certificate in respect of the Works and Services. The Engineer shall, within twenty-one (21) days of the date of delivery of such notice, either issue to the Contractor a Taking-Over Certificate, stating the date on which the Works and Services were substantially completed or give instructions in writing to the Contractor specifying all the conditions to be complied with and all the work which are required to be done by the Contractor before the issuance of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works and Services affecting completion that may appear after such instructions and before completion of the Taking- Over Certificate within twenty-one (21) days of completion, to the satisfaction of the Engineer, of the Works and Services so specified and remedying any defects so notified.</p> <p><b>33.2</b> Similarly, in accordance with the procedure set out in Sub-Clause 33.1, the Contractor may request the Engineer for the issuance of a Taking-Over Certificate for:</p> <p>(a) Any Works and Services in which a separate Time for Completion is provided in the PCC,</p> <p>(b) Any substantial part of the Works and Services outside the DMAs which has been completed to the satisfaction of the Engineer and, otherwise than as provided for in the</p>



Contract, occupied or used by the Employer, or

- (c) Any part of the Works and Services which the Employer has elected to occupy or use prior to completion where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure. Other than the Works and Services specified in GCC Clause 33.2, the Contractor will not be allowed to request the Engineer for a Taking-Over Certificate. For the avoidance of doubt, the Contractor will not request for a Taking-Over Certificate for all works and services in relation to DMA establishment and Water Loss Reduction and Management Services until the end of the O&M Phase.

### 33.3 Handback of Project Facilities

#### 33.3.1 Ownership

Without prejudice and subject to the rights granted under this Agreement, the ownership of the Project Facilities, including all improvements made therein by the Contractor, shall at all times remain that of EMPLOYER.

#### 33.3.2 Contractor's Obligations

##### a. Project Facilities

- i. The Contractor shall on the date of expiry of Agreement Period, hand back on as-is where-is basis, the Project Facilities to Employer free of cost and in good operable condition. For the purpose of clarity, the Contractor shall leave behind all assets in good and operable condition including tools, spares, inventory, machinery and all other movables required for continuous water supply.
- ii. At least 12 (twelve) months before the expiry of the Agreement Period a joint inspection of the Project Facilities shall be undertaken by Employer and the Contractor. Employer shall, within 45 days of such inspection prepare and furnish to the Contractor a list of works/ jobs ("Handback Requirements"), if any, to be carried out so as to conform to the Employer's Requirements. The Contractor shall promptly undertake and complete such works / jobs at least 3 (three) months prior to the expiry of Agreement Period and ensure that the Project Facilities continue to meet such requirements until the same are handed back to Employer. On Expiry Date, the parties shall undertake a joint inspection of the

	<p>Project Facilities so as to ensure that Handback Requirements are met. The release of the final installment of the Contractor Payment and other outstanding payments, if any, shall be subject to the Handback Requirements being fully met to the satisfaction of Employer.</p> <p>iii. Employer shall, within 45 days of the joint inspection undertaken under preceding clause (ii) prepare and furnish to the Contractor a list of items, if any, with corresponding distinctive descriptions, which are to be compulsorily handed back to Employer.</p> <p>iv. The Contractor, upon written request by the Employer no later than 180 days prior to the Transfer Date, shall provide assistance to the Employer during a transitional period of up to 60 days prior to the Transfer Date. (“Transition Assistance”) The purpose is to ensure a smooth transition between Contractor and a subsequent manager of the Project Facilities. The scope of the assistance shall be determined by Employer provided that the assistance shall be related to only transition services.</p> <p>v. If the Employer makes a request for assistance, the Transition Assistance shall be provided by those staff identified by Employer and the identified staff shall be resident in India until the completion of the Transition Assistance.</p> <p>b. The Contractor hereby acknowledges Employer's rights specified in Clause 33.3 enforceable against it upon Termination and its corresponding obligations arising there from. The Contractor undertakes to comply with and discharge promptly all such obligations.</p>
<p><b>34. As Built Drawings and Manuals</b></p>	<p><b>34.1</b> If “as built” Drawings and/or manuals are required, the Contractor shall supply them by the dates stated in the PCC.</p> <p><b>34.2</b> If the Contractor does not supply the Drawings and/or manuals by the dates stated in the PCC, or they do not receive the Engineer’s approval, the Engineer shall deduct an amount stated in the PCC from payments due to the Contractor as a</p>

	penalty.
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**F. Guarantees and Liabilities**

<p>35. Completion Time <b>Guarantee</b></p>	<p><b>35.1</b> The Contractor guarantees that it shall attain completion of the Works and Services (or a part for which a separate time for completion is specified) within the Time for Completion specified in the PCC pursuant to GCC Sub-Clause 9.2, or within such extended time to which the Contractor shall be entitled under GCC Clause 48 hereof.</p> <p><b>35.2</b> If the Contractor fails to attain completion of the Works and Services or any part thereof within the Time for Completion or any extension thereof under GCC Clause 48, the Contractor shall pay to the Employer liquidated damages in the amount specified in the PCC as a percentage rate of the Contract Price or the relevant part thereof. The aggregate amount of such liquidated damages shall in no event exceed the amount specified as “Maximum” in the PCC as a percentage rate of the Contract Price. Once the “Maximum” is reached, the Employer may consider termination of the Contract, pursuant to GCC Sub-Clause 50.2.2.</p> <p>Such payment shall completely satisfy the Contractor’s obligation to attain completion of the Works or the relevant part thereof within the Time for Completion or any extension thereof under GCC Clause 48. The Contractor shall have no further liability whatsoever to the Employer in respect thereof.</p> <p>However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the Works or from any other obligations and liabilities of the Contractor under the Contract.</p> <p>Save for liquidated damages payable under this GCC Sub-Clause 35.2, the failure by the Contractor to attain any milestone or other act, matter or thing by any date specified in the PCC or other work program prepared pursuant to GCC Sub-Clause 26.2 shall not render the Contractor liable for any loss or damage thereby suffered by the Employer.</p>
<p>36. Performance <b>Obligations and Liquidated Damages</b></p>	<p><b>36.1</b> The Contractor guarantees the attainment of the following:</p> <ul style="list-style-type: none"> <li>(a) The minimum number of DMAs established per quarter</li> <li>(b) Completion of all construction works within the Design &amp; construction period as specified in PCC</li> <li>(c) The performance standard to be maintained within a range as specified in Section 6, Employer’s Requirements and performance standard as per Schedule 7of PCC.</li> </ul>

**36.2** If, for reasons attributable to the Contractor, the minimum number of DMAs established per quarter are not met, the Contractor shall choose to either:

- (a) Make such changes, modifications and/or additions to the Works and Services or any part thereof that are necessary to meet the requirements within 90 days from the end of the previous quarter at its own cost and expense, or;
- (b) Pay to the Employer liquidated damages in the amount specified in the PCC, prepare a revised schedule for DMA establishment and submit to the Engineer for approval.

**36.3** If, for reasons attributable to the Contractor, construction works is not completed within the design & construction period, the Contractor shall choose to either:

- (a) Make such changes, modifications and/or additions to the Works and Services or any part thereof that are necessary to meet the requirements within 30 days after the target date at its own cost and expense, or;
- (b) Pay to the Employer liquidated damages in the amount specified in the PCC.

**36.4** If, for reasons attributable to the Contractor, During O&M period performance levels in the DMAs deteriorated beyond the maximum deduction for any. Parameters as specified in Schedule 5 & 7 of PCC. The parameters are water loss continuity of supply, water quality & consumer complaint the Contractor shall choose to either:

- (a) Make such changes, modifications and/or additions to the Works and Services or any part thereof that are necessary to meet the requirements at its own cost and expense, or
- (b) Pay to the Employer liquidated damages in an amount specified in the PCC.

**36.5** The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

**36.6** At the end of the Design & Construction phase the payment of liquidated damages under GCC Sub-Clause 36.2 and 36.3 up to the limitation of liability specified in the PCC, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause 36.1(a) and (b) and the Contractor shall have no further liability whatsoever to the Employer.

**36.7** At the end of each year of O&M Phase the payment of liquidated damages under GCC Sub-Clause 36.4 (b) up to the limitation of liability specified in the PCC, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause

	36.1(c) for the respective year and the Contractor shall have no further liability to the Employer.
<b>37. Defect Liability</b>	<p><b>37.1</b> The Contractor warrants that the Works and Services or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Works and Services supplied and executed.</p> <p><b>37.2</b> The Defect Liability Period shall be One hundred Eighty (180) days from the date of completion of the O&amp;M Phase as per GCC Clause 32 (or any part thereof) or one hundred and eighty (180) days from the date a Taking Over Certificate is issued pursuant to GCC Sub-Clause 33.2 for a particular part of the Works and Services, whichever comes first.</p> <p>If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Works and Services executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good as the Contractor shall determine at its discretion, such defect as well as any damage to the water distribution system caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defect or of any damage to the water distribution system arising out of or resulting from any of the following causes:</p> <ul style="list-style-type: none"> <li>(a) Improper operation or maintenance of the water distribution system maintained by the Employer;</li> <li>(b) Operation of the water distribution system outside the procedures provided in the Operations Manual submitted by the Contractor to the Engineer; or</li> <li>(c) Normal wear and tear of existing retained assets.</li> </ul> <p><b>37.3</b> The Contractor's obligations under this GCC Clause 37 shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) Any materials that are normally consumed in operation, or have a normal life shorter than the Defect Liability Period stated herein;</li> <li>(b) Any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility herein; or</li> <li>(c) Any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under GCC Clause 37.6.</li> <li>(d) Leaks in new locations that occur after the last day of the</li> </ul>

	<p>O&amp;M Period.</p> <p><b>37.4</b> The Employer shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Contractor to inspect any such defect.</p> <p><b>37.5</b> The Employer shall afford the Contractor all necessary access to the Works and the Site to enable the Contractor to perform its obligations under GCC Clause 36, 37.</p> <p><b>37.6</b> The Contractor may, with the consent of the Employer, remove from the Site any part of the Works that are defective if the nature of the defect, and/or any damage to the Works caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.</p> <p><b>37.7</b> If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Works caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due the Contractor or claimed under the Performance Security.</p> <p><b>37.8</b> If the Works or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Works or such part, as the case may be, shall be extended by a period equal to the period during which the Works or such part cannot be used by the Employer because of any of the aforesaid reasons.</p> <p><b>37.9</b> Except as provided in GCC Clauses 37 and 41, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Works or any part thereof, design or engineering or work executed that appear after completion of the Works and Services at the end of the Water Loss Reduction Phase or any part thereof, except where such defects are the result of the gross negligence, fraud, criminal or willful action of the Contractor.</p>
<p><b>38. Liability for Burst Mains and Water Interruptions</b></p>	<p><b>38.1</b> The Contractor cannot be held liable for damages of any kind arising out of water pipeline bursts unless the bursts have been caused directly by excavation works, criminal acts, willful misconduct or gross negligence of the Contractor.</p> <p><b>38.2</b> The Contractor will not be held liable for damages of any</p>

	<p>kind to any third party arising out of water supply interruptions, including any indirect or consequential loss or damage to property, loss of use, loss of production, or loss of profits or interest costs, illness or death unless the same has resulted from the Contractor's criminal acts, willful misconduct or gross negligence.</p>
<p>39. Limitation of Liability</p>	<p><b>39.1</b> Except in cases of criminal negligence or willful misconduct,</p> <p>(a) the Contractor shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer and</p> <p>(b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed a multiple of the Contract Price specified in the PCC or, if a multiple is not so specified, the total Contract Price.</p>



**G. Risk Distribution****40. Care of Works**

**40.1** The Contractor shall be responsible for the care and custody of the Works or any part thereof until the date of completion of the Works pursuant to GCC Clauses 32 and 33 or, where the Contract provides for completion of the Works in parts, until the date of completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the Works or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the Works caused by the Contractor or its Subcontractors in the course of any work carried out, pursuant to GCC Clause 37. Notwithstanding the foregoing, the Contractor shall not be liable for any loss or damage to the Works or that part thereof caused by reason of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clause 40.2 and 46.1.

**40.2** If any loss or damage occurs to the Works or any part thereof or to the Contractor's temporary facilities by reason of:

- (a) insofar as they relate to the country where the Site is located, nuclear reaction, nuclear radiation, radioactive contamination, pressure wave caused by aircraft or other aerial objects, or any other occurrences that an experienced contractor could not reasonably foresee, or if reasonably foreseeable could not reasonably make provision for or insure against, insofar as such risks are not normally insurable on the insurance market and are mentioned in the general exclusions of the policy of insurance, including War Risks, taken out under GCC Clause 42 hereof; or
- (b) any use or occupation by the Employer or any third party other than a Subcontractor, authorized by the Employer of any part of the Works ; or
- (c) any use of or reliance upon any design, data or specification provided or designated by or on behalf of the Employer, or any such matter for which the Contractor has disclaimed responsibility herein,

the Employer shall pay to the Contractor all sums payable in respect of the Works executed, notwithstanding that the same be lost, destroyed or damaged, and will pay to the Contractor

	<p>the replacement value of all temporary facilities and all parts thereof lost, destroyed or damaged. If the Employer requests the Contractor in writing to make good any loss or damage to the Works thereby occasioned, the Contractor shall make good the same at the cost of the Employer in accordance with GCC Clause 47. If the Employer does not request the Contractor in writing to make good any loss or damage to the Works thereby occasioned, the Employer shall either request a change in accordance with GCC Clause 47, excluding the performance of that part of the Works thereby lost, destroyed or damaged, or, where the loss or damage affects a substantial part of the Works, the Employer shall terminate the Contract pursuant to GCC Sub-Clause 50.1 hereof.</p> <p><b>40.3</b> The Contractor shall be liable for any loss of or damage to any of its equipment, or any other property of the Contractor used or intended to be used for purposes of the Works, except (i) as mentioned in GCC Sub-Clause 40.2 with respect to the Contractor’s temporary facilities, and (ii) where such loss or damage arises by reason of any of the matters specified in GCC Sub-Clauses 40.2 (b) and (c) and 46.1.</p> <p><b>40.4</b> With respect to any loss or damage caused to the Works or any part thereof or to the Contractor’s equipment by reason of any of the matters specified in GCC Sub-Clause 46.1, the provisions of GCC Sub-Clause 46.3 shall apply.</p>
<p>41. Loss of or <b>Damage to</b> <b>Property;</b> <b>Accident or</b> <b>Injury to</b> <b>Workers;</b> <b>Indemnification</b></p>	<p><b>41.1</b> Subject to GCC Sub-Clause 41.3, the Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney’s fees and expenses, in respect of the death or injury of any person or loss of or damage to any property other than the Works whether accepted or not, arising in connection with the supply and installation of the Works and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.</p> <p><b>41.2</b> If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GCC Sub- Clause 41.1, the Employer shall promptly give the Contractor notice thereof and the Contractor may at its own expense and in the Employer’s name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.</p>

	<p>If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim.</p> <p>The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.</p> <p><b>41.3</b> The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from any liability for loss of or damage to property of the Employer, other than the Works not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GCC Clause 42, provided that such fire, explosion or other perils were not caused by any act or failure of the Contractor.</p> <p><b>41.4</b> The party entitled to the benefit of an indemnity under this GCC Clause 41 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the party fails to take such measures, the other party's liabilities shall be correspondingly reduced.</p>
<p><b>42. Insurance</b></p>	<p><b>42.1</b> To the extent specified in the PCC, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said PCC. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.</p> <p>(a) Third Party Liability Insurance Covering bodily injury or death suffered by third parties including the Employer's personnel, and loss of or damage to property occurring in connection with the supply and installation of the Facilities.</p> <p>(b) Automobile Liability Insurance Covering use of all vehicles used by the Contractor or its Subcontractors, whether or not owned by them, in connection with the execution of the Contract.</p> <p>(c) Workers' Compensation In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.</p> <p>(d) Employer's Liability</p>

	<p>In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.</p> <p>(e) Other Insurances Such other insurances as may be specifically agreed upon by the parties</p> <p><b>42.2</b> The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 42.1, except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 42.1 except for the Workers' Compensation and Employer's Liability Insurances. All insurer's rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies.</p> <p><b>42.3</b> The Contractor shall deliver to the Employer certificates of insurance or copies of the insurance policies as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.</p> <p><b>42.4</b> The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.</p> <p><b>42.5</b> Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GCC Clause 42, and all monies payable by any insurers shall be paid to the Contractor. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Contractor's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.</p>
<p><b>43. Unforeseen Conditions</b></p>	<p><b>43.1</b> If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions other than climatic conditions, or artificial obstructions that could not have been reasonably foreseen prior to the date of the Contract Agreement by an experienced Contractor on the basis</p>

of reasonable examination of the data relating to the Works provided by the Employer, and on the basis of information that it could have obtained from a visual inspection of the Site if access thereto was available, or other data readily available to it relating to the Works, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional equipment, notify the Engineer in writing of

- (a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen;
- (b) the additional work or equipment required, including the steps which the Contractor will or proposes to take to overcome such conditions or obstructions;
- (c) the extent of the anticipated delay; and
- (d) the additional cost and expense that the Contractor is likely to incur.

On receiving any notice from the Contractor under this GCC Sub- Clause 43.1, the Engineer shall decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Engineer shall instruct the Contractor, with a copy to the Employer, of the actions to be taken.

**43.1.1** Incorrect information on the condition and location of the distribution network including the incorrectness of maps of the distribution network e.g. wrong location, diameter, material, age or other information of pipelines shown or pipelines additionally found and not shown on the map, or of the overall condition of the network, are expressly excluded from being considered as Unforeseen Conditions under GCC Sub-Clause 43.1 and as such GCC Clause 43 shall not apply.

**43.1.2** Actual water loss levels higher or lower than the average figure used for the comparison of the bid prices as well as the technical difficulties with leak detection in low pressure systems and/or at locations with high groundwater levels or high background and traffic noise, are expressly excluded from being considered as Unforeseen Conditions under GCC Clause 43.1 and as such GCC Sub-Clause 43 shall not apply.

**43.2** Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Engineer to overcome such physical conditions or artificial obstructions referred to in GCC Sub-Clause 43.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.

	<p><b>43.3</b> If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GCC Sub-Clause 43.1, the Time for Completion shall be extended in accordance with GCC Clause 48.</p>
<p><b>44. Change in Laws and Regulations</b></p>	<p><b>44.1</b> If, after the date twenty-eight (28) days prior to the date of Bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed which shall be deemed to include any change in interpretation or application by the competent authorities, that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the PCC, pursuant to GCC Sub-Clause 17.1.</p>
<p><b>45. Force Majeure</b></p>	<p><b>45.1</b> "Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:</p> <p>war, hostilities or warlike operations whether a state of war be declared or not, invasion, act of foreign enemy and civil war</p> <p>rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts</p> <p>confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority</p> <p>strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague</p> <p>earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster</p>

shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.

**45.2** If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.

**45.3** The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GCC Clause 48.

**45.4** The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either party's right to terminate the Contract under GCC Sub-Clauses 45.6 and 46.5.

**45.5** No delay or nonperformance by either party hereto caused by the occurrence of any event of Force Majeure shall

- (a) constitute a default or breach of the Contract, or
- (b) give rise to any claim for damages or additional cost or expense occasioned thereby, subject to GCC Sub-Clauses 40.2, 46.3 and 46.4.

if and to the extent that such delay or nonperformance is caused by the occurrence of an event of Force Majeure.

**45.6** If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other, but without prejudice to either party's right to terminate the Contract under GCC Sub-Clause 46.5.

**45.7** In the event of termination pursuant to GCC Sub-Clause 45.6, the rights and obligations of the Employer and the Contractor shall be as specified in GCC Sub-Clauses 50.1.2 and 50.1.3.

**45.8** Notwithstanding GCC Sub-Clause 45.5, Force Majeure shall not apply to any obligation of the Employer to make payments to

	the Contractor herein.
<p><b>46. War Risks</b></p>	<p><b>46.1</b> “War Risks” shall mean any event specified in paragraphs (a) and (b) of GCC Sub-Clause 45.1 and any explosion or impact of any mine, bomb, shell, grenade or other projectile, missile, munitions or explosive of war, occurring or existing in or near the country (or countries) where the Site is located.</p> <p><b>46.2</b> Notwithstanding anything contained in the Contract, the Contractor shall have no liability whatsoever for or with respect to</p> <ul style="list-style-type: none"> <li>(a) destruction of or damage to the Works, or any part thereof;</li> <li>(b) destruction of or damage to property of the Employer or any third party; or</li> <li>(c) injury or loss of life</li> </ul> <p>if such destruction, damage, injury or loss of life is caused by any War Risks, and the Employer shall indemnify and hold the Contractor harmless from and against any and all claims, liabilities, actions, lawsuits, damages, costs, charges or expenses arising in consequence of or in connection with the same.</p> <p><b>46.3</b> If the Works or Contractor’s equipment or any other property of the Contractor used or intended to be used for the purposes of the Works shall sustain destruction or damage by reason of any War Risks, the Employer shall pay the Contractor for</p> <ul style="list-style-type: none"> <li>(a) any part of the Works destroyed or damaged to the extent not already paid for by the Employer and so far as may be required by the Employer, and as may be necessary for completion of the Works</li> <li>(b) replacing or making good any Contractor’s equipment or other property of the Contractor so destroyed or damaged</li> <li>(c) replacing or making good any such destruction or damage to the Works or any part thereof.</li> </ul> <p>If the Employer does not require the Contractor to replace or make good any such destruction or damage to the Works, the Employer shall either request a change in accordance with GCC Clause 47, excluding the performance of that part of the Works thereby destroyed or damaged or, where the loss, destruction or damage affects a substantial part of the Works, shall terminate the Contract, pursuant to GCC Sub-Clause 50.1.</p> <p>If the Employer requires the Contractor to replace or make good on any such destruction or damage to the Works, the Time for Completion shall be extended in accordance with GCC 48.</p> <p><b>46.4</b> Notwithstanding anything contained in the Contract, the</p>



Employer shall pay the Contractor for any increased costs or incidentals to the execution of the Contract that are in any way attributable to, consequent on, resulting from, or in any way connected with any War Risks, provided that the Contractor shall as soon as practicable notify the Employer in writing of any such increased cost.

**46.5** If during the performance of the Contract any War Risks shall occur that financially or otherwise materially affect the execution of the Contract by the Contractor, the Contractor shall use its reasonable efforts to execute the Contract with due and proper consideration given to the safety of its and its Subcontractors' personnel engaged in the work on the Works, provided, however, that if the execution of the work on the Works becomes impossible or is substantially prevented for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of any War Risks, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other.

**46.6** In the event of termination pursuant to GCC Sub-Clauses 46.3 or 46.5, the rights and obligations of the Employer and the Contractor shall be specified in GCC Sub-Clauses 50.1.2 and 50.1.3.

## H Change in Contract Elements

<p><b>47. Change in the Works and Services</b></p>	<p><b>47.1 Introducing a Change</b></p> <p><b>47.1.1</b> Subject to GCC Sub-Clauses 47.2.5 and 47.2.7, the Employer shall have the right to propose, and subsequently require, that the Engineer order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Works and Services hereinafter called “Change”, provided that such Change falls within the general scope of the Works and Services and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Works and Services and the technical compatibility of the Change envisaged with the nature of the Works and Services as specified in the Contract.</p> <p><b>47.1.2</b> The Contractor may from time to time during its performance of the Contract propose to the Employer with a copy to the Engineer, any Change that the Contractor considers necessary or desirable to improve the quality, efficiency or safety of the Works and Services. The Employer may at its discretion approve or reject any Change proposed by the Contractor, provided that the Employer shall approve any Change proposed by the Contractor to ensure the safety of the Works and Services.</p> <p><b>47.1.3</b> Notwithstanding GCC Sub-Clauses 47.1.1 and 47.1.2, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.</p> <p><b>47.1.4</b> The procedure on how to proceed with and execute Changes is specified in GCC Sub-Clauses 47.2 and 47.3, and further details and forms are provided in Section 6, Employer’s Requirements.</p> <p><b>47.2 Changes Originating from Employer</b></p> <p><b>47.2.1</b> If the Employer proposes a Change pursuant to GCC Sub- Clause 47.1.1, it shall send to the Contractor a “Request for Change Proposal,” requiring the Contractor to prepare and furnish to the Engineer as soon as reasonably practicable a “Change Proposal,”</p>
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which shall include the following:

- (a) brief description of the Change
- (b) effect on the Time for Completion
- (c) estimated cost of the Change
- (d) effect on the Works and Services
- (e) effect on any other provisions of the Contract.

**47.2.2** Prior to preparing and submitting the "Change Proposal," the Contractor shall submit to the Engineer an "Estimate for Change Proposal," which shall be an estimate of the cost of preparing and submitting the Change Proposal.

Upon receipt of the Contractor's Estimate for Change Proposal, the Employer shall do one of the following:

- (a) accept the Contractor's estimate with instructions to the Contractor to proceed with the preparation of the Change Proposal
- (b) advise the Contractor of any part of its Estimate for Change Proposal that is unacceptable and request the Contractor to review its estimate
- (c) advise the Contractor that the Employer does not intend to proceed with the Change.

**47.2.3** Upon receipt of the Employer's instruction to proceed under GCC Sub-Clause 47.2.2 (a), the Contractor shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GCC Sub-Clause 47.2.1.

**47.2.4** The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rates as specified in PCC for the valuation of the Change.

**47.2.5** If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith and with all other Change Orders that have already become binding upon the Contractor under this GCC Clause 47 would be to increase or decrease the Contract Price by more than fifteen percent (15%), the Contractor may give a written notice of objection thereto prior to furnishing the Change Proposal as aforesaid. If the Employer accepts the Contractor's objection, the Employer shall withdraw the proposed Change and shall notify the

Contractor in writing thereof.

The Contractor's failure to so object shall neither affect its right to object to any subsequent requested Changes or Change Orders herein, nor affect its right to take into account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Contractor represents.

**47.2.6** Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order.

If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision.

If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GCC Sub-Clause 47.2.2.

**47.2.7** If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a "Pending Agreement Change Order."

Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal.

If the parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement

	<p>Change Order, then the matter may be referred to the Dispute Board in accordance with the provisions of GCC Sub-Clause 53.3.</p> <p><b>47.2.8 Extension of Service Areas</b> Employer shall reserve the right within contract period, to increase or decrease the geographical coverage of Service Area not exceeding 25% of the Service Area. The extension of service area may include addition of new areas outside or inside the present project area. Change in the geographical coverage of Service Area under this Clause shall not be reckoned as Change of Scope and the Contractor shall continue to perform obligation under this Agreement as per the terms of this Agreement. Further, In the event that the Employer extends the Service Area, so as to require the Contractor to construct, operate and maintain the Project Facilities in respect of such extended Service Area, the provision of the Services to such part of the Service Area as may be specified, shall continue to be subject to the rights and obligations given to Contractor under this Agreement. Employer shall ensure that the rights of the Contractor in relation to the Project shall continue undisturbed and Contractor shall continue to exercise complete and unimpeded control thereon and shall render Service in such extended Service Area as if it was a part to it originally.</p> <p><b>47.3 Changes Originating from Contractor</b> <b>47.3.1</b> If the Contractor proposes a Change pursuant to GCC Sub- Clause 47.1.2, the Contractor shall submit to the Engineer a written “Application for Change Proposal,” giving reasons for the proposed Change and including the information specified in GCC Sub-Clause 47.2.1.</p> <p>Upon receipt of the Application for Change Proposal, the parties shall follow the procedures outlined in GCC Sub- Clauses 47.2.6 and 47.2.7. However, should the Employer choose not to proceed, the Contractor shall not be entitled to recover the costs of preparing the Application for Change Proposal.</p>
<p><b>48. Extension of Time for Completion</b></p>	<p><b>48.1</b> The Time(s) for Completion specified in the PCC shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:</p> <ul style="list-style-type: none"> <li>(a) any Change in the Works and Services as provided in GCC Clause 47</li> <li>(b) any occurrence of Force Majeure as provided in GCC</li> </ul>

Clause 46 Unforeseen Conditions as provided in GCC Clause 43, or other occurrence of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clause 40.2

- (c) any suspension order given by the Employer under GCC Clause 49 hereof or reduction in the rate of progress pursuant to GCC Sub-Clause 49.2 or
- (d) any changes in laws and regulations as provided in GCC Clause 45 or
- (e) any default or breach of the Contract by the Employer, or any activity, act or omission of the Employer, or the Engineer, or any other contractors employed by the Employer or
- (f) any other matter specifically mentioned in the Contract
- (g) any delay on the part of a sub-contractor, provided such delay is due to a cause for which the Contractor himself would have been entitled to an extension of time under this sub-clause

by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

**48.2** Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Engineer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a Dispute Board, pursuant to GCC Sub-Clause 53.3.

**48.3** The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

In all cases where the Contractor has given notice of a claim for an extension of time under GCC 48.2, the Contractor shall consult with the Engineer in order to determine the steps (if any) which can be taken to overcome or minimize the actual or anticipated delay. The Contractor shall thereafter comply with all reasonable instructions which the Engineer shall give in order to minimize such delay. If compliance with such

	<p>instructions shall cause the Contractor to incur extra costs and the Contractor is entitled to an extension of time under GCC 48.1, the amount of such extra costs shall be added to the Contract Price.</p>
<p><b>49. Suspension</b></p>	<p><b>49.1</b> The Employer may request the Engineer, by notice to the Contractor, to order the Contractor to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefore. The Contractor shall thereupon suspend performance of such obligation, except those obligations necessary for the care or preservation of the Works, until ordered in writing to resume such performance by the Engineer.</p> <p>If, by virtue of a suspension order given by the Engineer, other than by reason of the Contractor’s default or breach of the Contract, the Contractor’s performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Engineer requiring that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GCC Clause 47, excluding the performance of the suspended obligations from the Contract.</p> <p>If the Employer fails to do so within such period, the Contractor may, by a further notice to the Engineer, elect to treat the suspension, where it affects a part only of the Works and Services, as a deletion of such part in accordance with GCC Clause 47 or, where it affects the whole of the Works and Services, as termination of the Contract under GCC Sub-Clause 50.1.</p> <p><b>49.2</b> If</p> <p>(a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GCC Sub-Clause 13.7, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for</p>

	<p>withholding such approval, or fails to remedy the breach or take steps to remedy the breach within sixty (60) days after receipt of the Contractor's notice or</p> <p>(b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas in accordance with GCC Sub-Clause 11.3, or failure to obtain any governmental permit necessary for the execution and/or completion of the Works and Services.,</p> <p>then the Contractor may by thirty (30) days' notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.</p> <p><b>49.3</b> If the Contractor's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GCC Clause 49, then the Time for Completion shall be extended in accordance with GCC Sub- Clause 48, and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Employer to the Contractor in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Contractor's default or breach of the Contract.</p> <p><b>49.4</b> During the period of suspension, the Contractor shall not remove from the Site, any part of the Works or any Contractor's equipment, without the prior written consent of the Employer.</p>
<p><b>50. Termination</b></p>	<p><b>50.1 Termination for Employer's Convenience</b></p> <p><b>50.1.1</b> The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GCC Sub-Clause 50.1.</p> <p><b>50.1.2</b> Upon receipt of the notice of termination under GCC Sub- Clause 50.1.1, the Contractor shall either immediately or upon the date specified in the notice of termination</p> <p>(a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Works already executed, or any work required to leave the Site in a clean and safe condition</p> <p>(b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below</p>



- (c) remove all Contractor's equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition, and
- (d) subject to the payment specified in GCC Sub-Clause 50.1.3,
  - (i) deliver to the Employer the parts of the Works executed by the Contractor up to the date of termination
  - (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors; and
  - (iii) deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Works.

**50.1.3** In the event of termination of the Contract under GCC Sub-Clause 50.1.1, the Employer shall pay to the Contractor the following amounts:

- (a) the Contract Price, properly attributable to the parts of the Works and Services executed by the Contractor as of the date of termination
- (b) the costs reasonably incurred by the Contractor in the removal of the Contractor's equipment from the Site and in the repatriation of the Contractor's and its Subcontractors' personnel
- (c) costs incurred by the Contractor in protecting the Works and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 50.1.2
- (d) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (c) above.

**50.2 Termination for Contractor's Default**

**50.2.1** The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a

notice of termination and its reasons therefore to the Contractor, referring to this GCC Sub-Clause 50.2.

- (a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up, other than a voluntary liquidation for the purposes of amalgamation or reconstruction, a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt
- (b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GCC Clause 51.
- (c) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices, as defined in GCC Clause 6, in competing for or in executing the Contract.

**50.2.2** If the Contractor

- (a) has abandoned or repudiated the Contract
  - (b) has without valid reason failed to commence the Works and Services promptly or has suspended, other than pursuant to GCC Sub-Clause 49.2, the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed
  - (c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause
  - (d) refuses or is unable to provide sufficient materials, services or labor to execute and complete the Works and Services in the manner specified in the work program furnished under GCC Sub-Clause 26.2 at rates of progress that give reasonable assurance to the Employer that the Contractor can attain completion of the Works and Services by the Time for Completion as extended,
- then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps

to remedy the same within fourteen(28) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GCC Sub-Clause 50.2.

**50.2.3** Upon receipt of the notice of termination under GCC Sub-Clauses 50.2.1 or 50.2.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Works already executed, or any work required to leave the site in a clean and safe condition
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) below
- (c) deliver to the Employer the parts of the Works executed by the Contractor up to the date of termination
- (d) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors
- (e) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Works.

**50.2.4** The Employer may enter upon the Site, expel the Contractor, and complete the Works and Services itself or by employing any third party. The Employer may, to the exclusion of any right of the Contractor over the same, takeover and use with the payment of a fair rental rate to the Contractor, with all the maintenance costs to the account of the Employer and with an indemnification by the Employer for all liability including damage or injury to persons arising out of the Employer's use of such equipment, any Contractor's equipment owned by the Contractor and on the Site in connection with the Works and Services for such reasonable period as the Employer considers expedient for the completion of the Works and Services.

Upon completion of the Works and Services or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Contractor that such Contractor's equipment will be returned to the Contractor at or near the Site and shall return such Contractor's equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site.

**50.2.5** Subject to GCC Sub-Clause 50.2.6, the Contractor shall be entitled to be paid the Contract Price attributable to the Works and Services executed as of the date of termination, and the costs, if any, incurred in protecting the Works and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 50.2.3. Any sums due the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

**50.2.6** If the Employer completes the Works and Services, the cost of completing the Works and Services by the Employer shall be determined.

If the sum that the Contractor is entitled to be paid, pursuant to GCC Sub-Clause 50.2.5, plus the reasonable costs incurred by the Employer in completing the Works and Services, exceeds the Contract Price, the Contractor shall be liable for such excess.

If such excess is greater than the sums due the Contractor under GCC Sub-Clause 50.2.5, the Contractor shall pay the balance to the Employer, and if such excess is less than the sums due the Contractor under GCC Sub-Clause 50.2.5, the Employer shall pay the balance to the Contractor.

The Employer and the Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.

**50.3** Termination by Contractor

**50.3.1** If

(a) the Employer has failed to pay the Contractor any

sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GCC Sub-Clause 13.7, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, fails to remedy the breach or take steps to remedy the breach within sixty(60) days after receipt of the Contractor's notice, or

- (b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas or failure to obtain any governmental permit necessary for the execution and/or completion of the Works and Services,

then the Contractor may give notice to the Employer thereof, and if the Employer has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within sixty (60) days of such notice, or if the Contractor is still unable to carry out any of its obligations under the Contract for any reason attributable to the Employer within sixty (60) days of the said notice, the Contractor may by a further notice to the Employer referring to this GCC Sub-Clause 50.3.1, forthwith terminate the Contract.

**50.3.2** The Contractor may terminate the Contract forthwith by giving a notice to the Employer to that effect, referring to this GCC Sub-Clause 50.3.2, if the Employer becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is

appointed over any part of its undertaking or assets, or if the Employer takes or suffers any other analogous action in consequence of debt.

**50.3.3** If the Contract is terminated under GCC Sub-Clauses 50.3.1 or 50.3.2, then the Contractor shall immediately

(a) cease all further work, except for such work as may be necessary for the purpose of protecting that part of the Works already executed, or any work required to leave the Site in a clean and safe condition

(b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii)

(c) remove all Contractor's Equipment from the Site and repatriate the Contractor's and its Subcontractors' personnel from the Site, and

(d) subject to the payment specified in GCC Sub-Clause 50.3.4,

(i) deliver to the Employer the parts of the Works executed by the Contractor up to the date of termination

(ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors, and

(iii) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Works and Services.

**50.3.4** If the Contract is terminated under GCC Sub-Clauses 50.3.1 or 50.3.2, the Employer shall pay to the Contractor all payments specified in GCC Sub-Clause 50.1.3, and reasonable compensation for all loss, except for loss of profit, or damage sustained by the Contractor arising out of, in connection with or in consequence of such termination.

**50.3.5** Termination by the Contractor pursuant to this GCC

	<p>Sub-Clause 50.3 is without prejudice to any other rights or remedies of the Contractor that may be exercised in lieu of or in addition to rights conferred by GCC Sub-Clause 50.3.</p> <p><b>50.4</b> In this GCC Clause 50, the expression “Works executed” shall include all Works executed and Services provided, or subject to a legally binding obligation to purchase, by the Contractor and used or intended to be used for the purpose of the Works, up to and including the date of termination.</p> <p><b>50.5</b> In this GCC Clause 50, in calculating any monies due from the Employer to the Contractor, account shall be taken of any sum previously paid by the Employer to the Contractor under the Contract, including any advance payment paid pursuant to the Contract Agreement.</p>
<p><b>51. Assignment</b></p>	<p><b>51.1</b> Neither the Employer nor the Contractor shall, without the express prior written consent of the other party which consent shall not be unreasonably withheld, assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.</p>

**T Claims, Disputes, Arbitration****52. Contractor's  
Claims**

**52.1** If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall submit a notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause 52.1 shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub-Clause 52.1, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.

Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- (a) this fully detailed claim shall be considered as interim;
- (b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and
- (c) the Contractor shall send a final claim within 28 days after the



end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within such time.

Each payment certified by the Employer shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

The Engineer shall agree with the Contractor or estimate: (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with GCC Clause 48, and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

The requirements of this Sub-Clause 52.1 are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 52.1.

In the event that the Contractor and the Employer cannot agree on any matter relating to a claim, either party may refer the matter to the Dispute Board pursuant to GCC Sub Clause 53.3 hereof.

#### **52.2 Claim for compensation for delay in starting the work**

No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or in the case of clearance works on account of any delay in according to sanction of estimates.

#### **52.3 Claim for compensation for delay in execution of the work**

No compensation shall be allowed for any delay in the execution of the work on account of water standing in borrow pits or compartments the rates are inclusive for hard or cracked soil

	<p>Excavation in mud, sub soil , water standing in borrow pits and no claim for an extra rate shall be entertained, unless otherwise expressly specified.</p>
<p><b>53. Disputes and Arbitration</b></p>	<p><b>53.1 Appointment of the Dispute Board</b></p> <p>Disputes shall be referred to a DB for decision in accordance with GCC Sub-Clause 53.3. The Parties shall appoint a DB by the date stated in the PCC.</p> <p>The DB shall comprise, as stated in the PCC, either one or three suitably qualified persons (“the members”), each of whom shall be fluent in the language for communication defined in the Contract and shall be a professional experienced in the type of activities involved in the performance of the Contract and with the interpretation of contractual documents. If the number is not so stated and the Parties do not agree otherwise, the DB shall comprise three persons, one of whom shall serve as chairman.</p> <p>If the Parties have not jointly appointed the DB 21 days before the date stated in the PCC and the DB is to comprise three persons, each Party shall nominate one member for the approval of the other Party. The first two members shall recommend and the Parties shall agree upon the third member, who shall act as chairman.</p> <p>However, if a list of potential members is included in the PCC, the members shall be selected from those on the list, other than anyone who is unable or unwilling to accept appointment to the DB.</p> <p>The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Board Agreement contained in the Appendix to these General Conditions, with such amendments as are agreed between them.</p> <p>The terms of the remuneration of either the sole member or each of the three members, including the remuneration of any expert whom the DB consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment of the member or such expert (as the case may be). Each Party shall be responsible for paying one-half of this remuneration.</p> <p>If a member declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Sub-Clause.</p> <p>The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the</p>

Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the DB (including each member) shall expire when the Take-Over Certificate has been issued in accordance with GCC Clause 33.

**53.2 Failure to Agree Dispute Board**

If any of the following conditions apply, namely:

- (a) the Parties fail to agree upon the appointment of the sole member of the DB by the date stated in the first paragraph of GCC Sub-Clause 53.1,
- (b) either Party fails to nominate a member (for approval by the other Party) of a DB of three persons by such date,
- (c) the Parties fail to agree upon the appointment of the third member (to act as chairman) of the DB by such date, or
- (d) the Parties fail to agree upon the appointment of a replacement person within 42 days after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, disability, resignation or termination of appointment,
- (e) then the appointing entity or official named in the PCC shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the DB. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the remuneration of the appointing entity or official.

**53.3 Obtaining Dispute Board's Decision**

If a dispute (of any kind whatsoever) arises between the Parties in connection with the performance of the Contract, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause 53.3.

For a DB of three persons, the DB shall be deemed to have received such reference on the date when it is received by the chairman of the DB.

Both Parties shall promptly make available to the DB all such additional information, further access to the Site, and appropriate facilities, as the DB may require for the purposes of making a decision on such dispute. The DB shall be deemed to be not acting as arbitrator(s).

Within 84 days after receiving such reference, or within such other period as may be proposed by the DB and approved by

both Parties, the DB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause 53.3. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the performance of the Works and Services in accordance with the Contract.

If either Party is dissatisfied with the DB's decision, then either Party may, within 28 days after receiving the decision, give notice to the other Party of its dissatisfaction and intention to commence arbitration. If the DB fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give notice to the other Party of its dissatisfaction and intention to commence arbitration.

In either event, this notice of dissatisfaction shall state that it is given under this Sub-Clause 53.3, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in GCC Sub- Clauses 53.6 and 53.7, neither Party shall be entitled to commence arbitration of a dispute unless a notice of dissatisfaction has been given in accordance with this Sub-Clause.

If the DB has given its decision as to a matter in dispute to both Parties, and no notice of dissatisfaction has been given by either Party within 28 days after it received the DB's decision, then the decision shall become final and binding upon both Parties.

#### **53.4 Amicable Settlement**

Where notice of dissatisfaction has been given under GCC Sub-Clause 53.3 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, arbitration may be commenced on or after the fifty-sixth day after the day on which notice of dissatisfaction and intention to commence arbitration was given, even if no attempt at amicable settlement has been made.

#### **53.5 Arbitration**

Unless settled amicably, any dispute in respect of which the DB's decision (if any) has not become final and binding shall be finally settled by arbitration. Unless otherwise agreed by both Parties:

- (a) arbitration proceedings shall be conducted as stated in the Special Conditions,

- (b) if no arbitration proceedings is so stated, the dispute shall be finally settled by institutional arbitration under the Rules of Arbitration of the International Chamber of Commerce,
- (c) the dispute shall be settled by three arbitrators, and
- (d) the arbitration shall be conducted in the language for communications defined in GCC Sub-Clause 5.2.

The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DB, relevant to the dispute. Nothing shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the DB to obtain its decision, or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the DB shall be admissible in evidence in the arbitration.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

**53.6 Failure to Comply with Dispute Board's Decision**

In the event that a Party fails to comply with a DB decision which has become final and binding, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under GCC Sub-Clause 53.5. GCC Sub-Clauses 53.3 and 53.4 shall not apply to this reference.

**53.7 Expiry of Dispute Board's Appointment**

If a dispute arises between the Parties in connection with the performance of the Contract, and there is no DB in place, whether by reason of the expiry of the DB's appointment or otherwise:

- (a) GCC Sub-Clauses 53.3 and 53.4 shall not apply, and
- (b) the dispute may be referred directly to arbitration under GCC Sub-Clause 53.5.

**U. Additional Clauses& Paras**

5.9 Additional Clause	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 as aforesaid 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 previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of additional Clause 10.13 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said additional Clause 10.13.
7.1 Additional Clause		<p>Cost of interconnection</p> <p>Cost of interconnection with the existing water main will include all labour involved for performing all acts related with fittings and making the system functional within permitted shut down period. Payment for cost of all materials and work involved in interconnection is to be made as per relevant items in the bill of quantities/ contract. All the interconnections with the existing water main are included in the scope of work. The payment shall be restricted to the provision in the Bill of Quantity. No extra payment shall be made.</p> <p>Diversion of Traffic</p> <p>Scope of work will also include diversion of traffic, handling of pipes / specials for crossing drain &amp; inter connections work using mechanical equipments 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. Nothing extra shall be paid on this account. The payment shall be restricted to the provision in the Bill of Quantity. The work shall deem to be included in the quoted rate.</p>
9.1 Additional Clause		<p>Entering upon or commencing any portion of work</p> <p>The contractor shall not enter upon or commence any portion of work except with the written authority and instructions of the Engineer or of his subordinate in charge of the work. Failing such authority the contractor shall have no</p>

		claim to ask for measurements of or payment for work.
10.3.1 Additional Clause		<p>Permission from Relevant Authorities</p> <p>It is the responsibility of the contractor to persue for getting permission from land owing agencies like PWD, Railways, Forest Departments, etc The payment for permission charges ,shifting services and road restoration charges shall be made by the Authority after verification.</p>
10.13 Additional Clause	Work not to be sublet. Action in case of in solvancy	The contract shall not be assigned or sublet without the written approval of the Engineer-in-Charge. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employ of Authority in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Engineer-in-Charge on behalf of the Authority shall have power to adopt the course specified in Additional Clause 56 hereof in the interest of Authority and in the event of such course being adopted, the consequences specified in the said Additional Clause 56 shall ensue.
10.14 Additional Clause	Contractor to indemnify Authority against Patent Rights	The contractor shall fully indemnify and keep indemnified the Authority against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against the Authority in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise therefrom, provided that the contractor shall not be liable to indemnify the Authority if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge in this behalf.
11.15 Additional Clause		<p>Posting of Assigned Authority's Employees to the Contractor</p> <p>From the Initial Takeover Date the Authority shall, subject to applicable procedures, may assign the some employees of</p>

		<p>Authority to the Contractor for duties in Service Area. The Authority shall provide the Contractor with details i.e. name, age, qualifications, and terms of employment of each Authority Employee and shall specify the date on which the relevant Authority Employee shall report to the Contractor for duty. Authority shall assign the existing employees not exceeding in different hierarchy to Contractor within the project area. However Employer may reduce the number and may decide not to depute any employees to the Contractor. The number of employees deputed to Contractor is only for on job training purpose and not as obligations of Authority. Non deputation of employees does not alter any cost obligation of Contractor&amp; Employer.</p>
12.4 Additional Clause		<p>The price quoted by the contractor shall not in any case exceed the control price, if any, fixed by the Government or reasonable price which it is permissible for him to charge a private purchaser for the same class and description, the controlled price or the price permissible under the hoarding and Profiteering Ordinance,1948 as amended from time to time, if the price quoted exceeds the controlled price or the price permissible under the Hoarding and Profiteering Ordinance, 1948 as amended from time to time, the contractor will specifically mention this fact in his tender along with the reasons for quoting such higher prices. The purchaser at his description will in such case exercise the right of revising the price at any stage so as to confirm with the control price on the permissible under the Hoarding and Profiteering Prevention Ordinance. This discretion will be exercised without prejudice to any other action that may be taken against the contractor.</p>
13.3(i) Additional Clause	Withholding and lien in respect of sum due from contractor	<p>(i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the Authority shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in- Charge or the Authority shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalisation or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the Authority shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from</p>



		<p>any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge of the Authority or any contracting person through the Engineer-in-Charge pending finalization of adjudication of any such claim.</p> <p>It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Authority will be kept withheld or retained as such by the Engineer-in-Charge or Authority till the claim arising out of or under the contract is determined by the arbitrator(if the contract is governed by the arbitration clause) 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 Authority 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.</p> <p>(ii) Authority 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 and 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 and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for Authority 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 Authority to the contractor, without any interest thereon whatsoever.</p>
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		<p>(iii) Provided that the Authority 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 Authority on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Authority.</p>
<p>13.3(ii) Additional Clause</p>	<p>Lien in respect of claims in other Contracts</p>	<p>Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the Authority or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or Authority or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer- in-Charge or the Authority or with such other person or persons.</p> <p>It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the Authority will be kept withheld or retained as such by the Engineer-in-Charge or the Authority or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.</p>
<p>14.3.5 Additional Clause</p>		<p>Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement, the value in accordance with the contract of work done.</p> <p>All 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.</p> <p>All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect</p>

		<p>with reason and signed by both the parties.</p> <p>If for any reason the contractor or his authorized representative 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 Department shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative 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 be accepted by the Contractor.</p> <p>The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels. Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the 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.</p> <p>The contractor shall give, not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work, before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of</p>
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		<p>measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing, the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.</p> <p>Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the department 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.</p> <p>It is also a term of this contract that recording of measurements of any item of work 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 over measurement or defects noticed till completion of the defects liability period.</p>
<p>14.3.6 Additional Clause</p>	<p>Computerized Measurement Book</p>	<p>Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract.</p> <p>All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4 size as per the format of the authority so that a complete record is obtained of all the items of works performed under the contract.</p> <p>All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative. After the necessary corrections made by the Engineer-in-Charge, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer-in-Charge for the dated</p>

		<p>signatures by the Engineer-in- Charge and the contractor or their representatives in token of their acceptance.</p> <p>Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/test checked from the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to the department a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks/test checks.</p> <p>The final, fair, computerized measurement book given by the contractor, duly bound, with its pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error is noticed, the contractor shall have to submit a fresh computerized MB with its pages duly machine numbered and bound, after getting the earlier MB cancelled by the concerned office. Thereafter, the MB shall be taken in the concerned office records, and allotted a number as per the Register of Computerised MBs. This should be done before the corresponding bill is submitted to the concerned office for payment. The contractor shall submit two spare copies of such computerized MB's for the purpose of reference and record by the various officers of the authority.</p> <p>The contractor shall also submit to the department separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with two spare copies of the "bill. Thereafter, this bill will be processed by the concerned office and allotted a number as per the computerized record in the same way as done for the measurement book meant for measurements.</p> <p>The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements/levels by the</p>
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		<p>Engineer-in- Charge or his representative.</p> <p>Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the 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.</p> <p>The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.</p> <p>Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded by contractor and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.</p> <p>It is also a term of this contract that checking and/or test checking the measurements of any item of work in the measurement book and/or its payment in the interim, on</p>
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		account of 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 over measurement or defects noticed till completion of the defects liability period.
14.4 Additional Clause		<p>Initial Measurement for Record</p> <p>For proper measurements of the work it is necessary to have an initial set of levels or other measurements taken and the same are recorded in the authorised field book or M.B. of the Authority by the Engineer or his authorised representative and will be signed by the Contractor who will be entitled to have a true copy of the same made at his cost. Any failure on the part of the Contractor to get such level etc. recorded before starting the work will render him liable to accept the decision of the Engineer as to the basis of taking measurements. Likewise the contractor will not cover any work which will render its subsequent measurement difficult or impossible without first getting the same jointly measured by himself and the authorised representative of the Engineer. The record of such measurements will be signed by the Contractor as its acceptance and he will be entitled to have a true copy of the same at his cost.</p>
15.3 Additional Clause		<p>Claim of quantities entered in the tender or estimates</p> <p>(1) Quantities in respect of the several items shown in the tender are approximate and no revision in the tendered rate shall be permitted in respect of any of the items so long as subject to any special provision contained in the specifications prescribing a different percentage of permissible variation the quantity of the item does not exceed the tender quantity by more than 25% and so long as the value of the excess quantity beyond this limit as the rate of the item specified in the tender is not more than Rs 50000/-(Rs Fifty Thousand only).(2) The contractor shall if ordered in writing by the Engineer to do so , also carry out any quantities in excess of the limit mentioned in sub-clause(1) hereof on the same conditions as in accordance with the specifications in the tender and at the rates (i) derived from the rates entered in the current schedule of rates and in absence of such rates(ii) at the rate prevailing in the market, the said rates being increased or decreased as the case may be by the percentage which the total tendered amount bears to the estimated cost of work as put to tender based on the schedule of rates applicable to the year in which the tenders were invited. For the purpose of operation of this</p>

		<p>clause, the total cost shall be taken as derived from the Public Works Department's D.S.R. for Pune district.(3) Claims arising out of reduction in the tendered quantity of any item beyond 25% will be governed by the provision of clause 15 only when the amount of such reduction beyond 25 % at the rate of the item specified in the tender is more than Rs 50000/(Rs Fifty Thousand). This reduction is exclusively of the reduction mentioned in clause No 2, 1, 4 of the work and site condition.(4) This clause is not applicable to extra items.(5) There is no change in the rate if excess is less than or equal to 25%. Also there is no change in the rate if quantity of work done is more than 25% of the tendered quantity or the value of the excess work at tendered rates does not exceed Rs 50000/( Rs Fifty Thousand) only.(6) The quantity to be paid at tendered rate shall include-(a) Tendered Quantity plus (b) 25 % excess of the tendered quantity or the excess quantity of the value of 50000/(Rupees Fifty Thousand) at the tendered rates whichever is more (7) This clause shall not be applicable to any items of Electrical work of shifting/laying new cables or any other items specified in the tender.</p>
16.5 (i) Additional Clause	Secured Advance on Non-perishable Materials	<p>(i) The contractor, on signing an indenture in the form to be specified by the Engineer-in- Charge, shall be entitled to be paid during the progress of the execution of the work up to 90% of the assessed value of any materials which are in the opinion of the Engineer-in-Charge non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.</p> <p>Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-in-Charge provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer- in-Charge shall be final and binding on the contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.</p>



16.5 Additional Clause	(ii) Mobilisation Advance	(ii) Not Used
16.5 Additional Clause	(iii) Plant Machinery & Shuttering Material Advance	(iii) Not Used
16.5 Additional Clause	(iv) Interest & Recovery	<p>(iv) The mobilization advance and plant and machinery advance in (ii) &amp; (iii) above bear simple interest at the rate of 10 per cent per annum and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractors bills commencing after first ten per cent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty per cent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.</p> <p>(v) If the circumstances are considered reasonable by the Engineer-in-Charge, the period mentioned in (ii) and (iii) for request by the contractor in writing for grant of mobilization advance and plant and equipment advance may be extended in the discretion of the Engineer-in-Charge.</p>
16.5 (v) Additional Clause	Dismantled Material Authority's Property	The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as authority property and such materials shall be disposed of to the best advantage of Authority according to the instructions in writing issued by the Engineer-in-Charge.
17.2 Additional Clause	Payment on Account of Increase in Prices/Wages due to Statutory Order(s)	If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under additional Clause 17.3 and/or wages of labour increases as a direct result of the coming into force of any fresh law, or statutory rule or order (but not due to any changes of rate in sales tax/VAT, Central/State Excise/Custom Duty) beyond the prices/wages prevailing at the time of the last stipulated date of receipt of tenders including extensions, if any, for the work during contract period including the justified period extended under the provisions of additional Clause 50.6 of the contract, without any action under additional clause 54 then the amount of the contract shall accordingly be varied and provided further that any such increase shall be limited to the price/wages prevailing at the time of updated stipulated date of completion considering

	<p>effect of extra work (extra time to be calculated on prorata basis only as cost of extra work x stipulated period/tendered amount).</p> <p>If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under additional Clause 17.3 and/or wages of labour as prevailing at the time of last stipulated date of receipt of tender including extensions, if any, is decreased as a direct result of the coming into force of any fresh law or statutory rules or order (but not due to any changes of rate in sales tax/VAT, Central/State Excise/Custom Duty), Authority shall in respect of materials incorporated in the works (excluding the materials covered under additional Clause 17.3 and/or labour engaged on the execution of the work after the date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor, such amount as shall be equivalent to the difference between the prices of the materials and/or wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work and the prices of materials and/or wages of labour on the coming into force of such law, statutory rule or order. This will be applicable for the contract period including the justified period extended under the provisions of additional Clause 50.6 of the contract without any action under additional Clause 54.</p> <p>Engineer-in-Charge may call books of account and other relevant documents from the contractor to satisfy himself about reasonability of increase in prices of materials and wages.</p> <p>The contractor shall, within a reasonable time of his becoming aware of any alteration in the price of any such materials and/or wages of labour, give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating thereto which he may be in position to supply.</p> <p>For this purpose, the labour component of the work executed during period under consideration shall be the percentage as specified in PCC, of the value of work done during that period and the increase/decrease in labour shall be considered on the minimum daily wages in rupees of any unskilled adult</p>
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		male mazdoor, fixed under any law, statutory rule or order.
17.3 Additional Clause	Payment due to variation in prices of materials after receipt of tender	<p>If after submission of the tender, the price of materials specified in PCC increases/ decreases beyond the base price(s) as indicated in PCC for the work, then the amount of the contract shall accordingly be varied and provided further that any such variations shall be effected for stipulated period of Contract including the justified period extended under the provisions of additional Clause 26.2.1 of the Contract without any action under additional Clause 54.</p> <p>However for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/tendered cost).</p> <p>The increase/decrease in prices of cement, steel reinforcement, structural steel and POL shall be determined by the Price indices issued by the competent authority. For other items provided in the PCC, this shall be determined by the All India Wholesale Price Indices of materials as published by Economic Advisor to Government of India, Ministry of Commerce and Industry. Base price for cement, steel reinforcement, structural steel and POL shall be as issued under the concerned authority. In case, price index of a particular material is not issued by Ministry of Commerce and Industry, then the price index of nearest similar material as indicated in PCC shall be followed.</p> <p>The amount of the contract shall accordingly be varied for all such materials and will be worked out as per the formula given below for individual material:-</p> <p>Adjustment for component of individual material</p> $V = P \times Q \times \frac{CI - CI_0}{CI_0}$ <p>where, V = Variation in material cost i.e. increase or decrease in the</p>

		<p>amount of rupees to be paid or recovered.</p> <p>P = Base Price of material as issued by authority and as indicated in PCC.</p> <p>For Projects and Original Works</p> <p>Q = Quantity of material brought at site for bonafide use in the works since previous bill excluding any such quantity consumed in the deviated quantity of items beyond deviation limit and extra /substituted item, paid/to be paid at rates derived on the basis of market rate under additional clause 30.23 (ii) 2A.</p> <p>For Maintenance Works</p> <p>Q = Quantity of material brought at site for bonafide use in the works since previous bill including any such quantity consumed in the deviated quantity of items beyond deviation limit paid at agreement rate and extra /substituted item being scheduled items, but excluding non schedule extra /substituted item paid/to be paid at market rate under additional clause 30.23 (ii).</p> <p>Clo = Price index for cement, steel reinforcement bars structural steel and POL as issued by the authority and corresponding to the time of base price of respective material indicated in PCC. For other items, if any, provided in PCC, All India Wholesale Price Index for the material as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce and corresponding to the time of base price of respective material indicated in PCC.</p> <p>CI = Price index for cement, steel reinforcement bars, structural steel and POL as issued by the authority for period under consideration. For other items, if any, provided in PCC, All India Wholesale Price Index for the material for period under consideration as published by Economic Advisor to Government of India, Ministry of Industry and Commerce.</p> <p>Note:</p> <p>(i) In respect of the justified period extended under the provisions of additional Clause 50.6 of the contract without any action under additional Clause 54, the index prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on prorata basis only as cost of extra</p>
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		<p>work x stipulated period/ tendered cost) shall be considered.</p> <p>Provided always that provisions of the preceding additional Clause 17.2 shall not be applicable in respect of Materials covered in this Clause.</p> <p>(ii) If during progress of work or at the time of completion of work, it is noticed that any material brought at site is in excess of requirement, then amount of escalation if paid earlier on such excess quantity of material shall be recovered on the basis of cost indices as applied at the time of payment of escalation or as prevailing at the time of effecting recovery, whichever is higher.</p> <p>(iii) Cement mentioned wherever in this clause includes Cement component used in RMC brought at site from outside approved RMC plants, if any.</p> <p>(iv) The date wise record of ready mix concrete shall be kept in a register and the cement consumption for the same shall be calculated accordingly.</p> <p>(v) If built-up steel items are brought at site from workshop, then the variation shall be paid for the structural steel up to the period when the built up item/finished product is brought at site.</p>
17.4 Additional Clause	Payment due to Increase/Decrease in Prices/Wages after Receipt of Tender for Works	<p>If the prices of materials and/or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contract shall accordingly be varied, subject to the condition that that such compensation for escalation in prices and wages shall be available only for the work done during the stipulated period of the contract including the justified period extended under the provisions of additional Clause 26.2.1 of the contract without any action under Clause 54. However, for the work done during the justified period extended as above, the compensation as detailed below will be limited to prices/wages prevailing at the time of updated stipulated date of completion considering the effect of extra work ( extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/tendered cost). No such compensation shall be payable for a work for which the stipulated period of completion is equal to or less than the time as specified in PCC. Such compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the following provisions:-</p> <p>(i) The base date for working out such escalation shall be</p>

		<p>the last stipulated date of receipt of tenders including extension, if any.</p> <p>(ii) The cost of work on which escalation will be payable shall be reckoned as below :</p> <p>(a) Gross value of work done up to this : (A) quarter</p> <p>(b) Gross value of work done up to the last : (B) quarter</p> <p>(c) Gross value of work done since previous : (C) quarter (A-B)</p> <p>(d) Full assessed value of Secured Advance : (D) (excluding materials Covered under additional Clause 17.3 fresh paid in this quarter</p> <p>(e) Full assessed value of Secured Advance : (E) (excluding materials Covered under additional Clause 17.3 recovered in this quarter</p> <p>(f) Full assessed value of Secured Advance : (F) for which escalation Payable in this quarter (D-E)</p> <p>(g) Advance payment made during this : (G) quarter</p> <p>(h) Advance payment recovered during this : (H) quarter</p> <p>(i) Advance payment for which escalation : (I) is payable in this Quarter(G-H)</p> <p>(j) Extra items/deviated quantities of items : (J) paid as per additional Clause 30.23 (ii) Based on prevailing market rates during this quarter Then, <math>M = C+F+I-J</math> <math>N = 0.85 M</math></p> <p>(k) Cost of work for which escalation is applicable: <math>W = N</math></p> <p>(iii) Components for materials (except cement, reinforcement bars, structural steel, POL or other materials covered under additional Clause 17.3) labour, etc. shall be pre-determined for every work and incorporated in the conditions of contract attached to</p>
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		<p>the tender papers included in PCC. The decision of the Engineer-in-Charge in working out such percentage shall be binding on the contractors.</p> <p>(iv) The compensation for escalation for other materials (excluding cement, reinforcement bars, structural steel, POL or other materials covered under additional clause 17.3) shall be worked as per the formula given below:-</p> <p>(a) Adjustment for civil component (except cement, structural steel, reinforcement bars, POL and other materials covered under additional Clause 17.3) / electrical component of construction 'Materials'</p> $V_m = W \times \frac{X_m}{100} \times \frac{MI - MI_o}{MI_o}$ <p><math>V_m</math> = Variation in material cost i.e. increase or decrease in the amount in rupees to be paid or recovered.</p> <p><math>W</math> = Cost of Work done worked out as indicated in sub-para (ii) of additional Clause 17.4.</p> <p><math>X_m</math> = Component of 'materials' (except cement, structural steel, reinforcement bars POL and other materials covered under additional Clause 17.3) expressed as percent of the total value of work.</p> <p><math>MI</math> = All India Wholesale Price Index for civil component/electrical component* of construction material as worked out on the basis of All India Wholesale Price Index for Individual Commodities/ Group Items for the period under consideration as published by Economic Advisor to Govt. of India, Ministry of Industry &amp; Commerce and applying weightages to the Individual Commodities/Group Items. (In respect of the justified period extended under the provisions of additional Clause 50.6 of the contract without any action under additional Clause 54, the index prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on prorata basis only as cost of extra work x stipulated period/tendered cost, shall be considered.)</p> <p><math>MI_o</math> = All India Wholesale Price Index for civil component/electrical component* of construction material as worked out on the basis of All India Wholesale Price Index</p>
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		<p>for Individual Commodities/Group Items valid on the last stipulated date of receipt of tender including extension, if any, as published by the Economic Advisor to Govt. of India, Ministry of Industry &amp; Commerce and applying weightages to the Individual Commodities/Group items.</p> <p><b>*Note:</b> relevant component only will be applicable.</p> <p>(v) The following principles shall be followed while working out the indices mentioned in para (iv) above.</p> <p>(a) The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done as per bills paid during the three calendar months of the said quarter. The dates of preparation of bills as finally entered in the Measurement Book by the Assistant Engineer/ date of submission of bill finally by the contractor to the authority in case of computerised measurement books shall be the guiding factor to decide the bills relevant to the quarterly interval. The first such payment shall be made at the end of three months after the month (excluding the month in which tender was accepted) and thereafter at three months' interval. At the time of completion of the work, the last period for payment might become less than 3 months, depending on the actual date of completion.</p> <p>(b) The index (MI/FI etc.) relevant to any quarter/period for which such compensation is paid shall be the arithmetical average of the indices relevant to the three calendar months. If the period up to date of completion after the quarter covered by the last such installment of payment, is less than three months, the index MI and FI shall be the average of the indices for the months falling within that period.</p> <p>(vi) The compensation for escalation for labour shall be worked out as per the formula given below:-</p> $VL = W \times \frac{Y}{100} \times \frac{LI - LI_0}{LI_0}$ <p>VL : Variation in labour cost i.e. amount of increase or decrease in rupees to be paid or recovered.</p> <p>W : Value of work done, worked out as indicated in sub-para (ii) above.</p> <p>Y : Component of labour expressed as a percentage of the total value of the work.</p> <p>LI : Minimum wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as applicable on the last date of the quarter previous to the one</p>
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		<p>under consideration. (In respect of the justified period extended under the provisions of additional Clause 26.2.1 of the contract without any action under additional Clause 54, the minimum wage prevailing on the last date of quarter previous to the quarter pertaining to updated stipulated date of Completion considering the effect of extra work (extra time to be calculated on prorata basis only as cost of extra work x stipulated period/tendered cost, shall be considered.)</p> <p>Llo : Minimum daily wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as on the last stipulated date of receipt of tender including extension, if any.</p> <p>(vii) The following principles will be followed while working out the compensation as per sub-para (vi) above.</p> <p>(a) The minimum wage of an unskilled male mazdoor mentioned in sub-para (vi) above shall be the higher of the wage notified by Government of India, Ministry of Labour and that notified by the local administration both relevant to the place of work and the period of reckoning.</p> <p>(b) The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials is paid under this clause. If such revision of minimum wages takes place during any such quarterly intervals, the escalation compensation shall be payable at revised rates only for work done in subsequent quarters;</p> <p>(c) Irrespective of variations in minimum wages of any category of labour, for the purpose of this clause, the variation in the rate for an unskilled adult male mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.</p> <p>(viii) In the event the price of materials and/or wages of labour required for execution of the work decrease/s, there shall be a downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard the formula herein before stated under this additional Clause 17.4 shall mutatis mutandis apply, provided that:</p> <p>(a) no such adjustment for the decrease in the price of materials and/or wages of labour aforementioned would be made in case of contracts in which the stipulated period of completion of the work is equal to or less than the time as specified in PCC.</p> <p>(b) the Engineer-in-Charge shall otherwise be entitled to lay down the procedure by which the provision of this sub-</p>
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		<p>clause shall be implemented from time to time and the decision of the Engineer-in-Charge in this behalf shall be final and binding on the contractor.</p> <p>(ix) Provided always that:-</p> <p>(a) Where provisions of additional Clause 17.4 are applicable, provisions of additional Clause 17.2 will not be applicable but provisions of additional Clause 17.3 will be applicable.</p> <p>(b) Where provisions of additional Clause 17.4 are not applicable, provisions of additional Clause 17.2 and 17.3 will become applicable.</p> <p><b>Note:</b> Updated stipulated date of completion (period of completion plus extra time for extra work for compensation under additional Clause 17.2, 17.3 and 17.4, the factor of 1.25 taken into account for calculating the extra time under additional Clause 30.24 (ii) for extra time shall not be considered while calculating the updated stipulated date of completion for this purpose in additional Clause 17.2, 17.3 and 17.4.</p>
19.2 Additional Clause	Payment of Final Bill	<p>The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge 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 hereinunder, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Asstt. Engineer, complete with account of dismantled materials.</p> <p>(i) If the Tendered value of work is up to Rs. 45 lac : 2 months</p> <p>(ii) If the Tendered value of work is more than Rs.45 lac and up to Rs. 2.5 Crore : 3 months</p> <p>(iii) If the Tendered value of work exceeds Rs. 2.5 Crore : 6 months</p> <p>In case of delay in payment of final bills after prescribed time</p>

		limit, a simple interest @ 7.5% per annum shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis, provided the final bill submitted by the contractor found to be in order.
19.3 Additional Clause	Payment of Contractor's Bills to Banks	<p>Payments due to the contractor may, if so desired by him, be made to his bank, registered financial, co-operative or thrift societies or recognized financial institutions instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank; registered financial, co-operative or thrift societies or recognized financial institutions to receive payments and (2) his own acceptance of the correctness of the amount made out</p> <p>as being due to him by authority or his signature on the bill or other claim preferred against authority before settlement by the Engineer-in-Charge of the account or claim by payment to the bank, registered financial, co-operative or thrift societies or recognized financial institutions. While the receipt given by such banks; registered financial, co-operative 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, co-operative or thrift societies or recognized financial institutions.</p> <p>Nothing herein contained shall operate to create in favour of the bank; registered financial, co-operative or thrift societies or recognized financial institutions any rights or equities vis a vis the authority.</p>
22.2 Additional Para		<p>The rates for specific material and goods falling under Excise Exemption as per Central Excise Notification no. 12/2012-CE dated 17-03-2012 issued &amp; updated by Government of India time to time shall be without any excise duty. Excise Exemption on the materials like pipes, valves, specials, flow meter, instrument, etc. shall be availed under this project. Contractor shall be responsible to get the Exemption and liaison with concerned department. However, Authority shall assist Contractor to obtain certification towards Exemption of Excise Duties. The responsibility for obtaining any such exemptions from the Competent Authority will remain with the Contractor and the Employer shall not in any way be responsible for admissibility of the claims or eligibility of the</p>

		Contractor.
22.6 Additional Clause		The tendered rates shall be inclusive of all taxes, rates and cesses and shall also be inclusive of the tax leviable in respect of work contract under the relevant provision of the Govt.
22.6 Additional Clause	A Levy/Taxes payable by Contractor	<p>(i) Sales Tax/VAT (except Service Tax), Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the contractor and Authority shall not entertain any claim whatsoever in this respect. However, in respect of service tax, same shall be paid by the contractor to the concerned department on demand and it will be reimbursed to him by the Engineer-in-Charge after satisfying that it has been actually and genuinely paid by the contractor.</p> <p>(ii) The contractor shall deposit royalty and obtain necessary permit for supply of the bajri, stone, kankar, etc. from local authorities.</p> <p>If pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the Authority and does not any time become payable by the contractor to the State Authority, 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 Authority and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor.</p>
22.7 Additional Clause	<b>Conditions for reimbursement of levy/taxes if levied after receipt of tenders</b>	(i) All tendered rates shall be inclusive of all taxes and levies (except Service Tax) payable under respective statutes. However, if any further tax or levy or cess is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/levies/cess, the contractor shall be reimbursed the amount so paid, provided such

		<p>payments, if any, is not, in the opinion of the Authority (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.</p> <p>(ii) 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 a duly authorized representative of the Authority and/or the Engineer-in-Charge and shall also furnish such other information/document as the Engineer-in-Charge may require from time to time.</p> <p>(iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.</p>
<p>25.2.7 Additional Clause</p>	<p>Employment of Technical Staff and employees</p>	<p>A. Contractors Superintendence, Supervision, Technical Staff &amp; Employees</p> <p>(i) The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.</p> <p>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(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work. Minimum requirement of such technical representative(s) and their qualifications and experience shall not be lower than specified in PCC. The Engineer-in-Charge shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) 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(s) according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s) shall be appointed by the contractor soon after receipt of the approval from Engineer-in-charge and shall be available at site before start of work.</p>

		<p>All the provisions applicable to the principal technical representative under the Clause will also be applicable to other technical representative(s) The principal technical representative and other technical representative(s) shall be present at the site of work for supervision at all times when any construction activity is in progress and also present himself/themselves, as required, to the Engineer-in-Charge and/or his designated representative to take instructions. Instructions given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and other technical representative(s) shall be actually available at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Engineer-in-Charge and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative(s) in the site order book and shall affix his/their signature in token of noting down the instructions and in token of acceptance of measurements/ checked measurements/ test checked measurements. The representative(s) shall not look after any other work. Substitutes, duly approved by Engineer-in-Charge of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two days.</p> <p>If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (nonrefundable) shall be effected from the contractor as specified in PCC and the decision of the Engineer-In-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint suitable technical Principal technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days</p>
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		<p>without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are 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(s) specified in PCC alongwith every on account bill final bill and shall produce evidence if at any time so required by the Engineer-in-Charge.</p> <p>(ii)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.</p> <p>The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.</p>
	No Authority's Engineer to work as Contractor within one year of retirement	B. No engineer employed in engineering or administrative duties in an engineering department of the Authority shall work as a contractor or employee of a contractor for a period of one year after his retirement from Authority's service without the previous permission of Authority in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Authority as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.
26.2.1 Additional Clause	Time and Extension for Delay	The time allowed for execution of the Works as specified in the PCC or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in PCC or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Authority shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the performance guarantee absolutely.

		<p><b>26.2.2</b> As soon as possible after the Contract is concluded, the Contractor shall submit a Time and Progress Chart for each mile stone and get it approved by the Authority. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones given in PCC.</p> <p>a. Project Management shall be done by using project management software for works costing more than Rs. 5 Crore.</p> <p>b. The project management shall be done using M.S. Project software for works costing more than Rs. 5 Crore and up to Rs. 20 Crore.</p> <p>For works costing more than Rs. 20 Crore, project management shall be done using Primavera Software.</p> <p><b>PROGRAMME CHART</b></p> <p>(i) The Contractor shall prepare an integrated programme chart in MS Project/Primavera software for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the programme within the stipulated period or earlier and submit the same for approval to the Engineer-in- Charge within ten days of award of the contract. A recovery of Rs. 2500/- (for works costing upto Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the above programme.</p> <p>(ii) The programme chart should include the following:</p> <p>a. Descriptive note explaining sequence of the various activities.</p> <p>b. Network (PERT / CPM / BAR CHART).</p> <p>c. Programme for procurement of materials by the contractor.</p> <p>Programme of procurement of machinery / equipments having adequate capacity, commensurate with the</p>
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		<p>quantum of work to be done within the stipulated period, by the contractor. In addition to above, to achieve the progress of Work as per programme, the contractor must bring at site adequate shuttering material required for cement concrete and R.C.C. works etc. for three floors within one month from the date of start of work till the completion of RCC work as per requirement of work. The contractor shall submit shuttering schedule adequate to complete structure work within laid down physical milestone.</p> <p>(iii) If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved programme referred above or after rescheduling of milestones, the contractor shall produce a revised programme within 7 (seven) days, showing the modifications to the approved programme to ensure timely completion of the work. The modified schedule of programme shall be approved by the Engineer in Charge. A recovery of Rs. 2500/- (for works costing upto Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the modified programme.</p> <p>(iv) The submission for approval by the Engineer-in-Charge of such programme or such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.</p> <p>(v) The contractor shall submit the progress report using MS Project/Primavira software with base line programme referred above for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery Rs. 2500/ - (for works costing upto Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the monthly progress report.</p> <p><b>26.2.3</b> If the work(s) be delayed by:-</p> <ul style="list-style-type: none"> <li>(i) force majeure, or</li> <li>(ii) abnormally bad weather, or</li> <li>(iii) serious loss or damage by fire, or</li> <li>(iv) civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or</li> <li>(v) delay on the part of other contractors or tradesmen</li> </ul>
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		<p>engaged by Engineer-in- Charge in executing work not forming part of the Contract, or</p> <p>(vi) non-availability of stores, which are the responsibility of Authority to supply or</p> <p>(vii) non-availability or break down of tools and Plant to be supplied or supplied by Authority or</p> <p>(viii) any other cause which, in the absolute discretion of the Engineer-in-Charge is beyond the Contractor's control.</p> <p>then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the authority as indicated in PCC but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.</p> <p><b>26.2.4</b> Request for rescheduling of Mile stones 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 on the prescribed form to the authority as indicated in PCC. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.</p> <p><b>26.2.5</b> In any such case the authority as indicated in PCC may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in PCC in writing, within 3 months or 4 weeks of the date of receipt of such request respectively. Non application by the contractor for extension of time/ rescheduling of the milestones shall not be a bar for giving a fair and reasonable extension/ rescheduling of the milestones by the authority as indicated in PCC and this shall be binding on the contractor.</p>
26.2.6 Additional Clause		<p>In case, the work cannot be started due to reasons not within the control of the contractor within 1/8th of the stipulated time for completion of work or one month whichever is higher, either party may close the contract. In case contractor wants to close the contract, he shall give notice to the authority stating the failure on the part of authority. In such eventuality, the Performance Guarantee of the contractor shall be refunded within following time limits :</p> <p>(i) If the Tendered value of work is up to Rs. 45 lac: 15</p>

		<p>days.</p> <p>(ii) If the Tendered value of work is more than Rs. 45 lac and up to Rs. 2.5 Crore: 21 days.</p> <p>(iii) If the Tendered value of work exceeds Rs. 2.5 Crore: 30 days.</p> <p>If Performance Guarantee is not released within prescribed time limit, then a simple interest @ 0.25% per month shall be payable on Performance Guarantee amount to the contractor from the date of expiry of prescribed time limit.</p> <p>A compensation for such eventuality, on account of damages etc. shall be payable @ 0.25% of tendered amount subject to maximum limit of Rs. 10 lacs.</p>
26.2.7 Additional Clause	Contractor liable to pay Compensation even if action not taken under Additional Clause 56	<p>In any case in which any of the powers conferred upon the Engineer-in-Charge by additional Clause-56 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 work/or 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, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the</p>

		amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.
26.5.1 Additional Clause		<p>Programme to be furnished</p> <ol style="list-style-type: none"> <li>i. The Contractor shall submit a detailed programme unit wise for execution of various Works allotted to him so as to complete the same within the time schedule and adhere to the same. The Contractor shall submit at least 5 copies of PERT/BAR chart, for completion of the Work as per time schedule specified under this contract.</li> <li>ii. The order of sequence of execution of the Work and general conditions of works shall be subjected to the approval and direction of the Engineer-in-Charge whose approval or direction shall however in no way relieve the Contractor from responsibility for the proper and satisfactory execution of the Work according to the terms of Contract and within stipulated period.</li> <li>iii. The Contractor shall prepare a time and progress chart with the approval of the Engineer-in-Charge prior to the commencement of the Work. The chart shall be prepared in direct relation to the time stated in the Contract for completion. It shall indicate the dates of commencement and completion of various activities or section of the Work and may be amended as necessary by agreement between the Engineer - in-Charge and the Contractor within the limitations of the time imposed in the Contract.</li> <li>iv. The Contractor shall regularly review his programme in the light of the progress actually achieved and shall submit for approval updated CPM/PERT network and bar charts at intervals to be agreed with the Engineer. If progress falls behind that needed to ensure timely completion of the various parts of the Works, the Contractor shall submit proposals for improving his methods and pace of working to the satisfaction of the Engineer and shall carry out such measures as are needed to ensure that the Works are completed on time.</li> </ol>
28.1.1 Additional Para		<p>Action where no specifications</p> <p>In the case of any class of work for which there is no such specification as is mentioned in employers requirements such work shall be carried out in accordance with the standard specifications of State Public Works Department, and in the</p>

		event of there being no specification, then in case the work shall be carried out in all respects in accordance with all instructions and requirements of the Engineer - in - Charge.
30.1.5 Additional Clause	Unfiltered water supply	<p>The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions.</p> <p>(i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge.</p> <p>(ii) The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in- Charge, unsatisfactory.</p>
30.1.6 Additional Clause	Authority's water supply, if available	<p>Water if available may be supplied to the contractor by the Authority subject to the following conditions:-</p> <p>(i) The water charges @ 1 % shall be recovered on gross amount of the work done.</p> <p>(ii) The contractor(s) shall make his/their own arrangement of water connection and laying of pipelines from existing main of source of supply.</p> <p>(iii) The Authority do not guarantee to maintain uninterrupted supply of water and it will be incumbent on the contractor(s) to make alternative arrangements for water at his/ their own cost in the event of any temporary break down in the Authority's water main so that the progress of his/their work 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.</p>
30.1.7 Additional Clause	Alternate water arrangements	<p>(i) Where there is no piped water supply arrangement and the water is taken by the contractor from the wells or hand pump constructed by the Authority, no charge shall be recovered from the contractor on that account. The contractor shall, however, draw water at such hours of the day that it does not interfere with the normal use for which the hand pumps and wells are intended. He will also be responsible for all damage and abnormal repairs arising out of his use, the cost of which shall be recoverable from him. The Engineer-in-Charge shall be the final authority to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.</p> <p>(ii) The contractor shall be allowed to construct temporary wells in Authority's land for taking water for construction purposes only after he has got permission of the Engineer-in- Charge in writing. No charges shall be recovered from the contractor on this account, but</p>

		<p>the contractor shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.</p>
30.2.4 (d) Additional Clause		<p>The contractor shall engage apprentices such as Bricks layer, Carpenters, Wireman, Plumber as well as Black Smith as recommended by the competent authority on the construction work.</p>
30.2.8 (d) Additional Clause		<p>Condition For Malaria Eradication</p> <p>(A) The antimaleria and other health measure shall be as directed by the competent authority of Health Services.</p> <p>(B) Contractor shall see that mosquitozenic conditions are not created so as to keep vector population to minimum level.</p> <p>(C) Contractor shall carry out antimaleria measures in the area as per guidelines prescribed under National Malaria Eradication Programme and as directed by the competent authority of Health Services.</p> <p>(D) In case of default in carrying out prescribed anti-malaria measure resulting in increase in Malaria incidence contractor shall be liable to pay to Government the amount spent by Government on anti-malaria measures to control the situation in addition to fine.</p> <p>(E) Relation with Public authorities The contractor shall make sufficient arrangement for draining away the sullage water as well as water coming from the bathing and washing places and shall dispose of this water in such away as not to cause any nuisance. He shall also keep the premises clean by employing sufficient number of sweepers. The contractor shall comply with all rules, regulations, bye laws and directions given from time to time by any local or public authority in connection with this work and shall pay fees or charges which are leviable on him without any extra cost to Government.</p>
30.2.24 Additional Clause		<p>Contractor's Employees:</p> <p>It is expressly understood between the Parties that the employees, other than the Authority's Assigned Employees, who are directly employed by the Contractor shall not have any employment relationship with the Authority and Contractor's performance under this Agreement does not entitle such employees to claim employment or continuation</p>

		of employment with the Authority on expiry or at any time before or after expiry of this Agreement. The Contractor should at all times assume full legal and social responsibility towards such employees as employer and shall not by its acts or omission provide any direct or indirect indication to the employees regarding their employment or chances of employment directly with the Authority.
30.23 (i) Additional Clause	Work to be Executed in Accordance with Specifications, Drawings, Orders etc.	<p>The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and 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 specified in PCC or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.</p> <p>The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including 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.</p>
30.23 (ii) Additional Clause	Deviations/ Variations      Extent and Pricing	The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for 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 and 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 and any altered, additional or substituted

		<p>work 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 main work except as hereafter provided.</p> <p>The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration shall not exceed 1.25 times of Tendered amount.</p> <p><b>Additional Clause 30.23 (ii) 1</b></p> <p>The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows :</p> <p>(i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus</p> <p>(ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.</p>
30.23 (ii) 2 Additional Clause	Deviation, Extra Items and Pricing	<p>A. For Project and original works:</p> <p>In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.</p> <p>B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:</p> <p>In the case of Extra Item(s) being the schedule items (specified in PCC), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted contract amount.</p> <p>Payment of Extra items in case of non-schedule items (Non-</p>



		DSR items) shall be made as per the prevailing market rate.
	<b>Deviation, Substituted Items, Pricing</b>	<p>A. For Project and original works:</p> <p>In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para.</p> <p>(a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).</p> <p>(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).</p> <p>B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:</p> <p>In the case of Substitute Item(s) being the schedule items (specified in PCC), these shall be paid as per the PCC.</p>
	<b>Deviation, Deviated Quantities, Pricing</b>	<p><b>A. For Project and original works:</b></p> <p>In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in PCC, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.</p>

		<p><b>Additional Clause 30.23 (ii) 3</b></p> <p>A. For Project and original works:</p> <p>The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in PCC, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.</p> <p><b>Additional Clause 30.23 (ii) 4</b></p> <p>The contractor shall send to the Engineer-in-Charge once every three months, an up to date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the competent authority may authorise consideration of such claims on merits.</p> <p><b>Additional Clause 30.23 (ii) 5</b></p> <p>For the purpose of operation of PCC, the following works shall be treated as works relating to foundation unless &amp; otherwise defined in the contract:</p> <ul style="list-style-type: none"> <li>(i) For Buildings: All works up to 1.2 metres above ground level or up to floor 1 level whichever is lower.</li> <li>(ii) For abutments, piers and well staining: All works up to 1.2 m above the bed level.</li> <li>(iii) For retaining walls, wing walls, compound walls, chimneys, overhead reservoirs/ tanks and other elevated structures: All works up to 1.2 metres above the ground level.</li> <li>(iv) For reservoirs/tanks (other than overhead reservoirs/tanks): All works up to 1.2 metres above the ground level.</li> <li>(v) For basement: All works up to 1.2 m above ground level or up to floor 1 level whichever is lower.</li> </ul>
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		<p>(vi) For Roads, all items of excavation and filling including treatment of sub base.</p> <p><b>Additional Clause 30.23 (ii) 6</b></p> <p>Any operation incidental to or necessarily has to be in contemplation of tenderer while filing. tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.</p>
30.23 (iii) Additional Clause	Foreclosure of contract due to Abandonment or Reduction in Scope of Work	<p>If at any time after acceptance of the tender, Engineer-in-charge shall decide 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 foreclosure of the whole or part of the works.</p> <p>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 work to the full extent in view of the foreclosure;</p> <p>(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.</p> <p>(ii) Authority shall have the option to 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) provided, however Authority shall be bound to take over the materials or such portions thereof as the contractor does not desire to retain. For materials taken over or to be taken over by Authority, cost of such materials as detailed by Engineer-in- Charge shall be</p>

		<p>paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the contractor.</p> <p>(iii) Reasonable compensation for transfer of T &amp; P from site to contractor's permanent stores or to his other works, whichever is less. If T &amp; P are not transported to either of the said places, no cost of transportation shall be payable.</p> <p>(iv) Reasonable compensation for repatriation of contractor's site staff and imported labour to the extent necessary.</p> <p>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.</p> <p>The reasonable amount of items on (i), (iii) and (iv) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e. total stipulated cost of the work as per accepted tender less the cost of work actually executed under the contract and less the cost of contractor's materials at site taken over by the Authority as per item (ii) above. 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 Authority from the contractor under the terms of the contract.</p> <p>A compensation for such eventuality, on account of damages etc. shall be payable @ 0.5% of cost of work remaining incomplete on date of closure i.e. total stipulated cost of the work less the cost of work actually executed under the contract shall be payable.</p>
30.23 (iv) Additional Clause	Carrying out part work at risk & cost of contractor	<p>If contractor:</p> <p>(i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or</p>

		<p>(ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.</p> <p>The Engineer- in-Charge without invoking action under additional Clause 56 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to authority, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:</p> <p>(a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or</p> <p>(b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.</p> <p>The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by authority because of action under this clause shall not exceed 10% of the tendered value of the work.</p> <p>In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the authority are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.</p>
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<p>30.23 (v) Additional Clause</p>	<p>Suspension of Work</p>	<p>(i) The contractor shall, on 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 works 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 or injury to the work already done or endanger the safety thereof for any of the following reasons:</p> <ul style="list-style-type: none"> <li>(a) on account of any default on the part of the contractor or;</li> <li>(b) for proper execution of the works or part thereof for reasons other than the default of the contractor; or</li> <li>(c) for safety of the works or part thereof.</li> </ul> <p>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</p>

		<p>Engineer-in- Charge.</p> <p>(ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:</p> <p>(a) the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;</p> <p>(b) If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as the Engineer-in-Charge may consider reasonable in respect of salaries and/or wages paid by the contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-Charge within fifteen days of the expiry of the period of 30 days.</p> <p>(iii) If the works or part thereof is suspended on the orders of the Engineer-in-Charge for more than three months at a time, except when suspension is ordered for reason (a) in subpara (i) above, the contractor may after receipt of such order serve a written notice on the Engineer-in-Charge requiring permission within fifteen days from receipt by the Engineer-in-Charge of the said notice, to proceed with the work or part thereof in regard to which progress has been suspended and if such permission is not granted within that time, the contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by Authority or where it affects whole of the works, as an abandonment of the works by Authority, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Engineer-in-Charge. In the event of the contractor treating the suspension as an abandonment of the contract by Authority, he 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 work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Engineer-in-Charge may consider reasonable, in respect of salaries</p>
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		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.
30.23 (vi) Additional Clause	Action in case Work not done as per Specifications	<p>All works 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 authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the Authority or any organization engaged by the Authority for Quality Assurance, and 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 a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.</p> <p>If it shall appear to the Engineer-in-charge or his authorized subordinates incharge of the work or to the competent authority for Quality Assurance or his subordinate officers or the officers of the organization engaged by the Authority for Quality Assurance, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or 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 within twelve months (six months in the case of work costing Rs. 10 Lac and below except road work) of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in- Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same</p>

PCC



		<p>rate as under Additional Clause 54 of the contract (for non-completion of the work in time) for this default.</p> <p>In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority specified in PCC 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 work 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 will be final and binding on the contractor.</p>
30.23 (vii) Additional Clause	Contractor to Supply Tools & Plants etc.	<p>The contractor shall provide at his own cost all materials, machinery, tools &amp; plants as specified in PCC. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.</p>
30.23 (vii)A Additional Clause	Recovery of Compensation paid to Workmen	<p>In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensation Act, 1923, Authority is obliged to pay compensation to a workman employed by the contractor, in execution of the works, Authority will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of</p>

		<p>the Authority under sub-section (2) of Section 12, of the said Act, Authority 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 Authority to the contractor whether under this contract or otherwise. Authority shall not be bound to contest any claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to Authority full security for all costs for which Authority might become liable in consequence of contesting such claim.</p>
30.23 (vii)B Additional Clause	Ensuring Payment and Amenities to Workers if Contractor fails	<p>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, Authority 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, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by Authority's Contractors, Authority 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 Authority under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Authority 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 Authority to the contractor whether under this contract or otherwise Authority 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 Authority full security for all costs for which Authority might become liable in contesting such claim.</p>
30.23 (viii) Additional Clause	Labour Laws to be complied by the Contractor	<p>The contractor shall obtain a valid licence under the Contract Labour (R&amp;A) 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.</p> <p>The contractor shall also comply with the provisions of the</p>

		<p>building and other Construction Workers (Regulation of Employment &amp; Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.</p> <p>Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.</p>
30.23 (viii) A Additional Clause		No labour below the age of fourteen years shall be employed on the work.
30.23 (viii) B Additional Clause	Payment of Wages	<p>Payment of wages:</p> <p>(i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as specified in PCC 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.</p> <p>(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.</p> <p>(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 Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorizedly 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.</p> <p>(iv) (a) 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-fulfilment 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.</p>

		<p>(b) Under the provision 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.</p> <p>(v) 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 Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made thereunder from time to time.</p> <p>(vi) The contractor shall indemnify and keep indemnified Authority against payments to be made under and for the observance of the laws aforesaid without prejudice to his right to claim indemnity from his sub-contractors.</p> <p>(vii) 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.</p>
30.23 (viii)c Additional Clause		<p>In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as prevalent 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 a penalty of Rs.200/- for each default 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.</p>
30.24 Additional Clause		<p>All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.</p>
30.25 Additional Clause	Action where no Specifications are specified	<p>In the case of any class of work for which there is no such specifications as referred to in additional Clause 30.23 (i), such work shall be carried out in accordance with the Bureau</p>

		<p>of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.</p>
31.12 Additional Para	Inspection / Checking of Works	<p>This work is open to inspection and checking by a 3rd party agency fixed by Authority/vigilance wing of Authority or by any other statutory authority of the Govt. The work can be checked by the agencies as mentioned above simultaneously, subsequently, jointly or independently and the contractor is required to cooperate with the agencies and shall be responsible for removing of all defects / deficiencies pointed out at his own cost.</p> <p>The inspection of one agency / authority / team shall not absolve the contractor of his own responsibility on 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, if it is within acceptable limit but not reducing soundness and strength of the work, shall be recovered from the contractor's payments.</p> <p>If 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. Authority officers will also make visit to the manufacturing unit for which the contractor will make arrangement free of cost for the visit of the officials including boarding, lodging, transportation etc.</p> <p>The Contractor shall inform the Engineer-in-charge in advance for the production of material and fabrication for the factory inspection. The Contractor shall arrange at his own cost inspection of works by competent authority of State and seek clearance &amp; submit report for energisation &amp; commissioning.</p>
34.3 Additional Clause		<p>As built drawing of pipeline</p> <p>The Contractor shall maintain a detailed as working drawing of pipeline work during construction work and after commissioning the pipeline the contractor need to submit</p>

		the final as built drawing made based on triangulation method for pipeline and special (such as valve location, bend tee etc.) and submitted in soft copy (autocad /GIS files) and hard copy (printout) to the Engineer in charge for record.
	Completion Certificate and Completion Plans	Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the 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.
34.4 Additional Clause	Contractor to Keep Site Clean	When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done: without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to

		<p>comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work 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.</p>
34.5 Additional Clause	Completion Plans to be Submitted by the Contractor	<p>The contractor shall submit completion plan as required vide General Specifications for Electrical works as applicable within thirty days of the completion of the work.</p> <p>In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.15,000 (Rs. Fifteen thousand only) as may be fixed by the concerned competent Engineer and in this respect the decision of the competent officer of authority shall be final and binding on the contractor.</p> <p>The contractor shall submit completion plan for water, sewerage and drainage line plan within thirty days of the completion of the work.</p> <p>In case, the contractor fails to submit the completion plan as aforesaid, the department will get it done through other agency at his cost and actual expenses incurred plus Rs. 15,000/- for the same shall be recovered from the contractor.</p>
42.6 Additional Clause	Insurance	<p>Transit cum Storage Insurance for E&amp;M and SCADA Equipments For E&amp;M and SCADA equipments the Contractor shall include transit cum storage cum erection insurance right from the dispatch till handed over to Authority after satisfactory commissioning/ working. All insurance which the Contractor is required to enter into, under the Contract shall be with Nationalized Insurance Cos. and in terms approved by the Engineer. The Contractor shall produce the policies of insurance and the receipts of payments. The Authority shall not be liable for, in respect of any damages, losses and compensation payable as per the law or in consequence of any accident or injury to any person in the employment of the Contractor. Insurance of complete plant excluding cost of civil works will be arranged by the contractor in the name of both the Authority &amp; the contractor. However, the administrative assistance will be provided to the contractor for filling up the forms for replacement value of the station.</p>

		All the charges for obtaining insurance policy for labour & E&M and SCADA equipments etc. are to be borne by the contractor at his own cost. Nothing extra shall be payable.
46.7 Additional Clause	Compensation during warlike situations	<p>The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation upto the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the competent officers of the authority. The contractor shall be paid for the damages/destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.</p> <p>Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the A.R.P. Officers or the Engineer-in-Charge (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.</p> <p>In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered</p>



		reasonable by the Authority.
47.2.9 Additional Clause		<p>Additional Item / Extra Item</p> <p>For extra /addl. Items of works executed at other than project site (which includes present lines for maintenance), the payment shall be made as per the following procedures.</p> <ol style="list-style-type: none"> <li>1. DSR based items: As per Current DSR of the Deptt specified in PCC</li> <li>2. Non schedule items based on Market Rates: Market rates to be considered for analyzing (as per Authority) such items plus 10% CP</li> </ol>
50.1 Additional Para		If the project is shelved by the Authority before commencement, the contractor will have no right to claim any losses or compensation due to the same and for whatsoever reasons.
50.2.1 (d) Additional Clause	Termination of Contract on death of contractor	Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Authority shall have the option of terminating the contract without compensation to the contractor.
52.4 Additional Clause		All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of Authority without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.
53.4.1 Additional Clause		All disputes and differences of any kind whatever arising out of or in connection with the contract or the carrying out of the work (whether during progress of the works or after their completion and whether before or after the determination, abandonment or breach of the contract ) shall be referred to and settled by Authorised person of the Authority .But if the contractor is dissatisfied with the decision of the Authorised person of the Authority or with holding by the Authorised person of the Authority of any certificate of the Authorised person of the Authority contractor may within 60 days after receiving notice of such decision give a written notice to the other party requiring that / may claim to entitled then and in any such case the contractor such matters in disputes be referred to in appeal before a Committee as mentioned below. Such written notice shall specify the manner which are in disputes and such disputes or difference of which such notice has been given and no other shall be and is hereby referred to Committee consisting of the members specified in PCC, the decision taken by the committee will be final as amicable settlement.

		<p>Such reference except as to the withholding of any certificate to which the contractor to be entitled shall not be opened or entered upon until after the completion or alleged completion of the works or until after the practical cessation of the works arising from any cause unless with the written consent of the Authorised person of the Authority. Provided always that the Authority shall not withhold the payment of an interim certificate nor the contractor in any way delay the carrying out of the works by reason of any such matters, question or dispute being referred to the Committee but shall, proceed with the work with all the diligence and shall, until the decision of the Committee abide by the decision of the Authorised person of the Authority and no award of the Committee shall relieve the contractor of his obligations to adhere strictly to Authorised person of the Authority instructions with regard to the actual carrying out of the works. The Owner and the contractor hereby also agree that the said reference to the Committee under this clause shall be a condition precedent to any right of action under the Contract.</p>
<p>54 Additional Clause</p>	<p>Compensation for Delay</p>	<p>If the contractor fails to maintain the required progress in terms of additional Clause 50.6 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Authority on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in PCC (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in additional Clause 50.6 or that the work remains incomplete.</p> <p>This will also apply to items or group of items for which a separate period of completion has been specified.</p> <p>(i) Compensation for delay of work @ 1.5 % per month of delay to be computed on per day basis</p> <p>Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of</p>

		<p>completion is originally given.</p> <p>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 Authority. In case, the contractor does not achieve a particular milestone specified in PCC, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of Extension of Time. With-holding of this amount on failure to achieve a milestone, shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.</p>
55 Additional Clause	Incentive for early completion	<p>In case, the contractor completes the work ahead of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work X stipulated period/tendered cost), a bonus @ 1% (one per cent) of the tendered value 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 tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of work. Provided always that provision of the additional clause 55 shall be applicable only when so provided in PCC.</p>
56 Additional Clause	When Contract can be Determined	<p>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 date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:</p> <p>(a) If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or unworkman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.</p> <p>(b) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to</p>

		<p>proceed with the work 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 work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.</p> <p>(c) If the contractor fails to complete the work within the stipulated date or items of work 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.</p> <p>(d) If the contractor 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.</p> <p>(e) If the contractor shall offer or give or agree to give to any person in Authority's 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 Authority.</p> <p>(f) If the contractor shall enter into a contract with Authority in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge.</p> <p>(g) If the contractor had secured the contract with Authority as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.</p> <p>(h) If the contractor 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.</p>
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<p>56 Additional Clause</p>	<p>Release of Security deposit after labour clearance</p>	<p>Release of Security Deposit of the work shall not be refunded till the contractor produces a clearance deposit after labour certificate from the Labour Officer. As soon as the work is virtually complete the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released if otherwise due.</p>
<p>57 Additional Clause</p>	<p>Contribution of EPF and ESI</p>	<p>The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis.</p>

## **APPENDIX A - General Conditions of Dispute Board Agreement**

### **1 Definitions**

Each "Dispute Board Agreement" is a tripartite agreement by and between:

- (a) the "Employer";
- (b) the "Contractor"; and
- (c) the "Member" who is defined in the Dispute Board Agreement as being:
  - (i) The sole member of the "DB" and, where this is the case, all references to the "Other Members" do not apply, or
  - (ii) One of the three persons who are jointly called the "DB" (or "dispute board") and, where this is the case, the other two persons are called the "Other Members".

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

### **2 General Provisions**

Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:

- (a) the Commencement Date defined in the Contract,
- (b) When the Employer, the Contractor and the Member have each signed the Dispute Board Agreement, or
- (c) When the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Board Agreement shall terminate upon the expiry of this period.

### **3 Warranties**

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:

- (a) experienced in the work which the Contractor is to carry out under the Contract,
- (b) experienced in the interpretation of contract documentation, and
- (c) fluent in the language for communications defined in the Contract.

#### **4 General Obligations of the Member**

The Member shall:

- (a) have no interest financial or otherwise in the Employer, the Contractor or the Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;
- (b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;
- (c) have disclosed in writing to the Employer, the Contractor and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;
- (d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members (if any);
- (e) comply with the annexed procedural rules and with GCC Sub-Clause 45.3;
- (f) not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;
- (g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;
- (h) ensure his/her availability for all site visits and hearings as are necessary;
- (i) become conversant with the Contract and with the progress of the Facilities (and of any other parts of the project of which the Contract forms part) by studying all documents received which shall be maintained in a current working file;
- (j) treat the details of the Contract and all the DB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members (if any); and
- (k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

#### **5 General Obligations of the Employer and the Contractor**

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DB's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel respectively.



The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any):

- (a) be appointed as an arbitrator in any arbitration under the Contract;
- (b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or
- (c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the DB under GCC Sub-Clause 45.3, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

## **6 Payment**

The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:

- (a) a retainer fee per calendar month, which shall be considered as payment in full for:
  - (i) being available on 28 days' notice for all site visits and hearings;
  - (ii) becoming and remaining conversant with all project developments and maintaining relevant files;
  - (iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and
  - (iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

- (b) a daily fee which shall be considered as payment in full for:
  - (i) each day or part of a day up to a maximum of two days' travel time in each direction for the journey between the Member's home and the site, or another location of a meeting with the Other Members (if any);
  - (ii) each working day on site visits, hearings or preparing decisions; and

- (iii) each day spent reading submissions in preparation for a hearing.
- (c) all reasonable expenses including necessary travel expenses incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause;
- (d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.

The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee the appointing entity or official named in the SCC shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DB; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in accordance with GCC Sub-Clause 12.3.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

## **7 Termination**

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

#### **8 Default of the Member**

If the Member fails to comply with any of his obligations under Clause 4 concerning his impartiality or independence in relation to the Employer or the Contractor, he/she shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

#### **9 Disputes**

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.

### **Annex - DISPUTE BOARD GUIDELINES**

1. Unless otherwise agreed by the Employer and the Contractor, the DB shall visit the site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor and the DB, the period between consecutive visits shall not be less than 70days, except as required to convene a hearing as described below.
2. The timing of and agenda for each site visit shall be as agreed jointly by the DB, the Employer and the Contractor, or in the absence of agreement, shall be decided by the DB. The purpose of site visits is to enable the DB to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to prevent potential problems or claims from becoming disputes.
3. Site visits shall be attended by the Employer, the Contractor and the Engineer and shall be co-ordinated by the Employer in co-operation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each site visit and before leaving the site, the DB shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.
4. The Employer and the Contractor shall furnish to the DB one copy of all documents which the DB may request, including Contract documents, progress reports, variation instructions, certificates and other documents pertinent to the performance of the Contract. All communications between the DB and the Employer or the Contractor shall be copied to the other Party. If the DB comprises three persons, the Employer and the Contractor shall send copies of these requested documents and these communications to each of these persons.
5. If any dispute is referred to the DB in accordance with GCC Sub-Clause 45.3, the DB shall proceed in accordance with GCC Sub-Clause 45.3 and these Guidelines. Subject to the time allowed to give notice of a decision and other relevant factors, the DB shall:
  - (a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case, and
  - (b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.
6. The DB may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.
7. Except as otherwise agreed in writing by the Employer and the Contractor, the DB shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor and the Engineer, and to proceed in the absence of any party who the DB is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.
8. The Employer and the Contractor empower the DB, among other things, to:
  - (a) establish the procedure to be applied in deciding a dispute,

- (b) decide upon the DB's own jurisdiction, and as to the scope of any dispute referred to it,
  - (c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Guidelines,
  - (d) take the initiative in ascertaining the facts and matters required for a decision,
  - (e) make use of its own specialist knowledge, if any,
  - (f) decide upon the payment of financing charges in accordance with the Contract,
  - (g) decide upon any provisional relief such as interim or conservatory measures,
  - (h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute, and
  - (i) appoint, should the DB so consider necessary and the Parties agree, a suitable expert at the cost of the Parties to give advice on a specific matter relevant to the dispute.
9. The DB shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the DB shall make and give its decision in accordance with GCC Sub-Clause 45.3, or as otherwise agreed by the Employer and the Contractor in writing. If the DB comprises three persons:
- (a) it shall convene in private after a hearing, in order to have discussions and prepare its decision;
  - (b) it shall endeavour to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and
  - (c) if a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision, unless:
    - (i) either the Employer or the Contractor does not agree that they do so, or
    - (ii) the absent Member is the chairman and he/she instructs the other Members to not make a decision.

# **Section 8**

## **Particular Conditions of Contract**

### Section 8 - Particular Conditions of Contract

The following Particular Conditions of Contract (PCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

#### Part A – Contract Data

Ref of GCC	Data to be Given	Data
1.	Design & Construction Period	24 months from Contract commencement date or Start date
1	Contract commencement date	Date of Work Order unless specified in Work Order
1.	Dispute Board	As specified by Authority
1.	Employer	New Delhi Municipal Council, New Delhi
1.	Engineer	Executive Engineer (W/S) / Projects, New Delhi Municipal Council, Room No. 231, S.B.S. Place, Gole Market, New Delhi – 110 001, INDIA
1.	Contract completion date	As per Section 6
	Start date	Date Specified in Work Order or Notice to proceed or contract commencement date
1.	Site	Selected operational zones BPS /UGRs /DMAs Command Area given in Employers Requirement Section 6
1.	Works& Services	i)Design & Construction works ii) Operation and Maintenance works and all other works specified in scope of services of Section 6:Employers Requirements
3.1	Documents Forming the Contract	Is replaced herewith as follows; The documents forming the contract shall be interpreted in the following order of priority: (a) Agreement (b) Letter of Acceptance (c) Price Bid (d) Particular Conditions of Contract (PCC) (e) General Conditions of Contract (GCC) (f) Employer’s Requirements (g) Bill of Quantities (h) Any other document listed in the PCC as forming part of the Contract
5.1	Law and Language & Other Provisions	Union of India, ..... In case of conflict, the Laws of Union of India will prevail.
5.2	language for communication	English

8.1(a)	Design & Construction Phase	24 months from the date of commencement
8.1 (a)	O&M for Sectional Completion Work	From Initial take Over date to Final take Over date
8.1 (a)	Initial Take Over date	Commencement date for O&M after sectional completion of Construction Works of a DMA or Sub DMA before Final takeover Date
8.1 (b)	O&M Phase	Maximum 60 months (From Final take over date till Contract completion date)
8.1 (b)	Final take Over date	Commencement date for O&M Phase after completion of construction period of 24 months
8.1	Service Levels	Service Level as Per Employers requirement 1. Water Loss reduction 2. Continuous Pressurized Water supply 3. Resolving Customer complaint for NDMC 4. Water Quality (Residual Chlorine)
9.1	Time for Commencement of works and services	Contract Commencement date
9.1	Time for Completion works and services	84 months from contract commencement date
11.3	Rights of access for Contractor	On or before commencement date
11.6	Minimum Supply of Bulk Water	Gross supply at 150 lpcd as per demand assessment of respective water supply zone + Non Domestic demand
13.1 (a) (i)	Terms of Payment for Construction Works	As Per Schedule 05- Payment Terms
13.1 (a)(ii)	Terms Of Payment for DMA Establishment	As Per Schedule 05- Payment Terms
13.1 (a) (iii)	Terms Of Payment for O&M for Sectional completion certificate	As Per Schedule 05- Payment Terms
13.1 (b) (i)	Terms of Payment for O&M Service Fixed Fees	As Per Schedule 05- Payment Terms
13.1 (b) (ii)	Terms of Payment for O&M Service Performance fees	As Per Schedule 05- Payment Terms
13.3	Rate of Interest	0%
13.8	Currencies for Payments to Contractor	INR (Indian Rupees)
13.12	Method of Payment	Cheque or Electronic Transfer
Additional clause 14.3.5	Clause applicable (14.3.5 or 14.3.6)	..... .....
16.1	Advance Payment to Contractor	0% of contract price



	against BG		
16.3	Advance Payment repaid date	0 months from contract commencement date	
Additional clause 16.5 (ii)	Whether clause 16.5(ii) shall be applicable.	Yes / No	
17.1	Price Adjustment	As specified in additional clause 17.4 of section 7 GCC	
17.2	Labour component of the work executed during the period under consideration.	5%	
Additional clause 17.3	Increases / Decreases in the price of materials beyond the base price(s)	Materials covered under this clause	Nearest Material for which all India wholesale price index is to be followed
		1. ....	.....
		2. ....	.....
		3. ....	.....
Additional clause 17.3	Price index of the nearest similar material	Material	Price index
	Cl <sub>0</sub> – Price index for cement steel reinforcement bars structural steel and POL as issued by the authority	Material	Price index
		Cement	.....
		Steel reinforcement bars	.....
		Structural steel	.....
		POL	.....
	CI – Price index for cement, steel reinforcement bars, structural steel and POL as issued by the authority for the period under consideration.	Material	Price index
		Cement	.....
		Steel reinforcement bars	.....
		Structural steel	.....
		POL	.....
Additional clause 17.4	Clause 17.4 to be applicable in contracts with stipulated period of completion exceeding the period shown in the next column	..... months	
Additional	(iii) Conditions of contract	.....	

clause 17.4	attached to the tender papers																																			
18.1	% to be retained from Contractor for Design & Construction Works and O&M Services	The retention is fixed at 5%																																		
18.4	% to be retained from Contractor for DMA Establishment works and Pipe Replacement	The retention is fixed at 5%																																		
21.2.1	Advance Payment Security amount to be paid by Contractor	The advance payment security is the same as the advance payment amount. i.e. pp 0% of contract price.																																		
21.3.1	Security amount for due performance of the contract	The performance security is 10% of the contract price																																		
21.3.2	Format of security to be submitted by Contractor	FDR of Nationalised Bank																																		
Additional clause 25.2.7(i)	Requirement of Technical representatives and recovery rate  The form of certificate of employment of Technical representatives	<table border="1"> <thead> <tr> <th rowspan="2">Sr.no</th> <th rowspan="2">Minimum qualification of Tech. Representative</th> <th rowspan="2">Discipline</th> <th rowspan="2">Designation (Principal Tech. / Tech representative)</th> <th rowspan="2">Mini. Experience</th> <th rowspan="2">Number</th> <th colspan="2">Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)</th> </tr> <tr> <th>Figure</th> <th>Words</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Sr.no	Minimum qualification of Tech. Representative	Discipline	Designation (Principal Tech. / Tech representative)	Mini. Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)		Figure	Words	1.								2.															
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Figure	Words																																			
1.																																				
2.																																				
<p>Assistant Engineers retired from Government Services that are holding Diploma will be treated at par with Graduate Engineer.</p> <p>As prescribed by Engineer in-Charge</p>																																				
26.1	Penalty for Contractor for failing to provide key-personnel	<p>Non providing the Key-Personnel expert resources as per Section 6 : Employers Requirement shall result into penalty upto 1% of Annual O &amp; M (performance ) fees per month&amp; DMA establishment.</p> <p>The total penalty shall not exceed 10% of fees payable for the corresponding period.</p>																																		
Additional clause 26.2.1	Number of days from the date of issue of letter of acceptance for reckoning date of start	..... Days.																																		
Additional Clause 26.2.2	Mile stone(s) as per table.	Table of Mile stone(s)																																		
		<table border="1"> <thead> <tr> <th>Sr. no</th> <th>Description of Milestone (Physical)</th> <th>Time Allowed in days (From date of start)</th> <th>Amount to be withheld in case of non achievement of milestone</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3.</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Sr. no	Description of Milestone (Physical)	Time Allowed in days (From date of start)	Amount to be withheld in case of non achievement of milestone	1.				2.				3.																					
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Additional clause 26.2.3	Notice to be given to the authority	Authority to whom notice to be given Engineer in charge
Additional clause 26.2.4	Request for re-scheduling of milestones to be made to authority.	Name of authority Engineer in charge
26.2.5	Extension of time or rescheduling of milestone communicating authority	Competent Authority
27.1	Subcontracting activities	The Contractor may Sub Contract : 1 ..... 2 ..... 3 ..... 4 ..... 5 ..... . . . . .
27.2	Works and services which are small in nature for sub-contracting	None
30.2.2	Penalty for not removing the Staff of Contractor within 15 days after receipt of employer's written request	as per GCC 26.1 as above
30.2.6	Working hours and locally recognized days of rests	--
30.2.6 (h)	Specific works to be carried out on Working hours and locally recognized days of rests are;	--
30.2.11	Provision of Supply of foodstuff at reasonable prices for the contractor's personnel	--
Additional clause 30.23 (i)	Specifications to be followed for execution of work	.....
Additional clause 30.23 (ii)	30.23(ii) 2 and 30.23(ii) 3 - Deviation limit beyond which clauses 30.23(ii) 2 & 30.23(ii) 3 shall apply for building works	.....
	30.23(ii) 5 - Deviation limit	.....

	beyond which clauses 30.23(ii) 2, 30.23(ii) 3 shall apply for foundation work	
Additional clause 30.23(ii) 2	(B) Deviation extra items and pricing	Schedule item of schedule of rate of .....
Additional clause 30.23(ii) 2	(B) Deviation substituted items pricing For maintenance works including upgradation etc.	Limit of contract items.....
Additional clause 30.23(vi)	Competent authority for deciding reduced rates	.....
Additional clause 30.23(vii)	Machinery , tools and plants to be deployed by the contractor	List of mandatory machinery, tools and plants to be deployed by the contractor at site. 1..... 2. .... 3. .... 4. .... 5. .... 6. ....
Additional clause 30.23(viii) B	Fair wages	Wages not less than fair wages as defined in .....
31.14	Third Party Agencies	-----
32.2	Design and Construction Period	-----
33.2	Works and services for separate time for completion provided are;	--
34.1	As Built drawings and manuals to be provided by Contractor on	The as-built drawings will be submitted 14 days after the completion of the respective works. The Manuals at the end of the Water Loss Reduction Phase
34.2	Penalty for not providing the as Built drawings and manuals by Contractor	5% of the value of the works for which the as-built drawing applies. (note this will be a penalty not a simple withholding)
35.2	Maximum amount of % Contract Price of Liquidated damages to be recovered from Contractor for not completing the Works and Services or any part thereof within the Time for Completion or any extension thereof.	Liquidated damages for delay of overall contract completion are 0.05% per day. The maximum amount of liquidated damages for such delay is 10% of the Contract Price
36.1	Completion Time Guarantee by Contractor for works and services ( or a part for which a separate time for completion is	Design & Contraction Period – ..... Months O&M Period – ..... months from the date of commencement of contract

	specified)	
36.2 (b)	Liquidated damages amount to be paid by Contractor, if the minimum number of DMAs established per quarter are not met	For DMA Establishment Works, the liquidated damages are 10% of the lump sum due to the Contractor for the number of DMAs whose establishment is behind schedule; for every month of delay.
36.3 (b)	Liquidated damages amount to be paid by Contractor, if for reason attribute to the contractor, construction work is not completed within the design& construction period	For the construction works the liquidate damage are 10% of value of balance work is behind the schedule for every month of day.
36.4 (b)	Liquidated damages amount to be paid by Contractor, if performance levels in the DMAs deteriorated beyond the maximum deduction specified in Schedule 5 & 7 of PCC	Additional 10% as Liquidated Damages over and above fees deduction as per Schedule 5 & 7 for the period under consideration.
36.6	Limitation of liability for the liquidated damages payment under clause 36.2 & 36.3 to the Employer, at the end of the Design & Construction period	10% of Gross Annual O&M fees over & above all deducting as per Schedule 5 & 7.
36.7	Limitation of liability for the liquidated damages payment under clause 36.4 (b) to the Employer, at the end of the year	10% of Contract Price
39.1 (b)	Multiple of the contract price or Contract Price for Limitation of liability – (aggregate liability of the Contractor to the Employer )	The limit of aggregate liability of the contractor to employer shall not exceed the contract price.
Additional clause 47.2.9	Additional items / extra items D.S.R based items	Current D.S.R of the following department. Deptt -Delhi schedule of Rates (CPWD)
53.1	Appointment of the Dispute Board by the date	The Parties shall appoint a Dispute Board within 60 days from effective date. The Dispute Board shall comprise 3 persons.
53.1	Dispute Board shall comprises of potential members / persons;	As specified by Authority .....
53.2	Failure to agree Dispute Board , final appointing entity or official will be	..... High Court.
Additional clause	Committee for referring the disputes / differences	The members of the committee shall be 1.

53.4.1		2. 3. . . . .
Additional clause 54.	Authority for fixing compensation under clause 54	.....
Additional clause 55	Whether clause 55 shall be applicable	Yes / No

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**Note:- Map of service area shown above is tentative and may differ in actual and subject to modification.**

## Schedule 2: NDMCSafety Codes

1. 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. 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 there of 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. 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. 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. 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 which may, with the consent of the contractor, be paid to compensate any claim by any such person.
6. 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. 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. 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 to work 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.
  - vi) 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 ready made 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. 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 NDMC
  - viii) NDMC may require, when necessary medical examination of workers.
  - ix) Instructions with regard to special hygienic precautions to be taken in the painting.
10. 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. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions
  1. 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.
  2. 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.
  3. 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.
  4. 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 parts 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.
  5. 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. 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. 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. 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. 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.

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



**Schedule 3: Water Quality**

Not used

**Schedule 4: Employer Personnel**

Not Used

**Schedule 5: Contractor Payment Terms**

**1. The total Contractor Payments comprises of two components:**

**i. Payment for Capital Work (a + b)**

Where

- a. Payment for DMA Establishment; and
- b. Payment for Construction Works;

**ii. Payment for O&M Services**

**2. Payment for Capital Work**

Payment for Capital Work includes NDMC's share of maximum 60% shall be paid during the construction period and the balance 40% shall be paid in form of monthly annuity payment over the 60 months i.e. during O&M period. First such annuity payment shall be commenced from initial takeover date i.e. 25th month from Appointed Date.

Annuity Payment shall be Equated Monthly Installment (EMI) calculated considering the following formula:

$$EMI = P \times r \times ((1+r)^n / ((1+r)^n - 1))$$

Where,

**P** = Total Certified Amount invested by the Contractor (40% of Total Certified Amount of Capital Cost)

**r** = Monthly Rate of Interest

**n** = Total No. of Months i.e. 60 Months

This cost includes completion of all works related DMA Establishment including isolation and freezing of final boundary map for DMA, completion of all survey & investigations, creation of hydraulically discreet network, zero pressure test, consumer survey, as built drawing, hydraulic modelling, submission of revised SIP & drawings including civil work as per price bid complete. This shall be paid on demonstration of all establishment works and certification of same from the Engineer.

**(A) For DMA Establishment within NDMC service area**

The Payment for DMA shall be calculated based on number of connections in respective DMA. This shall be calculated as below;

$$\text{DMA Establishment Fees} = \frac{\text{Total No. of Consumers in DMA}}{\text{Total No. of consumers (i.e. 32000)}} \times (\text{Total fees quoted in Item No.1(DMA Fees) + Construction work for respective DMA (As per Price Bid) \& employer's requirement (As per Section-6)})$$

- i. **30% after Establishing of DMA** including all expert services, isolation and freezing of final boundary map for DMA, completion of all survey & investigations, creation of hydraulically discreet network, zero pressure test, consumer survey, as built drawing, hydraulic modeling, submission of revised SIP & drawings etc. complete  
*(Note:-The cost of Bulk meters/ DMA meters, Valves for isolation, consumer meters and associated civil works like excavation, construction of chambers will be paid as per price bid and as per following method)*

The performance of the contractor will be evaluated based on the successful establishment of the DMA's as per the scope defined in Vol-II Detailed Technical Specifications under Section 6.23 for Item no. 1 and will payable in terms of DMA fees as per formula below;

- a) **Fees Payable on Establishing of DMA = 30% of Capital work X 60% of NDMC's share during construction period.**
- b) **Fees Payable on Establishing of DMA = 30% of DMA Fees X 40% of Contractor's share as Annuity payment during O&M period.**

- ii. **50% after completion of water loss reduction (NRW) and commissioning of DMA**(including all expert services, leak detection, leak reduction with latest technologies like helium gas, smart ball, sahara, listening stick, leak noise correlators or as appropriate) and certification of the same from Engineer.

The performance of the contractor in reducing water loss will be evaluated as per scope of work defined in Vol-II Detailed Technical Specifications under Section 6.23 for Item no. 1 and the payment for his performance will be payable in terms of DMA fees as per formula below.

This shall be calculated for each DMA as below;

- a) **Fees payable on completion Water loss Reduction and Commissioning of DMA = 50% of DMA Fees X 60% of NDMC's share +/- 'X' during construction period**
- b) **Fees payable on completion Water loss Reduction and Commissioning of DMA = 50% of DMA Fees X 40% of Contractor's share +/- 'X' as Annuity payment during O&M period**

Where, 'X' = Y (%) x DMA Fees

'X' means Performance based bonus (+) or deduction (-)

Value of 'Y' is calculated as per NRW % as calculated below:

$\text{NRW (\%)} = 1 - \frac{\text{Summation of all Consumption meters + Export Meters (in Cum) for The DMA}}{\text{System Input for respective DMAs (In Cum)}} \times 100$
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This further divided in following performance linked payment break up;

Sr. No.	If, NRW %	Corresponding Value of 'Y (%)'
(1)	Less than or equal to ( $\leq$ ) 7%	$Y(\%) = [5 \times (7\% - \text{NRW}(\%)) + 11\%]$
(2)	More than 7% and less than or equal to 10%	$Y(\%) = [2 \times (10\% - \text{NRW}(\%)) + 5\%]$
(3)	More than 10% but less than or equal to 15%	$Y(\%) = [1 \times (15\% - \text{NRW}(\%))]$
(4)	More than 15% but less than or equal to 20%	$Y(\%) = 0$
(5)	More than 20% but less than or equal to 25%	$Y(\%) = [-1 \times (\text{NRW}(\%) - 20\%)]$
(6)	More than 25% but less than or equal to 30%	$Y(\%) = [-2 \times (\text{NRW}(\%) - 30\%)] - 10\%$
(7)	More than 30%	$Y(\%) = [-5 \times (\text{NRW}(\%) - 35\%)] - 20\%$

Note – 1. Bonus shall be calculated as per (1) to (3) in above table

2. deductions shall be calculated as per (5) to (7) in above table

3. The maximum deduction shall not exceed (50% x DMA fees)

iii. **20% on achieving continuous (24 x 7) pressurized water supply in DMA** and certification of the same from Engineer based on 7 days monitoring period or any other period specified by Employer.

**a) Fees Payable on achieving continuous (24 x 7) pressurized water supply in DMA = 20% of DMA Fees X 60% of NDMC's share during construction period.**

**b) Fees Payable on achieving continuous (24 x 7) pressurized water supply in DMA = 20% of DMA Fees X 40% of Contractor's share as Annuity payment during O&M period.**

**3. Payments for Construction Works:** The eligibility of payment shall be as per above criteria alongwith DMA establishment. The measurement shall be as actual work done and certified by engineer Incharge as per price bid and Section-6.

**4. Payment for O & M Services (Item Covered : Item No. 191)**

**Monthly Payment for Operations& Maintenance services from initial takeover date shall be computed as per following;**

$$\text{Total Monthly O \& M Fees (TF)} = \text{OR} \times \text{N} \times \text{Pv}$$

Where;

OR - Rate in INR quoted for each connection month as quoted by Bidder & approved by Employer

N - No. of Connections covered in Established DMA for O & M for the month under consideration as certified by Engineer

Pv - Price variation factor (It shall be based on consumer price index of that period of that city / region)

Monthly O & M fees, would comprise two components, namely Fixed fees and Performance fees, as follows from Final takeover date:

- (i) Maximum Fixed Fees equal to 70% of O & M Fees for respective month / quarter ;
- (ii) Maximum Performance Fee equal to 30% of O & M Fees for respective month **as per Schedule 7: Performance Target and Measurement**

Employer shall pay the fixed Payment to the Contractor after raising the monthly bills. The monthly payment bills will be reviewed and certified by the Engineer or Employer’s representative. Eligible Performance Fees and other charges if any will be paid on certification within 15 days of recommendation by the Engineer or Employer’s representative along with a certificate regarding fulfilment of the performance conditions.

**4.1 Fixed Fees (FF)**

**Maximum Eligible Fixed Fees shall be calculated as = Total Monthly O & M fees x 70%**

**Maximum Fixed Fees (FF) = TF x 70%**

4.1.1 The Fixed Payment shall be paid to the Contractor on monthly / quarterly basis subject to fulfilment of the following conditions:

- (i) Maintaining the minimum personnel as specified in contract during the previous month.
- (ii) Compliance with the obligations under this Contract.
- (iii) Providing and maintain continuous pressurised water supply to the respective water districts or DMA’s specified in the project area (except the extraordinary situation where water is not supplied by Employer).

4.1.2 The essence of the contract is achieving efficient Operations while providing pressurised water supply to consumers. Towards achieving this, deductions as proposed below shall be made from the fixed Payment in case of below satisfactory or inferior performance in achieving the performance indicators.

Contractor is eligible to get full 70% of the agreed Monthly O & M Fees for services as fixed Fee only if he achieves performance indicators sufficient enough to get 50% of the maximum Performance Fees. In case the Contractor gets less than 50% of the maximum Performance Fee of 30%, deductions shall be made from the fixed fee for below satisfactory or inferior performance.

Performance Payment payable to the Contractor during the payment period (As percentage of total agreed Payment for O & M Services for the corresponding payment period)	Fixed Payment payable to the Contractor (As percentage of total agreed Payment for Operation Services for the corresponding payment period)
15% or More	70%
Less than 15% but more than or equal to 10%	60%
Less than 10%	50%

**4.2 Performance Fees(PF) and deductions**

**Maximum Eligible Performance Fees shall be calculated as = Total monthly O & M Fees x 30%**

<b>Maximum Performance Fees (PF)= TF x 30%</b>
--

A maximum of 30% of the total agreed fees for Operations & Maintenance services for respective month will be based on achieving actual performance as shown in **Schedule 7: Performance Target and Measurement** during O& M Services under the contract.

Contractor is eligible to get maximum performance Fees i.e 30% if he meets the threshold limits of all the performance indicators. The breakdown of performance payment related to performance indicators are listed below.

Breakup for various performance parameter / criteria is as given below:

Sr. No.	criteria for weightage	Performance Breakup for payment
i	Water loss / NRW level	10 %
ii	continuous (24 x7 ) water supply	10%
ii	water quality	5%
iv	Customer complaint	5%

Performance Parameter / Indicators as above shall be calculated as per formula specified in Schedule 7 of performance targets and measurement

In case the Contractor performance doesn't meets the threshold limits of all performance Indicators, deductions shall be made from the performance fee for below satisfactory or inferior performance based on **Actual Performance** of respective month computed as per **Schedule 7 Performance Target and Measurement**. In that the case the, Performance fees shall be calculated as below;

<b>Performance Fees (PF) = TF x Actual Performance (---%)</b>
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**Thus, Monthly O & M Fees based on Performance payment shall be computed as per following table for Fixed Fee (FF) and Performance Fee (PF) based on actual performance.**

Sr. No.	Performance Payment & eligibility	Monthly Fees Payable (in Rs.)
1	15% or More	<b>Total O &amp; M Fees (TF) = Fixed Fee (FF) + Performance Fee (PF)</b>  Where, Fixed Fee (FF) = 70% x TF Performance Fee (PF) = Actual Performance ( __%) x TF
2	Less than 15% but more than or equal to 10%	<b>Total O &amp; M Fees (TF) = Fixed Fee (FF) + Performance Fee (PF)</b>  Where, Fixed Fee (FF) = 60% x TF Performance Fee (PF) = Actual Performance ( __%) x TF
3	Less than 10% but more than 0%	<b>Total O &amp; M Fees (TF) = Fixed Fee (FF) + Performance Fee (PF)</b>  Where, Fixed Fee (FF) = 50% x TF Performance Fee (PF) = Actual Performance ( __%) x TF

4	Equals to 0%	Liquidated Damages shall be applicable as per PCC
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#### 5. Penalty amount recoverable from operator

- A. Non providing the Key-Personnel expert resources as per Section 6: Employers Requirement shall result into penalty upto 1% of Annual O& M (performance) fees per month.  
The total penalty shall not exceed 10% of annual O & M Fees.
- B. Operator shall need to maintain the timelines of various design activities, failing to the same shall result in penalties as below;

S N	Activity	Target period for completion from contract commencement date	Amount of penalty to be recovered in case of delayed output
1	2	3	4
1	Mobilisation on site	30 days	
2	Verification & validation of base map (provided by NDMC), finalisation of DMA boundaries, procurement plan of priority DMA's	60 days	Rs. 10,000 per day
3	Topographical survey and ground profiling of the service area, plot surveys and any other surveys and investigations to ensure accurate design.	60 days	Rs. 25,000 per day
6	Complete system design and drawings, preparation of abstract of final quantities and cost estimates for the designs	90 days	Rs. 75,000 per day
7	Preparing PERT chart, manpower, equipment, mobilisation plan, cash flow plan, detailed methodology of continuous monitoring etc.	60 days	-
8	Detailed O&M plan, Standard Operating Procedures and policies plan, Performance measurement plan, Bulk Supply locational data base for water supply system.	60-90 days	Rs. 75,000 per day



<b>9</b>	Compilation and submission of designs, hydraulic modelling in complete with SIP and procurement plan for priority zones (tentative 5 nos.)	60-90 days	Rs. 75,000 per day
<b>10</b>	Complete designs, survey and all as built drawings for balance DMA's within NDMC area	180 days	

C. Operator shall need to maintain the timelines of various Construction activities as following to deliver the project output failing to the same shall result in penalties / Liquidated damages as per PCC as recommended by Engineer.

<b>S N</b>	<b>Target Period (end of quarter) for completion from contract commencement date</b>	<b>Target Activity: DMA establishment / No. of connection Completion (inclusive of all instrumentation &amp; SCADA works)</b>	<b>Target Activity: Transmission Main /Pipe Laying Completion</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1 <sup>st</sup> Quarter (Q1)	Door to door Consumer Survey, Network updation, hydraulic modelling, SIP, Procurement Plan, DMA Established  (For Priority DMA's)	SIP & Procurement Plan
2	2 <sup>nd</sup> Quarter (Q2)	1000 number connections & Submission of SIP for balance DMA's	Pipe procurement
3	3 <sup>rd</sup> Quarter (Q3)	3000 number connections	Laying & testing
4	4 <sup>th</sup> Quarter (Q4)	7000 number connections	Laying & testing
5	5 <sup>th</sup> Quarter (Q5)	12000 number connections	Laying & testing

<b>S N</b>	<b>Target Period (end of quarter) for completion from contract commencement date</b>	<b>Target Activity: DMA establishment / No. of connection Completion (inclusive of all instrumentation &amp; SCADA works)</b>	<b>Target Activity: Transmission Main /Pipe Laying Completion</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
6	6 <sup>th</sup> Quarter (Q6)	18000 number connections	Commissioning
7	7 <sup>th</sup> Quarter (Q7)	25000 number connections	
8	8 <sup>th</sup> Quarter (Q8)	30000 number connections	

Note :- If these targets / connections per quarter as mentioned above (as per Section 6 Employers Requirements), for reasons attributable to the Contractor, are not met and no successful corrective action has been taken to achieve them within a period specified by Engineer, liquidated damages will apply.

## Schedule 6: Performance Target and Measurement

### A. Definitions

- i. **Water Loss** :Scope in Water Supply shall include, the operation, maintenance and repairs of all existing and new assets created for the water supply under this project and to be kept in operation to deliver but also to keep water losses in established DMA's with in contractual limits. Bulk water supply by employer shall be measured at Inlet supply point of DJB to NDMC Tapping Points as System Input Volume (SI) or Bulk water Export/ Import point measured as Certified Export Meter. Water supply quantum shall be measured as all consumption at consumer end and export point or at the end of transfer point as applicable. The water loss is defined as difference between System Input volume & Certified Export point. However the bulk water import or export (if any) shall be adjusted through respective flow meters.
- ii. **Continuous (24 x 7 ) Pressurized Water Supply** means achieving and maintaining a continuous supply of water in respective DMA based on quantity of availability of bulk water (to be provided by DJB at NDMC Tapping points ensured by NDMC ) at 8 m water column at consumer end, monitoring flow and pressure data including logging & data transfer with SCADA.
- iii. **Measurement Points** means the points on the project components at which the flow and or pressure measuring devices to measure and record one or multiple parameters with data logger would be installed which shall be mutually agreed by the Employer and the Contractor during the Design Construction period but should include all major and sub components and inlet and outlet points. The logger shall transfer the data to both Employers & Operators location through wireless communication without any human interface on 24/7 basis.
- iv. **Potable Water Quality** Operators obligations is limited to maintain the residual chlorine of 0.2 ppm at consumer end provided that NDMC shall supply Bulk Water at BPS/UGR outlet with minimum 0.5 ppm chlorine.

### B. Performance Targets

The Operator must meet following Performance Targets on monthly basis:

- i.) Continuous Pressured Water Supply must be provided at consumer connection
- ii.) Water Loss
- iii.) Water Quality.
- iv.) Consumer Complaints

### C. Methodology for Measurement of Performance:

The Contractor shall develop a robust methodology and framework for measurement and monitoring of Performance Standards stipulated under this clause and proposed as part of the Service Improvement

Plan (SIP). The Employer shall review the same and upon agreement between the Parties, the agreed methodology shall form the basis for monitoring the performance of the Contractor and apply the Performance Payment.

**D. Parameter, Minimum Service Level, Measurement and Monitoring System of Performance Indicators/ Standards**

S.No	Description	Details
<b>1.</b>	<b>Parameter</b>	<b>Continuous Pressurized Water Supply within DMA</b>
	Minimum Service Level	80% of the pressure readings maintained at a minimum level as specified in 24 hours. To be achieved at the pressure measuring point from commissioning date and maintained throughout the contract period.
	Measured By	At least five continuous pressure measuring point with logger (CPMP) will be established in each DMA/ BPS per approved Service Improvement Plan (SIP). Readings at the CPMPs will be taken on hourly basis during supply hours. Compliance on continuity of service = $100 \times (\text{Total Number of readings of pressure equal to or more than Specified} / \text{Total number of readings of pressure in the service area})$ .  For illustration purpose, if an area of 5 CPMP in Project Area is in service. Total CPMPs in 1 DMA are 5. Hourly readings are 24 in a day at each CPMP and the month is of 30 days. Total readings in a month will be $5 \times 24 \times 30 = 3600$ . If 2880 readings (which is more than 80% of 3600) is equal to or more than specified pressure at respective CPMPs, Contractor will be eligible for getting performance fees under this criteria. It may be noted that non function of CPMPs shall be considered as non performing readings
	Monitored By	An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables pressure logs at each of the CPMP  The pressure log database shall include: Time and date CPMP identification number Pressure in meters
	Allowable Exclusions	1.Planned maintenance periods not exceeding 8 hours each 2.Interruption due to mains bursts not exceeding 12 hours 3.Shortage of Raw water supplied by source provider 4.Third party causes like power failure and fire fighting
<b>2</b>	<b>Parameter</b>	<b>Water Loss /NRW (applicable for entire system/ DMA)</b>
	Maximum level	Less than or equal to 20%
	Measured	

by	NRW Performance based Fees payable in (Rs.)	$NRW \text{ FEES} = (TF \times 10\%) - FD$ Where $TF = \text{Total O\&M Fees for DMA (Ref para 4 of Sch 5)}$ $FD = \text{Fees Deduction for Higher NRW}$ The value of FD as Computed below	
	Sr. No.	If, NRW / Water Loss Level	Corresponding amount of 'FD'
	1	More than 15% but less than or equal to 20%	FD = 0
	2	More than 20% but less than or equal to 30%	$FD = TF \times [(NRW\% - 20\%) \times 0.5]$
	3	More than 30% but less than or equal to 35%	$FD = TF \times \{[(NRW\% - 30\%) \times 1] + 5\%$
	4	More than 35%	$FD = TF \times \{[(NRW\% - 35\%) \times 2] + 10\%$
Monitored by	Electronic registry from bulk flow meter recorded at inlet points for System input volume and corresponding registry from bulk flow meter record at DJB Tapping Points and certified Import Export points. Adjustment of Volume export or Import from or in the project battery limit respectively and all import or export points shall be installed with meters.		
Monitored by	Electronic registry from bulk flow meter at DMA and consumer meter readings as per the billing records for the month under review		
Allowable Exclusions	1. If bulk inlet and tapping of the UGR/BPS is not measured for volume. 2. If un-metered Export supply, detected by operator & not allowed to disconnect or metered by NDMC within 15 days.		
<b>3</b>	<b>Parameter</b>	<b>Water Quality</b>	
	Minimum Service Level	Contractors obligations is limited to maintain the residual chlorine of 0.2 ppm at consumer end provided that NDMC shall supply Bulk Water at Tappings/UGR/BPS outlet with minimum 0.5 ppm chlorine.	
	Measured By	(% of failed sample with respect to desired level of performance for residual chlorine) x Operator fees for the month up to the full performance fees for Water Quality (5% of total fees)	
	Monitored By	An electronic registry maintained by the Contractor in CRM centre with 24/7 data logging and electronic log of inspection notes and on line Residual chlorine shall be installed at all import / export and BPS/ UGR outlet.	
	Allowable Exclusions	If supply volume by NDMC at outlet of BPS/ UGR is less than 0.5 ppm	

<b>4</b>	<b>Parameter</b>	<b>Consumer Complaints</b>
	<b>Minimum Service Level</b>	<b>95% of reported complaints resolved during the period under review</b>
	Measured by	Percentage of total number of complaints responded within 24 hours and resolved within 120 hours during the period under review over the total number of complaints received during the period under review.  Resolution of complaints = $100 \times (\text{total number of complaints responded within 24 hours and resolved in 120 hours during the period under review} / \text{total number of complaints received during the period under review})$
	Monitored By	An electronic registry maintained by the Operator, the registry shall include detailed database and summary tables including: Time and date Complaint number Consumer Name Consumer Identification Number DMA Number Nature of Complaint Time and Date at which consumer is provided with response Action Taken Report Time and Date of resolution of complaint
	Allowable Exclusions	1. Commercial & billing related issues 2. poor quality of water , if bulk water supplied by NDMC or DJB is of poor quality 3. No water due to shortage of water supply.
	Monitored By	An electronic registry maintained by the Operator; the registry shall include detailed database and summary tables for both routine water quality tests and tests necessitated due to Complaints from Customer on poor quality of water  The water quality testing database shall include:  Time and Date  Sample Location  Sample Number  Details of water quality tests conducted  Details of Remedial Actions taken in case of water quality problem  The customer complaints database shall include:  Time and Date  Complaint Identification Number

	Customer Identification Code
	Nature of Complaint on water quality
	Action Taken Report
	Time and Date of Resumption of Service Level

**E. Performance Measurement Protocol (NRW)**

During performance measurement period it is not possible to measure to have simultaneous measurement within a DMA or multiple DMA. Therefore, for normalizing the readings, following, protocols will be followed;

Performance measurement will always be taken 12 noon to 12 noon of start date to 12 Noon of end Date on a particular day of a month as decided by Engineer for a period under consideration.

Measurement time gap for consumption or supply flow meter with DMA performance period, if any, in terms of days/ hrs or any other period under consideration shall normalize as per following corrections;

- a. Performance measurement period (Tp) : is the duration in days / hrs. for which operator performance is assessed for performance measurement (Te-Ts)
- b. Initial Reading (R1): is the reading taken during start of time for performance period (Ts)
- c. Final reading (R2): is the reading taken during end of performance period (Te)
- d. Actual Performance period (Ta): is the duration / time of actual reading from Initial reading (R1)
- e. Normalizing Reading: is the correction of actual reading with respect to time gap if any, during performance period.

f. Normalising Formula : = (R2-R1) x (Tp/Ta)  
 = (R2-R1) x [(Te-Ts)/ Tm-Ts]

**Where,**

“Start time (Ts)” is the time of Initial Reading for Performance Measurement period (Tp) of DMA

“End Time (Te)” is the time of Final Reading at the end of Performance Measurement period of DMA

“Actual Measurement Time (Tm)” is the time of actual measurement for respective consumption meter / or supply meter

“Actual Performance period (Ta)” means Tm-Ts in hrs./ day

### Schedule 7: NDMC PRE-CONTRACT INTEGRITY PACT

#### General

This pre-bid pre-contact Agreement (hereinafter called the integrity Pact) is made on \_\_\_\_\_ day of the month of \_\_\_\_\_ 20....., between on one hand the New Delhi Municipal Council acting through Shri. \_\_\_\_\_, The Executive Engineer (hereinafter called the "Principal/Owner", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s \_\_\_\_\_ represented by Shri \_\_\_\_\_ (hereinafter called the "Bidder(s)/Contractor(s) which expression shall mean and include unless the context otherwise requires, his successors and permitted assigns) of the Second Part Whereas the Principal/Owner proposes to procure (Name of work the Store/ Equipment/Item) through the Bidder(s)/Contractor(s) and the Bidder(s)/Contractor(s) is willing to offer / has offered the same. Whereas the Bidder(s)/Contractor(s) is a private Company/public company/ Government undertaking/ partnership/ registered export agency, constituted in accordance with the relevant law in the matter and the Principal/Owner is the municipal government of New Delhi established as per NOMC act 1994 performing its functions on behalf of the Council.

Now, therefore,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be "entered into with a view to:

Enabling the Principal/Owner to procure the desired said work! Services/ Stores / Equipments at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption during tendering, execution & public procurement, and

Enabling Bidder(s)/Contractor(s) to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the Principal/Owner will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties here to hereby, agree to enter in to this Integrity Pact and agree as follows:

#### Commitments of the Principal/Owner

- 1.1 The Principal/Owner undertakes that no official of the Principal/Owner, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Bidder(s)/Contractor(s), either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The Principal/Owner will, during the pre-contract stage, treat all Bidder(s)/Contractor(s) alike, and will provide to all Bidder(s)/Contractor(s) the same information and will not provide and such information to any particular Bidder(s)/Contractor(s) which could afford an advantage to that particular Bidder(s)/Contractor(s) in comparison to other Bidder(s)/Contractor(s).
- 1.3 All the officials of the Principal/Owner will report to the CVO, NDMC any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach
2. In case any such preceding misconduct on the part of such official(s) is reported by the Bidder(s)/ Contractor(s) to the CVO, NDMC with full and verifiable facts and the same is prima



facie found to be correct by the NDMC necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the NDMC and such a person shall be debarred from further dealings related to the contract process.

In such a case while an enquiry is being conducted by the NDMC the proceedings under the contract would not be stalled.

**Commitments of Bidder(s)/Contractor(s)**

3. The Bidder(s)/Contractor(s) commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:
  - 3.1 The Bidder(s)/Contractor(s) will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Principal/Owner, connected directly or indirectly with the bidding process, or to any person, organization or third part related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
  - 3.2 The Bidder(s)/Contractor(s) further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees brokerage or inducement to any official of the Principal/Owner or otherwise in executing the contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the New Delhi Municipal Council for showing or forbearing to show favour or disfavor to any person in relation to the contract or any other contract with the New Delhi Municipal Council.
  - 3.3 Bidder(s)/Contractor(s) shall disclose the name and address of agents/brokers/ representatives / Intermediaries and Indian Bidder(s)/ Contractors shall disclose their foreign Principals or associates at the time of bidding.
  - 3.4 Bidder(s)/Contractor(s) shall disclose the payments to be made by them to such agents/brokers/representatives, intermediaries, in connection with this bid/contract at the time of bidding.
  - 3.5 Deleted.
  - 3.6 The Bidder(s)/Contractor(s), either while presenting the bid or during pre-contract negotiations or before signing the contract ,shall disclose any payments he has made, is committed to or - intends to make to agents, brokers or any other intermediaries in Connection with the contract and the details of services agreed upon for such payments. A copy of contract so made with agents/ brokers/intermediaries shall be submitted.
  - 3.7 The Bidder(s)/Contractor(s) will not collude with other parties interested in the contract to impair the transparency, 'fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract. Bidder shall remain responsible to maintain safety & confidentiality of his bid documents during bid process.
  - 3.8 The Bidder(s)/Contractor(s) will not accept any advantage in exchange for any corrupt practice, unfair means, and illegal activities.
  - 3.9 The Bidder(s)/Contractor(s) shall not use improperly, for purposed of competition or personal gain, or pass on to others, any information provided by the Principal/Owner as part business relationship regarding plans, technical proposals and business details, including information

contained in any electronic data carrier. The Bidder(s)/Contractor(s) also undertakes to exercise due and adequate care lest any such information is divulged.

- 3.10 The Bidder(s)/Contractor(s) commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts, either to principal/owner or to IEMs so appointed by NDMC.
- 3.11 The Bidder(s)/Contractor(s) shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the Bidder(s)/Contractor(s) or any employee of the Bidder(s)/Contractor(s) or any person acting on behalf of the Bidder(s)/Contractor(s), either directly or indirectly, is a relative of any of the officers of the Principal/Owner, or alternatively, if any relative of an officer of the Principal/Owner has financial interest/ stake in the Bidder(s)/Contractor(s) firm, the same shall be disclosed by the Bidder(s)/Contractor(s) at the time of filing of tender. The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.
- 3.13 The Bidder(s)/Contractor(s) shall not lend to or borrow any money form or enter into any monetary dealings or transaction, directly or indirectly, with any employee of the Principal/Owner.

#### **4. Previous Transgression**

- 4.1 The Bidder(s)/Contractor(s) declares that no previous transgression occurred in the last Five years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged here under or with any Public Sector Enterprise in India or New Delhi Municipal Council that could justify Bidder(s)/Contractor(s) exclusion from the tender process.
- 4.2 The Bidder(s)/Contractor(s) agrees that' if it makes incorrect statement on this subject, Bidder(s)/Contractor(s) can be disqualified from the' tender process or the contract, if already awarded, can be terminated for such reason.

#### **5. Deleted.**

#### **6. Sanctions for Violations**

- 6.1 Any breach of the aforesaid provisions by the Bidder(s)/Contractor(s) or anyone employed by it or acting on its behalf (whether with or without the knowledge of the Bidder(s)/ Contractor(s)) shall entitle the Principal/Owner to take .all or' anyone of the following actions, wherever required:-
- (i) To immediately call off the pre contract negotiations without assigning any reason orgiving any compensation to the Bidder(s)/Contractor(s). However, the proceedings with the other Bidder(s)/Contractor(s ) would continue.
  - (ii) The Earnest Money Deposit (in pre-contract stage) and/or. Security Deposit/Performance Bond / Guarantee (after the contract is signed) shall stand forfeited and the Principal/Owner shall not be required to assign any reason therefore.

- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the Bidder(s)/Contractor(s).
  - (iv) To recover all sums already paid by the Principal/Owner, and in case of an Indian Bidder(s)/ Contractor(s) with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a Bidder(s)/Contractor(s) from a country other than India with interest thereon at 2% higher than the LIBOR If any outstanding payment is due to the Bidder(s)/Contractor(s) from the Principal/Owner in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
  - (v) To encase the advance bank guarantee and performance bond/warranty bond, if furnished by the Bidder(s)/Contractor(s), in order to recover the payments, already made by the Principal/Owner, along with interest.
  - (vi) To cancel all or any other contracts with the Bidder(s)/Contractor(s). The Bidder(s)/Contractor(s) shall be liable to pay compensation for any loss or damage to the Principal/Owner resulting from such cancellation/ rescission and the Principal/Owner shall be entitled to deduct the amount so payable from the money(s) due to the Bidder(s)/Contractor(s).
  - (vii) To debar the Bidder(s)/Contractor(s) from participation in future bidding processes of the New Delhi Municipal Council for a period ranging from six months to maximum, five years. However if the bidder takes corrective measures against transgressions, subject to satisfaction of Principal/Owner & IEMs, the period of debar can be reviewed.
  - (viii) To recover. all sums paid in violation of this Pact by Bidder(s)/Contractor (s) to any middleman or agent or broker with a view to securing the contract.
  - (ix) In case where irrevocable letters of Credit have been received in respect of any contract signed by the Principal/Owner with the Bidder(s)/Contractor(s), the same shall not be opened.
  - (x) Forfeiture of Performance Bond/Guarantee in case of a decision by the Principal/Owner to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.
- 6.2 The Principal/Owner will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the Bidder(s)/Contractor(s) or anyone employed by it or acting on its behalf (whether with or without the knowledge of the Bidder(s)/Contractor(s), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.
- 6.3 The decision of the Principal/Owner to the effect that a breach of the provisions of this Pact has been committed by the Bidder(s)/Contractor(s) shall be final and conclusive on the Bidder(s)/Contractor(s). However, the Bidder(s)/Contractor(s) can approach the Independent Monitor(s) appointed for the purposes of this Pact.  
IEMs shall examine the transgression and its severity and submit the report to Chairman, NDMC for further action after providing an opportunity and hearing to the affected parties.
- 7. Deleted Fall Clause:**
- 8. Independent External Monitors**
- 8.1 The Principal/Owner has appointed Independent External Monitors (hereinafter referred to as IEMs) for this Pact in consultation with the Central Vigilance Commission whose names and email IDs have been given in the NIT.

- 8.2 The task of the IEMs shall be to review independently and objectively, whether and 'to what extent the parties comply with the obligations under this pact.
- 8.3 The IEMs shall not be Subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 8.4 Both the parities accept that the IEMs have the right to access all the documents relating to the project/procurement, including minutes of meetings
- 8.5 As soon as the IEMs notices, or have reasons to believe a violation of this Pact, they shall so inform to Chairman, NDMC.
- 8.6 The Bidder(s)/Contractor(s) accepts that the IEMs have the right to access without restriction to all Project documentation of the Principal/Owner including that provided by the Bidder(s)/Contractor(s). The Bidder(s)/Contractor(s) will also grant the IEMs, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to subcontractors. The IEMs shall be under contractual obligation to treat the information and documents of the Bidder(s) contractor(s)/Subcontractor(s) confidentiality.
- 8.7 The Principal/Owner will provide to the IEMs -sufficient information about all meetings among the parties related to the Project provided such meeting could have an impact on the contractual relations between the parties. The parties will offer to the IEMs the option to participate in such meetings.
- 8.8 The IEMs will submit a written report to the Chairman NDMC within 8 to 10 weeks from the date of reference or intimation to him by the Principal/Owner/ Bidder(s)/Contractor(s) and, should the occasion arise, submit proposals for correcting problematic situation. However an opportunity of hearing shall be provided by the IEMs to the buyers /bidders before submitting their written report.
- 9. Facilitation of Investigation**  
In case of any allegation of violation of any provisions of this pact or payment of commission, the Principal/Owner or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder(s)/Contractor(s) and the Bidder(s)/Contractor(s) shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination
- 10. Law and Place of Jurisdiction**  
This pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the Principal/Owner.
- 11. Other Legal Actions**  
The action stipulated in this Integrity Pact is without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.
- 12. Validity**
- 12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 12 months beyond the defects liability period of the contracts. In case Bidder(s)/Contractor(s) is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract by the successful bidder.
- 12.2 Should one or several provision of this Pact turn out to be invalid.the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intention.
- 13 The parties hereby sign this Integrity Pact at \_\_\_\_\_ on \_\_\_\_\_  
Principal/Owner

Name of the Officer,  
Designation  
**New Delhi Municipal Council**  
Witness

Bidder(s)/Contractor(s)  
Chief Executive Officer

Witness

1. \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

2. \_\_\_\_\_

\* Provisions of these clauses would. need to be' amended / deleted in, line with the policy of the Principal/Owner in regard to involvement of Indian agents of foreign suppliers.

## **Schedule 8: Model Rules for the Protection of Health and Sanitary Arrangements for Workers Employed by NDMC or its Contractors**

### **1. APPLICATION**

These rules shall apply to all buildings and construction works in charge of New Delhi Municipal Council 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.

### **2. DEFINITION**

Work place means a place where twenty or more workers are ordinarily employed in connection with construction work on any day during the period during which the contract work is in progress.

### **3. 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. 3 medium size sterilised dressings.
    3. 3 large size sterilised dressings.
    4. 3 large sterilised burn dressings.
    5. 1 (30 ml.) bottle containing a two per cent alcoholic solution of 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 burns.
    13. A bottle of suitable surgical antiseptic solution.
  - (b) For work places in which the number of contract labour exceed 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 burn dressings.
    5. 6 (15 gms.) packets sterilised cotton wool.
    6. 1 (60 ml.) bottle containing a two per cent 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 of 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 compounder. 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. 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.

#### **5. 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.

#### **6. LATRINES AND URINALS**

- (i) Latrines shall be provided in every work place on the following scale :-
- (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.

- (i) 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.
- (ii) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.
- (iii) Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials and shall be cement washed inside and outside at least once a year, Latrines shall not be of a standard lower than borehole system.
- (iv) (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.
- (v) 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 15cm. 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 proper 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.

#### **7. 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. (6 sft) 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.

#### **8. CRECHES**

- (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 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 19H (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 ayaa to look after the children in the creche when the number of women workers does not exceed 50 and two when the number of women workers exceed 50.
  - (v) The use of the rooms earmarked as creches shall be restricted to children, their attendants and mothers of the children.

### **9. 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 limewashed or colour washed at least once in each year.  
Provided that the inside walls of the kitchen shall be lime-washed every four months.
- (vi) The premises of the canteen shall be maintained in a clean and sanitary 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 metre (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 accommodated as prescribed in sub-Rule 9.  
(xiii) (a) 1. There shall be provided and maintained sufficient utensils crockery, furniture and any other equipments 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 replacement 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.

#### **10. 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 filling up of any borrow pits which may have been dug by him.

**11.** The above rules shall form an integral part of the contracts.

#### **12. AMENDMENTS**

NDMC 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.

## Schedule 9: Contractor's Labour Regulations

### 1. SHORT TITLE

These regulations may be called the Contractors Labour Regulations.

### 2. DEFINITIONS

i) **Workman** means any person employed by NDMC or its contractor directly or indirectly through a subcontractor with or without the knowledge of the New Delhi Municipal Council 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 mensem or exercises either by the nature of the duties attached to the office or by reason of powers 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 be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the 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 workman.

ii) **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.

iii) **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.

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

3.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 or for more than 48 hours in any week, he shall be paid over time 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.

### 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 wages are earned, wages periods, dates of payments of wages and other relevant information as per Appendix 'III'.

#### **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 by contractor through bank or ECS or online transfer to his bank account.
- vii) All wages shall be paid through bank or ECS or online transfer.
- 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 through bank account of labour.
- xi) The contractor shall obtain from the Junior Engineer or any other authorized 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-Muster 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 through bank account of labour ..... at ....."

#### **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-X
- (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 instalment, 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.

## 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 workmen 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 the work place but the same shall include the following particulars:
  - a) Full 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 Compensation 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 in 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 Advances in Form XXIII 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)

#### **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 form at (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.
- v) The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.
- vi) The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

#### **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).

#### **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 XV of the CL (R&A) Central Rules 1971 (Appendix-IX)

#### **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 authorised by the Ministry of Urban Development in this behalf.

#### **12. POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY**

The Labour Officer or any person authorised 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 these Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

#### **13. REPORT OF LABOUR OFFICER**

The Labour Officer or other persons authorised 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 will 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 labour concerned within 45 days from the receipt of the report from the Labour Officer or the Superintending Engineer as the case may be.

#### **14. APPEAL AGAINST THE DECISION OF LABOUR OFFICER**

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorised 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.

#### **15. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER**

- i) 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 employers 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.

#### **16. INSPECTION OF BOOKS AND SLIPS**

The contractor shall allow inspection of all the prescribed 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, authorised by the Central Government on his behalf.

#### **17. SUBMISSIONS OF RETURNS**

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

#### **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.

Appendix 'I' REGISTER OF MATERNITY BENEFITS (Clause 19 F)

Name and address of the contractor.....

Name and location of the work.....

Name of the employee	Father's/ husband's name	Nature of employment	Period of actual employment	Date on which notice of confinement given

**Date on which maternity leave commenced and ended**

Date of delivery/ miscarriage	In case of delivery		In case of miscarriage	
	commenced	Ended	Commenced	Ended

**Leave pay paid to the employee**

In case of delivery		In case of miscarriage		Remarks
Rate of leave pay	Amount paid	Rate of leave pay	Amount paid	



**Appendix 'II' SPECIMEN FORM OF THE REGISTER, REGARDING MATERNITY BENEFIT  
ADMISSIBLE TO THE CONTRACTOR'S LABOUR IN CENTRAL PUBLIC WORKS  
DEPARTMENT WORKS.**

Name and address of the contractor.....

Name and location of the work.....

1. Name of the woman and her husband's name.
2. Designation.
3. Date of appointment.
4. Date with months and years in which she is employed.
5. Date of discharge/dismissal, if any.
6. Date of production of certificates in respect of pregnancy.
7. Date on which the woman informs about the expected delivery.
8. Date of delivery/miscarriage/death
9. Date of production of certificate in respect of delivery/miscarriage.
10. Date with the amount of maternity/death benefit paid in advance of expected delivery.
11. Date with amount of subsequent payment of maternity benefit.
12. Name of the person nominated by the woman to receive the payment of the maternity benefit after her death.
13. If the woman dies, the date of her death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment.
14. Signature of the contractor authenticating entries in the register.
15. Remarks column for the use of Inspecting Officer.

### Appendix 'III' Labour Board

Name of work .....

Name of Contractor .....

Address of Contractor .....

Name and address of C.P.W.D. Division .....

Name of C.P.W.D. Labour Officer .....

Address of C.P.W.D. Labour Officer .....

Name of Labour Enforcement Officer .....

Address of Labour Enforcement Officer .....

Sl. No.	Category	Minimum wage fixed	Actual wage paid	Number present	Remarks

Weekly holiday .....

Wage period .....

Date of payment of wages .....

Working hours .....

Rest interval .....

Appendix 'IV' Form –XIII (See Rule 75) Register of Workmen Employed by Contractor

Name and address of contractor .....

Name and address of establishment under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer .....

Sl. No	Name and Surname of workman	Age and Sex	Father's/ Husband's name	Nature employment/ designation	Permanent home address of the workman (Village and Tehsil, Taluk and District)	Local address	Date of commencement of employment	Signature or thumb impression of the workman	Date of termination of employment	Reasons for terminations	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Appendix 'V'Form-XVI (See Rule 78(2)(a))Muster Roll

Name and address of contractor .....  
 Name and address of establishment under which contract is carried on .....  
 Nature and location of work .....  
 Name and address of Principal Employer. ....For the Month of fortnight .....

Sl. No	Name of Workman	Sex	Father's/ Husband's name	Dates					Remarks
				1	2	3	4	5	
1	2	3	4	5					6
				1	2	3	4	5	

Appendix 'VI' Form-XVII (See Rule 78(2)(a)) Register of wages

Name and address of contractor .....

Name and address of establishment under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer. ....Wages period: Month/fortnight

Sl. No.	Name of workman	Serial No. in the register of workman	Designation/ nature of work done	No. of days worked	Units of work done	Daily rate of wages/ piece rate	Amount of wages earned					Deductions if any (indicate nature)	Net amount paid	Signature or thumb impression of the workman	Initial of contractor or his representative
							Basic wages	allowances	Overtime	Other cash payments (Indicate nature)	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

### Appendix 'VII' (Observe)Wage Card

Wage Card No.....  
 Name and address of contractor ..... Date of Issue .....  
 Name and location of work .....Designation .....  
 Name of workman .....Month/Fortnight .....  
 Rate of Wages .....

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Morning																															
Evening																															
intials																															

Received from .....the sum of Rs. .... on account of my wages

Signature

The Wage Card is valid for one month from the date of issue

Appendix 'VII' (Reserve)Form-XIX[See rule 78 (2)(b)]Wages Slip

- Name and address of contractor.....
- Name and Father's/Husband's name of workman.....
- Nature and location of work.....
- For the Week/Fortnight/Month ending.....
1. No. of days worked.....
  2. No. of units worked in case of piece rate workers.....
  3. Rate of daily wages/piece rate.....
  4. Amount of overtime wages.....
  5. Gross wages payable.....
  6. Deduction, if any.....
  7. Net amount of wages paid.....

Initials of the contractor or his representative

## Appendix 'VIII' Form-XIV[See rule 76]Employment Card

Name and address of contractor.....

Name and address of establishment under which contract is carried on.....

Name of work and location of work.....

Name and address of Principal Employer.....

1. Name of the workman
2. Sl. No. in the register of workman employed
3. Nature of employment/designation
4. Wage rate (with particulars of unit in case of piece work)
5. Wage period
6. Tenure of employment
7. Remarks

Signature of contractor



## Appendix – 'IX' Form-XV (See Rule 77) Service Certificate

Name and address of contractor ... ..  
 Nature and location of work .....  
 Name and address of workman .....  
 Age or date of birth .....  
 Identification marks .....  
 Father's Husband's Name .....  
 Name and address of establishment in under which contract is carried on .....  
 Name and address of Principal Employer.....

Sr No.	Total Period for which employed		Nature of Work done	Rate of wages (with particulars of unit in case of piecework)	Remarks
	From	To			
	2	3			
	4	5	6		

## Appendix 'X' LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule 7(v) of the Contractor's Labour Regulation to be displayed prominently at the site of work both in English and local Language.

1. Willful insubordination or disobedience, whether alone or in combination with other.
2. Theft, fraud or dishonesty in connection with the contractor's business or property of NDMC.
3. Taking or giving bribes or any illegal gratifications.
4. Habitual late attendance.
5. Drunkenness, riotous or disorderly or indifferent behavior.
6. Habitual negligence.
7. Smoking near or around the area where combustible or other materials are stored.
8. Habitual indiscipline.
9. Causing damage to work in progress or property of the NDMC or of the contractor.
10. Sleeping on duty.
11. Malingering or slowing down work.
12. Giving off false information regarding name, age, father's name, etc.
13. Habitual loss of wage cards supplied by the employers.
14. Unauthorized use of employer's property of manufacturing or making of unauthorized articles at the workplace.
15. Bad workmanship in construction and maintenance by skilled workers which is not approved by the Department and for which the contractors are compelled to undertake rectifications.
16. Making false complaints and/or misleading statements.
17. Engaging in trade within the premises of the establishments.
18. Any unauthorized divulgence of business affairs of the employees.
19. Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the employer.
20. Holding meetings inside the premises without previous sanction of the employers.
21. Threatening or intimidating any workman or employer during the working hours within the premises.

APPENDIX – ‘XI’ Form-XV (See Rule 77) FORM XII (See Rule 78 (2) (d) REGISTER OF FINES

Name & address of contractor.....

Name & location of work.....

Name & address of establishment in/under which contract is carried on.....

Name & address of Principal Employer.....

Sl. No.	Name of workman	Father's/Husband Name	Designation/nature of employment	Act/Omission for which the fine imposed	Date of offence	Whether workman showed cause against fine
1	2	3	4	5	6	7

Name of person in whose presence employee's explanation was heard	Wage period and wages payable	Amount of fine imposed	Date on which fine realized	Remarks
8	9	10	11	12

APPENDIX – ‘XII’ FORM XX (See Rule 78(2) (d) REGISTER OF DEDUCTION FOR DAMAGE OR LOSS

Name & address of contractor.....

Name & location of work.....

Name & address of establishment in/under which contract is carried on..... Name & address of Principal Employer.....

Sl. No.	Name of workman	Father's/Husband Name	Designation/nature of employment	Particulars of damage or loss	Date of damage or loss	Whether workman showed cause against deduction
1	2	3	4	5	6	7

Name of person in whose presence employee's explanation was heard	Amount of deduction imposed	No. of installments	Date of recovery First Installments	Date of Recovery Last Installment	Remarks
8	9	10	11	12	13

**APPENDIX – XIII FORM XXII (See Rule 78(2)(d))REGISTER OF ADVANCES**

Name & address of contractor.....

Name & location of work.....

Name & address of establishment in/under which contract is carried on..... Name & address of Principal Employer.....

Sl.No.	Name of workman	Father's/Husband Name	Designation/ nature of employment	Wage period and wages payable	Date and amount of advance given
1	2	3	4	5	6

Purpose (s) for which advance made	No. of instalments by which advance is to be repaid	Date & Amount of each instalment repaid	Date on which last instalment was repaid	Remarks
7	8	9	10	11

**APPENDIX – XIVFORM XXIII (78(2) (e) REGISTER OF OVERTIME**

Name&

addressofcontractor.....

.....

Name&locationofwork.....

.....

Name&

addressofestablishmentin/underwhichcontractiscarriedon.....

..... Name&

addressofPrincipalEmployer.....

Sl.No.	Name of workman	Father's/Husband Name	Sex	Designation/nature	Dateonwhich overtime worked
1	2	3	4	5	6

Total overtime worked or	Normal rate of wages	Overtime rate of wages	Overtimeearnings	Rateat which overtime wagespaid	Remarks
7	8	9	10	11	12

APPENDIX XV Notice for appointment of Arbitrator

[Refer Clause 25]

To

The Chairperson, NDMC,

.....

.....

Dear Sir,

In terms of clause 25 of the agreement, particulars of which are given below, I/we hereby give notice to you to appoint an arbitrator for settlement of disputes mentioned below:-

1. Name of applicant
2. Whether applicant is Individual/Prop. Firm/Partnership Firm/Ltd.Co.
3. Full address of the applicant
4. Name of the work and contract number in which arbitration sought
5. Name of the Division which entered into contract
6. Contract amount in the work
7. Date of contract
8. Date of contract Date of initiation of work
9. Stipulated date of completion of work
10. Actual date of completion of work (if completed)
11. Total number of claims made
12. Total amount claimed
13. Date of intimation of final bill (if work is completed)
14. Date of payment of final bill (if work is completed)
15. Amount of final bill (if work is completed)
16. Date of request made to SE for decision
17. Date of receipt of SE's decision
18. Date of appeal to you
19. Date of receipt of your decision.

Specimen signatures of the applicant

(only the person/authority who signed the contract should sign)

I/We certify that the information given above is true to the best of my/our knowledge.

I/We enclose following documents.

1. Statement of claims with amount of claims.
- 2.
- 3.
- 4.

Yours faithfully,

(Signature)

Copy in duplicate to:

1. The Executive Engineer, Water Supply Division.

## SUB:-Specification for safety equipment



S. No.	Name of Equipment	Specifications
1.	Helmet with lamp arrangement	ISI-Marked Made of chemical resistant HDPE polymer with Comfortable head band and chin strap.
2.	Goggles	Made from moulded PVC Frame with clear polycarbonate lens provided with indirect ventilation arrangement and an adjustable elastic head band provides wide vision conforming to EN 166:2001.
3.	Chin Cartridge Gas Mask	Incorporating full vision face mask of neoprene rubber chin cartridge provided with HEPA filter (High Efficiency) Particulate Aerosol Filter), supplied in storage bag. EN141 – 190 approved/Refer to IS: 14166-1994.
4.	Full Body Protective overall	Ultra Flex overall (coat, pant and hood) with good penetration resistance to chemicals.
5.	Hand Gloves	Made from high grade PVC and non slip grip with texture finish for wet gripping.
6.	Safety Shoes	Non Woven Vamp Lining, Black Campbelle lining, green T30 stitching, Non Woven synthetic insole, high density PU injected outsole, low ankle/high ankle.
7.	GUM BOOT	Size:- 6 to 10 Height of Boot-10", 12", 14" Materials :- Polyvinyl Chloride + Rubberized Compound Leak proof, Resistant to mild acid / alkali (20% concentration) equipped with ISI marked steel toe Refer to IS: 15298.
8.	Cascade Type Oxygen Cylinder	A strong steel structure with ISI marked full vision air tight silicon face masks, CCE approved cylinders (6000 1) consisting of 2 or more Nos. with max. Pressure of 1980 psi. 20 m long Breathing tube, audio warning whistle regulating valve, low pressure valve mounted on a movable trolley.
9.	SHOULDER MOUNTED oxygen Inhalator/ O <sup>2</sup> CYLINDER	Self Administering portable oxygen set for relief to victim of Toxic gases inhalation consists of oxygen Cylinder of capacity approx, 400 liters, fitted with valve, pressure reducer, pressure gases and an outlet with non collapsible breathing mask through tubing. Supplied in a carrying/storages bags.
10.	Safety Belt	a) Full body type, fully adjustable shoulder's rings for confined space vertical entry & exit, ideal position pelvic straps for extended comfort. For an independent. Service or with THIPOD SYSTEM. Refer to IS : 3521 – 1999.
		b) Full body type, waist belt adjustable thigh straps One dorsal, one sterna, one ventral & two lateral 'D' rings, soft padding on shoulder & back, and thigh straps conforming to EN 361, 358 & EN 813. 8 - 68
11.	Nylon Rope Ladder	Rope ladder is made up of 12mm dia ISI marked PP rope with 25mm dia fluted aluminum rungs at a

		uniform distance of 1.5 feet. Rope ladders provided with 2 anchorage points CE marked Connectors.
12.	Flame Proof Torch	Water Resistant, Non Sparking Unbreakable body with Polycarbonate lens MSHA, CE, EX and UL approved.
11.	Nylon Rope Ladder	Rope ladder is made up of 12mm dia ISI marked PP rope with 25mm dia fluted aluminum rungs at a uniform distance of 1.5 feet. Rope ladders provided with 2 anchorage points CE marked Connectors.
12.	Flame Proof Torch	Water Resistant, Non Sparking Unbreakable body with Polycarbonate lens MSHA, CE, EX and UL approved.
13	Gas Detector Electronic Equip, for Multi Gases CH <sub>4</sub> , H <sub>2</sub> S, O <sub>2</sub> , CO.	<p><b>CASE:</b> High – Visibility, impact resistant Composite – RFI, EMI and IP 65 Tested and approved.</p> <p><b>DIMENSIONS:</b> 4.30”h x 2.45”w x 1.37”d (10.9cm x 6.22 cm x 3.48 cm)</p> <p><b>WEIGHT:</b> 8.6 ounces (244 g). Weight with Pump: 1.1.6 ounces (326g)</p> <p><b>SENORS:</b> The M40 is available in a 1.2.3 or 4 – gm configuration including Oxygen, Hydrogen Sulfide, Carbon Monoxide and Combustibles / Hydrocarbons.</p> <p><b>MEASURING RANGES:</b> O<sub>2</sub> range: 0.3% volume in 0.1% increments Combustibles (LEL): 0-100% LEL in 1% Increments H<sub>2</sub>S : 0-500 1 ppm increments. CO: 0-999 ppm in 1 ppm increments.</p> <p><b>POWER SOURCE:</b> Lithium-ion battery (can be charged in instrument)</p> <p><b>RUNTIME:</b> 18 hour – instrument (non-alarm) 12 hour-instruments with pump (non – alarm)</p> <p><b>DISPLAY:</b> large LCD provides simultaneous and continuous readout of up to all four gases Large, high – contrast characters – graphic icons and unique amber backlight provide clear display visibility in low – light conditions.</p> <p><b>ALARMS:</b> Vibrating, 90 dB audible and ultra bright LED visual alarms High /low STEL. TWA and low batter alarms, Flow alarm indicators when used with optional SP40 pump.</p>

		<p><b>DATALOGGING:</b> Upto 50 hours of data logging capability</p> <p><b>TEMPERATURE RANGE:</b> 4° TO 122°F (-20° to 50° C)</p> <p><b>HUMIDITY RANGE:</b> 15 to 95% RH, typical, 0 to 99% RH intermittent (non – condensing)</p> <p><b>APPROVALS:</b> UL approved – Class I, Group A, B, C, D</p> <p>CSA – Class I Group A,B,C,D Cenelec (ATEX) and Australia – Eexiad IIC T4 <b>India =- CCoE Nagpur</b></p>
14.	First aid Box	Made of acrylic plastic material / metal in red colour available with all essential medicines in small and big size part list as per factory rules.
15.	Blower	Refer to IS: 941 - 1985

**Section-9**  
**Contract Forms**

# Section 9 - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

## Table of Forms

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**Letter of Acceptance**  
**[on letterhead paper of the Employer]**

..... **date.** .....

To: ..... **name and address of the Contractor** .....

Subject: ..... **Notification of Award Contract No.** .....

This is to notify you that your Bid dated / /2016. . . . **date.** . . . consisting of the Technical Bid and the Price Bid for execution of the **Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years, and identification number, as given in the Bid Data Sheet** . . . . . for the Accepted Contract Amount of the equivalent of . . . . . **amount in figures and words and name of currency** . . . . ., as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Agency: **New Delhi Municipal Council, New Delhi**

Attachment: Contract Agreement

## Contract Agreement

THIS AGREEMENT made the . . . . .day of . . . . ., . . . . ., between . **New Delhi Municipal Council, New Delhi** (hereinafter “the Employer”), of the one part, and . . . . . **name of the Contractor**. . . . .(hereinafter “the Contractor”), of the other part:

WHEREAS the *Employer* desires that the Works known as **Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years** should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
  - (a) The Contract Agreement,
  - (b) The Letter of Acceptance
  - (c) The Letter of Technical Bid
  - (d) The Letter of Price Bid
  - (e) The Variation Nos . . . . . insert variation numbers if any. . . . .
  - (f) the Particular Conditions of Contract – Part A
  - (g) the General Conditions of Contract;
  - (h) the Employers Requirement
  - (i) the completed Schedules
3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of . . . . . **India**. . . . .on the day, month and year indicated above.

Signed by .....

Signed by .....

for and on behalf of the Employer  
in the presence of

Witness, Name, Signature, Address, Date

for and on behalf the Contractor  
in the presence of

Witness, Name, Signature, Address,  
Date



**Performance Security  
(Bank Guarantee)**

To

To  
**Executive Engineer (W/S) / Projects,**  
New Delhi Municipal Council,  
Room No. 231, S.B.S. Place, Gole Market,  
New Delhi – 110 001

In consideration of New Delhi Municipal Council, New Delhi (hereinafter referred as the "Client", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s ....., having its office at ..... (hereinafter referred as the "Contractor" which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), vide the Client's Letter of Intent no. .... dated ..... and the agreement to be executed for Rs. .... (Rupees .....), (hereinafter referred to as the "Agreement") for ..... (insert "Project Name") and the Contractor having agreed to furnish a Bank Guarantee amounting to Rs. .... (Rupees ..... ) to the Client for performance of the said Agreement. We, ..... (hereinafter referred to as the "Bank") at the request of the Contractor do hereby undertake to pay to the Client an amount not exceeding Rs. .... (Rupees ..... ) against any loss or damage caused to or suffered or would be caused to or suffered by the Client by reason of any breach by the said Contractor of any of the terms or conditions contained in the said Agreement. We, ..... (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the Client stating that the amount/claimed is due by way of loss or damage caused to or would be caused to or suffered by the Client by reason of breach by the said Contractor of any of the terms or conditions contained in the said Agreement or by reason of the Contractor's failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. .... (Rupees .....).

We, ..... (indicate the name of Bank) undertake to pay to the Client any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceeding pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this guarantee shall be a valid discharge of our liability for payment thereunder and the Contractor shall have no claim against us for making such payment.

We, ..... (indicate the name of Bank) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Client under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till the Client certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor and accordingly discharges this Guarantee.

We, ..... (indicate the name of Bank) further agree with the Client that the Client shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Client against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor or for any forbearance, act or omission on the part of the Client or any indulgence by the Client to the said Contractor or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.

This Guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor (s). We, ..... (indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Client in writing.

For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. \*\*\* \* (Rupees \*\*\*\*\* ) only. The Bank shall be liable to pay the said amount or any part thereof only if the Client serves a written claim on the Bank in accordance with paragraph 2 hereof, on or before [\*\*\* (indicate date falling 90 days after the date of this Guarantee)].

For .....

Name of Bank:

Seal of the Bank:

Dated, the ..... day of ....., 2016

**Advance Payment Security  
(Bank Guarantee-)**

**Guarantor:** \_\_\_\_\_ *[insert Bank's Name, and Address of Issuing Branch or Office]*

**Beneficiary:** \_\_\_\_\_ *[insert Name and Address of Client]*

**Date:** \_\_\_\_\_ *[insert date]* \_\_\_\_\_

**ADVANCE PAYMENT GUARANTEE No.:** \_\_\_\_\_ *[insert number]* \_\_\_\_\_

We have been informed that \_\_\_\_\_ *[name of Contractor or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Contractor") has entered into Contract No. \_\_\_\_\_ *[reference number of the contract]* dated \_\_\_\_\_ *[insert date]* \_\_\_\_\_ with the Beneficiary, for the provision of \_\_\_\_\_ *[Name of the Work]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of \_\_\_\_\_ *[insert amount in figures]* ( ) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of \_\_\_\_\_ *[amount in figures]* ( ) *[amount in words]*<sup>1</sup> upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's a written statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of their obligation under the Contract because the Contractor:

- (a)** has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Contractor has failed to repay;
- (b)** has used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on their account number \_\_\_\_\_ at \_\_\_\_\_ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in certified statements or invoices marked as "paid" by the Client which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the payment certificate or paid invoice indicating that the Contractor has made full repayment of the amount of the advance payment, or on the \_\_\_ day of *[month]* \_\_\_\_\_, *[year]* \_\_,<sup>2</sup> whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

<sup>1</sup> The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency (ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

<sup>2</sup> Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 revision, ICC Publication No. 758.

***[signature(s)]***

***{Note: All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.}***

**Draft Format for Memorandum of Understanding for  
JOINT VENTURE**

This Memorandum of Understanding (hereinafter referred to as "MOU") is made and entered into this ----- ("Effective Date").

**BETWEEN**

**M/s.** \_\_\_\_\_, a company incorporated, and having its registered office at \_\_\_\_\_.  
(Hereinafter referred to as the "**First Party**"/"**One Partner**");

**M/s.** \_\_\_\_\_) a company incorporated, and having Registered office at \_\_\_\_\_.  
(Hereinafter referred to as the "**Second Party**"/ "**Each Partner**");

**M/s.** \_\_\_\_\_) a company incorporated, and having Registered office at \_\_\_\_\_.  
(Hereinafter referred to as the "**Third Party**"/ "**Each Partner**");

Hereinafter jointly referred to as the "**Parties**" and individually as "**Each Party**" or "**a Party**" as the case may be.

WHEREAS,

- A) The **New Delhi Municipal Council, New Delhi** (hereinafter referred to as the **NDMC** or "**Employer**") invited bid for Selection of Contractor for Implementation of **Selection of Contractor for Implementation of Continuous (24 x 7) Pressurised Water Supply in NDMC and Operation and Maintenance of the system for five years**
- (B) The **Parties** hereto formed a Joint Venture or will form a joint venture (hereinafter referred to as the "**JV**") to jointly execute the above project in all respect

**NOW THEREFORE IT IS HEREBY AGREED** as follows

**ARTICLE 1: JOINT VENTURE:**

- 1.1. The Parties hereto agree to form the Joint Venture with \_\_\_\_\_ designated as the **One Partner and First Partner**.
- 1.2. \_\_\_\_\_ shall be the **Second Member – or Second Partner**

**ARTICLE 2: JOINT VENTURE NAME:**

- 2. The JV shall do business in the name of “ \_\_\_\_\_ **Joint Venture**”.

**ARTICLE 3: JOINT AND SEVERAL LIABILITY:**

- 3 The **Parties** hereto shall, for the above-referred **Projects**, be jointly and severally

liable to the **Employer** for the execution of the Projects in accordance with the **Contract** till the actual completion of Contract including defect liability period and operation & maintenance as per bid conditions.

**ARTICLE 4: PROPORTIONATE SHARE:**

4.1 Each member of the Joint Venture agrees to place at the disposal of the Joint Venture, the benefit of all its experience, technical knowledge and skill, and shall in all respects bear its share of responsibility and burden of completing the contract. The parties herein shall be responsible for physical and financial distribution of work as under.

**Lead Partner** : Financial responsibility : -----

Physical responsibility :-----

**Other Partners** : Financial responsibility : -----

Physical responsibility :-----

4.2 All rights, interests, liabilities, obligations, risks, costs, expenses and pecuniary obligations and all net profits or net losses arising out of the **Contract** shall be shared or borne by the **Parties** in the above **Proportions**.

4.3 The members in the proportion as mention in article 4.1, shall contribute sufficient Initial fixed capital for timely execution of the project including commissioning & operating period as per the contract.

**ARTICLE 5: JOINT EFFORT AND MANAGEMENT:**

5.1 The **Parties** shall participate as a **JV** in the submission of bids and further negotiations with the **Employer** and shall co-operate and contribute their respective expertise and resources to secure and execute the **Projects**.

5.2 On award of **Projects**, the **First Partner** in consultation with the other members of JV will decide on the final management structure for the successful execution of the **Projects** as per the terms of **Contract**.

5.3 All the **Parties** hereby agree to pool in their financial, administrative, managerial, technical and material resources for execution of the **Projects**, including commissioning & operation for the period as stipulated in the contract. The share of interest of the **JV** shall be as per the mutual understanding for the successful completion of the project.

**ARTICLE 6: EXCLUSIVITY:**

6.1 The co-operation between the **Parties** hereto shall be mutually exclusive i.e. none of them shall without the other **Party's** consent & prior approval of **NDMC**, approach or cooperate with any other parties in respect of the Project.

6.2 In the course of working as associates, the parties to the JV will be sharing information with each other which may be proprietary /confidential information /knowledge acquired by each other. It is hereby agreed that the parties will maintain complete secrecy regarding such information / knowledge and will not divulge to any party for any other purpose except for the success of the joint execution of the contract. All parties will also indemnify each other against any claim that may arise

out of using information, which are being claimed proprietary.

**ARTICLE 7: Memorandum of Understanding:**

- 7.1 This **Memorandum of Understanding** shall be terminated:-
- a. if the **Parties** mutually confirm that the **JV's** bid proposal has not been finally accepted by **Employer** and all rights and obligations of the **Parties** under or in connection with this **Memorandum of Understanding** have ceased, or
  - b. after successful completion of the project including commissioning & operation and defect liability period from the date of this **Memorandum of Understanding** unless extended for a further period on demand of **NDMC** & mutual consent of the Parties, or
- 7.2 The **Memorandum of Understanding** can be modified by mutual consent of the Parties to suit the efficient and expeditious execution of Projects including commissioning & operation of Plant or to make this agreement more meaningful to suit the requirements of Employer **after the consent of the Employer**.

**ARTICLE 8: ARBITRATION:**

- 8.1 Any dispute resulting from this Agreement shall be settled amicably by mutual Consultation by the Municipal Commissioner, NDMC & \_\_\_\_\_. In the event that an amicable settlement is not reached within 60 days in any particular case, the dispute shall be referred to arbitration and shall be resolved in accordance with and subject to the provisions of the \_\_\_\_\_ and any statutory modifications and enactment hereof for the time being in force. The decision of the arbitrators shall be final and binding upon both parties. The venue of arbitration will be \_\_\_\_\_.

**ARTICLE 9: GOVERNING LAWS:**

- 9.1 This Agreement shall in all respects be governed by and interpreted in accordance with the \_\_\_\_\_ Laws.

**ARTICLE 10: CONFIDENTIALITY:**

- 10.1 No Party hereto shall disclose to any other party any information of a confidential nature including but not limited to trade secrets, know-how acquired from any Party in connection with the subject matter of this Agreement.

**ARTICLE 11: ADDRESS OF CONSORTIUM:**

- Any and all correspondence from the Employer to the **JV** shall be addressed to **(name of JV)** at the address stated herein below–(any one of the partners). The address of the Consortium office of the partner companies will be deemed to be the address for the purpose of communication.
- The notice, if any required to be served on the party by the other party, will be deemed to be served, if the said notice / communication is delivered by Registered Post at the respective address

**(name of JV)**

\_\_\_\_\_

**ARTICLE 12: Authorized Representative:**

- the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.
- Authorized Representative of JV : \_\_\_\_\_

**ARTICLE 13: ASSIGN ABILITY:**

13.1 The interests and rights of a Party in the Contract and as a Party of the Joint Venture shall not be transferable or assignable without the written consent of the Employer & other party.

**ARTICLE 14: INTERPRETATION OF HEADINGS:**

14. The headings of each of the Articles herein contained are inserted merely for convenience of reference and shall be ignored in the interpretation and construction of any of the provisions herein contained.

**ARTICLE 15: OTHERS**

15.1 Any other matters not contained in this Agreement shall be discussed and amicably agreed upon by the Parties in the spirit of mutual trust and cooperation for timely completion of project including commissioning & operation of project. Notwithstanding anything above all the Parties are severally and jointly responsible to the Employer for execution of the Contract:

**IN WITNESS WHEREOF** the Parties hereto have caused this Agreement to be executed by each of the duly authorized representatives as appearing below:-

Signed by _____ ) For and on behalf of _____ )	
in the presence of: _____ ) Name: _____ ) Designation: _____ )	Name : _____ Designation: _____
Signed by _____ ) For and on behalf of _____ )	
in the presence of: _____ ) Name: _____ ) Designation: _____ )	Name : _____ Designation: _____



**Draft Format for Shareholders Agreement**  
**SHAREHOLDER'S AGREEMENT**

THIS AGREEMENT is made the \_\_\_\_ day of \_\_\_\_\_ 2016, by and between:

M/s. \_\_\_\_\_, a company incorporated in India under the Companies Act, \_\_\_\_\_, and having its registered office at \_\_\_\_\_ (hereinafter referred to as '**Company A**', which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and permitted assigns)  
..... One Part

AND

M/s. \_\_\_\_\_, a company incorporated in India under the Companies Act, \_\_\_\_\_, and having its registered office at \_\_\_\_\_ (hereinafter referred to as '**Company B**', which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and permitted assigns)  
..... Other Part

WHEREAS the Company A is carrying on the business, inter alia of \_\_\_\_\_.

AND WHEREAS the Company B is carrying on the business, inter alia of \_\_\_\_\_.

AND WHEREAS the parties hereto have, after several consultations with each other shown the intention to co-operate with each other and enter the Joint Venture for \_\_\_\_\_ (hereinafter referred to as 'the Purpose/ Project') for the consideration and upon the terms and conditions herein contained.

AND WHEREAS the duration of the Company shall be until the completion of the said Purpose/ Project subject to the prior written approval of the \_\_\_\_\_ (Authority).

AND WHEREAS pursuant to the aforesaid intention of the parties hereto they propose to procure the formation of a **Limited Company** in India known as \_\_\_\_\_ under the Indian Companies Act, 2013, (hereinafter called 'the Special Purpose Company') which would have an authorised share capital of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) divided into \_\_\_\_\_ equity shares of Rs. \_\_\_\_\_ each and an issued share capital of Rs. \_\_\_\_\_.

NOW IT IS HEREBY AGREED between the parties as follows:

1. Forthwith upon the execution of this agreement the parties hereto shall get registered a Special Purpose Company in the name of M/s.

\_\_\_\_\_, (and which name is approved by the Registrar of Companies at \_\_\_\_\_) with the said Registrar under the Indian Companies Act, 2013. Also, this Shareholder's Agreement shall form part of the Memorandum and Articles of Association and shall be laid at the first Board of Directors Meeting for the approval. Additionally, this Shareholder's Agreement shall override the Memorandum and Articles of Association of the Company. Further, the Alteration of Memorandum and Articles of Association of the Special Purpose Company will need the prior written approval of the \_\_\_\_\_ Authority.

2. The rights attaching to the shares of the Company have been set out in the draft Articles of Association referred to in Clause 1 hereof.
3. Each of the parties hereto undertakes to the other–
  - 3.1 To perform and observe and (so far as it is able by the exercise of voting rights or otherwise so to do) to procure that the Special Purpose Company will perform and observe all the provisions of this Agreement.
  - 3.2 To take all necessary steps on its part to give full effect to the provisions of this agreement, and
  - 3.3 Without prejudice to the generality of the foregoing, to exercise and procure that every person for the time being representing it will exercise or refrain from exercising any rights of voting at any meeting of the members or of the Directors of the Special Purpose Company so as to ensure the passing of any and every resolution necessary or desirable to procure that the affairs of the Special Purpose Company are conducted in accordance with this agreement and otherwise to give full effect to the provisions of this agreement and likewise so as to ensure that no resolution is passed which does not accord with such provisions.
4. The registered office of the Special Purpose Company shall be at \_\_\_\_\_.
5. The parties hereto agree that the share equity in the Special Purpose Company shall be in the following proportion:
  - 5.1 The Company A shall hold \_\_\_\_ percentage, and
  - 5.2 The Company B shall hold \_\_\_\_ percentage of the total issued share capital of the Special Purpose Company at any one time throughout the period of this Joint Venture.
6. All shares issued shall be paid in full in cash and/or in kind to the Company but no additional shares shall be issued without the prior mutual agreement of the parties hereto. However, the parties hereto shall have pre-emptive rights in proportion to the number of shares held by each of them with respect to any new issuance of shares of the Special Purpose Company, subject to the provisions of the Indian Company Act, 2013.

7. Neither of the parties hereto shall pledge, sell, transfer or otherwise encumber or dispose of all or any of the shares of the Company without the prior written consent of the \_\_\_\_\_ Authority.
8. Both the parties hereto shall be aligned with the Special Purpose Company until the winding-up of the Special Purpose Company unless otherwise approved by the \_\_\_\_\_ Authority in writing.
9. As provided in the draft Articles of Association referred to in Clause 1 hereof the number of Directors of the Company shall be \_\_\_\_\_ of whom \_\_\_\_\_ will be nominated by the Company A and \_\_\_\_\_ by the Company B respectively hereto. Before the commencement of each financial year of the Company the Directors shall appoint one of their members to be the Chairman of the Board throughout such financial year and the person so elected shall be nominated in respect of alternate years by the parties hereto. The chairman shall have a casting vote at meetings of directors or at general meetings of the Company. The first Chairman of the Company shall be nominated from the Company A. No director so appointed as herein provided shall be entitled to remuneration whatsoever unless otherwise agreed by the parties hereto.
10. In the event that a director vacates his position at any time for whatsoever reason the vacancy shall be filled by the nomination of the party whose nominated director as aforesaid has vacated his/ her position.
11. The Board of Directors shall decide the time and venue for convening all meetings of the Company, provided that they will be held always in India.
12. All general meetings of the Company shall be conducted in the language understood by the parties hereto and/ or the shareholders of the Company but all the minutes of such meetings shall be written in the English language.
13. The quorum for meetings of Directors of the Company and the procedure for transacting business at meetings of Directors of the Company shall be as prescribed in the draft Articles of Association referred to in clause 1.
14. The Company A will arrange for the necessary accounting and other essential services and facilities to be provided for the Special Purpose Company on terms to be approved by the Directors of the Company.
15. Annual Accounts:
  - 15.1 The accounts of the Special Purpose Company shall be made upto the 31<sup>st</sup> day of March in each year.
  - 15.2 The annual statement of account of the Special Purpose Company shall be audited by an Independent Chartered Accountant to be appointed on the mutual agreement of the parties hereto. The

Special Purpose Company shall issue to the shareholders on a semi-annual basis and within sixty (60) days of the end of the relevant month the financial statements together with the report on operations for the period covered by the financial statements and which shall be submitted In the English language at the expense of the Company.

16. The Company shall open a bank account with the Bank of \_\_\_\_\_ and such account shall be operated by any two (2) Directors of the Company or otherwise as may be determined by the Directors of the Company from time to time.
17. The Directors shall appoint two (2) Joint Representative Directors for the Company, one of whom shall be nominated by the Company A and the other by the Company B, who shall be responsible for the operation and administration of the Special Purpose Company in accordance with the decisions of the Directors. The Joint Representative Director nominated by the Company A shall be designated the President of the Special Purpose Company and the Joint Representative Director nominated by the Company B shall be designated the Vice-President of the Special Purpose Company.
18. Except with the approval of the Directors of the Company-
  - 18.1 The Special Purpose Company shall not engage in any other business than the \_\_\_\_\_ (Purpose/ Project).;
  - 18.2 The Special Purpose Company shall not make or incur any commitment for capital expenditure; and
  - 18.3 The Special Purpose Company shall not enter into any contract or engagement of a material nature outside the normal course of business.
19. This Agreement shall continue to be in effect so long as the Purpose/ Project of the Special Purpose Company is accomplished/ achieved unless the same is earlier terminated as provided hereinbelow by prior written approval of the \_\_\_\_\_ Authority and on such terms and conditions as imposed by the said Authority:
  - 19.1 In the event that the necessary approvals by the Government authorities for this Special Purpose Company and/ or the necessary approvals for the \_\_\_\_\_ (Purpose/ Project) and such other related matters are not obtained within three (3) months from the date of this agreement or such other period the parties hereto may agree to; or
  - 19.2 In the event that either party commits a breach of any of the terms of this agreement, provided that the other party in writing requires the former to remedy such breach within ninety (90) days from the date of the notice and the party receiving such notice has failed to remedy the breach; or

- 19.3 In the event of any acts by force majeure which either of the parties are unable to remedy within ninety (90) days of its happening; or
- 19.4 In the event that either party hereto goes into liquidation voluntarily or compulsorily or enters into composition with its creditors or restructures itself or does anything whereby its corporate entity is so materially changed so as to adversely affect this joint venture and/ or this agreement; or
- 19.5 In the event that there be intervention by the local authorities thereby making the Special Purpose Company not viable to continue; or
20. The failure of either party to insist on the strict and punctual performance of the provisions of this agreement shall not constitute a waiver of or estoppel against asserting the right to require such performance nor should a waiver or estoppel in one instance constitute a waiver or estoppel with respect to a later breach whether of similar nature or otherwise. Nothing in this provision shall prevent a party hereto from enforcing its rights by such remedies as may be available in lieu of termination of this agreement as specified in Clause 19 hereto.
21. Neither the parties shall dilute their equity without the prior written approval of the \_\_\_\_\_ Authority. Further, any substantial change as mentioned below shall not have any effect unless it is carried with the prior written approval of the \_\_\_\_\_ Authority.
22. Substantial change shall include the following:
- 22.1 Increase, decrease or other alteration or modification in authorized or issued share capital, or creation or issue of securities (including Equity Shares, preference shares, non-voting shares, warrants, options, debt instruments, convertible instruments etc), or any buyback or redemption of the Special Purpose Company Securities or any reduction of capital or any listing of any Company Securities;
- 22.2 Any amendments to the Charter Documents, except for those required pursuant to the terms of this Agreement;
- 22.3 Any issuance, modification of terms, or increases of any stock option or incentive plans for the employees (including any ESOP Scheme) or for the Directors of the Special Purpose Company and the allocation of options thereunder;
- 22.4 Amending the annual business plan and operating budget of the Special Purpose Company including capital expenditures and/ or investments and/ or debt plans for every Financial Year;
- 22.5 Availing of debt or the incurring of liability by the Special Purpose Company. For the purposes of this provision, "debt" shall include but not be limited to short and long-term debt and guarantees and indemnities but shall not include guarantees provided in the ordinary course of business of the Special Purpose Company;

- 22.6 Creation of joint ventures/ partnerships, creation or investment in any new subsidiaries, or entering into a new line of business by the Special Purpose Company; and entering into any new commercial contract or arrangement (by the Company) with any third party (save and except new commercial contracts or arrangements entered in the ordinary course of business);
  - 22.7 Affiliate/ Related Party transactions entered into by the Special Purpose Company other than in ordinary course of the business of the Special Purpose Company;
  - 22.8 Delegation of authority or any of the powers of the Board to any individual or committee, or any change in the number of Directors or the composition of the Board;
  - 22.9 Mergers, acquisitions, demergers, spin off, amalgamations, consolidations, and divestment or sale of the Special Purpose Company or sale (including to a lease or exchange) of assets;
  - 22.10 The listing or de-listing of the Equity Securities, or the equity securities of any of the Company's Subsidiaries, on any stock exchanges, or change in legal status of the Special Purpose Company e.g. private to public company status, etc.;
  - 22.11 Commencing liquidation, winding up, dissolution or bankruptcy proceedings pertaining to the Special Purpose Company;
  - 22.12 The appointment or removal and determination of the terms of employment of Key management personnel including the Chief Executive Officer, Managing Director, Chief Technology Officer, Chief Financial Officer and Chief Operating Officer and any significant changes in the terms of the employment agreement;
  - 22.13 Material change in accounting policies and principles;
  - 22.14 Appointment or removal or change of the statutory auditors or internal auditors of the Special Purpose Company;
  - 22.15 Any loans to Promoters or their Affiliates;
  - 22.16 Any loans exceeding Rs. 25,000 a year (Rupees Twenty Five Thousand) to employees of the Special Purpose Company;
  - 22.17 Any agreement, arrangement, transaction or assignment of intellectual property rights including those relating to copyrights, trademarks, patents and designs;
23. In the event that there be any term or provision of this agreement becoming invalid, illegal or unenforceable in any respect after execution hereof such invalidity or unenforceability shall not affect any other term or provision of this agreement and this agreement shall be interpreted and construed as if such invalidity, illegality or unenforceability had never existed and/ or contained in this agreement.
  24. The failure or delay of either party hereto to perform any obligation under this agreement solely by reason of acts of God, acts of Governmental policies (otherwise than provided herein) riots, wars, strikes, lockouts, accidents in transportation and/ or such other causes beyond the party's

control shall not be deemed to be a breach of this Agreement.

PROVIDED ALWAYS, if the party is so prevented from performing as herein stated it shall continue to take all expedient steps and/ or actions within its ability to rectify the situation.

25. Except where the nature of the happening is such as to prevent the party from doing so the party suffering from the acts by force majeure shall notify the other party and a copy of the said notifying letter shall be addressed to the \_\_\_\_\_ Authority in writing within seven (7) days after the occurrence of such happening.
26. This agreement shall not be construed by either party hereto as constituting each of them the agent of the other nor the Special Purpose Company as the agent for either of them.
27. This Agreement shall be binding upon and accrue to the benefit of the parties hereto and their respective successors and assigns but any assignment of this agreement by one party shall not be effective without the written consent of the \_\_\_\_\_ Authority.
28. The costs and expenses incidental to this Shareholder's Agreement shall be paid by the parties hereto but such payments shall be reimbursed by the Special Purpose Company after the execution hereof.
29. The terms and conditions, apart from those contained herein, on which the parties has agreed to collaborate and to render necessary help in the achieving the Purpose/ Accomplishing the Project by the Special Purpose Company by supplying the know-how and transferring its patents and trademarks, have been recorded in a draft of the agreement to be entered into between the Special Purpose Company and the parties hereto and such draft which is approved by both the parties hereto and is annexed hereto as Annexure A shall be deemed to form part of this agreement. On the registration of the said Special Purpose Company, the said draft agreement will be got adopted by the Board of Directors of the Special Purpose Company and shall be thereafter executed by and on behalf of the Special Purpose Company and the parties hereto so as to be binding on the Company.
30. In case the Special Purpose Company fails to comply with the contractual obligations and terms and conditions in a given time frame for whatever reason may be, the parties/ Joint Venture Partners alongwith Special Purpose Company shall severally and jointly be held liable to the \_\_\_\_\_ Authority. And accordingly, the penal provisions as applicable to the Special Purpose Company will also be applicable in the same manner and to the same extent to the parties/ Joint Venture Partners alongwith the Special Purpose Company.
31. The parties hereto covenant with each other as follows:

- 31.1 That it will carry out the provisions of this agreement in good faith and in the spirit it is executed.
- 31.2 That it warrants and represents to the other party that it has no outstanding commitments or obligations which would impede its ability and right to enter into this agreement and/ or fulfill its obligations hereunder except for those disclosed in writing at the time of the execution hereof.
- 31.3 That it will indemnify the other party if the aforesaid warranty and/ or representation is found to be false or untrue and save it harmless from all damages, fines, costs and such other expenses in consequence thereof.
- 31.4 That it will not engage or participate in any manner with any other party in any venture within India which may compete and/ or be detrimental to the Special Purpose Company's interest and wellbeing of the Company generally, and
- 31.5 That it will do such acts and/ or deeds as are necessary and beneficial to the Special Purpose Company upon the request by the other party hereto.
32. The Shareholders shall not during the continuance of this agreement or at any time thereafter divulge or disclose to any person whomsoever or make any use whatever for his own or for whatever purpose, of any confidential information or knowledge obtained by him as to the business or affairs of the company or as to any trade secrets or secret processes of the company and they shall during the continuance of this agreement hereunder also use their best endeavors to prevent any other person from doing so. A Confidentiality Agreement could be required to be signed any time in the future.
33. All disputes and/ or differences arising between the parties hereto with regard to this agreement including Annexure A hereto or the duties, powers or liabilities or either party hereunder or with regard to the construction of any clause hereof or any act or thing to be done in pursuance thereof or arising out of anything herein contained whether during the continuance of this agreement or upon or after its termination by any act of either party hereto or otherwise shall be referred to a single Arbitrator in accordance with the provisions of the Indian Arbitration & Conciliation Act, 1996.
34. Any notice required or permitted to be given hereunder shall be in writing and may be given by the personal service or by electronic transmissions to the parties hereto at their addresses specified below:

To the Company A: \_\_\_\_\_

To the Company B: \_\_\_\_\_

and any such notice given shall be deemed to have been received by either of the parties hereto within fourteen (14) days after it has been posted and



if it is sent by electronic transmission it shall be deemed to have been received within forty eight hours after it has been transmitted. For the purpose of showing proof of posting and/ or transmitting it shall be sufficient to produce a letter, a telex, a cable and/ or a telefax message containing the notice and properly addressed, posted and/ or transmitted to the party intended therefor.

The said notices shall also be copied to \_\_\_\_\_ Authority in the same manner as mentioned above.

To the Authority: \_\_\_\_\_

35. This agreement shall be construed and shall take effect in accordance with the law in India.

AS WITNESS the Common Seal of the parties hereto have been hereunto affixed, the day and year first hereinabove written:

The common seal of Company A,

is hereunto affixed pursuant to the resolution of the Board of Directors dated \_\_\_\_\_ in the presence of Mr. \_\_\_\_\_, Director duly authorised in that behalf.

The common seal of Company B,

is hereunto affixed pursuant to the resolution of the Board of Directors dated \_\_\_\_\_ in the presence of Mr. \_\_\_\_\_, Director duly authorised in that behalf.

Witnesses:

1.

2.