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

NIT NO. 02(2019-20)/EE (Project) W-II

VOLUME: V / V
BIDDING DOCUMENTS
(PRICE BID)

TENDER DOCUMENT

FOR

PACKAGE – 2 (West)

**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 (West)**

ON

INTERNATIONAL COMPETITIVE BIDDING

May 2019

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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 date Index	Bidder's related currency amount	Weighting
1	Nonadjustable	—	—	—	0.15
2	Labour	UAMM(Delhi)		INR	0.212
3	Material	AIWPI	Calculated by "b) Further break-up of material"	INR	0.595
4	Petrol, oil & Lubricant	AIWPI(POL)		INR	0.043
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 date Index	Bidder's related currency amount	Weighting
3(a)	Cement	AIWPI for cement (Manufacture of Cement, Lime and Plaster)		INR	0.595 x [3 (a) / Total, in Column (e)]
3(b)	Steel	AIWPI for (Mild Steel Long products)		INR	0.595 x [3 (b) / Total, in Column (e)]
3(c)	Balance Material	AIWPI (All Commodities)		INR	0.595 - [3 (a) + 3(b), in Column (f)]
Total					0.595

Instruction;

- (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 date Index	Bidder's related currency amount	Weighting
1	Nonadjustable	—	—	—	0.15
2	Labour	UAMM(Delhi)		INR	0.40
3	Material	AIWPI		INR	0.40
4	Petrol, oil & Lubricant	AIWPI(POL)		INR	0.05
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 Ministry of Labour.

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

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, bracing 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 principle 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 $\pm 10\%$ 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.

O&M Works

General:

19. A brief guideline on the O&M Scope of Works applicable in each year of contract period may be noted as follows.
- 1st, 2nd and 3rd years: only existing system would be available.
 - 4th and 5th year: some newly constructed works will be added and some of the existing work/system may be discarded/abandoned

- 6th to 10th 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.

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.
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 1/3 rd height of the Structure/ Building	15	40	Paid on each item as applicable when milestone

Milestone	Payment in % of lump sum item		Comments
	Increment	Total	
			reached
Upon completion of works up to 2/3 rd 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 10 Kms of pipes at a time. Next instalment will be released such that the maximum quantities of supplied but unlaied 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)			

**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			
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 Performance Security as per terms of this Tender.	Year	5				
1.2	Providing insurance for the Works and Contractor's Equipment (CAR POLICY).	Year	5				
1.3	Providing third party insurance for Rs. 50,00,000 for the duration of Contract	Year	5				
1.4	Providing insurance for Contractor's Personnel.	Year	5				
1.5	Professional Indemnity Insurance of Contract Cost up to DNP.	Year	5				
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	60				
3	Temporary Works, Safety and Environmental Protection						
3.1	All Kinds of Temporary Works e.g. Access Roads, Diversion Roads, Store/yards, Utility Connections, Protection of existing Structures	Job	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	etc. as required.						
3.2	All Kinds of Safety and Security related Works including personal protective equipment, First aid kit, medical and rescue services etc.	Month	60				
3.3	Occupational safety and Health Audit	No.	10				
3.4	Compliance on Environmental monitoring and Environmental Management Plan (Air, Water, Dust, Noise etc.)	Month	60				
4	Quality Control Tests and Inspections						
4.1	Establishment of Site Laboratories with necessary Equipment	Job	1				
4.2	All kinds of QA/QC tests on-site and in laboratory required as per Specification and QAP e.g. Concrete Cube test, Slump tests, Soil Compaction tests etc.	Month	60				
4.3	All Kinds of Factory Inspections required as per Specification for Materials, Plants and Equipment e.g. Pipes & Valves, Plant, Pumps, other E/M equipment, Instrumentation & SCADA equipment etc.	Job	1				
5	Survey and Investigations						
5.1	All kinds of Topographic/ Ground Surveys and mapping of underground utilities	Job	1				
5.2	All kinds of Soil and Geo-technical Investigations	Job	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
5.3	All kinds of Water Quality Studies	Job	1				
6	Design Services and Documents						
6.1	Preparation of Detailed design, Working Drawings and Method Statements as per scope of works and specifications	Job	1				
6.2	Progress Report, Video and Photographs for the construction period	Month	60				
6.3	Preparation of Final As-built/As-laid drawings	Job	1				
6.4	Preparation of O&M Manuals as required	Job	1				
6.5	Supply of all codes (BS & ISO), standards and manuals as per specification for Engineer's use	Job	1				
7	Trainings as per tender requirements						
7.1	On-site Training for 20 persons for 15 days	Job	1				
8	Provision of Specified Professional and Application Software's for Work						
8.1	Project Manager	Month	60				
8.2	Health, Safety, Welfare and Security (HSWS) officer	Month	60				
8.3	Planning Engineer	Month	60				
8.4	Project Monitoring Software	No	1				
8.5	Computerized Maintenance Management Software (CMMS)	No	1				
9	Cost for Commissioning Tests including manpower, tools, consumables, water quality analyses etc. but excluding electricity	Job	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
10	Cost for Trial Run including cost of manpower, tools, spare parts, consumables, water quality analyses etc. but excluding raw water and electricity	Month	6				
11	Miscellaneous works and services						
11.1	Provision of special tools and tackle for O&M	Job	1				
11.2	Liaison work with external agencies for getting permissions, licences and registrations.	Job	1				
11.3	Water cost for hydraulic/leakage test, flushing and disinfection of water retaining structures, Pipes etc. testing	Job	1				
Total of this Schedule CW-G							

SCHEDULE CW-TM

Transmission Mains- Civil Works

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.1	Carriage of materials by Mechanical Transport including loading, unloading and stacking:-						
	Lime, Moorum, building, rubbish						
1.1.1	Lead 5 km	cum	100.00				
1.1.2	Beyond 5 km upto 10 km per km	cum	150.00				
1.1.3	Beyond 10 km upto 20 km 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	40382.63				
2.2	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m						

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				Local	Foreign	Local	Foreign
	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	13460.88				
2.2.2	Hard Rock (blasting prohibited)	cum	13460.88				
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	945.50				
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.						

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				Local	Foreign	Local	Foreign
2.4.1	Ordinary Rock.	cum	315.17				
2.4.2	Hard Rock. (blasting prohibited)	cum	315.17				
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	474.00				
2.5.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	474.00				
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	150.00				
2.6.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	150.00				
2.7	Filling available excavated with (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	47017.85				
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	12154.25				
2.8.2	Ordinary or hard rock	cum	8102.84				

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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	923.95				
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	1500.00				
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	19.03				
3.1.2	1:3:6 (1 Cement : 3 coarse sand (Zone-III) : 6 graded stone aggregate 40 mm nominal size)	cum	192.73				
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 :						

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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	2522.49				
4.2	Centering and shuttering including strutting, propping etc. and removal of form for all heights :						
4.2.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	3325.14				
4.2.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	sqm	643.04				
4.2.3	Suspended floors, roofs, landings, balconies and access platform	sqm	33.30				
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	47963.10				
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						

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				Local	Foreign	Local	Foreign
	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 contentconsidered 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	11.83				
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 kg/cum)	cum	5.00				
4.6	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Quintal	5.00				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
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	107.87				
5	Brick Work						
5.1	Brick work with common burnt clay F.P.S.						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	(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	8.00				
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	12.00				
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	510.80				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
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	785.59				
7.3	Welding by gas or electric plant including transportation of plant at site etc. complete.	cm	3104867.78				
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 the 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	35.35				
9	Dismantling and Demolishing						
9.1	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 Meters lead as per direction of	cum	5.00				

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				Local	Foreign	Local	Foreign
	Engineer - in- charge.						
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 Meters 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 Meters lead as per direction of Engineer-in-charge :						
9.5.1	In cement mortar	cum	20.00				
9.6	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	Kg	50.00				

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				Local	Foreign	Local	Foreign
	stacking within 50 Meters lead.						
9.7	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kiloMeter, as per direction of Engineer-in-charge.	cum	1716.82				
10	Road Work						
10.1	Providing and laying 60mm thick faciory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved s;ze, 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	10.00				
10.2	Providing and erecting 2.00 Meter high temporary barricading at site as per drawing/ 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-	Meter	812				

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				Local	Foreign	Local	Foreign
	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).						
10.3	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 Meter lead as per direction of Engineer-in-Charge.	sqm	100.00				
10.4	Laying old cement concrete interlocking	sqm	80.00				

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				Local	Foreign	Local	Foreign
	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).						
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 coarse 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.						
10.5.1	80mm thick Cement concrete paver block of	sqm	10.00				

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				Local	Foreign	Local	Foreign
	M-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 :						
11.1.1	400 mm diameter pipe	Each	2.00				
11.1.2	600 mm diameter pipe	Each	2.00				
11.2	Supplying pig lead at site of work.	quintal	0.62				
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	400 mm dia pipes	joints	142.00				
11.3.2	500 mm dia pipes	joints	1.00				
11.3.3	600 mm dia pipes	joints	102.00				
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 repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory.						
11.4.1	400 mm diameter pipe	100 Meter	7.09				
11.4.2	500 mm diameter pipe	100 Meter	0.04				

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				Local	Foreign	Local	Foreign
11.4.3	600 mm diameter pipe	100 Meter	5.09				
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	157.00				

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				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.	day	15.00				
12.3	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	2.63				
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.	47410.30				
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.	1918.52				
12.6	Providing and erecting 1.60 m high corrugated G.I. sheets barricading supported on safeda ballies 100 mm dia, two Meter high placed at 2.5 m c/c corrugated G.I.sheets fixed with nails of required length and dia to safeda ballies i/c excavating holes of size 0.3x0.30x0.40mt getting out the excavated soil and then returning the soil i/c	sqm	320.00				

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				Local	Foreign	Local	Foreign
	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 -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 excluding excise duty component.						
12.7.1	400 mm dia.	Meter	709.00				
12.7.2	500 mm dia.	Meter	4.00				
12.7.3	600 mm dia.	Meter	509.00				
12.8	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS:9523 excluding excise duty component.						
12.8.1	Up to 600mm dia.	Qtl.	1.29				
12.9	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						

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				Local	Foreign	Local	Foreign
	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.						
12.9.1	700 mm nominal dia. (clear internal dia.) pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	4256.00				
12.9.2	800 mm nominal dia. (clear internal dia.) pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	20.00				
12.9.3	1000 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	2597.00				
12.9.4	1200 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining	Meter	1782.00				
12.9.5	1400 mm nominal dia. (clear internal dia.) pipes of 12 mm thickness (min) and 12 mm thick internal Cement mortar lining.	Meter	6631.00				
12.10	Providing Mild Steel Pipes fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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.						
12.10.1	1000 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	35.00				
12.10.2	1400 mm nominal dia. (clear internal dia.) pipes of 12 mm thickness (min.)	Meter	293.00				
12.11	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.						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.11.1	600 mm nominal dia. (clear internal dia.) specials of 8 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	1282.08				
12.11.2	700 mm nominal dia. (clear internal dia.) specials of 8 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	11134.80				
12.11.3	1000 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	34965.04				
12.11.4	1200 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining	kilogram	22810.32				
12.11.5	1400 mm nominal dia. (clear internal dia.) specials of 12 mm thickness (min.) and 12 mm thick internal cement mortar lining.	kilogram	121660.00				
12.12	Ultrasonic testing of welded joints at site.	Rm	1502.32				
12.13	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.						
12.14.1	700 mm dia	Meter	4256.00				
12.14.2	800 mm dia	Meter	20.00				

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				Local	Foreign	Local	Foreign
12.14.3	1000 mm dia	Meter	2632.00				
12.14.4	1200mm Dia	Meter	1782.00				
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.						
12.15.1	400 mm nominal dia (clear internal dia) pipes	Meter	709.00				
12.15.2	500 mm nominal dia (clear internal dia) pipes	Meter	4.00				
12.15.3	600 mm nominal dia (clear internal dia) pipes	Meter	509.00				
12.15.4	700 mm nominal dia (clear internal dia) pipes	Meter	4256.00				
12.15.5	800 mm nominal dia (clear internal dia) pipes	Meter	20.00				
12.15.6	1000 mm nominal dia (clear internal dia) pipes	Meter	2597.00				
12.15.7	1200 mm nominal dia (clear internal dia) pipes	Meter	1782.00				
12.15.8	1400 mm nominal dia (clear internal dia) pipes	Meter	6631.00				
13.5	Installation of product pipe by manual pipe jacking method in mixed soil tye at required depth and for maximum drive length of 100						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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 seperately)						
13.5.1	900 mm to 1000 mm diameter	Meter	35.00				
13.5.2	1200mm to 1500mm dia	Meter	84.00				
13.6	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	394.20				
13.7	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,						

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				Local	Foreign	Local	Foreign
	reaming and pulling back the new pipe-work on the designed bore path alingment, 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.						
13.7.1	Steel Pipes above 1300mm & upto 1700mm						
13.7.1.1	In Hard Rock	Meter	209.00				
13.8	Providing/Supplying & Installation at site ISI Mark Ductile Iron manually operated Butterfly 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, taxes, providing flange joints two number, labour required, transportation up to site, loading, unloading & stacking, erection etc. complete as per IS-13095 specifications or as directed by Engineer-In-Charge.						
13.8.1	500 mm dia	Each	1.00				
13.8.2	800 mm dia	Each	3.00				
13.8.3	1000 mm dia	Each	1.00				
13.9	Disinfection of water mains by flushing with						

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				Local	Foreign	Local	Foreign
	water containing bleaching powder @0.5 gm per liter of water and cleaning the same, getting the samples from disinfected w/main tested in DJB Laboratory.Operation to be repeated three times.						
13.9.1	1400 mm dia	Meter	6924.00				
13.10	Providing/Supplying & Installation at site ISI Mark Ductile Iron Sluice Valves of rating PN 1.0 with EPDM rubber gaskets, rubber sheet and MS nuts & bolts as per requirements, field testing & commissioning complete as per specifications, including all cost of materials, providing flanged 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. These rates are excluding excise duty component.						
13.10.1	400 mm Dia	Each	2				
13.10.2	500 mm Dia	Each	1				
13.11	Providing and fixing in position D.I. Manual Scour/Washout Valve and providing flanged joints (2 nos.) including bolts, nuts, 3mm thick two washers for each bolt, rubber insertion etc. all complete. .						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
13.11.1	800 mm dia valve	Each	4.00				
13.12	Providing and fixing in position DI Double Orifice Air Valve and providing flanged joints (one no.) i.e. cost bolts, nuts, rubber insertion etc. (3mm thick two washers for each bolt) all complete i/c testing to the specified head by filling water as per specification and as directed by Engineer-in-charge.						
13.12.1	150 mm dia	Each	2.00				
13.12.2	200 mm dia	Each	8.00				
13.13	Providing SFRC Manhole cover as per standard and specification complete and as per Engineer-in-charge.						
13.13.1	900mm dia.	Each	4.00				
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	Carriage of materials by Mechanical Transport including loading, unloading and stacking:-						
	Lime,Moorum, building, rubbish						
1.1.1	Lead 5 km	cum	1617.22				
1.1.2	Beyond 5 km upto 10 km per km	cum	92.00				
1.1.3	Beyond 10 km upto 20 km per km	cum	114.38				
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	11850.77				

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				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	3950.25				
2.2.2	Hard Rock (blasting prohibited)	cum	3950.25				
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	92883.69				
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						

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				Local	Foreign	Local	Foreign
	directed, within a lead of 50 m.						
2.4.1	Ordinary Rock.	cum	30056.95				
2.4.2	Hard Rock. (blasting prohibited)	cum	30056.95				
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) :						
2.5.2	Depth not exceeding 1.50mtr	sqm	75099.97				
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	6900.00				
2.7	Filling available excavated with (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	153923.38				
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	1528.22				
2.7.3	Ordinary or hard rock	cum	1018.81				
2.8	Supplying and filling in plinth with sand under floors, including watering, ramming,	cum	4078.12				

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				Local	Foreign	Local	Foreign
	consolidating and dressing complete.						
2.9	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	10600.00				
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	283.61				
3.1.2	1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 40 mm nominal size).	cum	18.40				
3.1.3	1:3:6(1 Cement:3 Coarse sand Zone-III:6graded stone aggregate20mm nominal size)	cum	312.35				
3.1.4	1:3:6 (1 Cement : 3 coarse sand (Zone-III) : 6 graded stone aggregate 40 mm nominal size)	cum	476.13				
3.2	Providing and fixing up to floor five level precast cement concrete string or lacing courses, copings, bed plates, anchor blocks,						

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				Local	Foreign	Local	Foreign
	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 graded stone aggregate 20mm nominal size).	cum	32.37				
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	1609.59				
4.2	Centering and shuttering including strutting, propping etc. and removal of form for all heights :						
4.2.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	8583.13				
4.2.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	sqm	4730.37				
4.2.3	Suspended floors, roofs, landings, balconies and access platform	sqm	169.20				
4.2.4	Lintels, beams, plinth beams, girders,	sqm	1391.56				

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				Local	Foreign	Local	Foreign
	bressumers and cantilevers						
4.2.5	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	472.19				
4.2.6	Extra for shuttering in circular work (20% of respective centering and shuttering items)	sqm	32.99				
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 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	223.10				
4.4	Steel Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.						
4.4.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	321537.58				
4.5	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement						

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	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).						
4.5.1	All works upto plinth level	cum	41.32				
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	70.00				
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	35.00				

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4.7	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Quintal	35.00				
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 servicelines etc., providing steel hooks for lifting etc, form work in precasting, handling, hoisting, centering and erection complete for all floor levels but, excluding the cost of reinforcement.	cum	713.93				
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						

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	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	1302.88				
4.9.2	All works above plinth level upto floor V level	cum	443.37				
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	920.00				
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						

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	nominal size) upto plinth level with :						
6.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	368.00				
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	552.00				
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	99657.17				
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	5261.67				
7.3	Welding by gas or electric plant including transportation of plant at site etc. complete.	cm	116069.47				
8	Finishing						
8.1	12mm cement plaster of mix:						
8.1.1	1:4 (1 cement : 4 coarse sand)	sqm	2300.00				

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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 Coarse sand)	sqm	2300.00				
8.3	Neat cement punning	sqm	2300.00				
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	236.81				
9	Dismantling and Demolishing						
9.1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 Meters 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	892.42				
9.2	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 Meters lead as per direction of Engineer - in- charge.	cum	230.00				
9.3	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B.	sqm	1150.00				

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	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.						
9.4	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work.	Kg	23000.00				
9.5	Demolishing brick work 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.						
9.5.1	In cement mortar	cum	920.00				
9.6	Demolishing stone rubble masonry 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 :						
9.6.1	In cement mortar	cum	920.00				
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 50 Meters lead.	Kg	2300.00				
9.8	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1	cum	3783.71				

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	kiloMeter, as per direction of Engineer-in-charge.						
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	3989.52				
10	Road Work						
10.1	Supplying and stacking at site.						
10.2	Good earth	cum	16733.99				
10.3	Providing and laying 60mm thick faciory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved s;ze, 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	70.00				
10.4	Providing and erecting 2.00 Meter high temporary barricading at site as per drawing/ direction of Engineer-in-Charge which includes writing and painting, arrangement for	Meter	4456.00				

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	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 stacking of serviceable material within 50	Meter	700.00				

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	Meter 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	560.00				
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 coarse 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						

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	manufacturer's specifications & direction of Engineer-in-Charge.						
10.7.1	80mm thick Cement concrete paver block of M-30 grade with approved colour, design & pattern.	sqm	70.00				
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 :						
11.1.1	100 mm diameter pipe	Each	56.00				
11.1.2	150 mm diameter pipe	Each	62.00				
11.1.3	200 mm diameter pipe	Each	48.00				
11.1.4	250 mm diameter pipe	Each	70.00				
11.1.5	300 mm diameter pipe	Each	36.00				
11.1.6	350 mm diameter pipe	Each	34.00				
11.1.7	400 mm diameter pipe	Each	28.00				
11.1.8	500 mm diameter pipe	Each	24.00				
11.1.9	600 mm diameter pipe	Each	22.00				
11.2	Supplying pig lead at site of work.	quintal	26.92				
11.3	Providing flanged joints to double flanged C.I./ D.I. pipes and specials, including testing of joints :						
11.3.1	100 mm diameter pipe	Each	113.00				
11.3.2	150 mm diameter pipe	Each	18.00				
11.3.3	200 mm diameter pipe	Each	13.00				

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11.3.4	300 mm diameter pipe	Each	6.00				
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	39678.00				
11.4.2	150 mm dia pipes	joints	7638.00				
11.4.3	200 mm dia pipes	joints	3162.00				
11.4.4	250 mm dia pipes	joints	2819.00				
11.4.5	300 mm dia pipes	joints	1059.00				
11.4.6	350 mm dia pipes	joints	1814.00				
11.4.7	400 mm dia pipes	joints	1056.00				
11.4.8	500 mm dia pipes	joints	1768.00				
11.4.9	600 mm dia pipes	joints	907.00				
11.4.10	800 mm dia pipes	joints	2.00				
11.4.11	1000 mm dia pipes	joints	4.00				
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	100 mm dia Ductile Iron Double Flanged	Meter	483.00				
11.5.2	150 mm dia Ductile Iron Double Flanged	Meter	90.00				
11.5.3	200 mm dia Ductile Iron Double Flanged	Meter	65.00				
11.5.4	300 mm dia Ductile Iron Double Flanged	Meter	30.00				
11.6	Disinfecting C.I. water mains by flushing with						

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	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	100 mm diameter pipe	100 Meter	2694.90				
11.6.2	150 mm diameter pipe	100 Meter	492.77				
11.6.3	200 mm diameter pipe	100 Meter	171.94				
11.6.4	250 mm diameter pipe	100 Meter	143.92				
11.6.5	300 mm diameter pipe	100 Meter	54.45				
11.6.6	350 mm diameter pipe	100 Meter	90.00				
11.6.7	400 mm diameter pipe	100 Meter	52.30				
11.6.8	500 mm diameter pipe	100 Meter	87.90				
11.6.9	600 mm diameter pipe	100 Meter	45.11				
11.7	Labour for cutting pipe with steel saw.						
11.7.1	100 mm diameter pipe	Each cut	1174.00				
11.7.2	150 mm diameter pipe	Each cut	223.00				
11.7.3	200 mm diameter pipe	Each cut	57.00				
11.7.4	250 mm diameter pipe	Each cut	6.00				
11.7.5	300 mm diameter pipe	Each cut	16.00				
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	Each	1514.00				

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	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.						
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.	day	85.00				
12.3	Surface Box	Each	870.00				
12.4	Providing in position 12mm dia. & 450mm long SS Bolt including Nuts, anchoring plate & washers as required complete as per standard	Kg	48.34				

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	and specification and as per Engineer-in-charge.						
12.5	Anchor Fastner - M10	Each	12591.00				
12.6	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.	1225.43				
12.7	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.	27.55				
12.8	Providing and erecting 1.60 m high corrugated G.I. sheets barricading supported on safeda ballies 100 mm dia, two Meter high placed at 2.5 m c/c corrugated G.I.sheets fixed with nails of required length and dia to safeda ballies 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 -Charge.	sqm	13280.00				

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	(The barricading dismantled on completion of the work shall remain the property of contractor).						
12.9	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	105.00				
12.9.1	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron class K-9 Pipes confirming to IS : 8329 excluding excise duty component.						
12.9.1.1	200 mm dia	Meter	1269.00				
12.9.1.2	250 mm dia	Meter	2065.51				
12.9.1.3	300 mm dia	Meter	1258.18				
12.9.1.4	350 mm dia	Meter	4883.00				
12.9.1.5	400 mm dia.	Meter	2940.81				
12.9.1.6	500 mm dia.	Meter	8973.25				
12.9.1.7	600 mm dia.	Meter	4327.36				
12.9.1.8	800 mm dia.	Meter	7.00				
12.9.1.9	1000 mm dia.	Meter	17.42				
12.10	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron class K-7 Pipes confirming to IS : 8329 excluding excise duty component.						
12.10.1	100 mm Dia	Meter	198314.27				

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12.10.2	150 mm Dia	Meter	38093.85				
12.10.3	200 mm Dia	Meter	14443.72				
12.10.4	250 mm Dia	Meter	11918.60				
12.10.5	300 mm Dia	Meter	3945.50				
12.10.6	350 mm Dia	Meter	4117.93				
12.10.7	400 mm Dia	Meter	2289.00				
12.11	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS:9523 excluding excise duty component.						
12.11.1	Up to 600mm dia.	Qtl.	1939.52				
12.11.2	Above 600mm dia.	Qtl.	8.00				
12.12	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.						
12.12.1	Up to 600mm dia.	Qtl.	776.47				
12.13	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						

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	directed by Engineer-in-charge. The rates are excluding excise duty component.						
12.13.1	800 mm nominal dia. (clear internal dia.) pipes of 8 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	566.57				
12.13.2	900 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min) and 9 mm thick internal Cement mortar lining.	Meter	106.02				
12.14	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.						
12.14.1	900 mm nominal dia. (clear internal dia.) pipe of 10mm thickness (min.), 9mm internal Cement mortar lining and outside epoxy coating.	Meter	26.00				
12.15	Providing Mild Steel Pipes fabricated / manufactured out of MS plate of steel grade Fe410 as per IS 3589:2001 or out of HR coils						

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				Local	Foreign	Local	Foreign
	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.						
12.15.1	250 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	43.00				
12.15.2	300 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	19.00				
12.15.3	350 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	30.00				
12.15.4	400 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	60.00				
12.15.5	500 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	29.00				
12.15.6	600 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	53.00				
12.15.7	800 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	59.00				
12.15.8	900 mm nominal dia. (clear internal dia.) pipes of 10 mm thickness (min.)	Meter	30.00				
12.16	Providing Mild Steel Specials fabricated / manufactured out of MS plate of steel grade						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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.						
12.16.1	900 mm nominal dia. (clear internal dia.) specials of 10 mm thickness (min.) and 9 mm thick internal cement mortar lining.	kilogram	2755.44				
12.17	Ultrasonic testing of welded joints at site.	Rm	62.20				
12.18	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.						
12.18.1	800 mm dia	Meter	633.00				
12.18.2	900 mm dia	Meter	162.00				
12.18.3	1000 mm dia	Meter	17.00				
12.19	Filling water into water main for testing to the specified head, water to be arranged by sinking						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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.						
12.19.1	100 mm nominal dia (clear internal dia) pipes	Meter	198344.27				
12.19.2	150 mm nominal dia (clear internal dia) pipes	Meter	37656.85				
12.19.3	200 mm nominal dia (clear internal dia) pipes	Meter	15573.72				
12.19.4	250 mm nominal dia (clear internal dia) pipes	Meter	13763.11				
12.19.5	300 mm nominal dia (clear internal dia) pipes	Meter	5201.68				
12.19.6	350 mm nominal dia (clear internal dia) pipes	Meter	8723.93				
12.19.7	400 mm nominal dia (clear internal dia) pipes	Meter	4988.81				
12.19.8	450 mm nominal dia (clear internal dia) pipes	Meter	0.00				
12.19.9	500 mm nominal dia (clear internal dia) pipes	Meter	14992.25				
12.19.10	600 mm nominal dia (clear internal dia) pipes	Meter	4325.36				
12.19.11	800 mm nominal dia (clear internal dia) pipes	Meter	605.57				
12.19.12	900 mm nominal dia (clear internal dia) pipes	Meter	147.02				
12.19.13	1000 mm nominal dia (clear internal dia) pipes	Meter	17.42				
12.20	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.						
12.20.1	Up to 300mm dia	Qtl.	81.45				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.20.2	Above 300 mm dia	Qtl.	59.34				
13	Trenchless Technology						
13.1	Installation of product pipe by manual pipe jacking method in mixed soil tye 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 seperately)						
13.1.1	900 mm to 1000 mm diameter	Meter	30.00				
13.2	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	32579.99				
13.3	Installation of HDPE or other available product pipe by HDD metod 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 Pipt,						

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				Local	Foreign	Local	Foreign
	Shoring / strutting, Backfilling, Disposal of Surplus Earth, Road Cutting & restoration, Dewatering etc will be paid separately).						
13.3.1	Upto-including 280mm diameter.	Meter	43.00				
13.3.2	>280mm diameter and upto-including 315mm diameter.	Meter	19.00				
13.3.3	>315mm diameter and upto-including 355mm diameter.	Meter	30.00				
13.3.4	>355mm diameter and upto-including 400mm diameter.	Meter	85.00				
13.3.5	>450mm diameter and upto-including 500mm diameter.	Meter	29.00				
13.3.6	>560mm diaMeter and upto-including 630mm diameter.	Meter	53.00				
13.4	Installation of Steel product pipe by Auger Boring 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 Pit, Shoring/ strutting, Backfilling, Disposal of Surplus Earth and, Road Cutting & Restoration Dewatering etc will be paid separately)						
13.4.1	600-900 mm diameter						
13.4.1.1	In Mixed Soil	Meter	59.00				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
13.5	Providing/Supplying & Installation at site ISI Mark Ductile Iron Sluice Valves of rating PN 1.0 with EPDM rubber gaskets, rubber sheet and MS nuts & bolts as per requirements, field testing & commissioning complete as per specifications, including all cost of materials, providing flanged 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. These rates are excluding excise duty component.						
13.5.1	100 mm Dia	Each	375.00				
13.5.2	150 mm Dia	Each	186.00				
13.5.3	200 mm Dia	Each	71.00				
13.5.4	250 mm Dia	Each	24.00				
13.5.5	300 mm Dia	Each	12.00				
13.5.6	350 mm Dia	Each	5.00				
13.5.7	400 mm Dia	Each	3.00				
13.5.8	600 mm Dia	Each	1.00				
13.6	Providing and fixing in position D.I. Manual Scour/Washout Valve and providing flanged joints (2 nos.) including bolts, nuts, 3mm thick two washers for each bolt, rubber insertion etc. all complete. .						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
13.6.1	80 mm dia valve	Each	123.00				
13.6.2	100 mm dia valve	Each	58.00				
13.6.3	150 mm dia valve	Each	7.00				
13.6.4	200 mm dia valve	Each	8.00				
13.6.5	250 mm dia valve	Each	2.00				
13.6.6	300mm dia valve	Each	4.00				
13.6.7	350 mm dia valve	Each	1.00				
13.7	Providing and fixing in position DI Double Orifice Air Valve and providing flanged joints (one no.) i.e. cost bolts, nuts, rubber insertion etc. (3mm thick two washers for each bolt) all complete i/c testing to the specified head by filling water as per specification and as directed by Engineer-in-charge.						
13.7.1	50 mm dia	Each	128.00				
13.7.2	80 mm dia	Each	11.00				
13.7.3	100 mm dia	Each	5.00				
13.7.4	200 mm dia	Each	1.00				
13.8	Providing & Fixing in position Cast Iron Single orifice Air Valve and providing saddle clamp or flanged joints (one no.) i.c cost bolts, nuts, rubber insertion etc. (3mm th.two washers for each bolt) all complete i/c taxes, transporation, loading, unloading, erection, testing to the specified head by filling water as						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	per specification and as directed by Engineer-in-charge.						
13.8.1	25 mm dia valve	Each	27.00				
13.8.2	40 mm dia	Each	8.00				
13.8.3	50 mm dia	Each	2.00				
13.9	Providing SFRC Manhole cover as per standard and specification complete and as per Engineer-in-charge.						
13.9.1	900mm dia.	Each	92.00				
	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 for demolition and disposal (transportation and staking at places designated by DJB) of the existing UGR/structure's debris as required.						
1.1	Construction of new UGR at Shadipur (10.70 ML capacity)	LS	1				
1.2	Construction of new UGR at Zakhira (5.55 ML capacity)	LS	1				
1.3	Construction of new UGR at New Rajendra Nagar (4.81 ML capacity)	LS	1				
1.4	Construction of new UGR at Naraiana (9.95 ML	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	capacity)						
1.5	Rehabilitation of Existing UGR at Thansingh	LS	1				
1.6	Rehabilitation of Existing UGR at Shastrinagar.	LS	1				
1.7	Rehabilitation of Existing UGR Janta Park.	LS	1				
1.8	Rehabilitation of Existing UGR Rock Garden.	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 for demolition and disposal (transportation and staking at places designated by DJB) of the existing PS/Structure's debris as required.						
2.1	Construction of new Pump House with associated Structures at Zakhira.	LS	1				
2.2	Construction of new Pump House with associated Structures at Shadipur.	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.3	Construction of new Pump House with associated Structures at New Rajendra Nagar.	LS	1				
2.4	Construction of new Pump House with associated Structures at Naraina.	LS	1				
2.5	Rehabilitation of Existing Pump House with associated Structures at Janta Park.	LS	1				
2.6	Rehabilitation of Existing Pump House with associated Structures at Shastri Nagar.	LS	1				
2.7	Rehabilitation of Existing Pump House with associated Structures at Thansingh.	L.S	1				
	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 for demolition and disposal (transportation and staking at places designated by DJB) of the existing structure's debris as required.						
3.1	Zakhira	LS	1				
3.2	Shadipur & Rock Garden	LS	1				
3.3	New Rajendra Nagar	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.4	Naraina	LS	1				
3.5	Shastri Nagar	LS	1				
3.6	Janta Park	LS	1				
3.7	Thansingh	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	<u>UGR's and BPS's</u> 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. Shastri Nagar 2. Zakhira 3. Than Singh Nagar 4. Shadipur & Rock Garden 5. Janta Park 6. New Rajender Nagar 7. Naraina						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	(Note: Sizes, capacities and quantities given herein, if any, are indicative and provided for Bidder's reference only)						
1	Shastri Nagar BPS & UGR						
1.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes	Lot	1				
b	DI fittings	Lot	1				
c	Associated Dismantalling Joints	Lot	1				
d	MS Pipes	Lot	1				
e	MS fittings	Lot	1				
f	Associated Dismantalling Joints	Lot	1				
1.2	Electrically actuated double flanged Sluice Valves along with dismantling joints : (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	350 mm dia.	Nos	2				
b	400 mm dia.	Nos	2				

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				Local	Foreign	local	Foreign
c	600 mm dia.	Nos	4				
d	700 mm dia.	Nos	3				
e	800 mm dia.	Nos	3				
1.3	Electrically actuated double flanged Butterfly Valves along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	1000 mm dia.	Nos	3				
1.4	Double flanged Non Return Valve						
a	350 mm dia.	Nos	2				
b	700 mm dia.	Nos	3				
1.5	Double flanged Duel plate Check Valve along with dismantling joint						
a	1000 mm dia.	Nos	1				
1.6	Electrically Actuated Flow Control Valve along with dismantling joint						
a	600 mm dia.	Nos	1				
1.7	Retro-fitting of Electrical actuators on existing Sluice Gate along with repair and maintenance work of the Gates.	Nos	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
1.8	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	2150 m3/hr x 37 m, (2W + 1S)	Nos	3				
b	520 m3/hr x 44 m, (1W + 1S)	Nos	2				
1.9	Suitable capacity vacuum pump & motor (1W + 1S) complete with piping, valves, accessories, etc.	Nos	2				
1.10	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	2				
1.11	Submersible drain pump set including electric motor, piping, valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
1.12	Ventilation System with exhaust fan complete	Nos	10				
1.13	Repair, maintenance and retro fittings of Crane of capacity 5.0 MT	Nos	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
1.14	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	10				
1.15	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).	L.S	1				
2	Zakhira BPS & UGR						
2.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes	Lot	1				
b	DI fittings	Lot	1				
c	Associated Dismantling Joints	Lot	1				
d	MS Pipes	Lot	1				
e	MS Fittings	Lot	1				
f	Associated Dismantling Joints	Lot	1				
2.2	Electrically actuated double flanged Sluice Valves along with						

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				Local	Foreign	local	Foreign
	dismantling joint: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	150 mm dia.	Nos	4				
b	200 mm dia.	Nos	4				
c	300 mm dia.	Nos	3				
d	350 mm dia.	Nos	6				
e	400 mm dia.	Nos	3				
f	500 mm dia.	Nos	6				
2.3	Double flanged Sluice Valves along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	300 mm dia.	Nos	2				
2.4	Electrically actuated double flanged Butterfly Valves along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps.						
a	1000 mm dia.	Nos	2				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
b	700 mm dia.	Nos	2				
2.5	Electrically actuated double flanged Flow Control Valves along with dismantling joint.						
a	1000 mm dia.	Nos	1				
2.6	Double flanged Non Return Valve						
a	150 mm dia.	Nos	4				
b	300 mm dia.	Nos	3				
c	350 mm dia.	Nos	3				
2.7	Double flanged Duel plate Check Valve along with dismantling joint						
a	500 mm dia.	Nos	2				
2.8	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	500 m3/hr x 45 m, (2W + 1S)	Nos	3				
b	100 m3/hr x 53 m, (1W + 1S)	Nos	2				
c	400 m3/hr x 30 m, (2W + 1S)	Nos	3				
d	100 m3/hr x 36 m, (1W + 1S)	Nos	2				
2.9	Electrically actuated Sluice Gates 1000 x 1000	Nos	4				

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				Local	Foreign	local	Foreign
2.10	Double Girder EOT Crane of capacity 5.0 MT	Nos	1				
2.11	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	2				
2.12	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
2.13	Ventilation System with exhaust fan complete	Nos	15				
2.14	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	10				
2.15	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).	L.S	1				

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				Local	Foreign	local	Foreign
3	Than Singh Nagar BPS & UGR						
3.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (i) Suction, Discharge & Header of Pumps						
a	MS Pipes	Lot	1				
b	MS fittings	Lot	1				
c	Associated Dismantalling Joints	Lot	1				
3.2	Electrically actuated double flanged Sluice Valves along with dismantling joints : (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	700 mm dia.	Nos	3				
b	800 mm dia.	Nos	3				
3.3	Electrically actuated double flanged Butterfly Valves along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps.						
a	1000 mm dia.	Nos	7				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
3.4	Double flanged Non Return Valve						
a	700 mm dia.	Nos	3				
3.5	Double flanged Duel Plate Check Valve along with dismantling joint						
a	1000 mm dia.	Nos	1				
3.6	Electrically Actuated Flow Control Valve along with dismantling joint						
a	1000 mm dia.	Nos	1				
3.7	Electrically actuated sluice gate, size 1000 x 1000	Nos	1				
3.8	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	2100 m3/hr x 35 m, (2W + 2S)	Nos	4				
3.9	Suitable capacity vacuum pump & motor (1W + 1S) complete with piping, valves, accessories, etc.	Nos	2				
3.10	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible	Nos	2				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	hose of 10 mt & cable of 10 mt						
3.11	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
3.12	Ventilation System with exhaust fan complete	Nos	10				
3.13	Electric Hoist of capacity 5.0 MT	Nos	1				
3.14	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	8				
3.15	Surge analysis and protection equipment	Lot	1				
	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).	L.S	1				
4	Shadipur and Rock Garden BPS & UGR						
4.1	Pipes and Fittings:						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	(i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes	Lot	1				
b	DI fittings	Lot	1				
c	Associated Dismantling Joints	Lot	1				
d	MS Pipes	Lot	1				
e	MS Fittings	Lot	1				
f	Associated Dismantling Joints	Lot	1				
4.2	Electrically actuated double flanged Sluice Valves along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	200 mm dia.	Nos	2				
b	250 mm dia.	Nos	2				
c	400 mm dia.	Nos	7				
d	450 mm dia.	Nos	3				
e	500 mm dia.	Nos	5				
f	600 mm dia.	Nos	9				
4.3	Double flanged Sluice Valves along with dismantling joints :						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	(i) Inlet side & outlet side of UGR (iii) Suction, Discharge & Header of Pumps						
a	300 mm dia.	Nos	2				
4.4	Electrically actuated double flanged Butterfly Valve along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	700 mm dia.	Nos	1				
4.5	Double flanged Non Return Valve						
a	200 mm dia.	Nos	2				
b	400 mm dia.	Nos	3				
4.6	Double flanged Duel Plate Check Valve along with dismantling joint						
a	600 mm dia.	Nos	1				
4.7	Electrically actuated Flow Control Valve along with dismantling joint						
a	500 mm dia.	Nos	1				
b	400 mm dia.	Nos	2				
4.8	Double suction horizontal split casing centrifugal volute Pump set						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	along with induction motor and all associated accessories as per technical specification						
a	625 m3/hr x 23 m, (2W + 1S)	Nos	3				
b	150 m3/hr x 27 m, (1W + 1S)	Nos	2				
4.9	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	2				
4.10	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
4.11	Ventilation System with exhaust fan complete	Nos	10				
4.12	EOT Crane of capacity 5.0 MT	Nos	1				
4.13	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	10				
4.14	Any other items required for commissioning of pumping system	L.S	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	(which are not covered above and in other schedules but required for commissioning of UGR and BPS from Mechanical perspectives).						
5	Janta Park BPS & UGR						
5.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes	Lot	1				
b	DI fittings	Lot	1				
c	Associated Dismantling Joints	Lot	1				
5.2	Electrically actuated double flanged Sluice Valves along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	200 mm dia.	Nos	4				
b	350 mm dia.	Nos	3				
c	400 mm dia.	Nos	7				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
d	500 mm dia.	Nos	3				
5.3	Electrically actuated Flow Control Valve along with dismantling joint						
a	400 mm dia.	Nos	1				
5.4	Double flanged Non Return Valve						
a	200mm dia.	Nos	2				
b	350 mm dia.	Nos	3				
5.5	Double flanged Duel Plate Check Valve along with dismantling joint						
a	500 mm 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	550 m3/hr x 31 m, (2W + 1S)	Nos	3				
b	140 m3/hr x 40 m, (1W + 1S)	Nos	2				
5.7	Suitable capacity vacuum pump & motor (1W + 1S) complete with piping, valves, accessories, etc.	Nos	2				
5.8	Portable submersible dewatering pump set of Capacity 50 m3/hr at	Nos	2				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	15 mwc head with electric motor and accessories, including flexible hose of 10 mt & cable of 10 mt						
5.90	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
5.10	Ventilation System with exhaust fan complete	Nos	8				
5.11	Repair, maintenance and retro fittings of Crane of capacity 5.0 MT	Nos	1				
5.12	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	5				
5.13	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).	L.S	1				
6	New Rajender Nagar BPS & UGR						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
6.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes	Lot	1				
b	DI fittings	Lot	1				
c	Associated Dismantling Joints	Lot	1				
d	MS Pipes	Lot	1				
e	MS Fittings	Lot	1				
f	Associated Dismantling Joints	Lot	1				
6.2	Electrically actuated double flanged Sluice Valves along with dismantling joint: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	200 mm dia.	Nos	2				
b	250 mm dia.	Nos	2				
c	400 mm dia.	Nos	3				
d	500 mm dia.	Nos	5				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
e	600 mm dia.	Nos	3				
6.3	Double flanged Sluice Valves along with dismantling joint. (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	300 mm dia.	Nos	2				
6.4	Electrically actuated double flanged Butterfly Valve along with dismantling joints: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	700 mm dia.	Nos	4				
6.5	Double flanged Non Return Valve						
a	200 mm dia.	Nos	2				
b	400 mm dia.	Nos	3				
6.6	Double flanged Duel Plate Check Valve along with dismantling joint						
a	600 mm dia.	Nos	1				
6.7	Electrically Actuated Flow Control Valve along with dismantling joint						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
a	700 mm dia.	Nos	1				
6.8	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	760 m3/hr x 29 m, (2W + 1S)	Nos	3				
b	760 m3/hr x 38 m, (1W + 1S)	Nos	2				
6.9	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	2				
6.10	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
6.11	Ventilation System with exhaust fan complete	Nos	10				
6.12	EOT Crane of capacity 5.0 MT.	Nos	1				
6.13	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as	Nos	10				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	per TAC IS:2190.						
6.14	Suitable capacity Electro Chlorinator complete with piping, valves, accessories, etc. (1W + 1S).	Nos	2				
		L.S	1				
7	Naraina BPS & UGR						
7.1	Pipes and Fittings: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	DI Pipes	Lot	1				
b	DI fittings	Lot	1				
c	Associated Dismantalling Joints	Lot	1				
d	MS Pipes	Lot	1				
e	MS Fittings	Lot	1				
f	Associated Dismantalling Joints	Lot	1				
7.2	Electrically actuated double flanged Sluice Valves along with dismantling joint: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
a	250 mm dia.	Nos	2				
b	300 mm dia.	Nos	5				
c	350 mm dia.	Nos	4				
d	600 mm dia.	Nos	5				
e	700 mm dia.	Nos	3				
7.3	Double flanged Sluice Valves along with dismantling joint. (i) Inlet side & outlet side of UGR (i) Suction, Discharge & Header of Pumps						
a	300 mm dia.	Nos	2				
7.4	Electrically actuated double flanged Butterfly Valves along with dismantling joint: (i) Inlet side & outlet side of UGR (ii) Suction, Discharge & Header of Pumps						
a	700 mm dia.	Nos	2				
b	800 mm dia.	Nos	3				
7.5	Double flanged Non Return Valve	Nos					

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
a	250 mm dia.	Nos	2				
b	300 mm dia.	Nos	2				
c	600 mm dia.	Nos	3				
7.6	Double flanged Duel Plate Check Valve along with dismantling joint						
a	300 mm dia.	Nos	1				
b	800 mm dia.	Nos	1				
7.7	Electrically Actuated Flow Control Valve along with dismantling joint						
a	700 mm dia.	Nos	1				
7.8	Double suction horizontal split casing centrifugal volute Pump set along with induction motor and all associated accessories as per technical specification						
a	1325 m3/hr x 17 m, (2W + 1S)	Nos	3				
b	320 m3/hr x 22 m, (1W + 1S)	Nos	2				
c	400 m3/hr x 20 m, (1W + 1S)	Nos	2				
7.9	Portable submersible dewatering pump set of Capacity 50 m3/hr at 15 mwc head with electric motor and accessories, including flexible	Nos	2				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	local	Foreign
	hose of 10 mt & cable of 10 mt						
7.10	Submersible drain pump set including electric motor, piping , valve, etc. of Capacity 10 m3/hr at 15 mwc head (1W + 1S)	Nos	2				
7.11	Ventilation System with exhaust fan complete	Nos	12				
7.12	EOT Crane of capacity 5.0 MT	Nos	1				
7.13	Portable extinguishers with glow signs indicating location of extinguishers- ABC type @ 6 kg as per TAC IS:2190	Nos	10				
7.14	Suitable capacity Electro Chlorinator complete with piping, valves, accessories, etc. (1W + 1S)	Nos	2				
		L.S	1				
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	"UGR's and BPS's: Study/Investigation, Design, Supply, Delivery, Construction/ Installation/ Rehabilitation including testing and commissioning of all Electrical Works, Equipment and Plants, including Solar Power systems, DG sets 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	Shastri Nagar						
1.1	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				
1.2	Transformers: 11/0.433 KV, (800 KVA, minimum) KVA, Indoor Cast resin Dry type Transformer Dyn11 with On Load Tap Changer Arrangement	Nos.	2				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.3	Solar System: Solar system (400 KWp, minimum) along with all accessories as per specification.	No.	1				
1.4	DG Set: 415 V, 3 Phase, (800 KVA, minimum) DG set with AMF Panel	Nos.	1				
1.5	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				
1.6	Variable Frequency Drive: VFD as per SLD and tender specification						
(i)	315 KW	Nos	4				
(ii)	90 KW	Nos	2				
1.7	Battery and Battery Charger: 24 V, 150 AH (minimum) Ni-Cd maintenance free battery and Float Cum Boost Charger.	No	1				
1.8	Lighting System: Indoor and Outdoor lighting system with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
1.9	Earthing: Complete Earthing System and Lightning Protection System as per specification.	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.1	Cabling System: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
1.11	Miscellaneous items: 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	LS	1				
	Sub-Total						
2	Zakhira						
2.1	Compact Substation : 11 / 0.433KV, 500 KVA (minimum), Compact Sub Station, consist of RMU, Transformer and LV Switchgear as per SLD compatible with PLC/SCADA Systems	Nos.	2				
2.2	Solar system : Solar system (110 KWp, minimum) along with all accessories as per specification	No.	1				
2.3	DG Set : 415 V, 3 Phase, (500 KVA, minimum) DG set with AMF Panel	No.	1				
2.4	415 Volts L T Panels: 415 Volts Main Panel,	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	Aux Panels and APFC panel along with starter and VFD – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems						
2.5	Lighting System: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
2.6	Earthing: Complete Earthing System and Lightning Protection System	LS	1				
2.7	Cabling System: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
2.8	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						
3	Than Singh Nagar						
3.1	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				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.2	Transformers :11/0.433 KV , (1000 KVA, minimum) KVA, Indoor Cast resin Dry type Transformer Dyn11 with On Load Tap Changer Arrangement	Nos.	2				
3.3	Solar System : Solar system (40 KWp, minimum) along with all accessories as per specification.	No.	1				
3.4	DG Set :415 V, 3 Phase , (1000 KVA, minimum) DG set with AMF Panel	No	1				
3.5	415 Volts L T Panels : 415 Volts Main Panel, Aux Panels and APFC panel along with starter feeders (Soft Starter, DOL, etc.) – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
3.6	Variable Frequency Drive : VFD as per SLD and tender specification						
(i)	315 KW	Nos	4				
3.7	Battery and Battery Charger : 24 V, 150 AH (minimum) Ni-Cd maintenance free battery and Float Cum Boost Charger	No.	1				
3.8	Lighting System : Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.9	Earthing: Complete Earthing System and Lightning Protection System as per specification.	LS	1				
3.1	Cabling System: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
3.11	Miscellaneous items: 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	LS	1				
	Sub-Total						
4	Shadipur						
4.1	Compact Substation : 11 / 0.433KV, 250 KVA (minimum), Compact Sub Station, consist of RMU, Transformer and LV Switchgear as per SLD compatible with PLC/SCADA Systems	Nos.	2				
4.2	Solar system : Solar system (170 KWp, minimum) along with all accessories as per specification	No.	1				

**JICA ASSISTED DELHI WATER SUPPLY IMPROVEMENT PROJECT IN
CHANDRAWAL WTP COMMAND AREA (ID-P225)**

Improvement of Water Supply System including Operation and Maintenance of Transmission and Distribution pipes, Pumping Stations, Service Connections, and Consumer Meters with DMA formation and NRW Reduction in Chandrawal WTP Command Area (Package 2 – West Zone)

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**Section IV
Bidding Forms
Price Bid**

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
4.3	DG Set :415 V, 3 Phase, (200 KVA, minimum) DG set with AMF Panel	No.	1				
4.4	415 Volts L T Panels: 415 Volts Main Panel, Aux Panels and APFC panel along with starter and VFD – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
4.5	Lighting System: Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
4.6	Earthing: Complete Earthing System and Lightning Protection System	LS	1				
4.7	Cabling System: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
4.8	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			
5	Janta Park						
5.1	Compact Substation : 11 / 0.433KV, 250	Nos.	2				

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Improvement of Water Supply System including Operation and Maintenance of Transmission and Distribution pipes, Pumping Stations, Service Connections, and Consumer Meters with DMA formation and NRW Reduction in Chandrawal WTP Command Area (Package 2 – West Zone)

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	KVA (minimum), Compact Sub Station, consist of RMU, Transformer and LV Switchgear as per SLD compatible with PLC/SCADA Systems						
5.2	Solar system : Solar system (70 KWp, minimum) along with all accessories as per specification	No.	1				
5.3	DG Set :415 V, 3 Phase, (250 KVA, minimum) DG set with AMF Panel	No.	1				
5.4	415 Volts L T Panels : 415 Volts Main Panel, Aux Panels and APFC panel along with starter and VFD – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
5.5	Lighting System : Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
5.6	Earthing : Complete Earthing System and Lightning Protection System as per specification.	LS	1				
5.7	Cabling System : XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
5.8	Miscellaneous items : Safety kit and tools & tackle: Safety chart, sand	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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							
6	New Rajinder Nagar						
6.1	Compact Substation : 11 / 0.433KV, 315 KVA (minimum), Compact Sub Station, consist of RMU, Transformer and LV Switchgear as per SLD compatible with PLC/SCADA Systems	Nos.	2				
6.2	Solar system : Solar system (110 KWp, minimum) along with all accessories as per specification	No.	1				
6.3	DG Set : 415 V, 3 Phase, (320 KVA, minimum) DG set with AMF Panel	No.	1				
6.4	415 Volts L T Panels: 415 Volts Main Panel, Aux Panels and APFC panel along with starter and VFD – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
6.5	Lighting System: Indoor and Outdoor lighting	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc						
6.6	Earthing: Complete Earthing System and Lightning Protection System	LS	1				
6.7	Cabling System: XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
6.8	Miscellaneous items: 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	LS	1				
	Sub-Total						
7	Naraina						
7.1	Compact Substation : 11 / 0.433 KV, 400 KVA (minimum), Compact Sub Station, , consist of RMU, Transformer and LV Switchgear as per SLD compatible with PLC/SCADA Systems	Nos.	2				
7.2	Solar system: Solar system (130 KWp, minimum) along with all accessories as per	No.	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	specification.						
7.3	DG Set :415 V, 3 Phase, (350 KVA, minimum) DG set with AMF Panel	No.	1				
7.4	415 Volts L T Panels : 415 Volts Main Panel, Aux Panels and APFC panel along with starter and VFD – Metal enclosed, free standing, floor mounting, extensible on either side, compatible with PLC/SCADA Systems	LS	1				
7.5	Lighting System : Indoor and Outdoor lighting System with LED fittings, lighting DB, JB, wiring, cabling, receptacles, poles, fans, AC etc	LS	1				
7.6	Earthing : Complete Earthing System and Lightning Protection System as per specification.	LS	1				
7.7	Cabling System : XLPE HT and LT power cables, control cables, NPSBD, telephone cables, etc.	LS	1				
7.8	Miscellaneous items : 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	LS	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	perspectives						
	Sub-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
	Distribution System SCADA Hardware. 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 2 (West 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 (West 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,	Nos.	2				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	MS Office latest version with 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: <u>Central Programming & Configuration PC(ES-1)</u> 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 with scanner	Nos.	1				
1.7	A4 laser printer with scanner	Nos.	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.8	Service Laptop for programming & configuration of PLC and RTU.	Nos.	1				
1.9	Office WAN router	Nos.	1				
1.10	WAN Firewall	Nos.	11				
1.11	Network Managed Switches (24 port) for Central Server	Nos.	4				
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 (West) control room of required capacity with 1 hour backup.	Nos.	2				
1.16	Complete Ethernet LAN installation for the Zonal SCADA (West) 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 (West Zone), all BPS/UGRs and DMAs of Pkg-2 complete with	Set	1				

**JICA ASSISTED DELHI WATER SUPPLY IMPROVEMENT PROJECT IN
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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	router, network manager/fire wall, power adapter, EPBX system and open SIP IP phone etc.						
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				
B. At 8 UGR & 7 BPS							
1.21	Redundant PLC with Modbus Communication enabled along with Duly wired IP 54 Control Panels & Accessories.	Nos.	7				
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.	7				
1.23	A4 laser printer with Scanner	Nos.	7				
1.24	Telemetry RTU, PLC & Dual SIM Routers along with Panels & Accessories for gravity outlet flow UGRs.	Nos.	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.25	GPRS modem (TCP/IP)/Modbus.	Nos.	8				
1.26	10" Colour Panel HMI with Touch Screen along with its Software for gravity outlet flow UGRs.	Nos.	1				
1.27	230V AC Redundant UPS of required capacity with 1 hour backup (For 7Nos. UGR with BPS).	Nos.	7				
1.28	230V AC Redundant UPS of required capacity with 1 hour backup (For 1 No. Gravity outlet flow UGRs).	Nos.	1				
1.29	Complete data and power cabling supply, installation and termination for 7 UGR with BPS and for 1 UGRs on as required basis.	Lot	1				
C. At 46 DMAs with 47 Inlets							
1.30	Telemetry RTU with built-in PLC & Modbus Communication enabled with Panels & Accessories with 7" Colour HMI Screens (46 for lowest pressure points + 47 for Inlets).	Nos.	93				
1.31	230V AC UPS with 2hrs backup (46 for lowest pressure points + 47 for Inlets).	Nos	93				
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.	Lum p-sum	1				

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**JICA ASSISTED DELHI WATER SUPPLY IMPROVEMENT PROJECT IN
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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
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 number of tag license: 3nos. OS Clients Other Licenses enabled: Built-in Historian OPC Server Web Server with 2 Client License.	Set	1				
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	8				
2.6	(a) Water demand forecast & planning software, (b) Water distribution and pressure management software, (c) Water Leakage management software, (d) Energy management software.	Set	1				
3. Instrumentation System for 8 UGRs and 7 BPSs							
3.1	Electromagnetic Flowmeter DN300	No.	1				
3.2	Electromagnetic Flowmeter D400	Nos	3				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.3	Electromagnetic Flowmeter DN500	Nos	5				
3.4	Electromagnetic Flowmeter DN600	Nos	5				
3.5	Electromagnetic Flowmeter DN700	Nos	2				
3.6	Electromagnetic Flowmeter DN800	Nos	1				
3.7	Electromagnetic Flowmeter DN1000	Nos	4				
3.8	Ultrasonic Level Transmitter	Nos.	15				
3.9	Water Level Switch	Nos.	24				
3.10	Local Level Gauge for UGRs	Nos.	15				
3.11	Pressure Transmitter	Nos.	60				
3.12	Pressure Switch	Nos.	12				
3.13	Pressure Gauge	Nos.	98				
3.14	Drain Pit Level Controller	Nos.	7				
3.15	Portable Temperature Measuring Instrument	Nos.	2				
3.16	Portable Vibration Measuring Instrument	Nos.	2				
3.17	Local Control Panels	Nos.	8				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
3.18	On Line Residual Chlorine Analyser	Nos.	11				
3.19	On Line Turbidity Analyser	Nos.	11				
3.20	Bar Graph Indicator	Nos.	55				
4. Instrumentation for 46 DMAs with 47 Inlets							
4.1	Online Residual chlorine analysers at lowest Pressure points of each DMA.	Nos.	46				
4.2	Pressure Transmitters (47 at inlets, 47 at outlets & 46 at lowest pressure points).	Nos.	140				
4.3	Pressure Gauges (47 at inlets, 47 at outlets & 46 at lowest pressure points).	Nos.	140				
4.4	Local Control Panels (46 for lowest pressure points + 47 for Inlets).	Nos.	93				
4.5	Level switch for valve chamber flooding alarm	Nos.	47				
5. CCTV, FIRE & INTRUDER ALARM (Hardware and Software)							
5.1	Complete Supply, Installation, and Testing & Commissioning of CCTV Monitoring Systems along with power supply units and video recorder etc. in 8 UGR/BPS areas.	Sets	8				
5.2	Intruder Alarm System for UGRs/BPSs (one Intruder/burglar alarm with adequate nos of motion detectors).	Sets	8				
5.3	Fire Alarm System for BPSs (Cold Wire/Wireless Technology).	Nos.	7				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
6. Laboratory Equipment							
6.1	Laboratory Equipment for testing potable water quality	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	Each	64448				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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.						
1.1.2	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	Each	2718				

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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, 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	Each	680				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	elbow 90 deg., female threaded adopter with one sided compression, GI pipe of Class 'B' conforming to relevant IS Code with 25 mm 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	Each	16217				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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 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	Each	683				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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 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	Each	171				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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 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						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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	40 mm OD pipe	Mtr.	60				
b	50 mm OD pipe	Mtr.	40				
	63 mm OD pipe	Mtr.	20				
c	75 mm OD pipe	Mtr.	40				
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	80665				
b	20 mm	Each	3401				
c	25 mm	Each	851				
d	40 mm	Each	10				
e	50 mm	Each	2				
2.0	EXCAVATION						
2.1	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						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
	All kinds of soil	Cum.	4021.20				
2.2	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.	1362.27				
2.3	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 meters lead as per direction of Engineer in charge.	Cum.	268.85				
2.4	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.	3922.65				
3.0	CONSUMER METER						
3.1	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						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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	48896				
b	20 mm	Each	2073				
c	25 mm	Each	519				
d	40 mm	Each	10				
e	50 mm	Each	2				
	BULK METER						
3.2	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.						
a	80 mm	Each	4				
b	100 mm	Each	9				
c	150 mm	Each	2				
d	200 mm	Each	8				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
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	4				
b	100 mm	Each	9				
c	150 mm	Each	2				
d	200 mm	Each	8				
3.4	Providing and fixing of multipath ultrasonic clamp on type flow meter on above 300 mm pipe for isolation of package-2 cluster areas during transient phase for temporary purpose and handover the flow meters to DJB after completion of flow measurement.	Each	8				
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 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.						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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	7885				
b	20 mm	Each	332				
c	25 mm	Each	83				
d	40 mm	Each	10				
e	50 mm	Each	2				
f	80 mm and above	Each	19				
5.0	ELECTROMAGNETIC FLOW METER						
5.1	Supply, Installation, Testing and Commissioning of Electromagnetic DMA Flow meters as per detailed technical Specification.						
a	150 mm	Each	15				
b	200 mm	Each	6				
c	250 mm	Each	11				
d	300 mm	Each	11				
e	350 mm	Each	4				
6.0	DI SLUICE VALVE						
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.						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
a	80 mm	Each	4				
b	100 mm	Each	9				
c	150 mm	Each	2				
d	200 mm	Each	8				
7.0	DI BUTTERFLY VALVE						
7.1	Providing & Fixing in position DI motorized butterfly valve and providing flanged joints (2 nos) including bolts, nuts, 3 mm thick two washers for each bolt, rubber insertion etc. all complete.						
a	150 mm	Each	15				
b	200 mm	Each	6				
c	250 mm	Each	11				
d	300 mm	Each	11				
e	350 mm	Each	4				
8.0	DI FITTINGS						
8.1	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.	1438.45				
b	Above 600 mm dia.	Qtl.	150.70				
8.2	Providing flanged joints to double flanged DI pipes and specials including testing of joints.						
a	80 mm dia	Each	16				
b	100 mm dia	Each	36				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
c	150 mm dia	Each	113				
d	200 mm dia	Each	112				
e	250 mm dia	Each	176				
f	300 mm dia	Each	136				
g	350 mm dia	Each	120				
h	400 mm dia	Each	33				
i	500 mm dia	Each	12				
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	31				
10.0	PRESSURE ZERO TEST						
10.1	Conducting Pressure Zero Test (PZT) for DMA	Per	46				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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.	DMA					
11.0	ESTABLISHMENT OF NRW LEVEL						
11.1	Determine the NRW level after the completion 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/cluster area by carryout the MNF test as per specification to establish the physical leakage levels in each DMA as well as in the overall cluster/Contract area.	Per DMA	46				
12.0	LEAK DETECTION & REPAIR WORKS ON EXISTING PIPES						
12.1	Leak Detection work on distribution pipes for 5 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.	1466				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.2	Labour for cutting CI/DI pipe with steel saw						
12.2.1	100 mm	Each	1174				
12.2.2	150 mm	Each	291				
12.2.3	200 mm	Each	60				
12.2.4	250 mm	Each	41				
12.2.5	300 mm	Each	144				
12.2.6	350 mm	Each	36				
12.2.7	400 mm	Each	44				
12.2.8	450 mm	Each	74				
12.2.9	500 mm	Each	6				
12.2.10	600 mm	Each	106				
12.2.11	700 mm	Each	20				
12.2.12	750 mm	Each	28				
12.3	Proving and laying S&S centrifugally cast (spun) / DI class K-7 pipes confirming to IS 8329 excluding exise duty component.						
12.3.1	100 mm	Mtr.	1174				
12.3.2	150 mm	Mtr.	291				
12.3.3	200 mm	Mtr.	60				
12.3.4	250 mm	Mtr.	41				
12.3.5	300 mm	Mtr.	144				
12.3.6	350 mm	Mtr.	36				
12.3.7	400 mm	Mtr.	44				
12.3.8	450 mm	Mtr.	75				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
12.3.9	500 mm	Mtr.	6				
12.3.10	600 mm	Mtr.	108				
12.4	Proving and laying S&S centrifugally cast (spun) / DI class K-9 pipes conforming to IS 8329 excluding exise duty component.						
12.4.1	700 mm	Mtr.	10				
12.4.2	750 mm	Mtr.	28				
12.4	Hire charges of pump set of capacity 4000 litres/hour	Day	490				
12.5	Customer Survey:						
	The customer (house hold) 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 4 years (from 2nd year of construction) 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.			5,855,735.00		5,855,735.00	
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	1712.66			2372034.1	
3.2	Restoration charges for bituminous road above 6m upto road 12mtr right of way cut for laying pipes, cables or sewers.	sqm	21176.06			34432273.56	
3.3	Restoration charges for bituminous road above 12m upto road 18mtr right of way cut for laying pipes, cables or sewers.	sqm	11447.36			26306033.28	
3.4	Restoration charges for Cement concrete Road (upto 12.5cm thick) cut for laying pipes, cables or sewers.	sqm	3153.59			6442784.37	

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
4	Road Restoration (Distribution Works)						
4.1	Restoration charges for bituminous road upto 6m right of way cut for laying pipes, cables or sewers.	sqm	4337.11			6,006,897.35	
4.2	Restoration charges for bituminous road above 6m upto road 12mtr right of way cut for laying pipes, cables or sewers.	sqm	27395.19			44,544,578.94	
4.3	Restoration charges for bituminous road above 12m upto road 18mtr right of way cut for laying pipes, cables or sewers.	sqm	13971.67			32,106,897.66	
4.4	Restoration charges for bituminous road above 18mtr right of way cut for laying pipes, cables or sewers.	sqm	29994.65			84,914,854.15	
4.5	Restoration charges for Cement concrete Road (above 12.5cm thick) cut for laying pipes , cables or sewers.	sqm	3072.68			11,673,111.32	
4.6	Restoration charges for Cement concrete Road (upto 12.5cm thick) cut for laying pipes, cables or sewers.	sqm	343247.96			701,255,582.28	
Total of this Schedule CW-P						960,910,782.01	

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	1 st Year of Contract (for 6 months only) excluding preparatory period	L.S	1				
1.2	2 nd Year	L.S	1				
1.3	3 rd Year	L.S	1				
1.4	4 th Year	L.S	1				
1.5	5 th Year	L.S	1				
1.6	6 th Year	L.S	1				
1.7	7 th Year	L.S	1				
1.8	8 th Year	L.S	1				
1.9	9 th Year	L.S	1				
1.10	10 th 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	6th Year	LS	1				
1.2	7th Year	LS	1				
1.3	8th Year	LS	1				
1.4	9th Year	LS	1				
1.5	10th 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
A	Repair and Replacement Cost (Repair of Leaks in Pipeline, etc.) for all the assets under Package 2 (Existing as well as Newly Constructed Works) covering all Civil works (excluding Mechanical, Electrical, Instrumentation, 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.						
	Bituminous Road	Sqm.	1209.6				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
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.	241.9				
1.3	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.						
	All kinds of soil	Cum.	3628.8				
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.	3628.8				
2.0	Repairing of leaks by cutting & replacing of damaged pipe.						

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.1	Labour for cutting CI/DI pipe with steel saw						
2.1.1	100 mm	Each	2830				
2.1.2	150 mm	Each	440				
2.1.3	200 mm	Each	60				
2.1.4	250 mm	Each	20				
2.1.5	300 mm	Each	10				
2.2	Proving and laying S&S centrifugally cast (spun) / DI class K-7 pipes confirming to IS 8329 excluding exise duty component.						
2.2.1	100 mm	Mtr.	2830				
2.2.2	150 mm	Mtr.	440				
2.2.3	200 mm	Mtr.	60				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
2.2.4	250 mm	Mtr.	20				
2.2.5	300 mm	Mtr.	10				
2.3	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.	670.1				
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						

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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	2410				
b	20 mm	Each	102				
c	25 mm	Each	26				
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	2410				
b	20 mm	Each	102				
c	25 mm	Each	26				
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						

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Improvement of Water Supply System including Operation and Maintenance of Transmission and Distribution pipes, Pumping Stations, Service Connections, and Consumer Meters with DMA formation and NRW Reduction in Chandrawal WTP Command Area (Package 2 – West Zone)

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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 valve)						
a	15 mm	Each	12200				
b	20 mm	Each	520				
c	25 mm	Each	130				
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						

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				Local	Foreign	Local	Foreign
	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.						
a	15 mm	Each	1971				
b	20 mm	Each	83				
c	25 mm	Each	21				
4.0	GIS Updation						
4.1	Asset updation and household survey updation in GIS for the total package area as per specification for 4 years during construction period. (ArcGIS Software to be used same bought during construction period)						
a	All-in-one Computer -Desktop	Nos	1				
b	Colour Printer/Plotter	Nos	1				
c	GIS Analyst	Person-month	60				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
d	Stationary item	Per year	5				
5.0	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 6 months only) excluding preparatory period	KL	100				
5.2	2nd Year	KL	200				
5.3	3rd Year	KL	200				
5.4	4th Year	KL	200				
5.5	5th Year	KL	100				
5.6	6th Year	KL	100				
5.7	7th Year	KL	100				
5.8	8th Year	KL	100				
5.9	9th Year	KL	100				
5.10	10 th Year	KL	100				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
	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-2 (Existing as well as Newly Constructed Works) covering all Mechanical, Electrical, Instrumentation, SCADA, works (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	1 st Year of Contract (for 6 months only) excluding preparatory period	LS	1				
1.2	2 nd Year	LS	1				
1.3	3 rd Year	LS	1				
1.4	4 th Year	LS	1				
1.5	5 th Year	LS	1				
1.6	6 th Year	LS	1				
1.7	7 th Year	LS	1				
1.8	8 th Year	LS	1				
1.9	9 th Year	LS	1				
1.10	10 th Year	LS	1				
Total of this Schedule OM-M2						545192188.80	

SCHEDULE OM-PR

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

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1	Running and Maintenance 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-2 (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	1 st Year of Contract (for 6 months only) excluding preparatory period	L.S	1				
1.2	2 nd Year	L.S	1				

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Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
1.3	3 rd Year	L.S	1				
1.4	4 th Year	L.S	1				
1.5	5 th Year	L.S	1				
1.6	6 th Year	L.S	1				
1.7	7 th Year	L.S	1				
1.8	8 th Year	L.S	1				
1.9	9 th Year	L.S	1				
1.10	10 th 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 6th year to 10th year)

Sl. No.	Drive for	Number	Working (Nos)	Stand by (Nos)	Input Power of Motor (KW)	Recommend ed 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	Zakhira UGR & BPS								
i)									
ii)									
iii)									
iv)									
v)									
vi)									
II	Shadipur UGR & BPS								

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	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
i)									
ii)									
iii)									
iv)									
III	New Rajendra Nagar UGR & BPS								
i)									
ii)									
iii)									
iv)									
IV	Naraina UGR & BPS								

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	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
i)									
ii)									
iii)									
iv)									
V	Shastri Nagar UGR & BPS								
i)									
ii)									
iii)									
iv)									
VI	Rock Garden UGR & BPS								

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	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
i)									
ii)									
iii)									
iv)									
VII	Janta Park UGR								
i)									
ii)									
VIII	Thansingh UGR								
i)									
ii)									
IX	Tal katora UGR								

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	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
								Total electricity consumption, AKWh
B	Solar Power generation								
i)	Zakhira							KWh
ii)	Shadipur							KWh
iii)	New Rajendra Nagar							KWh
iv)	Naraina							KWh
v)	Shastri Nagar							KWh
vi)	Rock Garden							KWh
vii)	Janta Park							KWh
viii)	Thansingh							KWh
								Total Solar Power Generated - BKWh
	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								

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	(a)	(b)	(c)	(d)=(b)-(c)	(e)	(f)	(g)	(h)=(c)*(g)*365	(i)=(e)*(h)
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
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:

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

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Key Performance Indicators And Service Level Agreement

“Covered under Sub-section 2. Of O&M in VOLUME – III”