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JICA ASSISTED DELHI WATER SUPPLY IMPROVEMENT PROJECT IN CHANDRAWAL WTP COMMAND AREA (LOAN NO. ID-P225)

NIT NO. 02 (2021-22)/EE(EAP)-I

VOLUME: III / IV

BIDDING DOCUMENTS (PRICE BID)

TENDER DOCUMENT

FOR

PACKAGE – 3 (Central Zone)

Improvement of Water Supply System including Operation and maintenance of Transmission & Distribution Pipes, Pumping Stations, Service Connections and Consumer Meters with DMA formation and NRW Reduction in Chandrawal WTP Command Area Package-3 (Central Zone)

ON

INTERNATIONAL COMPETITIVE BIDDING

April 2021

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Letter of Price Bid

Date: *[insert date of Bid submission]*

Loan Agreement No.: *[insert No of Loan]*

IFB No.: *[insert number]*

Alternative No.: [*insert identification No. if this is a Bid for an alternative*]

To: *[insert full name of Employer]*

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including addenda issued in accordance with Instructions to Bidders (ITB 8).*[Insert the number and issuing date of each addendum]*;

(b) We offer to execute in conformity with the Bidding Documents and Technical Bid the following Works: [*insert a brief description of the Works*];

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

Total price of the Bid*[insert the total price of the Bid in words and figures, indicating the various amounts and the respective currencies]*

Total price of Works Section 1 Capital Works: *[Insert the total price of Section 1 works in words and figures, indicating the various amounts and the respective currencies]*

Total price of Works Section 2 Operation and Maintenance*: [Insert the total price of Section 2 works in words and figures, indicating the various amounts and the respective currencies]*

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

The discounts offered are:*[specify in detail each discount offered.]*

The exact method of calculations to determine the net price after application of discounts is shown below:*[specify in detail the method that shall be used to apply the discounts.]*;

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

(f) If our Bid is accepted, we commit to obtain a Performance Security in accordance with the Bidding Documents;

(g) We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed; and

(h) We understand that you are not bound to accept the lowest evaluated Bid or any other Bid that you may receive.

Name of the Bidder***** *[insert complete name of the Firm submitting the Bid]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder****** *[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid*[insert complete title of the person signing the Bid]*

Signature of the person named above*[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* day of*[insert month], [insert year]*

*****: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

******: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid.

Schedule of Price Adjustment Data

Table A.: Local Currency

a) Capital Works:

(a)	(b)	(c)	(d)	(e)	(f)
Index code	**Index description**	**Source of index***	**Base Value and Date**	**Bidder's related currency amount (INR)**	**Weighting**
1	Nonadjustable	—	—	—	0.15
2	Labour	UAMM(Delhi)			0.212
3	Material	AIWPI	Calculated by "b)Further break-up of material"		0.595
4	Petrol, oil & Lubricant	AIWPI (Mineral Oils)			0.043
The Bidder shall fill in column (d) & (e).			**Total**		**1.00**

Instructions:

(i) The Bidder shall fill estimated amount in column (e).
(ii) Amount of Index Code No.3 in Column (e) is equal to Total in "b) Further Break-up of Material." below.

b) Further break-up of material (to be as given below):

(a)	(b)	(c)	(d)	(e)	(f)
Index code	**Index description**	**Source of index***	**Base Value and Date**	**Bidder's related currency amount (INR)**	**Weighting**
3(a)	Cement	AIWPI (Manufacture of Cement, Lime and Plaster)			0.595 x [3 (a) / Total, in Column (e)]
3(b)	Steel	AIWPI (Mild Steel Long products)			0.595 x [3 (b) / Total, in Column (e)]
3(c)	Balance Material	AIWPI (All Commodities)			0.595 - [3 (a) + 3(b), in Column (f)]

(a)	(b)	(c)	(d)	(e)	(f)
Index code	**Index description**	**Source of index***	**Base Value and Date**	**Bidder's related currency amount (INR)**	**Weighting**
The Bidder shall fill in column (d) & (e).			**Total**		**0.595**

Instructions:

(i) The Bidder shall fill estimated amount in column (e).
(ii) The amount of Index Code 3 (a) and 3 (b) in Column (e), if seriously unbalanced between the Design, Index Code 3 (a) and 3 (b) in Column (e) and (f) shall be adjusted based on the amount/quantity from the Design.

c) Operation and Maintenance:

(a)	(b)	(c)	(d)	(e)	(f)
Index code	**Index description**	**Source of index***	**Base Value and Date**	**Bidder's related currency amount (INR)**	**Weighting**
1	Nonadjustable	—	—	—	0.15
2	Labour	UAMM(Delhi)			0.40
3	Material	AIWPI (……..)			0.40
4	Petrol, oil & Lubricant	AIWPI (Mineral Oils)			0.05
The Bidder shall fill in column (d) & (e).			**Total**		**1.00**

Instructions:

(i) The Bidder shall indicate the Source of Index of Material in column (c), from the index commodities in the AIWPI.
(ii) The Bidder shall fill estimated amount in column (e).

Note " * " are;

UAMM (Delhi): Minimum daily wage of an unskilled adult male mazdoor, notified by the Government of NCT of Delhi.

AIWPI: All India Wholesale Price Index for all Commodities as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce

AIWPI(POL): All India Wholesale Price Index for Mineral Oils as published by Economic Advisor to Govt. of India, Ministry of Industry and Commerce

As per Clause 14.1.3 (iii) of DJB Conditions of Contract:
http://www.delhi.gov.in/wps/wcm/connect/doit_djb/DJB/Home/Tender/

Table B.: Foreign Currency (FC)

Currency: _____*[Insert name of currency**; if the Bidder wishes to quote in more than one foreign currency then this table should be repeated for each foreign currency.]*

(a)	(b)	(c)	(d)	(e)	(f)	(g)
Index code	**Index description**	**Source of index**	**Base value and date**	**Bidder's related source currency in type/amount**	**Equivalent in FC for payment**	**Weighting**
	Nonadjustable	—	—	—		0.15
				Total		**1.00**

The Bidder shall indicate the type of currency and columns (c), (d), (e) and (f), and specify a value of column (g), so that the total weighting equals 1.00.

Bill of Quantities

A. Preamble

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, scope of works, Technical Specifications, approved Drawings and for all matters and things necessary for the proper construction, completion, and maintenance of the whole of the Works.

2. The quantities given in the Bill of Quantities are estimated and provisional and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Engineer (accepted by the Contractor) and valued at the rates and prices in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.

3. The rates and prices in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional Plant, material, labour, supervision, erection, maintenance, approvals & permits, insurance, guarantees, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

   Prior to pricing of any work items, it is needed to have careful assessment of nature of work and vigilant on site conditions where the actual execution will be taken place. Some of the features need due considerations are noted below.

   - All setting out and survey work where necessary for execution of work components as per the drawings, specifications or details at BOQ
   - Temporary site facilities to fulfil the labour needs, material storage, security & site safety
   - Cost for public awareness in general, giving notice to authorities where necessary or overall coordination for execution of work components in planned manner
   - The recruitment, bringing to and from the site, accommodating and feeding and all incidental costs and expenses involved in the provision of all necessary skilled and unskilled labour and supervision of work as per the agreed work program and resource profiles;
   - Safety precautions and all measures to prevent and suppress fire and other hazards and fulfil all safety regulations which applies for execution of work as per the EMP
   - All false work for supporting faces of excavation temporary or permanent shoring, earthwork support with piling, brazing or any other approved methods.
   - Dewatering or diversion of water paths to do away of actual work with water but avoiding damages to third party liabilities by that transaction.
   - Inspection, handling, transporting, loading, unloading and delivering to the site of pipes, fittings and other allied items and removal of the excess or surplus material from the project area after completion of work with the direction of the Engineer.

4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

5. The whole cost of complying with the provisions of the Contract shall be included in the Items

provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

6. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.

7. The Employer shall indicate in the Summary of Provisional Sums an amount equivalent to one-half of the Employer's estimate of the cost of the Dispute Board (DB) for payments to the Contractor of the Employer's share of the payments to the DB member(s). Contractor's overhead, profit, etc., shall not be included in the provisional sums for the cost of the DB.

8. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer, except for the provisional sum for the cost of the DB, which requires no prior instruction of the engineer, in accordance with Sub-Clause 13.5 and Clause 13.6 of the General Conditions.

9. Any arithmetical errors in computation or summation will be corrected by the Employer as follows:
   (a) where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and
   (b) where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer, there is an obviously gross misplacement of the decimal point in the unit price, in which event the total amount as quoted will govern and the unit rate will be corrected.
   (c) Where there is a discrepancy in a 'unit, the same shall be corrected as per standard engineering practices.

10. For "Design-Build" works, the items shown are only an indicative breakdown of components which are to be used for payment purposes based on progress of works. However, the bidders shall quote for the entire works, including un-itemized, unforeseen and incidental works, on a "single responsibility" basis such that the total bid price specified work covers for all the Contractor's obligations mentioned in or to be reasonably inferred from the Bidding Documents in respect of the investigations, design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation, testing, commissioning and completion of the works. This also includes the acquisition of all permits, approvals and licenses etc.; training services and such other items and services as may be specified in the Bidding Documents. Items against which no price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items. Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the Bidding Documents.

11. Quantities

Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage, or waste. Quantities should be rounded up or down where appropriate and spurious accuracy should be avoided.

12. **Units of Measurement**

The following units of measurement and abbreviations are recommended for use (unless other national units are mandatory in the country of the Employer).

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m^3 or cu m	millimeter	mm
hectare	ha	month	mon
hour	Hr	number	Nos
kilogram	kg	square meter	m^2 or sq m
lump sum	sum	square millimeter	mm^2 or sq mm
meter	m	week	wk
Running meter	Rmt	Million liters	ML
metric ton (1,000 kg)	MT		

13. Excavation in Rock

Ordinary rock: Generally any rock which can be excavated by splitting with crow bars or picks And does not require blasting, wedging or similar means for excavation such as lime stone, sand Stone, hard laterite, hard conglomerate and un-reinforced cement concrete below ground level. If required light blasting may be resorted to for loosening the materials but this will not in any way entitle the material to be classified as 'Hard rock'.

Hard rock: Generally any rock or boulder for the excavation of which blasting is required such as quartzite, granite, basalt, reinforced cement concrete (reinforcement to be cut through but not Separated from concrete) below ground level and the like.

Hard rock (blasting prohibited): Hard rock requiring blasting as described above but where the blasting is prohibited for any reason and excavation has to be carried out by chiselling, wedging, use of rock hammers and cutters or any other agreed method.

In this project and this Contract, blasting is prohibited.

Rates for excavation of rock shall be in line with the categories of rock spelled out in DSR and as per the standard definitions. Most of the working areas at the proposed distribution networks, blasting with explosives will not be permitted.

The volume measured for rock excavation shall be to the maximum bottom width of trench permitted under the Specification & drawings or actual width, whichever is less, and to the depth authorized. Prior to any of the rock blasting required in the pipe trenches, it should be pre-determined by survey grids established at the outcrop of the rock surface and agreed upon with the supervisory staff of the Engineer.

14. Rates for laying and Installation of Pipes and Fittings

Rates for laying or installation of pipes & fittings shall be considered as a complete work item including providing of such items as well and in accordance with the categorization given at the DSR sub-heading 18.0 Water Supply, unless otherwise specified differently in the BOQs. The following features need to be considered at the unit rates where handling & installation of pipes and fittings are considered.

The principal stores of Pipes & Fittings shall be established at the project area with the concurrence of the Engineer. The pipe yards should be located in such a manner to avoid excessive distance transporting and disturbance to the prevailing traffic flows. Where ever practicable day time transporting should be avoided at congested or heavy traffic localities.

The items provided for Supply, Jointing, installation or laying of pipes & fittings in the Bill of Quantities shall cover all the things necessary including to excavate and reinstate all trial pits required or as directed and obtaining of permission from the Road Authorities for the making of the trial holes or any other required field investigations. The relevant unit rates in the BOQs shall also deemed to be covered, install or lay and test the complete pipeline without limitation including storing transporting, handling, site clearance, dewatering, normal bedding, laying, cutting, jointing, incorporation of all required pipe specials and fittings / connections to mains where applicable, painting where specified, backfilling compacting and pressure testing thereof (other than with granular fill or concrete) protection, security, removal and proper disposal of surplus excavated material all as specified. The quantities specified are calculated / indicative quantities and may vary during execution as per site conditions.

(a) Pipes - The Quantities for laying of pipes shall be measured by effective length of pipeline along its centre line and separately according to type, diameter and given depth ranges, for pipes installed in the trenches. The laying length of the first depth range includes the laying length of the next depth range(Depth means ground level to invert level of pipes).

(b) Pipe Specials and Fittings – Providing Pipe Specials and Fittings, if not specified otherwise in BOQ, is considered to be included under item ‘a’ above in accordance with the approved drawings, scope and specifications. Wherever specified in BOQ, it shall be measured by weight as depicted in the DSR.

(c) Rate for concrete thrust block and anchor blocks as depicted in the drawings for protection of joints shall be measured separately by the effective volume of concrete as per the design details.

(d) Section Valves – Rates for the Supply & installation of section valves shall be measured as the number of each item installed in accordance with the STD Drawings. Valve chambers including manhole covers as depicted in drawings or specified in the Specification shall be measured separately in line with the itemized quantities. However, all necessary spindle guide brackets and for head stock support brackets or steel support members as appropriate for fixings and painting, wrapping the bolts & nuts where necessary with specified wrapping materials will be inbuilt elements of the unit rates.

(e) Washout Valves - Rates and prices for Supply installation of washouts shall include supply & fixing of all the fittings including surface box assembly and pipes within the limit of installation for discharge including the overflow chamber, head wall, drain as relevant.

(f) Valve Chambers & Surface Boxes – Valve Chambers as per the Structural drawings will be measured separately from the installation of valve or special. Thus, rate for valve chambers shall include for all Contractor’s obligations necessary to complete the chambers in accordance with the approved Drawings including, but not limited to, excavation, supply & placing reinforcements and concreting by specified grade where the RC chambers are involved, associated pipe work manhole covers, drain pipes etc. Surface boxes shall be provided as per standard drawings provided.

15. Method of Payment for House Service Connection Works

The payment for house service connection shall be based on two criteria; per number of connections and length of service pipe between the tapping point and customer meter. For any connection having total length 5.5 mtr with 4 m MDPE pipe for underground portion and 1.5 mtr GI pipe for above ground portion. The payment shall be based on per number of connection. For connections more than 4 m long, with MDPE pipe and 1.5 mtr long with GI pipe or MDPE and 1.5 mtr of GI shall be counted as one connection and paid for one connection. The length over and above 4 m and 1.5 mtr of MDPE & GI respectively shall be paid based on the per meter rate pipe work. As such a connection having total length of 2.5 m will be paid for one connection whereas one connection of 6.5 m length will be paid for 1 connection plus 1 m (6.5-5.5) pipe work

16. Customer Meter Box

Customer meter boxes are not included in the project scope and cost. Given the diverse housing types and space availability for locating meters, the decision to choose the suitable type of meter box has been left upon the customers. As far as possible the Contractor shall install new meters in the place of old meters wherever a meter box exists. In case of metering of unmetered connections, suitable location of meters shall be decided in consultation with the customers.

17. Payment to Water Loss Reduction Works

Costs of Water loss reduction activities are covered by two methods;
(i) by New Pipe laying works as per BOQ for capital works,
(ii) by BOQ for O&M works.

About 80% of the existing pipelines are proposed to be replaced with the new pipelines under the BOQ of the Capital works, which is aimed to reduce the water loss below 15% level as per contract. In order to maintain the desirable water loss level during the post-construction O&M period, it is expected that the contractor would include the necessary costs under the O&M schedules of Civil Works as appropriate.

18. Design and Installation of Pumps for Booster Pump Houses

The capacity requirement for Booster Pumps may vary to some extent after validation of Hydraulic Network analysis based on actual field conditions. Accordingly, the required capacity (head/discharge/power) pumps shall only be supplied by the contractor upon approval of the Engineer. However, any changes in the capacity by ±10% shall be absorbed by the Contractor at offered BOQ rate itself and no additional payment shall be made for the same. If the variation is more than 10%, variation order may be issued subject to the contract conditions.

<u>O&M Works</u>

<u>General:</u>

19. A brief guideline on the O&M Scope of Works applicable in each year of contract period may be noted as follows.
    - 1st year: Mostly existing system would be available.
    - 2nd and 3rd year: some newly constructed works will be added and some of the existing

work/system may be discarded/abandoned

- 4th to 13th year: Complete new system mixed of old and new assets would be applicable.

20. The Price Schedules are divided into separate Schedules. The Price Schedule is divided into two parts based on the works related to Civil Division and E/M Division of DJB. The works related to Civil Division include for all the Transmission and Distribution Systems pipeline works (excluding the piping inside the pump houses) including associated works such as Valves and Civil Structures; Civil works of Underground Reservoirs, BPS Buildings and outdoor works in the UGR-BPS complex. The E/M Division's scope of works includes for all kinds of Mechanical works (including piping inside BPS building), Electrical works, Instrumentation works and SCADA works. Hence, the Contractor shall quote for the costs accordingly.

21. The Schedules do not generally give a full description of the work to be supplied and the services to be performed under each item. Bidders shall be deemed to have read the Employer's Requirements and other sections of the Bidding Documents and reviewed the Drawings to ascertain the full scope of the works and requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to cover the full scope as aforesaid, including overheads and profit.

22. If Bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with ITB 7 prior to submitting their Bid.

Pricing:

23. Prices shall be filled in indelible ink, and any alterations necessary due to errors, etc., shall be initialled by the Bidder. As specified in the Bid Data Sheet and Particular Conditions of Contract, prices shall be fixed and firm for the duration of the Contract, or prices shall be subject to adjustment in accordance with the corresponding Appendix (Price Adjustment) to the Contract Agreement.

24. Bid Prices shall be quoted in the manner indicated and in the currencies specified in the Instructions to Bidders in the Bidding Documents. For each item, Bidders shall complete each appropriate column in the respective Schedules, giving the price breakdown as indicated in the Schedules.

25. Prices given in the Schedules against each item shall be for the scope covered by that item as detailed in Section VI (Employer's Requirements) or elsewhere in the Bidding Documents.

26. Payments will be made to the Contractor in the currency or currencies indicated under each respective item.

27. When requested by the Employer for the purposes of making payments or partial payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the Schedules.

28. The rate and price quoted by the Bidder, shall be considered that the Accepted Contract Amount shall be deemed to cover and unchanged even if the size and/or capacity of the Booster Pumping Facility increase within 10% from stated in the Works Requirements.

29. Inadequate contents of each price proposal forms would result in "Non-Responsive" at Price Proposal Evaluation.

30. Operation & Maintenance Service (for 12 years and 8 months) costs under price schedules (Price Schedules OM-T1 and OM-T2) which include operation, maintenance and management of entire

system, shall not be less than 30% of the total quoted price of the Contract (Price Schedule C-T). If bidder's quoted price for Operation & Maintenance Service is less than the cost as proposed above, the bid submitted by bidder is liable to be rejected.

B. Work Items

1. The items in the Bill of Quantities are grouped into sections to distinguish between those points of works that by nature, location, access, timing or any other special characteristics may give rise to different method of construction, phasing of the works or consideration of cost.

2. The Bill of Quantities are presented as CAPITAL WORKS and O&M WORKS in this Section. The O&M works starts from the 1st year of work award till the completion of contract period that includes for the O&M of existing systems during construction phase as well as O&M of entire system in post-construction period.

3. The BoQ for Capital Works contains the schedules, which have been grouped according to the nature of the work. The Capital Works are to be executed both under the unit/item rate basis and Design-Build basis. The Works of UGRs, BPSs, Instrumentation & SCADA are Design-Build works. All works under the Schedule titled Design-Build shall be treated and paid on Design and Build basis. The break-down of works into various items under Design-Build Schedules are only for indicative and facilitation of payment purposes based on progression of works. However, the Contractor's responsibility lies on completion of the entire works in combination of civil, mechanical, electrical, instrumentation and SCADA, as required, to build a complete plant or structure as defined in the scope of works, technical specifications and drawings.

4. The BoQ for Operation and Maintenance works contains price schedules wherein prices are to be fill up on annual basis starting from the first year to tenth year as applicable.

   Operation & Maintenance Service (for 12 years and 8 months) costs under price schedules (Price Schedules OM-T1 and OM-T2) which include operation, maintenance and management of entire system, shall not be less than 30% of the total quoted price of the Contract (Price Schedule C-T). If bidder's quoted price for Operation & Maintenance Service is less than the cost as proposed above, the bid submitted by bidder is liable to be rejected.

5. Bidders shall price the Bill of Quantities in the currency or currencies specified in the Instructions to Bidders.

6. New Water Service Connections

The Operator will be paid for the design, supply and installation of the Water Service Connection (including the water meter). New water service connections, whether for the existing system or new system, during the construction phase shall be paid as per BOQ provided in the section of capital cost. In order to cope up with any new connections to be provided during the post-construction O&M period, the Operator shall quote for his price in the schedule given in O&M Section. The technical specifications for works and pipe material shall be as per technical specifications of the main contract.

The number of service connections given in the BOQ is tentative, which can increase or decrease in the actual condition. The Bidder should keep in mind this factor and quote his price accordingly.

7. Disconnection & Reconnection of the water service connection

The Operator will carry out the disconnection and reconnection for some subscribers in cases of no payment and illegal water use. Disconnection and reconnection work during the construction phase shall be paid as per BOQ provided in the section of capital cost. However, for post-construction O&M period the Operator shall quote for his price in the schedule given in O&M Section. The technical specifications for works and pipe material shall be as per technical specifications of the main contract. The number of connections given in the BOQ is tentative, which can increase or decrease in the actual condition. The Bidder should keep in mind this factor and quote his price accordingly.

8. Water Supply by Tankers

There can be areas or situation when water has to be supplied by the tankers as per the instructions of DJB. The Operator shall give his rate for such service on per KL basis to be supplied by tankers during the entire contract period.

The quantity of water given in the BOQ is tentative, which can increase or decrease in the actual condition. The Bidder should keep in mind this factor and quote his price accordingly.

The payment for the Operator will be on monthly Basis for the actual quantities supplied to the subscribers and non-subscribers as per his rate in the related year.

The conditions for water supply by Tanker will be as follows.

(1) O&M during Construction phase:

(i) The current short supply area where DJB is supplying water, whether periodic or occasional, through Tankers

(ii) Any water demand as ordered by DJB for public purposes such as public, social and religious functions.

(2) O&M during Post-construction phase

(i) Any water demand as ordered by DJB for public purposes such as public, social and religious functions.

(ii) Tanker water supply against complaints of short supply due to low pressure, poor quality of water, leakages, line bursts etc. shall be at the bidder's own cost, and the bidder shall ensure free potable water supply through tankers to the respective area within 5 hours after receipt of complaint. This will be counted under Efficiency in redressal of Customer Complaints and will be considered under category 'The total number of customer complaints redressed within 24 hours'

Stage Payments (Payment Milestones)

Payment milestones for Supply and Installation of Electro-mechanical Plants under Design and Build Works (BPS, SCADA & Instrumentation, Piping and Instrumentation works of UGR)

Milestone	Payment in % of lump sum item		Comments
	Increment	Total	
Upon Engineers approval of Design Calculations, Drawings and Vendors	5	5	Paid on the schedule summary total and not on individual items as single sum when milestone is reached
Upon Supply and Delivery of Fabricated Plants and Equipment ready to install at site	60	65	Paid on each item as single sum when milestone reached
Upon Completion of Erection/ Installation at site	20	85	Paid on each item as single sum when milestone reached
Upon Commissioning of the Full System at One Plant Site (e.g. one BPS, one UGR)	10	95	Paid on each item as single sum when milestone reached
Upon Taking Over of the Works as per Contract Conditions	5	100	Paid on the schedule summary total

Payment milestones for Construction of Civil Works under Design and Build Scheme (UGR, Pump House and allied Civil Works)

Milestone	Payment in % of lump sum item		Comments
	Increment	Total	
Upon Engineers approval of design calculations and drawings	5	5	Paid on the schedule summary total and not on individual items as single sum when milestone is reached
Upon Completion of Foundation Works i.e. Base Slab of UGR and plinth level of the Buildings	20	25	Paid on each item as applicable when milestone reached
Upon completion of works up to 1/3rdheight of the Structure/ Building	15	40	Paid on each item as applicable when milestone reached

Milestone	Payment in % of lump sum item		Comments
	Increment	Total	
Upon completion of works up to 2/3rd height of the Structure/ Building	15	55	Paid on each item as applicable when milestone reached
Upon full completion of the structural works of the Structure/Building	20	75	Paid on each item as applicable when milestone reached
Upon Completion of finishing works, ancillary & allied works	10/20	85/95	10 for water retaining structures and 20 for others
Upon Completion of water tightness test for UGRs	10	95/95	Paid on each item as applicable when milestone reached
Upon Taking Over of the Works as per Contract Conditions	5	100	Paid on the schedule summary total

Payment milestones for Supply, Laying, Testing, Commissioning and Taking Over of MS and DI pipelines

Milestone	Payment in % of lump sum item		Comments
	Increment	Total	
Against Supply of finished Pipes along with internal and external lining	65	65	Paid on individual items when milestone is reached. The payment on supply of finished pipes will be made for a maximum length of 30 Kms of pipes at a time. Next instalment will be released such that the maximum quantities of supplied but unlaid pipes doesn't exceed 10 Kms.
Laying and jointing of Pipelines in field	20	85	Paid on individual items when milestone is reached
Hydro-Testing, flushing, Disinfection & Commissioning	10	95	Paid on individual items when milestone is reached
Upon Taking Over of the Works as per Contract Conditions	5	100	Paid on individual items when milestone is reached

Schedule C-T
Grand Summary - Total Contract Price

Price Schedules	Page	Amount (In Figures)	
		Local	Foreign
Price Schedule CW-T			
Price Schedule OM-T1			
Price Schedule OM-T2			
Total Contract Price (Schedule C-T)			

(Note to the Bidder: The sum of amounts in Price Schedules OM-T1 and OM-T2 shall not be less than 30% of the total Contract Price (Schedule C-T))

Schedule CW-T
Summary of Prices for Capital Works

Price Schedules	Works	Page	Amount (In Figures)	
			Local	Foreign
Schedule CW-G	General Items			
Schedule CW-TM	Transmission Mains- Civil Works			
Schedule CW-DP	Distribution Pipelines- Civil Works			
Schedule CW-DB-C	Design-Build: UGR and BPS- Civil and Rehabilitation Works			
Schedule CW-DB-M	Design-Build: UGR and BPS- Mechanical Works			
Schedule CW-DB-E	Design-Build: UGR and BPS- Electrical Works			
Schedule CW-DB-S&I	Design-Build: All SCADA & Instrumentation Works			
Schedule CW-HM	Housing Connections and Metering Works			
Schedule CW-P	Provisional Sum		1,57,14,89,054	
Total Price of Capital Works, Schedule CW-T				

Schedule OM-T1
Summary of Prices for O&M Works (Civil Division)

Price Schedule	Works	Page	Amount (In Figures)	
			Local	Foreign
Schedule OM-M1	Routine Operating Cost for Manpower			
Schedule OM-P1	Preventive / Periodic Maintenance Cost			
Schedule OM-R1	Repair and Maintenance Cost			
Schedule OM-MISC	Miscellaneous Works (NRW, HSC, GIS etc.)			
Total Price of O&M Works, Schedule OM-T1				

Schedule OM-T2
Summary of Prices for O&M Works (E&M Division)

Price Schedule	Works	Page	Amount (In Figures)	
			Local	Foreign
Schedule OM-M2	Routine Operating Cost for Manpower			
Schedule OM-PR	Preventive Maintenance, Repair and Replacement Cost			
Total Price of O&M Works, Schedule OM-T2				

Other Schedules (for Bid Evaluation and Guarantee only)

Price Schedule	Works	Page
Schedule OM-PG	Power (Electrical Energy) Guarantee	

SCHEDULE CW-G

General Items

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	**Insurance and Bank Guarantees**						
1.1	Providing insurance for the Works and Contractor's Equipment (CAR POLICY).	Year	3				
1.2	Providing third party insurance for Rs. 50,00,000 for the duration of Contract	Year	3				
1.3	Professional Indemnity Insurance of Contract Cost up to DNP.	Year	4				
2	**Site Office running during O&M**						
2.1	Engineer's office with Supply of Stationery and Utilities (Water, Electricity, Telephone etc.) during O&M period. As per Condition of Contract.	Month	32				
3	**Design Services and Documents**						
3.1	Preparation of Detailed design, Working Drawings and Method Statements as per scope of works and specifications including all kinds of Topographic/ Ground Surveys and mapping of underground utilities, Soil and Geo-technical Investigations	Job	1				
3.2	Progress Report, Video and Photographs for the construction period	Month	36				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.3	Preparation of Final As-built/As-laid drawings	Job	1				
3.4	Preparation of O&M Manuals as required	Job	1				
4	**Trainings as per tender requirements**						
4.1	On-site Training for 20 persons for 15 days	Job	1				
5	**Provision of Specified Professional and Application Softwares for Work**						
5.1	Computerized Maintenance Management Software (CMMS)	No	1				
6	**Cost for Trial Run including cost of manpower, tools, spare parts, consumables, water quality analyses etc. but excluding raw water and electricity**	Month	3				
					Total of this Schedule CW-G		

SCHEDULE CW-TM

Transmission Mains- Civil Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	**Carriage of Materials**						
1.1	Carriage of materials by Mechanical Transport including loading, unloading and stacking of Excavated Rock:-						
1.1.1	Lead 5km	cum	100.00				
1.1.2	Beyond 5KM upto 10KM per KM.	cum	150.00				
1.1.3	Beyond 10KM upto 20KM per KM	cum	200.00				
2	**Earthwork**						
2.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.						
2.1.1	All kinds of Soil	cum	23396.80				
2.2	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan)						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.						
2.2.1	Ordinary Rock	cum	23396.80				
2.2.2	Hard Rock (blasting prohibited)	cum	31195.73				
2.3	Earth work in excavation by mechanical means (Hydraulic Excavator)/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
2.3.1	All kinds of soil.	cum	310.40				
2.4	Excavation work by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m.						
2.4.1	Ordinary Rock.	cum	310.40				
2.4.2	Hard Rock. (blasting prohibited)	cum	413.86				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.5	Close timbering over areas including strutting, shoring and packing cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered) :						
2.5.1	Depth not exceeding 1.50mtr	sqm	100.00				
2.5.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	100.00				
2.6	Open timbering in trenches including strutting and shoring complete. (measurements to be taken of the face area timbered):						
2.6.1	Depth not exceeding 1.50mtr	sqm	300.00				
2.6.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	300.00				
2.7	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50m and lift upto 1.5m.	cum	53339.73				
2.8	Extra for every additional lift of 1.5 mtr or part thereof in excavation / banking excavated or stacked materials						
2.8.1	All kinds of soil	cum	7580.78				
2.8.2	Ordinary or hard rock	cum	17688.48				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.9	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	cum	1136.87				
2.10	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50m outside the periphery of the area cleared	sqm	15000.00				
3	**Concrete Work**						
3.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level						
3.1.1	1:2:4 (1 Cement : 2 coarse sand (Zone-III) : 4 graded stone aggregate 20 mm nominal size)	cum	97.85				
3.1.2	1:3:6 (1 Cement : 3 coarse sand (Zone-III) : 6 graded stone aggregate 40 mm nominal size)	cum	213.53				
4	**Reinforced Cement Concrete**						
4.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
4.1.1	1:1.5:3 (1 cement : 1.5 coarse sand (Zone-III): 3 graded stone aggregate 20 mm nominal size	cum	2382.00				
4.2	Centering and shuttering including strutting, propping etc. and removal of form for:(As per DSR correction slip 2018)						
4.2.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	5080.59				
4.2.2	Walls (any thickness) including attached pilasters, butteresses, pilnth and string courses etc.	sqm	1720.87				
4.2.3	Lintels, beams, plinth beams, girders, bressumers and cantilevers	sqm	788.12				
4.2.4	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	287.46				
4.2.5	Extra for shuttering in circular work (20% of respective centering and shuttering items.i.e. (20% x 467.85=93.57)	sqm	287.46				
4.3	Steel Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.						
4.3.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	318971.40				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
4.4	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.“(Note: - Cement content considered in this item is @ 330 kg/cum. “Excess/ less cement used as per design mix is payable/recoverable separately).						
4.4.1	All works upto plinth level	cum	22.26				
4.5	Extra for providing richer mixes at all floor levels. Note: - Excess/less cement over the specified cement content used is payable /recoverable separately.						
4.5.1	Providing M-30 grade concrete instead of M-25 grade BMC / RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum)	cum	10.00				
4.5.2	Providing M-35 grade concrete instead of M-25 grade BMC / RMC. (Note : Cement content considered in M-35 is @ 350	cum	5.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	kg/cum)						
4.6	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Quintal	5.00				
4.7	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/recoverable separately)..						
4.7.1	All works upto plinth level	cum	806.67				
4.7.2	All works above plinth level upto floor V	cum	299.11				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	level						
5	**Brick Work**						
5.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:						
5.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	20.00				
6	**Stone Work**						
6.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with :						
6.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	16.00				
6.2	Random rubble masonry with hard stone in superstructure above plinth level and upto floor five level, including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) at window sills, ceiling level and the like.						
6.2.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20.00				
7	**Steel Work**						
7.1	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel	Kg	917.51				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	primer all complete.						
7.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	1593.80				
7.3	Welding by gas or electric plant including transportation of plant at site etc. complete.	cm	3916415.23				
7.4	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.						
8	**Finishing**						
8.1	12mm cement plaster of mix:						
8.1.1	1:4 (1 cement : 4 coarse sand)	sqm	50.00				
8.2	15 mm cement plaster on rough side of single or half brick wall of mix:						
8.2.1	1:4 (1 cement : 4 coarse sand)	sqm	50.00				
8.3	Neat cement punning	sqm	50.00				
8.4	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:						
8.4.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	sqm	71.72				
9	**Dismantling and Demolishing**						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
9.1	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	cum	5.00				
9.2	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. Work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.	sqm	25.00				
9.3	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.	Kg	500.00				
9.4	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.						
9.4.1	In cement mortar	cum	20.00				
9.5	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge :						
9.5.1	In cement mortar	cum	36.00				
9.6	Dismantling steel work in built up sections in angles, tees, flats and channels including	Kg	75.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead.						
9.7	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-in-charge.	cum	1440.85				
9.8	Dismantling of cement concrete pavement by mechanical means using hydraulic excavator with concrete breaker attachment and stock piling at designated locations and disposal of dismantled materials up to a lead of 1 km, as per direction of Engineer-in-Charge.	cum	360.96				
10	**Barricading Work**						
10.1	Supplying and stacking at site.						
10.1.1	Good earth	cum	5925.33				
10.2	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	sqm	10.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
10.3	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	sqm	100.00				
10.4	Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).	sqm	80.00				
10.5	Providing and laying factory made chamfered edge Cement Concrete paver blocks In foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineer-in-Charge.						
10.5.1	80mm thick Cement concrete paver block of M-30 grade with approved colour, design & pattern.	sqm	10.00				
11	**Piping Work.**						
11.1	Providing lead caulked joints to spun iron or C.I. pipes and specials, including testing of joints but excluding the cost of pig lead :						
11.1.1	400 mm diameter pipe	Each	2.00				
11.2	Supplying pig lead at site of work.	Quintal	0.15				
11.3	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket :						
11.3.1	300 mm dia pipes	joint	7.00				
11.3.2	400 mm dia pipes	joint	176.00				
11.3.3	500 mm dia pipes	joint	4.00				
11.3.4	600 mm dia pipes	joint	4.00				
11.4	Disinfecting C.I. water mains by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, operation to be						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory.						
11.4.1	300 mm diameter C.I. pipe	100 Metre	0.31				
11.4.2	400 mm diameter C.I. pipe	100 Metre	8.77				
11.4.3	500 mm diameter C.I. pipe	100 Metre	0.18				
11.4.4	600 mm diameter C.I. pipe	100 Metre	0.16				
12	**Drainage**						
12.1	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	286.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.2	Hire charges of pump set for pumping out water @4000 ltr/ hr or 32 Kltr/ per day including cost of service and operating and supply of lubricant etc. (Basic Rate+1% water charge+15% CP)	day	15.00				
12.3	Surface Box	Each	0.00				
12.4	Laying in position M.S pipes/ Steel cylinder reinforced concrete pipes suitable for rubber ring jointing or welding or flanged jointing (excluding cost of pipe).	Qtl.	60955.60				
12.5	Laying in position M.S. specials/ steel cylinder reinforced concrete specials suitable for rubber ring jointing or welding or flanged jointing (excluding cost of specials).	Qtl.	3199.24				
12.6	Providing and erecting 1.60 m high corrugated G.I. sheets barricading supported on safe daballies 100 mm dia, 2 metre high placed at 2.5 m c/c corrugated G.I. sheets fixed with nails of required length and dia to safe daballies i/c excavating holes of size 0.3x0.30x0.40mt getting out the excavated soil and then returning the soil i/c consolidating by ramming and watering etc. all complete i/c disposal of surplus excavated earth with in a lead of 50m and painting on full surface of C.G.I Sheet (on one side) with bright paint of red & white colour in vertical stripes 0.30m wide alternately as directed by Engineer-in -	sqm	80.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	Charge. (The barricading dismantled on completion of the work shall remain the property of contractor).						
12.7	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron class K-9 Pipes confirming to IS : 8329						
a	300 mm dia	Meter	31.00				
b	400 mm dia.	Meter	877.00				
c	500 mm dia.	Meter	18.00				
d	600 mm dia.	Meter	16.00				
12.8	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS:9523						
a	Up to 600mm dia.	Qtl.	12.45				
12.9	Providing Mild Steel Pipes fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; internally						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	lined with cement mortar lining confirming to IS 3589:2001; and having external / outside 4 mm coal tar coating and wrapping confirming to IS 10221:2008; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge.						
a	700 mm nominal dia. (clear internal dia.) pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	337.00				
b	800 mm nominal dia. (clear internal dia.) pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	28.00				
c	900 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	2779.00				
d	1000 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	6737.00				
e	1100 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	2462.00				
f	1400 mm nominal dia. (clear internal dia.) Pipes of 12 mm thickness (min) and 12 mm thick internal Cement mortar lining.	Meter	6331.00				
12.10	Providing Mild Steel Pipes fabricated / manufactured out of MS Plates of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same / equivalent grade, internally lined with cement mortar						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	confirming to IS 3589:2001 and having external/outside epoxy coating complete in all respect; with upto date amendments in relevant IS codes and as directed by Engineer-in-charge.						
a	1100 mm nominal dia. (clear internal dia.) pipe of 10mm thickness (min.), 9mm internal Cement mortar lining and outside epoxy coating.	Meter	80.00				
b	1400 mm nominal dia. (clear internal dia.) pipe of 12mm thickness (min.), 12mm internal Cement mortar lining and outside epoxy coating.	Meter	290.00				
12.11	Providing Mild Steel Pipes fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; coated internally with food grade epoxy and externally / outside with epoxy coating; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge.						
a	900 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	85.11				
b	1000 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	169.88				
c	1400 mm nominal dia. (clear internal dia.) pipes of 12 mm thickness (min.)	Meter	206.70				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.12	Providing Mild Steel Specials fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; internally lined with cement mortar lining confirming to IS 3589:2001; and having external / outside 4 mm coal tar coating and wrapping confirming to IS 10221:2008; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge.						
a	700 mm nominal dia. (clear internal dia.) specials of 8 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	991.12				
b	900 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	42020.46				
c	1000 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	57215.52				
d	1100 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	32636.88				
e	1400 mm nominal dia. (clear internal dia.) specials of 12 mm thickness (min.) and 12 mm thick internal cement mortar lining.	kilogram	178540.00				
12.13	Ultrasonic testing of welded joints at site.	Rm	1908.50				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.14	Disinfecting of water mains by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal/DJB laboratory.						
a	700 mm dia	Meter	5791.00				
b	800 mm dia	Meter	28.00				
c	900 mm dia	Meter	2779.00				
d	1000 mm dia	Meter	6737.00				
e	1100 mm dia	Meter	2542.00				
12.15	Filling water into water main for testing to the specified head, water to be arranged by sinking of tube well and pumping out the underground water and filling the same into water main including installation of pumps of sufficient capacity and head, providing and fixing delivery and suction pipe etc. all complete and as directed by Engineer-in-Charge.						
a	300 mm nominal dia (clear internal dia) pipes	Meter	31.00				
b	400 mm nominal dia (clear internal dia) pipes	Meter	877.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
c	500 mm nominal dia (clear internal dia) pipes	Meter	18.00				
d	600 mm nominal dia (clear internal dia) pipes	Meter	16.00				
e	700 mm nominal dia (clear internal dia) pipes	Meter	337.00				
f	800 mm nominal dia (clear internal dia) pipes	Meter	28.00				
g	900 mm nominal dia (clear internal dia) pipes	Meter	2864.00				
h	1000 mm nominal dia (clear internal dia) pipes	Meter	6906.00				
i	1100 mm nominal dia (clear internal dia) pipes	Meter	2542.00				
j	1400 mm nominal dia (clear internal dia) pipes	Meter	6828.00				
13.1	**Horizontal Directional Drilling For Steel Ducts/Pipes :-** Installation of Steel product pipe HDD method including preparing and setting up the plant and equipment, preparing new pipe work material, installing new pipe work and commissioning system or making the system ready for commissioning by HDD operation including, all related civil and mechanical works like excavation, shoring/strutting, etc. drilling, stringing,						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	reaming and pulling back the new pipe-work on the designed bore path alignment, proper disposal of drilling fluid and back fill of the site after completion all-inclusive as per IndSTT:101-2007: Code of Practice for Horizontal Directional Drilling Technique suiting Indian Conditions.						
13.1.1	For installation lengths from 50 meter & upto 200 Meter.						
13.1.1.1	Steel Pipes above 1300mm & upto 1700mm						
	In Hard Rock	Meter	461.69				
13.2	Providing/Supplying & Installation at site ISI Mark Ductile Iron manually operated Butterfly valves of rating PN 1.0 with EPDM rubber gasket, rubber sheet and MS nuts & bolts as per requirements, field testing and commissioning complete as per specifications, including all cost of materials, taxes, providing flange joints two number, labour required, transportation up to site, loading, unloading & stacking, erection charge etc. complete as per IS-13095 specifications or as directed by Engineer-In-Charge.						
a	700 mm dia	Each	2.00				
b	800 mm dia	Each	3.00				
c	900 mm dia	Each	1.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
d	1000 mm dia	Each	1.00				
13.3	Providing Mild Steel Pipes fabricated / manufactured out of MS plates of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; internally lined with cement mortar confirming to IS 3589:2001;and having external / outside epoxy coating; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge.						
a	1300 mm nominal dia. (clear internal dia.) of pipe of 12 mm thickness (min.) and 12 mm internal cement mortar lining and outside epoxy coating.	Metre	210.00				
13.4	Providing Mild Steel Pipes fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; internally lined with cement mortar lining confirming to IS 3589:2001; and having external / outside 4 mm coal tar coating and wrapping confirming to IS 10221:2008; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge.						
a	1300 mm nominal dia. (clear internal dia.) of pipes of 12 mm thickness (min) and 12 mm thick internal Cement mortar lining.	Metre	240.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
b	1300 mm nominal dia. (clear internal dia.) of pipes of 12 mm thickness (min) and 12 mm thick internal Cement mortar lining.	Kg	8520.00				
13.5	Disinfection of water mains by flushing with water containing bleaching powder @0.5 gms per litre of water and cleaning the same, getting the samples from the disinfected w/main tested in DJB Laboratory. (Operation to be repeated three times).						
a	1300 mm dia	Metre	450.00				
b	1400 mm dia	Metre	6621.00				
13.6	Filling water into water main for testing to the specified head, water to be arranged by sinking of tube well and pumping out the underground water and filling the same into water main including installation of pumps of sufficient capacity and head, providing and fixing delivery and suction pipe etc. all complete and as directed by Engineer-in-Charge.						
a	1300 mm nominal dia (clear internal dia) pipes.	Metre	450.00				
13.7	Providing and fixing in position DI Manual Scour/Washout Valve and providing flanged joints (two no.) i.e. cost bolts, nuts, rubber (3mm thick two washers for each bolt) rubber insertion etc.all complete.						
a	500mm dia valve	Each	8.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
b	600 mm dia valve	Each	2.00				
c	700 mm dia valve	Each	1.00				
d	800 mm dia valve	Each	4.00				
13.8	Providing and fixing in position DI Double Orifice Air Valve and providing flanged joints (one no.) i.e. cost bolts, nuts, rubber (3mm thick two washers for each bolt) rubber insertion etc.all complete.						
a	200 mm dia	Each	14.00				
	Total of this Schedule CW-TM						

SCHEDULE CW-DP

Distribution Pipeline- Civil Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	**Carriage of Materials**						
1.1.1	Carriage of materials by Mechanical Transport including loading, unloading and stacking:-	cum					
a	Earth						
	Lead 5 km	cum	3637.13				
1.1.2	Carriage of materials by Mechanical Transport including loading, unloading and stacking of Excavated Rock:-						
a	Lead 5km	cum	117.00				
b	Beyond 5KM upto 10KM per KM.	cum	156.00				
c	Beyond 10KM upto 20KM per KM	cum	195.00				
2	**Earthwork**						
2.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.						
2.1.1	All kinds of Soil	cum	19032.80				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.2	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.						
2.2.1	Ordinary Rock	cum	11419.62				
2.2.2	Hard Rocks (blasting prohibited)	cum	7613.08				
2.3	Earth work in excavation by mechanical means (Hydraulic Excavator)/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
2.3.1	All kinds of soil.	cum	143918.67				
2.4	Excavation work by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m.						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.4.1	Ordinary Rock.	cum	82607.39				
2.4.2	Hard Rock. (blasting prohibited)	cum	55071.63				
2.5	Close timbering over areas including strutting, shoring and packing cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered) :						
2.5.1	Depth not exceeding 1.50mtr	sqm	800.00				
2.6	Open timbering in trenches including strutting and shoring complete. (measurements to be taken of the face area timbered):						
2.6.1	Depth not exceeding 1.50mtr	sqm	11700.00				
2.7	Filling available excavated with good earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50m and lift upto 1.5m.	cum	286848.72				
2.7.1	Extra for every additional lift of 1.5 mtr or part thereof in excavation / banking excavated or stacked materials						
2.7.2	All kinds of soil	cum	3016.42				
2.7.3	Ordinary or hard rock	cum	3016.42				
2.8	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	cum	7754.42				
2.9	Clearing jungle including uprooting of rank	sqm	31950.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50m outside the periphery of the area cleared						
3	**Concrete Work**						
3.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level						
3.1.1	1:2:4 (1 Cement : 2 coarse sand (Zone-III) : 4 graded stone aggregate 20 mm nominal size)	cum	344.76				
3.1.2	1:2:4 (1 Cement: 2 coarse sand (zone-III): 4 graded stone aggregate 40 mm nominal size).	cum	38.70				
3.1.3	Base PCC 1:3:6	cum	741.18				
3.1.4	1:3:6 (1 Cement : 3 coarse sand (Zone-III) : 6 graded stone aggregate 40 mm nominal size)	cum	752.31				
3.2	Providing and fixing up to floor five level precast cement concrete string or lacing courses, copings, bed plates, anchor blocks, plain window sills, shelves, louvers, steps, stair cases, etc., including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), cost of required Centering complete.						
3.2.1	1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) : 3	cum	68.05				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	graded stone aggregate 20mm nominal size).						
4	**Reinforced Cement Concrete**						
4.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :						
4.1.1	1:1.5:3 (1 cement : 1.5 coarse sand (Zone-III): 3 graded stone aggregate 20 mm nominal size	cum	2262.08				
4.2	Centering and shuttering including strutting, propping etc. and removal of form for all heights:	sqm					
4.2.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	12439.77				
4.2.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	sqm	9545.87				
4.2.3	Suspended floors, roofs, landings, balconies and access platform	sqm	324.00				
4.3	Providing, hoisting and fixing above plinth level up to floor five level precast reinforced cement concrete in vertical & horizontal fins, individually or forming box louvers, setting in cement mortar 1:2 (1 cement: 2 coarse sand), including the cost of required centering, shuttering but , excluding the cost of reinforcement, with 1:1.5:3 (1 cement : 1.5	cum	529.41				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).						
4.4	Steel Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level.						
4.4.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	316378.53				
4.5	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of cantering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.“(Note: - Cement content considered in this item is @ 330 kg/cum.“Excess/ less cement used as per design mix is payable/recoverable separately).						
4.5.1	All works upto plinth level	cum	80.71				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
4.6	Extra for providing richer mixes at all floor levels. Note: - Excess/less cement over the specified cement content used is payable /recoverable separately.						
4.6.1	Providing M-30 grade concrete instead of M-25 grade BMC / RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum)	cum	80.00				
4.6.2	Providing M-35 grade concrete instead of M-25 grade BMC / RMC. (Note : Cement content considered in M-35 is @ 350 kg/cum)	cum	40.00				
4.7	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Quintal	40.00				
4.8	Providing and placing in position precast reinforced cement concrete waffle units, square or rectangular, as per design and shape for floors and roofs in 1:1½:3 (1 Cement : 1½ coarse sand (zone-III) : 3 graded stone aggregate 10 mm nominal size), including flush or deep ruled pointing at joints with Cement mortar 1:2 (1 Cement : 2 Fine sand) making necessary holes of required sizes for carrying through service lines etc., providing steel hooks for lifting etc, form work in precasting, handling, hoisting, centring and erection complete for all floor	cum	1694.12				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	levels but, excluding the cost of reinforcement.						
4.9	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/recoverable separately)..						
4.9.1	All works upto plinth level	cum	1396.17				
5	**Brick Work**						
5.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	foundation and plinth in:						
5.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	1560.00				
6	**Stone Work**						
6.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with :						
6.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	624.00				
6.2	Random rubble masonry with hard stone in superstructure above plinth level and upto floor five level, including leveling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) at window sills, ceiling level and the like.						
6.2.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	936.00				
7	**Steel Work**						
7.1	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	201714.50				
7.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer	Kg	10263.72				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	all complete.						
7.3	Welding by gas or electric plant including transportation of plant at site etc. complete.	cm	1160998.05				
8	**Finishing**						
8.1	12mm cement plaster of mix:						
8.1.1	1:4 (1 cement : 4 coarse sand)	sqm	3900.00				
8.2	15 mm cement plaster on the rough side of single or half brick wall of mix:						
8.2.1	1:4 (1 cement : 4 course sand)	sqm	3900.00				
8.3	Neat cement punning	sqm	3900.00				
8.4	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:						
8.4.1	Two or more coats on new work over an under coat of suitable shadewith ordinary paint of approved brand and manufacture.	sqm	461.91				
9	**Dismantling and Demolishing**						
9.1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer-in-charge.						
9.1.1	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	cum	2117.66				
9.2	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel	cum	390.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.						
9.3	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. Or R.B. Work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.	sqm	1950.00				
9.4	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.	Kg	39000.00				
9.5	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.						
9.5.1	In cement mortar	cum	1560.00				
9.6	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge :						
9.6.1	In cement mortar	cum	1560.00				
9.7	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within	Kg	3900.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	50 metres lead.						
9.8	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-in-charge.	cum	15754.46				
9.9	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	cum	2117.66				
10	**Road Work**						
10.1	Supplying and stacking at site.						
10.2	Good earth	cum	32225.38				
10.3	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M - 30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	sqm	400.00				
10.4	Providing and erecting 2.00 metre high temporary barricading at site as per drawing/	Metre	1800.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, caution tape as directed by the Engineer-in- Charge. The barricading provided shall be retained in position at site continuously i/c shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipment and works required to execute the job. The barricading shall not be removed without prior approval of Engineer-in-Charge. (Note: -One-time payment shall be made for providing barricading from start of work till completion of work i/c shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).						
10.5	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and	Metre	800.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.						
10.6	Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).	sqm	640.00				
10.7	Providing and laying factory made chamfered edge Cement Concrete paver blocks In foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineer-in-Charge.						
10.7.1	80mm thick Cement concrete paver block of M-	sqm	400.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	30 grade with approved colour, design & pattern.						
11	**Water Supply**						
11.1	Providing lead caulked joints to spun iron or C.I. pipes and specials, including testing of joints but excluding the cost of pig lead :						
a	100 mm diameter pipe	Each	24.00				
b	150 mm diameter pipe	Each	30.00				
c	200 mm diameter pipe	Each	20.00				
d	250 mm diameter pipe	Each	106.00				
e	300 mm diameter pipe	Each	72.00				
f	350 mm diameter pipe	Each	38.00				
g	400 mm diameter pipe	Each	26.00				
h	450 mm diameter pipe	Each	20.00				
i	500 mm diameter pipe	Each	16.00				
j	600 mm diameter pipe	Each	18.00				
11.2	Supplying pig lead at site of work.	quintal	29.65				
11.3	Providing flanged joints to double flanged C.I./ D.I. pipes and specials, including testing of joints :						
11.3.1	80 mm diameter pipe	Each	0.00				
11.3.2	100 mm diameter pipe	Each	238.00				
11.3.3	150 mm diameter pipe	Each	48.00				
11.3.4	200 mm diameter pipe	Each	36.00				
11.3.5	250 mm diameter pipe	Each	2.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
11.3.6	300 mm diameter pipe	Each	2.00				
11.3.7	400 mm diameter pipe	Each	2.00				
11.4	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket :						
11.4.1	100 mm dia pipes	joints	77418.00				
11.4.2	150 mm dia pipes	joints	13304.00				
11.4.3	200 mm dia pipes	joints	6573.00				
11.4.4	250 mm dia pipes	joints	4116.00				
11.4.5	300 mm dia pipes	joints	3718.00				
11.4.6	350 mm dia pipes	joints	1370.00				
11.4.7	400 mm dia pipes	joints	1647.00				
11.4.8	450 mm dia pipes	joints	750.00				
11.4.9	500 mm dia pipes	joints	614.00				
11.4.10	600 mm dia pipes	joints	465.00				
11.4.11	700 mm dia pipes	joints	368.00				
11.4.12	800 mm dia pipes	joints	52.00				
11.4.13	900 mm dia pipes	joints	9.00				
11.5	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :						
11.5.1	80 mm ductile Iron Double Flanged (Rate same as 100 mm dia pipe)	Metre	0.00				
11.5.2	100 mm dia Ductile Iron Double Flanged	Metre	1200.00				
11.5.3	150 mm dia Ductile Iron Double Flanged	Metre	240.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
11.5.4	200 mm dia Ductile Iron Double Flanged	Metre	180.00				
11.5.5	250 mm dia Ductile Iron Double Flanged	Metre	10.00				
11.5.6	300 mm dia Ductile Iron Double Flanged	Metre	10.00				
11.5.7	400 mm dia Ductile Iron Double Flanged	Metre	10.00				
11.6	Disinfecting C.I. water mains by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory.						
11.6.1	80 mm diameter C.I. pipe	100 Metre	0.00			-	
11.6.2	100 mm diameter C.I. pipe	100 Metre	5249.27				
11.6.3	150 mm diameter C.I. pipe	100 Metre	825.86				
11.6.4	200 mm diameter C.I. pipe	100 Metre	364.30				
11.6.5	250 mm diameter C.I. pipe	100 Metre	213.20				
11.6.6	300 mm diameter C.I. pipe	100 Metre	196.19				
11.6.7	350 mm diameter C.I. pipe	100 Metre	67.79				
11.6.8	400 mm diameter C.I. pipe	100	82.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
		Metre					
11.6.9	450 mm diameter C.I. pipe	100 Metre	37.24				
11.6.10	500 mm diameter C.I. pipe	100 Metre	30.44				
11.6.11	600 mm diameter C.I. pipe	100 Metre	30.49				
11.7	Labour for cutting C.I. pipe with steel saw.						
11.7.1	100 mm diameter C.I. pipe	Each cut	2864.00				
11.7.2	150 mm diameter C.I. pipe	Each cut	455.00				
11.7.3	200 mm diameter C.I. pipe	Each cut	167.00				
11.7.4	250 mm diameter C.I. pipe	Each cut	31.00				
11.7.5	300 mm diameter C.I. pipe	Each cut	6.00				
11.7.6	600 mm diameter C.I. pipe	Each cut	2.00				
12	**Drainage**						
12.1	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the	Each	3130.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.						
13	Hire charges of pump set for pumping out water @4000 ltr/ hr or 32 Kltr/ per day including cost of service and operating and supply of lubricant etc.	day	95.00				
14	Surface Box	Each	1830.00				
15	Providing in position 12mm dia. & 450mm long SS Bolt including Nuts, anchoring plate & washers as required complete as per standard and specification and as per Engineer-in-charge.	Kg	109.41				
16	Anchor Fastner - M10	Each	12565.00				
17	Laying in position M.S pipes/ Steel cylinder reinforced concrete pipes suitable for rubber ring jointing or welding or flanged jointing (excluding cost of pipe).	Qtl.	14494.47				
18	Laying in position M.S. specials/ steel cylinder reinforced concrete specials suitable for rubber ring jointing or welding or flanged jointing (excluding cost of specials).	Qtl.	175.22				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
19	Providing and erecting 1.60 m high corrugated G.I. sheets barricading supported on safe daballies 100 mm dia, two metre high placed at 2.5 m c/c corrugated G.I.sheets fixed with nails of required length and dia to safe daballies i/c excavating holes of size 0.3x0.30x0.40mt getting out the excavated soil and then returning the soil i/c consolidating by ramming and watering etc. all complete i/c disposal of surplus excavated earth with in a lead of 50m and painting on full surface of C.G.I Sheet (on one side) with bright paint of red & white colour in vertical strips 0.30m wide alternately as directed by Engineer-in -Charge. (The barricading dismantled on completion of the work shall remain the property of contractor).	sqm	6240.00				
20	Providing and fixing fire hydrant of size 65 mm of approval brand with bolts, nuts, rubber, insertions etc. complete all (tailpiece if required will be paid separately.)	Each	120.00				
a	Providing and laying S&S Centrifugally Cast (Spun) Ductile Iron class K-9 Pipes confirming to IS: 8329 excluding excise duty component.						
b	100 mm dia	Metre	273.00				
c	150 mm dia	Metre	4115.00				
d	200 mm dia	Metre	1856.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
e	250 mm dia	Metre	6469.00				
f	300 mm dia	Metre	8775.00				
g	350 mm dia	Metre	2946.00				
h	400 mm dia.	Metre	8102.00				
i	450 mm dia.	Metre	3724.00				
j	500 mm dia.	Metre	3044.00				
k	600 mm dia.	Metre	2302.00				
l	700 mm dia.	Metre	1832.00				
m	800 mm dia.	Metre	256.00				
n	900 mm dia.	Metre	43.00				
21	Providing and laying S&S Centrifugally Cast (Spun) Ductile Iron class K-7 Pipes conforming to IS: 8329 excluding excise duty component.						
a	100 mm Dia	Metre	386662.00				
b	150 mm Dia	Metre	62220.00				
c	200 mm Dia	Metre	31090.00				
d	250 mm Dia	Metre	13690.00				
e	300 mm Dia	Metre	9936.00				
f	350 mm Dia	Metre	3833.00				
g	400 mm Dia	Metre	67.00				
22	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS: 9523 excluding excise duty component.						
a	Up to 600mm dia.	Qtl.	3212.60				
b	Above 600mm dia.	Qtl.	131.55				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
23	Providing and laying D.I. Specials of Class K - 12 suitable for mechanical jointing as per IS: 9523. These rates are excluding excise duty component.						
a	Up to 600mm dia.	Qtl.	1548.95				
b	Above 600mm dia.	Qtl.	27.42				
24	Providing Mild Steel Pipe fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; internally lined with cement mortar lining confirming to IS 3589:2001; and having external / outside 4 mm coal tar coating and wrapping confirming to IS 10221:2008; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge. The rates are excluding excise duty component.						
a	700 mm nominal dia. (clear internal dia.) of pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Metre	1578.00				
b	800 mm nominal dia. (clear internal dia.) of pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Metre	3000.00				
c	900 mm nominal dia. (clear internal dia.) of pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Metre	2452.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
d	1000 mm nominal dia. (clear internal dia.) of pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Metre	664.00				
25	Providing Mild Steel Pipes fabricated / manufactured out of MS Plates of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same / equivalent grade, internally lined with cement mortar conforming to IS 3589:2001 and having external/outside epoxy coating complete in all respect; with upto date amendments in relevant IS codes and as directed by Engineer-in-charge. The rates are excluding excise duty component.						
a	900 mm nominal dia. (clear internal dia.) pipe of 10mm thickness (min.), 9mm internal Cement mortar lining and outside epoxy coating.	Metre	22.00				
26	Providing Mild Steel Pipes fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; coated internally with food grade epoxy and externally / outside with epoxy coating; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge. These rates are excluding excise duty component.						
a	800 mm nominal dia. (clear internal dia.) pipes	Metre	50.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	of 10 mm thickness (min.)						
b	900 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Metre	70.00				
27	Providing Mild Steel Specials fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils of same/equivalent grade; internally lined with cement mortar lining confirming to IS 3589:2001; and having external / outside 4 mm coal tar coating and wrapping confirming to IS 10221:2008; complete in all respect; with up to date amendments in relevant IS codes and as directed by Engineer-in-charge. These rates are excluding excise duty component.						
a	700 mm nominal dia. (clear internal dia.) specials of 8 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	1081.13				
b	800 mm nominal dia. (clear internal dia.) specials of 8 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	3874.18				
c	900 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	9182.78				
d	1000 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	3383.94				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
28	Ultrasonic testing of welded joints at site.	Rm	575.55				
29	Disinfecting of water mains by flushing with water containing bleaching powder @ 0.5 gms per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal/DJB laboratory.						
a	700 mm dia	Metre	3613.00				
b	800 mm dia	Metre	3306.00				
c	900 mm dia	Metre	2587.00				
d	1000 mm dia	Metre	664.00				
30	Filling water into water main for testing to the specified head, water to be arranged by sinking of tube well and pumping out the underground water and filling the same into water main including installation of pumps of sufficient capacity and head, providing and fixing delivery and suction pipe etc. all complete and as directed by Engineer-in-Charge.						
a	100 mm nominal dia (clear internal dia) pipes	Metre	386935.00				
b	150 mm nominal dia (clear internal dia) pipes	Metre	66335.00				
c	200 mm nominal dia (clear internal dia) pipes	Metre	32946.00				
d	250 mm nominal dia (clear internal dia) pipes	Metre	20159.00				
e	300 mm nominal dia (clear internal dia) pipes	Metre	18690.00				
f	350 mm nominal dia (clear internal dia) pipes	Metre	6779.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
g	400 mm nominal dia (clear internal dia) pipes	Metre	8190.00				
h	450 mm nominal dia (clear internal dia) pipes	Metre	3724.00				
i	500 mm nominal dia (clear internal dia) pipes	Metre	3043.00				
j	600 mm nominal dia (clear internal dia) pipes	Metre	2302.00				
k	700 mm nominal dia (clear internal dia) pipes	Metre	2243.00				
l	800 mm nominal dia (clear internal dia) pipes	Metre	1008.00				
m	900 mm nominal dia (clear internal dia) pipes	Metre	271.00				
n	1000 mm nominal dia (clear internal dia) pipes	Metre	664.00				
31	Providing and laying flanged C.I. standard specials such as tees, bends, collars, tapers, caps etc., suitable for flanged jointing as per IS : 1538 : These rates are excluding excise duty component.						
a	Up to 300mm dia	Qtl.	101.26				
b	Above 300 mm dia	Qtl.	100.14				
32	**Trenchless Technology**						
32.1	Installation of product pipe by manual pipe jacking method in mixed soil type at required depth and for maximum drive length of 100 meter to correct grade and alignment: complete as per specifications and as directed by the Engineer -in -Charge. (Cost of product pipe, excavation of entry and Exit pit, shoring/strutting, backfilling, Disposal of surplus earth, Road cutting & restoration, Dewatering etc will be paid separately)						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
32.1.1	900 mm to 1000 mm diameter	Metre	70.00				
32.2	Dismantling of cement concrete pavement by mechanical means using hydraulic excavator with concrete breaker attachment and stock piling at designated locations and disposal of dismantled materials up to a lead of 1 km, as per direction of Engineer-in-Charge.	Cum	41075.78				
32.3	Installation of HDPE or other available product pipe by HDD method in mixed soil type at required depth to correct grade and alignment; complete as per specifications and as directed by the Engineer-In-Charge. (Cost of product pipe, Excavation of Entry and Exit Pipe, Shoring / strutting, Backfilling, Disposal of Surplus Earth, Road Cutting & restoration, Dewatering etc will be paid separately).						
32.3.1	Upto-including 280mm diameter.	Metre	156.00				
32.3.2	>280mm diameter and upto-including 315mm diameter.	Metre	55.00				
32.3.3	>355mm diameter and upto-including 400mm diameter.	Metre	159.00				
32.3.4	>450mm diameter and upto-including 500mm diameter.	Metre	22.21				
32.3.5	>500mm diameter and upto-including 560mm diameter.	Metre	46.54				
32.3.6	>560mm diametre and upto-including 630mm	Metre	80.00				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	diameter.						
32.3.7	>630mm diameter and upto-including 710mm diameter.	Metre	73.96				
33	Installation of Steel product pipe HDD method including preparing and setting up the plant and equipment, preparing new pipe work material, installing new pipe work and commissioning system or making the system ready for commissioning by HDD operation including, all related civil and mechanical works like excavation, shoring/strutting, etc. drilling, stringing, reaming and pulling back the new pipe-work on the designed bore path alignment, proper disposal of drilling fluid and back fill of the site after completion all-inclusive as per IndSTT:101-2007: Code of Practice for Horizontal Directional Drilling Technique suiting Indian Conditions.						
33.1.1	For Installation Lengths Upto 50m						
33.1.1.1	Steel Pipes above 700mm & upto 1000mm dia.						
33.1.2.1	In hard rock	Metre	50.00				
33.1.2	For Installation Lengths from 50m & upto 200m						
33.1.2.1	Steel Pipes above 450mm & upto 700mm dia.						
33.1.2.2	In hard rock	Metre	117.26				
34	Providing/Supplying & Installation at site ISI Mark Ductile Iron Manually Operated Sluice						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	valves of rating PN 1.0 with EPDM rubber gaskets, rubber sheet and MS nuts & bolts as per requirements, field testing and commissioning complete as per specifications, including all cost of materials, providing flange joints two number, labour required, transportation up to site, loading, unloading & stacking etc. complete as per IS-14846 specifications or as directed by Engineer-In-Charge.						
a	100 mm Dia	Each	919.00				
b	150 mm Dia	Each	305.00				
c	200 mm Dia	Each	124.00				
d	250 mm Dia	Each	38.00				
e	300 mm Dia	Each	32.00				
f	350 mm Dia	Each	6.00				
g	400 mm Dia	Each	5.00				
h	500 mm Dia	Each	3.00				
35	Providing/Supplying & Installation at site ISI Mark Ductile Iron Manually Operated Scour valves of rating PN 1.0 with EPDM rubber gaskets, rubber sheet and MS nuts & bolts as per requirements, field testing and commissioning complete as per specifications, including all cost of materials, providing flange joints two number, labour required, transportation up to site, loading, unloading & stacking etc. complete						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	as per IS-14846 specifications or as directed by Engineer-In-Charge.						
a	80 mm dia valve	Each	256.00				
b	100 mm dia valve	Each	111.00				
c	150 mm dia valve	Each	22.00				
d	200 mm dia valve	Each	19.00				
e	250 mm dia valve	Each	1.00				
f	300mm dia valve	Each	1.00				
g	400 mm dia valve	Each	1.00				
36	Providing & Fixing in position Ductile Iron Double orifice Air Valve and providing flanged joints (one no.) i.c cost bolts, nuts, rubber insertion etc. (3mm thick two washers for each bolt) all complete as per standard i/c taxes, transportation, loading, unloading, erecting & testing to the specified head by filling water as per specification and as directed by Engineer-in-charge.						
a	40 mm dia	Each	175.00				
b	50 mm dia	Each	57.00				
c	80 mm dia	Each	18.00				
d	100 mm dia	Each	7.00				
e	150 mm dia	Each	2.00				
38	Providing & Fixing in position Cast Iron Single orifice Air Valve and providing saddle clamp or flanged joints (one no.) i/c. cost bolts, nuts,						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	rubber insertion etc. (3mm thick two washers for each bolt) all complete i/c taxes, transportation, loading, unloading, erection, testing to the specified head by filling water as per specification and as directed by Engineer-in-charge.						
a	25 mm dia valve	Each	44.00				
b	40 mm dia	Each	51.00				
c	50 mm dia	Each	18.00				
d	80 mm dia	Each	2.00				
39	Providing SFRC Manhole cover as per standard and specification complete and as per Engineer-in-charge.						
	900mm dia.	Each	208.00				
				Total of Schedule CW-DP			

SCHEDULE CW-DB-C

Design-Build: UGR and BPS- Civil Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	Study/investigation, Design, Construction and/or Rehabilitation, including Testing and Commissioning of following Underground Reservoirs (specified capacity being the minimum effective reservoir capacity excluding free board) as per scope of works, specifications, approved drawings and other specified requirements on DBO (Design, Build & Operate) basis. The work also includes demolition and disposal (transportation and stacking at places designated by DJB) of the existing UGR/structure's debris as required.						
1.1	Construction of new UGR at Flagstaff (8.4 ML capacity)	LS	1				
1.2	Construction of new UGR at Jeetgarh (15.1 ML capacity)	LS	1				
1.3	Construction of new UGR at Jhandewalan (17.4 ML capacity)	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.4	Construction of new UGR at Ramjas (2.4 ML capacity)	LS	1				
1.5	Construction of new UGR at Ridge Road (1.7ML capacity)	LS	1				
1.6	Construction of new UGR at Cantt Palam- II (11.8 ML capacity)& Rehabilitation of Existing UGR at Cantt Palam- I.	LS	1				
1.7	Construction of new UGR at Talkatora (21.6 ML capacity)	LS	1				
1.8	Construction of new UGR at Hasanpur (21.6 ML capacity)	LS	1				
1.9	Rehabilitation of Existing UGR at Hindu Rao	LS	1				
1.10	Rehabilitation of Existing UGR at Idgah	LS	1				
2	Study/investigation, Design, Construction and/or Rehabilitation of Building and Structures, including finishing and commissioning of Pumping Stations (PS), as per scope of works, specifications, approved drawings and other specified requirements on DBO (Design, Build & Operate) basis. The works under this schedule should cover all civil and steel structural works including the civil works of electrical & mechanical installations, Pump Sets, Transformers, DG set, Solar Systems, trenches etc. The work also includes demolition and disposal						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	(transportation and staking at places designated by DJB) of the existing PS/Structure's debris as required.						
2.1	Rehabilitation of existing Pumping Station at Hindu Rao	LS	1				
2.2	Construction of new Pumping Station with associated Structures at Ramjas	LS	1				
2.3	Construction of new Pumping Station with associated Structures at Ridge Road	LS	1				
2.4	Construction of new Pumping Station with associated Structures at Cantt PalamII	LS	1				
2.5	Rehabilitation of existing Pumping Station with associated structures at Idgah	LS	1				
3	Design, Construction and/or Rehabilitation of all civil works at UGR & BPS complex other than mentioned under Sr. no. 1 and 2 above, including road, drainage, utilities, Master Control Station and landscaping etc. in the campus on DBO (Design, Build & Operate) basis as per the scope of works, specifications, approved drawings and other specified requirements. The work also includes demolition and disposal (transportation and staking at places designated by DJB) of the existing structure's debris as required.						
3.1	Jhandewalan	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.2	Flag Staff	LS	1				
3.3	Hindu Rao	LS	1				
3.4	Jeet Garh	LS	1				
3.5	Idgah	LS	1				
3.6	Ramjas	LS	1				
3.7	Ridge Road	LS	1				
3.8	Cantt Palam- I&II	LS	1				
3.9	Talkatora	LS	1				
3.10	Hasanpur	LS	1				
Total of this Schedule CW-DB-C							

SCHEDULE CW-DB-M

Design-Build: UGR and BPS- Mechanical Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
A	**UGR's and BPS's** Study/Investigation, Design, Supply, Delivery, Construction/ Installation/ Rehabilitation including testing and commissioning of all Mechanical Works, Equipment and Plants at the following UGR's and BPS's as per scope of works, specifications, approved drawings and other specified requirements on DBO (Design, Build & Operate) basis. 1. Idgah 2. Cant Palam-II 3. Ramjas 4. Ridge Road 5. Hindu Rao (Note: Sizes, capacities and quantities given herein, if any, are indicative and provided for Bidder's reference only)						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
1	**Idgah BPS & UGR**						
1.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes, fittings and associated dismantling joints,	Lot	1				
1.2	Electrically actuated double flanged Sluice Valves: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	200 dia	Nos	2				
b	250 dia	Nos	2				
c	400 dia	Nos	7				
d	450 dia	Nos	3				
e	500 dia	Nos	1				
1.3	Electrically actuated Flow Control Valves						
a	400 dia	Nos	1				
1.4	Double flanged Non Return Valve						
a	200 dia	Nos	2				
b	400 dia	Nos	3				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
1.5	Double flanged Duel plate Check Valve along with dismantling joint						
a	500 dia.	Nos	1				
1.6	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as pertechnical specification						
a	770 m3/hr x 40 m, (2W + 1S)	Nos	3				
b	210 m3/hr x 50 m, (1W + 1S)	Nos	2				
1.7	Suitable capacity vacuum pump required for negative suction pumps (1W + 1S)	Nos	2				
1.8	Portable submersible dewatering pumpset of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt& cable of 10 mt	Nos	1				
1.9	Submersible drain pumpset including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 10mwc head (1W + 1S)	Nos	2				
1.10	Ventilation System with exhaust fan complete	Nos	8				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
1.11	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	8				
1.12	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
2	**Cantt Palam-II BPS & UGR (Including Cantt Palam-I UGR)**						
2.1	Pipes and Fittings: (i) Inlet side& outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes, fittings and associated dismantling joints, if any	Lot	1				
b	MS Pipes and fittings	Lot	1				
2.2	Electrically actuated double flanged Sluice Valves : (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
a	300 dia	Nos	2				
b	400 dia	Nos	2				
c	600 dia	Nos	3				
d	700 dia	Nos	4				
e	800 dia	Nos	2				
2.3	Double flanged Non Return Valve						
a	300 dia	Nos	2				
b	600 dia	Nos	3				
2.4	Double flanged Duel plate Check Valve						
a	700 dia	Nos	1				
2.5	Electrically Actuated Flow Control Valve						
a	1000 dia	Nos	1				
2.6	Electrically actuated sluice gate, size 1000 x 1000	Nos	1				
2.7	Double suction horizontal split casing centrifugal volute Pumpset along with induction motor and all associated accessories as per technical specification						
a	1800 m3/hr x 35 m, (2W + 1S)	Nos	3				
b	480 m3/hr x 35 m, (1W + 1S)	Nos	2				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
2.8	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt & cable of 10 mt.	Nos	1				
2.9	Submersible drain pump set including electric motor, piping, valve, etc. of Capacity 10 m3/hr at 10 mwc head (1W + 1S)	Nos	2				
2.10	Ventilation System with exhaust fan complete	Nos	6				
2.11	Double Girder EOT Crane of capacity 5.0 MT	Nos	1				
2.12	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	8				
2.13	Suitable capacity Electro chlorinator (1W + 1S) complete with piping, valves, accessories, etc.	Nos	2				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
2.14	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
3	**Ramjas BPS & UGR**						
3.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes, fittings and associated dismantling joints	Lot	1				
3.2	Electrically actuated double flanged Sluice Valves: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	150 dia	Nos	2				
b	200 dia	Nos	2				
c	400 dia	Nos	4				
d	450 dia	Nos	2				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
3.4	Electrically actuated double flanged Flow control Valve:						
a	400 dia	Nos	1				
3.5	Double flanged Non Return Valve						
a	150 dia	Nos	2				
b	400 dia	Nos	2				
3.6	Double flanged Duel Plate Check Valve along with dismantling joint						
a	400 dia	Nos	1				
3.7	Electrically actuated sluice gate, size 600 x 600	Nos	2				
3.8	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	750 m3/hr x 33 m, (1W + 1S)	Nos	2				
b	90 m3/hr x 33 m, (1W + 1S)	Nos	2				
3.9	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt& cable of 10 mt	Nos	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
3.10	Submersible drain pump set including electric motor, piping, valve, etc. of Capacity 10 m3/hr at 10 mwc head (1W + 1S)	Nos	2				
3.11	Ventilation System with exhaust fan complete	Nos	4				
3.12	Electric Hoist with trolley of capacity 2.0 MT	Nos	1				
3.13	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	6				
3.14	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
4	**Ridge Road BPS & UGR**						
4.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes, fittings and associated	Lot	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	Dismantling Joints						
4.2	Electrically actuated double flanged Sluice Valves: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	100 dia	Nos	2				
b	150 dia	Nos	2				
c	200 dia	Nos	3				
d	300 dia	Nos	5				
e	400 dia	Nos	1				
4.3	Electrically actuated double flanged Flow control Valve:						
a	300 dia	Nos	1				
4.4	Double flanged Non Return Valve						
a	100 dia	Nos	2				
b	200 dia	Nos	3				
4.5	Double flanged Duel Plate Check Valve						
a	300 dia	Nos	1				
b	400 dia	Nos	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
4.6	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	190 m3/hr x 33 m, (2W + 1S)	Nos	3				
b	50 m3/hr x 33 m, (1W + 1S)	Nos	2				
4.7	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt& cable of 10 mt	Nos	1				
4.8	Submersible drain pump set including electric motor, piping, valve, etc. of Capacity 10 m3/hr at 10 mwc head (1W + 1S)	Nos	2				
4.90	Ventilation System with exhaust fan complete	Nos	8				
4.10	Electric Hoist with travelling trolley of capacity 2 MT	Nos	1				
4.11	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	10				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
4.12	Electrically actuated Sluice Gates as per technical specifications 800mm × 800mm	No.	1				
4.13	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
5	**Hindu Rao BPS & UGR**						
5.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii)Suction, Discharge & Header of Pumps						
a	DI Pipes, fittings and associated Dismantling Joints	Lot	1				
5.2	Electrically actuated double flanged Sluice Valves: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	100 dia	Nos	6				
b	150 dia	Nos	6				
c	400 dia	Nos	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
d	600 dia	Nos	1				
5.3	Double flanged Non-Return Valve	Nos					
a	100 dia	Nos	5				
5.4	Double flanged Duel Plate Check Valve						
a	100 dia	Nos	1				
b	150 dia	Nos	1				
5.5	Electrically Actuated Flow Control Valve						
a	400 dia	Nos	1				
5.6	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	72 m3/hr x 20 m, (3W + 2S)	Nos	5				
5.7	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt& cable of 10 mt	Nos	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
5.8	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 10 mwc head (1W + 1S)	Nos	2				
5.9	Ventilation System with exhaust fan complete	Nos	4				
5.10	Electric Hoist of capacity 2.0 MT	Nos	1				
5.11	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	8				
5.12	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
B	UGR's Study/Investigation, Design, Supply, Delivery, Construction/ Installation/ Rehabilitation including testing and commissioning of all Mechanical Works, Equipment and Plants at the following UGR's as per scope of works, specifications, approved drawings and other specified requirements on DBO (Design, Build & Operate) basis. 1. Flagstaff 2. Jeetgarh 3. Talkatora 4. Hasanpur 5. Cantt Palam I (Covered in Cantt Palam II UGR BPS cost) (Note: Sizes, capacities and quantities given herein, if any, are indicative and provided for Bidder's reference only)						
6	**Flagstaff UGR**						
6.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR						
a	DI Pipes, fittings and associated	Lot	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	Dismantling Joints; MS Pipes and Fittings						
6.2	Electrically actuated double flanged Sluice Valves. (i) Inlet side & outlet side of UGR						
a	600 dia	Nos	4				
6.3	Electrically actuated double flanged Butterfly Valves						
a	800 dia	Nos	1				
6.4	Electrically Actuated Flow Control Valve						
a	600 dia	Nos	1				
6.5	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 m& cable of 15 m	Nos	1				
6.6	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
7	**Jeetgarh UGR**						
7.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes, fittings and associated Dismantling Joints; MS Pipes and fittings	Lot	1				
7.2	Double flanged Sluice Valves. (i)Inlet side & outlet side of UGR						
a	700 dia	Nos	2				
b	800 dia.	Nos	2				
7.3	Electrically actuated double flanged Butterfly Valves. (i) Inlet side & outlet side of UGR						
a	700 dia	Nos	1				
b	1000 dia	Nos	1				
7.4	Electrically Actuated Flow Control Valve						
a	700 dia	Nos	1				
7.5	Electrically actuated sluice gate, size 1000 x 1000	Nos	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
7.6	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 m& cable of 15 m	Nos	1				
7.7	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
8	**Talkatora UGR**						
8.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR						
a	MS Pipes, fittings and associated dismantling joints	Lot	1				
8.2	Double flanged Sluice Valves. (i) Outlet side of UGR						
a	300 dia	Nos	5				
c	600 dia	Nos	3				
c	900 dia	Nos	3				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
8.3	Electrically actuated double flanged Butterfly Valves. (i) Inlet side of UGR						
a	800 dia	Nos	2				
b	900 dia	Nos	1				
8.4	Electrically Actuated Flow Control Valve						
a	900 dia	Nos	1				
8.5	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt& cable of 15mt	Nos	1				
8.6	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
9	**Hasanpur UGR**						
9.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR						
a	DI Pipes, fittings and associated	Lot	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	dismantling joints; MS Pipes and fittings						
9.2	Electrically actuated double flanged Sluice Valves (i) Inlet side & outlet side of UGR						
a	600 dia	Nos	3				
b	700 dia	Nos.	3				
9.3	Electrically actuated double flanged Butterfly Valves (i) Inlet side of UGR						
a	700 dia	Nos	1				
9.4	Electrically Actuated Flow Control Valve						
a	700 dia	Nos	1				
9.5	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible hose of 10 mt& cable of 15mt	Nos	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
9.6	Any other items required for commissioning of pumping system (which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).	LS	1				
					Sub total		
					Total of this Schedule CW-DB-M		

SCHEDULE CW-DB-E

Design-Build: UGR and BPS- Electrical Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
A	**UGRs and BPSs:** Study/Investigation, Design, Supply, Delivery, Construction/ Installation/ Rehabilitation including testing and commissioning of all Electrical Works, Equipment and Plants, including Solar Power systems, DG set at the following UGR's and BPS's from electrical perspectives and as per scope of work, specifications, approved SLD and other specified requirements on DBO (Design, Build & Operate) basis. 1. Idgah 2. Cant palam 3. Ramjas 4. Ridge Road 5. Hindu Rao (Note: Sizes, capacities and quantities given herein, if any, are indicative and provided for Bidder's reference only)						
1	**Idgah UGR and BPS**						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.1	**Compact Sub-station** : 11 / 0.433 KV, 315 KVA (minimum), Compact Substation, , consist of RMU, Transformer and LV Switchgear as per SLD compatible with PLC/SCADA Systems	Nos.	2				
1.2	**Solar system** : Solar system (80 KWp, minimum) along with all accessories	No.	1				
1.3	**DG Set** :415 V, 3 Phase, (250 KVA, minimum) DG set with AMF Panel	No.	1				
1.4	**415 Volts L T Panels**: 415 Volts Main Panel, Aux Panels and APFC panel along with starter feeders – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
1.5	**Variable Frequency Drive**: VFD as per SLD and tender specification						
(i)	110 KW	Nos.	3				
1.6	**Lighting System**: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
1.7	**Earthing**: Complete Earthing System and Lightning Protection System	LS	1				
1.8	**Cabling System**: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
1.9	**Miscellaneous items**:	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	Safety kit and tools & tackle: Safety chart, sand bucket, rubber mat, gloves, tools, spares, etc. **Dismantling Items**: Dismantling of existing electrical equipment. **Other Items :** which are not covered above and in other schedules but required for commissioning of UGR and BPS from Electrical perspectives						
			Sub Total				
2	**Cant Palam UGR and BPS**						
2.1	**HT Panel**: 11 KV,630 Amp, Indoor VCB Type HT Panel, 5 panel board (2 I/C, 1 B/C, 2 O/G) compatible with PLC / SCADA System	No.	1				
2.2	**Transformers** :11/0.433 KV , (630 KVA, minimum) KVA, Indoor Cast resin Dry type Transformer Dyn11 with On Load Tap Changer Arrangement	Nos.	2				
2.3	**Solar system** : Solar system (400 KWp, minimum) along with all accessories	No.	1				
2.4	**DG Set** :415 V, 3 Phase, (600 KVA, minimum) DG set with AMF Panel	No.	1				
2.5	**415 Volts L T Panels**: 415 Volts Main Panel, Aux Panels and APFC panel along with starter feeders – Metal enclosed, free standing, floor	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	mounting, extensible on either side, compatible with PLC/SCADA Systems						
2.6	**Variable Frequency Drive**: VFD as per SLD and tender specification						
(i)	200 KW	No	3				
(ii)	75 KW	No	2				
2.7	**Battery and Battery Charger**: 24 V, 150 AH (minimum) Ni-Cd maintenance free battery and Float Cum Boost Charger	No.	1				
2.8	**Lighting System**: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
2.9	**Earthing**: Complete Earthing System and Lightning Protection System	LS	1				
2.10	**Cabling System**: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
2.11	**Miscellaneous items:** **Safety kit and tools & tackle:** Safety chart, sand bucket, rubber mat, gloves, tools, spares, etc. **Other items :**which are not covered above and in other schedules but required for commissioning of UGR and BPS from Electrical perspectives	LS	1				
					Sub Total		

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3	**Ramjas UGR and BPS**						
3.1	**Solar system**:Solar system (50 KWp) along with all accessories	No.	1				
3.2	**DG Set** :415 V, 3 Phase, (125 KVA, minimum) DG set with AMF Panel	No.	1				
3.3	**415 Volts L T Panels**: 415 Volts Main Panel, Aux Panels and APFC panel along with starter/VFD feeders – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
3.4	**Lighting System**: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
3.5	**Earthing**: Complete Earthing System and Lightning Protection System	LS	1				
3.6	**Cabling System**: XLPE HT and LT power cables, control cables and telephone cables	LS	1				
3.7	**Miscellaneous items**: Any other as required.	LS	1				
					Sub Total		
4	**Ridge Road UGR and BPS**						
4.1	**Solar system** :Solar system (40 KWp, minimum) along with all accessories	No.	1				
4.2	**DG Set** :415 V, 3 Phase, (100 KVA, minimum) DG set with AMF Panel	No.	1				
4.3	**415 Volts LT Panels**: 415 Volts Main Panel, Aux Panels and APFC panel along with	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	starter/VFD feeders – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems						
4.4	**Lighting System**: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
4.5	**Earthing**: Complete Earthing System and Lightning Protection System	LS	1				
4.6	**Cabling System**: XLPE HT and LT power cables, control cables and telephone cables	LS	1				
4.7	**Miscellaneous items**: **Safety kit and tools & tackle: S**afety chart, sand bucket, rubber mat, gloves, tools, spares, etc. **Other Items:** which are not covered above and in other schedules but required for commissioning of UGR and BPS from Electrical perspectives	LS	1				
					Sub Total		
5	**Hindu Rao UGR and BPS**						
5.1	Solar system : Solar system (10 KWp, minimum) along with all accessories	No.	1				
5.2	DG Set :415 V, 3 Phase, (40 KVA, minimum) DG set with AMF Panel	No.	1				
5.3	415 Volts L T Panels: 415 Volts Main Panel, Aux Panels and APFC panel along with	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	starter/VFD feeders – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems						
5.4	Lighting System: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
5.5	Earthing: Complete Earthing System and Lightning Protection System	LS	1				
5.6	Cabling System: XLPE HT and LT power cables, control cables and telephone cables	LS	1				
5.7	Miscellaneous items and any other as required.	LS	1				
					Sub Total		
6	**Flagstaff, Jeetgarh, Talkatora, Hasanpur UGR**						
6.1	**Solar System**: Solar system (5KWp, minimum) along with battery and all accessories.	Nos.	1				
6.2	**415 V / 230 Volts LT Panel:** 415 V / 230 Volts, Single phase panel – Metal enclosed, free standing, floor mounting, extensible on either side, switchboard compatible with PLC/SCADA Systems	Nos.	1				
6.3	**Lighting System**: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, etc	LS	1				
6.4	**Earthing**: Complete Earthing System	LS	1				
6.5	**Cabling System**: LT power cables, control	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	cables						
6.6	**Miscellaneous items**: Items which are not covered above and in other schedules but required for commissioning of UGR and BPS from Electrical perspectives	LS	1				
				Sub Total			
				FOR 4 Nos UGR Total			
				Total Cost of Schedule CW-DB-E			

SCHEDULE CW-DB-S&I

Design-Build: All SCADA & Instrumentation Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	Study/Investigation, Design, Supply, Delivery, Construction/Installation, including testing and commissioning of all Instrumentation and SCADA system with associated hardware, software and communication system for Package 3 (Central Zone) as per scope of works, specifications, approved system architecture, P&ID and other specified requirements on DBO (Design, Build & Operate) basis. (Note: Sizes, capacities and quantities given herein, if any, are indicative and provided for Bidder's reference only).						
1. Distribution System SCADA Hardware							
A. Zonal SCADA Control Room (Central Zone) Hardware							
1.1	Redundant Server-Router system: SCADA Redundant Server Grade HDD: 1TB, 4 GB RAM, DVD R/W, 2 serial and 1 parallel, 4-USB, port. Windows 2008/2012 or latest with standard Keyboard and Optical mouse along with Antivirus software, MS Office latest version with	Nos.	2				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	32" screen along with webserver with three client and built in historian and OPC server.						
1.2	Redundant Data Storage System	Nos.	2				
1.3	Web Router	Nos.	1				
1.4	Work stations: Central Programming &Configuration PC(ES-1) For PLC/RTU & SCADA system, 32" screen,, i3-Core , RAM: 4GB, HDD:750GB, DVD R/W, 4- USB port. Windows 7 (32Bit) with standard Keyboard and optical mouse along with Antivirus software, MS office software latest version Workstations PC(OS Client1,2) 32" screen, i3-Core , RAM: 4GB, HDD:750GB, DVD R/W, 4- USB port. Windows 7 (32Bit) with standard Keyboard and optical mouse along with Antivirus software, MS office software latest version	Nos.	3				
1.5	Alarm/Event printer (Dot Matrix)	Nos.	1				
1.6	A3 colour laser printer withscanner	Nos.	1				
1.7	A4 laser printer with scanner	Nos.	1				
1.8	Service Laptop for programming & configuration of PLC and RTU.	Nos.	1				
1.9	Office MAN/WAN router	Nos.	1				
1.10	MAN/WAN Firewall	Nos.	11				
1.11	Network Managed Switches (24 port) for Central Server	Nos.	4				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.12	Network Managed Switches (8 port) for UGRs	Nos.	16				
1.13	Large LED screen 67" for SCADA Centre	Nos.	1				
1.14	SCADA Centre PLC / RTU (to receive signals from various RTUs).	Nos.	1				
1.15	230V AC Redundant UPS for the Zonal SCADA (Central) Control Room of required capacity with 1 hour backup.	Nos.	2				
1.16	Complete Ethernet LAN installation for the Zonal SCADA (centre) Control Room as required.	Lot	1				
1.17	Additional workstation outside SCADA centre comprising web router and UPS for 10 web clients.	No.	1				
1.18	Dual Data & Voice Communication Network between CWMC at Chandrawal WTP, Zonal SCADA Control Room (Central Zone), all BPS/UGRs and DMAs complete with router, network manager/fire wall, power adapter, EPBX system and open SIP IP phone etc. of package-3	Set	1				
1.19	Complete Instrumentations, data and power cabling supply, installation and termination for zonal SCADA control room on as required basis.	Lot	1				
1.20	GPRS modem (TCP/IP)	No.	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
B. At 10 UGR & 6 BPS							
1.21	Redundant PLC with Modbus Communication enabled along with Duly wired IP 54 Control Panels & Accessories.	Nos.	5				
1.22	Local SCADA System with Work stations PC 32" screen, i3-Core, RAM: 4GB, HDD: 750GB, DVD R/W, 4-USB, port. Windows 7 (32Bit) with standard Keyboard and optical mouse along with Antivirus software, MS office software latest version, A4 Printer and other items as required for System completeness.	Nos.	5				
1.23	A4 laser printer with Scanner	Nos.	6				
1.24	Telemetry RTU, PLC & Dual SIM Routers along with Panels & Accessories for gravity outlet flow UGRs.	Nos.	4				
1.25	GPRS modem (TCP/IP)/Modbus.	Nos.	9				
1.26	10" Colour Panel HMI with Touch Screen along with its Software for gravity outlet flow UGRs.	Nos.	4				
1.27	230V AC Redundant UPS of required capacity with 1 hour backup (For 5Nos. UGR with BPS).	Nos.	5				
1.28	230V AC Redundant UPS of required capacity with 1 hour backup (For 4 Nos. Gravity outlet flow UGRs).	Nos.	4				
1.29	Complete data and power cabling supply,	Lot	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	installation and termination for 6 UGR with BPS and for 4 UGRs on as required basis.						
C. At 78 DMAs with 103 Inlets							
1.30	Telemetry RTU with built-in PLC & Modbus Communication enabled with Panels & Accessories with 7" Colour HMI Screens (78 for lowest pressure points + 103 for Inlets).	Nos.	181				
1.31	230V AC UPS with 2hrs backup (78 for lowest pressure points + 103 for Inlets).	Nos	181				
1.32	Complete data and power cabling (supply, installation and termination for 181 DMA's control Panels).	Lot	1				
1.33	Any other Items required for fulfilment of SCADA system and Instrumentation works as per System/Process requirements.	Lump-sum	1				
2. Distribution System SCADA Software							
2.1	SCADA Software and Licences for 3 PCs and 2 Servers. (SCADA Redundant Servers with required nos of tag license: 3nos. OS Clients Other Licenses enabled: Built-in Historian OPC Server Web Server with 2 Client License SCADA Redundant Servers with required nos of tag license: 3nos. OS Clients Other Licenses enabled: Built-in	Set	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	Historian OPC Server Web Server with 2 Client License.						
2.2	RTU software Licences for 3 PCs.	Set	2				
2.3	PLC software Licences for 3 PCs.	Set	2				
2.4	SCADA general software applications.	Set	1				
2.5	RTU Application Software for UGRs and BPSs, DMAs.	Set	10				
2.6	Four (4) nos. of Application Softwares as below. (a) Water demand forecast & planning software, (b) Water distribution and pressure management software, (c) Water Leakage management software, (d) Energy management software.	Set	4				
3. Instrumentation System for 10 UGRs and 6 BPSs							
3.1	Electromagnetic Flowmeter DN 100	Nos	1				
3.2	Electromagnetic Flowmeter DN150	Nos	1				
3.3	Electromagnetic Flowmeter DN300	Nos	2				
3.4	Electromagnetic Flowmeter D400	Nos	5				
3.5	Electromagnetic Flowmeter DN500	Nos	2				
3.6	Electromagnetic Flowmeter DN600	Nos	2				
3.7	Electromagnetic Flowmeter DN700	Nos	2				
3.8	Electromagnetic Flowmeter DN800	Nos	1				
3.9	Electromagnetic Flowmeter DN900	Nos	2				
3.10	Ultrasonic Level Transmitter	Nos.	23				
3.11	Water Level Switch	Nos.	27				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.12	Local Level Gauge for UGRs	Nos.	18				
3.13	Pressure Transmitter	Nos.	47				
3.14	Pressure Switch	Nos.	7				
3.15	Pressure Gauge	Nos.	67				
3.16	Drain Pit Level Controller	Nos.	6				
3.17	Portable Temperature Measuring	Nos.	2				
3.18	Portable Vibration Measuring	Nos.	2				
3.19	Local Control Panels	Nos.	9				
3.20	On Line Residual Chlorine Analyser	Nos.	7				
3.21	On Line Turbidity Analyser	Nos.	7				
3.22	Bar Graph Indicator	Nos.	55				
4. Instrumentation for 78 DMAs with 103 Inlets							
4.1	Online Residual chlorine analysers at lowest Pressure points of each DMA.	Nos.	78				
4.2	Pressure Transmitters (103 at inlets, 103 at outlets & 78 at lowest pressure points).	Nos.	284				
4.3	Pressure Gauges (103 at inlets, 103 at outlets & 78 at lowest pressure points).	Nos.	284				
4.4	Local Control Panels (78 for lowest pressure points + 103 for Inlets).	Nos.	181				
4.5	Level switch for valve chamber flooding alarm	Nos.	103				
5. CCTV, FIRE & INTRUDER ALARM (Hardware and Software)							
5.1 TO	Complete Supply, Installation, and Testing & Commissioning of CCTV Monitoring Systems	Sets	10				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
5.11	along with power supply units and video recorder etc. in 10 UGR/BPS areas.						
5.12	Intruder Alarm System for UGRs/BPSs (one Intruder/burglar alarm with adequate nos of motion detectors and one extra system for Jhandewalan PH).	Sets	10				
5.13	Fire Alarm System for BPSs (Cold Wire/Wireless Technology).	Nos.	05				
6. Laboratory Equipment							
6.1	Laboratory Equipment for testing potable water quality as specified in the scope of works	Lot	01				
					Total of this Schedule CW-DB-S&I		

SCHEDULE CW-HM

House Connection and Metering Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.0	**HOUSE SERVICE CONNECTION**						
1.1	**Shifting of HOUSE SERVICE CONNECTION from existing to new pipe**						
1.1.1	Shifting of house service connection from old to new water distribution main upto water meter which includes providing and fixing of composite strap saddle having outer body of non-corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle, seal gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut of SS202 etc. having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow 90 deg., female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code with 15 mm nominal bore with all fittings upto 1.5 m length for above ground portion MDPE pipe of minimum PE 80 grade, PN 16, 20 mm OD upto 4 m length with all fittings including	Each	87184				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	compression elbow in underground portion including tapping and boring in new water distribution main and disconnection of existing house service connection from old water distribution main & plugging the bore hole, depositing all dismantled material i.e. ferrule, house service connection pipe and fittings etc. in the store of department and complete in all respect as per the directions of Engineer-in charge.						
1.1.2	Shifting of house service connection from old to new water distribution main upto water meter which includes providing and fixing of composite strap saddle having outer body of non-corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle, seal gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut of SS202 etc. having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow 90 deg., female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code with 20 mm nominal bore with all fittings upto 1.5 m length for above ground portion MDPE pipe of	Each	3668				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	minimum PE 80 grade, PN 16, 25 mm OD upto 4 m length with all fittings including compression elbow in underground portion including tapping and boring in new water distribution main and disconnection of existing house service connection from old water distribution main & plugging the bore hole, depositing all dismantled material i.e. ferrule, house service connection pipe and fittings etc. in the store of department and complete in all respect as per the directions of Engineer-in charge.						
1.1.3	Shifting of house service connection from old to new water distribution main upto water meter which includes providing and fixing of composite strap saddle having outer body of non-corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle, seal gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut of SS202 etc. having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow 90 deg., female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code with 25 mm	Each	954				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	nominal bore with all fittings upto 1.5 m length for above ground portion MDPE pipe of minimum PE 80 grade, PN 16, 32 mm OD upto 4 m length with all fittings including compression elbow in underground portion including tapping and boring in new water distribution main and disconnection of existing house service connection from old water distribution main & plugging the bore hole, depositing all dismantled material i.e. ferrule, house service connection pipe and fittings etc. in the store of department and complete in all respect as per the directions of Engineer-in charge.						
1.2	**Providing new HOUSE SERVICE CONNECTION from New DI and Existing CI/DI pipes**						
1.2.1	Providing house service connection from new water distribution main upto water meter including providing and fixing of composite strap saddle having outer body of non-corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle seal/gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut SS202 etc.	Each	17913				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow 90 degree, female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code of 15 mm nominal bore with all fittings upto 1.5 m length for above ground portion and MDPE pipe of minimum PE 80 grade, PN 16, size of 20 mm OD upto 4 m length with all fittings including compression elbow in underground portion complete in all respect as per the directions of Engineer-in Charge. (Total connection length upto 5.5 mtr. from tapping point considered) (Item to be used after approval of competent authority).						
1.2.2	Providing house service connection from new water distribution main upto water meter including providing and fixing of composite strap saddle having outer body of non-corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle seal/gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut SS202 etc. having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow	Each	754				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	90 degree, female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code of 20 mm nominal bore with all fittings upto 1.5 m length for above ground portion and MDPE pipe of minimum PE 80 grade, PN 16, size of 25 mm OD upto 4 m length with all fittings including compression elbow in underground portion complete in all respect as per the directions of Engineer-in Charge. (Total connection length upto 5.5 mtr. from tapping point considered) (Item to be used after approval of competent authority).						
1.2.3	Providing house service connection from new water distribution main upto water meter including providing and fixing of composite strap saddle having outer body of non-corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle seal/gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut SS202 etc. having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow 90 degree, female threaded adopter with one sided compression, GI pipe of Class 'B'	Each	189				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	conforming to relevant IS Code of 25 mm nominal bore with all fittings upto 1.5 m length for above ground portion and MDPE pipe of minimum PE 80 grade, PN 16, size of 32 mm OD upto 4 m length with all fittings including compression elbow in underground portion complete in all respect as per the directions of Engineer-in Charge. (Total connection length upto 5.5 mtr. from tapping point considered) (Item to be used after approval of competent authority).						
1.3	**MDPE pipe for bulk connection**						
1.3.1	Providing, laying and jointing MDPE pipes confirming to latest ISO 4427 including fittings confirming to latest ISO 14236 manufactured from virgin resin of minimum PE 80 food grade compounded raw material having blue colour and having pressure rating PN 16, with quality assurance certificate from agencies as approved by Engineer in charge for usage in drinking water inclusive of all taxed, complete in all respect as per direction of Engineer-in charge.						
a	50 mm OD pipe	Mtr.	130				
b	63 mm OD pipe	Mtr.	130				
c	75 mm OD pipe	Mtr.	50				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.4	**Brass stop cock & full way stop valve**						
1.4.1	Providing of brass stop cock & full way valve of approved quality on house service connection. (Fixing charge included in the consumer meter rate)						
a	15 mm	Each	105097				
b	20 mm	Each	4422				
c	25 mm	Each	1143				
d	40 mm	Each	13				
e	50 mm	Each	14				
f	65 mm	Each	5				
2.0	**EXCAVATION**						
	Excavation for bulk connections						
2.1	Excavating trenches of required width for pipes including excavation for sockets and dressing of sides, ramming of bottoms depth upto 1.5 m, including getting out the excavated soil and then returning the soil as required in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavates soil as directed within a lead of 50 m.						
	Pipes not exceeding 80 mm dia						
a	All Kinds of soil	Mtr.	186				
b	Ordinary rock	Mtr.	124				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.2	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm. on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
	All kinds of soil	Cum.	7658				
2.3	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 meters lead as per direction of engineer in charge.						
	Bituminous Road	Sqm.	2626				
2.4	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 meters lead as per direction of Engineer in charge.	Cum.	513				
2.5	Filling available excavated earth (excluding rock) in trenches in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50 m and lift upto 1.5 m.	Cum.	7476				
3.0	**CONSUMER METER**						
3.1	Providing and installing Class B consumer						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	water meter on unmetered connections or removing existing defunct meter and installing new Class B consumer water meter as per IS 779-1994 or ISO 4064. The water meter shall be inferential type, multi jet, magnetically coupled, having dry dial, Brass / Bronze body, Class 'B' conforming to IS-779: 1994 with up to date amendments or ISO 4064:1993 standard with ISI/EEC certification mark, shall be with protection class of IP-68, complete with connecting pieces and all test certificates, including replacement of all defective fittings and submitting the details of new and old meter readings and new meter location to DJB on regular basis. (Rate including fixing of stop cock / full way stop valve)						
a	15 mm	Each	62148				
b	20 mm	Each	2630				
c	25 mm	Each	695				
d	40 mm	Each	13				
e	50 mm	Each	19				
3.2	**BULK METER** Providing and fixing enclosed type water meter (bulk type) confirming to IS:2373 and tested by municipal Board complete with bolts, nuts, rubber insertions etc.						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
a	80 mm	Each	11				
b	100 mm	Each	33				
c	150 mm	Each	17				
d	200 mm	Each	19				
3.3	Providing and fixing CI dirt box strainer for bulk type water meter with bolts, nuts, rubber insertions etc. complete confirming to IS:2373						
a	80 mm	Each	11				
b	100 mm	Each	33				
c	150 mm	Each	17				
d	200 mm	Each	19				
3.4	Providing and fixing of multipath ultrasonic clamp on type flow meter on above 300 mm pipe for isolation of package-3 areas during transient phase for temporary purpose and handover the flow meters to DJB after completion of flow measurement.	Each	28				
4.0	**CONSUMER METER TESTING**						
4.1	Testing of existing working consumer meter for accuracy check in DJB approved lab. Remove existing consumer water meter and fix new Class B meters, Test the removed meter and return to DJB store / house owner if it fails, but if it passes replace it again. Retain the already fixed Class B meters at the failed meter						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	location. The retained meter cost shall be paid as per item 2.01. Test and replacement (if passed) shall be completed within 72 hours after removal. It may be required to establish NABL accredited meter testing facility or to utilize external accredited facilities for testing all size of meters in accordance to the specifications.						
a	15 mm	Each	10505				
b	20 mm	Each	442				
c	25 mm	Each	111				
d	40 mm	Each	13				
e	50 mm	Each	18				
f	80 mm and above	Each	24				
5.0	**ELECTROMAGNETIC FLOW METER**						
5.1	Supply, Installation, Testing and Commissioning of Electromagnetic DMA Flow meters as per detailed technical Specification.						
a	100 mm	Each	14				
b	150 mm	Each	43				
c	200 mm	Each	24				
d	250 mm	Each	10				
e	300 mm	Each	10				
f	350 mm	Each	2				
6.0	**DI SLUICE VALVE FOR BULK**						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	CONSUMER METER						
6.1	Providing & Fixing in position DI manual sluice valve/scour/washout valve and providing flanged joints (2 nos.) including bolts, nuts, 3 mm thick two washers for each bolt, rubber insertion etc. all complete.						
a	80 mm	Each	11				
b	100 mm	Each	33				
c	150 mm	Each	17				
d	200 mm	Each	19				
7.0	**DI BUTTERFLY VALVE FOR DMA METER**						
7.1	Supply, Installation, Testing and Commissioning of electric operated DI butterfly valve as per IS 13095, pressure rating of PN 10 complete with actuator, bolts, nuts, rubber insertions, etc and all test certificates and as per detailed technical Specification. (Construction of RCC chamber measured extra & refer piping BOQ)						
a	100 mm	Each	14				
b	150 mm	Each	43				
c	200 mm	Each	24				
d	250 mm	Each	10				
e	300 mm	Each	10				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
f	350 mm	Each	2				
8.0	**DI FITTINGS**						
8.1	Supply, Installation, Testing and Commissioning of DI fittings of class K-12 flanged type for installation of DMA meter, bulk mechanical meter and valves as per IS 9523, pressure rating of PN 16 complete with bolts, nuts, rubber insertions, etc and all test certificates and as per detailed technical Specification.						
a	Upto 600 mm dia.	Qtl.	2069				
b	Above 600 mm dia.	Qtl.	308				
8.2	Providing flanged joints to double flanged DI pipes and specials including testing of joints.						
a	80 mm dia	Each	48				
b	100 mm dia	Each	286				
c	150 mm dia	Each	783				
d	200 mm dia	Each	305				
e	250 mm dia	Each	263				
f	300 mm dia	Each	396				
g	350 mm dia	Each	156				
h	400 mm dia	Each	24				
i	450 mm dia	Each	6				
j	500 mm dia	Each	3				
k	600 mm dia	Each	3				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
9.0	**MASONRY CHAMBER**						
9.1	Constructing brick masonry manhole chamber in CM 1:4 with RCC top slab with 1:2:4 mix, foundation concrete 1:4:8 mix, inside plastering 12 mm thick with CM 1:3 finished with floating coat of neat cement and making channels in CC 1:2:4 finished with a floating coat of neat cement complete as per standard design of size 1.5 x 1.5 x 1 m.						
	Inside size 120 x 90 cm and 90 cm deep including CI cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and frame 100 kg) with common burnt clay FPS (non-modular) bricks of class designation 7.5	Each	81				
10.0	**PRESSURE ZERO TEST**						
10.1	Conducting Pressure Zero Test (PZT) for DMA boundary confirmation for each DMA by closing boundary valves and measuring pressure at critical locations by installing data logger and confirming the DMA network is clear and as per detailed specification.	Per DMA	78				
11.0	**ESTABLISHMENT OF NRW LEVEL**						
11.1	Determine the NRW level after the completion	Per	78				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	of physical works, PZT and establishment of the DMA indicating leakage and non-leakage component levels in each DMA and submit report for each DMA as well as in the overall contract area by carryout the MNF test as per specification to establish the physical leakage levels in each DMA as well as in the overall Contract area.	DMA					
12.0	**LEAK DETECTION & REPAIR WORKS ON EXISTING PIPES**						
12.1	Leak Detection work on distribution pipes for 3 years during the construction phase. Undertake monitoring of NRW level and its reduction to the target level specified in the document, including undertaking leakage surveys, leak detection, etc. record data, and prepare leakage reduction report in accordance to the DJB requirements and specification.	Km.	2907				
12.2	Labour for cutting CI/DI pipe with steel saw						
12.2.1	100 mm	Each	2636				
12.2.2	150 mm	Each	562				
12.2.3	200 mm	Each	248				
12.2.4	250 mm	Each	110				
12.2.5	300 mm	Each	237				
12.2.6	350 mm	Each	43				
12.2.7	400 mm	Each	77				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.2.8	450 mm	Each	19				
12.2.9	500 mm	Each	8				
12.2.10	600 mm	Each	8				
12.2.11	700 mm	Each	2				
12.2.12	750 mm	Each	6				
12.2.13	800 mm	Each	7				
12.2.14	900 mm	Each	56				
12.3	Leak Repair work on distribution pipes by connecting with new K-7 DI pipe confirming to IS 8329 & DI mechanical fittings (K-12) including cleaning and barricading of pit, etc. complete all as directed by engineer. (Excluding Excise duty component)						
12.3.1	100 mm	Mtr.	2636				
12.3.2	150 mm	Mtr.	562				
12.3.3	200 mm	Mtr.	248				
12.3.4	250 mm	Mtr.	110				
12.3.5	300 mm	Mtr.	237				
12.3.6	350 mm	Mtr.	43				
12.3.7	400 mm	Mtr.	77				
12.3.8	450 mm	Mtr.	19				
12.3.9	500 mm	Mtr.	8				
12.3.10	600 mm	Mtr.	8				
12.4	Leak Repair work on distribution pipes by connecting with new K-9 DI pipe confirming to						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	IS 8329 & DI mechanical fittings (K-12) including cleaning and barricading of pit, etc. complete all as directed by engineer. (Excluding Excise duty component)						
12.4.1	700 mm	Mtr.	1				
12.4.2	750 mm	Mtr.	6				
12.4.3	800 mm	Mtr.	7				
12.4.4	900 mm	Mtr.	56				
12.4	Hire charges of pump set of capacity 4000 litres/hour	Day	560				
12.5	**Customer Survey:**						
	The customer (household) survey is to connect the RMS information of the customer details on the ground thereby spatially enabling the RMS data for better understanding and decision making. It includes Survey of all properties in the package area and to update the collected data in the data base as directed by the Engineer.	LS	1				
12.6	**Asset & survey updation in GIS**						
	Asset updation, Topographic and household survey updation in GIS for the total package area for 3 years during construction period.	LS	1				
					Total of this Schedule CW-HM		

SCHEDULE CW-P

Provisional Sum

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	**Contingency**						
1.1	Cost for Dispute Board (Employer's share)			5,000,000.00		5,000,000.00	
1.2	Any other miscellaneous works						
2	**Cost for payment to Utility Agencies, utility shifting etc.**			9,537,345.00		9,537,345.00	
3	**Road Restoration (Transmission Main)**						
3.1	Restoration charges for bituminous road upto 6m right of way cut for laying pipes, cables or sewers.	sqm	8878.36	1385.00		12,296,528.60	
3.2	Restoration charges for bituminous road above 6m upto road 12mtr right of way cut for laying pipes, cables or sewers.	sqm	19938.74	1626.00		32,420,391.24	
3.3	Restoration charges for Cement concrete Road (above 12.5cm thick) cut for laying pipes, cables or sewers.	sqm	755.82	3799.00		2,871,360.18	
3.4	Restoration charges for Cement concrete Road (upto 12.5cm thick) cut for laying pipes, cables or sewers.	sqm	2131.86	2043.00		4,355,389.98	
4	**Road Restoration (Distribution Works)**						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
4.1	Restoration charges for bituminous road upto 6m right of way cut for laying pipes, cables or sewers.	sqm	108771.73	1385.00		150,648,846.05	
4.2	Restoration charges for bituminous road above 6m upto road 12mtr right of way cut for laying pipes, cables or sewers.	sqm	77233.35	1626.00		125,581,427.10	
4.3	Restoration charges for bituminous road above 12m up to road 18mtr right of way cut for laying pipes, cables or sewers.	sqm	51155.07	2298.00		117,554,350.86	
4.4	Restoration charges for bituminous road above 18mtr right of way cut for laying pipes, cables or sewers.	sqm	74169.82	2831.00		209,974,760.42	
4.5	Restoration charges for Cement concrete Road (above 12.5cm thick) cut for laying pipes, cables or sewers.	sqm	1610.27	3799.00		6,117,415.73	
4.6	Restoration charges for Cement concrete Road (up to 12.5cm thick) cut for laying pipes, cables or sewers.	sqm	433724.21	2043.00		886,098,561.03	
5	Estimate for Arrangement of Decking of Crossover at Pul Bangash / Rani Jhansi Road	Lump Sum	1	9,032,677.69		9,032,677.69	
					Total of this Schedule CW-P	**1,57,14,89,053.98**	

SCHEDULE OM-M1

Civil Works - Routine Operating Cost for Manpower

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	Provision of Manpower for Operation & Maintenance of all the assets under Package 3 (Existing as well as Newly Constructed Works) covering all Civil, NRW management and Customer services works (but excluding Mechanical, Electrical, Instrumentation and SCADA works) as per the scope of works, specification, specified manpower and the terms & conditions of O&M works in the Contract. Note: The minimum number and categories of manpower to be deployed are given in the Works Requirement Scope of Works for O&M Works						
1.1	1st Year of Contract (for 8 months only) excluding preparatory period	L.S	1				
1.2	2nd Year	L.S	1				
1.3	3rd Year	L.S	1				
1.4	4th Year	L.S	1				
1.5	5th Year	L.S	1				
1.6	6th Year	L.S	1				
1.7	7th Year	L.S	1				
1.8	8th Year	L.S	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.9	9th Year	L.S	1				
1.10	10th Year	L.S	1				
1.11	11th Year	L.S	1				
1.12	12th Year	L.S	1				
1.13	13th Year	L.S	1				
Total of this Schedule OM-M1							

SCHEDULE OM-P1

Civil Works- Preventive/ Periodic Maintenance Costs of Pipelines, UGR, Buildings etc.

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	Preventive and Periodic Maintenance Cost (Servicing, Cleaning, Painting, Spare parts etc.) for all the assets under Package 3 (Existing as well as Newly Constructed Works) covering all Civil works (but excluding Mechanical, Electrical, Instrumentation and SCADA works) as per the scope of works, specification and the terms & conditions of O&M works in the Contract						
1.1	4th Year	LS	1				
1.2	5th Year	LS	1				
1.3	6th Year	LS	1				
1.4	7th Year	LS	1				
1.5	8th Year	LS	1				
1.6	9th Year	LS	1				
1.7	10th Year	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.8	11th Year	LS	1				
1.9	12th Year	LS	1				
1.10	13th Year	LS	1				
Total of this Schedule OM-P1							

SCHEDULE OM-R1

Civil Works - Repair and Maintenance Cost

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	Repair and Replacement Cost (Repair of Leaks in Pipeline, etc.) for all the assets under Package 3 (Existing as well as Newly Constructed Works) covering all Civil works (but excluding Mechanical, Electrical, Instrumentation and SCADA works) as per the scope of works, specification and the terms & conditions of O&M works in the Contract						
1.0	**EXCAVATION**						
1.1	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 meters lead as per direction of engineer in charge.						
1.1.1	Bituminous Road	Sqm.	456.00				
1.2	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 meters lead as per direction of Engineer in charge.	Cum.	91.20				
1.3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm. on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
1.3.1	All kinds of soil	Cum.	1368				
1.4	Filling available excavated earth (excluding rock) in trenches in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50 m and lift upto 1.5 m.	Cum.	1368				
2.0	**Repairing of leaks by cutting & replacing of damaged pipe.**						
2.1	Labour for cutting CI/DI pipe with steel saw						
2.1.1	100 mm	Each	1090				
2.1.2	150 mm	Each	126				
2.1.3	200 mm	Each	24				
2.1.4	250 mm	Each	8				
2.1.5	300 mm	Each	8				
2.1.6	350 mm	Each	2				
2.1.7	600 mm	Each	6				
2.2	Proving and laying S&S centrifugally cast (spun) / DI class K-7 pipes confirming to IS 8329						
2.2.1	100 mm	Mtr.	1090				
2.2.2	150 mm	Mtr.	126				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.2.3	200 mm	Mtr.	24				
2.2.4	250 mm	Mtr.	8				
2.2.5	300 mm	Mtr.	8				
2.2.6	350 mm	Mtr.	2				
2.2.7	600 mm	Mtr.	6				
2.30	Providing and laying DI specials of of class K-12 suitable for mechanical jointing as per IS 9523, excluding excise duty component.						
a	Upto 600 mm dia.	Qtl.	262				
				Total of this Schedule OM-R1			

SCHEDULE OM-MISC

Miscellaneous Works (NRW, HSC, GIS etc.) - Civil Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	**House service connection**						
1.1	Providing house service connection from CI/DI distribution main						
	Providing house service connection from new water distribution main upto water meter including providing and fixing of composite strap saddle having outer body of non corrosive engineering plastic (MDPE) moulded with SS304 threaded metal insert for tapping distribution main with 8 mm bore size, saddle seal/gasket of SBR grade 30 NBR, strap of plastic with integrated bolt & nut SS202 etc. having total minimum weight of 0.565 kg, PP compression male threaded metal insert elbow 90 degree, female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code of 15 mm nominal bore with all fittings upto 1.5 m length for above ground portion and MDPE pipe of minimum PE 80 grade, PN 16, size of 20 mm OD upto 4 m length with all fittings including						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	compression elbow in underground portion complete in all respect as per the directions of Engineer-in Charge. (Total connection length upto 5.5 mtr. from tapping point considered) (Item to be used after approval of competent authority).						
a	15 mm	Each	3153				
b	20 mm	Each	133				
c	25 mm	Each	34				
1.2	**Brass stop cock & full way stop valve**						
1.2.1	Providing of brass stop cock & full way valve of approved quality on house service connection. (Fixing charge included in the consumer meter rate)						
a	15 mm	Each	3153				
b	20 mm	Each	133				
c	25 mm	Each	34				
2	**Consumer Meters**						
2.1	Providing and installing Class B consumer water meter on unmetered connections or removing existing defunct meter and installing new Class B consumer water meter as per IS 779-1994 or ISO 4064. The water meter shall be inferential type, multi jet, magnetically coupled, having dry dial, Brass / Bronze body, Class 'B' conforming to IS-779: 1994 with up to date amendments or						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	ISO 4064:1993 standard with ISI/EEC certification mark, shall be with protection class of IP-68, complete with connecting pieces and all test certificates, including replacement of all defective fittings and submitting the details of new and old meter readings and new meter location to DJB on regular basis. (Rate including fixing of stop cock / full way valve)						
a	15 mm	Each	77685				
b	20 mm	Each	3288				
c	25 mm	Each	869				
3	**Testing of consumer meters**						
3.1	Testing of existing working consumer meter for accuracy check in DJB approved lab. Remove existing consumer water meter and fix new Class B meters. Test the removed meter and return to DJB store / house owner if it fails, but if it passes replace it again. Retain the already fixed Class B meters at the failed meter location. The retained meter cost shall be paid as per item 2.01. Test and replacement (if passed) shall be completed within 72 hours after removal. It may be required to establish NABL accredited meter testing facility or to utilize external accredited facilities for testing all size of meters in accordance to the specifications.						

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
a	15 mm	Each	2626				
b	20 mm	Each	111				
c	25 mm	Each	28				
4.0	**GIS Updation**						
4.1	Asset updation and household survey updation in GIS for the total package area as per specification for 10 years during post-construction O&M period. (ArcGIS Software to be used same bought during construction period)						
4.1.1	All-in-one Computer -Desktop	Nos	1				
4.1.2	Colour Printer/Plotter	Nos	1				
4.1.3	GIS Analyst	Person-month	120				
4.1.4	Stationary item	Years	10				
5	**Supplying water by Tankers including arranging tankers along with its operating cost e.g. driver, helper, fuel. Tankers can be filled in with water at filling stations situated within the project area at UGRs etc.**						
5.1	1st Year of Contract (for 8 month sonly) Excluding preparatory period.	KL	400				
5.2	2nd Year	KL	600				
5.3	3rd Year	KL	600				
5.4	4th Year	KL	300				
5.5	5th Year	KL	300				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
5.6	6th Year	KL	300				
5.7	7th Year	KL	300				
5.8	8th Year	KL	300				
5.9	9th Year	KL	300				
5.10	10th Year	KL	300				
5.11	11th Year	KL	300				
5.12	12th Year	KL	300				
5.13	13th Year	KL	300				
	Total of this Schedule OM- MISC						

SCHEDULE OM-M2

Routine Operating Cost for Manpower- E/M Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	Provision of Manpower (Establishment) for Operation & Maintenance of all the assets under Package 3 (Existing as well as Newly Constructed Works) covering all Mechanical, Electrical, Instrumentation, SCADA works (but excluding Civil, NRW & customer management works) as per the scope of works, specification, specified manpower and the terms & conditions of O&M works in the Contract. Note: The minimum number and categories of manpower to be deployed are given in the Works Requirement, Scope of Works for O&M Works.						
1.1	1st Year of Contract (for 8 months only) excluding preparatory period	LS	1				
1.2	2nd Year	LS	1				
1.3	3rd Year	LS	1				
1.4	4th Year	LS	1				
1.5	5th Year	LS	1				
1.6	6th Year	LS	1				
1.7	7th Year	LS	1				
1.8	8th Year	LS	1				
1.9	9th Year	LS	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.10	10th Year	LS	1				
1.11	11th Year	L.S	1				
1.12	12th Year	L.S	1				
1.13	13th Year	L.S	1				
Total of this Schedule OM-M2							

SCHEDULE OM-PR

Preventive maintenance, Repair and Replacement Cost- E/M Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	Preventive maintenance, Repair and Replacement Cost including (a) Consumables cost - diesels, oil, liquid, grease, water, chemicals/Salt cost etc. (b) Preventive/Periodic maintenance cost – servicing, cleaning, painting checking & remedial actions on daily, monthly, quarterly, half-yearly, yearly basis etc. (c) Repair/Replacement/major breakdown cost – Breakdown of E/M/I/S equipment, replacements due to life expiration, Up-dation of Software, License & Permits etc. but excluding the cost of electricity power cost within the guaranteed limit for all the assets under Package-3 (Existing as well as Newly Constructed Works) covering all Mechanical, Electrical, Instrumentation, SCADA works (excluding NRW management and Customer services works) as per the scope of works, specification and the terms & conditions of O&M works in the Contract.						
1.1	1st Year of Contract (for 8 months only) excluding preparatory period	L.S	1				
1.2	2nd Year	L.S	1				

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.3	3rd Year	L.S	1				
1.4	4th Year	L.S	1				
1.5	5th Year	L.S	1				
1.6	6th Year	L.S	1				
1.7	7th Year	L.S	1				
1.8	8th Year	L.S	1				
1.9	9th Year	L.S	1				
1.10	10th Year	L.S	1				
1.11	11th Year	L.S	1				
1.12	12th Year	L.S	1				
1.13	13th Year	L.S	1				
Total of this Schedule OM-PR							

SCHEDULE OM-PG

Details of Power Guarantees for Electricity consumption and Solar Power Generation

(Separate sheet/s to be filled up for each year starting from 4th year to 13th year)

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
A	**Pumping Station/UGR**								
I	**Jhandewalan UGR & BPS**								
i)									
ii)									
iii)									
iv)									
v)									
vi)									
II	**Idgah UGR**								

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
	& BPS								
i)									
ii)									
iii)									
iv)									
III	**Canttpalam-II UGR & BPS**								
i)									
ii)									
iii)									
iv)									
IV	**Ramjas UGR & BPS**								

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
i)									
ii)									
iii)									
iv)									
V	**Ridge Road UGR & BPS**								
i)									
ii)									
iii)									
iv)									
VI	**Hindu Rao UGR & BPS**								
i)									
ii)									

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
iii)									
iv)									
VII	**Flagstff UGR**								
i)									
ii)									
VIII	**Jeetgarh UGR**								
i)									
ii)									
IX	**Tal katora UGR**								
i)									
ii)									
X	**Hasanpur**								

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
	UGR								
i)									
ii)									
XI	**Canttpalam I UGR**								
i)									
ii)									
								Total electricity consumption, A	**……KWh**
B	**Solar Power generation**								
i)	**Jhandewalan**								……KWh
ii)	**Idgah**								……KWh
iii)	**CanttPalam - II**								……KWh
iv)	**Ramjas**								……KWh

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
v)	**Ridge Road**								……KWh
vi)	**Hindu Rao**								……KWh
vii)	**Flag staff**								……KWh
viii)	**Jeetgarh**								……KWh
ix)	**Talkatora**								……KWh
x)	**Hasanpur**								……KWh
								Total Solar Power Generated - B	……KWh
								Net-Total ‘C’= (A – B)	……KWh
								Net-Total ‘C’ converted in KVA with a minimum power factor of 0.98 (KWh/0.98)	……KVAh
D	**Electricity consumption by Zonal WMC, SCADA and DMA’s**								
i)									
ii)									
iii)									
iv)									
								Sub-Total ‘D’	……KWh
								Sub-Total ‘D’ converted in KVA with a minimum power factor of 0.98 (KWh/0.98)	……KVAh

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor(KW)	Recommended Rating of Motor(KW)	Unit running Hrs / Day	Total Running Hours in one year	Total Electricity consumption in one year (O&M Period) in (KWh)
	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
E	**Electricity consumption for other uses (Buildings, Road and Yard lightings etc.)**								
i)									
ii)									
iii)									
	Sub-Total 'E'								……KWh
	Sub-Total 'E' converted in KVA with a minimum power factor of 0.98 (KWh/0.98)								……KVAh
	Total Guaranteed Power Consumption/year at Power company meter G = [C + D + E]								……KVAh

Notes:

(1) Penalty/recovery of electricity charges shall be beyond guaranteed value on annual basis as per prevailing rates of power Distribution Company including all other charges.

(2) Penalty/recovery shall be on billing cycle basis for not maintaining Power Factor of minimum 0.98.

(3) Power and Solar guarantees shall be calculated based on each financial year for recovery, if any.

We confirm that we have included all equipment required & other load and it shall be the total sum of maximum power consumed by equipment. The list of equipment and power consumed per year are final and guaranteed for entire O&M period.

Key Performance Indicators
And
Service Level Agreement

"Covered under Sub-Section 2. of O&M in VOLUME – II"