Detailed Project Report: Bagru Part B: Costing and Estimations

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1. Abstract Cost for FSM in Bagru

	Abstract Costing for FSM Project/interventions in Bag	gru
SI No	Description	Actual cost in INR
1	Faecal Sludge Treatment Plant(FSTP) - CAPEX	₹ 18,290,205
2A	Faecal Sludge Treatment Plant(FSTP) - Operations and maintenance per year	₹ 1,365,532
2 B	Faecal Sludge Treatment Plant(FSTP) - Operations and maintenance for 10 years	₹ 13,655,319
3 A	Cesspool Vehicle - Operations and maintenance per year	₹ 1,280,419
3 B	Cesspool Vehicle - Operations and Maintenance for 10 years	₹ 12,804,192
	Total Project Cost	₹ 44,749,716

2. Annexure I: Abstract Cost for FSTP

	Abstract Costing of FSTP Bagru		
SI No	Description	Nos	Actual cost in INR
Α	Treatment modules		
1	Screening Chamber	1	₹ 20,564
2	Stabilisation Tank	1	
			₹ 1,528,212
			1,020,212
3	Sludge Drying Bed	20	
			₹ 3,243,530
4	Planted Drying Bed	2	₹ 1,214,597
5	Integrated Settler & AF	1	₹ 552,202
6	Planted Gravel Filter	1	₹ 725,639
7	Polishing pond	1	₹ 421,806
	Total A		₹ 7,706,550
C 1	Other civil, mechanical and electrical works		₹ 356,129
0			x 000,120
2	Guard Room		₹ 159,131
3	Sludge Storage House		₹ 436,399
4			
	Flexible Pavement		₹ 973,598
5	Additional work		₹ 3,461,033
7	Retaining wall+Ramp		₹ 219,801
8	Storm water drain		₹ 468,937
9	Compound Wall		₹ 603,874
10	Registars + solar drying bed		₹ 87,166
	Total B		₹ 6,766,068
	Total (A+B)		₹ 14,472,618

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Contingencies and unforeseen charges (5% of A+B)=C		723,631
Sub Total(A+B+C)	₹	15,196,249
Work charge establishment (2%)	₹	303,925
GST (@18%)	₹	2,790,031
Total Cost of FSTP	₹	18,290,205

3. Annexure II: O&M Costing

Operations and Maintenance for Bagru										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Cesspool Truck - Operations and Maintenance	₹ 1,347,940	₹ 1,375,067	₹ 1,403,550	₹ 1,433,458	₹ 1,464,861	₹ 692,434	₹ 727,055	₹ 763,408	₹ 801,579	₹ 841,658
Taxes as applicable(assu ming 18%)	₹ 242,629	₹ 247,512	₹ 252,639	₹ 258,022	₹ 263,675	₹ 124,638	₹ 130,870	₹ 137,413	₹ 144,284	₹ 151,498
Part A - Cesspool truck O&M	₹ 1,590,569	₹ 1,622,579	₹ 1,656,189	₹ 1,691,480	₹ 1,728,536	₹ 817,072	₹ 857,925	₹ 900,822	₹ 945,863	₹ 993,156
FSTP operations and maintenance	₹ 1,028,497	₹ 1,070,922	₹ 1,115,468	₹ 1,162,241	₹ 1,211,353	₹ 1,082,921	₹ 1,137,067	₹ 1,193,920	₹ 1,253,617	₹ 1,316,297
Taxes as applicable(assu ming 18%)	₹ 185,129	₹ 192,766	₹ 200,784	₹ 209,203	₹ 218,044	₹ 194,926	₹ 204,672	₹ 214,906	₹ 225,651	₹ 236,934
Part B - FSTP O&M	₹ 1,213,626	₹ 1,263,688	₹ 1,316,252	₹ 1,371,445	₹ 1,429,397	₹ 1,277,847	₹ 1,341,739	₹ 1,408,826	₹ 1,479,267	₹ 1,553,231
Average O&M - Cesspool - 1 Year	₹ 1,280,419									
Average O&M - FSTP- 1 Year	₹ 1,365,532									

Particula										
rs of										
Revenue										
Generati										
on by										
ULB	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Income										
desludgi										
ng										
operatio	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
ns	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Sale of										
End	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
Products	540,000	540,000	540,000	540,000	540,000	540,000	540,000	540,000	540,000	540,000
Taxes										
collected										
from										
househol						₹	₹	₹	₹	₹
ds						966,000	966,000	966,000	966,000	966,000

4. Annexure III: Income Generation for Bagru Nagarpalika

	O&M costing Bagru - 12 KLD													
S.no	Particulars	Specifications	Unit	Number of units	Reference	Unit rate in Rs.	Amount	Remarks	Amo anni	ount per um				
A	Operational cost													
		Semi-skilled manpower to guide discharge of FS into the treatment plant and carry out the required operational			RUIDP, SOR 2017. Basic rates,									
1	Operator	activtities as suggested in the DPR	Mandays	300	Labour, #247	₹ 500	₹ 150,000	Every year	₹	150,000				
	SDB sludge	Removal of mature sludge from the SDB after maturation period and placing it for solar	Cubic		RUIDP SOR	₹	₹	Every year starting from						
2	removal	sterlisation	metre	360	2017, 4.24 RUIDP, SOR 2017. Basic rates,	254	91,440	Year 2	₹	91,440				
3	Guard	Security for the treatment plant 1 - 0.5 HP pump, 3	Mandays	365	Labour, #234	₹ 350	₹ 127,750	Every year	₹	127,750				
4	Electricity charges	tubelight, 1 fan, 2 exhaust fan	KwH	2675	JVVNL, rates	₹ 6	₹ 14,713	Every year	₹	14,713				
5	Safety equipments	All materials as specified in the DPR	Refer DPR				₹ 31,200	Every year	₹	31,200				

5. Annexure IV: Operations and Maintenance of FSTP

1			1		RUIDP,	1	1	1	I	1
					SOR					
					2017.					
					Basic					
	Maintain plants				rates,					
	in landscapping	Mali for trimming and			Labour,	₹	₹	Every		
	and PGF	Deweeding of plants	Mandays	60	#234	350	21,000	,	₹	21,000
		Testing of treated	Manuays	00	#234	330	21,000	year		21,000
		•								
		water for specifications as prescribed by			RUIDP,					
	Testing of	Rajasthan staterd	Per		SOR	₹	₹	Every		
	7 treated water	pollution control board		12	2017, 5.6	6,240	74,880	,	₹	74,880
		policitor control board	sample	12	2017, 5.0	0,240	74,000	year	×	74,000
	Maintenance									
в	cost									
В	COSI	Removal of all filter								
		materials and								
		replacement with new								
	Replacement of	filter media as per								
	filter materials -	specifications provided	Cubic			₹	₹	Once in		
	1 SDB	in the design	metre	448		1,000	x 448,000	2 years	₹	224,000
		Removal of all filter	meue	440		1,000	440,000	z years	ζ.	224,000
		materials and								
	Doplocoment of	replacement with new								
	Replacement of filter material in	filter media as per	Cubic			₹	₹	Once in		
	2 PGF	specifications provided		44			× 44,000		₹	22.000
-	-	in the design	metre	44		1,000	44,000	2 years	र	22,000
	Desludging of	Down over of a official								
	settled solids	Removal of settled	Quitin		RUIDP	z	z			
	from settler and	sludge from settler and	Cubic	10	SOR	₹	₹	once in 2	E I	1 070
	3 AF	AF	metre	10	2017, 4.24	254	2,540	years	₹	1,270

		Removal of silt and			RUIDP			once		
	Desilting of	settled solids from	Cubic		SOR	₹	₹	every		
4	polishing pond	polishing pond	metre	4	2017, 4.23	237	948	year	₹	948
	Desludging of									
	settled solids									
	from	Removal of settled			RUIDP					
	stabilisation	sludge from	Cubic		SOR	₹	₹	Every		
5	reactor	stabilisation reactor	metre	40	2017, 4.24	254	10,160	year	₹	10,160
	Replacement of									
	screen in									
	screen	Replacement of screen	per			₹	₹	every		
6	chamber	as per design	screen	1	BOQ	2,000	2,000	year	₹	2,000
	Incidental and									
С	Misc. cost	10% of total O&M cost							₹	77,136
	Total O&M									
	cost per									
	annum								₹	<u>848. 497</u>

6. Annexure V: 10 Year Cash Flow – SFC Grants

10 Year											
Cash											
Flow -											
SFC											
Grants											
		1	2	3	4	5	6	7	8	9	10
Particula											
rs	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10

Capex:											
12 KLD	₹										
treatme	18,290,20										
nt plant	5										
Cesspool											
operatio		₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
n		542,540	569,667	598,150	628,058	659,461	692,434	727,055	763,408	801,579	841,658
Treatme											
nt plant						₹	₹	₹	₹	₹	₹
operatio		₹	₹	₹	₹	1,031,35	1,082,92	1,137,06	1,193,92	1,253,61	1,316,29
ns		848,497	890,922	935,468	982,241	3	1	7	0	7	7
Subsidy -											
Househo											
lds											
desludgi		₹	₹	₹	₹	₹					
ng		805,400	805,400	805,400	805,400	805,400					
Subsidy -											
Tipping											
fee for											
desludgi											
ng											
operator		₹	₹	₹	₹	₹					
S		180,000	180,000	180,000	180,000	180,000					
Cesspool											
Truck											
operatio											
ns and		₹	₹	₹	₹	₹					
mainten		1,347,94	1,375,06	1,403,55	1,433,45	1,464,86	₹	₹	₹	₹	₹
ance		0	7	0	8	1	692,434	727,055	763,408	801,579	841,658
FSTP											
operatio											
ns and		₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
mainten		1,028,49	1,070,92	1,115,46	1,162,24	1,211,35	1,082,92	1,137,06	1,193,92	1,253,61	1,316,29
ance		7	2	8	1	3	1	7	0	7	7

		₹	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
	Net	18,290,20	2,376,43	2,445,98	2,519,01	2,595,69	2,676,21	1,775,35	1,864,12	1,957,32	2,055,19	2,157,95
	Outflow	5	7	9	8	9	4	5	3	9	5	5
	Income											
	from											
Infl	Renting		₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
ow	of trucks		120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000	150,000
	Taxes											
	collecte											
	d from											
	househo							₹	₹	₹	₹	₹
	lds							966,000	966,000	966,000	966,000	966,000
		₹	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
	ULB	18,290,20	2,256,43	2,325,98	2,399,01	2,475,69	2,556,21	1,625,35	1,714,12	1,807,32	1,905,19	2,007,95
	deficit	5	7	9	8	9	4	5	3	9	5	5
	FSTP											
	Deprecia											
	tion							₹	₹	₹	₹	₹
	fund							966,000	966,000	966,000	966,000	966,000
		₹	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹
	Grant	18,290,20	2,256,43	2,325,98	2,399,01	2,475,69	2,556,21	1,625,35	1,714,12	1,807,32	1,905,19	2,007,95
	from SFC	5	7	9	8	9	4	5	3	9	5	5
	Net											
	Present											
	Value of											
	SFC											
	Grants											
	for 10	₹										
	years	35,600,36										
	@5%	0										

Assumptions:

Inflation Rate = 5%

Calculation of the present value has been done considering a discount rate of 5%

Note:

1. Subsidy from ULB for HH

Subsidy from ULB for HH = Rs. 500 / HH Total Subsidy = No. of HHs * Rs. 500 = 1610*500 = Rs. 8, 05,400

2. Subsidy from ULB for Truck Operators

Subsidy from ULB for Truck Operators = Rs. 150/load Total Subsidy = No. of loads * Rs. 150 = 1200*150 = 1, 80,000

3. 3. Income for renting of trucks

Rent to be paid by the truck operator/month = Rs. 10,000

Total Rent obtained by the ULB= 12*10,000 = Rs. 1,20,000

7. Bill of Quantities

1. Cost Estimate For Construction Of Screening Chamber

Sl.n	Item No	Description	Unit	N	os	L	В	D	Quantity	Rate	Amount
						mtr	mtr	mtr		Rs	Rs
Α		Rate for Earthwork- Excavation									
а	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).									
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	In all types of soil upto 3m depth									
		Excavation (EGL +96.50m to Exc Ivl +96.116m)	cum	1	1	3.50	1.050	0.384	1.41		

			cum						1.41	116.00	₹ 164
с		Refilling filling with excavated earth									
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.									
		Excavation	cum						1.41		
		Deduct PCC for long wall footing	cum	1	-1	2.93	0.66	0.150	(0.29)		
		Deduct PCC for short wall footing	cum	1	-2	0.61	0.66	0.150	(0.12)		
		Deduct SBM masonry for long wall	cum	1	-1	2.73	0.46	0.234	(0.29)		
		Deduct SBM masonry for short wall	cum	1	-2	0.71	0.46	0.234	(0.15)		
		Total	cum						0.55		
		Refilling between masonry to support soling	cum	1	1	1.93	0.78	0.500	0.75		

		Total refilling	cum						1.31	98.00	₹ 128
В		Stone Soling									
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.									
		Rubble soling bed	cum	1	4	1.93	0.78	0.200	1.20		
		Total	cum						1.20	1,360.00	₹ 1,634
С		Plain Cement Concrete									
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work									

		upto plinth level :									
	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 fine/ coarse sand : 8 graded stone aggregate 40mm nominal size).									
		PCC for long wall footing	cum	1	1	2.93	0.66	0.150	0.29		
		PCC for short wall footing	cum	1	2	0.61	0.66	0.150	0.12		
		TOTAL	cum						0.41	3,360.00	₹ 1,378
	RUIDP 2017, item no 21.1.3 (page 151)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)									
		PCC bed	cum	1	1	2.04	0.84	0.150	0.26		
		TOTAL	cum						0.26	4,280.00	₹ 1,100
D		Centering/ Shuttering									
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :									

	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete								
		PCC side shuttering of footing for long wall (outer side)	sqm	1	1	2.93	0.150	0.44		
		PCC side shuttering of footing for long wall (inner side)	sqm	1	1	1.61	0.150	0.24		
		PCC side shuttering of footing for short wall(inner side)	sqm	1	2	0.61	0.150	0.18		
		PCC side shuttering of footing for short wall (outer side)	sqm	1	2	1.27	0.150	0.38		
			sqm					1.24	162.00	₹ 201
Е		BRICK WORK								
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two								
		stories in all shapes and sizes in								

	RUIDP SOR 2017, item no 24.5.1(pag e 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		Screening chamber long wall footing(1st layer)	cum	1	1	2.73	0.46	0.46	0.58		
		Screening chamber short wall footing(1st layer)	cum	1	2	0.71	0.46	0.46	0.30		
		Screening chamber long wall footing(2nd layer)	cum	1	1	2.62	0.34	0.53	0.47		
		Screening chamber short wall footing(1st layer)	cum	1	2	0.76	0.34	0.53	0.28		
		Screening chamber long wall footing(3rd layer)	cum	1	1	2.50	0.23	0.72	0.41		
		Screening chamber short wall footing(3rd layer)	cum	1	2	0.82	0.23	1.10	0.42		
			cum						2.46	4500	₹ 11,048
F		Plastering with mortar, 1:4									
	RUIDP SOR 2017, item no 32.1(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 12 mm cement plaster of mix :									

	RUIDP SOR 2017, item no 32.1.1(pag e 210)	1:4 (1 cement : 4 fine/ coarse sand)									
		External plastering	sqm	1	1	4.60		1.100	5.06		
		Internal walls at SDB									
		Screening Chamber									
		Long wall	Sqm	2	1	2.04		1.00	4.08		
		Short wall	Sqm	2	1	0.80		1.00	1.60		
		Screening chamber Bottom	sqm	1	1	2.00	0.80		1.60		
			sqm						12.34	150	₹ 1,851
G		Waste water pipes									
	RUIDP SOR 2017, Item no. 17.25. Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to									

		site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.								
	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	1	1	0.45		0.45	510.00	₹ 230
	RUIDP SOR 2017, item no 2005, pg- 514	160 mm dia U-PVC double/ single socketed 90° bend (class III, 6kg/sqcm) confirming to IS:7834	each	1	1	1.00		1.00	1,041.00	₹ 1,041
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	1	0.39		0.39	244.00	₹ 95
н	RUIDP SOR 2017, Item no. 39.35. Pg - 266	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.							
Weld grill with vertical sloping 5 mm thick bar placed at a distance of 3 cms and dimensions of 700 mm x 600 mm	Quint al	1	0.2 5		0.25	6,770.00	₹ 1,693
Total for screen chamber							₹ 20,564

2. Measurement sheet of Stabilization Tank

SI. n	Item No	Description	Unit	Nos	L	В	D	Quantity	Rate	Amount
					mtr	mtr	mtr			
Α		Rate for Earthwork-Excavation								
	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).								
	4.9.1	In all type of soil								
	4.9.1.1	Upto 3.0 m depth	cum	1	14.78	7.68	2.27	257.44		
		Total	cu m					257.44	116.0 0	₹ 29,863
В		Refilling with excavated earth								
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.								
		Excavated earth	cu m					257.44		
		Deduct rubble solingfor CH1	cum	-1	5.52	2.37	0.15	(1.96)		

		Deduct rubble solingfor CH2,3,4	cum	-1	11.02	6.28	0.15	(10.28)		
		Deduct PCC for CH1	cum	-1				(10.38)		
			cum	-1	5.52	2.37	0.10	(1.31)		
		Deduct PCC for CH2,3,4	cum	-1	11.02	6.28	0.10	(6.92)		
		Deduct Base slab for CH1	cum	-1	5.32	2.37	0.25	(3.15)		
		Deduct Base slab for CH2,3,4	cum	-1	10.82	6.08	0.25	(16.45)		
		Deduct module CH1	cum	-1	4.92	2.37	1.82	(21.17)		
		Deduct module CH2,3,4	cum	-1	10.42	5.68	1.82	(107.66)		
		Total refilling with excavated earth	cum					88.46	98.00	₹ 8,669
С		Plain Cement Concrete (P.C.C),								
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :								
а	RUIDP 2017, item no 21.1.3 (page 151)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)								
		PCC for CH1	cum	1	5.52	2.37	0.10	1.31		
		PCC for CH2,3,4	cum	1	11.02	6.28	0.10	6.92		
			cu m					8.23	4280	₹ 35,207
b	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).								
		PCC slope in CH1	cum	0.5						

					2.00	2.13	0.18	0.37		
			cum	2	0.30	2.13	0.25	0.32		
		PCC slope in CH2	cum	2	0.30	2.90	0.25	0.44		
		PCC slope in CH3	cum	2	0.30	2.90	0.25	0.44		
		PCC slope in CH4	cum	2	2.10	1.60	0.50	3.36		
		Total	cu m					4.92	3670	₹ 18,059
D		Stone Soling								
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.								
		Rubble solingfor CH1	cum	1	5.52	2.37	0.15	1.96		
		Rubble solingfor CH2,3,4	cum	1	11.02	6.28	0.15	10.38		
			cu m					12.34	1360	₹ 16,781
E		Reinforced Cement Concrete (R.C.C), M25								
	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement - All work upto plinth level :								

RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand :2 graded stone aggregate 20 mm nominal size). (As per design mix)							
	BASE SLAB							
	Base slab for CH1	cum	1	5.32	2.37	0.25	3.15	
	Base slab for CH2,3,4	cum	1	10.82	6.08	0.25	16.45	
	RCC WALLS							
	CH1							
	Long wall	cum	1	4.92	0.20	3.25	3.19	
	Short wall	cum	2	2.17	0.20	3.25	2.81	
	CH2,3,4							
	External wall							
	Long Wall	cum	2	10.42	0.20	3.25	13.53	
	Partition Wall	cum	1	7.68	0.20	3.25	4.98	
	Short Wall between CH1 & CH2	cum	1	5.28	0.20	3.25	3.43	
	Short Wall between CH3 & CH4	cum	1	5.28	0.20	3.25	3.43	
	Short Wall between CH2 & CH3	cum	1	5.28	0.20	3.25	3.43	
	External short wall @CH4	cum	1	5.28	0.20	3.25	3.43	
	short wall in CH1	cum	2	2.17	0.20	2.31	2.00	
	Ch2,3	cum	2	5.08	0.10	2.41	2.45	
	Beam							
	B1(200X400) @ CH1	cum	2	2.17	0.20	0.40	0.35	
	Beam @ CH2 & CH3 to support SBM wall	cum	2					

				5.08	0.10	0.30	0.30		
	Top Slab								
	At CH1	cum	1	4.92	2.37	0.15	1.75		
	At CH2,3,4	cum	1	10.42	5.68	0.15	8.88		
	Deduct Manhole covers								
	600 mm x 600 mm	cum	-40	0.60	0.60	0.15	(2.16)		
	600mm dia	cum	-17	3.14	0.09	0.15	(0.72)		
	Precast slab	cum	40	0.60	0.60	0.08	1.08		
		cum	17	3.14	0.09	0.08	0.36		
	Total	Cu m					72.09	5030	₹ 362,633
	Reinforcement								
RUIDP 2017, item no 23.19(page 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete.								
RUIDP 2017, item no 23.19.6(pa ge 157)	Thermo-Mechanically Treated bars.								
		1	1	1	1	1	1		
	2017, item no 23.19(page 157) RUIDP 2017, item no 23.19.6(pa	At CH1 At CH2,3,4 Deduct Manhole covers 600 mm x 600 mm 600mm dia Precast slab Total Reinforcement RUIDP 2017, item no 23.19(page 157) RUIDP 2017, item no 23.19.6(pa	At CH1cumAt CH2,3,4cumDeduct Manhole covers600 mm x 600 mmcum600mm diacumPrecast slabcumPrecast slabcumTotalCumReinforcementReinforcementReinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete.RUIDP 2017, item no 23.19(page 157)Thermo-Mechanically Treated bars.RUIDP 2017, item no 23.19.6(paThermo-Mechanically Treated bars.	At CH1cum1At CH2,3,4cum1Deduct Manhole covers-600 mm x 600 mmcum600 mm x 600 mmcum600mm diacumPrecast slabcumPrecast slabcum17CuTotalCuReinforcement-Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete.RUIDP 2017, item no 23.19(pageThermo-Mechanically Treated bars.RUIDP 2017, item no 23.19.6(paThermo-Mechanically Treated bars.	Top SlabImage: cumImage: cum <th< td=""><td>Top Slab Image: cum <thimage: cum<="" th=""> Image: cum Image: cum</thimage:></td><td>Top Slab Image: constraint of the stress of th</td><td>Top Slab Image: constraint of the state of</td><td>Top Slab Image: constraint of the strength of the strengt of the strength of the stren</td></th<>	Top Slab Image: cum Image: cum <thimage: cum<="" th=""> Image: cum Image: cum</thimage:>	Top Slab Image: constraint of the stress of th	Top Slab Image: constraint of the state of	Top Slab Image: constraint of the strength of the strengt of the strength of the stren

b		Walls	kg	1	125.00	42.67		5,333.58		
с		Beam	kg	1	125.00	0.65		81.40		
d		Top Slab	kg	1	125.00	9.18		1,147.80		
			KG					9,011.76		
			МТ					9.01	51500	₹ 464,106
G		Centering/ Shuttering								
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :								
а	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete								
		BASE SLAB								
		Base slab for CH1 sides	sqm	2	5.32		0.25	2.66		
			sqm	2		2.37	0.25	1.18		
		Base slab for CH2,3,4 sides	sqm	2	10.82		0.25	5.41		
			sqm	2		6.08	0.25	3.04		
		Footing PCC for CH1	sqm	2	5.52		0.10	1.10		
			sqm	2		2.37	0.10	0.47		
		Footing PCC for CH2,3,4	sqm	2						

					11.02		0.10	2.20		
			sqm	2		6.28	0.10	1.26		
			sqm					17.33	162	₹ 2,807
b	RUIDP SOR 2017, item no 22.1.2 (page 154)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc								,
		RCC WALLS								
		CH1								
		Long wall(B/F)	sqm	2	4.92		3.25	31.93		
		Short wall(B/F)	sqm	4	2.17		3.25	28.10		
		CH2,3,4								
		External wall								
		Long wall(B/F)	sqm	4	10.42		3.25	135.25		
		Short wall(B/F)	sqm	8	5.28		3.25	137.07		
		Partition Wall (B/F)	sqm	2	7.68		3.25	49.84		
		short wall in CH1	sqm	4	2.17		2.31	20.00		
		Ch2,3	sqm	4	5.08		2.41	48.97		
			sqm					451.17	240	₹ 108,281
С	RUIDP SOR 2017, item no 22.1.3 (page 154)	Suspended floors, roofs, landings, balconies and access platform								
		Top Slab								
		At CH1(sides)	sqm	1	4.92		0.15	0.74		
		sides	sqm	2						

н		Plastering with mortar, 1:4								
			sqm					11.44	269	₹ 3,078
		Bottom	sqm	2	5.08	0.10		1.02		
		Beam @ CH2 & CH3 to support SBM wall(sides)	sqm	4	5.08		0.30	6.10		
		Bottom	sqm	2	2.17	0.20		0.87		
		B1(200X400) @ CH1(sides)	sqm	4	2.17		0.40	3.46		
		Beam								
d	RUIDP SOR 2017, item no 22.1.5(pag e 154)	Lintels, beams, plinth beams, girders, bressumers and cantilevers								
			sqm					39.32	287	₹ 11,284
		600mm dia	sqm	-17	3.14	0.09		(4.81)		
		600 mm x 600 mm	sqm	-40	0.60	0.60		(14.40)		
		Deduct Manhole covers								
		CH4 bottom	sqm	1	5.28	1.94		10.24		
		CH3 bottom	sqm	2	3.34	2.54		16.97		
		CH2 bottom	sqm	2	3.34	2.54		16.97		
			sqm	1		5.68	0.15	0.85		
		At CH2,3,4(sides)	sqm	2	10.42		0.15	3.13		
		Bottom	sqm	1	4.12	2.17		8.92		
						2.37	0.15	0.71		

а	RUIDP SOR 2017, item no 32.3(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :							
	RUIDP SOR 2017, item no 32.3.2(pag e 210)	1:4 (1 cement : 4 fine/ coarse sand)							
		External plastering	sqm	1	36.92		3.25	119.81	
		RCC WALLS							
		CH1							
		Long wall	Sq m	2	4.12		3.25	26.74	
		Short wall	Sq m	2	2.17		3.25	14.05	
		Support walls	Sq m	4	2.17		2.31	20.00	
		Beam bottom	sqm	1	2.17	0.20		0.43	
		CH2,3							
		Long wall	Sq m	4	7.48		3.25	97.09	
		Short wall	Sq m	4	5.00		3.25	64.90	
		Support walls	Sq m	4	5.00		2.41	48.20	
		Beam bottom	sqm	2	5.00	0.10		1.00	
		CH4							
		Long wall	sqm	2	5.28		3.25	34.27	
		Short wall	sqm	2	1.94		3.25	12.59	

	Тор	o Slab							
	At 0	CH1							
	Bot	tom	sqm	1	4.12	2.17	8.92		
	At C	CH2,3,	sqm	4	3.34	2.54	33.93		
		CH4	sqm	1	5.28	1.94	10.24		
	Dec	duct Manhole covers							
	600) mm x 600 mm	sqm	-40	0.60	0.60	(14.40)		
	600)mm dia	sqm	-17	3.14	0.09	(4.81)		
	Ba	se slab for CH1	sqm	1	4.52	2.17	9.79		
	Ba	se slab for CH2,3,	sqm	4	3.34	2.54	33.93		
	Bas	se slab for CH4	sqm	1	5.28	1.94	10.24		
	ТО	TAL	Sq m				526.93	210	₹ 110,656
1	Wa	ste water pipes							

RUIDP SOR 2017, Item no. 17.25. Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.						
RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	0.50	0.50	244	₹ 122
RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	1.00	1.00	559	₹ 559
RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	4	0.30	1.20	510	₹ 612
RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	2	2.10	4.20	510	₹ 2,142
RUIDP SOR 2017, Item no. 1885. Pg - 510	160 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	4.00	4.00	1466	₹ 5,864

	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	6	0.30	1.80	510	₹ 918
	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	6	2.10	12.60	510	₹ 6,426
	RUIDP SOR 2017, Item no. 1885. Pg - 510	160 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	6.00	6.00	1466	₹ 8,796
	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	6	0.30	1.80	510	₹ 918
	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	6	2.10	12.60	510	₹ 6,426
	RUIDP SOR 2017, Item no. 1885. Pg - 510	160 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	6.00	6.00	1466	₹ 8,796
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	0.85	0.85	244	₹ 207
J		Sludge pump						

Quotation attached	1 HP sewage sludge solar pumping system	Nos	1			1.00	15000 0	
	GST 5%						7500	
	TOTAL COST	Nos	1	2.00		2.00	15750 0	₹ 315,000
	TOTAL COST							₹ 1,528,212

3. Cost Estimate For Construction Of Sludge Drying Beds

SI. n	Item No	Description	Uni t	N	los	L	В	D	Quantit y	Rate	Amount
						mtr	mtr	mtr			
Α		Rate for Earthwork-Excavation									
а	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).									
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	In all types of soil upto 3.0 m depth.									
		For set of 7 beds	cu m	1	2	35.21	10.500	0.723	534.59		
		For set of 6 beds	cu m	1	1	30.17	10.500	0.723	229.02		
			cu m						763.61	116. 00	₹ 88,579
b	RUIDP 2017, item no 4.13 (page 12)	Refilling filling with excavated earth Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.									
		Excavation	cu m						763.61		
		Deduct soling (For set of 7 beds)	cu m	- 1	2	33.91	9.20	0.150	(93.59)		
		Deduct soling (For set of 6 beds)	cu m	- 1	1	28.87	9.20	0.150	(39.84)		

	1					1		r			
		Deduct PCC (For set of 7 beds)	cu m	- 1	2	33.51	8.80	0.150	(88.47)		
		Deduct PCC (For set of 6 beds)	cu m	- 1	1	28.47	8.80	0.150	(37.58)		
		Deduct Registar soling	cu m	- 1	2 0	2.23	0.95	0.150	(6.36)		
		Deduct Registar PCC	cu m	- 1	2 0	1.83	0.95	0.150	(5.22)		
		Deduct SDB module (for 7 beds) below EGL	cu m	- 1	2	33.21	8.50	0.423	(238.81)		
		Deduct SDB module (for 6 beds) below EGL	cu m	- 1	1	28.17	8.50	0.423	(101.28)		
		Deduct registar module below EGL	cu m	- 1	2 0	1.53	0.95	0.423	(12.30)		
		Total	cu m						140.18	98.0 0	₹ 13,738
B	RUIDP 2017, item no 30.34 (page 200)	Stone Soling Random rubble dry stone Kharanja (soling) under floor.									
		Foe set of 7 beds	cu m	1	2	33.91	9.200	0.150	93.59		
		For set of 6 beds	cu m	1	1	28.87	9.200	0.150	39.84		
		Register	cu m	1	2 0	2.23	0.95	0.150	6.36		
		Total	cu m						139.78	1360	₹ 190,108
С		Plain Cement Concrete (P.C.C), 1:3:6									
-	RUIDP 2017, item no 21.1	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :									

	(Page 151)										
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).									
		PCC base slab above soling for set of 7 beds	cu m	1	2	33.51	8.80	0.150	88.47		
		PCC base slab above soling for set of 6 beds	cu m	1	1	28.47	8.80	0.150	37.58		
		PCC base slab above soling at registar	cu m	1	2 0	1.83	0.95	0.150	5.22		
		PCC at slope above base slab	cu m	1	2 0	8.04	4.04	0.063	40.60		
		TOTAL C	cu m						171.86	3670	₹ 630,732
D		Centering/Shuttering									
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :									
	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete									
		PCC side shuttering									
		PCC base slab above soling for set of 7 beds	sq m	2	2	33.51		0.150	20.11		
			sq m	2	2		8.800	0.150	5.28		

		PCC base slab above soling for set of 6 beds	sq m	2	1	28.47		0.150	8.54		
			sq m	2	1		8.800	0.150	2.64		
		PCC base slab above soling at registar	sq m	1	2 0	1.83		0.150	5.49		
			sq m	2	2 0		0.950	0.150	5.70		
			sq m						47.76	162	₹ 7,737
E		BRICK WORK									
	RUIDP SOR 2017, item no 24.5(pag e 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in									
	RUIDP SOR 2017, item no 24.5.1(pa ge 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		Long wall(For set of 7 beds)	cu m	2	1	33.65	0.230	1.225	18.96		
		Long wall(For set of 6 beds)	cu m	1	1	28.61	0.230	1.225	8.06		
		Short wall (For set of 7 beds)	cu m	2	1 2	8.47	0.230	1.225	57.27		
		Short wall (For set of 6 beds)	cu m	1	1 0	8.47	0.230	1.225	23.86		
		Long wall near registar(For set of 7 beds)	cu m	2	1	30.03	0.230	1.225	16.92		
		Long wall near registar(For set of 6 beds)	cu m	1	1	25.74	0.230	1.225	7.25		
		For ramp(short wall)	cu m	1	2 0	1.00	0.230	0.875	4.03		
		For ramp(long wall)	cu	1	2						

1			m		0	1.77	0.230	0.938	7.63		
		Registars (long wall)	cu m	1	2 0	1.53	0.230	1.225	8.62		
		Registars (short wall)	cu m	2	2 0	0.72	0.230	1.225	8.11		
			cu m		0	0.72	0.200	1.220	160.72	4500	₹ 723,236
											;
F		Plastering with mortar, 1:4									
	RUIDP SOR 2017, item no 32.3(pag e 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :									
	RUIDP SOR 2017, item no 32.3.2(pa ge 210)	1:4 (1 cement : 4 fine/ coarse sand)									
	č /	External plastering									
		Long wall (For set of 7 beds)	sq m	2	2	33.65		1.23	164.89		
		Short wall (For set of 7 beds)	sq m	2	2	9.30		1.23	45.57		
		Long wall (For set of 6 beds)	sq m	2	1	28.61		1.23	70.09		
		Short wall (For set of 7 beds)	sq m	2	1	9.30		1.23	22.79		
		Registars Short wall	sq m	2	2 0	0.95		1.23	46.55		
				- T	-		1				
		Internal walls	0.7		2						
		SDB bed walls	sq m	1	2 0	20.08		1.23	491.96		
		Internal plastering between beds	sq m	1	1 1	17.94		1.23	241.74		
		At ramp top	sq	1	2						

1			m		0	2.03	1.00	1.09	44.25		
		Register									
		Long wall	Sq m	2	2 0	1.04		1.23	50.96		
		Short wall	Sq m	2	2 0	0.70		1.23	34.30		
		Total	Sq m						1,213.10	210	₹ 254,750
G	RUIDP SOR 2017, item no 3428(pag e 544)	Brick Bat filling									
		Brickbat filling between beds	cu m	1	1 1	8.00	0.50	0.88	38.50		
		Brick bat filling at ramp	cu m	1	2 0	1.77	1.00	0.94	33.19		
		Total	cu m						71.69	400	₹ 28,675
—		Mastania									
H	RUIDP SOR 2017, Item no. 17.25. Pg - 70	Waste water pipes Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.									
а	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	2 0	8.59			171.80	244	₹ 41,919

b	RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	2	20.00			40.00	559	₹ 22,360
с	RUIDP SOR 2017, item no 2002, pg- 514	110 mm dia U-PVC double/ single socketed 90° bend (class III, 6kg/sqcm) confirming to IS:7834	each	1	4	20.00			80.00	378	₹ 30,240
d	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	1 7	4.1			69.70	244	₹ 17,007
е	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	1	2 0	8			160.00	510	₹ 81,600
I		Aggregate									
а	RUIDP SOR 2017, item no 2840 (page 532)	Aggregates 90 mm to 45 mm (hand broken)	cu m	1	2 0	3.00	2.00	0.263	31.50		
			cu m	1	2 0	6.00	4.00	0.263	126.00		
			cu m						157.50	460	₹ 72,450

1	1			1	1		1				
b	RUIDP SOR 2017, item no 2830 (page 532)	Aggregates 25 mm to 10 mm	cu m	1	2 0	3.00	2.00	0.100	12.00		
			cu m	1	2 0	6.00	4.00	0.100	48.00		
			cu m						60.00	700	₹ 42,000
с	RUIDP SOR 2017, item no 2821 (page 531)	Aggregates 10 mm to 5 mm	cu m	1	2 0	3.00	2.00	0.100	12.00		
			cu m	1	2 0	6.00	4.00	0.100	48.00		
			cu m						60.00	630	₹ 37,800
d	RUIDP SOR 2017, item no 2873 (page 532)	Coarse Sand	cu m	1	2 0	3.00	2.00	0.200	16.80		
			cu m	1	2 0	6.00	4.00	0.200	67.20		
			cu m						84.00	900	₹ 75,600
J		Clamps									
		· ·				I	1	1			L

	Clamps to connect the hose pipes to drying beds inlets	nos	1	3	20		60.00	1000	₹ 60,000
K	Weinerberger porotherm bricks								
	Dimensions of brick (400mm x 100 mm x 200 mm), cut into half and placed over the gravel filter media of the drying beds and filled in the intermediate voids with coarse sand. Placing and filling with sand as per directions of the engineer	cu m					120.00	6875	₹ 825,000
	TOTAL COST OF SLUDGE DRYING BED								₹ 3,243,530

4. Cost Estimate For Construction Of Planted Drying Beds

SI. n	Item No	Description	Unit	N	os	L	В	D	Quantity	Rate	Amount
						mtr	mtr	mtr		Rs	Rs
Α		Rate for Earthwork- Excavation									
а	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).									
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	In all types of soil upto 3m depth									
		PDB excavation (EGL +96.50m to Exc lvl +94.25m)	cum	1	1	16.98	10.640	2.250	406.50		

		Register excavation	cum	1	2	2.50	1.07	1.370	7.33		
			cum						413.83	116.00	₹ 48,004
b		Refilling filling with excavated earth									
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.									
		Excavation	cum						413.83		
		Deduct PCC for long wall footing	cum	1	- 2	16.08	1.40	0.100	(4.50)		
		Deduct PCC for short wall footing	cum	1	- 3	6.94	1.40	0.100	(2.91)		
		Deduct RCC footing for long wall	cum	1	- 2	15.88	1.20	0.375	(14.29)		
		Deduct RCC footing for short wall	cum	1	- 3	7.14	1.20	0.375	(9.64)		
		Deduct long wall upto soling bed	cum	1	- 2	14.98	0.30	0.400	(3.60)		
		Deduct short wall upto soling bed	cum	1	- 3	8.04	0.30	0.400	(2.89)		
		Deduct PDB module below EGL	cum	1	- 1	14.98	8.64	1.375	(177.96)		
		Deduct rubble soling at registar	cum	1	- 2	1.84	1.24	0.300	(1.37)		
		Deduct PCC bed at	cum	1	-						

		registar			2	1.84	1.24	0.100	(0.46)		
		Deduct registar below EGL	cum	1	- 2	1.50	1.07	0.970	(3.11)		
		Total	cum						193.09	98.00	₹ 18,923
В		Stone Soling									
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.									
		Rubble soling bed at PDB	cum	1	2	8.00	7.00	0.300	33.60		
		Rubble soling at registar	cum	1	2	1.84	1.24	0.300	1.37		
		Total	cum						34.97	1,360.00	₹ 47,558
С		Plain Cement Concrete									

	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :									
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).									
		PCC for long wall footing	cum	1	2	16.08	1.40	0.100	4.50		
		PCC for short wall footing	cum	1	3	6.94	1.40	0.100	2.91		
		PCC bed	cum	1	2	8.04	7.04	0.100	11.32		
		PCC at registar above soling	cum	1	2	1.84	1.24	0.100	0.46		
		PCC at slope in PDB	cum	1	2	8.04	7.04	0.138	15.57		
		TOTAL C	cum						34.76	3,670.00	₹ 127,567
D		Reinforced Cement Concrete (R.C.C), M25									
	RUIDP 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement									

	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)									
		RCC footing for long wall	cum	1	2	15.88	1.20	0.375	14.29		
		RCC footing for short wall	cum	1	3	7.14	1.20	0.375	9.64		
		long wall of PDB	cum	1	2	14.98	0.30	2.378	21.37		
		short wall of PDB	cum	1	3	8.04	0.30	2.378	17.21		
			cum						62.51		₹
			cum						02.01	5,030.00	314,434
E		Reinforcement								5,030.00	314,434

RUIDP 2017, item no 23.19.6(pag e 157)	Thermo- Mechanically Treated bars.									
	Footing @ 125kg/cum	kg	1	1	125.00	23.93		2,991.38		
	walls @ 125kg/cum	kg	1	1	125.00	38.58		4,822.58		
	Total reinforcement	kg						7,813.96		
		MT						7.81	51,500.00	₹ 402,419
	Centering/ Shuttering									
RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :									
RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete									
	side shuttering of footing for long wall (outer side)	sqm	1	2	15.88		0.375	11.91		
	side shuttering of footing for long wall (inner side)	sqm	1	2	12.28		0.375	9.21		
	side shuttering of	sqm	1	2				5.36		

	footing for external short wall (inner side)				7.14		0.375			
	side shuttering of footing for external short wall (outer side)	sqm	1	2	9.54		0.375	7.16		
	side shuttering of footing for internal short wall	sqm	2	1	7.14		0.375	5.36		
	side shuttering for PCC long wall footing(outer side)	sqm	1	2	16.08		0.100	3.22		
	side shuttering for PCC long wall footing(inner side)	sqm	1	2	11.88		0.100	2.38		
	side shuttering for PCC external short wall footing(inner side)	sqm	1	2	6.94		0.100	1.39		
	side shuttering for PCC external short wall footing(outer side)	sqm	1	2	9.74		0.100	1.95		
	side shuttering for PCC internal short wall footing	sqm	1	2	6.94		0.100	1.39		
	PCC at registar(long side)	sqm	1	2	1.84		0.100	0.37		
	PCC at registar(shorter side)	sqm	2	2		1.24	0.100	0.50		
		sqm						50.17	162.00	₹ 8,127
RUIDP SOR 2017, item no 22.1.2 (page 154)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc									
	External long wall shuttering (outer side)	sqm	1	2	14.98		2.378	71.24		
	External long wall	sqm	1	2				66.96		

		shuttering (inner side)				14.08		2.378			
		External short wall shuttering (inner side)	sqm	1	2	8.04		2.378	38.24		
		External short wall shuttering (outer side)	sqm	1	2	8.64		2.378	41.09		
		Internal short wall shuttering	sqm	2	1	8.04		2.378	38.24		
			sqm						255.78	240.00	₹ 61,387
F		BRICK WORK									
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in									
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		PDB long wall	cum	1	2	14.98	0.30	0.45	4.04		
		PDB short wall	cum	1	3	8.04	0.30	0.45	3.26		
		Registar long wall	cum	1	2	1.50	0.23	1.00	0.69		
		Registar short wall	cum	2	2	0.84	0.30	1.00	1.01		
			cum						9.00	4500	₹ 40,495
G		Plastering with mortar, 1:4									

	RUIDP SOR 2017, item no 32.3(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :									
	RUIDP SOR 2017, item no 32.3.2(page 210)	1:4 (1 cement : 4 fine/ coarse sand)									
		Internal walls at SDB									
		PDB long wall	sqm	1	2	14.08		2.02	56.88		
		PDB short walls	sqm	2	2	8.00		2.02	64.64		
		PDB Bottom	sqm	1	2	8.000	7.00		112.00		
		Register									
		Long wall	Sqm	2	2	1.04		1.00	4.16		
		Short wall	Sqm	2	2	0.80		1.00	3.20		
		Regitar Bottom	sqm	1	2	1.00	0.80		1.60		
		Total	sqm						242.48	210.00	₹ 50,921
Н		Waste water pipes									

RUIDP SOR 2017, Item no. 17.25. Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.								
RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	2	2	0.51		2.04	244.00	₹ 498
RUIDP SOR 2017, item no 2002, pg- 514	110 mm dia U-PVC double/ single socketed 90° bend (class III, 6kg/sqcm) confirming to IS:7834	each	1	1	2		2.00	378.00	₹ 756
RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	1			1.00	559.00	₹ 559

	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	1	2	7.7		15.40	510.00	₹ 7,854
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	2	4	2.1		16.80	244.00	₹ 4,099
	RUIDP SOR 2017, Item no. 0875 Pg - 487	Slotted cowl (terminal guard) 100 mm dia conforming to I.S. 1729	each	1	2	4		8.00	200	₹ 1,600
	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	1	1	6.45		6.45	510.00	₹ 3,290
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	2	0.8		1.60	244.00	₹ 390
I		Aggregate								

i	RUIDP SOR 2017, item no 2804 (page 531)	Stone Aggregate (Single size) : 20mm nominal size	cum	1	2	8.00	7.00	0.165	18.48	770.00	₹ 14,230
ii	RUIDP SOR 2017, item no 2830 (page 532)	Aggregates 25 mm to 10 mm	cum	1	2	8.00	7.00	0.150	16.80	700.00	₹ 11,760
iii	RUIDP SOR 2017, item no 2821 (page 531)	Aggregates 10 mm to 5 mm	cum	1	2	8.00	7.00	0.100	11.20	630.00	₹ 7,056
iv	RUIDP SOR 2017, item no 2873 (page 532)	Coarse Sand	cum	1	2	8.00	7.00	0.300	33.60	900.00	₹ 30,240
J		Plants									
	RUIDP SOR 2017, item no 39.41 (page 266)	Supply and planting following in poly bags / earthen pots well branched, well established & free from disease of 300 mm min. height ground covers at site in 0.3 m dia holes, 0.3 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, backfilling the hole watering etc as required.									

RUIDP SOR 2017, item no 39.41.7 (page 267)	Rhoeo spathacea 'Compacta' (Oyster, Boat Lily)	Sqm	2	1	8.00	7.00	112.00	111.00	₹ 12,432
	Total Cost of 2 PDB								₹ 1,214,597

5. Cost Estimate For Measurement of Integrated Settler and AF

SI. n	Item No	Description	Unit	Nos	L	В	D	Quantity	Rate	Amount
					mtr	mtr	mtr			
Α		Rate for Earthwork-Excavation								
а	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil-								
i	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	Upto 3.0 m depth	cum	1	13.14	4.44	3.59	209.45		
		Total for excavation	cum					209.45	116.00	₹ 24,296
b		Refilling with excavated earth								

	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.								
		Excavated earth	cum					209.45		
		Deduct rubble soling below PCC bed	cum	-1	10.80	2.84	0.15	(4.60)		
		Deduct PCC	cum	-1	10.80	2.84	0.10	(3.07)		
		Deduct PCC for distribution chamber	cum	-1	2.84	0.94	0.10	(0.27)		
		Deduct RCC Base Slab	cum	-1	10.60	2.64	0.20	(5.60)		
		Deduct RCC Base Slab for distribution chamber	cum	-1	2.64	0.84	0.20	(0.44)		
		Deduct the settler & AF module below EGL	cum	-1	10.40	2.44	3.14	(79.68)		
		Deduct distribution chamber module below EGL	cum	-1	2.44	0.74	1.36	(2.46)		
		Total refilling	cum					113.33	98.00	₹ 11,107
В		Plain Cement Concrete (P.C.C), 1:4:8								
1	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :								

	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).								
		PCC for integrated settler and AF	cum	1	10.80	2.84	0.10	3.07		
		PCC for distribution chamber	cum	1	2.84	0.94	0.10	0.27		
		TOTAL B	cum					3.33	3,360.00	₹ 11,203
С		Stone Soling								
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.								
		Rubble soling below PCC bed	cum	1	10.80	2.84	0.15	4.60		
			cum					4.60	1,360.00	₹ 6,257
D		Reinforced Cement Concrete (R.C.C), M25								

1	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement								
	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)								
		Base slab	cum	1	10.60	2.64	0.20	5.60		
		Base slab for distribution chamber	cum	1	2.64	0.84	0.20	0.44		
		Top slab	cum	1	11.14	2.44	0.15	4.08		
		deduct area for manhole openings	cum	-14	0.60	0.60	0.15	(0.76)		
		Perforated slabs	cum	3	2.04	1.84	0.08	0.84		
		RCC wall								
		Long Wall	cum	2	10.40	0.20	3.14	13.06		
		Short Wall	cum	4	2.04	0.20	3.14	5.12		
		Distribution chamber long wall	cum	1	2.44	0.20	1.40	0.68		
		Distribution chamber short wall	cum	2	0.54	0.20	1.40	0.30		
		Precast slabs	cum	14	0.60	0.60	0.08	0.38		
		Total for RCC	cum					29.75	5030	₹ 149,658

E		Reinforcement							
	RUIDP 2017, item no 23.19(pag e 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete.							
	RUIDP 2017, item no 23.19.6(pag e 157)	Thermo-Mechanically Treated bars.							
		Reinforcement at 125kg/cum	kg	1	125.00	29.75	3,719.14		
		Total for reinforcement	KG				3,719.1		
			МТ				3.72	51,500.00	191535.45
F		Centering/ Shuttering							
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :							

а	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete								
		PCC side shuttering								
		PCC for integrated settler and AF	sqm	2	10.80		0.10	2.16		
			sqm	2		2.84	0.10	0.57		
		PCC for distribution chamber	sqm	1	2.84		0.10	0.28		
			sqm	2		0.94	0.10	0.19		
		Base slab(Side)	sqm	2	10.60		0.20	4.24		
			sqm	2		2.64	0.20	1.06		
		Base slab(Side) for distribution chamber	sqm	1	2.64		0.20	0.53		
			sqm	2		0.84	0.20	0.34		
			sqm					9.36	162.00	₹ 1,516
b	RUIDP SOR 2017, item no 22.1.2 (page 154)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc								
		RCC walls								
		Long Wall (outer side shuttering)	sqm	2	10.40		3.14	65.31		
		Long wall (inner side shuttering)	sqm	2	9.20		3.14	57.78		
		External Short wall(inner side	sqm	2						

		shuttering)	1		2.04		3.14	12.81		
		External Short wall(outer side shuttering)	sqm	2	2.44		3.14	15.32		
`		Internal Short wall(inner side shuttering)	sqm	8	2.04		3.14	51.24		
		Distribution long wall(outer side shuttering)	sqm	1	2.44		1.40	3.40		
		Distribution long wall(inner side shuttering)	sqm	1	2.04		1.40	2.85		
		Distribution short wall(inner side shuttering)	sqm	2	0.54		1.40	1.51		
		Distribution short wall(outer side shuttering)	sqm	2	0.74		1.40	2.06		
			sqm					212.29	240.00	₹ 50,949
С	RUIDP SOR 2017, item no 22.1.3 (page 154)	Suspended floors, roofs, landings, balconies and access platform								
		Top slab(sides)	sqm	2	11.14		0.15	3.34		
			sqm	2		2.44	0.15	0.73		
		Bottom	sqm	1	9.74	2.04		19.87		
		deduct area for manhole openings	Sqm	-14	0.60	0.60		(5.04)		
			sqm					18.90	287.00	₹ 5,425
G		BRICK WORK								

	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in								
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		supporting wall for perforated wall	cum	9	1.840	0.150	0.500	1.24		
		Total	cum					1.24	4,500.00	₹ 5,589
н		Plastering with mortar, 1:4								
	RUIDP SOR 2017, item no 32.3(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :								
	RUIDP SOR 2017, item no 32.3.2(page 210)	1:4 (1 cement : 4 fine/ coarse sand)								
		External plastering	sqm	1	27.16		3.325	90.31		
		Internal plastering								
i		Settler	sqm	1	11.36		3.18	36.07		
		Partition wall in settler	sqm	2						

					2.00		3.18	12.70		
		Bottom of settler	sqm	1	3.60	2.00		7.20		
		AF	sqm	1	15.04		3.18	47.75		
		short walls in AF	sqm	2	2.00		3.18	12.70		
		Bottom of AF	sqm	1	5.40	2.00		10.80		
		Distribution chamber	sqm	1	5.16		1.38	7.10		
		Distribution chamber bottom	sqm	1	2.04	0.54		1.10		
		Total	Sq m					225.72	210.00	₹ 47,402
		Waste water pipes								
	RUIDP SOR 2017, Item no. 17.25 Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.								
а	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	0.30			0.30	244.00	₹ 73

b	RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	1.00		1.00	559.00	₹ 559
с	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	5	0.30		1.50	244.00	₹ 366
d	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	5	0.80		4.00	244.00	₹ 976
е	RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	5.00		5.00	559.00	₹ 2,795
f	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	5	0.30		1.50	244.00	₹ 366
g	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	5	2.40		12.00	244.00	₹ 2,928
h	RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	2	5.00		10.00	559.00	₹ 5,590

i	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	10	0.30		3.00	244.00	₹ 732
j	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	10	2.40		24.00	244.00	₹ 5,856
k	RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	10.00	i	10.00	559.00	₹ 5,590
I	RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	each	1	5.00		5.00	559.00	₹ 2,795
m	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	5	0.80		4.00	244.00	₹ 976
n	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	5	0.30		1.50	244.00	₹ 366
0	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160 mm Nominal Dia	m	4	2.60		10.40	510.00	₹ 5,304

р	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110mm Nominal Dia	m	1	2.00			2.00	244.00	₹ 488
q	RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160mm Nominal Dia	m	4	0.30			1.20	510.00	₹ 612
	RUIDP SOR 2017, Item no. 0875 Pg - 487	Slotted cowl (terminal guard) 100 mm dia conforming to I.S. 1729	each	1	1.00			1.00	200	₹ 200
J		Filter material for Anaerobic Filter								
	Quotation attached	Providing and laying Cinders as a Filter Material In AF as per the instruction given by the site engineer in charge.								
		Filter material in AF	cum	3	2.00	1.800	0.750	8.10		
		Quantity conversion from cum to ton @0.6Ton/cum	MT					4.86	2,200.00	₹ 10,692
		Total for ISAF								₹ 552,202

6. Measurement sheet of Planted Gravel Filter

SI. n	Item No	Description	Unit	No	DS	L	В	D	Quantity	Rate	Amount
						mtr	mtr	mtr			
Α		Rate for Earthwork- Excavation					ina	ma			
а	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil -									
	RUIDP SOR 2017, item no 4.9. 1.1 (page 10)	Upto 3.0 m depth Total earthwork excavation	Cu m	1	1	15.21	8.54	2.50	324.47		
			cu m						324.47	116.00	₹ 37,639
b		Refilling									
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.									
		Excavated Earth	cu m						324.47		

		Deduct rubble soling below PCC	cu	1	-1	13.71	7.04	0.15	(14.49)		
		Deduct footing PCC	m cu m	1	-1	13.71	7.04	0.15	(14.48) (9.65)		
		Deduct base slab	cu m	1	-1	13.51	6.84	0.20	(18.48)		
		Deduct module below EGL	cu m	1	-1	13.21	6.54	2.05	(177.02)		
		Deduct Registar module	cu m	1	-1	1.46	1.26	0.84	(1.55)		
		Total refill	cu m						103.30	98.00	₹ 10,123
В		Rubble soling									
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.									
		Rubble soling below footing PCC	cu m	1	1	13.71	7.04	0.15	14.48		
			cu m						14.48	1,360.00	₹ 19,690
С		Plain Cement Concrete (P.C.C), 1:4:8									
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :									

	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).									
		F	cu	4							
		Footing PCC	m	1	1	13.71	7.04	0.10	9.65		
		Footing above brick bat filling	cu m	1	1	6.00	0.44	0.08	0.20		
		TOTAL	cu m						9.85	3,360.00	₹ 33,095
D		Reinforced Cement Concrete (R.C.C), M25									
	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement									
	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)									
		Base slab	cu m	1	1	13.51	6.84	0.20	18.48		
		Long wall	cu m	1	2	13.21	0.25	2.30	15.19		
		Short wall	cu m	1	2	6.04	0.25	2.30	6.95		
		precast manhole slabs	cu m	1	1	6.40	0.67	0.08	0.32		
			cu m	1	2	1.14	0.64	0.08	0.11		

			cu m					41.05	5,030.00	₹ 206,483
Е		Reinforcement								
	RUIDP 2017, item no 23.19(page 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete.								
	RUIDP 2017, item no 23.19.6(p age 157)	Thermo-Mechanically Treated bars.								
		Total reinforcement @ 125kg/cum	kg	1	1	125.0 0	41.05	5,131.28		
			МТ					5.13	51,500.0 0	₹ 264,261
F		Centering/ Shuttering								
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :								

	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete									
		Footing PCC	sq m	1	2	13.71		0.10	2.74		
			sq m	1	2		7.04	0.10	1.41		
		Base slab	sq m	1	2	13.51		0.20	5.40		
			sq m	1	2		6.84	0.20	2.74		
			sq m						12.29	162.00	₹ 1,991
	RUIDP SOR 2017, item no 22.1.2 (page 154)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc									
		Long wall	sq m	2	2	13.21		2.30	121.53		
		Short wall	sq m	2	2	6.04		2.30	55.57		
			sq m						177.10	240.00	₹ 42,504
G		BRICK WORK									

	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in									
	RUIDP SOR 2017, item no 24.5.1(pa ge 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		Distribution chamber wall	cu m	1	1	6.04	0.23	0.97	1.35		
		Registar	cu m	1	1	1.67	0.100	0.975	0.16		
			cu m						1.51	4,500.00	₹ 6,797
Н		Plastering with mortar, 1:4									
	RUIDP SOR 2017, item no 32.3(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :									
	RUIDP SOR 2017, item no 32.3.2(pa ge 210)	1:4 (1 cement : 4 fine/ coarse sand)									
		External plastering	sq m	1	1	39.50		2.30	90.85		

		Internal plastering									
		Distribution chamber	sq m	1	1	12.88		0.45	5.80		
		Distribution chamber bottom	sq m	1	1	6.00	0.40		2.40		
		PGF	sq m	1	1	36.00		2.30	82.80		
		Bottom	sq m	1	1	12.00	6.00		72.00		
		registar	sq m	1	1	3.08		0.98	3.00		
		Registar bottom	sq m	1	1	1.00	0.50		0.50		
		TOTAL	Sq m						257.35	210.00	₹ 54,043
		Waste Water Pipes									
	RUIDP SOR 2017, Item no. 17.25 Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.									
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110mm Nominal Dia	m	1	1	0.45			0.45	244.00	₹ 110

RUIDP SOR 2017, Item no. 1882. Pg - 510	110 mm dia U-PVC equal Tee (class III, 6kg/sqcm) confirming to IS:7834	ea ch	1	1	1.00		1.00	559.00	₹ 559
RUIDP SOR 2017, Item no. 2377 Pg - 523	Chlorinated Polyvinyl - chloride (CPVC) pipe 50 mm outer dia.	m	1	12	0.25		3.00	432.00	₹ 1,296
RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160mm Nominal Dia	m	1	4	0.85		3.40	510.00	₹ 1,734
RUIDP SOR 2017, item no 2245(Pg 521)	160 mm dia End Cap (class V, 10kg/sqcm) confirming to IS:7834	ea ch	1	1	4.00		4.00	407.00	₹ 1,628
RUIDP SOR 2017, Item no. 17.25.2 Pg - 70	160mm Nominal Dia	m	1	1	5.20		5.20	510.00	₹ 2,652
RUIDP SOR 2017, item no 2002, pg-514	110 mm dia U-PVC double/ single socketed 90° bend (class III, 6kg/sqcm) confirming to IS:7834	ea ch	1	2	3.00		6.00	378.00	₹ 2,268

	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110mm Nominal Dia	m	1	1	0.30			0.30	244.00	₹ 73
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110mm Nominal Dia	m	1	1	0.45			0.45	244.00	₹ 110
J		Filter material (Aggregate)									
i	RUIDP SOR 2017, item no 2840 (page 532)	Aggregates 90 mm to 45 mm(hand broken)									
		At center	cu m	1	1	6.00	0.60	0.60	2.16		
		At corners	cu m	1	1	6.00	0.60	0.60	2.16		
			cu m	1	1	4.76	0.60	0.60	1.71		
		Total	Cu m						6.03	460.00	₹ 2,775

ii	RUIDP SOR 2017, item no 2830 (page 532)	Aggregates 25 mm to 10 mm	cu m	1	2	6.00	5.07	0.47	28.59	700.00	₹ 20,016
iii	RUIDP SOR 2017, item no 2821 (page 531)	Aggregates 10 mm to 5 mm	Cu m	1	2	6.00	5.22	0.13	8.14	630.00	₹ 5,130
к	RUIDP SOR 2017, item no 3428(pag e 544)	Brick Bat Filling	cu m	1	1	6.00	0.44	0.45	1.17	400.00	₹ 470
—		Planta									
L	RUIDP SOR 2017, item no 39.41 (page 266)	Plants Supply and planting following in poly bags / earthen pots well branched, well established & free from disease of 300 mm min. height ground covers at site in 0.3 m dia holes, 0.3 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, backfilling the hole watering etc as required									
	RUIDP SOR 2017, item no 39.41.7 (page 267)	Rhoeo spathacea 'Compacta' (Oyster, Boat Lily)	Sqm	1	1	12.00	6.00		72.00	111.00	₹ 7,992
М		Valves									
	Quotation attached	Ball valves for inlet, outlets and at diversion chambers	No s	1	4				4.00	550.00	₹ 2,200

Total	₹ 725,639
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7. Measurement sheet of Polishing Pond

SI.n	Item No	Description	Unit	N	los	L	В	D	Quantity	Rate	Ar	nount
						mtr	mtr	mtr				
A		Rate for Earthwork- Excavation Earth work in										
	RUIDP SOR 2017, item no 4.9 (page 10)	excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil -										
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	Upto 3.0 m depth	cum	1	1	8.98	9.17	3.55	292.33			
		Total	cum						292.33	116.00	₹	33,910
		Refilling with excavated earth										

RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.										
	Excavated Earth	cum						292.33			
	Deduct PCC for 225mm thick edge wall	cum	1	-2	8.34	1.48	0.10	(2.46)			
	Deduct PCC for curved wall	cum	1	-2	6.11	1.00	0.10	(1.22)			
	Deduct PCC for toe wall	cum	1	-2	6.11	0.83	0.15	(1.51)			
	Deduct RCC base slab for 225mm thick edge wall	cum	1	-2	8.14	1.28	0.25	(5.19)			
	Deduct RCC base slab for curved wall	cum	1	-2	6.31	0.80	0.25	(2.52)			
	Dedduct RCC edge wall(225mm thick)	cum	1	-2	6.00	0.23	2.39	(6.44)			
	Deduct RCC curved wall	cum	1	-2	7.00	0.20	1.45	(4.06)			
	Deduct toe wall(1st layer)	cum	1	-2	7.00	0.68	0.38	(3.54)			
	Deduct toe wall(2nd layer)	cum	1	-2	7.00	0.38	0.67	(3.52)			
	Deduct module below EGL	cum	1	-1	6.98	7.17	3.21	(160.65)			
		cum						101.21	98.00	₹	9,919

В		Rubble Soling										
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.										
		Rubble soling bed between RCC wall	cum	1	1	6.58	2.77	0.15	2.73			
		Rubble soling bed to support stairs	cum	1	2	7.10	2.05	0.15	4.37			
			cum						7.10	1,360.00	₹	9,654
С		Plain Cement Concrete										
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :										
	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).										
		PCC for 225mm thick edge wall	cum	1	2	8.34	1.48	0.10	2.46			
		PCC for curved wall	cum	1	2	6.11	1.00	0.10	1.22			
		PCC for toe wall	cum	1	2	6.11	0.83	0.15	1.51			
		Total PCC	Cum						5.19	3,360.00	₹	17,450
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).										
		PCC bed between RCC wall	cum	1	1	6.58	2.77	0.10	1.82			
		PCC bed to support stairs	cum	1	1	7.10	2.05	0.10	1.46			
			cum						3.28	3,670.00	₹	12,026

D		Reinforced Cement Concrete (R.C.C), M25										
	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement										
	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)										
		RCC base slab for 225mm thick edge wall	cum	1	2	8.14	1.28	0.25	5.19			
		RCC base slab for curved wall	cum	1	2	6.31	0.80	0.25	2.52			
		RCC edge wall(225mm thick)	cum	1	2	6.00	0.23	2.65	7.16			
		RCC curved wall	cum	1	2	7.00	0.20	1.45	4.06			
		Rcc bed above PCC	cum	1	1	6.58	2.77	0.08	1.37			
		Rcc bed above toe wall	cum	1	2	7.10	0.38	0.15	0.80			
			cum						21.09	5,030.00	₹	106,098
E		Reinforcement										

	RUIDP 2017, item no 23.19(page 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete									
	RUIDP 2017, item no 23.19.6(page 157)	Thermo- Mechanically Treated bars. Total reinforcement @ 125kg/cum	kg	1	1	125.00	21.09	2,636.62			
			МТ					2.64	51,500.00	₹	135,786
F		Centering/Shuttering									

RUIDP SO 2017, iten no 22.1 (page 154	 stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for : 										
RUIDP SO 2017, iten no 22.1.1 (page 154	columns, etc. for mass concrete										
	PCC for 225mm thick	sqm	2	2	8.34		0.10	3.34			
	edge wall	-			0.04	1 40					
	PCC for curved wall	sqm	2	2	0.14	1.48	0.10	0.59			
	PCC for toe wall	sqm	2	2	6.11 6.11		0.10 0.15	2.44 3.66			
		sqm	2	2	0.11	0.83	0.15	0.50			
	RCC base slab for 225mm thick edge wall	sqm sqm	2	2	8.14	0.03	0.13	8.14			
		sqm	2			1.28	0.25	0.64			
	RCC base slab for curved wall	sqm	2	2	6.31		0.25	6.31			
		sqm						25.61	162.00	₹	4,149
RUIDP SO 2017, iten no 22.1.2 (page 154	attached pilasters, buttresses, plinth										
	RCC edge wall(225mm thick)	sqm	2	2	6.00		3.33	79.92			
	RCC curved wall	sqm	2	2	7.00		1.45	40.60			
		sqm						120.52	240.00	₹	28,925

G		BRICK WORK										
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in										
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)										
		Toe wall (1st layer)	cum	1	2	7.00	0.68	0.38	3.57			
		Toe wall (2nd layer)	cum	1	2	7.00	0.38	1.04	5.46			
		Steps	cum	10	0.5	7.00	0.30	0.30	3.15			
			cum						12.18	4,500.00	₹	54,810
н		Plastering with mortar, 1:4										
	RUIDP SOR 2017, item no 32.1(page 210)	Cement plastering including T&P, scaffolding, material and complete labour, including cost of water, curing, racking of joints etc. with 12mm cement plaster of mix										
	RUIDP SOR 2017, item	1:4 (1 cement : 4										

			sqm	1	2	7.00	1.45	20.30			
			sqm	1	2	6.00	2.20	26.40			
			sqm					46.70	150.00	₹	7,005
		Waste water pipes									
	RUIDP SOR 2017, Item no. 17.25 Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.									
	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110mm Nominal Dia	m	1	2	4.00		8.00	244.00	₹	1,952

RUIDP SC 2017, Iter no. 17.25. Pg - 70	n 110mm Nominal Dia	m	1	1	0.50		0.50	244.00	₹	122
	Total								Ŧ	421,806

8. Measurement sheet of Operator Room

SI. n	ltem No	Description	Unit	Nos	L	В	D	Quantity	Rate	Amount
					mtr	mtr	mtr			
A		Rate for Earthwork- Excavation								

RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).								
RUIDP SOR 2017, item no 4.9.1.1 (page 10)	upto 3m depth in all type of soil								
	Excavation for long wall	cum	1	2	6.46	1.95	1.58	39.68	
	Excavation for short wall	cum	1	2	2.56	1.95	1.58	15.72	
	Excavation for kitchen partition wall	cum	1	1	1.00	1.00	0.55	0.55	
	Excavation for bedroom partition wall	cum	1	1	2.00	1.00	0.55	1.10	
	Excavation for bathroom (long	cum	1	1	2.12	1.00	0.55	1.17	

	wall)									
	Excavation for bathroom (short wall)	cum	1	1	0.40	1.00	0.55	0.22		
	Total	cum						58.44	116.00	₹ 6,779
	Refilling with excavated earth									
RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.									
	Excavated earth	cum						58.441		
	Deduct PCC for foorting(long wall)	cum	-1	2	6.16	0.950	0.150	(1.756)		
	Deduct PCC for foorting(short wall)	cum	-1	2	4.26	0.950	0.150	(1.214)		
	Deduct PCC for footing of kitchen partition wall	cum	-1	1	1.00	0.600	0.100	(0.060)		
	Deduct PCC for footing of bedroom partition wall	cum	-1	1	2.00	0.600	0.100	(0.120)		

	Deduct PCC for footing of bathroom long wall	cum	-1	1	2.12	0.600	0.100	(0.127)	
	Deduct PCC for footing of bathroom short wall	cum	-1	1	0.75	0.600	0.100	(0.045)	
	Deduct SSM footing 1st layer(long wall)	cum	-1	2	5.96	0.750	0.375	(3.353)	
	Deduct SSM footing 1st layer(short wall)	cum	-1	2	4.46	0.750	0.375	(2.509)	
	Deduct SSM footing 2nd layer(long wall)	cum	-1	2	5.81	0.600	0.375	(2.615)	
	Deduct SSM footing 2nd layer(short wall)	cum	-1	2	4.61	0.600	0.375	(2.075)	
	Deduct SSM footing 3rd layer(long wall)	cum	-1	2	5.66	0.450	0.525	(2.674)	
	Deduct SSM footing 3rd layer(short wall)	cum	-1	2	4.76	0.450	0.525	(2.249)	
	Deduct SSM footing 4th layer(long wall)	cum	-1	2	5.56	0.350	0.150	(0.584)	
	Deduct SSM footing 4th layer(short wall)	cum	-1	2	4.86	0.350	0.150	(0.510)	
	Deduct SSM footing 1st layer of kitchen partition wall	cum	-1	1	1.00	0.450	0.375	(0.169)	
	Deduct SSM footing 1st layer of bedroom partition wall	cum	-1	1	2.00	0.450	0.375	(0.338)	

		Deduct SSM footing 1st layer of bathroom long wall	cum	-1	1	2.12	0.450	0.375	(0.358)		
		Earth filling at floor	cum	1	1	5.00	5.000	0.350	8.750		
			cum						46.438	98.00	₹ 4,551
в		PLAIN CEMENT									
	RUIDP 2017, item no 21.1 (Page 151)	CONCRETE Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :									
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).									
		PCC for foorting(long wall)	cum	1	2	6.16	0.95	0.15	1.76		
		PCC for foorting(short wall)	cum	1	2	4.26	0.95	0.15	1.21		
		PCC for footing of kitchen partition wall	cum	1	1	1.00	0.60	0.10	0.06		
		PCC for footing of bedroom partition wall	cum	1	1	2.00	0.60	0.10	0.12		
		PCC for footing of bathroom long wall	cum	1	1	2.12	0.60	0.10	0.13		
		PCC for footing of bathroom short	cum	1	1	0.75	0.60	0.10	0.04		

		wall									
		PCC bed	cum	1	1	5.00	5.00	0.10	2.50		
		Total PCC	Cum						5.82	3,670.00	₹ 21,365
с		Reinforced Cement Concrete (R.C.C), M25									
	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement									
	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)									
		Plinth Beam (230X150) long wall	cum	1	2	5.460	0.350	0.150	0.573		
		Plinth Beam (230X150) short wall	cum	1	2	5.00	0.350	0.150	0.525		
		Plinth Beam (230X150) kitchen partition wall	cum	1	1	1.000	0.230	0.150	0.035		
		Plinth Beam (230X150) bedroom partition	cum	1	1	2.000	0.230	0.150	0.069		

		wall									
		Plinth Beam (230X150) bathroom long wall	cum	1	1	2.120	0.230	0.150	0.073		
		Plinth Beam (230X150) bathroom short wall	cum	1	1	1.400	0.230	0.150	0.048		
		Beam B1(230 X325)	cum	1	1	5.000	0.230	0.325	0.374		
		Top slab	cum	1	1	5.460	5.460	0.125	3.726		
		Lintel beam for Door	cum	1	1	1.400	0.230	0.150	0.048		
		Lintel beam for Door D1	cum	1	1	1.000	0.230	0.150	0.035		
		Lintel beam for window	cum	1	2	1.100	0.230	0.150	0.076		
		Chajja	cum	1	3	1.100	0.450	0.088	0.130		
		Total RCC	cum						5.712	5,030.00	₹ 28,732
D		Reinforcement									
	RUIDP 2017, item no 23.19(pag e 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete									
	RUIDP 2017, item no 23.19.6(page 157)	Thermo- Mechanically Treated bars.									

		Total reinforcement at 125 kg/cum	kg	1	1	125.00	5.71		714.01		
		TOTAL REINFORCEMEN T	kg MT						0.71	51,500.00	₹ 36,771
E		Centering/ Shuttering									
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :									
а	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete									
		PCC for foorting(long wall) sides	sqm	2	2	6.16		0.15	3.70		
			sqm	2	2		0.95	0.15	0.57		
		PCC for foorting(short wall)	sqm	1	2	4.26		0.15	1.28		
		PCC for footing of kitchen partition wall	sqm	1	2	1.00		0.10	0.20		
			sqm	1	1						

							0.60	0.10	0.06		
		PCC for footing of bedroom partition wall	sqm	1	2	2.00		0.10	0.40		
			sqm	1	1		0.60	0.10	0.06		
		PCC for footing of bathroom long wall	sqm	2	1	2.12		0.10	0.42		
			sqm	1	1		0.60	0.10	0.06		
		PCC for footing of bathroom short wall	sqm	1	1	0.75		0.10	0.07		
		PCC bed	sqm	1	1	5.00	5.00		25.00		
			sqm						31.82	162.00	₹ 5,155
b	RUIDP SOR 2017, item no 22.1.5(page 154)	Lintels, beams, plinth beams, girders, bressumers and cantilevers									
		Plinth Beam (230X150) long wall	sqm	1	2	5.460		0.150	1.638		
			sqm	1	2	5.000		0.150	1.500		
		Plinth Beam (230X150) short wall	sqm	1	2	5.00		0.150	1.500		
			sqm	1	2	5.46		0.150	1.638		
		Plinth Beam (230X150) kitchen partition wall	sqm	1	2	1.000		0.150	0.300		

Plinth Beam (230X150) bedroom partition wall	sqm	1	2	2.000		0.150	0.600	
Plinth Beam (230X150) bathroom long wa	sqm	1	2	2.120		0.150	0.636	
Plinth Beam (230X150) bathroom short wall	sqm	1	2	1.400		0.150	0.420	
Beam B1(230 X325)	sqm	1	2	5.000		0.325	3.250	
	sqm	1	1	5.000	0.230		1.150	
Lintel beam for Door	sqm	1	2	1.400		0.150	0.420	
	sqm	1	1	1.000	0.230		0.230	
	sqm	1	2	0.230		0.150	0.069	
Lintel beam for Door D1	sqm	1	2	1.000		0.150	0.300	
	sqm	1	1	0.800	0.230		0.184	
	sqm	1	2	0.230		0.150	0.069	
Lintel beam for window	sqm	2	2	1.100		0.150	0.660	
	sqm	1	2	0.900	0.230		0.414	
	sqm	2	2	0.230		0.150	0.138	
Chajja	sqm	1	3	1.100	0.450		1.485	
	sqm	2	3		0.450	0.088	0.236	
	sqm	1	3	1.100	0.050		0.165	

			sqm						17.00	269.00	₹ 4,574
c	22.1.3 (page 154)	Suspended floors, roofs, landings, balconies and access platform									
		Top Slab(sides)	sqm	1	2	5.460		0.125	1.37		
		sides	sqm	1	2		5.460	0.125	1.37		
		Bottom	sqm	1	1	5.0	5.000		25.00		
			sqm						27.73	287.00	₹ 7,959
F		BRICK WORK									
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in									
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		Long wall	cum	2	1	5.46	0.230	3.060	7.69		
		Short wall	cum	2	1	5.00	0.230	3.060	7.04		

		kitchen partition wall	cum	1	1	1.00	0.115	2.000	0.23		
		Bedroom partition wall	cum	1	1	2.00	0.115	2.000	0.46		
		Batroom long wall	cum	1	1	2.12	0.115	3.360	0.82		
		Batroom short wall	cum	1	1	1.40	0.115	3.360	0.54		
		Deduction for window	cum	-3	1	0.90	0.230	1.200	(0.75)		
		Deduction for main door	cum	-1	1	1.20	0.230	2.100	(0.58)		
		Deduction for toilet door	cum	-1	1	0.80	0.115	1.900	(0.17)		
		Deduction of ventilator	cum	-2	1	0.60	0.230	0.400	(0.11)		
		Step at main door(1st step)	cum	1	1	1.40	0.900	0.150	0.19		
		Step at main door(2nd step)	cum	1	1	1.40	0.600	0.150	0.13		
		Step at main door(3rd step)	cum	1	1	1.40	0.300	0.150	0.06		
		Total	cum						15.54	4,500.00	₹ 69,937
G		Stone Masonry									
	RUIDP SOR 2017, item no 25.1.2(page 163)	Random rubble masonry with hard stone in foundation and plinth : Cement mortar 1:4 (1 cement : 4									
		coarse sand) SSM footing 1st layer(long wall)	cum	1	2	5.96	0.750	0.375	3.353		
		SSM footing 1st layer(short wall)	cum	1	2	4.46	0.750	0.375	2.509		

	SSM footing 2nd	oum	1	2	5.81			2.615		
	layer(long wall)	cum	I	2	0.0 I	0.600	0.375	2.015		
	SSM footing 2nd layer(short wall)	cum	1	2	4.61	0.600	0.375	2.075		
	SSM footing 3rd layer(long wall)	cum	1	2	5.66	0.450	0.525	2.674		
	SSM footing 3rd layer(short wall)	cum	1	2	4.76	0.450	0.525	2.249		
	SSM footing 4th layer(long wall)	cum	1	2	5.56	0.350	0.450	1.751		
	SSM footing 4th layer(short wall)	cum	1	2	4.86	0.350	0.450	1.531		
	SSM footing 1st layer of kitchen partition wall	cum	1	1	1.00	0.450	0.375	0.169		
	SSM footing 1st layer of bedroom partition wall	cum	1	1	2.00	0.450	0.375	0.338		
	SSM footing 1st layer of bathroom long wall	cum	1	1	2.12	0.450	0.375	0.358		
	SSM footing 2nd layer of kitchen partition wall	cum	1	1	1.00	0.230	0.375	0.086		
	SSM footing 2nd layer of bedroom partition wall	cum	1	1	2.00	0.230	0.375	0.173		
	SSM footing 2nd layer of bathroom long wall	cum	1	1	2.12	0.230	0.375	0.183		
		cum						20.06	3,450.00	₹ 69,213
н	Plastering with mortar, 1:4									

201	DP SOR 17, item o 32.3 ige 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix							
201 no	DP SOR 17, item 32.3.2 ige 210)	1:4 (1 cement : 4 fine/ coarse sand)							
		External plastering							
		Long wall	sqm	1	2	5.46	3.06	33.42	
		Short wall	sqm	1	2	5.46	3.06	33.42	
		Deduction of window	sqm	1	- 3	0.90	1.20	(3.24)	
		Deduction of Door	sqm	1	- 1	1.20	2.10	(2.52)	
		Deduction of ventilator	sqm	1	- 2	0.60	0.40	(0.48)	
		Internal							
		plastering							
		Long wall	sqm	1	2	5.00	3.060	30.60	
		Short wall	sqm	1	2	5.00	3.060	30.60	
		Beam B1 sides	sqm	1	2	5.00	0.375	3.75	

		Slab Bottom	sqm	1	1	5.00	5.000	25.00		
		Deduction of window	Sqm	1	- 3	0.90	1.20	(3.24)		
		Deduction of Door	sqm	1	- 1	1.20	2.10	(2.52)		
		Deduction of toilet door	sqm	1	- 1	0.80	1.90	(1.52)		
		Toilet internal walls	sqm	1	1	7.04	3.060	21.54		
		Deduction of ventilator	sqm	1	- 2	0.60	0.40	(0.48)		
		Deduction of toilet door	sqm	1	- 1	0.80	1.90	(1.52)		
		Total plastering	sqm					162.80	210.00	₹ 34,189
1		White wash								
	RUIDP SOR 2017, item no 32.26 (page 212)	White washing with lime to give an even shade:	sqm			162.80		162.8	16.00	₹ 2,605

	RUIDP SOR 2017, item no 32.26.1 (page 212)	New work (three or more coats)							
J		Sanitary fittings							
а	RUIDP SOR 2017, item no 36.7(page 243)	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps,32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require :							
	RUIDP SOR 2017, item no 36.7.2(page 243)	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar taps.	each.	1	1		1.0	1,860.00	₹ 1,860

b	RUIDP SOR 2017, item no 36.1 (page 242)	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :								
	RUIDP SOR 2017, item no 36.1.1(page 242)	White Vitreous china Orissa pattern W.C. pan of size 580x440mm with integral type foot rests.	each.	1	1			1.0	3,570.00	₹ 3,570
		Door and								
K		Windows			1	1.0				
	RUIDP SOR 2017, item no 29.5(page 192)	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all	sqm	1	1	1.2	2.1	2.5		

	necessary fittings complete, including applying a priming coat of approved steel primer.								
RUIDP SOR 2017, item no 29.5.1(page 192)	Using M.S. angels 40x40x6 mm for diagonal braces.	sqm	1	1	0.8	1.9	1.5		
		sqm					4.040	2,790.00	₹ 11,272
RUIDP SOR 2017, item no 40.36(pag e 272)	Providing and fixing double leaf Window wooden shutters made of Ist grade wood as per traditional design (Deshi pattern) planks thickness 25mm and width of Binies, Andheri 35mm and 25mm, including Adwa etc. with fittings (nails, sankal, kunda, cheri, handle and patti etc.) as per existing matching/ as per approved design with moulding/ carving complete in all respect : Sheesham wood grade lst. MP teak wood grade 1st	sqm	3	1	0.90	1.200	3.2		

		M.P teak wood grade Ist	sqm	1	2	0.60		0.400	0.5		T
			sqm						3.72	5,830.00	₹ 21,688
L		Flooring									
	30.3(page 196)	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded 20mm nominal size stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete									
	30.3.1(page 196)	40mm thick	sqm	1	1	5.00	5.000		25.00	292.00	₹ 7,300
М		Waste water pipes									

	19.2(page 104)	Providing, lowering, laying in trenches, aligning, fixing in position and jointing uPVC pipe fittings/ accessories of class III (6 Kg/sqcm) confirming to IS:7834 suitable for potable water with rubber rings joints in uPVC pipe line at all levels/ depth including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer.							
	19.2.1 (page 104)	(Moulded) welded with socket							
а	19.2.1.5 (page 104)	160 mm Dia	each	3			3.00	1,810.00	₹ 5,430
N		Ladder							

	19.65	Providing, fabricating and erecting MS ladder of 450mm wide made of 65 x 65 x 6mm angle iron and 20mm MS bars for walkway to top of the OHSR including cutting, hoistng, fixing in position and applying a priming coat of approved steel primer complete in all respect as per specifications and the direction of the	m	1	1	3.00		3.00	1,390.00	₹ 4,170
0		Electrical works								
	55.4 & 55.4.1	P & F double ball bearing capacitor start ceiling fan of approved make complete with regulator and other accessories as required. (for estimation purpose only)	each	1.00				1.00	₹ 1,481.00	₹ 1,481
	55.5	P & F 1.6 mm thick M.S. Recessed fan box, hexagonal/ round of size 100 mm dia, depth 75mm, 12 mm dia rod fan hook with 100 mm length	each	1.00				1.00	₹ 114.00	₹ 114

	extended on each side .						
57.1.2	P & F strip type fluorscent tube fitting fabricated from (CRCA sheet and finished with powder coating / stove enamelled paint)/(extruded non corrosive UV resist EP channel) complete with accessories like (OCCB, starter, starter seat)/ EB, rotor holder, terminal block duly prewired with copper conductor including making connection, testing etc. as required. (without tube): 1x 36 watts with OCCB	each	2.00		2.00	₹ 277.00	₹ 554
57.7.1.2	P & F Fluorescent tube rod in existing fixtures as Required. Flourscent powder coated. 36/40 watts	each	2.00		2.00	₹ 36.00	₹ 72

57.27.2	P & F of IP65 IK10 rated LED bulk head type ligh fixture made from CRCA sheet steel housing suitable for mounting LED tube system (integral driver), Powen consumption of 10-15W , 500-600 lumens system lumen efficiecy 70 Im/ watt output suitable for1x100 W GLS/ 9W CFL bulk head fixtures, life time of 50000 burning hours with 70% initial lumen maintained. CCT	each	1.00			₹ ₹ 1,271.00 1,271
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54.1	Pipe Earthing as per IS:3043 with perforated 3.0 Mtr. Long, 40 mm dia.' B ' class G.I. Pipe including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover, C.I. Frame of size 300mm x 300 mm and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance as required.	each	1.00				1.00	₹ 3,000.00	₹ 3,000	
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41.1.3	Wiring of light point / fan point / exhaust fan point / call bell point with 1.5 sq. mm FR PVC insulated unsheathed 1.1kV grade flexible copper conductor and 1.5 sq.mm FR PVC insulated copper earth conductor (IS:694) of approved make in double lock/ ISI marked single lock pvc casing capping & it's accessories, 18 SWG M.S. box with earth terminal, screwless cage connectors for neutral looping in switch board & false ceiling point, 6 A switch 3.0 mm thick phenolic laminated sheet, zinc plated / brass screws, cup washers , making connections, testing etc. as required. long point upto 10 m	per point 4.00			₹ ₹ 487.00 1,948
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47.1	P & F ISI marked (IS :3854) 6 amp. flush type switch including cutting hole in tile and making connection testing etc. as required.	each	4.00		4.00	₹ 17.00	₹ 68
47.18	P & F ISI marked flush type 120/280 watt rotary step fan regulator including making connection testing etc. as required.	each	1.00		1.00	₹ 221.00	₹ 221
45.1.3	P & F 18 SWG Sheet steel boxes duly finished with two coats of red oxide and with earthing terminal of following sizes (nominal size) on surface or in recessed as required. Size: 150 x 75 x 60 mm	each	1.00		1.00	₹ 57.00	₹ 57
46.1.1.1	P&F 240/415 V MCB of breaking capacity not less than 10 KA (B/ C/ D tripping characteristic) ISI marked IS 8828(1996)]/ conforming to IEC 60898 in existing board/sheets including making connections with	each	1.00		1.00	₹ 225.00	₹ 225

Lugs, testing etc required. 0.5 A A rating	c. as to 4		
Total for opera room	tor		₹ 356,129

9. Measurement sheet of Guard Room

SI.n	Item No	Description	Unit	Nos	5	L	В	D	Quantity	Rate	Am	nount
						mtr	mtr	mtr				
Α		Rate for Earthwork- Excavation										
	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).										
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	upto 3m depth in all type of soil										
		Excavation for generator room	cum	1	2	3.96	3.96	1.58	49.40			
		Total	cum						49.40	116.00	₹	5,730
		Refilling with excavated earth										

RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.										
	Excavated earth	cum						49.397			
	Deduct PCC for foorting(long wall)	cum	-1	2	3.66	0.950	0.150	(1.043)			
	Deduct PCC for foorting(short wall)	cum	-1	2	1.76	0.950	0.150	(0.502)			
	Deduct SSM footing 1st layer(long wall)	cum	-1	2	3.46	0.750	0.375	(1.946)			
	Deduct SSM footing 1st layer(short wall)	cum	-1	2	1.96	0.750	0.375	(1.103)			
	Deduct SSM footing 2nd layer(long wall)	cum	-1	2	3.31	0.600	0.375	(1.490)			
	Deduct SSM footing 2nd layer(short wall)	cum	-1	2	2.11	0.600	0.375	(0.950)			
	Deduct SSM footing 3rd layer(long wall)	cum	-1	2	3.16	0.450	0.525	(1.493)			
	Deduct SSM footing 3rd layer(short wall)	cum	-1	2	2.26	0.450	0.525	(1.068)			
	Deduct SSM footing 4th layer(long wall)	cum	-1	2	3.06	0.350	0.150	(0.321)			
	Deduct SSM footing 4th layer(short wall)	cum	-1	2	2.36	0.350	0.150	(0.248)			
	Earth filling at floor	cum	1	1	2.50	2.500	0.350	2.188			
		cum						41.422	98.00	₹	4,059
											-

в		PLAIN CEMENT CONCRETE										
	RUIDP 2017, item no 21.1 (Page 151) RUIDP 2017, item no	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6										
	21.1.6 (page 151)	graded stone aggregate 40 mm nominal size).										
		PCC for foorting(long wall)	cum	1	2	3.66	0.95	0.15	1.04			
		PCC for foorting(short wall)	cum	1	2	1.76	0.95	0.15	0.50			
		PCC bed	cum	1	1	2.50	2.50	0.10	0.63			
		Total PCC	Cum						2.17	3,670.00	₹	7,963
с		Reinforced Cement Concrete (R.C.C), M25										
	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement										
	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)										
		Plinth Beam	cum	1	2	2.960	0.350	0.150	0.311			

1		(230X150) long wall										
		Plinth Beam (230X150) short wall	cum	1	2	2.50	0.350	0.150	0.263			
		Top slab	cum	1	1	2.960	2.960	0.125	1.095			
		Lintel beam for Door	cum	1	1	1.400	0.230	0.150	0.048			
		Lintel beam for window	cum	1	2	1.100	0.230	0.150	0.076			
		Chajja	cum	1	3	1.100	0.450	0.088	0.130			
		Total RCC	cum						1.923	5,030.00	₹	9,671
D		Reinforcement										
	RUIDP 2017, item no 23.19(page 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete										
	RUIDP 2017, item no 23.19.6(page 157)	Thermo- Mechanically Treated bars.										
		Total reinforcement at 125kg/cum	kg	1	1	125.00	1.92		240.33			
			kg						240.33			
		TOTAL REINFORCEMENT	МТ						0.24	51,500.00	₹	12,377
Е		Centering/ Shuttering										
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting,										

		propping etc. and removal of form for :										
а	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete										
		PCC for foorting(long wall) sides	sqm	2	2	3.66		0.15	2.20			
			sqm	2	2		0.95	0.15	0.57			
		PCC for foorting(short wall)	sqm	1	2	1.76		0.15	0.53			
		PCC bed	sqm	1	1	2.50	2.50		6.25			
			sqm						9.54	162.00	₹	1,546
b	RUIDP SOR 2017, item no 22.1.5(page 154)	Lintels, beams, plinth beams, girders, bressumers and cantilevers										
		Plinth Beam (230X150) long wall	sqm	1	2	2.960		0.150	0.888			
			sqm	1	2	2.500		0.150	0.750			
		Plinth Beam (230X150) short wall	sqm	1	2	2.96		0.150	0.888			
			sqm	1	2	2.50		0.150	0.750			
		Lintel beam for Door	sqm	1	2	1.400		0.150	0.420			
			sqm	1	1	1.000	0.230		0.230			
			sqm	1	2	0.230	0.150		0.069			
		Lintel beam for window	sqm	2	2	1.100		0.150	0.660			
			sqm	1	2	0.900	0.230		0.414			

			sqm	2	2	0.230	0.150		0.138			
		Chajja	sqm	1	3	1.100	0.450		1.485			
			sqm	2	3		0.450	0.088	0.236			
			sqm	1	3	1.100	0.050		0.165			
			sqm						7.09	269.00	₹	1,908
с	22.1.3 (page 154)	Suspended floors, roofs, landings, balconies and access platform										
		Top Slab(sides)	sqm	1	2	2.960		0.125	0.74			
		sides	sqm	1	2		2.960	0.125	0.74			
		Bottom	sqm	1	1	2.96	2.960		8.76			
			sqm						10.24	287.00	₹	2,939
F		BRICK WORK										
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in										
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)										
		Long wall	cum	2	1	2.96	0.230	3.000	4.08			
		Short wall	cum	2	1	2.50	0.230	3.000	3.45			
		Deduction for window	cum	-3	1	0.90	0.230	1.200	(0.75)			
		Deduction for main door	cum	-1	1	1.20	0.230	2.100	(0.58)			

		Step at main door(1st step)	cum	1	1	1.40	0.900	0.150	0.19			
		Step at main door(2nd step)	cum	1	1	1.40	0.600	0.150	0.13			
		Step at main door(3rd step)	cum	1	1	1.40	0.300	0.150	0.06			
		Total	cum						6.59	4,500.00	₹	29,646
G		Stone Masonry										
	RUIDP SOR 2017, item no 25.1.2(page 163)	Random rubble masonry with hard stone in foundation and plinth : Cement mortar 1:4 (1 cement : 4 coarse sand)										
		SSM footing 1st layer(long wall)	cum	1	2	3.46	0.750	0.375	1.946			
		SSM footing 1st layer(short wall)	cum	1	2	1.96	0.750	0.375	1.103			
		SSM footing 2nd layer(long wall)	cum	1	2	3.31	0.600	0.375	1.490			
		SSM footing 2nd layer(short wall)	cum	1	2	2.11	0.600	0.375	0.950			
		SSM footing 3rd layer(long wall)	cum	1	2	3.16	0.450	0.525	1.493			
		SSM footing 3rd layer(short wall)	cum	1	2	2.26	0.450	0.525	1.068			
		SSM footing 4th layer(long wall)	cum	1	2	3.06	0.350	0.450	0.964			
		SSM footing 4th layer(short wall)	cum	1	2	2.36	0.350	0.450	0.743			
			cum						9.76	3,450.00	₹	33,658
н		Plastering with mortar, 1:4										

	RUIDP SOR 2017, item no 32.3 (page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix										
	RUIDP SOR 2017, item no 32.3.2 (page 210)	1:4 (1 cement : 4 fine/ coarse sand)										
		External plastering										
		Long wall	sqm	1	2	2.96	3.00		17.76			
		Short wall	sqm	1	2	2.96	3.00		17.76			
		Deduction of window	sqm	1	-3	0.90	1.20	(3.24)			
		Deduction of Door	sqm	1	-1	1.20	2.10	(2.52)			
		Internal plastering										
		Long wall	sqm	1	2	2.50	3.000		15.00			
		Short wall	sqm	1	2	2.50	3.000		15.00			
		Slab Bottom	sqm	1	1	2.50	2.500		6.25			
		Deduction of window	Sqm	1	-3	0.90	1.20	(3.24)			
		Deduction of Door	Sqm	1	-1	1.20	2.10	(2.52)			
		Total plastering	sqm						60.25	210.00	₹	12,653
Ι		White wash										

	RUIDP SOR 2017, item no 32.26.1 (page 212)	White washing with lime to give an even shade: New work (three or more coats)	sqm			60.25		60.25	16.00	₹	964
J		Door and Windows									
	29.5(page 192)	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.	sqm	1		1.2	2.1	2.52			
	29.5.1(page 192)	Using M.S. angels 40x40x6 mm for diagonal braces.	sqm	1	1	0.8	1.9	1.52			
			sqm					4.04	2,790.00	₹	11,272

	40.36.1(page 272)	Providing and fixing double leaf Window wooden shutters made of Ist grade wood as per traditional design (Deshi pattern) planks thickness 25mm and width of Binies, Andheri 35mm and 25mm, including Adwa etc. with fittings (nails, sankal, kunda, cheri, handle and patti etc.) as per existing matching/ as per approved design with moulding/ carving complete in all respect : Sheesham wood grade Ist. MP teak wood grade 1st	sqm	2	1	0.90		1.200	2.2	5,830.00	₹	12,593
ŀ	· · · · · · · · · · · · · · · · · · ·	Flooring										
	30.3(page 196)	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded 20mm nominal size stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete										
	30.3.1(page 196)	40mm thick	sqm	1	1	2.50	2.500		6.25	292.00	₹	1,825

L		Waste water pipes								
		Providing, lowering, laying in trenches, aligning, fixing in position and jointing uPVC pipe fittings/ accessories of class III (6 Kg/sqcm) confirming to IS:7834 suitable for potable water with rubber rings joints in uPVC pipe line at all levels/ depth including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer.								
а	19.2.1.5 (page 104)	160 mm dia	each	3			3.00	1,810.00	₹	5,430
0		Electrical works					-			

57.1.2	P & F strip type fluorescent tube fitting fabricated from (CRCA sheet and finished with powder coating / stove enamelled paint)/(extruded non corrosive UV resist EP channel) complete with accessories like (OCCB, starter, starter seat)/ EB, rotor holder, terminal block duly prewired with copper conductor including making connection, testing etc. as required. (without tube): 1x 36 watts with OCCB	each	2.00			2.00	₹	277.00	₹	554
57.7.1.2	P & F Fluorscent tube rod in existing fixtures as required. Flourscent powder coated 36/40 watts	each	2.00			2.00	₹	36.00	₹	72
57.27.2	P & F of IP65 IK10 rated LED bulk head type ligh fixture made from CRCA sheet steel housing suitable for mounting LED tube system (integral driver), Powen consumption of 10- 15W, 500-600 lumens system lumen efficiecy 70 lm/ watt output suitable for1x100 W GLS/ 9W CFL bulk head fixtures, life time of 50000 burning	each	1.00			1.00	₹	1,271.00	₹	1,271

	hours with 70% initial lumen maintained. CCT 3000° K, 4000° K and 6000° K. Fixture shall be in compliance with CE & KEMA standards. LED Bulk head luminaire 9/10W								
54.1	Pipe Earthing as per IS:3043 with perforated 3.0 Mtr. Long, 40 mm dia. ' B ' class G.I. Pipe including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover, C.I. Frame of size 300mm x 300 mm and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance as required.	each	1.00			1.00	₹ 3,000.00	₹	3,000
	Total for guard room							₹	159,131

10. Measurement sheet of Sludge storage

SI. n	Item No	Description	Unit	Nos	L	В	D	Quantity	Rate	Amount	
					mtr	mtr	mtr				
А		Rate for Earthwork- Excavation				-					
	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil									
	RUIDP SOR 2017, item no 4.9.1.1(page 10)	Upto 3.0 m depth Excavation for column footing	cum	6	1.85	1.85	1.63	33.37			
		Total	cum					33.37	116.00	₹ 3,8	871
		Refilling with excavated earth									
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in									

		depth, consolidating each deposited layer									
		including ramming and									
		watering and									
		consolidation with lead									
		up to 50 m and lift upto 1.5 m.									
		Excavated Earth	cum					33.37			
		DeDUCT Pcc for footing	cum	-6	1.45	1.45	0.10	(1.26)			
		Deduct RCC footing(rectangular portion)	cum	-6	1.25	1.25	0.15	(1.41)			
		Deduct RCC footing(trapezoidal portion)	cum	-6	0.33	2.43	0.23	(1.09)			
		Note: Area of excavation= 1/3(A1+A2+sqrtA1*A2)*									
		h Deduct pedastal									
		Deduct pedastal	cum	-6	0.30	0.30	1.15	(0.62)			
			cum					28.99	98.00	₹	2,841
В		Plain Cement Concrete									
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :									
	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 fine/ coarse sand : 8 graded stone aggregate 40mm nominal size).									
		PCC for column footing	cum	6	1.45	1.45	0.10	1.26			
		Total PCC	cum					1.26		₹	4,239

									3,360.00		
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).									
		PCC bed	cum	2	5.60	5.00	0.10	5.60			
			cum					5.60	3,670.00	₹	20,552
С		Rubble Soling									
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.									
		Soling above PCC bed	cum	2	5.60	5.00	0.15	8.40			
			cum					8.40	1,360.00	₹	11,424
D		Reinforced Cement Concrete (R.C.C), M25									

	RUIDP SOR 2017, item no 23.1 (page 155)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement – All work upto plinth level	cum								
	RUIDP 2017, item no 23.1.1 (page 155)	1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). (As per design mix)									
		Plinth beam- long wall TB1(300X375)	cum	2	9.83	0.30	0.38	2.21			
		Plinth beam- Short wall	cum	3	5.23	0.30	0.38	1.77			
		Column	cum	3	0.45	0.30	3.50	1.42			
			cum	3	0.45	0.30	3.00	1.22			
		Footing	cum	6	1.25	1.25	0.15	1.41			
			cum	6	0.33	2.43	0.23	1.09			
		Total RCC	cum					9.11	5,030.00	₹	45,813
E		Reinforcement									
	RUIDP 2017, item no 23.19(page 157)	Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete									
	RUIDP 2017, item no 23.19.6(page 157)	Thermo-Mechanically Treated bars.									
		Total Reinforcement	KG	125.000	9.11			1,138.5			
			MT					1.1		₹	58,633

								51,500.00		
F		Centering/ Shuttering								
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :								
	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete								
		Column Foting	Sqm	6	5.00	0.15	4.5			
			Sqm	6	3.50	 0.23	4.7			
		PCC for footing	Sqm	6	5.80	0.10	3.5			
		Total	Sqm				12.7	162.00	₹	2,058
	RUIDP SOR 2017, item no 22.1.5(page 154)	Lintels, beams, plinth beams, girders, bressumers and cantilevers								
		Plinth beam- long wall	Sqm	4	9.83	0.38	14.74			
		Plinth beam- Short wall	Sqm	6	5.23	0.38	11.77			

		Beam Bottom long side	Sqm	2	9.83		0.30	5.90			
		Beam Bottom Short side	Sqm	3	5.23		0.30	4.71			
		Total for shuttering	Sqm					37.1	269.00	₹	9,982
	RUIDP SOR 2017, item no 22.1.6(pg 154)	Columns, Pillars, Piers, Abutments, Posts and Struts.									
		Column	sqm	3	1.20		4.83	17.37			
			sqm	3	1.20		4.33	15.57			
			sqm					32.94	254.00	₹	8,367
G		BRICK WORK									
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in									
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		Long wall	cum	1	9.83	0.23	3.50	7.91			
		Short wall	cum	2	5.23	0.23	3.25	7.82			
		Total	cum					15.73	4,500.00	₹	70,776
Н		Plastering with mortar,									

		1:4								
	RUIDP SOR 2017, item no 32.3 (page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix								
	RUIDP SOR 2017, item no 32.3.2 (page 210)	1:4 (1 cement : 4 fine/ coarse sand)								
		External Plastering								
		Long wall	sqm	1	10.73	3.50	37.54			
		Short walls	sqm	2	5.83	 3.25	37.90			
		Internal Plastering								
			sqm	1	16.20	3.25	52.65			
			sqm	1	10.60	3.25	34.45			
			sqm				162.53	210.00	₹	34,132
-		Roof								
	RUIDP SOR 2017, item no 29.2(page no 192)	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1	1,470.00		1,470.00	69.00	10	₹)1,430

	275gm/m ²								₹
31.1.2	0.80mm thick with zinc coating not less than	Sqm	1	11.00	6.83	75.1	829.00	₹	62,283
RUIDP SOR 2017, item no 31.1(page no 201)	Providing corrugated G.S. sheet roofing including vertical/ curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete upto any pitch in horizontal/vertical or curved surfaces) excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.								

11. Measurement sheet of Flexible Pavement

SI.n	Item NO	Description	Unit	Nos	L	В	D	Quantity	Rate	A	mount
					mtr	mtr	mtr				
Α		Earthwork Excavation									
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil Upto 3.0 m depth									
		4m wide road	cum	1	157.84	4.000	0.525	331.46			
			cum					331.46	116	₹	38,450
В		Granular Sub base									
	RUIDP SOR 2017, item no 7.1 Pg 21	Providing, laying, spreading and compacting of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory									

	RUIDP	power roller to achieve the desired density, complete as per MoRT&H specification clause - 401 including all material, labour,machinery, lighting, guarding and maintenance of diversion.									
	SOR 2017, item no 7.1.1 Pg 21										
		4m road	cum	1	157.84	4.00	0.20	126.27			
		road at ramp	cum	1	42.00	4.00	0.20	33.60			
		TOTAL	cum					159.87	1070	₹	171,063
С		Wet Mix Macadam									
	RUIDP SOR 2017, item no 7.6 Pg 22	Providing, laying, spreading (with paver finisher only) and compacting wet mix macadam (WMM) base course comprising of graded stone aggregate and granular material conforming to MORT&H specifications (Table 400-II) in layers of equal compacted thickness each consolidated, including pre-mixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tippers to site, laying in uniform layers in base course on a well prepared sub-base/ base									

		course and compacting with power vibratory-roller to achieve the desired density complete as per MoRT&H specification clause - 406 including all material, labour,machinery, lighting, guarding and maintenance of diversion.									
		4m road	Cum	1	157.84	5.00	0.25	197.30			
		road at ramp	cum	1	42.00	4.00	0.25	42.00			
		Total	cum					239.30	1360	₹	325,448
D		Prime Coat									
	RUIDP SOR 2017, item no 8.1 Pg 23	Providing and applying primer coat over prepared surface of granular base with bitumen emulsion as per IS : 8887 and approved quality @ 0.6 kg/sqm with the help of spray set fitted on bitumen Container (boiler) after cleaning the surface including removing of binding material and other foreign matter with wire brushes and small picks, sweeping with brooms or soft brushes and finally dusting with old gunny bags and compressed air to receive bituminous treatment complete as per clause 502 of MoRT&H specification									

		including all material, labour, machinery, lighting,guarding and maintenance of diversion								
		5m road	Sqm	1	157.84	5.00	789.20			
		road at ramp	sqm	1	42.00	4.00	168.00			
			sqm				957.20	20	₹	19,144
F		Bituminous Macadam								
	RUIDP SOR 2017, item no 8.5.1 Pg 23	Providing and laying bituminous macadam in 50/75 mm compacted thickness on prepared surface with specified graded crushed stone aggregates as per Table 500-4, Grading-II for base/ binding course, loading of aggregate with F.E. loader, heating and mixing of stone aggregate and bitumen in computerized hot mix plant, transported to site by tippers to paver, laid over a previously prepared surface with paver finisher fitted with electronic sensing device to the required grade, level and alignment and rolling with power roller and								

30 @ 3.3% (percentage by weight of total mix)	₹	4,730.00	8.40					cum	road at ramp	
30 @ 3.3% (percentage by weight of total mix)III <t< th=""><th></th><th>4 730 00</th><th>8.40</th><th></th><th></th><th></th><th></th><th>cum</th><th>road at ramp</th><th></th></t<>		4 730 00	8.40					cum	road at ramp	
30 @ 3.3% (percentage by weight of total mix) Image: Second s										
30 @ 3.3% (percentage by weight of total mix)			39.46	0.05	5.00	157.84	1	Cum	4m road	
30 @ 3.3% (percentage by weight of total										
									weight of total	

RUIDP SOR 2017, item no 8.10.1 Pg 25Providing and laying 30- mm compacted thickness Bituminous Concrete as design mix (approved by Engineer) on prepared surface with specified gr. stone aggregate as per - 500-18 with bitumen for wearing course including loading aggregate with F.E. loader and hot mixin stone aggregate and bitu (including cost of anti- stripping compound whe required) in computerise mix plant, transporting th mixed material by tippers paver and laying with patient fitted with electron sensing device (as per or 504-3.5) to the required and grade and compacti power rollers and vibrator rollers or 150 to 250 KN pneumatic tyred roller wi = 0.7 Mpa, to achieve the desired density complete per clause 509 of MoRTOR specification including al material, labour, machine lighting, guarding and maintenance of diversion excluding primer/tack co Grade-II with Bitumen Vo grade 30 @ 6% (percent weight of total mix)	s per ade Table of ing of imen rever d hot e s to ver vnic lause level ng by vry th TP e as &H l ery, n but at. G-	1	157.84	5.00	0.03	19.73	
road at ramp							

		cum			23.93	8,070.00	₹	193,115
	Total Cost						₹	973,598

12. Additional Works

SI. n	Item NO	Description	Unit	Nos	L	В	D	Quantity	Rate	Amount
					mtr	mtr	mtr			
1		Water Supply Works								
Α		Water Storage Tank								
	34.47(page 233)	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	ltr	1	2,000.00			2,000.00	6.50	13000
В	34.7 (pg no. 226)	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes,having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c 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.								

i	RUIDP SOR 2017, item no 34.7.6(page 226)	50 mm nominal outer dia .Pipes.	m	5		5.00	819.00	4095
ii	RUIDP SOR 2017, item no 34.7.5(page 226)	40 mm nominal outer dia .Pipes.	m	75		75.00	561.00	42075
iii	RUIDP SOR 2017, item no 34.7.4(page 226)	32 mm nominal outer dia .Pipes.	m	50		50.00	410.00	20500
	RUIDP SOR 2017, item no 34.48 (page 233)	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931						
iv	RUIDP SOR 2017, item no 34.48.1(pag e 233)	15 mm nominal bore.	each	8		8.00	377.00	3016
С		Water Storage Tank - Underground Sump						

34.47(page 233)	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	P er litr e	1	2000			2,000.00	6.50	13000
RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).								
RUIDP SOR 2017, item no 4.9.1.1 (page 10)	In all types of soil upto 3m depth								
	Excavation for sump tank	cum	1	1.41	1.4 1	1.8	3.58		
	Excavation for tank	cum	1	3.14	0.5 9	2.1	3.91		
		cum					7.49	116.00	868.63
	soling								
RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.	cum	1	1.4	1.4	0.1	0.20	1,360.00	266.56

		1							
	PCC bed								
RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :								
RUIDP 2017, item no 21.1.7(pag e 151)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	cum	1	1.4	1.4	0.1	0.20	3,360.00	658.56
	Shuttering								
RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :								
RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete	sqm	4	1.4		0.1	0.56	162.00	90.72
	Brick work								
RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in								
RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)								
	Brick work to support concrete rings	cum	1	3.14	0.7	0.1			985.18

		at tank				0	0.22	4,500.00	
	market rate	Providing Precast concrete rings of diameter 1.54m of size 500X95mm	Nos	1	4.00		4.00	500.00	2000.00
	RUIDP SOR 2017, item no 35.9(pg 239)	Providing and fixing in position precast R.C.C. manhole cover and frame of required shape and approved quality							
	RUIDP SOR 2017, item no 35.9.2.2(pg 239)	M D - 10 Circular shape 500mm internal diameter	each	1	2.00			1,610.00	3220.00
2		Gate at the entrance on compund wall							
	29.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1	500.00		500.00	69.00	34500
		Borewell Works							
3	Quotation attatched	Conduct Hydrogeological investication to determine the most probably spot for bore hole to obtain water. The scientific investication is to be carried in the pressence and in the directions of the engineer and using specialised resistivity measuring instruments.	Nos	1.00			1.00	24,830.00	24830

20.1.3	Construction of Tube-well upto 100 Meter depth and above in all type of rocks by DTH system and over burden to accommodate casing pipe of following sizes in all types of soils and over burden including lowering of casing pipes,excluding the cost of casing pipes as per IS : 2800 (Part I & II) 1979 specifications. The work would be completed after obtaining sand free water and as per direction of the engineer. The tube well should have a throughout bore as per nominal dia of casing pipe:150 mm dia nominal bore	m	35.00		35.00	580.00	20300
20.4.3	Supply of ERW M.S black casing pipe ISI marked (IS: 4270/1992) of grade Fe410 of following nominal bore sizes at site of work - 150 mm Dia	m	26.00		26.00	1,287.00	33462
20.5.1	Supply of strainer pipes made of ERW M.S. black pipe ISI mark of following sizes at the site of work including required size of slotting as per IS:8110-1985 of following nominal bore sizes at site of work. 150 mm dia	m	5.00		5.00	1,300.00	6500
20.6	Testing verticality of tube well by plumbing system and yeild test and draw down test by pumping system as per IS: 2800 (part II) 1979	each	1.00		1.00	7,260.00	7260

	20.7.3	Supply and fixing of tube well cover of M.S. sheet (6mm thick) with nuts and bolts complete for casing size: 150 mm dia	each	1.00		1.00	236.00	236
	20.8	Supply and fixing of MS clamp set of 50×6 mm flat iron with nuts and bolts etc for holding the riser pipe assembly of submersible pump set	each set	1.00		1.00	260.00	260
	20.9	Installation of submersible motor pump set in tube well complete (labour charges only) including transportation of tripod, pulley block, and any other material required for lowering purpose	each	1.00		1.00	3,509.00	3509
	20.10.1	Providing and lowering of GI flange pipe B class including rubber washer and nuts of 8 mm dis complete in all respect - 50 mm dia	metr e	32.00		32.00	539.00	17248
4		Supply of pumps						
	Quotation attached	2HP Borewell solar pump system	Nos	1.00			187,500.00	
		5% GST					9,375.00	
		Total Cost	Nos	1.00		1.00	196,875.00	196875
	Quotation attached	1HP sump solar pumping system	Nos	1.00		1.00	150,000.00	
		5% GST					7,500.00	
		Total Cost	Nos	1.00		1.00	157,500.00	157500

		Dewatering pump for reusing final treated water for gardening purpose, to be mounted on a mobile platform. Power power: 2 Hp	Nos	1.00		1.00	12,000.00	12000
		Fountain Pump	Nos	1.00		1.00	45,000.00	45000
5		Precast Culvert						
	RUIDP SOR 2017, item No 3121 page 538	Precast RCC M-40 grade Box culvert section designed for 'AA' class loading as per IRC specification size 600mm x 600mm	m	1	45.00	45.00	3949	177705
6	Quotation attached	Providing & installation of Solar street light including transportation	Nos	4		4.00	15698	62792
7	Quotation attached	Solar sludge sterlisation unit for 5 ton per day capacity	Unit	1		1.00	2,515,000	2515000
8	RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately.						

RUIDP SOR 2017, Item no. 17.25.1 Pg - 70	110 mm Nominal Dia	m	1	170.00		170.00	244	41480
		Total						₹ 3,461,033

13. Measurement sheet of refilling with earth

SI. n	Item No	Description	Unit	Nos	L	В	D	Quantity	Rate	Amount
					mtr	mtr	mtr			
А		Earthwork Excavation								
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil upto 3.0 m depth								
		Cutting at ramp	cum	1	22.32	4.00	0.26	23.44		
		Excavation for retaining wall	cum	1	47.57	1.20	0.25	14.27		
			cum					37.71	116	₹ 4,374.01
В		Refilling with excavated earth								

	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift up to 1.5 m.									
		Refilling at Ramp	cum	1	10.62	4.00	0.28	11.68			
			cum	1	8.20	4.00	0.20	4.51			
		At pathway	cum	1	15.25	7.90	0.79	95.18			
		Total refilling with excavated earth	Cu m					111.37	98.00	₹	10,913.99
С		Plain Cement Concrete Providing and laying in									
	RUIDP 2017, item no 21.1 (Page 151)	position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level :									
	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 fine/ coarse sand : 8 graded stone aggregate 40mm nominal size).									
		At retaining wall	cum	1	47.77	1.20	0.10	5.73			
			cum					5.73	3,360.00	₹	19,260.86
D		Random rubble stone									

		masonry									
	RUIDP SOR 2017, item no 25.1.2(pag e 163)	Random rubble masonry with hard stone in foundation and plinth : Cement mortar 1:4 (1 cement : 4 coarse sand)									
		Retaining wall	cum	1	47.57	0.75	1.00	35.68			
			cum					35.68	3,450.00	₹	123,087.38
Е		Interlock Pathway									
	RUIDP SOR 2017, item no 9.10(page 30)	Providing and fixing of precast concrete interlocking tiles of desired shape of M 30 grade manufactured from fully computerized automatic stationery hydraulic viebro pressed machine and fully computerized automatic batching plant of class A1/A2 as per BS 6717:2001. The CC interlocking paving blocks be laid on average 50mm. thick bed of coarse sand and the joint is to be filled with fine sand. Laying procedure on compacted sub-base as defined.Complete job is to be executed as per the instruction of Engineer incharge. The rates to be inclusive of all lead & Lifts etc. complete as per specifications. Tensile splitting strength, abrasion and braking load etc. as per BS 6717:2001, Grey cement.									

RUIDP SOR 2017, item no 9.10.1(pag e 30)	60mm thick	sqm	1	15.25	7.90	120.48	516.00	₹	62,165.10
	Total Cost							₹	219,801.34

14. Measurement sheet of storm water drain

SI.n	Item No	Description	Unit	No	s	L	В	D	Quantity	Rate	Amount
						mtr	mtr	mtr			
Α		Rate for Earthwork- Excavation									
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings). In all type of soil upto 3.0 m depth									
		Drain length	cum	1	1	233.43	1.540	0.56	199.51		
		Total	cum						199.51	116.00	₹ 23,143
		Refilling with excavated earth									
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m.									
		Excavated earth	cum						199.51		
		Deduct PCC	cum	-1	1	232.63	1.200	0.050	(13.96)		
		Deduct drain	cum	-1	1	232.43	1.000	0.505	(117.38)		
			cum						68.18	98.00	₹ 6,681

В		PLAIN CEMENT CONCRETE									
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :									
	RUIDP 2017, item no 21.1.7 (page 151)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).									
		PCC Sec 2- sec 3	cum	1	1	232.63	1.200	0.050	13.96		
		Total PCC	Cum						13.96	3,360.00	₹ 46,898
С		Centering/ Shuttering									
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :									
а	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete									
		PCC for foorting(long wall) sides	sqm	1	2	232.63		0.05	23.26		
			sqm	1	2		1.20	0.05	0.12		
			sqm						23.38	162.00	₹ 3,788

							l				
D		BRICK WORK									
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in									
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)									
		wall	cum	1	2	232.43	0.230	0.505	53.99		
		Total	cum						53.99	4,500.00	₹ 242,971
E		Plastering									
	RUIDP SOR 2017, item no 32.3(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :									
	RUIDP SOR 2017, item no 32.3.2(page 210)	1:4 (1 cement : 4 fine/ coarse sand)									
		External plastering	sqm	1	2	232.43		0.505	234.75		
		wall top	sqm	1	2	232.43	0.230		106.92		
		Internal plastering	sqm	1	2	232.43		0.51	234.75		
		Bottom	sqm	1	1						

				232.43	0.50	116.22		
		sqm				692.64	210.00	₹ 145,455
	Total for drain							₹ 468,937

15. Cost estimate for construction of Compound wall

Sl.n	Item No	Description	Unit	N	los	L	В	D	Quantity	Rate	Ar	nount
						mtr	mtr	mtr		Rs		Rs
Α		Rate for Earthwork- Excavation										
а	RUIDP SOR 2017, item no 4.9 (page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).										
	RUIDP SOR 2017, item no 4.9.1.1 (page 10)	In all types of soil upto 3m depth										
		Excavation	cum	1	1	157.57	1.100	0.800	138.66			
			cum						138.66	116.00	₹	16,085
с		Refilling filling with excavated earth										
	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to										

		50 m and lift upto 1.5 m.										
		Excavation	cum						138.66			
		Deduct PCC (long wall)	cum	1	-1	157.64	0.80	0.100	(12.61)			
		Deduct SSM(1st layer)	cum	1	-1	157.44	0.60	0.300	(28.34)			
		Deduct SSM(2nd layer)	cum	1	-1	157.29	0.45	0.300	(21.23)			
		Deduct DpC	cum	1	-1	157.29	0.45	0.100	(7.08)			
		Total	cum						69.40	98.00	₹	6,801
В		Plain Cement Concrete										
1	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :										
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).										
		Footing PCC	cum	1	1	157.64	0.80	0.150	18.92			
		TOTAL C	cum						18.92	3,670.00	₹	69,425
		Chuttonin r										
С	RUIDP SOR 2017, item no 22.1 (page 154)	Shuttering Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for :										

	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete										
		Footing PCC	sqm	2	2	157.64		0.150	94.58			
			sqm	2	2		0.80	0.150	0.48			
									95.06	162	₹	15,400
D		Random rubble stone masonry										
	RUIDP SOR 2017, item no 25.1.2(page 163)	Random rubble masonry with hard stone in foundation and plinth : Cement mortar 1:4 (1 cement : 4 coarse sand)										
		Footing SSM (1st layer)	cum	1	1	157.44	0.60	0.30	28.34			
		Footing SSM (2nd layer)	cum	1	1	157.29	0.45	0.30	21.23			
			cum						49.57	3450	₹	171,028
E		BRICK WORK										
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in										
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)										
		wall	cum	1	1	157.07	0.23	2.00	72.25	4,500.00	₹	325,135
		Total		<u> </u>	-		0.20				₹	603,874

16. Measurement sheet of Registars & solar drying

Sl.n	Item No	Description	Unit	N	os	L	В	D	Quantity	Rate	Am	ount
						mtr	mtr	mtr				
Α		Rate for Earthwork- Excavation										
	RUIDP SOR 2017, item no 4.9(page 10)	Earth work in excavation in open area, STP, WTP, Pumping station with mechanical means including dressing of sides and ramming of bottoms, including getting out the excavated material, disposal of excavated material lead upto 1000m at suitable site as per as per drawing and as per direction of Engineer. (Measurements for payment to be done as per standard drawings).										
	RUIDP SOR 2017, item no 4.9.1.1(page 10)	In all type of soil upto 3.0 m depth										
		Registar RE1	cum	1	1	2.10	2.100	0.69	3.06			
		Registar RE2	cum	1	1	2.10	2.100	1.29	5.71			
		Excavation for soling of solar drying bed	cum	1	1	10.20	10.200	0.20	20.81			
		Total	cum						29.58	116.00	₹	3,431
		Refilling with excavated earth										

	RUIDP 2017, item no 4.13 (page 12)	Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer including ramming and watering and consolidation with lead up to 50 m and lift										
		Excavated earth for	cum						8.77			
		registars Deduct soling of RE1	cum	-1	1	1.90	1.900	0.100	(0.36)			
		Deduct soling of RE2		-1	1	1.90	1.900	0.100	(0.36)			
		Deduct PCC for RE1	cum cum	-1	1	1.90	1.900	0.100	(0.30)			
		Deduct PCC for RE2	cum	-1	1	1.70	1.700	0.100	(0.29)			
		Deduct RE1 below EGL		-1	1	1.70	1.700	0.100	(0.29)			
		Deduct RE2 below EGL	cum	-1	1	1.50	1.500	1.090	. ,			
			cum cum	-1	-	1.50	1.500	1.090	(2.45) 3.91	98.00	₹	383
			oum						0.01	00.00	``	000
в		PLAIN CEMENT CONCRETE										
	RUIDP 2017, item no 21.1 (Page 151)	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :										
	RUIDP 2017, item no 21.1.6 (page 151)	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).										
		PCC for RE1	cum	1	1	1.70	1.70	0.10	0.29			

1		PCC for RE2	cum	1	1	1.70	1.70	0.10	0.29			
		PCC for solar drying bed	cum	1	1	10.00	10.00	0.10	10.00			
		Total PCC	Cum						10.58	3,670.00	₹	38,821
С		Rubble Soling										
	RUIDP 2017, item no 30.34 (page 200)	Random rubble dry stone Kharanja (soling) under floor.										
		soling of RE1	cum	1	1	1.90	1.90	0.10	0.36			
		soling of RE2	cum	1	1	1.90	1.90	0.10	0.36			
		Soling for solar drying bed	cum	1	1	10.20	10.20	0.20	20.81			
			cum						21.53	1,360.00	₹	29,281
С		Centering/ Shuttering										
	RUIDP SOR 2017, item no 22.1 (page 154)	Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and										

		removal of form for :										
а	RUIDP SOR 2017, item no 22.1.1 (page 154)	Foundations, footings, bases of columns, etc. for mass concrete										
		PCC for foorting(long wall) sides for RE1 & RE2	sqm	2	2	1.70		0.10	0.68			
			sqm	2	2		1.70	0.10	0.68			
		PCC for solar drying bed	sqm	2	2	10.00		0.10	4.00			
			sqm						5.36	162.00	₹	868
D		BRICK WORK										
	RUIDP SOR 2017, item no 24.5(page 159)	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto two stories in all shapes and sizes in										
	RUIDP SOR 2017, item no 24.5.1(page 159)	Cement mortar 1:4 (1 cement : 4 coarse sand)										
		RE1	cum	1	1	5.08	0.230	0.490	0.57			
		RE2	cum	1	1	5.08	0.230	1.094	1.28			
		Total	cum						1.85	4,500.00	₹	8,328
E		Plastering										

	RUIDP SOR 2017, item no 32.3(page 210)	Cement plastering including T&P, scaffolding, material and complete labpour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix :										
	RUIDP SOR 2017, item no 32.3.2(page 210)	1:4 (1 cement : 4 fine/ coarse sand)										
		External plastering	sqm	1	1	6.00		0.490	2.94			
			sqm	1	1	6.00		1.094	6.56			
		Internal plastering	sqm	1	1	4.08		0.49	2.00			
		Bottom	sqm	1	1	1.00	1.00		1.00			
		Internal plastering	sqm	1	1	4.08		1.09	4.46			
		Bottom	sqm	1	1	1.00	1.00		1.00			
			sqm						17.97	210.00	₹	3,773
F		Precast Slabs										
	RUIDP SOR 2017, item no 35.9.(page 239)	Providing and fixing in position precast R.C.C. manhole cover and frame of required shape and approved quality										
	RUIDP SOR 2017, item no 35.9.1(pag e 239)	LD-2.5										

RUIDP SOR 2017, item no, 35.9.1.1	Rectangular shape 600x450mm internal dimensions	each	1	2		2.00	1,140.00	₹	2,280
	TOTAL COST OF REGISTARS & SOLAR DRYING BED							₹	87,166

Rate Analysis for Precast Slab

Manufacturing, supplying and fixing Precast Reinforced Cement Concrete slabs of following thickness in RCC 1:2:4 (one cement, two sand and four aggregates), using following HBGS jelly including cost of reinforcement steel in position, cost of moulding charges, casting of slab, finishing, curing and fixing in position in all floors etc., complete complying with standard specification and as directed.

SI No	Item No in SR	Description	unit	Qty	Rate	per	Amount in Rs
		Considering 1cum					
Α		Material					
1	3239(page 540)	Cement OPC	kg	316.8	5.2	kg	1647.36
2	2874(page 532)	Sand	cum	0.44	900	cum	396
3	2830(page 532)	Aggregates 25 mm to 10 mm	cum	0.88	700	cum	616
4	23.19.1(page 157)	mild steel & medium tensile bars @125kg/cum including straighting, cutting, bending	Qtl	1.25	5000	Qtl	6250
5	1388(page 499)	Binding wire	kg	0.5	48	kg	24
6		Timber planks, nails for side shuttering		lump sum	1500		1500 10433.36
В		Labour					
1	0203(page 474)	Mason	Nos	1	500	day	500
2	0230(page474)	Bhisti (including curing)	Nos	1	300	day	300
3	0216(page 474)	Mazdoor/Helper	Nos	3	350	day	1050

	TOTAL B					1850
	TOTAL (A+B)					12283.36
С	water charges@ 5% of (A+B)					614.168
	TOTAL (A+B+C)					12897.53
D	Contractor's profit @ 10%					1289.75
	TOTAL COST OF PRECAST SLAB FOR 1cum=(A+B+C+D)					14187.28
	Rate per cum in Rs					14187
	Rate of 1 precast slab (1.19X0.70X0.10)	cum	0.08	14187	Rs	1181.78
	Rate of 1 precast slab (0.60X0.24X0.10)	cum	0.01	14187	Rs	204.29
	Rate of 1 precast slab (0.60X0.60X0.10)	cum	0.04	14187	Rs	510.73

	Rate Analysis for Rubble Soling									
Supp	Supplying and filling 40mm down size aggregartes along with watering and ramming as specified by EIC									
SI No	Item No in SR	Description	unit	Qty	Rate	per	Amount in Rs			
		Considering 1cum								
Α		Material								
1	2834(page 532)	Aggregates 45 mm to 22.4 mm	cum	0.35	630	cum	220.5			
2	2830(page 532)	Aggregates 25 mm to 10 mm	cum	0.35	700	cum	245			
3	2825(page 531)	Aggregates 13.2 mm to 10 mm	cum	0.15	700	cum	105			
4	2828(page 531)	2.36mm nominal size	cum	0.15	630	cum	94.5			

	0144(page 471)	Compactor	Hr	2	50	Hr	100
		TOTAL A					765
В		Labour					
1	0208(page 474)	Mason (IInd class)	Nos	1	400	day	400
2	0244(page 474)	Skilled Labour(for operating compactor)	Nos	0.25	400	day	100
3	0216(page 474)	Helper	Nos	2	350	day	700
		TOTAL B					1200
		TOTAL (A+B)					1965
С		water charges@ 5% of (A+B)					98.25
		TOTAL (A+B+C)					2063.25
D		Contractor's profit @ 10%					206.33
		TOTAL COST OF RUBBLE SOLING FOR					
		1cum=(A+B+C+D)					2269.58
		Rate per cum in Rs					2270

	Rate Analysis for AC sheet roofing									
	Providing and fixing 6mm thick AC sheet for roofing as per drawing including fixtures, labour cost, complete.(As per instruction of site engineer)									
SI No	Item No in SR	Description	unit	Qty	Rate	per	Amount in Rs			
		For 100sqm								
Α		Material								
1	0007(page IV)	AC sheet 6mm thick semi corrugated(45 Nos including overlapping)	sqm	142	200	sqm	28400			

	0152(page						
2	XVII)	G.I pipe 32mm dia B class	m	104	223	m	23192
3	573(page X)	MS clamps	kgs	10	54	kg	540
		TOTAL A					52132
В		Labour					
1	46 (page LVI)	Fitter class I	Nos	2	265	day	530
	124						
2	(page LIX)	unskilled labour	Nos	4	260	day	1040
		TOTAL B					1570
		TOTAL (A+B)					53702
С		Contractor's profit @ 10%					5370.20
		TOTAL COST OF AC SHEET ROOFING FOR 100sqm=(A+B+C)					59072.20
		Rate of AC sheet roofing for 1sqm	Rs				590.722
			Rs				591.00