BIHAR URBAN INFRASTRUCTURDEVELOPMENT CORPORATION LIMITED

Volume-II

FINANCIAL BID

FOR

CONSTRUCTION OF INTERCEPTION & DIVERSION WORKS INCLUDING 2 PUMPING STATIONS, RISING MAIN, TAPPINGS FOR 3 DRAINS (Amarnath Ghat, Chondi Nala, Salempur Nala) CONTROLLED WITH SCADA &CONSTRUCTION OF SEWAGE TREATMENT PLANT OF CAPACITY 11 MLD INCLUDING DISPOSAL & REUSE FACILITY WITH 2 MONTHS TRIAL, RUN, TESTING, COMMISSIONING & MAINTENANCE OF COMPLETE SYSTEM ON DESIGN BUILD OPERATE (DBO) BASIS & THERE AFTER OPERATION & MAINTENANCE FOR 15 YEARS FOR BARH TOWN, BIHAR, INDIA

UNDER

"NAMAMI GANGE PROGREMME"

Managing Director, BUIDCo.

CONSTRUCTION OF INTERCEPTION & DIVERSION WORKS INCLUDING 2 PUMPING STATIONS, RISING MAIN, TAPPINGS FOR 3 DRAINS (Amarnath Ghat, Chondi Nala, Salempur Nala) CONTROLLED WITH SCADA & CONSTRUCTION OF SEWAGE TREATMENT PLANT OF CAPACITY 11 MLD INCLUDING DISPOSAL & REUSE FACILITY WITH 2 MONTHS TRIAL, RUN, TESTING, COMMISSIONING & MAINTENANCE OF COMPLETE SYSTEM ON DESIGN BUILD OPERATE (DBO) BASIS & THERE AFTER OPERATION & MAINTENANCE FOR 15 YEARS FOR BARH TOWN, BIHAR, INDIA

ABSTRACT OF TOTAL COST

SEWAGE TREATMENT PLANT AND I & D ALLIED WORKS INCLUDING SPSs

Grand Summary

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) = *[in figures]* *[In words]*		
Total Price based on NPV of quoted O&M prices including price of land (1+2+3B+4B+5) = *[in figures]* *[In words]*		

SCHEDULE A

Table Ab2 - Price Schedule: PART A (STP) – Design-Build Price

S.N.	Works Activity	Design-Build Price
1	CONSTRUCTING OF STP OF CAPACITY 10 MLD	
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 bidsduring the Operations Period shall be as follows:

Year of Operations	**Indicative Sewage flow rate for STP& MPS (MLD)***
1- Year One	8.10
2- Year Two	8.31
3- Year Three	8.52
4- Year Four	8.73
5- Year Five	8.94
6- Year Six	9.15
7- Year Seven	9.36
8- Year Eight	9.58
9- Year Nine	9.79
10- Year Ten	10.00
11- Year Eleven	10.21
12- Year Twelve	10.42
13- Year Thirteen	10.63
14- Year Fourteen	10.84
15- Year Fifteen	11.05

***"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 Ab3 - Price Schedule

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

Year of Operation	Currency INR	PART B Annual O & M Price for treatment of Threshold Sewage Flow of 8.10 MLD (Amount) (a)	PART C Annual Additional O&M Price for treatment of additional sewage flow in excess of the Threshold flow on a per MLD basis (Amount Per MLD) (b)	Total Annual O&M Price, assuming Indicative Sewage Flow reaching the STP c = a + b* x (x = indicative flow minus threshold sewage flow)	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	
Total O&M Price (Gross) for 15 years assuming "Indicative Sewage Flow Rate" (as per Total of Column 'c') In figures: In words: **NPV of Total O&M Price for 15 years assuming "Indicative Sewage Flow Rate"** (as per Total of Column 'e') In figures: In words:						

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

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 as per Bid Data Sheet clause 3.3 (c)	
Total Price of Land**(INR)**:		
Amount in Words:		

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

Table Ab4 - Part D (STP) Guaranteed Electricity Consumption

Year of Operations	***Guaranteed Electricity Consumption for the year (KWh / MLD)***
1	
2	
3	
4	
5	
6	
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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 Ab3, Design-Build Price of I& D with Allied works including SPSs.

S.N.	Works Activity	Design-Build Price
1	CONSTRUCTING OF INTERCEPTION & DIVERSION WORKS INCLUDING PUMPING STATIONS, RISING MAIN, SEWER LINE, NEW TAPPINGS, RENOVATIONS OF OLD TAPPINGS & CLEANING OF LINE FOR WITH 2 IPS, 3 NALLA **(Amarnath Ghat, Chondi Nala, Salempur 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	

Indicative Sewage Flow Rate for SPS

Year of Operations	Indicative Sewage flow rate (MLD)			
	SPS A	**SPS B**		
1st year	**3.11**	**4.75**		
2 nd Year	**3.19**	**4.88**		
3 rd year	**3.27**	**5.00**		
4 th year	**3.36**	**5.13**		
5 th Year	**3.44**	**5.25**		
6 th year	**3.52**	**5.38**		
7 th Year	**3.60**	**5.50**		
8 th year	**3.69**	**5.63**		
9 th year	**3.77**	**5.76**		
10 th year	**3.85**	**5.88**		
11^{th} year	**3.93**	**6.01**		
12^{th} year	**4.01**	**6.13**		
13^{th} year	**4.10**	**6.26**		
14^{th} year	**4.18**	**6.38**		
15^{th} year	**4.26**	**6.51**		

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.

O&M Price for Operation and Maintenance of the Sewerage Network and Sewage Pumping Stations in each of the 15 years of the Operations Period as provided in the table below

Overall O&M Prices for Sewerage Network including Rising Mains and SPSs etc

Table 5

Year of Operations	**Annual Operation and Maintenance Price for Sewerage Network including Rising Main and SPSs**[1]		**NPV Factor** (Based on discount factor of 10% p.a.)	**NPV of O&M Price** *Col 5* **= Col 2 * Col 4**
	In Figures	**In words**		
(1)	(2)	(3)	(4)	(5)
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	
NPV of Total O&M Price for 15 years				

Figures in Table 3 are derived from Figures in Table 4

Note:

1. . The bidder shall furnish break-up of the O&M prices as under for each year along with the respective calculation sheets in support of the Part B (lump-sum) prices quoted in the Table above.

[1]Bidder may quote in more than one currency in accordance with ITB 3.12.

[i] O&M charges for as applicable for each size of sewerage lineseparately on per Km basis;
[ii] O&M charges for the each set of pumping stations; and
[iii] O& M charges for other assets, if any.

2. . The break-up of charges quoted by the bidder (Operator) shall be basis for determining the variation in the O&M payments for any period during which the scope of O&M services of the Operator is varied by the Owner owing to variation in the lengths of sewerage lines and number of pumping stations to be operated and maintained during the contract term, (Please refer Article 2 of Schedule 6 to the contract relating to Terms and procedure of Payment.)

3. The Bidder shall provide along with the price schedule a separate table giving details of taxes, duties, levies and other applicable taxes considered by him and included in the prices offered under Part A & Part B.Service Tax shall not be included in the prices and the same shall be paid separately by the Owner, if applicable, against proof of applicability and payment.

PART C – Guaranteed Electricity Consumption for SPS

Table 7 A

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

For SPS A

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

Table 7 B

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

For SPS B

Year of Operations	***Guaranteed Annual Energy Consumption for Sewage flow rate (KWh / MLD of Sewage pumped over the year)***
1	
2	
3	
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10	
11	
12	
13	
14	
15	

Summary of O & M Price

Table 8

Year		**Quoted Bid Price for 15 Years O&M**				
	Sewer network & rising mains	SPS A	SPS B			Total Price (2+3+4)
1	2	3	4			7
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
Total						

SCHEDULE "B"

I&D & Allied works

1.0: I&D Nallah -I_Chondi Nallah

Item Description	Quantity	Total Amount
1.1) Drain construction Cost	Details are attached	
1.2) Outfall Structure Cost	Details are attached	
1.3) Generator Room Cost	Details are attached	
1.4) Operator Quarter Cost	Details are attached	
1.5) Elctrical Component Cost	Details are attached	
1.6) DG Cost	Details are attached	
1.7) Rising Main Cost	Details are attached	
1.8) Pump and screen cost	Details are attached	
Total Cost, Rs		

1.1: BOQ For Drain Construction Cost																
									Existing Drain				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	Drain Area	Effective flow area	Flow (MLD)	Width	Height	**Rate Per RM**	**Drain Cost For Total Length**	Width	Height	I&D	Remark
1	Chondi Nala	100	0.23	0.5	1.5	0.75	10%	1.47	0.50	1.00			1.00	1.00	Pumping	To STP
2	Alaknath Ghat Nallah	350	0.21	1	1.5	1.5	10%	2.66	1	1.5			1	1.5	Gravity	To Chondi nallah
Total Cost, Rs																

1.2: BOQ for Outfall Structures					
Sl 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	Upto1.50m depth	cum	42.35		
	1.5 m to 3 m	cum	42.6		
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	8.47		
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 granded stone)	Cum	6.71		
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	24.07		
5	Centring and Shuttering including strutting, propping etc. and removal of form for vertical walls	sqm	77.17		
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	2166.30		
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	48.36		
	Sand	Cum	24.17		
	Cement	MT	21.62		

	Steel	MT	2.17		
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		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	18		
8.2	Weather shade,Chajjas, corbels etc. including edges	Sqm	1.2		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars		9.00		
	steel quantities	Kg	810.00		
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	5.87		
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) **(for Internal walls**)	Sqm	25.50		
12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) **(for ceiling**)		18.00		
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) **(for External walls**)	Sqm	26.40		
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	25.50		
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	25.50		
16.0	Appying one coat of cement primer of approved brand and manufacture on wall surface **(for External walls)**	Sqm	18.00		

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	26.40		
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	1.8		
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	18.00		
Total Cost, Rs					

1.3 BOQ For Generator Room					
Sl. No.	**Item description**	**Unit**	**Quantity**	**Rate**	**Amount**
	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 granded 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	12.4		
6.2	Roof beams	Sqm	12.4		
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		
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		
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	4.2		
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		
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 dm3 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	7.2		
	Cement	MT	6.01		
	Steel	MT	0.14		
	Brick (1000 Nos)	Per 1000	8.59		
	Total Cost				

1.4 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 granded 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 Columnn 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 Columnn Footing (C1 F1)	Sqm	10.8		
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	4.9		
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 and	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		
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 dm3 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 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	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 wateing lead.	Cum	25.88		
25	Carriage of Materials :				
	Aggregate	Cum	52.34		
	Coarse Sand	Cum	68.34		
	Local Sand	Cum	18.82		
	Cement	MT	18.8		
	Steel	MT	0		
	Brick (1000 Nos)		15.48		
	Total Cost				
26	**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 / cm2) 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		
26.1	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				

1.5 BOQ For Electrical Components For Pump-house

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)
1	**EARTHING**				

1.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accesseries, and providing masonary 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 accesseries, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2	**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	**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	**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	**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		
3	**EARTHING**				

	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accesseries, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3	**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 masonary 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	**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					

1.6 BOQ FOR DG SET					
Sl.No	**Description**	**Unit**	**Quantity**	**Rate (INR)**	**Amount (INR)**
1	**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 masonary 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 masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2	**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 masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3	**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 masonary 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	**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					

1.7: BOQ for Rising Main Cost					
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 kindes of soil - 100%	M	3.92		
2.0	Supplying and Filling in plinth with local sand and under floors including , watering, ramming consolidation and dressing complete.	cum	391.50		
3.0	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron. Pipes conforming to IS : 8329 **:DI-K9**				
3.1	300	M	2900		
4	Providing push on joints to Centifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes inculding testing of joints and the cost of rubber gasket (one at every 6m).				
4.1	300	Joint	483		
5	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	444.5		
5.2	**Taper-As per BS 4772 code**				
	300x200mm (34.5 Kg)	Kg	34.5		
5.3	**Tee-As per BS 4772 code**				
	300x300x300 mm (79.5 Kg)	Kg	79.5		

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	No	6		
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	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 reinforcment.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	6		
8.2	Scour valve chambers	No	6		
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	2900	M		
	Percentage of CC Road in town	70	%		
	Percentage of Asphalt Road in town	30	%		
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	274.05		
	Dismantalling of flexible Pavements(dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 m, stacking serviceable and unserviseable materials separately)				
	Bituminous courses by mechanical means	cum	39.15		
	Granular courses by manualmeans	cum	456.75		
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	1305.00		
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 mathod 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	97.88		

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	274.05		
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 Matrerial (50% of Total)	cum	137.03		
	Total for Grading I Matrerial (50% of Total)	cum	137.03		

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 mathod 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	456.75		
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 mechnical means complete	sqm	1827.00		
	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	1827.00		
	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)	cum	45.68		
Total Cost, Rs					

1.8: SITC of Mechanical Components at each Pumping Station					
Sl.No	**Description**	**Units**	**Quantity**	**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 45º and 60º 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	Nos	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 encloouser 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 shakle,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)				
	20 HP				
	For Lean Flow	Nos	2		
	For Peak Flow	Nos	1		
	For Average Flow	Nos	1		

3	Providing Supplying erection testing and commissioning of 2 Tonne capacity Mobile Crane				
3	1 T Capacity for 7 m lift.	Nos	1		
	Total Cost, Rs				

2.0: I&D Nallah-II_Salempur Nallah		
Item Description	**Quantity**	**Total Amount**
2.1) Drain construction Cost	Detailes are attached	
2.2) Outfall Structure cost	Detailes are attached	
2.3) Generator Room Cost	Detailes are attached	
2.4) Operator Quarter Cost	Detailes are attached	
2.5) Elctrical Component Cost	Detailes are attached	
2.6)DG Cost	Detailes are attached	
2.7) Rising Main Cost	Detailes are attached	
2.8)Pump and screen cost	Detailes are attached	
Total Cost, Rs		

2.1: BOQ for 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)	Effective flow area	Flow (MLD)	Width	Height	**Rate Per RM**	**Drain Cost for Total length**	Width	Height	I&D	Remark
1	Salempur Nala	100	0.18	10%	2.39	1.00	1.50			1.5	1.50	Pumping	TO STP

2.2: BOQ for Outfall Structures					
Sl 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	Upto1.50m depth	cum	51.73		
	1.5 m to 3 m	cum	65.10		
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	10.35		
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 granded stone)	Cum	8.27		
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	29.53		
5	Centring and Shuttering including strutting, propping etc. and remov	sqm	108.42		
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	2657.70		
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	54.29		
	Sand	Cum	27.14		
	Cement	MT	24.1074		
	Steel	MT	2.6577		

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		
8.0	Centring and Shuttering including strutting, propping etc. and removal of form for Roof slab				
8.1	For roof slab	Sqm	18		
8.2	Weather shade,Chajjas, corbels etc. including edges	Sqm	1.2		
9.0	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars		9.00		
	steel quantities	kg	810		
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	5.87		
11.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) **(for Internal walls**)	Sqm	25.50		
12.0	12 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) **(for ceiling**)		18.00		
13.0	20 mm Cement plaster in course sand in 1:3 (1 cement : 3 coarse sand) **(for External walls**)	Sqm	26.40		
14.0	Wall painting with plastic emulsion paint of approved brand and man	Sqm	25.50		
15.0	Wall painting with plastic emulsion paint of approved brand and man	Sqm	25.50		
16.0	Appying one coat of cement primer of approved brand and manufacture on wall surface **(for External walls)**	Sqm	18.00		
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	26.40		

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	1.8		
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.		18.00		
Total Cost, Rs					

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 granded 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	12.4		
6.2	Roof beams	Sqm	12.4		
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		
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		
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	4.2		

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		
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 dm3 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	7.2		
	Cement	MT	6.01		
	Steel	MT	0.14		
	Brick (1000 Nos)		8.59		
	Total Cost				

2.4 BOQ 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 granded 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 Columnn 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 Columnn Footing (C1 F1)	Sqm	10.8		
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	4.9		
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 and	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		
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 dm3 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 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	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 wateing lead.	Cum	25.88		
25	Carriage of Materials :				
	Aggregate	Cum	52.34		
	Coarse Sand	Cum	68.34		
	Local Sand	Cum	18.82		
	Cement	MT	18.8		
	Steel	MT	0		
	Brick (1000 Nos)		15.48		
	Total Cost				
26	**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 / cm2) 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		

26.1	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		
26.1	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		

26.2	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	**EARTHING**				
1.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accesseries, and providing masonary 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 accesseries, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
2	**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 accesseries, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2		
3	**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 masonary 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	**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					

2.6 Cost estimate For DG SET

Sl.No	Description	Unit	Quantity	Rate (INR)	Amount (INR)	Remarks
1	**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	**EARTHING**					
1.2.1	Neutral Earthing - Earthing with Copper earth plate 600mmx600mmx3mm thick including accesseries, and providing masonary 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 masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2			
2	**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	**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	**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	**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			
3	**EARTHING**					
	Body Earthing - Earthing with Gi earth pipe 4.5m long, 40mm dia including accesseries, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc with charcoal/coke and salt as required.	No	2			
3	**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 masonary 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	**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: BOQ for 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 kindes of soil - 100%	m	2.20		
2.0	Supplying and Filling in plinth with local sand and under floors including , watering, ramming consolidation and dressing complete.	cum	220.02		
3.0	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron. Pipes conforming to IS : 8329 **:DI-K9**				
3.1	350	m	1544		
4	Providing push on joints to Centifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes inculding testing of joints and the cost of rubber gasket (one at every 6m).				
4.1	350	Joint	257		
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	444.5		
5.2	**Taper-As per BS 4772 code**				
	300x200mm (34.5 Kg)	kg	34.5		
5.3	**Tee-As per BS 4772 code**				
	300x300x300 mm (79.5 Kg)	kg	79.5		
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	350	No	3		
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	350	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 reinforcment.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	1544	m		
	Percentage of CC Road in town	70	%		
	Percentage of Asphalt Road in town	30	%		
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	145.91		
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 unserviseable materials separately)				
	Bituminous courses by mechanical means	cum	20.84		
	Granular courses by manualmeans	cum	243.18		
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	694.80		
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 mathod 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	52.11		
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	145.91		
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 Matrerial (50% of Total)	cum	72.95		
	Total for Grading I Matrerial (50% of Total)	cum	72.95		
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 mathod 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	243.18		
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 mechnical means complete	sqm	972.72		
	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	972.72		

	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)	cum	24.32		
Total Cost, Rs					

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 45º and 60º 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 encloouser 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 shakle,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				
	For Lean Flow	2	Nos		
	For Peak Flow	1	Nos		
	For Average Flow	1	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					

Sr.no.	Item Description	Unit	Qty	Rate	Amount
1	SCADA System	Ls	1		
Total Cost, Rs					

O & M COST OF I&D AND ALLIAD WORK 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		