



BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

Volume-II FINANCIAL BID

FOR

CONSTRUCTION OF INTERCEPTION & DIVERSION WORKS INCLUDING 3 PUMPING STATIONS, RISING MAIN, NEW TAPPINGS, TAPPINGS FOR 6 DRAINS (Thana Chowk Nala, Chakwara Sthan, Sidh Nath Ghat, Dhaurani Tola Nala, Chinta Mani Chak Ghat Nala, Mokama Ghat Nalaa) CONTROLLED WITH SCADA & CONSTRUCTION OF SEWAGE TREATMENT PLANT OF CAPACITY 8 MLD INCLUDING DISPOSAL & REUSE FACILITY WITH 2 MONTHS TRIAL, RUN, TESTING, COMMISSIONING & MAINTENANCE OF COMPLETE SYSTEM ON DESIGN BUILD OPERATE (DBOT) BASIS & THERE AFTER OPERATION & MAINTENANCE FOR 15 YEARS FOR MOKAMA TOWN, BIHAR, INDIA

(Town. Mokama)

UNDER

“NAMAMI GANGE” SCHEME

CONSTRUCTION OF INTERCEPTION & DIVERSION WORKS INCLUDING 3 PUMPING STATIONS, RISING MAIN, NEW TAPPINGS, TAPPINGS FOR 6 DRAINS (Thana Chowk Nala, Chakwara Sthan, Sidh Nath Ghat, Dhaurani Tola Nala, Chinta Mani Chak Ghat Nala, Mokama Ghat Nalaa) CONTROLLED WITH SCADA & CONSTRUCTION OF SEWAGE TREATMENT PLANT OF CAPACITY 8 MLD INCLUDING DISPOSAL & REUSE FACILITY WITH 2 MONTHS TRIAL, RUN, TESTING, COMMISSIONING & MAINTENANCE OF COMPLETE SYSTEM ON DESIGN BUILD OPERATE (DBOT) BASIS & THERE AFTER OPERATION & MAINTENANCE FOR 15 YEARS FOR MOKAMA TOWN, BIHAR, INDIA

(Town. Mokama)

ABSTRACT OF TOTAL COST

SEWAGE TREATMENT PLANT AND I & D ALLIED WORKS INCLUDING SPSs

Grand Summary

Table - 1

No.	Component	Price
1.	Design-Build price for STP and allied infrastructure (Schedule A)	
2	Design-Build price for I & D and allied Works including SPSs (Schedule B)	
3 A.	Total O & M Price of STP for 15 years	
3 B	NPV of Total O & M Price of STP for 15 years	
4 A.	Total O & M Price of I & D works including SPSs for 15 years	
4 B	NPV of Total O & M Price of I & D works including SPSs for 15 years	
5.	Cost of Land requirement for setting up the STP facility as indicated in the bid	
Total Price based on quoted O&M prices including price of land (1+2+3A+4A+5) =		
<i>[in figures]</i>		
<i>[In words]</i>		
Total Price based on NPV of quoted O&M prices including price of land (1+2+3B+4B+5) =		
<i>[in figures]</i>		
<i>[In words]</i>		

SCHEDULE A

Table 2- Price Schedule: PART A (STP) – Design-Build Price

S.N.	Works Activity	Design-Build Price
1	Design, Build, Commissioning, trial and run of STP of capacity 08 mld along with the provision of online waste-water quality analyzer to measure, analyze and control PH, TSS, COD, BOD, TOC etc	
Break-up of Price of item 1 above		
1A	Civil and Structural Works (including that required for disposal and reuse)	
1B	Installation, testing and commissioning of Electro – mechanical and Instrumentation equipment and accessories including equipments for electricity generation from solar photovoltaic arrangement.	
C	Ancillary works like, internal roads, area grading etc.	
	Total Design Build Price	
	Amount in Words	

Indicative Flow

Indicative Flow for the purpose of evaluation of bids during the Operations Period shall be as follows:

Table - 3

Year of Operations	Indicative Sewage flow rate for STP& MPS (MLD)*
1- Year One	7.26
2- Year Two	7.31
3- Year Three	7.36
4- Year Four	7.41
5- Year Five	7.46
6- Year Six	7.51
7- Year Seven	7.56
8- Year Eight	7.61
9- Year Nine	7.66
10- Year Ten	7.72
11- Year Eleven	7.77
12- Year Twelve	7.82
13- Year Thirteen	7.87
14- Year Fourteen	7.93
15- Year Fifteen	8.00

*“**Indicative flow rate** for STP” means the rate of sewage flow which is projected by the Owner to be available for treatment in the STP facility for each of the 15 years of the O & M period.

Table 4 - Price Schedule

PARTS B & C (STP) and Annual O&M Price and Additional O&M Price

Year of Operations	Currency INR	Total Annual O&M Price, assuming Indicative Sewage Flow reaching the STP	NPV factor (d) (Based on discount factor of 10% p.a.)	Value e= c*d
1			0.909	
2			0.826	
3			0.751	
4			0.683	
5			0.621	
6			0.564	
7			0.513	
8			0.467	
9			0.424	
10			0.386	
11			0.350	
12			0.319	
13			0.290	
14			0.263	
15			0.239	

The area of the land that is required for the STP, roads, drains and other appurtenant reuse infrastructure in accordance square meters.

Table - 5

Cost of Land

S. N.	Component	
1.	Area of Land Required for STP as per given Technology by Bidder SQM	
2.	Price of Land per square meter	2372
Total Price of Land(INR):		
Amount in Words:		

1.9 Part D (STP)The Electricity Consumption guaranteed by the bidder

Table 6 - Part D (STP) Guaranteed Electricity Consumption

Year of Operations	<i>Guaranteed Electricity Consumption for the year (KWh / MLD)</i>
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Notes B:

1. Bidder shall indicate the land requirement for STP, roads, drains and other appurtenant structures in Square Metres, along with calculations considering the proposed treatment process.
2. The Bidder shall provide along with the price schedule a separate table giving details of taxes, GST, duties, levies and other applicable taxes considered by him and included in the prices offered under Part A& Part B.
3. The prices quoted in each of the sub parts of the Price Schedules shall be supported by sufficient justification, financial model and support materials / calculations showing the methods and the rates assumed at arriving these numbers.

Signature of the Bidder
Name of the Bidders
Rubber stamp with Designation

Signature of the Engineer
Name of the Engineer
Designation

Date

SCHEDULE “B”

I&D & Allied works

Table 8, Design-Build Price of I& D with Allied works including SPSs.

S.N.	Works Activity	Design-Build Price
1	DESIGNING, CONSTRUCTING OF INTERCEPTION & DIVERSION WORKS INCLUDING 3 NOS PUMPING STATIONS, RISING MAIN, SEWER LINE, NEW TAPPINGS, RENOVATIONS OF OLD TAPPINGS & CLEANING OF SEWER LINE FOR MOKAMA & 6 OTHER DRAINS (THANA CHOWK NALA, CHAKWARA STHAN GRAVITY, SIDH NATH GHAT, DHAURANI TOLA NALA, RAM GHAT NALA, CHINTA MANI CHAK GHAT NALA, MOKAMA GHAT NALA)	
Break-up of Price of item 1 above		
1A	Civil & Electromechanical Works of I & D Works (including SPSs and Rising Main)	
	Total Design Build Price	
	Amount in Words	

2.0 I&D: Ramghat Nallah

Item Description	Quantity	Total Amount
Drain construction Cost	Detailles are attached	
Outfall Structure cost	Detailles are attached	
Generator Room Cost	Detailles are attached	
Operator Quarter Cost	Detailles are attached	
Elctrical Component Cost	Detailles are attached	
DG Cost	Detailles are attached	
Rising Main Cost	Detailles are attached	
Pump and screen cost	Detailles are attached	
Total Cost, Rs		

2.1: Drain Construction Cost

Sl. No.	Name of Drains/ Nallah falling in Ganga River	Length of Drain (m) to be constructed	Velocity (m/sec)	Distance (m)	Flow (m3/sec)	Width	Depth	Area	Effective flow area	Flow	Flow (MLD)	Existing Drain Size		Proposed Drain Size				Remark			
												Width	Height	Rate	Amount	Width	Height		I&D		
1	Thana Chowk nala	100	0.12	100	0.015	0.50	1.00	0.5	10%	0.00615	0.53	0.50	1.00			1.00	1.00	Gravity/Diversion	Ram Ghat		
2	Chakwara Sthan	400	0.11	100	0.014	1.00	1.50	1.5	10%	0.016611	1.44	1.00	1.50			1.50	1.50	Gravity/Diversion	Ram Ghat		
3	Sidh Nath Ghat Dhaurani Tola Nala	150	0.12	100	0.002	1.00	1.50	1.5	10%	0.018657	1.61	1.00	1.50			1.50	1.50	Gravity/Diversion	Ram Ghat		
4	Ram Ghat Nala	100	0.09	100	0.002	1.00	1.50	1.5	10%	0.013	1.12	1.00	1.50			1.50	1.50	Pumping	TO STP		
Total Cost, Rs																	Drain construction cost including diversion				

Note: Design for diversion will be workout as per site condition, additional length of drain is to be included in diversion.

2.2.1: Cost Estimate- BOQ for Outfall Structures

SI no.	Description of Item	Unit	Quantity	Rate	Amount
1	Earth work excavation in foundation trenches or drains including dressing of sides and ramming of bottoms, lift as follows, including getting out the excavated soil and disposal of surplus excavated soil as directed, with all lead and lift complete as per the specification and as directed by the Engineer. All kinds of soils				
1.1.1	Upto 1.50m depth	cum	33.73		
	1.5 m to 3 m	cum	43.40		
2	Sand filling upto 300mm in Plinth including watering and compacting in layers of 150 mm thick as per specifications and as directed by the Engineer.	cum	6.75		
3	Providing and laying in position cement concrete of specified grade excluding the cost of Centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone)	Cum	8.15		
4	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.	Cum	29.36		
5	Centring and Shuttering including strutting, propping etc. and removal of form for vertical walls	sqm	101.42		
6	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars TMTC - 500 (Quantity at 90 kg/cum)	Kg	2642.40		
7	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	Aggregate	Cum	56.52		
	Sand	Cum	28.26		
	Cement	MT	25.20		
8	Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately	Kg	240.00		
	Erection of gates (a) 30% item NO- 8		240.00		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	20.00		
8.2	Weather shade, Chajjas, corbels etc. including edges	Sqm	1.20		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars		10.00		
	Steel quantities	kg	900.00		
10.0	Brick work with bricks of class designation 100A in foundations and plinth in :Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	6.21		

11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	27.00		
SI no.	Description of Item	Unit	Quantity	Rate	Amount
12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)		20.00		
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	27.90		
14.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for Internal walls)	Sqm	27.00		
15.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for ceiling)	Sqm	27.00		
16.0	Appying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	20.00		
17.0	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood for Door	Cum	27.90		
18.0	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick		0.50		
	For Doors	Sqm	1.80		
19.0	Providing and fixing glazing in aluminium door, window V shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)	Sqm	0.50		
20.0	Providing and laying Ceramic glazed floor tiles (400x400) mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS:13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as White, Ivory, Grey, Fume, Red, Brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.	Sqm	20.00		
Total Cost, Rs					

2.2.2: DETAILS OF MEASUREMENT (Carriage Items)

S.No.	Particulars of item	Unit	Quantity	Cement (Kg)	Sand (Cum)	Aggregate (Cum)
1	RCC (1:1.5:3)	Cum	59.36	23447.20	24.58	49.15
2	PCC (1:3:6)	Cum	8.15	1752.25	3.68	7.37
Total				25199	28.26	56.52

2.3 BOQ of Generator Room

Sl. No.	Item description	Unit	Quantity	Rate (INR)	Amount (INR)
	Earth work				
1.0	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5 m 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 disposals of surplus excavated soil as directed, within a lead of 50 m. (For all kinds of soil)				
1.1	From 0 m to 1.5 m	Cum	22.54		
1.2	From 1.5 m to 3 m	Cum	1.35		
2.0	Supplying and Filling on plinth with local sand and under floors including watering, ramming consolidating and dressing complete. For Generater room	Cum	7.20		
3.0	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level In 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone upto 20 mm nominal size)	Cum	7.33		
4.0	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
4.1	For Footings	Cum	1.44		
4.2	Column below GL up to Plinth	Cum	0.26		
4.3	Plinth beams	Cum	1.61		
4.4	For columns above Ground levels	Cum	0.87		
4.5	Lintel beams	Cum	1.43		
4.6	Roof Beams	Cum	1.33		
4.7	For roof slab	Cum	4.32		
4.8	For Sunshades over Door & Windows :	Cum	0.23		
5.0	Centring and Shuttering including strutting, propping etc. and removal of form for				
5.1	For footing – F	Sqm	4.80		
5.2	Column upto GL – C	Sqm	4.60		
5.3	Plinth beams :	Sqm	14.00		
6.0	Centring and Shuttering including strutting, propping etc. and removal of form for	Sqm			
6.1	Lintel beams	Sqm	12.40		
6.2	Roof beams	Sqm	12.40		
7.0	Centring and Shuttering including strutting, propping etc. and removal of form for				
	Column	Sqm	15.09		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	24.00		
8.2	Weather shade,Chajjas, corbels etc. including edges	Sqm	4.13		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars				
	steel quantities	MT	1.34		
10.0	Brick work with bricks of class designation 100A in foundations and plinth in :Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	17.53		
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	64.48		
12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)				
	Generator room	Sqm	24.00		



13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	89.54		
14.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for Internal walls)	Sqm	64.48		
15.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for ceiling)	Sqm	24.00		
16.0	Applying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	89.54		
17.0	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood for Door	Cum	0.16		
18.0	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick				
	For Doors	Sqm	4.20		
19.0	Providing and fixing glazing in aluminium door, window V shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)	Sqm	4.32		
20.0	Providing and laying Ceramic glazed floor tiles (400x400) mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS:13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as White, Ivory, Grey, Fume, Red, Brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
	Generater room	Sqm	24.00		
21.0	Cement plaster skirting (upto 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement. 18 mm thick	Sqm	2.70		
22.0	Providing and laying in situ five course water proofing treatment with glass fibre tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg per sqm, 2nd and 4th courses of bonding material 1.60 kg per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, third layer of glass fibre tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-seized gravel sprad @ 6 dm ³ per sqm including preparation of surface excluding grading for slope etc. compete.	Sqm	24.00		
23.0	Providing and fixing on wall face unplastidsed-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS : 4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter	m	13.50		
24.0	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth : consolidating each deposited layer by ramming and wateing lead.	Cum	14.86		
25.0	Carriage of Materials :				
	Aggregate	Cum	16.66		
	Coarse Sand	Cum	31.07		
	Local Sand	Cum	7.20		
	Cement	MT	6.01		
	Steel	MT	0.14		
	Brick (1000 Nos)		8.59		
Total Cost					

2.4 BOC of Operators Quarter

Sl. No	Item description	Unit	Quantity	Rate (INR)	Amount (INR)
1	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5 m 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 disposals of surplus excavated soil as directed, within a lead of 50 m. (For all kinds of soil)				
1.1	From 0 m to 1.5 m	Cum	36.72		
1.2	From 1.5 m to 3 m	Cum	3.24		
2	Supplying and Filling on plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	Cum	18.82		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone)	Cum	23.51		
4	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
4.1	For Column Footing	Cum	4.48		
4.2	For Column below GL up to plinth	Cum	0.74		
4.3	For Plinth beams-PB	Cum	5.08		
4.4	For columns above GL	Cum	2.45		
4.5	For lintel beams	Cum	2.04		
4.6	For Roof beams	Cum	3.59		
4.7	For Roof slab	Cum	12.03		
4.8	For Parapet	Cum	2.39		
5	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
5.1	Sunshade over Windows	Cum	0.89		
5.2	For Lofts & Racks	Cum	1.88		
6	Centring and Shuttering including strutting, propping etc. and removal of form for				
6.1	For Column Footing (C1 F1)	Sqm	10.80		
6.2	For Column below GL up to plinth	Sqm	51.36		
6.3	For Plinth beams-PB	Sqm	41.65		
6.4	For columns above GL	Sqm	42.66		
6.5	For lintel beams	Sqm	23.43		
6.6	For Roof beams	Sqm	30.97		
6.7	For Roof slab	Sqm	131.94		
6.8	For Parapet	Sqm	4.90		
7	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars	MT	4.14		
8	Brick work with bricks of class designation 100A in foundations and plinth in :Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	31.58		
9	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	167.68		

10	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)	Sqm	58.41		
11	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	147.88		
12	Wall painting with plastic emulsion paint of approved brand an	Sqm	226.09		
13	Appying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	191.98		
14	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood	Cum	0.50		
15	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick	Sqm	6.93		
16	Providing and fixing glazing in aluminium door, window ventilator shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)				
16.1	For Windows	Sqm	8.28		
16.2	For Ventilators	Sqm	0.72		
17	Providing and fabricating and fixing of M S grill for window protection etc . . As per specification, drawing and as directed by the engineer				
	For Windows & Ventilators	kg	9.00		
18	Providing and laying in situ five course water proofing treatment with glass fibre tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg per sqm, 2nd and 4th courses of bonding material 1.60 kg per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, third layer of glass fibre tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-seized gravel sprad @ 6 dm ³ per sqm including preparation of surface excluding grading for slope etc. complete.				
18.1	Slope concrete	Sqm	74.92		
19	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1 st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours such as white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
	Total quantity		58.41		
20	Providing and fixing first quality ceramic glazed wall tiles conforming to IS 15622 (thickness to be specified by the manufacturer) of approved maie in all colours shades except burgundy, bottle green, black of any size as approved by engineer incharge in skirting risers of steps and dados over 12 mm thick bed of cement mortar (1:3) and jointing with grey cement slurry at 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete				
	Total quantity	Rmt	55.67		
21	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours except white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with White cement and matching pigments etc, complete.				
21.1	Toilet	Sqm	5.85		
	Providing and laying Ceramic glazed floor tiles 400x400 mm				

22	(thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours except white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement mortar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with White cement and matching pigments etc, complete.				
22.1	Toilet Walls	Sqm	17.54		
23	Providing and fixing on wall face unplasticised-PVC(working pressure 4 kgf per sqm) rain water pipes conforming to IS :4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion	Rmt	15.60		
24	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth : consolidating each deposited layer by ramming and watering lead.	Cum	25.88		
25	Carriage of Materials :				
	Aggregate	Cum	52.34		
	Coarse Sand	Cum	68.34		
	Local Sand	Cum	18.82		
	Cement	MT	18.80		
	Steel	MT	0.00		
	Brick (1000 Nos)		15.48		
	Total Cost				
26.0	Plumbing work :				
26.1	Stainless steel kitchen sink - without drain board 470 mm X 420 mm bowl depth 178 mm	No.	1		
26.2	Salem Stainless steel AISI - 304 (18/8) Round basin 405 mm X 355 mm	No.	2		
26.3	PTMT - Soap Dish/Holder 138 mm X 102 mm X 75 mm	No.	3		
26.4	White vitreous china dual purpose closet (Anglo Indian W.C.) suitable for use as squatting pan or European type water closet as per manufacturer's specifications	No.	1		
26.4.1	White Vitreous china 10 lit. (full flush) capacity controlled low levelflushing cistern with all fittings	No.	1		
26.5	C.P.brass toilet paper holder of standard size	No.	3		
26.6	PTMT - Towel Rail (600 mm)	No.	3		
26.7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes,having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer In Charge.				
26.7.1	15 mm nominal outer dia Pipes	m	25		
26.7.2	25 mm nominal outer dia Pipes	m	25		
26.7.3	32 mm nominal outer dia Pipes	m	15		
26.8	uPVC pipes (working pressure 4 kg / cm ²) Single socketed pipe				
26.8.1	75 mm	m	30		
26.8.2	110 mm	m	30		
26.9	15 mm C.P. brass tap with elbow operation lever	No.	4		
26.10	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No.	1		
26.11	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	lit	2000		
26.12	Brass full way valve with C.I. wheel (screwed end) 40 mm dia	No	1		
26.13	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No	1		

26.14	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	No	1		
26.15	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	No	1		
26.16	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - H.D. - 35	No	1		
	Total Cost of Sanitary Items				
	Total Cost				

2.5 BOQ For Electrical Components For Pump-house

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	EARTHING				
1.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7m long etc with charcoal/coke and salt as required.	No	2		
1.2	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2.0	LT PANEL BOARD (Indoor type)				
2.1	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 240 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FRLS PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator) 2 + 8 way/10 way, Double door	No	1		
2.2	MCCB DISTRIBUTION BOARDS				
	Providing and fixing 100A rating and 16KA breaking capacity and pole TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, ets as required.	No	1		
2.3	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, triple pole and neutral, 415V, "C" curve, miniature circuit breaker for inductive load of triple pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	2		
2.4	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, single pole and neutral, 240V, "C" curve, miniature circuit breaker for inductive load of single pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	1		
2.5	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3.0	DISTRIBUTION BOARD				
3.1	Supply and fixing 4+12 way, single door, horizontal type three pole and neutral, sheet steel, MCB DB, 415V, on surface/recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powdered painted including earthing etc as required. (but without MCB/RCCB/Isolators)	m	1		
3.2	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
4	CABLES				
	Supply of LT UG cable having Copper conductor PVC insulated, Sheathed, galvanised steel wire /steel tap armoured cable with PVC outer sheathing 1.1 KV class)				
4.1	4Cx16 sq mm + 2x16 sq mm earth wire	m	1		
4.2	4Cx10 sq mm + 2x10 sq mm earth wire	m	6.5		
4.3	4Cx4 sq mm + 2x4 sq mm earth wire	m	15		
4.4	2Cx2.5 sq mm + 1x2.5 sq mm earth wire	m	14		
5.0	LUMINARIES, SOCKETS AND SWITCHES				
5.1	120W Gate lamp with fitting	No	2		
5.2	40W flourescent lamp	No	4		
5.3	70W MH Lamp for site lighting	No	4		
5.4	Single switched socket with multi purpose	No	2		
5.5	Switches	No	6		

6	POWER CONNECTION				
	Main power supply connection from the nearest BSEB source to SPS premises i/c Poles,cables,HT jointing Kit and all associated works as per Technical specifications and direction of EIC.up to Pumping Station including providing of poles, wires, cables etc.	Job	1		
7	Transformer of required capacity including H.T. panels-(incoming &Outgoing) with all associated works as per Technical specifications and direction of EIC.	Job	1		
8	Main L.T. Panel including incoming Panel, bus coupler, APFC Panel Load Distribution Panel and all associated accessories.	Job	1		
Total Cost					

2.6 BOQ ForDG Cost

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	DIESEL GENERATOR 50 KVA				
1.1	50 KVA, 40KW, 415V, 50 Hz, comprising of Perkins Engine Coupled to Stamford make Alternator, complete with all Standard accessories and ATS with Acoustic enclosure.	No	1		
1.2	EARTHING				
1.2.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7m long etc with charcoal/coke and salt as required.	No	2		
1.2.2	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2.0	LT PANEL BOARD (Indoor type)				
2.1	Supplying and fixing 4 ways surface/recess mounting, vertical type, 415V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100A TP 16KA MCCB as incommer, interconnection between incomer MCCB and bus bars (but without MCB,s /MCCB's) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)	No	1		
2.2	MCCB DISTRIBUTION BOARDS				
	Providing and fixing 100A rating and 16KA breaking capacity and pole TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, ets as required.	No	1		
2.3	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, triple pole and neutral, 415V, "C" curve, miniature circuit breaker for inductive load of triple pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	2		
2.4	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, single pole and neutral, 240V, "C" curve, miniature circuit breaker for inductive load of single pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	1		
2.5	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3.0	DISTRIBUTION BOARD				
3.1	Supply and fixing 4+12 way, single door, horizontal type thee pole and neutral, sheet steel, MCB DB, 415V, on surface/recess, complete with tinned copper bus bar, nueutral bus bar, earth bar, din bar, interconnections, powdered painted including earthing etc as required. (but without MCB/RCCB/isolators)	m	1		
3.2	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
4.0	CABLES				
	Supply of LT UG cable having Copper conductor PVC insulated, Sheathed ,galvanised steel wire /steel tap armoured cable with PVC outer sheathing 1.1 KV class)				
4.1	4Cx16 sq mm + 2x16 sq mm earth wire	m	1		
4.2	4Cx10 sq mm + 2x10 sq mm earth wire	m	6.5		
4.3	4Cx4 sq mm + 2x4 sq mm earth wire	m	15		
4.4	2Cx2.5 sq mm + 1x2.5 sq mm earth wire	m	14		
5.0	LUMINARIES, SOCKETS AND SWITCHES				
5.1	120W Gate lamp with fitting	No	2		
5.2	40W flourescent lamp	No	4		
5.3	70W MH Lamp for site lighting	No	4		

5.4	Single switched socket with multi purpose	No	2		
5.5	Switches	No	6		
Total Cost					

2.7 SITC of Mechanical Components at each Pumping Station

Sl.No	Description	Quantity	Units	Rate	Amount
1	Manually Cleaned Bar Screen				
	The screen shall be of removable type and shall consist of a welded stainless steel (AISI410) frame with vertical flats spaced at 30 mm. The flats shall not be less than 10 mm in thickness and not less than 50 mm deep. The flats shall not have any joint. The spacing between the flats shall be uniform and preferably so maintained by adequate number of spacers, which shall be so located as not to interfere with the raking operation. To facilitate the manual cleaning of the screen the inclination of the screen shall be between 45° and 60° to the horizontal. Single piece screen width should not be more than 1.5 m. Two numbers stainless steel rollers shall be fixed on each side of frame to facilitate rolling contact with guide channel during lifting and lowering of screen.				
1.2	(500 X 1500) mm	4	Nos		
2	Providing, erecting and giving test of Non clog sewage submersible pump set with SS CF8 M impeller, CI casing, SS 316 shaft suitable for 3 Ph, 415 V, 50 Hz A.C. Supply, submersible motor having TEFC enclosure with class F insulation and IP 68 protection. The pump shall be operated at 1450 RPM. The scope shall include required accessories viz automatic coupling device, guide pipe, chain with shackle, flat submersible cable upto starter panel through suitable GI pipe (30 mtr 3 Core flat copper for each pump with necessary electrical connection with the starter panel and as per specifications. (HP)				
	22 HP	4	Nos		
	4 Pumps for 2 lean, 1 peak and 1 average flow				
3	Providing Supplying erection testing and commissioning of 2 Tonne capacity Mobile Crane				
3.1	1 T Capacity for 7 m lift.	1	Nos		
Total Cost, Rs					

2.8: BOQ FOR Rising Main

Sl. No.	Description of Item	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	Excavating trenches of required width for pipes cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering etc., and disposing of surplus excavated soil as directed, within a lead of 50 m.				
1.1	0.0 to 1.5 mtr. Depth				
	do - in all kinds of soil - 100%	M	4583.74		
2.0	Supplying and Filling in plinth with local sand and under floors including , watering, ramming consolidation and dressing complete.	cum	458.37		
3.0	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron. Pipes conforming to IS : 8329 : DI -K9				
3.1	300.00	m	3395.36		
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 (one at every 6m).				
4.1	300.00	Joint	566		
5.0					
5.1	Bends-As per BS 4772 code				
	90 degree (63.5 Kg)	kg	444.50		
5.2	Taper-As per BS 4772 code				
	300x200mm (34.5 Kg)	kg	34.50		
5.3	Tee-As per BS 4772 code				
	300x300x300 mm (79.5 Kg)	kg	79.50		
6.0	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc.(the tail pieces if required will be paid separately)				
6.1	300.00	No	4		
7.0	Providing and fixing C.I. sluice valves for Scouring (with cap) complete with bolts, nuts, rubber insertions etc.(the tail pieces if required will be paid separately)				
7.1	300.00	No	3		
8.0	Providing & Constructing masonry Chamber 1.5x1.5x1.5 m inside, in brick work in cement mortar 1:3 (1 cement : 3 coarse sand) for valve, with cast insitu RCC slab with necessary reinforcement.The valve chamber shall be plastered with CM 1:4, A levelling coars of M10 shall be provided.The cost is inclusive of excavation , disposal and construction of valve chamber with moduar bricks plasting with cement mortar with all lead and lift etc., as per specification & drawing.				
8.1	Sluice valve chambers	No	3		
8.2	Scour valve chambers	No	3		
9.0	Providing and constructing of the RCC Thrust Blocks for DI bends including the excavations of soils up to the required depth ,disposal of soils after refilling with selected available earth,providing PCC including cost of labours,materials tools,curing etc., complete as per drawing and as directed by the Engineer (inclusive of cost of steel)				
9.1	90 degree	No	2		
	Enter Total pipe length		3395.36		
	Percentage of CC Road in town		70.00		
	Percentage of Asphalt Road in town		30.00		
10	Dismantling and restoration of roads :				
	Dismantling of cement concrete pavement (dismantling of cement				

10.1	concrete pavements by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock	cum	320.86				
	billing at designated locations and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable material						
10.2	Dismantalling of flexible Pavements(dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 m, stacking serviceable and unserviceable materials separately)						
	Bituminous courses by mechanical means	cum	45.84				
	Granular courses by manual means	cum	534.77				
11	Restoration of road as per the specification and as directed by the engineer						
11.1	Restoration of CC road	Cum					
a	Compacting original ground supporting subgrade (Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.) Rolling with vibratory roller	cum	1527.91				
b	Wet Mix Macadam - Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on a well prepared surface and compacting with vibratory roller to achieve the desired density complete as per Specification	cum	114.59				
c	Cement Concrete Pavement (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing)	cum	320.86				
12	Pavement Courses - Granular						
	Granular Sub-base with Close graded Material (By Mix in Place Method) - Construction of Granular sub-base(GSB) by providing close graded Material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method by rotavator at OMC, and compacting with vibratory power roller to achieve the desired density, complete as per Technical Specification						
		cum	320.86				
	Total for Grading II Material (50% of Total)	cum	160.43				
	Total for Grading I Material (50% of Total)	cum	160.43				
b	Wet Mix Macadam - Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on a well prepared surface and compacting with vibratory roller to achieve the desired density complete as per Specification	cum	534.77				
12	Pavement Courses - Bituminous						
	Prime Coat - Providing and applying primer coat with Bitumen emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.6kg/sqm using mechanical means complete	sqm	2139.08				
	Tack Coat - Providing and applying tack coat with Bitumen emulsion using emulsion pressure distributor at the rate of 0.2 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom .	sqm	2139.08				
c	Providing and laying Dense graded bituminous macadam with 100-120 TPH batch HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 % by weight of total mix and						

<p>filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specifications Clause 507. (Grading II -19mm nominal size)</p>	cum	53.48				
<p>Total Cost, Rs</p>						

3.0 I&D Nallah: Chinta Mani Chak Ghat

Item Description	Quantity	Total Amount
Drain construction Cost	Detailes are attached	
Outfall Structure cost	Detailes are attached	
Generator Room cost	Detailes are attached	
Operator Quarter Cost	Detailes are attached	
Elctrical Component Cost	Detailes are attached	
DG Cost	Detailes are attached	
Rising main cost	Detailes are attached	
Pump and screen cost	Detailes are attached	
Total Cost, Rs		

3.1 : Drain Construction Cost																	
										Existing Drain Size				Proposed Drain Size			
Sl. No.	Name of Drains/ Nallah falling in Ganga River	Length of Drain (m) to be constructed	Velocity (m/sec)	Width	Depth	Area	effective flow area	Flow	Flow (MLD)	Width	Height	Rate	Drain Cost	Width	Height	I&D	Remark
1	Chinta Mani Chak Ghat Nala	600	0.10	1.00	1.50	1.5	10%	0.015	1.27	1.00	1.50			1.50	1.50	Pumping	TO STP

3.2 BOQ for Outfall Structures

SI No.	Description of Item	Unit	Quantity	Rate (INR)	Amount (INR)
1	Earth work excavation in foundation trenches or drains including dressing of sides and ramming of bottoms, lift as follows, including getting out the excavated soil and disposal of surplus excavated soil as directed, with all lead and lift complete as per the specification and as directed by the Engineer. All kinds of soils				
1.1.1	Upto 1.50m depth	cum	38.10		
	1.5 m to 3 m	cum	41.40		
2	Sand filling upto 300mm in Plinth including watering and compacting in layers of 150 mm thick as per specifications and as directed by the Engineer.	cum	7.62		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone)	Cum	7.30		
4	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.	Cum	26.34		
5	Centring and Shuttering including strutting, propping etc. and removal of form for vertical walls	sqm	77.00		
6	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars TMTC - 500 (Quantity at 90 kg/cum)	Kg	2370.60		
7	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	Aggregate	Cum	55.73		
	Sand	Cum	27.87		
	Cement	MT	25.01		
8	Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately	Kg	240.00		
	Erection of gates (a) 30% item NO- 8	kg	240.00		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	22.00		
8.2	Weather shade, Chajjas, corbels etc. including edges	Sqm	1.20		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars		11.00		
	steel quantities	kg	990.00		
10.0	Brick work with bricks of class designation 100A in foundations and plinth in : Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	6.56		

SI No.	Description of Item	Unit	Quantity	Rate (INR)	Amount (INR)
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	28.50		
12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)		22.00		
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	29.40		
14.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for Internal walls)	Sqm	28.50		
15.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for ceiling)	Sqm	28.50		
16.0	Applying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	22.00		
17.0	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood for Door	Cum	29.40		
18.0	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick		0.50		
	For Doors	Sqm	1.80		
19.0	Providing and fixing glazing in aluminium door, window V shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)	Sqm	0.50		
20.0	Providing and laying Ceramic glazed floor tiles (400x400) mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as White, Ivory, Grey, Fume, Red, Brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.	sqm	22.00		
Total Cost, Rs					

3.3 Cost estimate of Generator Room

Sl. No.	Item description	Unit	Quantity	Rate (INR)	Amount (INR)
	Earth work				
1.0	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5 m 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 disposals of surplus excavated soil as directed, within a lead of 50 m. (For all kinds of soil)				
1.1	From 0 m to 1.5 m	Cum	22.54		
1.2	From 1.5 m to 3 m	Cum	1.35		
2.0	Supplying and Filling on plinth with local sand and under floors including watering, ramming consolidating and dressing complete. For Generater room	Cum	7.20		
3.0	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone upto 20 mm nominal size)	Cum	7.33		
4.0	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
4.1	For Footings	Cum	1.44		
4.2	Column below GL up to Plinth	Cum	0.26		
4.3	Plinth beams	Cum	1.61		
4.4	For columns above Ground levels	Cum	0.87		
4.5	Lintel beams	Cum	1.43		
4.6	Roof Beams	Cum	1.33		
4.7	For roof slab	Cum	4.32		
4.8	For Sunshades over Door & Windows :	Cum	0.23		
5.0	Centring and Shuttering including strutting, propping etc. and removal of form for				
5.1	For footing - F	Sqm	4.80		
5.2	Column upto GL - C	Sqm	4.60		
5.3	Plinth beams :	Sqm	14.00		
6.0	Centring and Shuttering including strutting, propping etc. and removal of form for	Sqm			
6.1	Lintel beams	Sqm	12.40		
6.2	Roof beams	Sqm	12.40		
7.0	Centring and Shuttering including strutting, propping etc. and removal of form for Column	Sqm	15.09		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	24.00		
8.2	Weather shade,Chajjas, corbels etc. including edges	Sqm	4.13		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars steel quantities	MT	1.34		
10.0	Brick work with bricks of class designation 100A in foundations and plinth in :Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	17.53		
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	64.48		

12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)				
	Generator room	Sqm	24.00		
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	89.54		
14.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for Internal walls)	Sqm	64.48		
15.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for ceiling)	Sqm	24.00		
16.0	Appying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	89.54		
17.0	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood for Door	Cum	0.16		
18.0	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick				
	For Doors	Sqm	4.20		
19.0	Providing and fixing glazing in aluminium door, window V shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)	Sqm	4.32		
20.0	Providing and laying Ceramic glazed floor tiles (400x400) mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS:13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as White, Ivory, Grey, Fume, Red, Brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
	Generator room	Sqm	24.00		
21.0	Cement plaster skirting (upto 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement. 18 mm thick	Sqm	2.70		
22.0	Providing and laying in situ five course water proofing treatment with glass fibre tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg per sqm, 2nd and 4th courses of bonding material 1.60 kg per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, third layer of glass fibre tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-seized gravel sprad @ 6 dm ³ per sqm including preparation of surface excluding grading for slope etc. compete.	Sqm	24.00		
23.0	Providing and fixing on wall face unplastidsed-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS : 4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter	m	13.50		
24.0	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth : consolidating each deposited layer by ramming and wateing lead.	Cum	14.86		
	Carriage of Materials :				
	Aggregate	Cum	16.66		
	Coarse Sand	Cum	31.07		
25.0	Local Sand	Cum	7.20		
	Cement	MT	6.01		

	Steel	MT	0.14		
	Brick (1000 Nos)		8.59		
	Total Cost				

3.4 BOQ FOR Operators Quarter

Sl. No	Item description	Unit	Quantity	Rate (INR)	Amount (INR)
1	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5 m 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 disposals of surplus excavated soil as directed, within a lead of 50 m. (For all kinds of soil)				
1.1	From 0 m to 1.5 m	Cum	36.72		
1.2	From 1.5 m to 3 m	Cum	3.24		
2	Supplying and Filling on plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	Cum	18.82		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone)	Cum	23.51		
4	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
4.1	For Column Footing	Cum	4.48		
4.2	For Column below GL up to plinth	Cum	0.74		
4.3	For Plinth beams-PB	Cum	5.08		
4.4	For columns above GL	Cum	2.45		
4.5	For lintel beams	Cum	2.04		
4.6	For Roof beams	Cum	3.59		
4.7	For Roof slab	Cum	12.03		
4.8	For Parapet	Cum	2.39		
5	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
5.1	Sunshade over Windows	Cum	0.89		
5.2	For Lofts & Racks	Cum	1.88		
6	Centring and Shuttering including strutting, propping etc. and removal of form for				
6.1	For Column Footing (C1 F1)	Sqm	10.80		
6.2	For Column below GL up to plinth	Sqm	51.36		
6.3	For Plinth beams-PB	Sqm	41.65		
6.4	For columns above GL	Sqm	42.66		
6.5	For lintel beams	Sqm	23.43		
6.6	For Roof beams	Sqm	30.97		
6.7	For Roof slab	Sqm	131.94		
6.8	For Parapet	Sqm	4.90		
7	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars	MT	4.14		
8	Brick work with bricks of class designation 100A in foundations and plinth in : Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	31.58		
9	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	167.68		
10	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)	Sqm	58.41		
11	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand)	Cum	147.88		

	(for External walls)				
12	Wall painting with plastic emulsion paint of approved brand an	Sqm	226.09		
13	Appying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	191.98		
14	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood	Cum	0.50		
15	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick	Sqm	6.93		
16	Providing and fixing glazing in aluminium door, window ventilator shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)				
16.1	For Windows	Sqm	8.28		
16.2	For Ventilators	Sqm	0.72		
17	Providing and fabricating and fixing of M S grill for window protection etc ., As per specification, drawing and as directed by the engineer				
	For Windows & Ventilators	kg	9.00		
18	Providing and laying in situ five course water proofing treatment with glass fibre tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg per sqm, 2nd and 4th courses of bonding material 1.60 kg per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, third layer of glass fibre tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-seized gravel sprad @ 6 dm ³ per sqm including preparation of surface excluding grading for slope etc. compete.				
18.1	Slope concrete	Sqm	74.92		
19	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1 st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours such as white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
	Total quantity		58.41		
20	Providing and fixing first quality ceramic glazed wall tiles conforming to IS 15622 (thickness to be specified by the manufacturer) of approved maik in all colours shades except burgundy, bottle green, black of any size as approved by engineer incharge in skirting risers of steps and dados over 12 mm thick bed of cement mortar (1:3) and jointing with grey cement slurry at 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete				
	Total quantity	Rmt	55.67		
21	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours except white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
21.1	Toilet	Sqm	5.85		
22	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours except white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
22.1	Toilet Walls	Sqm	17.54		

23	Providing and fixing on wall face unplasticised-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS : 4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion	Rmt	15.60		
24	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth : consolidating each deposited layer by ramming and watering lead.	Cum	25.88		
25	Carriage of Materials :				
	Aggregate	Cum	52.34		
	Coarse Sand	Cum	68.34		
	Local Sand	Cum	18.82		
	Cement	MT	18.80		
	Steel	MT	0.00		
	Brick (1000 Nos)		15.48		
	Total Cost				
26.0	Plumbing work :				
26.1	Stainless steel kitchen sink - without drain board 470 mm X 420 mm bowl depth 178 mm	No.	1		
26.2	Salem Stainless steel AISI - 304 (18/8) Round basin 405 mm X 355 mm	No.	2		
26.3	PTMT - Soap Dish/Holder 138 mm X 102 mm X 75 mm	No.	3		
26.4	White vitreous china dual purpose closet (Anglo Indian W.C.) suitable for use as squatting pan or European type water closet as per manufacturer's specifications	No.	1		
26.4.1	White Vitreous china 10 lit. (full flush) capacity controlled low level flushing cistern with all fittings	No.	1		
26.5	C.P.brass toilet paper holder of standard size	No.	3		
26.6	PTMT - Towel Rail (600 mm)	No.	3		
26.7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.				
26.7.1	15 mm nominal outer dia Pipes	m	25		
26.7.2	25 mm nominal outer dia Pipes	m	25		
26.7.3	32 mm nominal outer dia Pipes	m	15		
26.8	uPVC pipes (working pressure 4 kg / cm ²) Single socketed pipe				
26.8.1	75 mm	m	30		
26.8.2	110 mm	m	30		
26.9	15 mm C.P. brass tap with elbow operation lever	No.	4		
26.10	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No.	1		
26.11	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	lit	2000		
26.12	Brass full way valve with C.I. wheel (screwed end) 40 mm dia	No	1		
26.13	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No	1		
26.14	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine	No	1		

	sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5				
26.15	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	No	1		
26.16	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - H.D. - 35	No	1		
	Total Cost of Sanitary Items				
	Total Cost				

3.5 BOQ For Electrical Components For Pump-house

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	EARTHING				
1.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7m long etc with charcoal/coke and salt as required.	No	2		
1.2	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2.0	LT PANEL BOARD (Indoor type)				
2.1	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 240 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FRLS PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator) 2 + 8 way/10 way, Double door	No	1		
2.2	MCCB DISTRIBUTION BOARDS				
	Providing and fixing 100A rating and 16KA breaking capacity and pole TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, ets as required.	No	1		
2.3	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, triple pole and neutral, 415V, "C" curve, miniature circuit breaker for inductive load of triple pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	2		
2.4	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, single pole and neutral, 240V, "C" curve, miniature circuit breaker for inductive load of single pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	1		
2.5	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3.0	DISTRIBUTION BOARD				
3.1	Supply and fixing 4+12 way, single door, horizontal type three pole and neutral, sheet steel, MCB DB, 415V, on surface/recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powdered painted including earthing etc as required. (but without MCB/RCCB/Isolators)	m	1		
3.2	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
4	CABLES				
	Supply of LT UG cable having Copper conductor PVC insulated, Sheathed, galvanised steel wire /steel tap armoured cable with PVC outer sheathing 1.1 KV class)				
4.1	4Cx16 sq mm + 2x16 sq mm earth wire	m	1		
4.2	4Cx10 sq mm + 2x10 sq mm earth wire	m	6.5		
4.3	4Cx4 sq mm + 2x4 sq mm earth wire	m	15		
4.4	2Cx2.5 sq mm + 1x2.5 sq mm earth wire	m	14		
5.0	LUMINARIES, SOCKETS AND SWITCHES				
5.1	120W Gate lamp with fitting	No	2		
5.2	40W flourescent lamp	No	4		
5.3	70W MH Lamp for site lighting	No	4		
5.4	Single switched socket with multi purpose	No	2		
5.5	Switches	No	6		

3.6 BOQ FOR DG SET

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	DIESEL GENERATOR 50 KVA				
1.1	50 KVA, 40KW, 415V, 50 Hz, comprising of Perkins Engine Coupled to Stamford make Alternator, complete with all Standard accessories and ATS with Acoustic enclosure.	No	1		
1.2	EARTHING				
1.2.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7m long etc with charcoal/coke and salt as required.	No	2		
1.2.2	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2.0	LT PANEL BOARD (Indoor type)				
2.1	Supplying and fixing 4 ways surface/recess mounting, vertical type, 415V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100A TP 16KA MCCB as incommer, interconnection between incomer MCCB and bus bars (but without MCB,s /MCCB's) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)	No	1		
2.2	MCCB DISTRIBUTION BOARDS				
	Providing and fixing 100A rating and 16KA breaking capacity and pole TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, ets as required.	No	1		
2.3	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, triple pole and neutral, 415V, "C" curve, miniature circuit breaker for inductive load of triple pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	2		
2.4	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, single pole and neutral, 240V, "C" curve, miniature circuit breaker for inductive load of single pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	1		
2.5	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3.0	DISTRIBUTION BOARD				
3.1	Supply and fixing 4+12 way, single door, horizontal type thee pole and neutral, sheet steel, MCB DB, 415V, on surface/recess, complete with tinned copper bus bar, nuetral bus bar, earth bar, din bar, interconnections, powdered painted including earthing etc as required. (but without MCB/RCCB/isolators)	m	1		
3.2	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
4.0	CABLES				
	Supply of LT UG cable having Copper conductor PVC insulated, Sheathed, galvanised steel wire /steel tap armoured cable with PVC outer sheathing 1.1 KV class)				
4.1	4Cx16 sq mm + 2x16 sq mm earth wire	m	1		
4.2	4Cx10 sq mm + 2x10 sq mm earth wire	m	6.5		
4.3	4Cx4 sq mm + 2x4 sq mm earth wire	m	15		
4.4	2Cx2.5 sq mm + 1x2.5 sq mm earth wire	m	14		
5.0	LUMINARIES, SOCKETS AND SWITCHES				
5.1	120W Gate lamp with fitting	No	2		
5.2	40W flourescent lamp	No	4		
5.3	70W MH Lamp for site lighting	No	4		
5.4	Single switched socket with multi purpose	No	2		

5.5	Switches	No	6		
Total Cost					

3.7 SITC of Mechanical Components at each Pumping Station

Sl.No	Description	Quantity	Units	Rate	Amount
1	Manually Cleaned Bar Screen				
	The screen shall be of removable type and shall consist of a welded stainless steel (AISI410) frame with vertical flats spaced at 30 mm. The flats shall not be less than 10 mm in thickness and not less than 50 mm deep. The flats shall not have any joint. The spacing between the flats shall be uniform and preferably so maintained by adequate number of spacers, which shall be so located as not to interfere with the raking operation. To facilitate the manual cleaning of the screen the inclination of the screen shall be between 45° and 60° to the horizontal. Single piece screen width should not be more than 1.5 m. Two numbers stainless steel rollers shall be fixed on each side of frame to facilitate rolling contact with guide channel during lifting and lowering of screen.				
1.2	(500 X 1500) mm	4	Nos		
2	Providing, erecting and giving test of Non clog sewage submersible pump set with SS CF8 M impeller, CI casing, SS 316 shaft suitable for 3 Ph ,415 V , 50 Hz A.C. Supply, submersible motor having TEFC enclosure with class F insulation and IP 68 protection .The pump shall be operated at 1450 RPM .The scope shall include required accessories viz automatic coupling device,guide pipe,chain with shackle,flat submersible cable upto starter panel through suitable GI pipe (30 mtr 3 Core flat copper for each pump with necessary electrical connection with the starter panel and as per specifications. (HP)				
	4HP				
	4 Pumps for 2 lean, 1 peak and 1 average flow	4	Nos		
3	Providing Supplying erection testing and commissioning of 2 Tonne capacity Mobile Crane				
3.1	1 T Capacity for 7 m lift.	1	Nos		
Total Cost, Rs					

3.8.2: Rising Main- Cost Estimate

Sl. No.	Description of Item	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	Excavating trenches of required width for pipes cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering etc., and disposing of surplus excavated soil as directed, within a lead of 50 m.				
1.1	0.0 to 1.5 mtr. Depth do - in all kinds of soil - 100%	m	3214.36		
2.0	Supplying and Filling in plinth with local sand and under floors including , watering, ramming consolidation and dressing complete.	cum	321.44		
3.0	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron. Pipes conforming to IS : 8329 : DI-K9				
3.1	150.00	m	2857.2		
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 (one at every 6m).				
4.1	150.00	Joint	476		
5.0	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS : 9523 :				
5.1	Bends-As per BS 4772 code				
	90 degree (63.5 Kg)	kg	444.50		
5.2	Taper-As per BS 4772 code				
	300x200mm (34.5 Kg)	kg	34.50		
5.3	Tee-As per BS 4772 code				
	300x300x300 mm (79.5 Kg)	kg	79.50		
6.0	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc.(the tail pieces if required will be paid separately)				
6.1	150.00	No	4.00		
7.0	Providing and fixing C.I. sluice valves for Scouring (with cap) complete with bolts, nuts, rubber insertions etc.(the tail pieces if required will be paid separately)				
7.1	150.00	No	3.00		
8.0	Providing & Constructing masonry Chamber 1.5x1.5x1.5 m inside, in brick work in cement mortar 1:3 (1 cement : 3 coarse sand) for valve, with cast insitu RCC slab with necessary reinforcement.The valve chamber shall be plastered with CM 1:4, A levelling coars of M10 shall be provided.The cost is inclusive of excavation , disposal and construction of valve chamber with moduar bricks plasting with cement mortar with all lead and lift etc., as per specification& drawing.				
8.1	Sluice valve chambers	No	4.00		
8.2	Scour valve chambers	No	4.00		
9.0	Providing and constructing of the RCC Thrust Blocks for DI bends including the excavations of soils up to the required depth ,disposal of soils after refilling with selected available earth,providing PCC including cost of labours,materials tools,curing etc., complete as per drawing and as directed by the Engineer (inclusive of cost of steel)				
9.1	90 degree	No	2.00		
	Enter Total pipe length	2857.21	M		
	Percentage of CC Road in town	70.00	%		
	Percentage of Asphalt Road in town	30.00	%		
10	Dismantling and restoration of roads :				
10.1	Dismantling of cement concrete pavement (dismantling of cement concrete pavements by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock pilling at designated locations and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable material	cum	270.01		

10.2	Dismantalling of flexible Pavements(dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 m, stacking serviceable and unserviceable materials separately)				
	Bituminous courses by mechanical means	cum		38.57	
	Granular courses by manualmeans	cum		450.01	
11	Restoration of road as per the specification and as directed by the engineer				
11.1	Restoration of CC road				
a	Compactingoriginalgroundsupportingsubgrade (Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.) Rolling with vibratory roller	cum		1285.74	
b	Wet Mix Macadam - Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on a well prepared surface and compacting with vibratory roller to achieve the desired density complete as per Specification	cum		96.43	
c	Cement Concrete Pavement (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing)	cum		270.01	
12	Pavement Courses - Granular				
	Granular Sub-base with Close graded Material (By Mix in Place Method) - Construction of Granular sub-base(GSB) by providing close graded Material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method by rotavator at OMC, and compacting with vibratory power roller to achieve the desired density, complete as per Technical Specification	cum			
	Total for Grading II Material (50% of Total)	cum		135.00	
	Total for Grading I Material (50% of Total)	cum		135.00	
b	Wet Mix Macadam - Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on a well prepared surface and compacting with vibratory roller to achieve the desired density complete as per Specification	cum		450.01	
	Pavement Courses - Bituminous				
	Prime Coat - Providing and applyingprimer coat with Bitumen emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.6kg/sqm using mechanical means complete	sqm		1800.04	
	Tack Coat - Providing and applying tack coat with Bitumen emulsion using emulsion pressure distributor at the rate of 0.2 kg per sqm on the prepared bituminous/granular surface cleaned with mechancial broom .	sqm		1800.04	
c	Providing and laying Dense graded bituminous macadam with 100-120 TPH batch HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 % by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specifications Clause 507.	cum		45.00	

(Grading II - 19mm nominal size)

Total Cost, Rs

4.0 I &D Nallah - Mokama Ghat Nallah

Item Description	Quantity	Total Amount
Drain construction Cost	Detailes are attached	
Outfall Structure cost	Detailes are attached	
Generator Room cost	Detailes are attached	
Operator Quarter Cost	Detailes are attached	
Elctrical Component	Detailes are attached	
DG Cost	Detailes are attached	
Rising main cost	Detailes are attached	
Pump and screen cost	Detailes are attached	
Total Cost, Rs		

4.1: Drain Construction Cost

SI. No.	Name of Drains/ Nallah falling in Ganga River	Length of Drain (m) to be constructed	Velocity (m/sec)	Existing Drain Size								Proposed Drain Size				Remark	
				Width	Depth	Area	Effective flow area	Flow	Flow (MLD)	Width	Height	Rate	Drain Cost	Width	Height		I&D
6	Mokama Ghat Nala	100	0.10	1.00	1.50	1.5	10%	0.015	1.30	1.00	1.50			1.50	1.50	Pumping	TO STP

4.2. BOQ for Outfall Structures

SI no.	Description of Item	Unit	Quantity	Rate (INR)	Amount (INR)
1	Earth work excavation in foundation trenches or drains including dressing of sides and ramming of bottoms, lift as follows, including getting out the excavated soil and disposal of surplus excavated soil as directed, with all lead and lift complete as per the specification and as directed by the Engineer. All kinds of soils				
1.1.1	Upto 1.50m depth	cum	38.10		
	1.5 m to 3 m	cum	41.40		
2	Sand filling upto 300mm in Plinth including watering and compacting in layers of 150 mm thick as per specifications and as directed by the Engineer.	cum	7.62		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone)	Cum	7.30		
4	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.	Cum	26.34		
5	Centring and Shuttering including strutting, propping etc. and removal of form for vertical walls	sqm	77.00		
6	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars TMTC – 500 (Quantity at 90 kg/cum)	Kg	2370.60		
7	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	Aggregate	Cum	55.73		
	Sand	Cum	27.87		
	Cement	MT	25.01		
	Steel	MT	2.3706		
8	Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately	Kg	240.00		
	Erection of gates (a) 30% item NO- 8	kg	240.00		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	22.00		
8.2	Weather shade, Chajjas, corbels etc. including edges	Sqm	1.20		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars		11.00		
	steel quantities	kg	990.00		
10.0	Brick work with bricks of class designation 100A in foundations and plinth in :Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	6.56		
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	28.50		
12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand)	Sqm	22.00		

(for ceiling)					
Sl no.	Description of Item	Unit	Quantity	Rate (INR)	Amount (INR)
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	29.40		
14.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for Internal walls)	Sqm	28.50		
15.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for ceiling)	Sqm	28.50		
16.0	Applying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	22.00		
17.0	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood for Door	Cum	29.40		
18.0	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick		0.50		
	For Doors	Sqm	1.80		
19.0	Providing and fixing glazing in aluminium door, window V shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)	Sqm	0.50		
20.0	Providing and laying Ceramic glazed floor tiles (400x400) mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS:13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as White, Ivory, Grey, Fume, Red, Brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.	Sqm	22.00		
Total Cost, Rs					

4.3 BOQ FOR Generator Room

Sl. No.	Item description	Unit	Quantity	Rate (INR)	Amount (INR)
	Earth work				
1.0	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5 m 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 disposals of surplus excavated soil as directed, within a lead of 50 m. (For all kinds of soil)				
1.1	From 0 m to 1.5 m	Cum	22.54		
1.2	From 1.5 m to 3 m	Cum	1.35		
2.0	Supplying and Filling on plinth with local sand and under floors including watering, ramming consolidating and dressing complete. For Generater room	Cum	7.20		
3.0	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level In 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone upto 20 mm nominal size)	Cum	7.33		
4.0	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
4.1	For Footings	Cum	1.44		
4.2	Column below GL up to Plinth	Cum	0.26		
4.3	Plinth beams	Cum	1.61		
4.4	For columns above Ground levels	Cum	0.87		
4.5	Lintel beams	Cum	1.43		
4.6	Roof Beams	Cum	1.33		
4.7	For roof slab	Cum	4.32		
4.8	For Sunshades over Door & Windows :	Cum	0.23		
5.0	Centring and Shuttering including strutting, propping etc. and removal of form for				
5.1	For footing – F	Sqm	4.80		
5.2	Column upto GL – C	Sqm	4.60		
5.3	Plinth beams :	Sqm	14.00		
6.0	Centring and Shuttering including strutting, propping etc. and removal of form for	Sqm			
6.1	Lintel beams	Sqm	12.40		
6.2	Roof beams	Sqm	12.40		
7.0	Centring and Shuttering including strutting, propping etc. and removal of form for Column	Sqm	15.09		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	24.00		
8.2	Weather shade,Chajjas, corbels etc. including edges	Sqm	4.13		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars steel quantities	MT	1.34		
10.0	Brick work with bricks of class designation 100A in foundations and plinth in :Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	17.53		
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	64.48		

12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)				
	Generator room	Sqm	24.00		
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for External walls)	Sqm	89.54		
14.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for Internal walls)	Sqm	64.48		
15.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work (for ceiling)	Sqm	24.00		
16.0	Appying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	89.54		
17.0	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood for Door	Cum	0.16		
18.0	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick				
	For Doors	Sqm	4.20		
19.0	Providing and fixing glazing in aluminium door, window V shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)	Sqm	4.32		
20.0	Providing and laying Ceramic glazed floor tiles (400x400) mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS:13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as White, Ivory, Grey, Fume, Red, Brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
	Generator room	Sqm	24.00		
21.0	Cement plaster skirting (upto 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement. 18 mm thick	Sqm	2.70		
22.0	Providing and laying in situ five course water proofing treatment with glass fibre tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg per sqm, 2nd and 4th courses of bonding material 1.60 kg per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, third layer of glass fibre tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-seized gravel sprad @ 6 dm ³ per sqm including preparation of surface excluding grading for slope etc. compete.	Sqm	24.00		
23.0	Providing and fixing on wall face unplastidsed-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS : 4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter	m	13.50		
24.0	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth : consolidating each deposited layer by ramming and wateing lead.	Cum	14.86		
25.0	Carriage of Materials :				
	Aggregate	Cum	16.66		
	Coarse Sand	Cum	31.07		
	Local Sand	Cum	7.20		
	Cement	MT	6.01		

	Steel	MT	0.14		
	Brick (1000 Nos)		8.59		
	Total Cost				

4.4 BOQ FOR Operators Quarter

Sl. No	Item description	Unit	Quantity	Rate (INR)	Amount (INR)
1	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5 m 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 disposals of surplus excavated soil as directed, within a lead of 50 m. (For all kinds of soil)				
1.1	From 0 m to 1.5 m	Cum	36.72		
1.2	From 1.5 m to 3 m	Cum	3.24		
2	Supplying and Filling on plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	Cum	18.82		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level in 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone)	Cum	23.51		
4	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
4.1	For Column Footing	Cum	4.48		
4.2	For Column below GL up to plinth	Cum	0.74		
4.3	For Plinth beams-PB	Cum	5.08		
4.4	For columns above GL	Cum	2.45		
4.5	For lintel beams	Cum	2.04		
4.6	For Roof beams	Cum	3.59		
4.7	For Roof slab	Cum	12.03		
4.8	For Parapet	Cum	2.39		
5	Providing and laying in position machine batched, machine mixed, and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete.				
5.1	Sunshade over Windows	Cum	0.89		
5.2	For Lofts & Racks	Cum	1.88		
6	Centring and Shuttering including strutting, propping etc. and removal of form for				
6.1	For Column Footing (C1 F1)	Sqm	10.80		
6.2	For Column below GL up to plinth	Sqm	51.36		
6.3	For Plinth beams-PB	Sqm	41.65		
6.4	For columns above GL	Sqm	42.66		
6.5	For lintel beams	Sqm	23.43		
6.6	For Roof beams	Sqm	30.97		
6.7	For Roof slab	Sqm	131.94		
6.8	For Parapet	Sqm	4.90		
7	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars	MT	4.14		
8	Brick work with bricks of class designation 100A in foundations and plinth in : Extra for Brick work in superstructure above plinth level upto floor V cum	Cum	31.58		
9	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for Internal walls)	Sqm	167.68		
10	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) (for ceiling)	Sqm	58.41		
11	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand)	Cum	147.88		

	(for External walls)				
12	Wall painting with plastic emulsion paint of approved brand an	Sqm	226.09		
13	Appying one coat of cement primer of approved brand and manufacture on wall surface (for External walls)	Sqm	191.98		
14	Providing wood work in frames of door, window clerestory windows and other frames, wrought framed and fixed in position in local wood	Cum	0.50		
15	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including black enameled MS butt hinges with necessary screws excluding panelling which will be paid for separately - 30 mm thick	Sqm	6.93		
16	Providing and fixing glazing in aluminium door, window ventilator shutters and partition etc with PVC / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer incharge. (Cost of aluminium snap bading shall be paid in basic item). With glass pans of 5.50 mm thickness (Weight not less than 13.75 kg/sqm)				
16.1	For Windows	Sqm	8.28		
16.2	For Ventilators	Sqm	0.72		
17	Providing and fabricating and fixing of M S grill for window protection etc ., As per specification, drawing and as directed by the engineer				
	For Windows & Ventilators	kg	9.00		
18	Providing and laying in situ five course water proofing treatment with glass fibre tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg per sqm, 2nd and 4th courses of bonding material 1.60 kg per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, third layer of glass fibre tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-seized gravel sprad @ 6 dm ³ per sqm including preparation of surface excluding grading for slope etc. compete.				
18.1	Slope concrete	Sqm	74.92		
19	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1 st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours such as white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
	Total quantity		58.41		
20	Providing and fixing first quality ceramic glazed wall tiles conforming to IS 15622 (thickness to be specified by the manufacturer) of approved maike in all colours shades except burgundy, bottle green, black of any size as approved by engineer incharge in skirting risers of steps and dados over 12 mm thick bed of cement mortar (1:3) and jointing with grey cement slurry at 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete				
	Total quantity	Rmt	55.67		
21	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours except white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
21.1	Toilet	Sqm	5.85		
22	Providing and laying Ceramic glazed floor tiles 400x400 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO , ORIENT , SOMANY , KAJARIA or equivalent make in colours except white , Ivory , Grey , Fume , Red , Brown , laid on 20 mm thick cement motar 1:4 (1 cement: 4 Coarse sand) including grouting the joints with white cement and matching pigments etc, complete.				
22.1	Toilet Walls	Sqm	17.54		

23	Providing and fixing on wall face unplasticised-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS : 4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion	Rmt	15.60		
24	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth : consolidating each deposited layer by ramming and watering lead.	Cum	25.88		
25	Carriage of Materials :				
	Aggregate	Cum	52.34		
	Coarse Sand	Cum	68.34		
	Local Sand	Cum	18.82		
	Cement	MT	18.80		
	Steel	MT	0.00		
	Brick (1000 Nos)		15.48		
	Total Cost				
26.0	Plumbing work :				
26.1	Stainless steel kitchen sink - without drain board 470 mm X 420 mm bowl depth 178 mm	No.	1		
26.2	Salem Stainless steel AISI - 304 (18/8) Round basin 405 mm X 355 mm	No.	2		
26.3	PTMT - Soap Dish/Holder 138 mm X 102 mm X 75 mm	No.	3		
26.4	White vitreous china dual purpose closet (Anglo Indian W.C.) suitable for use as squatting pan or European type water closet as per manufacturer's specifications	No.	1		
26.4.1	White Vitreous china 10 lit. (full flush) capacity controlled low level flushing cistern with all fittings	No.	1		
26.5	C.P.brass toilet paper holder of standard size	No.	3		
26.6	PTMT - Towel Rail (600 mm)	No.	3		
26.7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.				
26.7.1	15 mm nominal outer dia Pipes	m	25		
26.7.2	25 mm nominal outer dia Pipes	m	25		
26.7.3	32 mm nominal outer dia Pipes	m	15		
26.8	uPVC pipes (working pressure 4 kg / cm ²) Single socketed pipe				
26.8.1	75 mm	m	30		
26.8.2	110 mm	m	30		
26.9	15 mm C.P. brass tap with elbow operation lever	No.	4		
26.10	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No.	1		
26.11	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	lit	2000		
26.12	Brass full way valve with C.I. wheel (screwed end) 40 mm dia	No	1		
26.13	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	No	1		
26.14	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine	No	1		

	sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5				
26.15	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	No	1		
26.16	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - H.D. - 35	No	1		
	Total Cost of Sanitary Items				
	Total Cost				

4.5 BOQ For Electrical Components For Pump-house

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	EARTHING				
1.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7m long etc with charcoal/coke and salt as required.	No	2		
1.2	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2.0	LT PANEL BOARD (Indoor type)				
2.1	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 240 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FRLS PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator) 2 + 8 way/10 way, Double door	No	1		
2.2	MCCB DISTRIBUTION BOARDS				
	Providing and fixing 100A rating and 16KA breaking capacity and pole TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, ets as required.	No	1		
2.3	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, triple pole and neutral, 415V, "C" curve, miniature circuit breaker for inductive load of triple pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	2		
2.4	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, single pole and neutral, 240V, "C" curve, miniature circuit breaker for inductive load of single pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	1		
2.5	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3.0	DISTRIBUTION BOARD				
3.1	Supply and fixing 4+12 way, single door, horizontal type three pole and neutral, sheet steel, MCB DB, 415V, on surface/recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powdered painted including earthing etc as required. (but without MCB/RCCB/isolators)	m	1		
3.2	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
4	CABLES				
	Supply of LT UG cable having Copper conductor PVC insulated, Sheathed ,galvanised steel wire /steel tap armoured cable with PVC outer sheathing 1.1 KV class)				
4.1	4Cx16 sq mm + 2x16 sq mm earth wire	m	1		
4.2	4Cx10 sq mm + 2x10 sq mm earth wire	m	6.5		
4.3	4Cx4 sq mm + 2x4 sq mm earth wire	m	15		
4.4	2Cx2.5 sq mm + 1x2.5 sq mm earth wire	m	14		
5.0	LUMINARIES, SOCKETS AND SWITCHES				
5.1	120W Gate lamp with fitting	No	2		
5.2	40W flourescent lamp	No	4		
5.3	70W MH Lamp for site lighting	No	4		
5.4	Single switched socket with multi purpose	No	2		
5.5	Switches	No	6		

4.6 BOQ FOR DG SET

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1.0	DIESEL GENERATOR 50 KVA				
1.1	50 KVA, 40KW, 415V, 50 Hz, comprising of Perkins Engine Coupled to Stamford make Alternator, complete with all Standard accessories and ATS with Acoustic enclosure.	No	1		
1.2	EARTHING				
1.2.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accesseries, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7m long etc with charcoal/coke and salt as required.	No	2		
1.2.2	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accesseries, and providing masonry enclosure with cover plate having locking arrangement andwateringpipeetc with charcoal/coke and salt as required.	No	2		
2.0	LT PANEL BOARD (Indoor type)				
2.1	Supplying and fixing 4 ways surface/recess mounting, vertical type, 415V, TPN MCB distribution board of sheet steel, dust protected , duly powder painted, inclusive of 200A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100A TP 16KA MCCB as incommer, interconnection between incomer MCCB and bus bars (but without MCB,s /MCCB's) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)	No	1		
2.2	MCCB DISTRIBUTION BOARDS				
	Providing and fixing 100A rating and 16KA breaking capacity and pole TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, ets as required.	No	1		
2.3	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, triple pole And neutral, 415V, "C" curve, miniature circuit breaker for inductive load of triple pole and Neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	2		
2.4	MINIATURE CIRCUIT BREAKERS				
	Supplying and fixing 32A, single pole And neutral, 240V, "C" curve, miniature circuit breaker for inductive load of single pole and neutral in the existing MCB DB complete with connections, testing and commitioning etc as required.	No	1		
2.5	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accesseries, and providing masonry enclosure with cover plate having locking arrangement andwateringpipeetc with charcoal/coke and salt as required.	No	2		
3.0	DISTRIBUTION BOARD				
3.1	Supply and fixing 4+12 way, single door, horizontal type thee pole and neutral, sheet steel, MCB DB, 415V, on surface/recess, complete with tinned copper bus bar, nuetral bus bar, earth bar, din bar, interconnections, powdered painted including earthing etc as required. (but without MCB/RCCB/isolators)	m	1		
3.2	EARTHING				
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accesseries, and providing masonry enclosure with cover plate having locking arrangement andwateringpipeetc with charcoal/coke and salt as required.	No	2		
4.0	CABLES				
	Supply of LT UG cable having Copper conductor PVC insulated,Sheathed ,galvanised steel wire /steel tap armoured cable with PVC outer sheathing 1.1 KV class)				
4.1	4Cx16 sq mm + 2x16 sq mm earth wire	m	1		
4.2	4Cx10 sq mm + 2x10 sq mm earth wire	m	6.5		



4.3	4Cx4 sq mm + 2x4 sq mm earth wire	m	15			
4.4	2Cx2.5 sq mm + 1x2.5 sq mm earth wire	m	14			
5.0	LUMINARIES, SOCKETS AND SWITCHES					
5.1	120W Gate lamp with fitting	No	2			
5.2	40W flourescent lamp	No	4			
5.3	70W MH Lamp for site lighting	No	4			
5.4	Single switched socket with multi purpose	No	2			
5.5	Switches	No	6			
Total Cost						

4.7.: BOQ Rising Main

Sl. No.	Description of Item	Unit	No.	Quantity	Rate (INR)	Amount (INR)		
1.0	Excavating trenches of required width for pipes cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering etc., and disposing of surplus excavated soil as directed, within a lead of 50 m.							
1.1	0.0 to 1.5 mtr. Depth							
	do - in all kinds of soil - 100%	m		2547.60				
2.0	Supplying and Filling in plinth with local sand and under floors including , watering, ramming consolidation and dressing complete.	cum		254.76				
3.0	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron. Pipes conforming to IS : 8329 :DI-K9							
3.1	200.00	m		2123.0				
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 (one at every 6m).							
4.1	200.00	Joint		354				
5.0								
5.1	Bends-As per BS 4772 code							
	90 degree (63.5 Kg)	kg		317.50				
5.2	Taper-As per BS 4772 code							
	300x200mm (34.5 Kg)	kg		34.50				
5.3	Tee-As per BS 4772 code							
	300x300x300 mm (79.5 Kg)	kg		79.50				
6.0	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc.(the tail pieces if required will be paid separately)							
6.1	200.00	No		4.00				
7.0	Providing and fixing C.I. sluice valves for Scouring (with cap) complete with bolts, nuts, rubber insertions etc.(the tail pieces if required will be paid separately)							
7.1	200.00	No		3.00				
8.0	Providing & Constructing masonry Chamber 1.5x1.5x1.5 m inside, in brick work in cement mortar 1:3 (1 cement : 3 coarse sand) for valve, with cast insitu RCC slab with necessary reinforcement.The valve chamber shall be plastered with CM 1:4, A levelling coars of M10 shall be provided.The cost is inclusive of excavation , disposal and construction of valve chamber with moduar bricks plasting with cement mortar with all lead and lift etc., as per specification & drawing.							
8.1	Sluice valve chambers	No		4.00				
8.2	Scour valve chambers	No		4.00				
9.0	Providing and constructing of the RCC Thrust Blocks for DI bends including the excavations of soils up to the required depth ,disposal of soils after refilling with selected available earth,providing PCC including cost of labours,materials tools,curing etc., complete as per drawing and as directed by the Engineer (inclusive of cost of steel)							
9.1	90 degree	No		2.00				
	Enter Total pipe length	2123.00		m				
	Percentage of CC Road in town	70.00		%				
	Percentage of Asphalt Road in town	30.00		%				

10	Dismantling and restoration of roads :						
10.1	Dismantling of cement concrete pavement (dismantling of cement concrete pavements by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable material	cum		200.62			
10.2	Dismantalling of flexible Pavements(dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 m, stacking serviceable and unserviceable materials separately)						
	Bituminous courses by mechanical means	cum		28.66			
	Granular courses by manualmeans	cum		334.37			
11	Restoration of road as per the specification and as directed by the engineer						
11.1	Restoration of CC road						
a	Compacting original ground supporting subgrade (Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.) Rolling with vibratory roller	cum		955.35			
b	Wet Mix Macadam - Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on a well prepared surface and compacting with vibratory roller to achieve the desired density complete as per Specification	cum		71.65			
c	Cement Concrete Pavement (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing)	cum		200.62			
12	Pavement Courses - Granular						
	Granular Sub-base with Close graded Material (By Mix in Place Method) - Construction of Granular sub-base(GSB) by providing close graded Material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method by rotavator at OMC, and compacting with vibratory power roller to achieve the desired density, complete as per Technical Specification	cum					
	Total for Grading II Material (50% of Total)	cum		100.31			
	Total for Grading I Material (50% of Total)	cum		100.31			
b	Wet Mix Macadam - Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on a well prepared surface and compacting with vibratory roller to achieve the desired density complete as per Specification	cum		334.37			
c	Pavement Courses - Bituminous						
	Prime Coat - Providing and applying primer coat with Bitumen emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.6kg/sqm using mechanical means complete	sqm		1337.49			
	Tack Coat - Providing and applying tack coat with Bitumen emulsion using emulsion pressure distributor at the rate of 0.2 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom .	sqm		1337.49			

<p>Providing and laying Dense graded bituminous macadam with 100-120 TPH batch HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 % by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specifications Clause 507. (Grading II - 19mm nominal size)</p>	cum		33.44			
Total Cost, Rs						

4.8 SITC of Mechanical Components at each Pumping Station

Sl.No	Description	Quantity	Units	Rate	Amount	Rate Reference
1	Manually Cleaned Bar Screen					
	The screen shall be of removable type and shall consist of a welded stainless steel (AISI410) frame with vertical flats spaced at 30 mm. The flats shall not be less than 10 mm in thickness and not less than 50 mm deep. The flats shall not have any joint. The spacing between the flats shall be uniform and preferably so maintained by adequate number of spacers, which shall be so located as not to interfere with the raking operation. To facilitate the manual cleaning of the screen the inclination of the screen shall be between 45° and 60° to the horizontal. Single piece screen width should not be more than 1.5 m. Two numbers stainless steel rollers shall be fixed on each side of frame to facilitate rolling contact with guide channel during lifting and lowering of screen.					
1.2	(500 X 1500) mm	4				
2	Providing, erecting and giving test of Non clog sewage submersible pump set with SS CF8 M impeller, CI casing, SS 316 shaft suitable for 3 Ph, 415 V, 50 Hz A.C. Supply, submersible motor having TEFC enclosure with class F insulation and IP 68 protection. The pump shall be operated at 1450 RPM. The scope shall include required accessories viz automatic coupling device, guide pipe, chain with shackle, flat submersible cable upto starter panel through suitable GI pipe (30 mtr 3 Core flat copper for each pump with necessary electrical connection with the starter panel and as per specifications. (HP)					
	16HP	4				
	4 Pumps for 2 lean, 1 peak and 1 average flow					
3	Providing Supplying erection testing and commissioning of 2 Tonne capacity Mobile Crane					
3.1	1 T Capacity for 7 m lift.	1				
Total Cost, Rs						

Tabel-9.

Indicative Sewage Flow Rate for SPS

<u>Year of Operations</u>	<u>Indicative Sewage flow rate (MLD)</u>		
	<u>SPS A</u>	<u>SPS B</u>	<u>SPS C</u>
<u>1st year</u>	<u>4.28</u>	<u>0.63</u>	<u>2.42</u>
<u>2 nd Year</u>	<u>4.31</u>	<u>0.63</u>	<u>2.44</u>
<u>3 rd year</u>	<u>4.33</u>	<u>0.64</u>	<u>2.45</u>
<u>4 th year</u>	<u>4.36</u>	<u>0.64</u>	<u>2.47</u>
<u>5 th Year</u>	<u>4.39</u>	<u>0.65</u>	<u>2.48</u>
<u>6 th year</u>	<u>4.42</u>	<u>0.65</u>	<u>2.50</u>
<u>7 th Year</u>	<u>4.44</u>	<u>0.65</u>	<u>2.51</u>
<u>8 th year</u>	<u>4.47</u>	<u>0.66</u>	<u>2.53</u>
<u>9 th year</u>	<u>4.50</u>	<u>0.66</u>	<u>2.55</u>
<u>10 th year</u>	<u>4.53</u>	<u>0.67</u>	<u>2.56</u>
<u>11th year</u>	<u>4.56</u>	<u>0.67</u>	<u>2.58</u>
<u>12th year</u>	<u>4.59</u>	<u>0.68</u>	<u>2.59</u>
<u>13th year</u>	<u>4.62</u>	<u>0.68</u>	<u>2.61</u>
<u>14th year</u>	<u>4.64</u>	<u>0.68</u>	<u>2.63</u>
<u>15th year</u>	<u>4.67</u>	<u>0.69</u>	<u>2.64</u>

Indicative Sewage flow rate for SPS means the rate of sewage flow which is projected by the Owner to be available for handling in the SPS for each of the 15 years of the O&M period.

Tabel-10

O&M Price for Operation and Maintenance of the I&D works, Rising Main & Three Pumping Stations in each of the 15 years of the Operations Period as provided in the table below

Overall O&M Prices for I&D works, Rising Main & Three Pumping Stations etc

<u>Year of Operations</u>	<u>Annual Operation and Maintenance Price for I&D Allied works, Rising Main including Rising Main and Three SPSs¹</u>		<u>NPV Factor (Based on discount factor of 10% p.a.)</u>	<u>NPV of O&M Price</u> <u>Col 5 = Col 2 * Col 4</u>
	<u>In Figures</u>	<u>In words</u>		
<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>	<u>(5)</u>
<u>1</u>			<u>0.909</u>	
<u>2</u>			<u>0.826</u>	
<u>3</u>			<u>0.751</u>	
<u>4</u>			<u>0.683</u>	
<u>5</u>			<u>0.621</u>	
<u>6</u>			<u>0.564</u>	
<u>7</u>			<u>0.513</u>	
<u>8</u>			<u>0.467</u>	
<u>9</u>			<u>0.424</u>	
<u>10</u>			<u>0.386</u>	
<u>11</u>			<u>0.350</u>	
<u>12</u>			<u>0.319</u>	
<u>13</u>			<u>0.290</u>	
<u>14</u>			<u>0.263</u>	
<u>15</u>			<u>0.239</u>	
<u>NPV of Total O&M Price for 15 years</u>				

PART C – Guaranteed Electricity Consumption for SPS

Tabel-11

The Electricity Consumption guaranteed by the bidder shall be as under:
For SPS A

<u>Year of Operations</u>	<u>Guaranteed Annual Energy Consumption for</u> <u>Sewage flow rate</u> <u>(KWh / MLD of Sewage pumped over the</u> <u>year)</u>
<u>1</u>	
<u>2</u>	
<u>3</u>	
<u>4</u>	
<u>5</u>	
<u>6</u>	
<u>7</u>	
<u>8</u>	
<u>9</u>	
<u>10</u>	
<u>11</u>	
<u>12</u>	
<u>13</u>	
<u>14</u>	
<u>15</u>	

Tabel-12

The Electricity Consumption guaranteed by the bidder shall be as under:
For SPS B

<u>Year of Operations</u>	<u>Guaranteed Annual Energy Consumption for Sewage flow rate (KWh / MLD of Sewage pumped over the year)</u>
<u>1</u>	
<u>2</u>	
<u>3</u>	
<u>4</u>	
<u>5</u>	
<u>6</u>	
<u>7</u>	
<u>8</u>	
<u>9</u>	
<u>10</u>	
<u>11</u>	
<u>12</u>	
<u>13</u>	
<u>14</u>	
<u>15</u>	

Tabel-13

The Electricity Consumption guaranteed by the bidder shall be as under:
For SPS C

<u>Year of Operations</u>	<u>Guaranteed Annual Energy Consumption for Sewage flow rate (KWh / MLD of Sewage pumped over the year)</u>
<u>1</u>	
<u>2</u>	
<u>3</u>	
<u>4</u>	
<u>5</u>	
<u>6</u>	
<u>7</u>	
<u>8</u>	
<u>9</u>	
<u>10</u>	
<u>11</u>	
<u>12</u>	
<u>13</u>	
<u>14</u>	
<u>15</u>	

Tabel-14
Summary of O & M Price

<u>Year</u>	<u>Quoted Bid Price for 15 Years O&M</u>				
	<u>I&D, rising mains, Drains</u>	<u>SPS A</u>	<u>SPS B</u>	<u>SPS C</u>	<u>Total Price (2+3+4+5)</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
<u>1</u>					
<u>2</u>					
<u>3</u>					
<u>4</u>					
<u>5</u>					
<u>6</u>					
<u>7</u>					
<u>8</u>					
<u>9</u>					
<u>10</u>					
<u>11</u>					
<u>12</u>					
<u>13</u>					
<u>14</u>					
<u>15</u>					
<u>Total</u>					

Tabel-15
O & M COST OF I&D, Rising Main, Drains FOR 15 YEARS

Year of Operation	Annual O&M rate in figures In Rs	In words In Rs
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Total O&M price for 15 years		
Amount in words in Rs		

Price for Operation & Maintenance of SPSA for 15 years

Sl. No.	Description	Lump Sum Price														
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	6 th Year	7 th Year	8 th Year	9 th Year	10 th Year	11 th Year	12 th Year	13 th Year	14 th Year	15 th Year
	Fixed Price															
1	O & M cost including Spare Parts, tools and tackles Manpower, repair & maintenance of civil works, electromechanical works and all other costs related to operation and maintenance of SPS facility but excluding energy consumption.															
	Variable Price															
2	Cost of electrical Energy consumption per MLD of sewage pumped (Guaranteed Energy Consumption per MLD x Base Rate of Electricity Tariff.)															
3	Indicative Sewage Flow to be pumped per year – MLD	4.28	4.31	4.33	4.36	4.39	4.42	4.44	4.47	4.50	4.53	4.56	4.59	4.62	4.64	4.67
4	Cost of Energy* (2x3)															
	Total Price for O&M of SPS-A for 15 years (1+4)															

Price for Operation & Maintenance of SPSB for 15 years

Sl. No.	Description	Lump Sum Price														
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	6 th Year	7 th Year	8 th Year	9 th Year	10 th Year	11 th Year	12 th Year	13 th Year	14 th Year	15 th Year
	Fixed Price															
1	O & M cost including Spare Parts, tools and tackles Manpower, repair & maintenance of civil works, electromechanical works and all other costs related to operation and maintenance of SPS facility but excluding energy consumption.															
	Variable Price															
2	Cost of electrical Energy consumption per MLD of sewage pumped (Guaranteed Energy Consumption per MLD x Base Rate of Electricity Tariff.)															
3	Indicative Sewage Flow to be pumped per year – MLD	0.63	0.63	0.64	0.64	0.65	0.65	0.65	0.66	0.66	0.67	0.67	0.68	0.68	0.68	0.69
4	Cost of Energy* (2x3)															
	Total Price for O&M of SPS-A for 15 years (1+4)															

Price for Operation & Maintenance of SPSC for 15 years

Sl. No.	Description	Lump Sum Price														
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	6 th Year	7 th Year	8 th Year	9 th Year	10 th Year	11 th Year	12 th Year	13 th Year	14 th Year	15 th Year
	Fixed Price															
1	O & M cost including Spare Parts, tools and tackles Manpower, repair & maintenance of civil works, electromechanical works and all other costs related to operation and maintenance of SPS facility but excluding energy consumption.															
	Variable Price															
2	Cost of electrical Energy consumption per MLD of sewage pumped (Guaranteed Energy Consumption per MLD x Base Rate of Electricity Tariff.)															
3	Indicative Sewage Flow to be pumped per year – MLD	2.42	2.44	2.45	2.47	2.48	2.50	2.51	2.53	2.55	2.56	2.58	2.59	2.61	2.63	2.64
4	Cost of Energy* (2x3)															
	Total Price for O&M of SPS-A for 15 years (1+4)															