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ANNEXURE II : Contract Agreement

This agreement, made the _____ day of _____**2025**, between Chennai Metropolitan Water Supply and Sewerage Board 4TH floor, No.1 Pumping Station, Chindatripet, Chennai-600002 [name and address of Employer](hereinafter called "the Employer)" and _____
_____
_____
_____
_____

[name and address of contractor] (herein after called "the Contractor" of the other part).

Whereas the Employer is desirous that the Contractor execute the work of", Contract no:

[name and identification number of Contract] (hereinafter called "the Works") and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a cost of Rs

_____
_____
_

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein 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.

4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

    (i) Letter of Acceptance;

    (ii) Notice to proceed with the works;

    (iii) Contractor's Bid;

    (iv) Contract Agreement comprising of the following:

- Contract Data;
- Conditions of Contract (General and Special);
- Schedules
- Performance Securities for Construction period and O&M period

(v) Specifications (General and Special)

(vi) Drawings;

(vii) Bill of Quantities; and

(viii) Any other document listed in the Contract Agreement & Contract Data and replies to queries, clarifications issued by the employer, such confirmations given by the bidder which are acceptable to the employer and the entire Addendum issued as forming part of the contract.

(ix) Instructions to bidders

(x) Safety and preventive measures and digest of labour laws (CMWSSB)

(xi) Joint Venture/ Consortium Agreement

In witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of

_____

was hereunto affixed in the presence of:

Signed, Sealed and Delivered by the said

_____

_____

_____

_____

in the presence of:

Binding Signature of Employer _____

Binding Signature of Contractor_____

SECTION 1. CONDITIONS OF CONTRACT

Article 1: Definitions & Interpretation

1.1. Definitions

Terms, which are defined in the Contract Data, and not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in Clauses 2.22 and 2.23. The name of the Adjudicator is defined in the Contract Data.

Bill of Quantities means the priced and completed Bill of Quantities to be submitted by the Bidder.

The **Completion Date** is the date of completion of the Works as certified by the Engineer in accordance with Sub Clause 6.1.1.

The **Contract/Agreement** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 1.2 below.

The **Contract Data** defines the documents and other information, which comprise the Contract.

The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; **months** are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer or Authority or CMWSSB** is the party who will employ the Contractor to carry out the Works.

The **Engineer** is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the

Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time, and valuing the Compensation Events.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

Materials are all supplies, including consumables, used by the contractor for incorporation in the Works.

Plant is any integral part of the Works, which is to have a mechanical, electrical, electronic, or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those, which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site.

Specification means the Specification of the Works to be submitted by the Bidder and any modification or addition made or approved by the Engineer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.

A **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.

Temporary Works are works designed, constructed, installed, and removed by the Contractor, which are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer, which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

Water Sector for the purpose of this project means all projects related to water and / or wastewater including construction or O&M or both the same.

Sub Zone refers to **DMA**

1.2. Interpretation

1.1.1. In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about the Conditions of Contract.

1.1.2. If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).

1.1.3. The documents forming the Contract shall be interpreted in the following order of priority:

(1) Agreement
(2) Letter of Acceptance, Notice to proceed with the works
(3) Contractor's Bid
(4) Contract Agreement comprising of the following:
    - Contract Data
    - Conditions of Contract (General and Special)
    - Schedules
    - Performance Securities
(5) Specifications (General and Special)
(6) Bill of Quantities
(7) Drawings and
(8) Any other document listed in the Contract Agreement, Contract Data and replies to queries, clarifications issued by the employer, such confirmations given by the bidder which are acceptable to the employer and all the Addendum issued as forming part of the contract.
(9) Instructions to bidders
(10) Safety and Preventive measures and digest of Labour Laws (CMWSSB)
(11) Joint Venture/ Consortium Agreement
(12) Declaration of undertaking

ARTICLE 2: General Conditions

2.1. Language and Law

2.1.1. The language of the Contract and the law governing the Contract are stated in the Contract Data.

2.2. Engineer's Decisions

2.2.1. Except where otherwise specifically stated the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

2.3. Delegation

2.3.1. The Engineer may delegate any of his duties and responsibilities to other people except to the Adjudicator after notifying the Contractor and may cancel any delegation after notifying the Contractor.

2.4. Communications

2.4.1. Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

2.5. Subcontracting

2.5.1. The Contractor may subcontract with the approval of the Engineer but shall not assign the Contract without the approval of the Employer in writing. Subcontracting does not alter the Contractor's obligations.

2.6. Other Contractors

2.6.1. The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors. The Contractor shall as have referred to in the Contract Data, also provide facilities and services for them as described in the Schedule. The Employer may modify the schedule of other Contractors and shall notify the Contractor of any such modification.

2.7. Personnel

2.7.1. The Contractor shall employ the key personnel named in the Schedule 6 of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

2.7.2. If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

2.7.3. Non-employment of Project Manager, Key Personnel and Support Personnel/ Staff shall be liable for a fine as specified in Contract Data.

2.8. **Employer's and Contractor's Risks**

2.8.1. The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

2.9. Employer's Risks

2.9.1. The Employer is responsible for the excepted risks which are; (a) in so far as they directly affect the execution of the Works in the Employer's country, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Contractor's design.

2.10. Contractor's Risks

2.10.1. All risks of loss of or damage to physical property and of personal injury and death, which arise during and in consequence of the performance of the Contract other than the excepted risks, are the responsibilities of the Contractor.

2.11. Insurance

2.11.1. The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks:

(a) loss of or damage to the Works, Plant and Materials;

(b) loss of or damage to Equipment;

(c) loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and

(d) personal injury or death.

2.11.2. Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

2.11.3. If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

2.11.4. Alterations to the terms of insurance shall not be made without the approval of the Engineer.

2.11.5. Both parties shall comply with any conditions of the insurance policies.

2.12. Site Investigation Reports

2.12.1. The Contractor, in preparing the Bid, shall rely on any site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder.

2.13. Queries about the Contract Data

2.13.1. The Engineer will clarify queries on the Contract Data.

2.14. Contractor to Construct the Works

2.14.1. The Contractor shall design (if applicable), construct and install the Works in accordance with the Specification and Drawings.

2.14.2. The basic centerlines, reference points and benchmarks will be fixed by Employer.

2.14.3. The Contractor shall establish at his cost, at suitable points, additional reference lines, benchmarks as may be necessary. The Contractor shall remain responsible for the sufficiency and accuracy of all his benchmarks and reference lines. He shall take precautions to see that the lines, points and benchmarks fixed by Employer are not disturbed by his work and shall make good any such damage.

2.15. The Works to be completed by the Intended Completion Date

2.15.1. The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the program submitted by the

Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

2.16. Approval by the Engineer

2.16.1. The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with the Specifications and Drawings.

2.16.2. The Contractor shall be responsible for design of Temporary Works.

2.16.3. The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

2.16.4. The Contractor shall obtain approval of third parties to the design of the Temporary Works where required.

2.16.5. All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

2.17. Safety

2.17.1. The Contractor shall be responsible for the safety of all activities on the Site

2.18. Archaeological and Geological Findings

2.18.1. All fossils, coins, articles of value or antiquity, structures, groups of structures, and other remains or items of geological, archaeological, paleontological, historical, architectural or religious interest found on the Site shall be placed under the care and custody of the Employer.

The Contractor shall:

(a) take all reasonable precautions, including fencing-off the area or site of the finding, to avoid further disturbance and prevent Contractor’s Personnel or other persons from removing or damaging any of these findings;

(b) train relevant Contractor’s Personnel on appropriate actions to be taken in the event of such findings; and

(c) implement any other action consistent with the requirements of the Specifications and relevant laws.

The Contractor shall, as soon as practicable after discovery of any such finding, notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

2.19. Possession of the Site

2.19.1. The Employer will give possession of all parts of the Site to the Contractor. However, if possession of a part is not given by the date stated in the Contract Data it cannot be taken as a reason for delay in start of the relevant activities and it will not be considered a Compensation Event.

2.20. Access to the Site

2.20.1. The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

2.21. Instructions

2.21.1. The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

2.21.2. The contractor shall permit the employer to inspect the Contractors accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the employer if so required by the employer.

2.22. Disputes

2.22.1. Standing Grievance Redressal Committee (SGRC)

If a dispute (of any kind whatsoever) arises between the Parties in connection with or arising out of the contract or execution of the works, including any dispute as to any opinion, instruction, representative, either party shall initially refer the same in writing to Employer. The Employer will constitute a Standing Grievance Redressal Committee (SGRC) with members of officers of the Board to resolve the disputes.

Accordingly, it is proposed that the following officials of CMWSSB may be formed as SGRC to resolve the disputes between CMWSSB and the Contractor.

Committee members for specified project:

i. Chief Engineer

ii. Superintending Engineer

General Committee Members:

iii. Controller of Finance

iv. Internal Auditor

The Committee should be formed by the concerned execution wing for each projects separately after getting approval from the Competent Authority. The Chief Engineer and Superintending Engineer should be other than the Chief Engineer / Superintending Engineer entrusted with the execution of the project.

If any dispute is referred to the SGRC, it will within a week of receipt of such request acknowledge and convene a meeting with both the parties. The committee will go through the submitted documents, hear the parties and attempt at finding an amicable solution within 28 days of receipt of such reference by the SGRC. If any settlement is arrived at SGRC the same shall be recorded in writing as a settlement agreement and signed by the Contractor, Employer and all committee members. Such settlement shall be final and binding on the parties with regards to all disputes so resolved.

If the SGRC fails to settle all or part of the dispute within 28 days, the same shall be notified to the contractor. Thereafter it is left to the parties to refer the unresolved disputes to Adjudication / Arbitration. In such case, the party may give notice in writing its intention to refer such dispute to Adjudication / Arbitration.

2.22.2. All If the Contractor believes that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Engineer's decision.

2.23. Procedure for Disputes

2.23.1. The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

2.23.2. The Adjudicator shall be paid daily at the rate specified in the Contract Data together with reimbursable expenses of the types specified in the Contract Data and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.

2.23.3. The Arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of the Contract.

2.24. Replacement of Adjudicator

2.24.1. Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not fulfilling his functions in accordance with the provisions of the Contract, a new Adjudicator will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the Contract Data at the request of either party, within 14 days of receipt of such request.

ARTICLE 3: Time Control

3.1. Program

3.1.1. Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works along with monthly cash flow forecast.

3.1.2. An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.

3.1.3. The Contractor shall submit to the Engineer, for approval, an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Program within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted.

3.1.4. The Engineer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer again at any time. A revised Program is to show the effect of Variations.

3.2. Extension of the Intended Completion Date

3.2.1. The Engineer shall extend the Intended Completion Date if a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work.

3.2.2. The Engineer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer for a decision upon the effect of a Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

3.3. **Deleted**

3.4. Delays Ordered by the Engineer

3.4.1. The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

3.5. Management Meetings

3.5.1. Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

3.5.2. The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

3.6. Early Warning

3.6.1. The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work increase the Contract Price or delay in the execution of works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

3.6.2. The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

Article 4: Quality Control

4.1. Identifying Defects

4.1.1. The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect

4.2. Tests

4.2.1. If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples.

4.2.2. All pipes, specials, electrical and mechanical items shall be subjected to Third Party inspection at the cost of Employer. The Contractor shall provide all necessary details such as manufacturers/supplier's address and location of the manufacturing site well in advance to the Employer for such purpose.

4.2.3. The contractor is responsible for ready availability of materials at the manufacturer's/supplier's address and location of the manufacturing site. If the materials are not available for Third Party Inspection Agency (TPIA) when inspecting the location as informed by the contractor the inspection fee payable for the visit of TPIA shall be recovered from the contractor's bill at the rate at which TPIA was given work order on the value of material (Ex-factory) that is not available, subject to a minimum of Rs.5000/- for inspection within Tamil Nadu and Rs.15,000/- outside Tamil Nadu.

4.2.4. All pipes, specials, electrical and mechanical items shall be subjected to Third Party inspection. If the materials are found inferior or defective and rejected by the TPIA then the TPIA shall inspect again based on the inspection call of the contractor. If the materials are again rejected due to inferior quality / defects the inspection fee for third and subsequent inspection shall be recovered from the contractor's bill at the rate at which TPIA was given work order on the value of material (Ex-factory) that are rejected subject to a minimum of Rs.5000/- for inspection within Tamil Nadu and Rs. 15,000/- outside Tamil Nadu

4.3. Correction of Defects

4.3.1. The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

4.3.2. Every time, notice of a Defect is given, the Contractor shall correct the notified Defect within the period of time specified by the Engineer’s notice.

4.4. Uncorrected Defects

4.4.1. If the Contractor has not corrected a Defect within the time specified in the Engineer’s notice, the Engineer will correct the defect, assess the cost of having the Defect corrected and the Contractor will pay this amount.

Article 5: Cost Control

5.1. Bill of Quantities

5.1.1. The Bill of Quantities shall contain items for the work of "Performance Based Contract for Operation & Maintenance of Water Distribution Station, Pipeline Networks (Pumping Mains & Distribution Mains), House Service Connections and allied works at Macro Marvel WDS, Manapakkam and Nandambakkam WDS,Sundar Nagar UGT for 5 years in Area XII (Package - II)" to be done by the contractor.

5.2. Changes in the Quantities

5.2.1. If the final quantity of the work done, differs from the quantity in the Bill of Quantities for the particular item the payment will be made as per actual quantity executed.

5.2.2. The Engineer shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 10 percent, except with the Prior approval of the Employer.

5.2.3. If requested by the Engineer, the Contractor shall provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

5.3. Variations

5.3.1. All Variations shall be included in updated Programs produced by the Contractor.

5.4. Payments for Variations

5.4.1. 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 of the request or within any longer period stated by the Engineer and before the Variation is ordered.

5.4.2. The Contractor shall not be entitled to additional payment for costs, which could have been avoided by giving early warning.

5.5. Cash flow forecasts

5.5.1. When the Program is updated, the contractor is to provide the Engineer with an updated cash flow forecast.

5.6. Payment Certificates

5.6.1. The Contractor shall submit to the Engineer monthly statements of the estimated value of the work completed less the cumulative amount certified previously.

5.6.2. Payments will be made to the Contractor under the certificates to be issued at reasonably frequent intervals by the Engineer. Based on the certificate of the Engineer, an intermediate payment will be made by the Engineer of a sum equal to 95 percent of the value of work subject to the conditions deducting all dues towards recovery of advances, interests, fines etc., as per terms of contract and for the cost of materials, if issued, at the term stipulated in the agreement. The balance of 5 percent will be withheld as Retention Money and retained as a security for the due fulfillment of the contract. Under the certificate to be issued by the Engineer on the completion of the entire works, the Contractor will receive the final payment of all the moneys due or payable to him under or by virtue of the Contract except performance security and a sum equal to 2.5% of the total value of the work done provided there is no recovery or forfeiture. No certificate of the Engineer shall be considered conclusive evidence as to the sufficiency of any work or materials or correctness of measurements to which it relates, nor shall it relieve the Contractor from his liability to make good defects as provided by the contract. The Contractor when applying for a certificate shall prepare a sufficiently detailed bill based on the original figures or quantities and rates in the Bill of Quantities to the satisfaction of the Engineer to check the claim and issue the certificate. The certificates as such of the claims mentioned in the application as are allowed by the Engineer shall be issued within fourteen days of the applications. No application for a certificate shall be made within fourteen days of a previous application.

5.6.3. The Engineer shall determine the value of work executed.

5.6.4. The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

5.6.5. The value of work executed shall include the valuation of Variation.

5.6.6. The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

5.6.7. If for any reason, the Contractor or his authorized agent is not available and/or the work is suspended by Employer, recording of measurements will be done by Employer without the presence of the Contractor or his authorized representatives and the Employer shall not entertain any claim from the Contractor for any loss on this account. If the Contractor or his authorized agent or representative does not remain present at the time of such measurements,

after the Contractor has been given a three-day notice in writing, such measurements may be taken in his absence and shall be deemed to be accepted by the Contractor.

5.6.8. Payment for the work done by the Contractor will be based on measurements recorded at various stages of the Work. The Contractor or his authorized agent, or representative shall be present at the time of recording of each set of measurements and sign the measurement book or level/field book in token of their acceptance.

5.7. Payments

5.7.1. Payments shall be adjusted for deductions for advance payments, retention and other recoveries in terms of the contract and deduction at source of taxes as applicable under the law. The Employer shall pay the Contractor the amounts certified by the Engineer.

5.7.2. Deleted

5.7.3. Items of the Works for which no rate or price has been entered in the contract, will not be paid for by the Employer and shall be deemed to have covered by other rates and prices in the Contract.

5.7.4. Payment will be made by the Employer as indicated in the Contract Data

5.8. Deleted

5.9. Tax

5.9.1. The Tenderer shall quote the price schedule exclusive of GST and GST rates and amounts to be shown separately. However, the rates quoted by the Contractor shall be deemed to be inclusive of GST for the performance of this Contract. The Employer will deduct such taxes and other statutory levies at source as per applicable law. Any statutory variations in duties / taxes, which takes effect from a date subsequent to the due date for receipt of tender, shall be to CMWSS Board's account.

5.9.2. Deleted

5.10. Currencies

5.10.1. All payments shall be made in Indian Rupees.

5.11. Deleted

5.12. Retention

5.12.1. The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

5.12.2. On Completion of the whole of the Works, half the total amount retained is repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.

5.12.3. 2.50 % of the total value of the Works executed by the Contractor less deduction if any will be paid to the Contractor along with the final bill. The balance amount of 2.50 % of the total value of the Works will be released after 6 months of completion without interest.

5.12.4. Any recovery advised by the Employer shall be recovered from any bill or money retained from this Contract.

5.13. Liquidated Damages

5.13.1. The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

5.13.2. If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate.

5.14. DELETED

5.15. DELETED

5.16. Securities

5.16.1. The Performance Security (including additional security for unbalanced bids) shall be provided to the Employer not later than the date specified and shall be issued in the amount and form and by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The Performance Security for construction activities shall be valid until 30 days from the Completion of Defect

Liability Period and the additional security for unbalanced bids shall be valid until a date 30 days from the Completion of Defect Liability Period.

5.16.2. The Performance Security for Operation & Maintenance period shall be valid until 60 days from the date of Completion of the contract period and the additional security for unbalanced bids shall be valid until a date 60 days from the date of issue of the certificate of completion. The bank guarantee of a Joint Venture/ consortium bidder shall be in the name of Joint Venture/ consortium.

5.17. Deleted

5.18. Cost of Repairs

5.18.1. Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's act or omissions. Contractor shall attend to the defect in the work noticed during defects correction period within 3 days from the date of issue of notice to attend to the defects, failing which the defect will be remedied by engaging other Contractors at any cost and that cost will be recovered from the Contractor's money available with the Employer and balance alone will be paid when it is due.

Article 6: Finishing the Contract

6.1. Completion

6.1.1. The Contractor shall request the Engineer to issue a Certificate of Completion of the Works and the Engineer will do so upon deciding that the Work is completed.

6.2. Taking Over

6.2.1. The Employer shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

6.3. Final Account

6.3.1. The Contractor shall supply to the Engineer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the contract period. The Engineer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor's revised account.

6.4. 'As Built' Drawings / O&M Manuals

6.4.1. If - As Built drawings and/ or O&M Manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

6.4.2. If the Contractor does not supply the Drawings and manuals by the dates stated in the Contract Data, or they do not receive the Engineer 's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

6.4.3. The Contractor has to submit the —As laid maps (As Constructed) in the following formats of UGSS/WSS/O&M works

I. All the assets (Both surface & underground) Geo referenced using (real Time Kinematics) RTK GPS Survey and drawing shall be GIS shape file format along with the direction of flow.

II. X, Y and Z co-ordinates of all the assets shall be surveyed.

III. The Geo-Coordinates (Spatial locations of —As constructed Assets using RTK shall be with reference to the Base point.

IV. The Base point shall be obtained from CMWSSB.

V. The Coordinate Reference System shall be in the Universal Transverse Mercator (WGS 84 UTM Zone 44N) Co-ordinates system.

VI. The symbols/legends used by the consultancy firm would be based on the NUIS Standards.

VII. The data model & attributes of the network component shall be submitted to the needs of CMWSSB (Templates shall be provided by CMWSSB) The RTK GPS survey drawings has to be submitted along with every RA bill for the completed portions and comprehensive 'As built drawing' is to be furnished on completion of the project

6.5. Termination

6.5.1. The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract by giving 30 (Thirty)days' notice.

6.5.2. Fundamental breaches of Contract include, but shall not be limited to the following:

(a) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(b) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;

(c) the Contractor does not maintain a security which is required;

(d) the Contractor has delayed the completion of works by the number of days for which the stipulated liquidated damages exceeds 10% of the Capital Contract price, then the authority/Employer reserves the right to terminate the Contract as per the provisions of this clause

(e) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

(f) The Contractor (in case of Joint Venture/ consortium) has modified the composition of the Joint Venture/ consortium and /other responsibility of each member of the Joint Venture/ consortium from what is stated in Joint Venture/ consortium agreement without prior approval of the Employer.

(g) Failure of the contractor to achieve two successive milestones.

(h) During O&M period, in case of penalties due to non-performance of KPIs exceeds 30% of the quarterly O&M payments for three consecutive quarters or for a total of five quarters into two consecutive financial years then Employer/Authority has the right to terminate the contract as per the applicable termination clause of this contract.

Note: For the purpose of this clause: "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the evaluation process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a evaluation process or the execution of a contract to the detriment of the Employer, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition."

6.5.3. When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub Clause 6.5.2 above, the Engineer shall decide whether the breach is fundamental or not.

6.5.4. Notwithstanding the above, the Employer may terminate the Contract for convenience.

6.5.5. If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

6.6. Payment upon Termination

6.6.1. If the Contract is terminated because of a fundamental breach of Contract by the contractor, the work will be completed by the employer at the risk and cost of the contractor.

6.6.2. If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

6.7. Property

6.7.1. All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor's default.

6.8. Release from Performance

6.8.1. If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

SECTION 2 . SPECIAL CONDITIONS OF CONTRACT-PART 1

Article 7: Labour Compliances & Applicable Laws

7.1. LABOUR:

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

The Contractor ensure compliance with the provisions listed under ESHS specifications and EMP.

The contractor shall commit complying with and ensuring that their Sub-contractors and major suppliers under the Contract comply with environmental and labour standards and good practices, consistent with laws and regulations applicable in the country of implementation of the Contract and the fundamental conventions of the International Labour Organization (ILO) and international environmental treaties. Moreover, they shall implement environmental and social risks mitigation measures when specified in the relevant environmental and social management plans or other similar documents provided by the Project Executing Agency and, in any case, implement measures to prevent sexual exploitation and abuse and gender-based violence.

7.2. COMPLIANCE WITH LABOUR REGULATIONS:

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactment's and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications / bye laws/ Acts / Rules / regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer/Engineer shall

also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

Further, the contractor has to give a declaration for the following provisions:

i. That in the capacity of Contractor, the contractor has to comply with the provisions of Contract Labour (Regulations & Abolition) Act, 1970 by obtaining a valid license under the Act and the Rules thereto and similarly under Factories Act wherever applicable.

ii. The contractor has to pay the wages in accordance with the Minimum Wages Act to all his / their employees.

iii. That the contractor has to abide to recover the Employees Provident Fund and the Employees' Insurance contributions (both Employees and employer's contribution) from the payment of bills every month.

iv. a) The staffs who have been employed by the contractor should also have ESI & EPF number in their names. The contractor has to pay ESI & EPF contributions towards the staff every month. The copies of the remittance challans of the ESI & EPF contributions should be submitted along with the bill for claiming the subsequent monthly payment. Similarly, the contribution / premium / tax etc, payable to any other statuary authorities should be remitted by the contractor directly, after registering with the respective departments.

b) The contractors are requested to register on Employees Provident Fund Organizations (EPFO) Unified Portal: https://unifiedportal-emp.epfindia.gov.in/epfo. and furnish the details along with the tender document.

c) Contractors cannot execute the agreement until the PF code of the contractor as well as individual UAN details of their workers provided by the contractor.

v. That the contractor has to further declare and undertake that in case of any liability pertaining to his / their employees is to be discharged by the Principal Employer for his / their lapse, the contractor undertakes to reimburse the same or the Principal Employer is authorised to deduct the same from the contractor's dues as payable.

vi. That the contractor will maintain the Registers and records about the Contract Labour employed under Section 29 of Labour (Regulation & Abolition) Act wherever applicable.

vii. That the contractor will take insurance policy under Workmen Compensation Act to meet out any untoward incident until the contract labourers are issued with ESI card.

viii. (1) That no Child Labour shall be employed in a house / work site / Establishment / Other place. (2) As per the Section 2(ii) of the Child Labour (Prohibition and Regulation) Act 1986.

"Child" means, a person who has not completed his fourteenth years of age.

7.3. Child Labour & Worker's Camp:

The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, 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. Where the relevant labour laws of the Country have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

Monitoring and reporting on laboor laws with use of digital systems (ICT Tools for tracking compliance of labor laws) of the applicable Labour Laws given below:

1) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and Centra; Rules 1998.
2) The Building and Other Construction Workers' Welfare Cess Act 1996 and Welfare Cess Rules 1998
3) The Minimum Wages Act 1948
4) The Industrial Employment (standing Orders) Central Rules 1946
5) The Payment and Wages Act 1936
6) The Employees Compensation Act, 1923
7) The Employees State Insurance Act 1948
8) The Contract Labour Act 1986
9) The Inter-state Migration Workmen Act 1979
10) The Equal Remuneration Act 1976
11) The Maternity benefit Act 1961
12) The Sexual Harassment of Women at Workplace (prohibition, Prevention, Redressal) Act 2013
13) The Child and Adolescent Labour (Prohibition and Regulation) act 1986

Tools for Avoidance, minimizing impact on host population and Mitigation where the mapping indicates that there is a likelihood of a negative impact of labor influx in any

project, a mitigation plan has to be put in place involving the key stakeholders. The contractor has contractual accountability to the client/borrower as well as a contractual and legal relationship with the sub-contractor. The contractor also stands in a position of “Principal Employer” to the workers and is therefore ultimately responsible for the labor welfare measures which would influence the impact of labor on the local community. In order to mitigate the negative effects of influx of migrant labors on the host community, the contractor needs to:

1) Assess the conditions of the host community prior to starting the work and hire labor accordingly
2) Manage influx and hire sub-contractors who have the capacity to manage effects of impacts
3) Conduct orientation meetings with the workers and where workers are engaged through a sub-contractor, with the sub-contractor, to apprise them of the social, political, cultural environment and instruct them to conduct themselves accordingly.
4) Lay down a “Code of Conduct” for the workers to avoid adverse impacts on the community.
5) Conduct periodic meetings with representatives of the community to track issues likely to impact it negatively.
6) Ensure a monitoring system to track possible negative impacts and ensure time bound mitigation measures.
7) Depending on the results of studying the nature and extent of impact, all or any of the following mitigating measures may be taken.

Workers Camps and Management of Worker - Community Interface

Camp Location Respond with Yes or No

1) Where the conditions are conducive, i.e. some indications of positive impacts are found, camps can be located in a place which helps workers to interact with the host community. This could facilitate easier acceptance, and co-existence. All cautionary measures are to be adopted at such camps as well.
2) In the best interest of the workers, the camp should be located at a place where there is mobile phone connectivity so that the workers can be in touch with their family
3) Where the connectivity of the camp with the project site is a crucial factor, keeping in mind the time and costs of the project, and the camp necessarily has to be located close to the community, adopt all cautionary measures

4) Where the cost or time is not an issue and negative impacts are indicated, locate the camp at a location which is far away from the local residential area

Managing Worker - Community interface

Camp Location Respond with Yes or No

1) The camp should be kept self-sufficient so that workers do not need to visit the local community market for day-to-day purchases
2) The camp should have means of entertainment and amusement for workers including indoor games, televisions etc. so that workers do not feel the need to move out in search of entertainment
3) Locals should be employed for guarding the camp so that movement of workers and locals can be monitored and restricted
4) The scope for workers to meet locals more often than necessary should be reduced by fixing accountability on local elders/influentials to keep a watch on workers' movement inside the host community, especially after dark
5) Workers should be kept under constant monitoring of respective troop leaders/ sardars/labor supplier and fix accountability on troop leaders for their actions
6) Watch should be kept on interactions of young and unmarried migrants with locals
7) Where favorable conditions allow, help the locals in accepting the migrant workers by allowing both to meet, interact and spend time

Engagement with the Host Community

1) Hire a local sub-contractor/labor-supplier to exercise influence on and engage with the host community
2) Engage local workers to satisfy "son-of-the-soil" demand
3) Extend some reasonable favors to keep the locals happy
4) Involve some local influential person or persons in some capacity and give him/them some decision-making power
5) Form joint committee/s with local influential persons which would monitor the effect of influx of outsiders and liaison between them and the host community
6) Ensure that project staff behave responsibly to environment in particular, not dumping waste, creating water-logging, etc.
7) Provide certain amenities or services, such as use of water supply to some extent, small repairs to public/community buildings, occasional recreation and entertainment such as sports events or film screening, etc.

8) Engage with and manage groups who are in majority or capable of creating problems

9) Engage the local unemployed educated youth in responsible jobs like site supervisor, junior engineer, etc.

10) Understand and manage the caste or ethnicity politics

11) Balance the requirement of outside workers with the tendency of the host community to be hostile to certain cultural, ethnic or religious groups

12) Alternately, ensure reduction of conflict by keeping the workers away from the community, ensure short duration stay or phased engagement to ensure the barriers are removed

13) Ensure that welfare measures are implemented in full so that labor is satisfied and confined to camp and worksites and therefore minimise the incidents of drawing on local resources or mingling with the host community

The following broad labor welfare measures will cumulatively affect the frequency and quality of interface with the host community and must be regularly monitored:

Camp Location Respond with Yes No

1) Access to the labor camp/site by road, avoiding passages through local habitations

2) Access to basic facilities including doctor/physician/para medical professionals, chemist, shops, and market for workers staying at the camp

3) Provision of basic health and safety measures31 such as equipment like fire extinguishers at the camp and ensuring that at least a few workers staying in the camp permanently have the required knowledge of using the safety devices

4) Provision of safety exits for evacuation during emergency

5) Adequate ventilation in rooms or containers with bunk-beds

6) Provision of personal safe/locker/storage space for the labors for storing valuables if not clothes & and household goods

7) Labor camps set at a place with no issue related to connectivity for mobile service operators

8) Provision of basic facilities in camp including drinking water filter, waste management, sanitation facility, adequate number of toilets and covered space for bathing and washing in line with regulations

9) Provision of kitchen, canteen/space for workers to eat their meals under hygienic conditions

10) Camp is self-sufficient and equipped where workers need not go out to buy commodities including vegetables, etc. for sustenance, at least for a week

11) Provision of bed with mattress and pillow alongside materials like blankets in sufficient numbers, keeping climatic conditions in mind

12) Each worker should have his private space even if they share rooms, not only for sleeping, alone but also for spending time during off season/hours

13) Feedback or grievance redressal mechanism where workers without fear of getting laid off, can report their complaints related to quality of services and facilities at their camp

14) Camp is secured 24x7 by guards hired by contractors

15) Provision for entertainment and recreation like games, TV, etc. for workers in the camp during off season/hours

16) Camp should have a first aid box that is regularly maintained by professionals

7.4. **Salient Features of Applicable Labour Laws.**

a) Workmen Compensation Act 1923: - The Act provides for compensation in case of injury/death by accident arising out of and during the course of employment. The contractor shall also take out the Insurance under Workmen's Compensation Act-1923 covering the total number of workmen employed by him on any work pertaining to this contract or contractors. He shall also ensure that similar Insurance under Workmen's Compensation Act 1923 covering the total number of workmen employed by his sub-contractor if any, also included in this policy.

b) Payment of Gratuity Act 1972: - Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years of service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

c) Employees P.F. and Miscellaneous Provision Act 1952: The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:

(i) Pension or family pension on retirement or death, as the case may be.

(ii) Deposit linked insurance on the death in harness of the worker.

(iii) Payment of P.F. accumulation on retirement/death etc.

d) Maternity Benefit Act 1951: - The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

e) Contract Labour (Regulation & Abolition) Act 1970: - The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate of

Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.

f) Minimum Wages Act 1948: - The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, and Runways are scheduled employment.

g) Payment of Wages Act 1936: - It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.

h) Equal Remuneration Act 1979: - The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

i) Payment of Bonus Act 1965: - The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/-per month or less. The bonus to be paid to employees getting Rs.2500/-per month or above up to Rs.3500/- per month shall be worked out by taking wages as Rs.2500/-per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

j) Industrial Disputes Act 1947: - The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

k) Industrial Employment (Standing Orders) Act 1946: - It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

l) Trade Unions Act 1926: - The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

m) Child Labour (Prohibition & Regulation) Act 1986: - The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides

for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.

n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: - The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upto the establishment and back, etc.

o) The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996: - All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

p) Factories Act 1948: - The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

q) Employee State Insurance Act, 1948

r) The Tamil Nadu Manual Workers (Regulation of Employment and Conditions of Work) Act, 1982.

Every Employer other than an Employer operating a motor transport for carrying passengers or goods by roads, employing manual worker in any scheduled employment, shall be liable to pay, within such time as may be prescribed, to the Board established under section 6, for the scheduled employments, other than the scheduled employment in construction or maintenance of dams, bridges, roads or in any building operations, every month a sum at such rate not exceeding one percent of the wages payable by him to such manual worker, as may be fixed by the Government by notification;

s) The Bonded Labour System (Abolition) Act, 1976

t) The Employer's Liability Act, 1938

ARTICLE 8: Environmental Compliances

8.1. Salient Features Of Applicable Environmental Laws.

1. The Forest Conservation Act, 1980, as amended, and Forest (Conservation) Rules, 1981 as amended: These provides for protection of forests by restricting conversion of forested areas into non- forested areas and prevention of deforestation, and stipulates the procedures for cutting any trees that might be required by the applicable rules. Permissions under the Actual so stipulates the norms and compliance requirements of the employer and any contract or on behalf of the employer.

2. State Tree Preservation Acts as may be in force: These provide for protection of trees of important species. Contractors will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees. As appropriate such permissions may be taken from GCC, State Forests Department or any other department / agency as required.

3. The Wildlife (Protection) Act, 1972, and as amended: This provides for protection of wildlife through notifying National Parks and Sanctuaries and buffer areas around these zones; and to protect individuals of nationally important species listed in the Annex of the Act.

4. The Biological Diversity Act, 2002: This provides for conservation of biological diversity, sustainable use of components of biological diversity, and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected there with or incidental there to.

5. The Public Liability Insurance Act, 1991 as amended and The Public Liability Insurance Rules, 1991 as amended: These provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for mattes connected herewith or incidental there to. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

6. The Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, the Ancient Monuments and Archaeological Sites and Remains Rules, 1959 amended 2011, the National Monuments Authority Rules, 2011 and the

similar State Acts: These provide for conservation of cultural and historical remains found in India. Accordingly, area within the radii of 100m and 300m from the “protected property” are designated as “protected area” and “controlled area” respectively. No development activity (including building, mining, excavating, blasting) is permitted in the “protected area” and development activities likely to damage the protected property is not permitted in the “controlled area” without prior permission of the Archaeological Survey of India (ASI) or the State Departments of Art and Culture or Archaeology as applicable.

7. The Environmental Impact Assessment Notification, 2006 and its amendments: This provides for prior environmental clearance for new, modernization and expansion projects listed in Schedule 1 of the Notification. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any environmental management plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.

8. The Water (Prevention and Control of Pollution) Act, 1974 as amended, and the Water (Prevention and Control of Pollution) Rules, 1975 as amended: These provide for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. ‘Pollution’ means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates waste water, and observe the required standards of establishment and operation of these item so work or installations; as well as install and operate all required waste water treatment facilities.

9. The Water (Prevention and Control of Pollution) Cess Act, 1977 and The Water (Prevention and Control of Pollution) Cess Rules, 1978: These provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution under the Water (Prevention and Control of Pollution) Act, 1974.

10. The Air (Prevention and Control of Pollution) Act, 1981 as amended, and the Air (Prevention and Control of Pollution) Rules, 1982: These provides for prevention, control and abatement of air pollution. ‘Air Pollution’ means the presence in the atmosphere of any ‘air pollutant’, which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to

be injurious to human beings or other living creatures or plants or property or environment. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates air pollution such as batching plants, hot mix plants, power generators, backup power generation, material handling processes, and observe the required standards of establishment and operation of these items of work or installations.

11. Noise Pollution (Control and Regulation) Rules, 2000, and as amended: This provides for standards for noise for day and night for various land uses and specifies special standards in and around sensitive receptors of noise such as schools and hospitals. Contractors will need to ensure compliance to the applicable standards, and install and operate all required noise control devices as may be required for all plants and work processes.

12. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996: This provides for Requirement of preparation of on-site and off-site Disaster Management Plans for accident-prone areas.

13. The Explosives Act 1884 and the Explosives Rules, 2008: These provide for safe manufacture, possession, sale, use, transportation and import of explosive materials such as diesel, Oil and lubricants etc.; and also, for regulating the use of any explosives used in blasting and/or demolition. All applicable provisions will need compliance by the contractors.

14. The Petroleum Rules, 2002: This provides for safe use and storage of petroleum products, and will need to be complied by the contractors.

15. The Gas Cylinder Rules 2004 and amendments: This provides for regulations related to storage of gas, and possession of gas cylinder more than the exempted quantity. Contractors should comply with all the requirements of this Rule.

16. Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and as amended: These provide for use and storage of hazardous material such as highly inflammable liquids like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event where the storage quantity exceeds the regulated threshold limit, the contractors will be responsible for regular safety audits and other reporting requirements as prescribed in the Rules.

17. Solid Waste Management Rules, 2016: (Add details)

18. Hazardous & Other Wastes (Management and Trans boundary Movement) Rules, 2016: These provide for protection of general public from improper handling storage and disposal of hazardous waste. The rules prescribe the management requirement of hazardous wastes from its generation to final disposal. Contractors will need to obtain permission from the State Pollution Control Boards and other designated authorities for

storage and handling of any hazardous material; and will to ensure full compliance to these rules and any conditions imposed in the permit.

19. The Bio-Medical Waste Management Rules, 2016: This provides for control, storage, transportation and disposal of bio-medical wastes. As and where the contractor has any first aid facility and dispensaries, established in either temporary or permanent manner, compliance to these Rules are mandatory.

20. Construction and Demolition Waste Management Rules, 2016: This provides for management of construction and demolition waste (such as building materials possible to be reused, rubble and debris or the like); and applies to all those waste resulting from construction, re-modelling, repair or demolition of any civil structure. Contractor will need to prepare a waste disposal plan and obtain required approval from local authorities, if waste generation is more than 20 tons in any day or 300 tons in any month during the contract period; and ensure full compliance to these rules and any conditions imposed in the regulatory approval.

21. The E-Waste (Management) Rules, 2016: This provides for management of E-wastes (but not covering lead acid batteries and radio-active wastes) aiming to enable there cover and/ or reuse of useful material from e-waste, thereby reducing the hazardous wastes destined for disposal and to ensure the environmentally sound management of all types of waste of electrical and electronic equipment. This Rule applies to every manufacturer, producer, consumer, bulk consumer, collection centers, dealers, e-retailer, refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, collection, storage and processing of e-waste or electrical and electronic equipment listed in Schedule I, including their components, consumables, parts and spares which make the product operational.

22. Plastic waste Management Rules, 2016: This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance to this Rule.

23. The Batteries (Management and Handling) Rules 2001: This provides for ensuring safe disposal and recycling of discarded lead acid batteries likely to be used in any equipment during construction and operation stage. Rules require proper control and record keeping on sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries. Contractors will ensure compliance to this the Rule.

24. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and as amended: This provides for regulation of production and consumption of ozone depleting substances in the country, and specifically prohibits export to or import from countries not specified in the Rules, and prohibit sunless specifically permitted, any use of ozone depleting substance.

25. The Coastal Regulation Zone Notifications,2019: This provides for regulation of development activities within the 500m of high tide line in coastal zone and100m of stretches of rivers and estuaries influenced by tides. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.

26. The Motor Vehicle Act 1988 as amended (and State Motor Vehicle Acts as may be in force) and the Motor Vehicle Rules, 1989, and as amended (and State Motor Vehicle Rules as may be in force): To minimize the road accidents, penalizing the guilty, provision of compensation to victim and family and check vehicular air and noise pollution. Contractors will be required to ensure full compliance to these rules.

27. Easement Act, 1882: This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners' rights under the Act is not affected by any ground water abstraction by the contractors.

28. State Groundwater Acts and Rules as may be in force and the Guidelines for Ground Water Abstraction for drinking and domestic purposes in Notified Areas and Industry/ Infrastructure project proposals in Non-Notified areas, 2012: These provide for regulating extraction of ground water for construction/ industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to ground water abstraction through digging any borewell or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.

29. The Mines Act, 1952 as amended; the Minor Mineral and Contract Rules as amended; and the State Mineral (Rights and Taxation) Acts as may be in force: These provide for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission from the State Departments of Minerals and Geology will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.

30. The Insecticides Act, 1968 and Insecticides Rules, 1971 and as amended: These provide for regulates the manufacture, sale, transport, distribution, export, import and use of pesticides to prevent risk to human beings or animals, and for matters connected therewith. No one should import or manufacture; sell, stock or exhibit foe sale; distribute, transport, use: (i) any misbranded insecticides, (ii) any insecticide the sale, distribution or use of which is for the time being prohibited under the Act; and (iii) any insecticide except in accordance with the condition on which it was registered under the Act.

31. National Building Codes of India, 2005 and as amended: This provides guidelines for regulating the building construction activities in India. The code mainly contains administrative regulations, development control rules and general building requirements; stipulations regarding materials, structural design and construction; and building and plumbing services. Contractors will be required to comply with all Bureau of Indian Standards Codes dealing with: (i) use and disposal of asbestos containing materials in construction; (ii) paints containing lead; (iii) permanent and temporary ventilations in workplace; (iv) safety, and hygiene at the workplace; (v) prevention of fire; (vi) prevention of accidents from faulty electrical gadgets, equipment and accessories; and all other such codes incidental to the Contract.

ARTICLE 9: ARBITRATION

9.1. **Procedure For Arbitration**

The procedure for arbitration will be as follows:

a) In case of Dispute or difference arising between the Employer and Contractor relating to any matter arising out of or connected with this agreement, such (Refer Standing Grievance Redressal Committee Clause 4.4) disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Employer and the Contractor. The third arbitrator shall be chosen by the two arbitrators so appointed by the parties, shall act as presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment, this shall be done in accordance with the Arbitration and Conciliation act,1996.

b) DELETED

c) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) above within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the appointment of the Arbitrator shall be made as per the Arbitration and Conciliation act,1996.

d) Arbitration proceedings shall be held at Chennai, (India) and the languages of the arbitration proceedings and that of all documents and communications between the parties shall be English.

e) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expense of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the Expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be born by each party itself.

f) DELETED

g) Performance under the contract shall continue during the arbitration proceedings and payments due to the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

SECTION 3: SPECIAL CONDITIONS OF CONTRACT-PART II

Article 10: Responsibilities of the Contractor

10.1. Contractor's Responsibility

The information given hereunder and provided elsewhere is given in good faith but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim whatsoever will be entertained on the plea that information supplied by the Engineers is erroneous or insufficient.

10.2. Construction Water

The Contractor shall make his own arrangement for the water required for the construction of civil works and testing of pipeline as well as for the potable water required for labour camps.

10.3. Construction Power

The Contractor shall make his own arrangement for supply electrical energy required at his sites and the works from the Tamil Nadu Electricity Board.

The Contractor is forewarned that there can be interruptions in power supply for reasons beyond the control of the Tamil Nadu Electricity Board and therefore the Contractor is advised to make his standby arrangement to provide and maintain all essential power supply for his work area at his expense. The Contractor shall not be entitled to any compensation for any loss or damage to his machinery or any equipment or any consequential loss in progress of work and idle labour.

10.4. Survey

The Contractor shall, at his own expense provide and maintain survey stations which he may require to carry out the works and shall remove the same on completion of the works. The Contractor shall, at his own expense, carry out all the necessary surveys, measurements and setting out of the works and shall for this purpose engage qualified and competent engineering surveyors whose names and qualifications shall be submitted to the Engineer for his approval.

The Contractor shall for the purpose of checking the survey and setting out, provide to the Engineer all the assistance, which he may require. The surveyor shall be selected having appropriate experience and as far as possible, the same surveyor shall be provided throughout the contract period. Before commencing any work at any locations, the Contractor shall give the Engineer not less than two days' notice of his intention to set out or give levels for any part of the work in order that arrangements

may be made for inspection. The Contractor shall provide for the sole use of the Engineer and his staff, all necessary survey instruments and other equipment and all technicians, labour and attendants which the Engineer may require for checking the setting out and marking of the works. The Contractor shall maintain in good working order at all time during the period of contract the instruments provided by him, for the proper setting out of the works. The Contractor shall make available at his own expense, any poles, staging templates.

10.5. Temporary Fencing

The Contractor shall, at his own expense, erect and maintain in good condition temporary fences and gates along the boundaries of the areas assigned, if any, to him by the Employer for the purpose of the execution of the works.

The Contractor shall, except when authorised by the Engineer, confine his men, materials and plant within the site of which he is given possession. The Contractor shall not use any part of the site for purposes not connected with the works unless prior written consent of the Engineer has been obtained. Access shall be made to such areas only by way of approved gateways.

10.6. Return of Labour and Plant

The Contractor shall supply to the Engineer by 9 a.m. every working day a return of the men employed by him and his sub-contractors on the previous working day and all of the work on which they were engaged specifying also the number employed in each trade. He shall also supply monthly any other returns which may be required as to the number of men and constructional plant employed and the nature and type of the work done.

10.7. Sanitary Facilities

The contractor shall provide sanitary latrines and urinals. Toilets provided shall have running water availability all the time. Bathing, washing and cleaning areas shall be provided at the site for construction labour. Washing and bathing places shall be kept in clean and drained condition. Workers shall be hired especially for cleaning of the toilets and bathing area. Septic tanks and soak pits shall be provided at site for disposal of the sewage generated or connect with existing sewer lines connected to sewage treatment plants. The Contractor shall make all arrangements for the disposal of sewage or drainage in accordance with the directions of the Engineer, and in line with EMP.

10.8. Restricted Entry To Site

The Contractor shall get the prior permission of the Engineer before any person not directly connected with the works visits the site. There shall be watch and ward at work sites. When there is no work, no personnel shall be allowed without written permission of Engineer. No person shall be allowed to enter the site in intoxicated

condition, or allowed to climb OHTs, or move around the site in not so healthy or intoxicated condition.

In case of floods or such emergencies all work shall be stopped with prior intimation. All tools, equipment, machinery shall be stacked properly in areas away from submergence areas. All pits shall be covered in advance and all precautions to be taken to prevent any incident.

10.9. Existing Services

Drains, pipes, cables, overhead electric wires and similar services encountered in the course of the works shall be guarded from injury by the Contractor at his own cost, so that they may continue in full and uninterrupted use to the satisfaction of the Employer and the Contractor shall not store materials or otherwise occupy any part of the 'site' in a manner likely to hinder the operation of such services. Should any damage be done by the Contractor on any mains, pipes, cables or lines (whether above or below ground), whether or not shown on the drawings, the Contractor must make good or bear the cost of making good the same without delay to the satisfaction of the Engineer and of the Employer.

10.10. Local Roads and Haul Roads

The approach roads and other public roads in the state may be used by the Contractor to haul construction materials and equipment subject to restriction of load carrying capacity on the roads in particular over bridges and culverts. However, the Contractor will have to pay customary vehicles license and permit fees for use of public roads.

The Contractor shall plan transportation of construction materials to site in such a way that road accidents are avoided.

10.11. Permission for Road Cuts

Wherever the Contractor considers that it is necessary to cut through an existing road or track, he shall submit details to the Engineer for approval, a minimum of seven days before such work commences for all planned works. For emergency works of repair/maintenance of distribution network, the Contractor shall approach the Employer to obtain permission for road cutting on need basis.

In the event of cutting a road by the Contractor without permission from the Engineer the Contractor shall pay compensation as claimed by the owner of the road until it is restored at the cost of the erring Contractor.

Trench Digging:

Digging of trench by the Contractor beyond the length than that is specified by the Engineer shall invite a fine of Rs.500/- per day till such time the damage is restored.

10.12. Temporary Diversion of Roads

During the execution of the works the Contractor shall make at his cost all necessary provision for the temporary diversion of roads, cart-tracks, footpaths, drains, water courses, channels etc., Should he fail to do so, the same shall be done by the Engineer and the cost thereof will be recovered from the Contractor.

10.13. Notice to Telephone, Railways & Electricity Supply Under Takings / Depts., etc.

The employer shall deposit an amount to the respective local bodies / highways department, for restoration of road surface after completion of the works. The employer shall obtain general permission to cut the road. Before commencing operations, the Contractor has to obtain permission from local bodies/Highways Department and others when he wants to cut any section of the road. The Employer will give necessary assistance such as sending letters and attending meetings if required.

The Contractor before taking up operations which involve cutting of roads, shifting utilities etc. during the process of work, shall give notice to the concerned authorities viz. the Corporation/Panchayats/ Municipalities, State Highways Department, National Highways Department, the Railway department, the Electricity Board, Telegraphs department, the Traffic department attached to the police and other departments or companies as may be affected by the work. The notice should identify the specific details so that the necessary diversion of traffic may be arranged and permissions obtained. The Contractor shall co-operate with the department concerned and provide for necessary barricading of roads, protection to existing underground cables etc. met with during the excavation of trenches. The Contractor shall provide at his own expenses watch and ward, hard barricading with reflectors, and lighting arrangements during day and night and erect required notice board such as “Caution Road closed for Traffic” etc. He should also provide and maintain at his own cost the necessary supports for underground cables etc. to afford best protection to them in consultation with the authorities in-charge of the properties and to their best satisfaction. The Contractor has to make necessary arrangements to get supply of electricity from TNEB for operating the machinery and equipment. The Employer will pay the necessary service connection and S.D. charges. The Contractor should obtain all approvals for the installation and commissioning of machinery and accessories offered by them from the respective inspecting authorities such as CEIG or CIFG etc., Fees if any, to be paid to the inspecting authorities will be reimbursed by the Employer.

10.14. Barricading

The pit / trench shall be barricaded with hard barricades and safe covers to prevent people or vehicles from falling into it, and stop trespassing into work area - on all four sides. The Contractor who has dug up the trench shall be responsible for any mishap, which may occur. Non-barricading of trenches by the Contractor shall be liable for a

fine of Rs.500/- per day. All such trenches shall have reflectors and lighting & cautionary boards well lit for night time visibility at least 200m ahead of the trench on all sides.

10.15. Length of Trench Open at One Time

The Pipe line shall be excavated in such length as may be ordered by the Engineer depending on the nature of the ground, the depth from the surface and the risk of damage to the adjoining property. The pipes shall not be permanently covered until they may have been tested to the satisfaction of the Engineer. But in bad ground in close proximity to buildings or in other places where the Engineer shall consider necessary, he may limit the length of trench so that there shall not be more than three pipes lengths from the refilled trench to the unbroken ground ahead. All trenches shall be covered temporarily or permanently in a safe manner, after works to prevent any accidents. Adequate lighting and reflectors shall be provided near all work sites including trenches during day and night to prevent any fall or accident. Awareness boards explaining about the work site shall be kept ahead of work areas on all sides of entry in such a way that all workers and communities could read & understand well and adopt safety precautions.

10.16. Watching and Lighting

The Contractor shall provide and maintain at his own cost proper fencing, notice boards, lighting, guarding, watchmen to protect and warn the public and watching of all the works at the site and when & where necessary as decided by the Engineer for the protection of the works or for the safety and convenience to the public or others. The lighting in and around the work spots shall be so arranged that there is sufficient illumination available in minimum area of 5 meters radius around the work spot. The standard of lighting should strictly be as per guidelines.

10.17. Filling in Holes and Trenches etc.

The Contractor immediately upon completion of the Works or before workers leave the sites after work, shall fill up holes and trenches which may have been made or dug, level the mounds, or heaps or earth that may have been raised or made, and clear away all material, wastes, rubbish which may have become superfluous or have been occasioned or made in the execution of the works, and the Contractor shall bear and pay all costs, charges etc. Failure to carry out the work before workers leave the sites after work will attract a fine of Rs 500/- per day. NO material shall be stored in such a manner that it slips into the pits. These shall be removed as soon as possible from the site and deposited / stored at safe construction material storage area notified by the Client and local body.

Chance Find Procedures: In case of chance finds, appropriate authority shall be informed and suitable mechanisms shall be made to protect the find in place or to move the suitable location, as per the direction of the department in charge.

10.18. **Power to Vary Work**

The description of work required to be executed by the Contractor are set forth in the specification, schedules and in the drawings, but the Engineer reserves the power to vary, extend or diminish the quantities of Work, to alter the line, level, or position of any work to increase, change or decrease the size, quantity, description, character or kind of any Work, to order the Contractor to execute the Works or any part thereof, by day or night Work, or to add or to take from the Work included in the contract as he may think proper without violating the contract and the Contractor shall not have any claim upon the Employer for any such variation, extension, diminution, alteration, increase, change or decrease other than for the Work actually done, calculated according to the prices tendered and accepted in this contract.

10.19. Extra or Varied Work

If the Engineer uses the power reserved to him under Clause 2.16 above an order in writing signed by the Engineer, shall be given to the Contractor to that effect and any Work executed under such order shall be paid for at the rates set forth in the Schedule of Prices prevailing at the time of execution where such rates in the opinion of the Engineer apply. This shall apply to unforeseen items of work which are not found in the Bill of Quantities. If the rates are not available in the Schedule of Prices, a rate or price shall be agreed upon between the Engineer and the Contractor in writing and failing their agreement the Contractor shall forthwith execute such order and the Engineer shall determine the rates or prices at which the work shall be paid off.

10.20. Free Flow of traffic

While executing the work, as soon as possible, the Contractor should allow as much traffic as possible on the roads/streets, by refilling the trenches cut across safely. Traffic Police shall be intimated of the works and safe arrangements shall be made in coordination with them.

10.21. Tools and Plants

All tools and plants required for the work including sheet piles and timber for shoring and strutting pump sets etc. shall be supplied by the Contractor at his own cost. The rate for the relevant items of work is inclusive of all such tools and plants and apparatus required for the execution of the work. All tools plants, work materials as detailed below, shall be stacked, covered as appropriate and barricaded with reflectors, lightings and awareness boards in a safe manner following safe housekeeping, and without impacting the surrounding environment as detailed below.

The Contractor shall provide a safe workplace, with critical controls for all hazards, specifically for high energy hazards including fall prevention and protection measures and implement whenever a worker is exposed to the hazard of falling more than two meters; into operating machinery; into water or other liquid; into hazardous

substances; or through an opening in a work surface. The contractor shall provide guardrails with mid-rails and toe boards at the edge of any fall hazard area, roper use of ladders and scaffolds. The contractor shall provide PPEs, fall prevention devices, including safety belt and lanyard travel limiting devices to prevent access to fall hazard area, or fall protection devices such as full body harnesses used in conjunction with shock absorbing lanyards or self- retracting inertial fall arrest devices attached to fixed anchor point or horizontal life-lines.

The Contractor shall provide material-specific storage for extremely hazardous or reactive materials (acids, bases, flammables, oxidizers, reactive chemicals) in separate areas. The Contractor shall provide the emergency action plan in accordance with ESMP before commencement of the work.

The Contractor shall implement dust suppression measures (e.g., water spray vehicles, covering of material stockpiles, etc.). The Construction vehicles shall comply with speed limits and haul distances shall be minimized; transport and construction vehicles shall abide by the Standard with respect to maximum exhaust fumes allowed; material loads shall be suitably covered and secured during transportation to prevent the scattering of soil, sand, materials or dust in accordance with ESMP.

The contractor shall provide marking all energized electrical devices and lines with warning signs. The contractor shall provide locking out and tagging-out devices during service or maintenance; double insulating / grounding all electrical equipment used in environments that are, or may become, wet in accordance to EMP.

10.22. Excess Materials

The Contractor shall be responsible for the procurement of required quantity of materials like pipes, specials, machinery, electrical items etc. Any materials procured for the work even though as per Bill of Quantities, if found excess due to any reasons after completion of the works, shall be taken back by the Contractor and the Employer / Engineer shall not be responsible for such excess materials. Amount paid if any for such excess materials shall be deducted from any bills payable to the Contractor.

10.23. DELETED

10.24. Commissioning of Works

The Contractor shall be responsible for successful commissioning of the works as detailed in contract Data before handing over.

10.25. Waste Management and Disposal

The Contractor shall provide different color bins for recyclable and non-recyclable for segregation of waste generated at site and camp. The contractor shall be sold the recyclable waste to authorized vendors and non-recyclable shall be handed over to

authority responsible in area for waste management. Waste management for construction site shall be as per waste management plan proposed in ESMP.

ARTICLE 11: Miscellaneous

11.1. General

Before submitting the bids, the bidder should carefully go through all the bid documents, drawings and also inspect the place of work so as to get full and first-hand knowledge of the site conditions based on which he has to quote his rate.

11.2. Accidents

It shall be the duty of the Contractor to arrange for the execution of the works in such a manner as to avoid the possibility of the accidents to persons or damage to the properties at any stage of the progress of work. Nevertheless, he shall be held wholly responsible for any injury or damage to persons and properties which may occur irrespective of any precautions he may take during the execution of the works. The Contractor shall make good all claims and loss arising out of such accidents and indemnify the Employer from all such claims and expenses on account thereof. All Project-related accidents shall be reported to the Client/Authority immediately and immediate support would be provided to the victims in line with regulations.

11.3. Flood Damages etc.

The Contractor may take risk insurance at his cost against losses due to unprecedented floods and other acts of God. No claim shall be entertained on this account and paid for.

11.4. Water and Lighting

The Contractor shall pay all fees and provide water and light as required from Municipal mains or other sources and shall pay all charges, therefore (including storage tanks, meters etc.) for the use of the works and workmen, unless otherwise arranged and decided on by writing with Engineer. The water used for the works shall be free from earthy vegetable or organic matter and from salts or other substances likely to interfere with the setting of mortar or otherwise prove harmful to the work and conform to relevant standards.

11.5. Rates

The Contractor shall particularly note that the accepted rates of the various items shall be inclusive of all incidental charges such as bailing by manual labour, dewatering, shoring etc. if found necessary during the execution and no extra shall be due therefore on any account during the currency of the contract, unless stated otherwise.

11.6. Royalty Charges

The Royalty will be charged for the materials obtained from Public Works Department (PWD) or other Government quarries. Assistance as necessary will be given to the Contractor by the Engineer. No plot rent shall be charged for materials stacked on Employer's lands during the course of construction provided all such materials are removed within one month after the work is completed. Royalty or charges due in the case of private quarries and private bodies shall be paid by the Contractor.

11.7. Payment to Labourer

The Contractor should note, that in the event of emergency, he shall pay all Labourer every day. The Contractor shall not employ any labourer below the age of 15 years.

11.8. Night Works

If night work is required to fulfill the agreed rate of progress and to complete the work within the period stipulated, prior written approval is necessary and all arrangement shall be made by the Contractor including lighting without any claim for extra rate.

11.9. Errors, Omissions and Discrepancies

In the case of errors, omissions, and/or disagreement between the written and the scaled dimensions on the drawings or between the drawings and the specifications, the following order of precedence shall apply;

i. In case of discrepancies in dimensions of any item of work as described between the descriptive specifications and detailed working drawings, the dimensions given in the detailed working drawings shall apply.

ii. In case of discrepancies in description of scope of work between what is indicated in the item of work given in Bill of Quantities and the corresponding detailed technical specifications, the latter shall apply.

iii. Figured dimensions shall supersede scaled dimensions. The drawings on a large scale shall take precedence over those on a smaller scale.

iv. Drawing issued as construction drawings from time to time shall supersede the corresponding drawings previously issued.

11.10. Equivalence of Standards and Codes

Whenever reference is made in the contract to the respective standards and codes in accordance with which plant, equipment or materials are to be furnished and work is to be performed or tested the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly set forth in the contract. Where such standards and codes are national in character, or relate to a particular country or region, other authoritative standards which ensure

equal or higher quality than the standards and codes specified will be accepted subject to the prior review and written approval by the Engineer. Difference between the standards specified and the proposed authoritative standards must be fully described in writing by the Contractor and submitted to the Engineer well in advance for approval. If on the prior review, the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards set forth in the contract document.

11.11. **Bidder to satisfy himself**

It will be the Contractor's responsibility to satisfy himself from the inspection of the site that sufficient quantities of construction materials required for the works exist in the designated borrow areas and quarry sites.

Failure by the Contractor to have done all the things, which in accordance with this condition he is deemed to have done shall not relieve him of the responsibility for satisfactorily completing the work as required.

11.12. **Employment of Scarcity Labour**

If Government of Tamil Nadu declares a state of scarcity or famine to exist within 16 kms. of the project site, the Contractor shall be required to employ in his works for which he will need unskilled labour and to the extent his works can accommodate any person or persons certified to him by the Engineer to be in need of relief and the Contractor shall pay to such persons wages not below the minimum wage which the Government may fix in this behalf from time to time.

1. All labourers and other employees of the Contractor should be covered by a suitable accident insurance policy to cover liabilities under the Workman's Compensation Act.

11.13. **Electricity Tariff**

The unit rates and prices quoted by the Bidder in the Bill of Quantities shall include the cost of electric energy required for construction at the rates fixed by the Tamil Nadu Electricity Board.

ARTICLE 12: SAFETY

12.1. SAFETY PROVISION

12.1.1. Suitable scaffolds shall be provided for workers for all 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 handholds shall be provided on the ladder and the ladder shall be given an inclination no steeper than 1\4 to 1 (1\4 horizontal to 1 vertical). Site code for scaffolding and ladders I.S 3696 -1996 Part -I and Part II and latest revisions to be followed.

12.1.2. Scaffolding or staging more than 3.25 meters above the ground or floor swung or suspended from an overhead support or erection with stationary support, shall have guard rail properly attached bolted, braced and otherwise secured atleast 1-metre-high above the floor or platform of such scaffolding of staging and extending along the entire length of the outside and ends thereof with only such openings 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 the structure.

12.1.3. Working platform, gangways and stairways shall be so constructed that they do not sag unduly or unequally, and if height of a platform or gangways or stairway is more than 3.25 metres above ground level, it shall be closely boarded, have adequate width and be suitably fenced, as described in 2 above. Every opening in floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of 1 meter. 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 7 metres in length. Width between side rails in a rung ladder shall in no case be less than 30 cm, for ladders, this width shall be increased by atleast 6mm for each additional 30cm length. Uniform steps spacing shall not exceed 30cm.

12.1.4. Adequate precautions shall be taken to prevent danger from electrical equipment. No material on any of the sites shall be so stocked or placed as to cause danger or inconvenience to any person or to the public. The Contractor shall provide all necessary fencing and lights to protect public from accidents and shall be bound to bear expenses of defence of every suit, action or proceedings at law that may be brought by any person for injury sustaining, owing to neglect of the above precautions and to any such suit, action or proceedings to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.

12.1.5. All necessary personal safety equipment as considered adequate by the Engineer shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use and the Contractor shall take adequate steps to ensure proper use of equipment by those concerned

a) Workers employed on mixing asphalt materials, cement and lime mortars /concrete shall be provided with protective footwear, hand gloves and goggles.

b) Those engaged in handling any materials, which is injurious to eyes, shall be provided with protective goggles.

c) Stonebreakers shall be provided with protective goggles and protective clothing.

d) When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that manhole covers are opened and manholes are ventilated at least for an hour before workers are allowed to get into them. Manholes so opened shall be cordoned-off with suitable railing and warning signals or boards provided to prevent accident to public.

e) The Contractor shall not employ men below the age of 15 and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting the following precautions shall be taken:

i. No paint containing lead or lead products shall be used except in the form of paste of ready-made paint.

ii. Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped.

iii. Overalls shall be supplied by the Contractor to workmen and adequate facilities shall be provided to enable working painters to wash during and on cessation of works.

12.1.6. When the work is done near any place where there is risk of drowning, all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

12.1.7. Use of hoisting machines and tacks including their attachments, anchorage and supports shall conform to the following:

a)

i. These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good repair and in good working order.

ii. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in-charge of a hoisting machine, including any scaffold winch or give signals to operator.

c) In case of every hoisting machine and of every chain ring hook, shackle, swivel and pulley block used in hoisting machine or lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with safe working load. In case of hoisting machine having a variable safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond safe working load except for the purpose of testing.

d) In case of departmental machine, safe working load shall be notified by the Engineer. As regards Contractor's machine, the Contractor shall notify safe working load of each machine to the Engineer whenever he brings to the site of work and gets it verified by the Engineer.

12.1.8. Motors, gearing, transmission, electrical wiring and other dangerous parts or hoisting appliance shall be provided with such means as will reduce to the minimum risk and accidental descending of load; adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energised, insulating mats, wearing apparel such as gloves, sleeves and boots, as may be necessary shall be provided. Workers shall not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

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

12.1.10. The safety provision shall be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work spot, persons responsible for ensuring compliance with the safety provision shall be named therein by the Contractor.

12.1.11. To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Contractor shall be open to inspection by the Engineer or his representative and the inspecting Officer.

12.1.12. The Contractor shall obtain previous permission of the competent authority such as Chief of Fire services for the site, manner and method of storing explosives near the site of work. All handling of explosives including storage, transport shall be carried out under the rules approved by the “Explosive Department of the Government”.

12.1.13. The Contractor shall at his own cost provide and maintain at the sites of works, standard first aid box as directed and approved by the Engineer, for the use of his own as well as the Employer’s staff on site.

12.1.14. Notwithstanding the above provision 1 to 15 Contractor is not exempted from the operation of any other Act or rules in force relating to safety provisions.

12.2. Environmental Protection Work

12.2.1. The Contractor shall have to take following measures during construction and commissioning of works for protection of environment as under to avoid environmental impacts on air, water and land, noise impacts, biodiversity and the people.

12.2.2. Site Clearance

The site clearance shall be done with minimum damage to existing structures flora and fauna, electricity and telephone lines and other infrastructure service.

12.2.3. Earth Work and Excavation

The Contractor shall inform the local authorities / government if any fossils, coins artifacts of value or antiquity, structures and other remains of geological or archaeological interests and excavation shall be stopped until identification of cultural relics by the authorized institution is completed.

The Contractor shall dispose off surplus / waste material at identified sites approved by the Engineer, but not creating any harm to the people, sensitive receptors & environment. The Contractor shall ensure that there is minimum hindrance to normal activities and business. The Contractor shall avoid damage to permanent structures and shall avoid loss of standing crops along the road.

12.2.4. Replantation

The Contractor shall carry out Plantation on areas / on the periphery of construction sites to minimise visual impact and soil erosion. The Contractor shall pay special attention to the type of trees to be replanted to ensure indigenous varieties and to prevent fouling of water through falling leaves and bird droppings. A list showing the type of trees to be replanted will be got approved before replanting any trees.

12.2.5. Soil Erosion and Water Quality

The Contractor shall ensure that earth and stone do not silt up existing irrigation /drainage systems.

The Contractor shall take suitable measures to prevent direct discharge of polluted waters form construction activity into lakes/rivers/irrigation channels.

The Contractor shall minimise exposure of soil types susceptible to wind and water erosion.

The Contractor shall control run-off and erosion through proper drainage channels and structures.

No waste water, leachate, sewage or drainage shall be allowed to pollute water resources (surface and ground)

12.2.6. Soil Compaction

The Contractor shall restrict traffic movements and use low ground pressure machines.

The Contractor shall preserve topsoil to be replaced after completion of construction activity.

The Contractor shall avoid wet soils. Appropriate care shall be taken for all work in wet/loose soil or stored materials.

12.2.7. Social Disruption

The Contractor shall minimise interruptions to utility services through proper planning and scheduling of activities.

The Contractor shall provide temporary roads and diversions as may be necessary for smooth flow of traffic

. The Contractor shall preferably use local labour / Skilled persons during construction.

12.2.8. Dust / Air Pollution

The Contractor shall provide effective dust control through sprinkling / washing of construction sites and access roads and use of green nets / screens appropriately.

The Contractor shall cover / water stockpiles and storage areas to prevent dust pollution.

The Contractor shall cover trucks transporting construction materials to minimise spills.

The Contractor shall have a preventive maintenance program for construction equipment and vehicles to meet emission standards.

12.2.9. Noise Pollution

The Contractor shall normally undertake construction work during daytime only (between 7.30 to 18.00 hrs) and when authorised to work beyond these hours adopt suitable noise control methods during such works.

The Contractor shall maintain machines and trucks to keep them with low noise.

The Contractor shall install appropriate sound barriers during construction, and plant tree as appropriate after construction.

12.2.10. Construction Camps

The Contractor shall take adequate measures such as provision of septic tank with soak pits or connected to sewer system / pit latrines at construction site / camps.

The Contractor shall provide creches to working women labour.

The Contractor shall provide drinking water conforming to IS: 10500: 2012

The Contractor shall provide garbage cans separate for biodegradable and non-biodegradable wastes at suitable fixed places accessible to all and have the garbage disposed of managed regularly through the treatment and disposal mechanism of the local body.

12.2.11. Aesthetic Improvement

The Contractor shall through proper housekeeping enhance aesthetic appearance of construction sites.

The Contractor shall dispose-off construction wastes at approved disposal sites. NO wastes shall be disposed in low lying areas, water bodies, agricultural areas or sensitive areas. Location for disposal shall be approved in writing by the owner of the land where it is disposed.

The Contractor shall repair pavements immediately following construction pipeline and appurtenant structures.

The Contractor shall remove after completion of construction, all temporary structures and restore the project and surrounding areas nearest possible to the pre-construction condition.

12.2.12. Conservation of Ecological Resources

The Contractor shall not use farmland, sensitive areas and forest belts as materials borrow sites.

The Contractor shall not select arable land as material borrows site. In case excavation in arable land is unavoidable, topsoil layer (30 cms. depth) shall be saved and returned after construction work is completed so as to minimise impacts on ecosystem, agriculture and animal husbandry.

The Contractor shall educate construction workers to protect natural resources, wild plants and animals.

12.2.13. Risk of Accidents

The Contractor shall provide efficient lighting equipment and safety signs on temporary roads during construction and shall adopt and implement adequate traffic regulation.

The Contractor shall take effective safety and warning measures to reduce accidents. All incidents shall be recorded in the register at work site and the client shall be informed at the earliest about each incident. Rescue efforts and hospitalization / other support shall be provided to the victim immediately,

The Contractor shall provide suitable safe and accessible temporary crossings across work areas / trenches to facilitate normal life and business.

12.2.14. Responsibility for Accidents, Damages Etc.

The care of the whole of the permanent work until their completion as defined in Clause 5.13 and for the period prescribed in Clause 6.4 and of the whole of the temporary work until their removal shall remain with the

Contractor who shall be responsible for all accidents or damages from whatever cause arising and chargeable for anything that may be stolen, removed, destroyed or damaged to whomsoever belonging and also for making good all defects and damages to the said works or to any property adjoining or any cause whatever, whether such damage or defects where occasioned by the negligence of the Contractor or not or may be or might have been discovered during the progress of the works or in consequence thereof, or shall appear to be known after the completion whereof or whether payment may wholly or partially have been made or the Works approved as supposed to have been properly done, and no certificate or approval of any works by any officers or members of the Employer shall effect

12.2.15. Noise Monitoring

i. Monitoring Frequency:

a) During construction period: 12 times a year each time including day and night.

b) During Commissioning period: 4 times ad hoc monitoring will be taken.

ii. Monitoring points:

During construction period: Near construction sites, factory sites and sensitive areas.

The provisions under the specific conditions of contract are complemented by those listed under the ESHS Specifications and EMP which the Contractor must ensure compliance with. Please refer to the Schedule 11 ESMP for details.

SCHEDULE 1. CONTRACT DATA

CONTRACT DATA

The Name and Identification Number of the Contract is

"Performance Based Contract for Operation & Maintenance of Water Distribution Station, Pipeline Networks (Pumping Mains & Distribution Mains), House Service Connections and allied works at Macro Marvel WDS, Manapakkam and Nandambakkam WDS,Sundar Nagar UGT for 5 years in Area XII (Package - II) Items marked "N/A" do not apply in this Contract".

The following data's are also part of the Contract:

Conditions of Contract	**Clause/ Sub-Clause**	**Contract Data**
Employer & Engineer	1.1	The Employer is Name: Managing Director Chennai Metropolitan Water Supply & Sewerage Board. Address: No. 1, Pumping Station Road Chintadripet, Chennai – 600 002 The Engineer is The Chief Engineer Name of Authorized Representative: Superintending Engineer/ Executive Engineer.
Start Date	1.1	The start shall be within 15 days from the date of issue of Notice to proceed with the work
Intended Completion Date	1.1	The Intended Completion Date for the whole of the Operation & Maintenance Works is 60 Months and for Construction Works is 12 Months
Site	1.1	Macro Marvel WDS, Manapakkam and Nandambakkam WDS,Sundar Nagar UGT
Defect Liability Period	1.1	3 Months
Language & Law	2.1	Language of the Contract documents is English The law, which applies to the Contract, is the law of Union of India, applicable to Tamil Nadu and the law of Tamil Nadu.

Conditions of Contract	Clause/ Sub-Clause	Contract Data
Personnel	2.7	The Schedule of Key Personnel for Operation & Maintenance activities Senior Engineer : BE Civil/Environmental, 7 Years in Water Supply Projects, Minimum 5 Years in O&M of 24X7 water supply operations, NRW reduction, Billing, Distribution Engineer (2 Numbers) : DE- Civil/Mechanical with 5 Years OR BE civil/Mechanical with 2 Years in Water supply, O&M NRW Engineer/ Leakage reduction Engineer/ Water supply Pipeline Maintenance Engineer : BE /Diploma Civil/Mech with 5 years' experience in NRW reduction/ Leak deduction, Water Balance Assessment in water supply projects
Personnel	2.7.3	Penalty for not employing Senior Engineer and other Key Personnel till the date of employment of the personnel Senior Engineer: Rs.50,000/month Other Key Personnel : Rs.25,000/month per Key Personnel Support Personnel: Rs. 10,000/month per Support Personnel
Insurance	2.11	The minimum insurance cover for loss of or damage to the works, plants, materials, equipment, physical property in connection with contract, personal injury or death is Rs.15 lakhs for occurrence with the no. of occurrences limited to four. After each occurrence, contractor will pay additional premium necessary to make insurance valid for four occurrences always.

Conditions of Contract	Clause/ Sub-Clause	Contract Data
Procedure for Disputes	2.23.2	Fees and types of reimbursable expenses to be paid to the Adjudicator is Rs.2000/- per day plus boarding, lodging, traveling and other charges as per actual.
	2.23.3	Institution whose arbitration procedures shall be used INDIAN ARBITRATION AND CONCILIATION ACT 199
Replacement of Adjudicator	2.24	The Adjudicator appointed jointly by the Employer and Contractor is: Name: Address :
Program	N/A	N/A
	N/A	N/A
Possession of the Site	2.19	The Site possession date shall be within 15 days from the issue of notice to proceed with the works
Payments and Incentives	5.7, Schedule 7, 8 & 9	Payment will be made to the Contractor during Construction and O&M Period as per the terms defined in SCHEDULE 7, SCHEDULE 8 and SCHEDULE 9.
Compensation Events	N/A	N/A
Currencies	5.10	The currency of the Contract is Indian Rupees
Retention	5.12	The proportion of payments retained (retention money) shall be 5% from each bill subject to a maximum of 5% of contract value and 2.5% of retention amount will be returned along with the final Bill. The balance amount of 2.50 % of the total value of the Works will be retained for a period of 6 Months reckoned from the date of completion without interest and this amount will be paid to the Contractor after obtaining an irrevocable Bank Guarantee for a further period upto the completion of defect liability period. All payments will be subjected to deduction of retention money as stated in Clause 5.12
Liquidated Damages (during Construction Period)	5.13 Schedule 9	The maximum amount of liquidated damages for the whole of the Works is 10% (ten percent) of Capital contract price.

Conditions of Contract	Clause/ Sub-Clause	Contract Data
Penalty (during Operation Period)	Schedule 8	• Penalty for Non-Performance of KPI Parameters shall be applicable as per the terms mentioned in **SCHEDULE 8** • The Penalty/damages applicable for non-performance of KPIs shall be capped at 30% of the Total Respective Quarterly Payments (sum of three-monthly O&M payments).
Advance Payment	N/A	N/A
Securities	5.16, Clause 30 of ITB	The Securities (Performance Securities for Construction, O&M Period and Additional Securities) shall be as per the terms defined in Clause 5.16 of this CA and Clause 30 of ITB. The amount of the Performance Securities shall be as per the **Clause 30.5 of ITB** The standard form of Performance Securities acceptable to the Employer shall be as presented as per the format provided in ANNEXURE III A and III B.
As Built Drawings/ O&M Manuals	6.4	The date by which "As-Built" drawings (in appropriate scale) in 5 set sand also in digitized form are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be. The amount to be withheld for failing to supply "As Built" drawings and O&M Manuals by the date required is Rs.5,00,000/-
Termination	6.5	The following events shall also be fundamental breach of contract The Contractor has contravened Sub-clause 2.5 and Clause 2.7
Payment Upon Termination	6.6	The percentage to apply to the value of the work not completed representing the Employer's additional cost for completing the Works shall be 20 percent or as per actual whichever is higher.

Conditions of Contract	Clause/ Sub-Clause	Contract Data
Anti-Corruption Guidelines		The project is financed by The World Bank and the Bidders are required to comply with the applicable guidelines (available at the following link): https://ppfdocuments.azureedge.net/3682.pdf).

SCHEDULE 2. OPERATION & MAINTENANCE – SPECIFICATIONS & PROCEDURES

SCHEDULE 2A. SCOPE OF WORK

Maintenance of water supply system comprises the work to be carried out to keep the system under operational condition and proper functioning without any interruption which covers Preventive maintenance and Corrective maintenance.

- Preventive maintenance constitutes routine works and precautions with scheduled maintenance activities to be performed to be taken up periodically to prevent equipment failure and extend its lifespan.
- Corrective maintenance involves carrying out works related to break down which has actually occurred.
- Emergency maintenance with Immediate response to critical equipment failures, often requiring urgent repair or replacement.

The Components to be dealt with are provided in detail but not limited to the following section – 'Water Supply Assets in the Distribution Areas':

I. Technical Management of the Water Distribution Station along with the network
II. Customer Billing and
III. Customer Care.

The technical aspects include:

- Expected maintenance works and planned activities;
- Emergency Repair works such as leakages;
- NRW reduction & management

The Customer billing includes:

- Reading of the customer water meters;
- Data entry in to server, Bill preparation, printing and distribution of bills to the customers;

The customer care includes:

- Identifying and listing customers without connection
- Motivating customers for taking new connection;
- Guiding customers in filling & documentation for new connection;

- ❖ Information relating to customer's complaints;
- ❖ Services to customers.
- ❖ Complaints Redressal
- ❖ Citizen engagement and communication on new connection and demand management

During the Five years of O&M period, the Contractor shall be required to operate and manage the water supply in the Area and must meet the Performance Targets as specified in Section 6, Volume I. However, one month mobilization period shall be provided to the contractor for sourcing the required manpower as per this section.

While meeting the Performance Targets, the Contractor shall carry out the following works, repair works and routine maintenance activities:

Works:

a) Installation of new house service connections to the CMWSSB network as and when authorized by CMWSSB.

b) Extension of existing pipeline as per the requirement to supply water to the customers within the Water Supply Area, under the instructions of the CMWSSB.

c) Transfer of house service connection from old network to the new network, disconnecting from old network and making old HSC redundant.

d) Removing cross connections between old network and new network

e) Installation of Flow & pressure measuring devices for better flow & pressure management and monitoring as directed by the Engineer.

Repair Works:

Attending to repairs of HDPE/DI/MS/CI/PE/PVC pipelines, House Service Connections connected fixtures (Valves, T, and Bends) and installations within the supply Area. Minor repairs of pump & motors, flow and pressure measuring instruments. Arresting the Leakages reported/detected on distribution system and HSC.

SCHEDULE 2B.OPERATION & MAINTENANCE ACTIVITIES:

I. **Routine Maintenance Activities**:

(a) Manage the water supply in the area as per the existing supply level, try and achieve improvements in supply duration and pressure within the Area through better flow & pressure management and ultimately aim for continuous pressurized water supply when required quantity bulk water is made available by CMWSSB.

(b) Measure Initial NRW and reduce NRW to 40%, thereafter to the value of 20% and maintain.

(c) Adopt active leakage control and repair the leaks identified network & service connections at the earliest time.

(d) Motivate customers to take new connection & assist in documentation. Provide the new service connections as and when approved by client & extend the network where ever required.

(e) Conduct scheduled water quality testing every day, analysis & reporting and to undertake emergency chlorination measures at times of outbreak of epidemics and any such emergency situations.

(f) Getting tested the customer water meters for their working condition and accuracy in the test bench located in Chennai Metro premises when there is dispute with customers.

(g) Customer Billing activities, Customer Care operation, managing the customer complaints related water supply services & network system leakages.

II. NRW Reduction

(a) System diagnostic: Contractor will undertake a rapid diagnostic assessment of the system to identify problematic areas and prioritize leak detection activities. The assessment will include a review of the operational data as available with client; a review of the as-built maps and hydraulic drawings; water audit; pressure monitoring; and physical surveys to inspect above-ground infrastructure, verify valve locations and identify locations of visible leaks.

(b) District Metered Areas (DMA) formation: In Area where DMAs have not been formed or are inadequate, the Contractor will undertake verification/review of hydraulic assessment of the scheme, create sub-zones/DMAs in coordination with CMWSSB, the need for additional valves for isolation of DMA from rest of the water distribution system for carrying out zero pressure test and step test, identify locations and determine specifications for flow meters, pressure reducing valves (PRVs) and pressure monitoring devices, including the protection chambers (if required).

(c) Prioritization of DMAs or zones for leak detection: The Contractor will undertake water auditing, Minimum Night Flow Assessment, and conduct step test to identify sub-zones/DMAs having higher physical losses. This activity shall be completed at least once in four months in the first week. As much as possible the contractor shall rely on EMF data and when sufficient information is not available the consultant shall undertake field measurements using clamp-on devices.

(d) Leak detection: Based on the above assessments, the Contractor shall undertake leak detection activities in the selected DMAs, in the pipe line network covering feeder mains and the distribution main . The contractor shall also assess household level leaks. The Contractor shall employ relevant methodologies and technologies that shall pinpoint the location of the leakages. The Contractor is expected to make available relevant equipment for this activity such as Leak Noise Correlator, Ground Microphone, Listening Sticks, Electro-magnetic Pipe Locator etc., for the minimum set of equipment that needs to be made available as per field requirements.

(e) Leak repairs: The Contractor shall pin point the potential leakage points and undertake repairing leaks and address other damages with good quality repair materials/kits within shortest possible time. Contractor must estimate & maintain as a minimum stock of leak repair materials/kits in his stores. The consultant shall document the leaks repaired on AutoCAD/GIS platform for future references and claims. Post repair activities, the Contractor will conduct Water Auditing and establish NRW values post active leakage control (This should be done only using data available on the existing EMF). The process shall be continued until the recommended levels of physical losses achieved and NRW is brought down to under 20% and maintained thereafter.

III. Assets maintenance

Contractor is expected to maintain all water supply assets in the good working conditions following the best CPHEEO/international practices. As a minimum maintenance activities listed in Asset Management, must be followed, documented and submitted along with the report for claiming the Fixed Remuneration.

SCHEDULE 3. WATER SUPPLY DETAILS

Water Distribution Area:

Area - XII

Sl. No	Description	Area-XII	
		WDS - Manapakkam	**WDS - Nandambakkam**
1	Depots Covered	157	158
2	No of House holds	2625	1314
3	No of HSC	2425	996
4	Population	45000	17000
5	Distribution System	23.49 Km	8.43km
6	Pumping/Feeder Main	3.45 Km	179 M
7	Pumping Machineries	15Hp 1390LPm @ 28m head 23 lps - 3 Nos (2w+1S)	10Hp 4200LPm @30m head 70 lps - 3 Nos (2w+1S)
8	Storage Capacity (OHT/UGT)	**1.3 ML** (OHT – 1.1 ML, UGT -0.2 ML)	**0.7 ML** (OHT – 0.5 ML, UGT -0.2 ML)
9	Source of supply	530 MLD & Veeranam	
10	Hours of supply	1 hour Daily	1 hour Daily
11	Streets covered	220	80
13	Total No of DMA's under WDS	5 nos	4 nos
		1.BEL Nagar Kavya Garden **2.** Lakshmi Nagar, Indra Nagar **3.**CRR Puram **4.**Mettu colony & Amdedkar Nagar **5**.Macro Marvel	**1**.Ramar Koil **2**.Vasantham colony **3**.wood creek area **4**.Ganapathy colony

Water Supply Assets in the Distribution Areas

Sl.	Description	Material	Unit (Nos/Mtr/ Km)	Quantity	
				WDS - MANAPAKKAM	WDS - NANDAMBAKKAM
1.	**Pipeline in km**				
	100 mm	DI	m	18101.37	5925.52
	150mm	DI	m	1536.50	684.61
	200mm	DI	m	2130.50	204.00
	250mm	DI	m	320.80	281.55
	300mm	DI	m	242.60	715.00
	350mm	DI	m	-	750.00
	400mm	DI	m	742.25	-
	450mm	DI	m	274.20	-
	500mm	DI	m	148.50	-
	Total length			**23496.72**	**8560.68**
2.	**Specials/Fixtures**				
a.	**Sluice / Butterfly valve (nos.)**				
	80mm	DI	No	-	-
	100mm	DI	No	23	2
	150mm	DI	No	7	1
	200mm	DI	No	4	2
	250mm	DI	No	1	3
	300mm	DI	No	2	5

Sl.	Description	Material	Unit (Nos/Mtr/ Km)	Quantity	
				WDS - MANAPAKKAM	WDS - NANDAMBAKKAM
	300mm	DI	No	5	-
	400mm	DI	No	-	-
	500 mm	DI	No	2	-
	Total, Nos			**44**	**13**
b.	**Air valve (nos.)**				
	80mm	DI/CI	No	**2**	-
	100mm	DI/CI	No		4
	150mm	DI/CI	No		1
	300mm	DI/CI	No		2
	Total, Nos			**2**	**7**
c.	**Pressure control valve (nos.)**				
	100mm	DI	No	-	-
	150mm	DI	No	-	-
	200mm	DI	No	-	-
	Total, Nos				
d.	**Full bore Electro Magnetic Flow Meter with Transmitter (nos.)**				
	100mm		No	-	-

SCHEDULE 4. RESPONSIBILITIES OF THE CONTRACTOR (O&M)

The Contractor shall undertake Operations, Maintenance and Management of the Water Supply System constituting the Water Distribution Stations (including Electromechanical), Water Supply Networks (including all appurtenances) in Areas in accordance with the service levels stipulated as part of Performance Targets ensuring safety. This includes but is not limited to:

Providing infrastructure and operational data on the supply system and distribution networks in the allocated Water Distribution Station (WDS) area during the contract period addressing but not limited to the following:

I. Service levels

i. State of asset

ii. Improvements made (physical)

iii. Operational issues relating to Customer service, billing, employee management, asset maintenance, record maintenance, connections and disconnections, Corporations interface etc.

iv. Service levels such as hours of supply, and pressure maintained based on auto collected data from Pressure Transmitters /censor loggers

v. Water quality data including residual chlorine levels, monitored as per CPHEEO manual

vi. Minimum Night flow (MNF), physical losses per connection, and NRW

vii. Energy intensity data (kWh /cubic meter)

Documentation of all the activities

II. Information Assistance

If and as required, the Contractor will provide assistance to the CMWSSB or agencies/advisors nominated by it in the following:

Liaising with the other agencies, in any interface in the operation and maintenance period.

III. The Contractor shall have the following Performance Obligations:

(a) The Contractor shall achieve the Performance Targets as specified in the contract.

(b) The Contractor shall maintain distribution system's Facilities, operation and maintenance to best international standards, including a systematic approach to monitor, manage and control leakages and pressure;

(c) The Contractor shall provide within seven days the new connections for which the authorization is given by the CMWSSB, install the customer water meter which are not present on the existing House Service Connections as directed by CMWSSB.

(d) The Contractor shall provide to the CMWSSB, separately for each Area, a report on "Project Operational Data", including technical and cost data. The Project Operational Data should represent the period of every quarter. Every report on Project Operational Data shall include description of service levels, state of Facilities, physical improvements carried out and consequent investments made, operational issues including customer service, billing.

(e) The Contractor shall provide to CMWSSB, Monthly Progress Reports till the expiry of the Contract,

(f) The Contractor shall continuously log pressure readings at pressure-metering points installed at Critical Zone Points (Farthest points from the reservoir and highest elevated ground in the distribution network within Areas approved by the CMWSSB. Including a point where pressure is routinely experienced at the minimum level in the Area.

(g) Contractor shall develop and implement Active Leakage Control plan, Contractor shall establish the initial NRW (Baseline) levels and subsequently reduce the NRW in stages starting with 40% and reach & maintain NRW levels of less than 20% over a period of time as stated in the KPI. The target of achieving NRW reduction less than 20% shall be initiated with one selected DMA/Sub Zones which mutually agreed between the Contractor and CMWSSB under each WDS and shall progress to all DMAs/Sub Zones as per the schedule provided in the KPI section of this agreement, as per availability of bulk water and directions of CMWSSB.

(h) The Contractor shall maintain throughout the distribution network within the area, the same quality of water received at the service reservoir without further deterioration of water quality. The water quality supplied shall meet CPHEEO standards. The Contractor shall also monitor the quality of the water throughout the Area and in this regard take two spot samples of the water supplied to the Area at the bulk supply meter chamber on entrance to the reservoir and at the Critical Zone Points, where Minimum Daytime Pressure is measured and area randomly suggested by CMWSSB engineer. These samples are to be taken daily throughout the Operation and Management Period. The samples should be analyzed on site for residual chlorine level (should be minimum of 0.2 ppm). In an event of water

contamination due to sewage mixing, contractor should isolate that area and resort to supplying water through tankers, until such time, the contamination point is located and repaired. As and when directed by CMWSSB and in the event of water contamination due to sewage mixing, the sample, taken in accordance with the sterile requirements for bacterial analysis, shall be analyzed at a laboratory approved by the CMWSSB for Total Coli form and E. coli form bacteria. A representative of the CMWSSB will be present at the sampling and the sample for bacterial analysis.

(i) The Contractor shall undertake emergency chlorination measures in times of outbreak of epidemics and any such emergency situations.

(j) The Contractor shall ensure and shall as far as practicable actively deploy at work all the Board Employees deputed to it & train them.

(k) The Contractor shall provide to Board in writing every four-week during the contract period, a report on the Customer complaints received and addressed by the Contractor during the period of such report.

In addition to the above Operation and Management Obligations, the Contractor shall have the following General Obligations, as they may be applicable during the term of the Contract:

a) The Contract 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 practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Contractor shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the CMWSSB, and shall at all times support and safeguard the Board legitimate interests in any dealings with sub-Contractors or third parties.

b) Day-to-day management and operation of the distribution system within the Areas including managing CMWSSB's customer service center which will carry out distribution of bills and ensure collection as well as manage customer relations, support and complaints for a period of 5 years from the Takeover Date in coordination with Board for those operations, where appropriate.

c) The Contractor shall carry on basic plumbing and shall replace, with the approval of the Board, illegal property water connections with legal connections where the property owner accepts the option to legitimize the connection, and if the property owner does not so opt to legitimize the connection, to facilitate disconnection of such illegal connections by the Board.

d) Prior to expiry of the contract, Contractor shall train the CMWSSB Employees on all aspects of O&M for the smooth take over and continuation of water supply services.

e) The Contractor shall be responsible for maintaining all Permits to perform the Services throughout the Contract.

f) The Contractor shall ensure that all materials and workmanship used in the course of the Contract shall be as per the relevant Indian Standards Specifications.

g) The Contractor shall replace or install Customer metering on all points of Customer supply, in coordination with CMWSSB, and regularly check for accuracy and calibrate for accurate readings to avoid under-estimation of non-revenue water.

h) The Contractor shall achieve the Performance Target relating to physical losses by using a combination of different measures including, but not limited to, the following:

- ✓ Control of pressure in the system, while meeting the Minimum Daytime Pressure requirement, by a combination of pressure control and the laying of alternative network of pipes within the Demonstration zones.
- ✓ Detection, location and repair of leaks on the distribution networks using good quality pipe clamps.
- ✓ The Contractor will use their experience and diagnostic analysis of the system to determine the most cost-effective measures to achieve the Performance Targets during the Operation and Management Period.

i) The Contractor shall permit the CMWSSB Engineers or personnel engaged by CMWSSB to conduct regular (quarterly/annual) audit and to constantly review the performance of the Contractor under the Contract from the Takeover Date till the Expiry Date, and shall fully cooperate with the Engineers in the conduct of audit and review exercises and checks as may be required under this Contract and shall immediately provide all requested information to the Engineers;

j) The Contractor shall on a periodic basis update the plan of the distribution system within each Area at a scale of 1:2500. The plan should show the inlet chamber, the boundary valves, and the distribution system location in plan (providing diameter, material and approximate depth data) and list of every stand-post and property connected to the public water distribution network. The Contractor has to submit the Drawing in GIS based Real Time Kinematics.

k) Neither the Contractor nor its employees shall engage, either directly or indirectly, during the term of this Contract, any business or professional activities in India which would conflict with the activities assigned to them under this Contract,

l) The Contractor to provide such information to CMWSSB and as asked by the Government on top propriety.

m) The Contractor shall assist and fully co-operate in up scaling of 24x7 water supply to entire areas.

The Contractor shall carry out the Maintenance of Civil Structures and any other works which is not covered under the scope as per the Instruction of the Employer for which the Payment shall be made as per the Actuals

SCHEDULE 5. ASSETS MAINTENANCE

Contractor should prepare and submit Asset Maintenance Plan & Operation Plan for the approval of the client. Contractor is expected to inspect and maintain the assets as per the approved plan.

I. Storage Reservoir (Underground Tank / Over Head Tank)

- Making sure that the levels in the sump are maintained in a safe required level and to ensure that overflowing of sump should not be allowed.
- All foreign floating matters in the sump/intake shall be manually removed at least once in a month and shall be disposed off away from pump house.
- Desilting of sump shall be carried out once in year preferably after monsoon. Care should be taken to dump the removed silt away from pump house.
- The sump shall be fully dewatered and inspected once in a year.
- It is advisable to undertake leakage test of sump once in a year. For this purpose, the sump shall be filled to FSL and drop in water level for reasonably long duration (2-3 hours) should be observed. If leakage is beyond limit, rectification works shall be taken.

a) The following Operational records shall be maintained:

- Water levels in the Service Reservoir (SR) (for all compartments) at hourly intervals.
- Time and relevant operation of control valves with time of opening and closure or
- Throttling position of the valves.
- Hourly flow meter readings both on the inlets and outlets.
- Hourly residual chlorine readings of inflow water and outflow water.

- The man-hours spent on routine operations at the SR in previous year and the cost thereof.

b) Record on each of the following maintenance/repair works along with the cost of materials and labour shall be recorded,

- Keep a set of as built Drawings
- When the gland ropes of the valves at the SR were changed.
- When the spares of the valves were changed.
- When the Chamber covers were changed/replaced.
- When the water level indicator was repaired or replaced.
- When the reservoir was last cleaned.
- When the out-fall drain for scour and overflow was last cleaned.
- When the ladder was changed.
- When the structure of the reservoir was last repaired to attend to structural defects or arrest leakage.
- When the reservoir was last painted.
- When the piping at the reservoir was last painted.
- Total cost of repairs and replacements at the SR in previous year along with breakup of material cost and labour cost with amount spent on outside agencies for repairs and replacements.

The following check list for clear water sump and reservoir shall be maintained:

Sl. No.	**Checks required/undertaken**	**Status**	**Frequency of reporting**
1	Proper Closure of washout valves; any abrupt stoppage during operation.		Quarterly
2	Proper operation of inlet valves; any abrupt stoppage during operation		Monthly
3	Proper operation of outlet valves; any abrupt stoppage during operation.		Daily
4	Proper operation of bye pass valves; any abrupt stoppage during operation		Quarterly
5	Does any valve pass water even after closure		Quarterly

Sl. No.	Checks required/undertaken	Status	Frequency of reporting
6	Leaks through valves; glands and bolts and Nuts		Fourth Nightly
7	Leaks through pipes and joints at Service Reservoir.		Daily
8	Status of finial ventilators; fly proof mesh intact or is to be replaced		Quarterly
9	Status of Chamber covers; are they corroded?		Monthly
10	Functioning of water level indicators		Daily
11	Functioning of flow meters		Daily
12	Status of ladders and railing; are they corroded?		Quarterly
13	Check whether quality of the water in the UGT/OHT		Daily
14	Possibility of OHT water getting polluted		Daily
15	Check for the need for cleaning and disinfecting the OHT		Weekly
16	Check for the presence of residual chlorine in the water stored in OHT		Daily
17	Check for signs of corrosion in interior of roof due to chlorine.		Quarterly
18	Check for structural damages of the OHT		Quarterly
19	Check for leaks through the structure of the OHT		Daily
20	Status of interconnecting pipe work? Is it corroded?		Quarterly
21	Status of lightning arrestor.		Quarterly
22	Status of out-fall drains of scour and overflow at OHT.		Quarterly
23	Availability of:		
A	Spares		Quarterly
B	Consumables		Quarterly

Sl. No.	Checks required/undertaken	Status	Frequency of reporting
C	Tools		Quarterly
24	Check for need for painting.		Yearly
25	Check for availability of drawings and designs of the OHT.		As and when required

II. Water Distribution Stations (WDS) /Pump House

- The Water Distribution Stations/Pump house shall be cleaned daily. Good house-keeping and cleanliness are necessary for hygienic/pleasant environment.
- Entire WDS/pump house, superstructure and sub-structure shall be adequately illuminated and well ventilated. Poor lighting, stale air etc. create unpleasant environment and have an adverse effect on will of the staff to work.
- Flooring and M.S. grating wherever damaged should be repaired on priority.
- It is observed that at many places, roof leaks badly and at times the leakage water drips on the panel/motor which is dangerous and can cause short circuit and electric accidents. All such leakages, if any should be rectified on priority.
- All facilities in sub-structure i.e. stair case, floors, walkways etc., should be cleaned daily.
- Painting of civil works should be carried out at least once in two years.
- Mandatory Regulations prescribed by CEIG and Inspector of Factories shall be followed without any lapse

III. Water Supply System (Water Pipeline Networks)

a) Develop and conduct a surveillance program for leaks in pipelines, pipe joints and valves,

b) Develop and conduct a water quality surveillance program,

c) Develop and conduct a program for locating and repairing leaks including rectifying cross connections if any, arrange for flushing, cleaning and disinfecting the mains,

d) Establish procedures for setting up maintenance schedules and obtain and process the information provided by the public and the maintenance teams about the pipeline leaks,

e) Procure appropriate machinery, equipment and tools for repair of leaks and replacement of pipes and valves,

f) Allocate suitable transport, tools and equipment to each maintenance team,

g) Establish time, labour and material requirement and output expected, time required and other standards for each maintenance task, and

h) Routine flushing of water pipelines shall be done before the water quality deteriorates and customers start complaining.

i) A minimum free chlorine residual of about 0.2 mg/l at the receiving reservoir of a transmission system shall be maintained to ensure that contamination is destroyed by the chlorine. In the absence of residual chlorine, following prompt actions shall be taken–

- Re-testing of residual chlorine,
- Checking chlorination equipment at the start of the transmission system,
- Searching for source of contamination along the transmission system which has caused the increased chlorine demand,
- Immediate rectification of source of contamination.

j) The following records shall be maintained:

- Update transmission system map with alignment plan and longitudinal section of the pipeline showing the invert levels and hydraulic grade lines of the pipe lines and location of appurtenances, flow meters and pressure gauges,
- Records of flow meter readings at upstream and downstream ends of the transmission system,
- Record of water levels of the reservoirs at both upstream and downstream ends of the transmission system,
- Pressure readings of the transmission system pipelines,
- Review of record of pressures and flows,
- Identify the persistent low pressure in the transmission system,
- Record on age of pipes/ quality of pipes,
- Identify pipelines to be replaced,
- Presence of corrosive water in the system,

- Identify the source of leaks,
- Identify the persistent leak points,
- Status of bulk meters – functional,
- Identify the residual chlorine levels at the receiving and transmitting ends of the transmission system,
- Identify the bacteriological quality of the water sampled from the reservoirs linked to the transmission system,
- Identify reasons for residual chlorine being absent/ where bacteriological samples are unwholesome,
- Records on when the pipeline leaks were replied or pipes changed and the cost of materials and labour cost thereof,
- Record on when the gland ropes of the valves distribution system were changed and the cost of materials and labour cost thereof,
- Record on when the spares of the valves were changed and the cost of materials and labour cost thereof,
- Record on when the expansion joints were serviced and the cost of materials and labour sent for repairing the same,
- Record on when the manholes on the valve chambers were changed and the cost of materials and labour cost thereof,
- Record on man-hours spent on routine operations in the transmission system in the previous year along with breakup of material cost and labour cost with amount spent on outside agencies for repairs and replacements,
- Record on when the exposed piping was last painted and the cost of materials and labour cost thereof.

Distribution System

Water supply system should be monitored and maintained as per CPHEEO/international standards.

Sample records to be maintained are given below:

a) Updated system map.

b) Pressure and flow readings at selected monitoring points.

c) Persistent low pressure or negative pressure areas.

d) Age of pipes/quality of pipes.

e) Pipelines to be replaced.

f) Presence of corrosive water in the system.

g) Water budget for each zone served by one SR.

h) Number of connections given.

i) Number of meters out of order.

j) Status of fire hydrants and public taps.

k) Quantity measured at outlet of reservoir.

l) Quantity distributed/measured or billed.

m) Source of leaks and persistent leak points.

n) Status of bulk meters - function or not.

o) Status of customer meters.

p) Facilities for repairs of customer meters.

q) Number of un-authorized connections.

r) Residual chlorine levels at the pre-selected monitoring points.

s) Bacteriological quality of the water sampling points.

t) Persistent areas where residual chlorine is absent/where bacteriological samples are un-wholesome.

u) Record on carrying out repairs on the following works and its cost:

v) The pipe line leaks or replacement of pipes.

w) Change of gland ropes of the valves in distribution system.

x) Replacement of parts.

y) Replacement of Chamber covers.

z) Record on man hours spent on routine operations in the distribution system in the previous year and the cost thereof.

aa) Record on total cost of repairs and replacements in previous year along with breakup of material cost and labour cost with amount spent on outside agencies for repairs and replacements

bb) Record on when the exposed piping was last painted and the cost of materials and labour cost thereof.

cc) Record on the un-served areas - extension of pipelines- need for interconnections

The Contractor ensure Safety during the Operation and Maintenance with necessary Safety Equipment's.

SCHEDULE 6: Minimum Personnel to be deployed by the Contractor

Sl.	Personnel	Qualifications	Area 15	
			Manapakkam	Nandambakkam
1.	Sr Engineer (Operations)	B E Civil/ Mechanical/ Environmental, 8Years in Water Supply Projects, Minimum 5 Years in O&M of 24X7 water supply operations, NRW reduction& Billing	1	
2.	Distribution Engineer	Diploma- Civil/Mechanical with 5 Years OR BE civil/Mechanical with 2 Years in O&M of Water supply projects	11	
3.	NRW Engineer/ Leakage reduction Engineer/ Water supply Pipeline Maintenance Engineer	BE /Diploma Civil/Mech with 5 Year experience in NRW reduction in water supply projects	1	
4.	Network Assistants/Valve men	ITI, 10thPass with 3 Years Experience in water supply projects	1	1
5.	NRW Technician	Diploma Mech/ ITI with 2 Years experience in NRW field works	1	1
6.	Billing & CCC Supervisor	Bcom/BBA/MBA with 2 Years Experience in Billing & customer management	1	

7.	Meter Readers/Data entry	BBA/Graduate with 2 Years Experience in data entry	32	
8.	Pump Operators	ITI, Diploma in Mechanical with 3 Years field experience on O&M pumps & Motors, Panel Board.	3	3
9.	Labours	Physically fit, strong for Earth work & cleaning of water assets	3	3
10.	Security	10thPass, with watch & Ward experience	1	1

SCHEDULE 7: PAYMENT PROCEDURE & REMUNERATION

A. REMUNERATION OF THE CONTRACTOR

1. Invoice of the Bills as per schedule of payment described in the agreement shall be submitted by the Contractor to the CMWSSB Area office.

2. Payment for the Approved bills will be released within 45 days.

B. WORK BILLS:

1. Payment for the Capital works which are part of the contract will be as per the item rate contract for the works carried out where the bills will be released based on the cost quoted for the Item and the Payment shall be paid to the Contractor as per mile stone.

2. Payment for the O&M works which are part of the contract will be as per the Item rate contract for the works carried out, where the bills will be released based on the cost quoted for the Item and the Payment shall be paid to the Contractor Monthly.

3. Any Capital works which are not part of this contract, but necessary for O&M of system shall be deemed as variation the payment shall be made as per the Schedule of Rates of CMWSSB/Market Rate.

4. The Contractor shall submit the Bill to the Area office along with the Invoice for the work carried out.

5. Approved bills for Construction period milestones shall be released within 45 days of submission of bill

6. The approved bills for O&M shall be released within 15 days of submission of bills and shall be paid as per the payment terms defined in KPI and Performance Remuneration Schedule below.

SCHEDLUE 8: KEY PERFORMANCE INDICATORS (KPI) & PERFORMANCE REMUNERATION

Performance Targets of O&M Contract:

The Contractor must meet all the following Performance Targets:

(a) Adequate and equitable Water Supply must be provided to every connected property in the Area, subjected to CMWSSB supplying adequate bulk water.

(b) Emergency stoppages shall not exceed twelve hours and no more than an average of twelve emergency stoppages [of more than 12 hours each] shall occur in any continuous period of twelve months.

(c) 100% of customer meters which are operational must be read every month and a bill for water used based on these volumetric readings must be issued to 100% of connected properties each month by the Contractor with prior approval of CMWSSB before dispatch to the Customers.

(d) Contractor shall ensure that the percentage (%) of functional/operational meters is not less than 95% of the total installed meters at any point of time

(e) Frequency of meter reading in a month shall be verified to manage and avoid the quantity of losses due to NRW.

(f) Computerized records of the readings of 100% of all property connections (Individual and shared) must be maintained.

(g) Non-Revenue Water (NRW) within the Area of supply must be brought down to 40% by end of 6th month and then reduced step by step from 35% to 25%, from 25% to 20% and below 20% over a period of time as stipulated in the table below. NRW shall be maintained under 20% where continuous water supply is targeted, in a progressive manner starting with demo DMAs, as per the schedule agreed with CMWSSB.

(h) System connection requests must be fulfilled within 7 days of directions being issued by the Board after the payment of the connection fee.

(i) A Customer service support shall be provided by the contractor for managing the customer complaints related to water supply services, billing, new connection etc.

(j) All Customer queries and complaints to be responded to within 24 hours and redressed within 5 days of such complaint or query, except the complaints concerning low pressure or poor quality of water, which must be responded to within 12 hours and redressed within 24 hours of such complaint. Resolution of the Complaints to be as per the Citizen Charter of CMWSSB.

(k) Leaks appearing at the surface must be repaired within 24 hours of notification/observance with approval received from the concern Engineers.

(l) The operator shall attempt (not a mandatory Performance Target) to supply 24x7 water supply for one or more sub-zones/DMAs especially for the one sub-zone/DMA which

was selected & agreed mutually between the Operator & the Authority for NRW reduction of ≤ 20%, within each WDS. Such attempts to supply water 24x7 for more than 25 days in a month shall have incentives as defined below.

(m) The system pressure has to be established after completion of all the Capex works ie First Year (12 months period). System pressure has to be maintained for remaining contract period and same has to be verified only with Authority. If the Pressure shall be not maintained for remaining contract period.

Key performance standards to be maintained during the O&M Period:

S No	Key Performance Indices (Targets)	Unit	O&M period in months									
			1 to 6	7 to 12	13 to 18	19 to 24	25 to 30	31 to 36	37 to 42	43 to 48	49 to 54	55 to 60
1	Duration of supply per day in project area (Monthly Average) – Minimum Threshold value	Hrs	2	2	6	6	6	6	12	12	12	12
2	Meter Reading (target value)	%	100	100	100	100	100	100	100	100	100	100
3	NRW (target value)	%	≤40	≤35	≤25	≤25	≤25	≤25	≤20	≤20	≤20	≤20
4	Ensuring Collection (target value)	%	85	90	95	95	95	95	95	95	95	95
5	Water Quality Compliance in project area (no. of samples)	%	100	100	100	100	100	100	100	100	100	100
6	Resolution of Complaints on Services in project area (target value)	%	80	80	90	90	90	90	90	90	90	90

Payments:

1) **The operator shall be paid 100% of applicable monthly O&M payments** in the first quarter and any deductions as applicable based on poor performance of the KPIs (as per the calculations stated in the respective KPI table) shall be adjusted in the first month payment of the following quarter. Subsequently the operator will receive 100% O&M payment for the second and third months of the following quarter and the cycle shall be repeated.
2) **The Penalty/damages applicable** for non-performance of KPIs shall be capped at 30% of the Total of respective quarterly payments (sum of three monthly O&M payments).
3) In case of penalties exceeding 30% of the quarterly O&M payments for three consecutive quarters or for a total of five quarters into two consecutive financial years then authority has the right to terminate the contract as per the applicable termination clause of this contract.
4) **The incentives paid to the O&M** operator shall be capped up to a maximum of 10% of the quarterly O&M payment (sum of three-monthly O&M payments).

1. (KPI 1) Continuity of Supply (Duration of supply per day in project area):

Rationale	Continuity & reliability of supply.
Frequency	Monthly
Required Service Level/ Minimum Threshold Value	Continuity of supply in case of intermittent water supply by Authority: • First year; Average of 2 Hrs per day supply of all days with shortage of water supply by the Authority in a month. • 13th Month to 36th Month; Average of 6 Hrs per day supply of all days with shortage of water supply by the Authority in a month. • 37th Month onwards; Average of 12 Hrs per day supply of all days with shortage of water supply by the Authority in a month. Continuity of supply in case of 24x7 water supply by the Authority: • Operator shall maintain 24x7 supply in case of required quantity of water supply by the Authority Continuity of supply i.e. 24x7 water supply by selected sub-zone/DMA: • The operator shall attempt to supply 24x7 water supply for one or more sub-zones/DMAs especially for the one sub-zone/DMA which was selected & agreed mutually between the Operator & the Authority for NRW reduction of ≤ 20%, within each WDS. Such attempts to supply water 24x7 for more than 25 days in a month by maintaining optimal tail-end pressure as mutually

	agreed between the Contractor/Operator and CMWSSB shall have incentives as defined below. Note: *For the purpose of accessing daily average water supply from 6AM to Next day 6AM Shall be considered as 24 Hrs.*
Measured by	Continuity of Supply: Flow meter reading at WDS and DMA's as per record maintained by the operator and verified by the Authority on periodic basis.
Data Requirements	Day wise data on Number of hours of supply in each WDS and its sub zones/DMAs
Monitored by	An electronic registry maintained by the Operator; the registry shall include detailed database and summary tables and record of Flow meter readings (WDS & DMAs) and customer complaints. The customer complaints database shall include: • Time and Date • Complaint Identification Number • Action Taken Report • Time and Date of Resumption of Service Level
Allowable Exclusions	The Hours with interruption in water supply due to the following situation, shall be excluded in arriving the total number of hours in a day of water supply; • Planned Maintenance Periods • Mains Bursts in networks operated by the Authority • Third Party Causes or any other reason for interruption of water supply which shall be validated/acknowledged by the Authority.
Penalty/Damages	**Continuity of supply in case of intermittent water supply by Authority:** • **07th Month onwards;** if average of 2 Hrs per day of water supply not achieved for all days with intermittent supply in a month, then 2% of Monthly O&M fee. • **13th Month to 36th Month;** if average of 6 Hrs per day of water supply not achieved for all days with intermittent supply in a month, then 1% of Monthly O&M fee for every one-hour supply less than the threshold average of 6 hours per day in a month. • **37th Month onwards;** if average of 12 Hrs per day of water supply not achieved for all days with intermittent supply in a month, then 1% of Monthly O&M fee for every one-hour supply less than the threshold average of 6 hours per day in a month. **Continuity of supply in case of 24x7 water supply by the Authority:** • 1% of the Monthly O&M fee for every day in a month, in case the operator fails to supply 24x7 water supply for more than 25% of the total number of days of 24x7 water supplied by the Authority

	in a month. This penalty will be applicable from 25th month onwards. Penalty = (1% of the Monthly O&M fee) x ((No of days of failure to supply 24x7 by the operator) – (25% x total days of 24x7 water supply by the Authority in a month))
Incentive	0.10% of the monthly fee for every additional day of water supplied 24x7 over and above 25 days in a month for each sub-zone/DMA within each WDS by maintaining optimal tail-end pressure as mutually agreed between the Contractor/Operator and CMWSSB. Calculation for Incentive shall be carried out for every calendar month for each DMA/Sub zone and Incentive payment shall be made quarterly. Formula: Incentive for Each sub-zone= (Total number of days in a month with 24x7 water supplied with agreed optimal tail end pressure – 25 Days) X (0.10% X Monthly Remuneration/ Fee)

2. (KPI 2) Meter Functioning and Meter Reading

Rationale	Implementation of Metering policy, facilitating volumetric consumption-based billing and for analyzing consumption pattern & data.
Frequency	Monthly
Required Service Level	• 95% of total consumer meters installed should be functional. • 100% of the functional meters shall be read and data to be submitted to the Authority within the monthly billing cycle due dates stipulated by the Authority.
Measured by	Total number of functional metered connection as a percentage of total number of metered connections
Data Requirements	Total number of connections & number of registered metered connection.
Calculation	Total number of functional metered connection Total number of metered connections/installed meters
Monitored by	• Electronic consumer database with initial meter reading and final reading for each billing cycle Consumer numbers in database • Photo of each reading with date and meter number, consumer number • Meter reading statement with linked photograph • 1% random check by Authority for each billing cycle

Allowable Exclusions	Maximum of up to 5% of the installed meters shall be considered as non-functional meters/for exclusion from meter reading under the following situations; • Meter damaged/stolen and reported by consumer • Access to meter is blocked temporarily • Meter non-functional due to technical issues • Refusal by consumer to read/access the meters and reported to CMWSSB • Disconnected by CMWSSB (will be deducted while calculating % from total consumers)
Penalty/Damages	Penalty (Meters) = (95% - (Total no. of meters for which the bills are generated in a billing cycle/ Total no. of installed meters during the review period x 100) %)) x (10% of Monthly O&M fees) The computation will be done monthly, and the penalty will be levied quarterly
Incentive	No incentive

3. (KPI 3) Extent of Non-Revenue Water (NRW):

Rationale	Financial and Environment sustainability
Frequency	Monthly
Target Value	Target Value of NRW reduction shall be calculated for entire area under O&M as per this contract, for every month based on average of NRW reduction achieved across all Sub zones/DMAs as per the following. • ≤ 40% for first 6 months (up to 6th month) with at least one Sub zone/ DMA in each WDS achieving ≤ 25% • ≤ 35% for 7th to 12th month, with at least one Sub zone/ DMA in each WDS achieving ≤ 20% • ≤ 25% from 13th to 36th month with at least one Sub zone/ DMA in each WDS achieving ≤ 20% • ≤ 20% from 37th to 60th month across all Sub zone/DMA.
Minimum Threshold Value/ Permissible Limit	The permissible limit for average NRW reduction across all Sub zones/DMAs shall be up to additional 5% above the Target Value defined for the respective time period (Key Performance Table). However, it is mandatory to maintain the NRW for at least one Sub zone/DMA as per the Target Value mentioned above and that will be the permissible limit for that DMA/sub zone.

Measured by	Percentage of total billed volume of water including the volume of measured free water supplies authorized by CMWSSB measured in Kilo Liters during the month under review over the total Supply Input Volume in Kilo Liters continuously measured at the bulk water supply points fixed on the transmission mains originating from pumping station or any other source.
Data Requirements	Total water input & total billed volume
Calculation	Revenue Water% = 100* (Total Billed Volume in Kilo Liters +Total volume of measured Free Supplies authorized by CMWSSB) / (Total Supply Input Volume in Kilo Liters)) NRW %= 100%- Revenue water%
Monitored by	An electronic registry maintained by the Operator; the registry shall include detailed database and summary tables for Supply Input Volume, Billed Volume and Authorized Free Supplies Volume. The monthly database shall include: • Cumulative Supply Input Volume • Cumulative DMA wise Distribution Input Volume • Total Billed Volume during the month • Total Measured Volume of Authorized Free Supplies
Penalty/Damages	X being the NRW (in %) achieved during the period under review, the applicable damages will be: • For first 6 months (X-45%) of the Monthly O&M fee with at least one Sub zone/ DMA in each WDS achieving ≤ 25% • For 7th to 12th month (X-40%) of the Monthly O&M fee with at least one Sub zone/ DMA in each WDS achieving ≤ 20% • From 13th to 36th month (X-30%) of the Monthly O&M fee with at least one Sub zone/ DMA in each WDS achieving ≤ 20% • From 37th to 60th month (X-25%) of the Monthly O&M fee with at least one Sub zone/ DMA in each WDS achieving ≤ 20% • Penalty for not maintaining even a single sub zone/DMA under each WDS with an NRW ≤ 20% from 7th month onwards shall be = (NRW% achieved in that DMA/Sub zone -20%) * Monthly O&M fee and will be applicable over and above-mentioned penalty. The computation will be done monthly, and the penalty will be levied quarterly
Incentive	X being the NRW (in %) achieved during the period under review, the applicable incentive will be: • **Up to 36 months;** 0.5% of the Monthly O&M fee for every 1% reduction below 25% across all DMAs/Sub zones up to a maximum

	of 5% of Monthly O&M fee • **37th Onwards;** 0.5% of the Monthly O&M fee for every 1% reduction below 20% across all DMAs/Sub zones up to a maximum of 5% of Monthly O&M fee The computation will be done monthly, and the incentive will be provided quarterly

4. (KPI 4) Efficiency in collection of water related charges/ Ensuring Collection

Rationale	Financial sustainability
Frequency	Quarterly
Target	Collection Efficiency target value shall be as per the KPI Table
Required Service Level (Minimum Threshold Value)	85% for first year, 90% from second year onwards
Measured by	Percentage of total revenue collected against volume billed during the period under review (3 months' total revenue collection against 3 months total volume billed) For the purpose of computing incentives for arrear collection, arrears shall mean amount billed but not collected within the due date of the bill for the last month of the quarter.
Data Requirements	Data from budget for current revenue collected and current revenue billed. (excluding arrears).
Calculation	**Current Collection:** $\frac{\text{Total amount collected during the given quarter}}{\text{Total amount billed during the given quarter}}$ The Collection efficiency shall be finalized based on collections which were billed during the relevant quarter and collected within due date of third month's bill (within the due date of the bill for the last month of the quarter). **Arrear Collection:** For the purpose of the computing incentive for arrear collection, the collection of arrears that are due for a period of less than 3 months from the end of the relevant quarter shall be considered as the service level for arrear collection incentive.
Monitored by	An electronic registry maintained by the Operator; the registry shall include detailed database and summary tables for total revenue billed, arrears, and amounts collected during the period under review. The database shall include: • Month • DMA Number

	• Total Amount and volume Billed- Arrears and Current Revenue Demand against volume in kilo liters • Total Revenue Collected as against Arrears and as against Current Demand against volume in kiloliters • Total arrears with volume in kiloliters • Total disputed cases • Other Income collected as against Connection Charges and Deposits received from Customers
Allowable Exclusions	• Amounts written off or exceptionally permitted by CMWSSB to be excluded • Defaulter customers identified by Operator, informed to CMWSSB. No action taken by CMWSSB for recovery as per applicable rule within the given time. • Any free connection permitted by CMWSSB
Penalty/Damages	X being the Quarterly Collection Efficiency (in %) achieved, the applicable damage for: • **Initial 4 Quarters (first year):** (85% - X) of Applicable Quarterly O&M Fee (sum of three months O&M Fee) • **From 5th Quarters onwards (2nd Year onwards):** (90% - X) of Applicable Quarterly O&M Fee (sum of three months O&M Fee)
Incentive	**For Current Collection** X being the Collection Efficiency (in %) achieved during any Quarter, the applicable incentive will be: if X is above the target value of 90% for first year and 95% from second year onwards, shall have an incentive of 1% of the quarterly O&M fee (sum of 3 month's O&M fee for that review period) for every 1% increase in collection efficiency up to a maximum of 100%. **For Arrear Collection** For collection of arrears against the billing up to the required level of service for arrears as stated above, 50% of the Penalty Charged for such shortfall in collection shall be given as incentive

5. (KPI 5) Water Quality Compliance Supplied to the Project Area

Rationale	Poor quality of water can pose serious health hazard
Frequency	Monthly
Required Service Level	er Tap: 100% samples conforming to the permissible level of Residual Chlorine (RC) to be maintained, other than where the Emergency Response Plan is triggered.
Measured by	Number of samples from User taps tested and not conforming to Residual Chlorine (RC) levels based on a minimum of 10 samples per Sub zone/DMA on monthly basis.

Data Requirements	Analysis sample of various points within distribution system.
Calculation	= Total numbers of samples that meet the specified standards/ Total number of samples tested
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. At least 30% of samples as prescribed by CPHEEO manual shall be collected and tested by third party approved lab or CMWSSB lab. 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 consumer complaints database shall include: • Time and Date • Complaint Identification Number Customer Identification Cod • Nature of Complaint on water quality Action Taken Report • Time and Date of Resumption of Service Level
Allowable Exclusions	Impact on water quality due to Emergency procedures and/or other events as acknowledged by the Authority.
Penalty/damages	For each sample at consumer tap not conforming to Residual Chlorine (RC) standards, Rs. 1,000, escalated at the rate of 5% per annum from the Appointed Date.
Incentives	No incentive

6. (KPI 6) Efficiency in Redressal of Complaints

Rationale	Responsive to consumer needs
Frequency	Monthly
Required Service Level	**80% of complaints for first year and from second year onwards 90% of complaints** shall be resolved as per the process and timelines stated in CMWSSB citizen chart **Complaints to be resolved within 24 hours:** Complaints related to water quality **Complaints to be resolved within 48 hours:** leakages in HSCs, No Water **Complaints to be resolved within 7 days**: Complaints related to delay in providing connection, meter not working properly, delay/errors/problems in billing and collection, change in customer database, reconnection,

	temporary disconnection, arrears and other complaints connected to customer database, billing or collection. Complaints for which Redressal beyond the control of the Operator to be listed separately and to be certified by the Authority. In the event a complaint is not redressed within the stipulated time provided for such redressal period, the same shall be considered as an additional complaint by the same Complaint. The accumulation of complaints shall continue till it has been resolved. It is hereby clarified that the complaint resolution targets of the Operator shall not include complaints pertaining to water shortage and / or resultant low pressure during the period of inadequate water supply by CMWSSB.
Measured by	Percentage of total number of customer requests resolved during the month under review, including those resolved until the 7th of the succeeding month (where the period allowed in 7 days) over the total number of customer requests received and recorded during that month under review
Data Requirements	Total number of water supply complaints received per month, and total number of complaints redressed within 24 hrs, 7 days, 15 days and beyond 15 days.
Calculation	Total number of complaints redressed within the stipulated time for the respective category /Total number of complaints received in a month in the respective categories
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	Complaints relating to • No Water • Poor quality of water other than residual chlorine However, the above will be excluded only if the reason for 'No water' is on account of CMWSSB not supplying the required quantity at the WDS or supplying poor quality water.
Penalty/Damages	(Target Value % of the respective period under review (Key Performance Table) - % of Total customer complaints redressed within the stipulated timelines during the respective month) x 20% of the Monthly O&M Fee
incentive	No incentive

SCHEDULE 9: CONSTRUCTION MILESETONES & LIQUDATED DAMAGES

Name of the Work	Total Quantity	Milestone for First Year			
		% of completion of work			
		3 months	6 Months	9Months	12Months
	%	%	%	%	%
Milesetone1: Providing House Service Connection as per the relevant Indian standard specifications, including cost of DI saddle, communication pipe GI Class B, ,water meter (IP68), specials and fittings, fixing in position and cost of excavation in all types of strata, refilling of trench and restoration to its original condition including disposal of surplus excavated material, as directed by the Engineer-in-charge.	100	15	25	30	30
Milesetone2: Effecting house service connection above ground level	100	15	25	30	30
Milesetone3: Supplying and Fixing of customer water meter, UPVC/MDPE pipes, collars, union, all materials including labour charges for threading, jointing and fixing	100	15	25	30	30

Liquidated Damages:

The liquidated damage for the whole of the works is **Rs.30,24,066.70/-** and that, for the milestone are as under: [49]

For milestone 1	**Rs. 1260 /- per day**
For milestone 2	**Rs. 2100/- per day**
For milestone 3	**Rs. 2520/- per day**
For milestone 3	**Rs. 2520/- per day**

The maximum amount of liquidated damages for the whole of the Works is Capped at 10% (ten percent) of Capital contract price. If the liquidated damage amount exceeds 10% of the Capital Contract price, the authority reserves the right to terminate the Contract as the Termination clauses as defined in Clause [6.5]

SCHEDULE 10. RESPONSIBILITIES OF THE EMPLOYER/CMWSSB

To Provide the Contractor with assistance as is necessary in procuring access to:

i) The Facilities within the water supply area; and

ii) The Central Storage Facility;

a) Provide the Contractor with the permission to repair or replace the Facilities, which the Contractor is responsible for, and the right to lay new water mains on behalf of the Corporation, including the right of way to carry out the Services;

b) Provide adequate Bulk Water to the Contractor to meet its obligation, **24X7 water supply in selected DMAs**; intermittent supply in the remaining areas. CPHEEO norms shall be followed for bulk water calculations and **all efforts shall be made to supply required quantity of water for maintaining 24x7water supply in selected DMAs and intermittent supply in remaining**

c) Manage all aspects of customer interface together with Contractor within the Area;

d) Collection of bill payments/arrears and disconnections in case of non-payment beyond the notice period.

e) Receive requests for approvals for new connections and communicate to the Contractor. Resolve the issues pertaining to new house service connections in respect of boundaries of properties / roads / lanes and disconnection issues etc. Ensure safety of the network through Co-ordination with the other implementing agencies.

f) Depute the CMWSSB Employees to the Contractor and to facilitate such deputation as directed for on field training and working with Contractor;

g) Make payment for remuneration and work bills of the Contractor.

h) Be responsible for the overall Project Management including decisions regarding achievement/non-achievement of performance obligations by the Contractor and release of payments;

i) Manage the project roles and responsibilities, interfaces and resolution of problems arising out of them using appropriate level(s) of interface.

j) Ensure timely preparation & generation of water supply monthly bills for each customer and timely issue of the bills to the Contractor for distribution

k) Monitor all performance Targets and KPIs of the Contractor through periodic and random inspections

l) Supply Chlorine to the Contractor as per the quantity required to carry out the necessary O&M componnets.

SCHEDULE 11. ENVIRONMENT & SOCIAL MANAGEMENT PLAN (ESMP)

ENVIRONMENT & SOCIAL MANAGEMENT PLAN (ESMP)

The project "**Performance Based Contract for Operation & Maintenance of Water Distribution Station, Pipeline Networks (Pumping Mains & Distribution Mains), House Service Connections and allied works at Macro Marvel WDS, Manapakkam and Nandambakkam WDS,Sundar Nagar UGT for 5 years in Area XII (Package - II)"** is part of Chennai City Partnership; the Chennai Sustainable Urban Services Program "C-SUSP" which is being implemented as a Program-for-Results "P for R" operation of the World Bank and co-financed by AIIB. Hence all activities under the program needs to be comply with Environmental and Social Systems Assessment (ESSA) Report of the Program. In this regard, the following Environment Social Management Plan (ESMP) requirements have been formulated to comply with the ESSA and the same needs to be adhered by the Authority and the Contractor (as applicable) as part of the project during the currency of this agreement.

The Project area covers depots 157 & 158 and has 3421 no.s of House Service connections with an estimated population of 62,000s. There exists about 32Kms of distribution pipe network along with about 3.5 Kms of Feeder main.

1. Excluded Locations for various activities:

1.1. Sites/ locations which should be excluded as per applicable siting criteria prescribed by TNPCB, Master plan, Excluded Disaster Zones, or other applicable criteria set out by National, State, Local Body will not be included in the Project.

1.2. Activities that involve (i) purchase, storage, and use of banned pesticides/ insecticides/chemicals/asbestos, (ii) Contaminated Areas, not conducive for the proposed activity or use, will not be allowed.

1.3. No pipeline laying activities, its operation & maintenance works, or disposal of wastes / wastewater or other activities shall affect demarcated forest area, natural habitats, archaeologically protected monuments/areas, cultural heritage areas, or area under Coastal Regulation Zone ("CRZ") notification or any other National / State / Local regulations or guidance. The Authority shall ascertain and take required permissions for any activity under the Program.

2. Note – The project involves Operation and Maintenance of Water Distribution Stations, Pipeline Networks (Pumping Mains & Distribution Mains), House Service Connections, repairing, and maintenance of water pipelines along existing roads and utility networks, along with the installation of House Service Connections (HSC) only and its primarily O&M project. Therefore, this project activity does not fall under the exclusion criteria. However, the contractor shall verify for any applicable regulations and obtain all necessary permissions (if required) in accordance with applicable laws and regulations before commencing any work.

2.1. Sites/ locations which should be excluded as per applicable siting criteria prescribed

by TNPCB, master plan, excluded disaster zones, or other applicable criteria set out by National, State, Local Body will not be included in the Operation & Maintenance activity.

2.2. Activities that involve (i) purchase, storage, and use of banned pesticides/ insecticides/chemicals/asbestos, (ii) Contaminated Areas, not conducive for the proposed activity or use, will not be allowed.

2.3. Repairs/replacement and operation & maintenance of pipelines network shall be strictly in line with regulations, without any pollutants, waste, wastewater discharge or safety concerns affecting any cultural resources, religious activities or sensitive areas including waterbodies, nalas, canals.

3. Pre Execution Stage

The Contractor shall carry out field visits & verifications along with the Authority / CMWSSB, study this ESMP and shall prepare a detailed ESMP for the project in compliance with this ESMP and submit it to the authority. The authority shall review and approve the same.

4. Operation and Maintenance Stage

Activities by the PIU/PMC/ IE

As may be appointed and authorized by CMWSSB, The PIU/PMC/IE shall be involved in the smooth execution of the O&M project and assist the Authority towards monitoring the Contractor's work and progress during this phase. Their work shall include but not limited to:

- **Monitoring and guiding the contractor in adopting good environmental, Social, EHS/OHS and engineering practices.**
- **Monitoring of implementation of the approved Environment and Social Management Plan (ESMP) by the contractor.**

5. Mitigation Measures

Project specific Environment and Social screening is undertaken for all activities belonging to the project and, a rapid assessment was undertaken for all activities. For each activity, an activity-specific mitigation/management plan is prepared. The activity-specific mitigation measures are provided in the following table.

PRE-EXECUTION STAGE		
SL No	**Environment & Social Issues**	**Management Measures**
P1	NOC/Consents/License	Necessary permission/license/NoCs (if required) will be obtained by the Contractor prior to commencement of work.

P2	Labor Requirements	The Contractor preferably will use unskilled labor from local communities and will mobilize skilled labors from it's pool to give the maximum benefit to the local community. Necessary license (Labor license/BoCW) shall be obtained by the Contractor.
P3	Arrangement of water	The Contractor shall arrange water to avoid disruption/disturbance to other water users.
P4	Pollution Under Control (PUC) Certificate	The Contractor will obtain the PUC certificates of vehicles, if any as part of O&M activities.
P5	Utility Shifting	The work is majorly Operation and Maintenance, hence utility shifting activities might not be required. In case of any such occurrence as a part of O&M activities, the utilities found during such activities, will be shifted suitably as per the instructions of the concerned/owner department.
OPERATION AND MAINTENANCE STAGE		
SL No	**Environment & Social Issues**	**Management Measures**
C1	Traffic Management and Accessibility	For Field works such as pipe laying, replacement etc. during maintenance, • The contractor will provide safe and convenient passage for vehicles, pedestrians, and livestock. • The contractor will take care that schools and religious places are accessible to public. • The contractor will also ensure that the work on / at existing accesses will not be undertaken without providing adequate provisions. • The contractor shall take all necessary measures for the safety of public/pedestrian and vehicle/traffic during such maintenance/repair works, provide, erect, and maintain such hard barricades with reflectors and good lighting, including signs, markings, flags, lights, and flagmen; and there shall be no possibility of communities or workers falling into pits/manholes etc. • All pits shall be closed safely on time immediately after work requirements, and/or before works at the location stops. • Appropriate barricades lighting shall be provided for pits / closed pits, so that there is no risk of fall or other

		hazards. • The contractor shall inform the local community of the changes to traffic routes, conditions, and pedestrian access arrangements in advance. • Necessary arrangements for vehicle movement, public accessibility and traffic control shall be ensured by the contractor during important local religious festivals where huge gatherings may happen. • During festivals, work will be rescheduled to suitable day/time to accommodate any such occasions or to ensure least obstruction to public. • For works such as House Service Connections, which shall mostly operate indoor or from premises away from road and traffic such arrangement is not needed.
C2	Worker Facilities and Health & Safety	• All worker facilities shall be ensured as per regulations by the authority (for its employees employed for the project under this Agreement) & the Contractor for its work force under the project. It is the obligation of the Contractor to comply with Factories Act/ other National / State regulations throughout the project period. This includes (but not limited to) provision of clean and safe rest area, first aid kit, potable water, & toilets etc. and connected to sewer system or septic tanks with appropriate water supply etc. • The Contractor shall provide appropriate PPEs to all the workers and replace the damaged ones on time as required. • The Contractor ensures safety of women during its operations. Appropriate training on Gender safety needs to be conducted for the worker to handle safety of public especially women, children, senior citizens and other vulnerable groups. • The Contractor shall provide appropriate safety measures for women workers. • Contractor shall provide readily available first aid kit including an adequate supply of sterilized dressing materials and appliances as per the Factories Rules in every work zone. • Necessary firefighting equipment (fire extinguishers/sand buckets) will be provided by the Contractor and ensure firefighting trainings.

C3	Material Handling	• All vehicles delivering fine materials to the site shall be covered to avoid spillage of materials and dust.
C4	Waste Management	• Contractor shall use C&D waste / recycled material as much as possible in the project area, but strictly following regulations and without any harm to people or environment. • The waste and other disposable materials will be stored in a safe manner. • Solid waste (including dry & wet if any), Construction & Demolition (C&D) wastes, hazardous wastes, e-wastes, shall be segregated at source & stored in different color-coded bins, and treatment and disposed shall be arranged in municipal / other approved facilities as in corresponding rules. No dumping of waste around the project or any other area shall be permitted.
C5	Pollution Control and Management	• Appropriate dust, noise, water pollution (if any) prevention mechanisms shall be adopted so that there is no disturbance to communities or sensitive receptors such as schools, hospitals etc. nearby. • The Contractor shall take all precautions to reduce the level of dust from construction sites involving earthwork by measures such as sprinkling of water, encapsulation of dust source and by erection of screen / net. • Contractor shall strictly conform to the CPCB noise standards for its construction activities, vehicle and machinery (if any)
C6	Special Situations and Emergencies	• Chance finds procedures to be followed in line with applicable regulations. • All safety requirements shall be followed during emergencies. Hazards shall be identified & safety, emergency & fire response plans shall be prepared and followed during the project life cycle. • Emergency Response Plan will be prepared & followed by the Contractor. All workers will be trained at intervals in emergency related response measures including fire safety.
C7	Water and Wastewater Management	• No groundwater exploitation/extraction is permitted. • The Contractor shall use water arranged by itself from

		CMWSSB / other relevant bodies / own arrangement. • No wastewater shall be discharged into the drains or waterbodies etc.
C8	Drainage	• Contractor will ensure that no construction materials like earth, stone or appendage is disposed of in a manner that blocks the flow of water of any water course and cross drainage channels. • Contractor will take all-necessary measures to prevent any blockage to water flow.
C9	Housekeeping and Cleanliness	• Good housekeeping shall be always maintained at O&M activity zones; without posing hazards, pollution or safety issues to the environment or people.
C10	Excavation of Trench / Pit	• The Contractor shall ensure that all the opened pits will be closed immediately after works pertaining to that pit and/or before workers leaving the site. In case any open pits are there, that must be soft barricaded. • The Contractor shall ensure the pit is closed immediately after maintenance work. • In case any open trenches are there, that must be hard barricaded along with provision of cautionary/warning boards at least 100 m ahead as per road disposition and adequate lighting for nighttime. • Excavated materials including debris shall not be piled up so close to the pit with the possibility of its slippage. All excavated material and debris shall be transferred within 24 hours to C&D disposal facility or safe storage area. • Storage of excavated material or fine materials for works (at site or in disposal area) shall be with proper cover (to prevent dust), berm (to prevent erosion), lighting and barricading. • No material shall fall into waterbodies or forest areas, community owned/used areas or the like.
C11	Monitoring & Record Keeping	• All records shall be kept at the project office including incident reports, monitoring results, waste quantity generated etc. All permits and clearances shall be obtained and copy of records maintained on site. • Incidents (Severe, Serious and Indicative) records shall be maintained on site. All severe & serious incidents (on project workers, communities) shall be

		reported to the Client immediately after arranging timely support to the injured.
C12	Information Meetings	• The Contractor shall update about his plans covering overall work schedule, and management plans of debris disposal, drainage protection during maintenance, pollution abetment and other plans, measures to minimize disruption, damage. • The Contractor shall maintain a channel of communication with the communities through his designated Environment and Safety Officer to address any concern or grievances.
C13	Clean-up Operations, Restoration and Rehabilitation	• Contractor shall prepare site restoration plans and implement the same prior to demobilization. • Immediate closure of work will be ensured after installation & testing
C 14	Following ESMP through Execution and Operation	• Throughout this Operation and Maintenance phases of the Project, the Contractor shall prepare and follow the ESMP.

6. ESMP Budget Estimate for the Project:

Sl. No	Item	Unit	Quantity	Remarks
1.	Medical health checkups of workers (Twice a year)	Number	29 x 2 x 5	Rate to be considered in consultation with physician (doctor) for half yearly health checkup. Two health check-ups of 25 nos. of laborers on average.
2.	EHS module training for capacity building of staff / laborers etc.	Number	1 x 1 x 5	Training can be conducted at site or at CMWSSB zonal premises. The cost would include training, material, refreshments etc.
3.	Worker's GRM	Number	1 x 2 x 5	The Grievance Redressal Committee (GRC) to have a meeting once every six months during the overall project period. Allocate amount required for meeting expenditure on transportation of the GRC members. Including IEC materials such as pamphlets, writing pads etc.
4.	Capacity building and awareness among contractors' workers and community members on SEA/SH prevention, community health and safety, labor management, etc.	Number	1 x 4 x 5	Awareness programs to be conducted once every quarter during the overall project period. Allocate amount required for awareness program including expenditure on IEC materials such as pamphlets, guest felicitations, flyers, standees etc.

The bidder has to include the cost for the above activities in its quoted bid price.

Annexure III to CA : PERFORMANCE SECURITIES

ANNEXURE III A: CONSTRUCTION PERIOD PERFORMANCE SECURITY

WHEREAS:

A. ..... …… (the "**Contractor**") and …… (the "**Authority**") have entered into a Contract Agreement dated …….. (the "**Agreement**") whereby the Authority has agreed to the Contractor undertaking the development of ……basis (the "**Project**"), subject to and in accordance with the provisions of the Agreement.

B. The Agreement requires the Contractor to furnish a Performance Security to the Authority in a sum of Rs……. (Rupees …… Lakhs) (the "**Guarantee Amount**") as security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement).

C. .....We, …….. through our Branch at..... (the "**Bank**") have agreed to furnish this Bank Guarantee by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due performance of the contractor's obligations during the Construction period, under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon occurrence of any failure or default in due and faithful performance of all or any of the Contractor's obligations, under and in accordance with the provisions of the Agreement, on its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from the Authority, under the hand of an Officer not below the rank of Executive Director in the Authority, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Contractor is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.

7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force in accordance with Article 9 of the Agreement.

8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred Branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the

notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

10. This guarantee shall also be operational at our branch at _____, from whom, confirmation regarding the issue of this guarantee or extension/renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for a period of two years from the date hereof or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

Signed and sealed this …… day of …….., 20…… at ……..

SIGNED, SEALED AND DELIVERED
For and on behalf of the BANK by:

(Signature)

(Name) (Designation) (Code Number)

(Address)

NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

(ii) The address, telephone number and other details of the Head Office of the Bank as well as of issuing Branch should be mentioned on the covering letter of issuing Branch.

ANNEXURE III B: O&M PERIOD PERFORMANCE SECURITY

WHEREAS:

A. ..... …… (the "**Contractor**") and …… (the "**Authority**") have entered into a Contract Agreement dated …….. (the "**Agreement**") whereby the Authority has agreed to the Contractor undertaking the development of ……basis (the "**Project**"), subject to and in accordance with the provisions of the Agreement.

B. The Agreement requires the Contractor to furnish a Performance Security to the Authority in a sum of Rs…….. (Rupees …… Lakhs) (the "**Guarantee Amount**") as security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement).

C. .....We, …….. through our Branch at..... (the "**Bank**") have agreed to furnish this Bank Guarantee by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due performance of the Contractor's obligations during the Operation Period, under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon occurrence of any failure or default in due and faithful performance of all or any of the Contractor's obligations, under and in accordance with the provisions of the Agreement, on its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from the Authority, under the hand of an Officer not below the rank of Executive Director in the Authority, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Contractor is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending

before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.

7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force in accordance with Article 9 of the Agreement.

8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred Branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof

forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

10. This guarantee shall also be operational at our branch at _____, from whom, confirmation regarding the issue of this guarantee or extension/renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for a period of two years from the date hereof or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

Signed and sealed this …… day of …….., 20…… at ……..

SIGNED, SEALED AND DELIVERED
For and on behalf of the BANK by:

(Signature)
(Name) (Designation) (Code Number)

(Address)

NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

(ii) The address, telephone number and other details of the Head Office of the Bank as well as of issuing Branch should be mentioned on the covering letter of issuing Branch.

DECLARATION

i) I . . . . s/o . . . . . Proprietor / Partner / Director of . . . . . Do hereby declare and undertake as under :

ii) That in the capacity of Contractor by M/s. . . . . ……. I will comply with the provisions of Contract Labour (Regulations & Abolition) Act, 1970 by obtaining a valid license under the Act and the Rules thereto and similarly under Factories Act wherever applicable.

iii) I will pay the wages in accordance with the Minimum Wages Act to all my employees.

iv) That I abide to recover the Employees Provident Fund and the Employees' Insurance contributions (both Employees and employer's contribution) from the payment of bills every month.

v) The staffs who have been employed by the contractor should also have ESI & EPF number in their names. The contractor has to pay ESI & EPF contributions towards the staff every month. The copies of the remittance challans of the ESI & EPF contributions should be submitted along with the bill for claiming the subsequent monthly payment. Similarly, the contribution / premium / tax etc, payable to any other statuary authorities should be remitted by the contractor directly, after registering with the respective departments.

vi) I further declare and undertake that in case of any liability pertaining to my employees is to be discharged by the Principal Employer for my lapse, I undertake to reimburse the same or the Principal Employer is authorised to deduct the same from my dues as payable.

vii) I will maintain the Registers and records about the Contract Labour employed under Section 29 of Labour (Regulation & Abolition) Act wherever applicable.

viii) I will take insurance policy under Workmen Compensation Act to meet out any untoward incident until the contract labourers are issued with ESI card.

ix) I will not employ any child labour in a house / worksite / Establishment / other places as per the Section 2 (ii) of the Child Labour (Prohibition and Regulation) Act 1976 (Child means, a person who has not completed his fourteenth years of age).

SIGNATURE OF CONTRACTOR