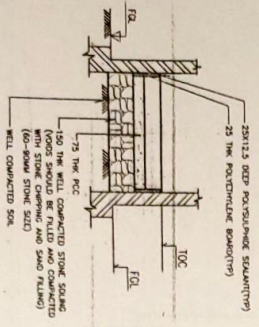
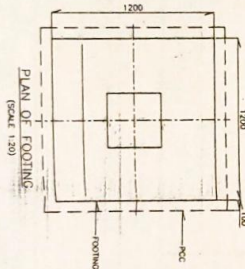


TABLE OF MEMBERS

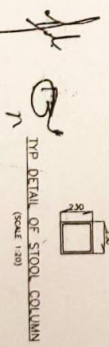
MEMBER NO.	MEMBER SHAPE	MEMBER SIZE
1.	SAFETY FENCE	1000x1000
2.	TRUSS	230x300
3 TO 5	RAFTER	100x100
6 TO 7	TRUSS	100x100
8 TO 11	TRUSS	100x100
12	TRUSS	100x100
13	TRUSS	100x100
14	TRUSS	100x100
15	TRUSS	100x100
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92	TRUSS	100x100
93	TRUSS	100x100
94	TRUSS	100x100
95	TRUSS	100x100
96	TRUSS	100x100
97	TRUSS	100x100
98	TRUSS	100x100
99	TRUSS	100x100
100	TRUSS	100x100



TYP. CROSS SECTION OF GRADE SLAB & ISOLATION JOINT (SCALE 1:20)



PLAN OF FOOTING (SCALE 1:20)



TYP. DETAIL OF STEEL COLUMN (SCALE 1:20)

TYP. DETAIL OF BAND LINE (SCALE 1:20)

FOR DRY PURPOSE ONLY  
DO NOT SCALE

UTTRAKHAND URBAN SECTOR DEVELOPMENT AGENCY (USDA)  
UTTRAKHAND URBAN SECTOR DEVELOPMENT INVESTMENT PROGRAM (USDP)

TYPICAL GENERAL ARRANGEMENT OF DRY WASTE SEGREGATION SHED

TAVA CONSULTING ENGINEERS LIMITED

NO.	REV.	DATE	BY	CHKD.
1	1	15-02-2022		
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100	100			

UTTRAKHAND URBAN SECTOR DEVELOPMENT AGENCY (USDA)  
UTTRAKHAND URBAN SECTOR DEVELOPMENT INVESTMENT PROGRAM (USDP)

TYPICAL GENERAL ARRANGEMENT OF DRY WASTE SEGREGATION SHED

TAVA CONSULTING ENGINEERS LIMITED

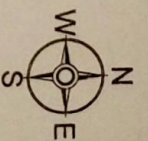
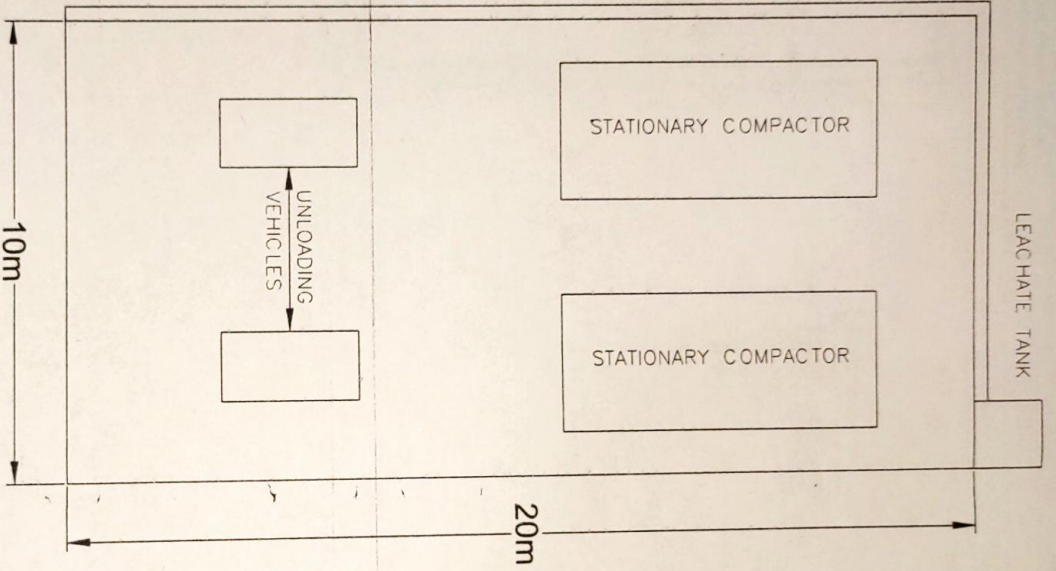
MUMBAI

TCE.10375A-CH-2022-RK-14

12



LEACHATE TANK



*Handwritten signatures and initials:*  
 [Signature]  
 [Signature]  
 [Initials]

FORM 30 (2012) (REV. 04/13)	ISSUE	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD	DATE	
ISSUED																					
REVISED																					
REVISION																					
NO.																					
DATE																					
BY																					
CHKD																					
DATE																					
BY																					
CHKD																					
DATE																					

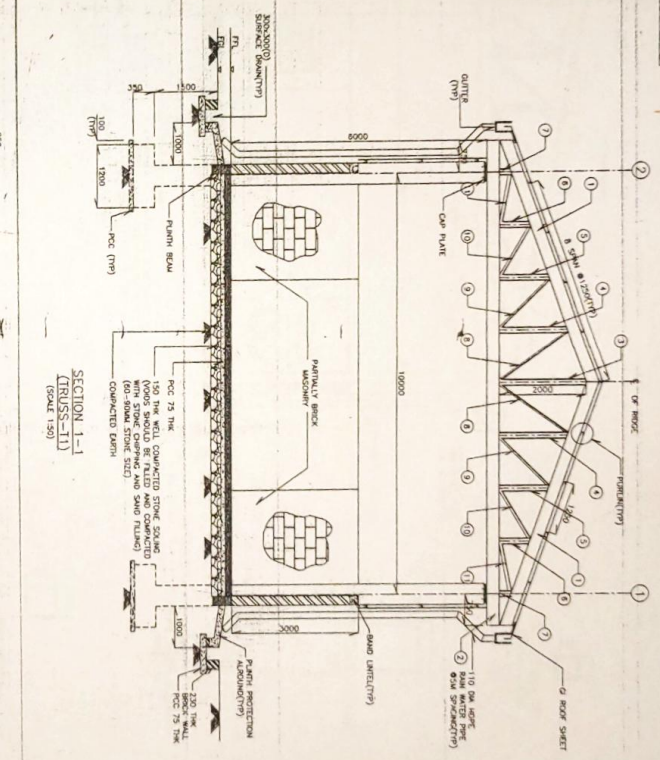
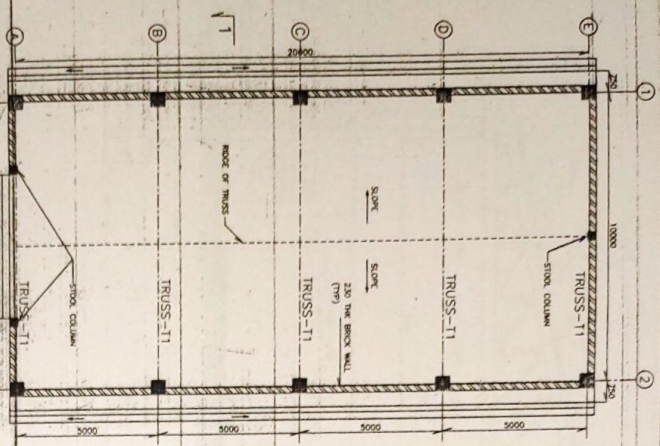
**TAVA CONSULTING ENGINEERS LIMITED**  
 111, 4200, MADHURVA, WILSON ROAD, CHENNAI 600 022, INDIA  
 TEL: +91 44 2632 2222 FAX: +91 44 2632 2222  
 WEBSITE: www.tavaconsulting.com  
 PROJECT: URBAN AND RURAL SOLID WASTE MANAGEMENT PLANNING AND DESIGN FOR THE CITY OF CHENNAI

SCALE	1:20	DATE	10/04/2013
PROJECT	URBAN AND RURAL SOLID WASTE MANAGEMENT PLANNING AND DESIGN FOR THE CITY OF CHENNAI	NO.	01
CLIENT	URBAN AND RURAL SOLID WASTE MANAGEMENT AGENCY (URMSA)	DATE	10/04/2013
PROJECT	URBAN AND RURAL SOLID WASTE MANAGEMENT PLANNING AND DESIGN FOR THE CITY OF CHENNAI	NO.	01
SCALE	1:20	DATE	10/04/2013
PROJECT	URBAN AND RURAL SOLID WASTE MANAGEMENT PLANNING AND DESIGN FOR THE CITY OF CHENNAI	NO.	01
CLIENT	URBAN AND RURAL SOLID WASTE MANAGEMENT AGENCY (URMSA)	DATE	10/04/2013
PROJECT	URBAN AND RURAL SOLID WASTE MANAGEMENT PLANNING AND DESIGN FOR THE CITY OF CHENNAI	NO.	01

DO NOT SCALE FOR PPR PURPOSE ONLY

TYPICAL LAYOUT OF MSW TRANSFER CENTER





PLAN (SCALE 1:30)

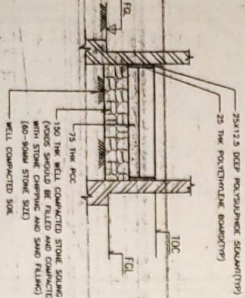
COLUMN SECTION 250x300 (SCALE 1:30)

PLASTER BEAM 230x300 (SCALE 1:30)

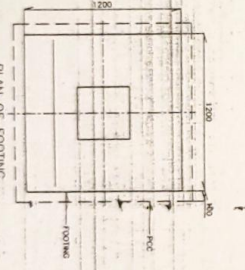
SECTION 1-1 (TRUSS-11) (SCALE 1:30)

TABLE OF MEMBERS

NO.	MEMBER	SECTION	UNIT	QUANTITY
1	WALL	150 THICK MASONRY	SQ. METRE	10000
2	TRUSS	150 THICK MASONRY	SQ. METRE	10000
3	ROOF	100 THICK CONCRETE	SQ. METRE	10000
4	PLASTER	100 THICK PLASTER	SQ. METRE	10000
5	TRUSS	150 THICK MASONRY	SQ. METRE	10000
6	ROOF	100 THICK CONCRETE	SQ. METRE	10000
7	PLASTER	100 THICK PLASTER	SQ. METRE	10000
8	TRUSS	150 THICK MASONRY	SQ. METRE	10000
9	ROOF	100 THICK CONCRETE	SQ. METRE	10000
10	PLASTER	100 THICK PLASTER	SQ. METRE	10000
11	TRUSS	150 THICK MASONRY	SQ. METRE	10000
12	ROOF	100 THICK CONCRETE	SQ. METRE	10000
13	PLASTER	100 THICK PLASTER	SQ. METRE	10000



TYP. CROSS SECTION OF GRADE SLAB & ISOLATION JOINT (SCALE 1:30)



PLAN OF FOOTING (SCALE 1:30)

TYP. DETAIL OF BRICK UNIT (SCALE 1:30)

TYP. DETAIL OF STUCCO COLUMN (SCALE 1:30)

TYP. DETAIL OF ROOF RIB (SCALE 1:30)

TYP. DETAIL OF TRUSS (SCALE 1:30)

TYP. DETAIL OF WALL (SCALE 1:30)

TYP. DETAIL OF ROOF (SCALE 1:30)

TYP. DETAIL OF PLASTER (SCALE 1:30)

TYP. DETAIL OF TRUSS (SCALE 1:30)

TYP. DETAIL OF WALL (SCALE 1:30)

LEGEND:  
 FILL FILL  
 FINISHED FLOOR LEVEL  
 FINISHED SOIL WASTE MANAGEMENT  
 FINISHED GRADE CONCRETE  
 FINISHED GRADE CONCRETE  
 FINISHED GRADE CONCRETE

TYPICAL GENERAL ARRANGEMENT OF WASTE TRANSFER SHED

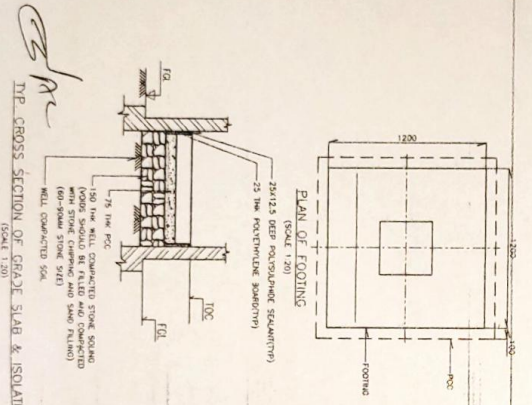
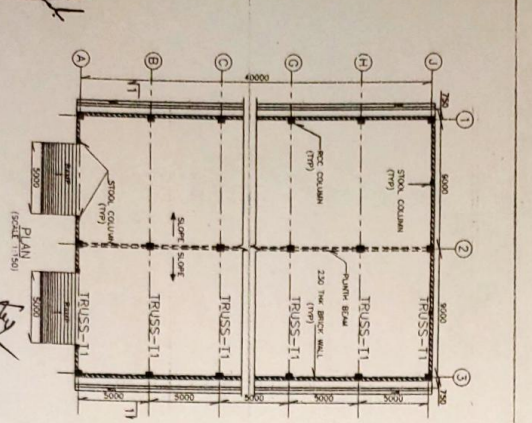
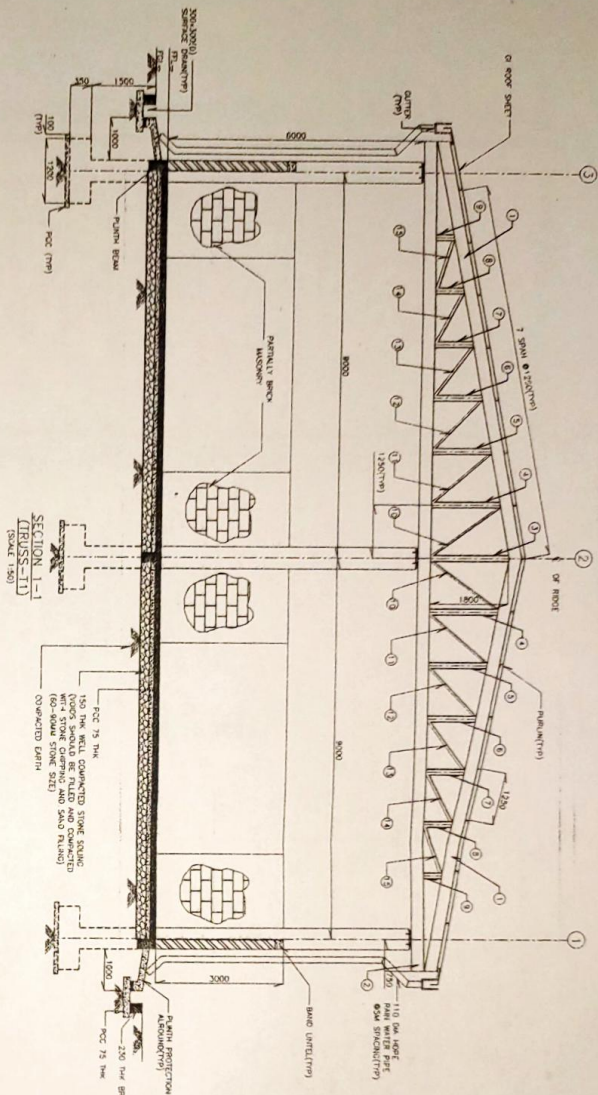
NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	WALL	SQ. METRE	10000	
2	TRUSS	SQ. METRE	10000	
3	ROOF	SQ. METRE	10000	
4	PLASTER	SQ. METRE	10000	
5	TRUSS	SQ. METRE	10000	
6	ROOF	SQ. METRE	10000	
7	PLASTER	SQ. METRE	10000	
8	TRUSS	SQ. METRE	10000	
9	ROOF	SQ. METRE	10000	
10	PLASTER	SQ. METRE	10000	
11	TRUSS	SQ. METRE	10000	
12	ROOF	SQ. METRE	10000	
13	PLASTER	SQ. METRE	10000	

UTPRAKASHAN URBAN SECTION DEVELOPMENT AGENCY (USDA)  
 UTPRAKASHAN URBAN SECTION DEVELOPMENT AGENCY (USDA)

TADA CONSULTING ENGINEERS (LIMITED)  
 TADA CONSULTING ENGINEERS (LIMITED)

SCALE: 1:30  
 DATE: 10/10/2022





TYP. DETAIL OF STOOD COLUMN (SCALE 1:50)

TABLE OF MEMBERS

MEMBER KIND	MEMBER SHAPE	MEMBER SHAPE
1	JL	6x25x75x8 THK
2	JL	6x25x75x8 THK
3 TO 6	JL	6x25x75x8 THK
10 TO 12	JL	6x25x75x8 THK
7 TO 9	JL	6x25x75x8 THK
13 TO 15	JL	6x25x75x8 THK
TRUSSING	C	6x25x75x8 THK
TR. MEMBERS	C	6x25x75x8 THK
SLAB REIN	●	12# REIN

FOR MORE PURPOSE ONLY  
 DO NOT SCALE

UTTRAKHAND URBAN SECTOR DEVELOPMENT AGENCY (UUSDA)  
 UTTARAKHAND URBAN SECTOR DEVELOPMENT IMPLEMENTATION PROGRAM (UISDP)

TYPICAL GENERAL ARRANGEMENT OF PARTIALLY OPEN SHED AT DOMVALA

TATA CONSULTING ENGINEERS LIMITED  
 MUMBAI

LEGEND:  
 FINISHED GRADE LEVEL  
 FINISHED FLOOR LEVEL  
 UNFINISHED GRADE LEVEL  
 UNFINISHED FLOOR LEVEL  
 FINISHED GRADE CONCRETE  
 FINISHED FLOOR CONCRETE

NO.	REV.	BY	CHKD.	DATE	DESCRIPTION
1	1			20-11-2018	

SCALE: 1:50 (SECTION), 1:20 (PLAN)  
 TCE.10375A-CH-2022-CH-03 (REV. PO)  
 DATE: 20-11-2018





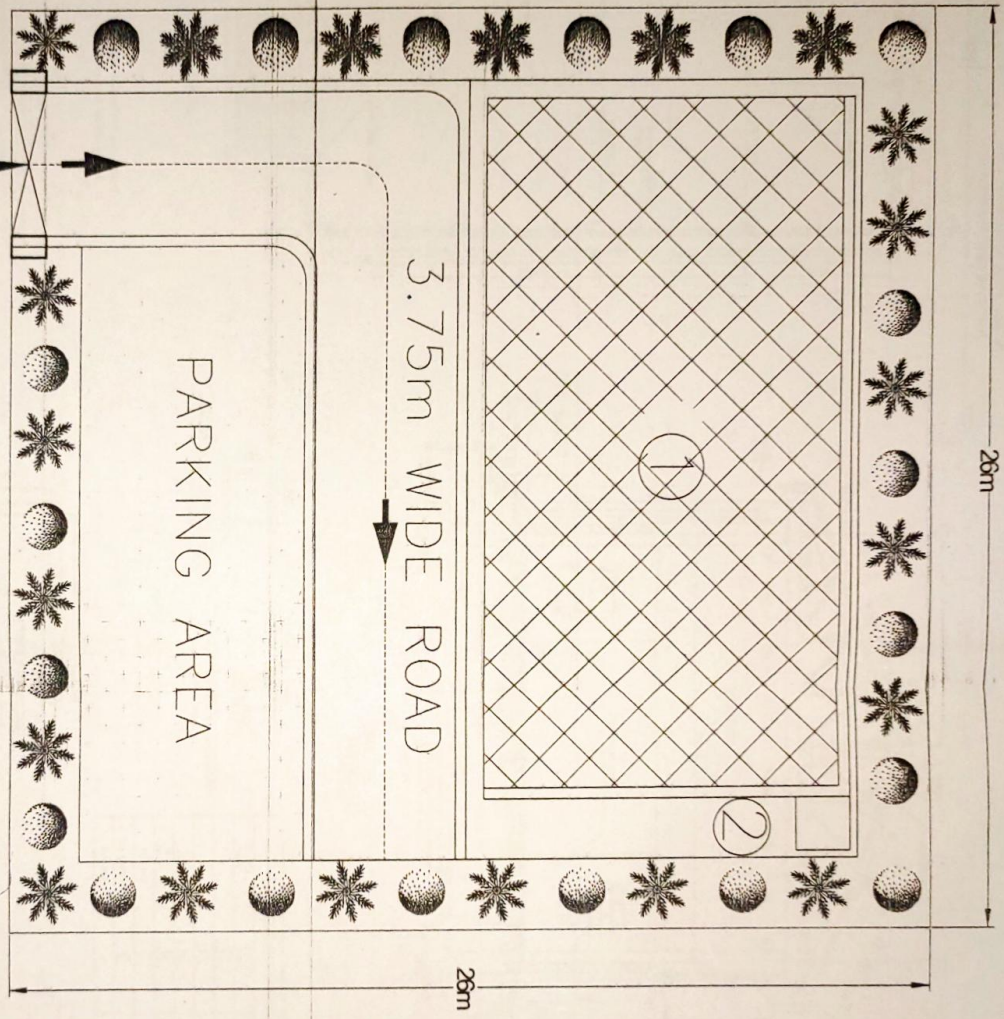


DESIGN NO.	1381	DATE	15-02-2022
PROJECT	3-S TPD MSW PROCESSING FACILITY		
CLIENT	TATA CONSULTING ENGINEERS LIMITED		
SCALE	AS SHOWN		
DATE	15-02-2022		
BY	[Signature]		
CHECKED	[Signature]		
DATE	15-02-2022		

MAIN ENTRANCE GATE

PARKING AREA

3.75m WIDE ROAD



LEGEND:

- PROPOSED ROAD
- BARBED WIRE FENCING
- GREEN BELT

NOTE:-

- ALL DIMENSIONS ARE IN METERS
- TOTAL AREA OF PLANT = 675.0 Sq.m
- TOTAL LENGTH OF 3.75m RDW/O = 30.0m

3-S TPD MSW PROCESSING FACILITY COMPONENT LIST

Sl. NO.	COMPONENT NAME	SIZE IN METERS			
		L	W	H	
01	SEGREGATION SHED	25.0	10.0	R/O	
02	LEACHATE COLLECTION TANK	1.50	1.50	---	

DO NOT SCALE THIS DRAWING PURPOSE ONLY

TYPICAL LAYOUT OF MSW SEGREGATION CENTER

DATE	15-02-2022
BY	[Signature]
CHECKED	[Signature]
DATE	15-02-2022





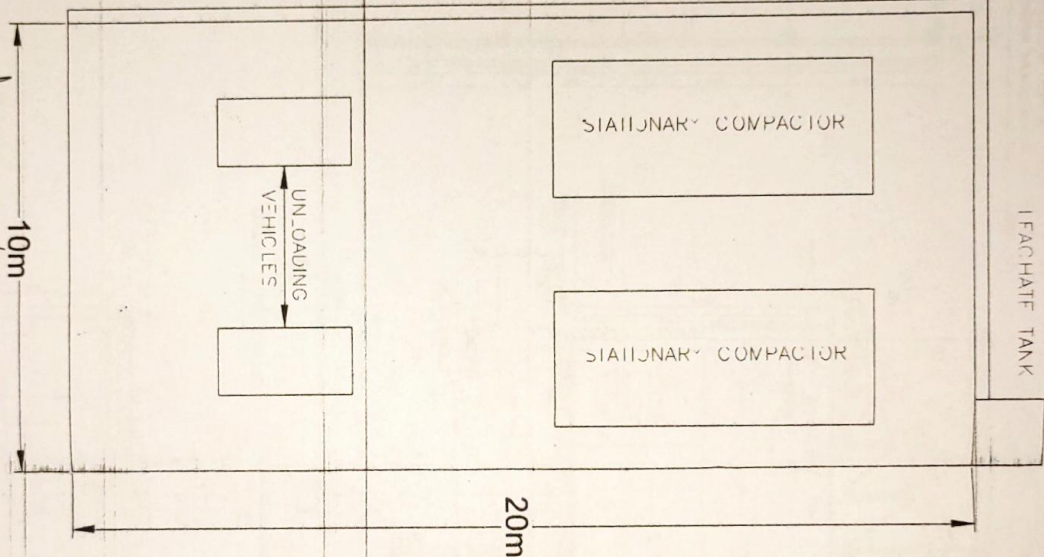


1 FAC HATE TANK

STATIONARY COMPACTOR

STATIONARY COMPACTOR

UNLOADING  
VEHICLES



DO NOT SCALE OR USE PLANS ON...

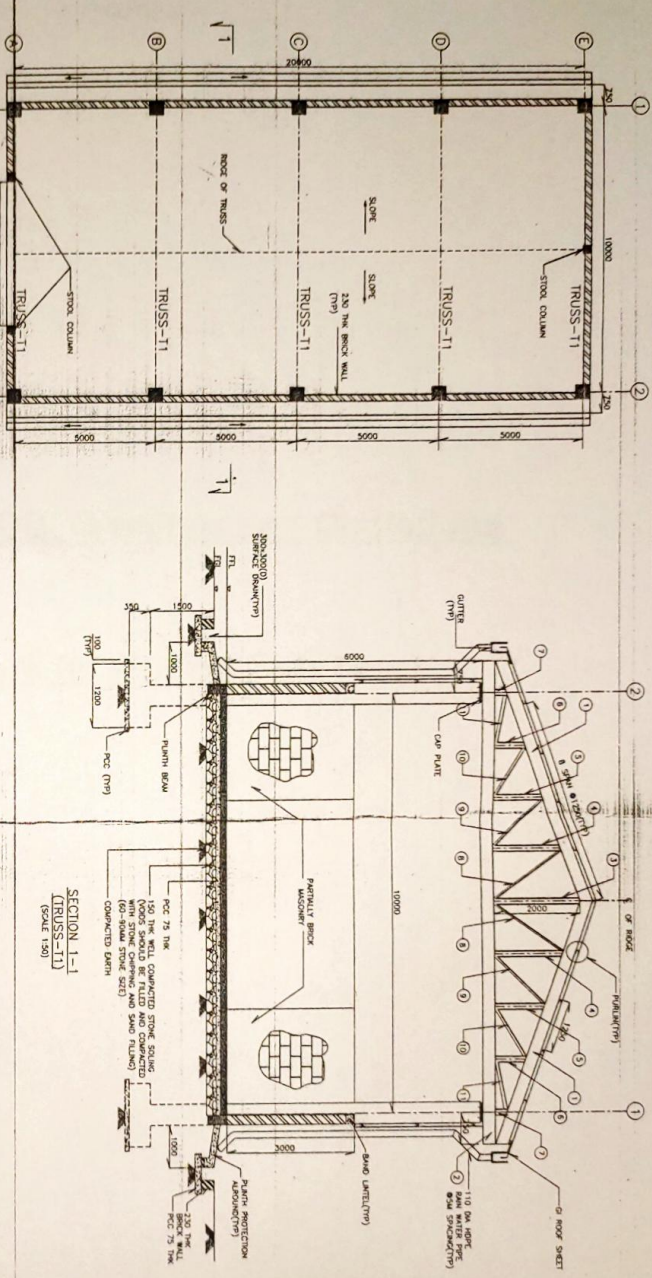
DATE	10/10/2011
BY	...
CHKD	...
REV	...
NO	...

NO	...
DATE	...
BY	...
CHKD	...
REV	...
NO	...

**TATA CONSULTING ENGINEERS LIMITED**  
 Mumbai  
 CLIENT : TOWN DEVELOPMENT AUTHORITY  
 PROJECT : ...

NO	...	DATE	...
BY	...	CHKD	...
REV	...	NO	...





PLAN (SCALE 1:75)

COLUMN SECTION 250x300 (SCALE 1:20)

PURLIN BEAM 230x300 (SCALE 1:20)

TABLE OF MEMBERS

MEMBER NO	MEMBER	MEMBER	MEMBER
1	WALL	230MM BRICK	100MM CONCRETE
2	ROOF	100MM CONCRETE	100MM SAND FILL
3	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
4	ROOF SHEET	0.5MM THICK	
5	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
6	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
7	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
8	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
9	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
10	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
11	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
12	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
13	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
14	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
15	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
16	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
17	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
18	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
19	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
20	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
21	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
22	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
23	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
24	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
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27	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
28	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
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35	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
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46	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
47	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
48	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
49	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE
50	TRUSS	110MM DIA STEEL PIPE	100MM DIA STEEL PIPE

TYP. GROSS SECTION OF GRADE SLAB & ISOLATION JOINT (SCALE 1:20)

PLAN OF FOOTING (SCALE 1:20)

TYP. DETAIL OF BAND INLET (SCALE 1:20)

TYP. DETAIL OF STEEL COLUMN (SCALE 1:20)

FOR OPEN PURPOSES ONLY  
DO NOT SCALE  
UTTMARHAND URBAN SECTION DEVELOPMENT AGENCY (USDA)  
ULTRAHAND URBAN SECTION DEVELOPMENT INVESTMENT PROGRAM (USDIP)

TYPICAL GENERAL ARRANGEMENT  
OF WASTE TRANSFER SHED

VIVA CONSULTING ENGINEERS LIMITED  
MUMBAI

TCE 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

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SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022

SCALE: AS SHOWN

PROJECT NO: 10375A-CH-2022-RK-13

DATE: 01-01-2022



**Annexure I & II – BOQ, Drawings and Quotations**

**List of Sub-Work for Muni Ki Reti Town**



Subwork 1: Construction of Open Shed 200 sq. m at Decentralized Transfer Centre

Subwork 2: Construction of Leachate Collection Tank at Decentralized Waste Transfer Centre

Subwork 3: Procurement of Portable compactor along with hook loader for transfer and secondary transportation for Municipal Solid Waste at Muni Ki Reti

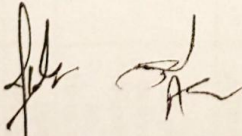
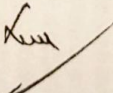
Sr. No.	Description	Unit	Quantity	Amount in Rs. Lakhs		
				DSR	SOR	NSI
	Decentralized Transfer Centre in 1 area			29.15		
1	Construction of open shed (200 sq.m. x 1 Nos.)	sq.m	200	29.16	—	0.02
2	Construction of Leachate Tank (1 Nos.)	nos	1	0.59	—	—
3	Stationary Compactor with Hook Loader	set	1	29.74	—	75.00
	<b>TOTAL COST (in lakhs)</b>			29.75	0.00	75.02
	Add Cost Index on DSR Item (Rishikesh) 0%				0.00	
	Add 1% Labour cess on DSR items		Subtotal (A)	29.74	0.30	75.02
	Add 3% contingency on schedule (DSR+SOR) items			0.89	0.89	
	<b>Total Capital cost</b>		Subtotal (B)	30.63	105.97	75.02

$$SI = ₹ 30.63 \text{ lacs}$$

$$NSI = ₹ 75.02 \text{ lacs}$$

Amo

TATA CONSULTING ENGINEERS LIMITED



Subwork 1: Construction of Open Shed 200 sq. m at Decentralized Transfer Centre

S. N	Item Description	No	Length h	Breadth h	Height	Qty	Unit	Rate	Amount	Item Reference	
1	Civil Work Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.										
			10	1.4	1.4	1.95	38.22				
			1	46.92	0.43	0.25	5.04				
			1	67.04	0.96	0.4	25.74				
	Upto 1.5 meter depth										
	For column foundation (250x300)										
	For PCC of Plinth Beam										
	Side Drain										
						69.01	Cum	252.3	17410.53	DSR Item No_2.8.1	
2	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including getting out and disposal of excavated earth upto 50 m and lift upto 1.5 m, as directed by Engineer-in-Charge.	1	20	10		200.00	Sqm	92.55	18510.00	DSR Item No_2.1.1	
3	150 mm THK Well compacted stone soling voids should be filled and compacted with stone chipping and sand filling 60-90 mm stone size										
	For Grade Slab	1	20	10	0.15	30.00					
	For Entrance	1	5	3	0.15	2.25					
						32.25	Cum	1873.00	60404.25	UNIT ESTIMATE	
2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement : 3 coarse sand (zone-II): 6 graded stone aggregate 40 mm nominal size).										

SSA



S. N	Item Description	No	Length h	Breadth h	Height	Qty	Unit	Rate	Amount	Item Reference
	in column foundation	10	1.4	1.4	0.075	1.47				
	Below plinth beam	1	50.75	0.43	0.075	1.64				
	Plinth Protection	1	65.84	1	0.1	6.58				
	Below Side Drain	1	67.04	0.96	0.075	4.83				
	For Entrance	1	5	3	0.1	1.50				
	For Flooring over soling	1	20	10	0.075	15.00				
						31.02	Cum	6126.25	190021.37	DSR Item No_4.1.6
3	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete 40 mm thick with 20 mm nominal size stone aggregate	1	20	10		200.00	Sqm	498.35	99670.00	DSR Item No_11.3.1
4	Providing and fixing glass strips in joints of terrazzo/ cement concrete floors. 40 mm wide and 4 mm thick									
	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately)					1000.00	RM	75.15	75150.00	DSR Item No_11.13.1
5	All works upto plinth level									
	Column foundation	10	1.2	1.2	0.35	5.04				
	Column 250x300	10	0.25	0.3	1.5	1.13				
	Plinth beam	1	50.75	0.23	0.3	3.50				

*[Handwritten signatures and initials]*





S. N	Item Description	No	Length h	Breadth h	Height	Qty	Unit	Rate	Amount	Item Reference
	All works above plinth level upto floor V level					9.67	Cum	7997.3	77307.90	DSR Item No_5.33.1
	Column (250x300) above plinth	10	0.25	0.3	6	4.50				
	Column (230x230) above plinth Stool Column	3	0.23	0.23	3	0.48				
	Band Lintel	1	60.92	0.23	0.23	3.22				
	Tie Beam	1	81	0.25	0.3	6.08				
	Chajja for Rolling shutter	1	5	0.75	0.15	0.56				
6	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns sides of foundation	10	4.8		0.35	14.84	Cum	9400.85	139473.53	DSR Item No_5.33.2
	Columns, piers, abutments, pillars, posts and struts Sides of column above foundation									
	Columns (250x300)	10	1.1		7.5	82.5				
	Column (230x230) above plinth Stool Column	3	0.92		3	8.28				
	Lintels, beams, plinth beams, girders, bressumers and cantilevers									
	Sides of Plinth Beam	10	50.8		0.6	30.45				
	Sides of band lintel	0	60.9		0.7	42.03				
	Sides of tie beam	10	81.0		0.9	68.85				
	Weather shade, Chajjas, corbels etc., including edges					141.33	sqm	552.05	78023.88	DSR Item No_5.9.5

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S. N	Item Description	N	Lengt h	Breadt h	Height	Qty	Unit	Rate	Amount	Item Reference
		1	5	0.75		3.75	Sqm	766.75	2875.31	DSR Item No_5.9.19
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level and above. Thermo-Mechanically Treated bars of grade Fe-500D or more.									
	Consider 1.5 % of Total volume					2885.2 3	Kg	83.5	240916.7 4	DSR Item No_5.22.6
	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:									
	Wall-1 of Outer Drain	1	46.58	0.23	0.3	3.21				
	Wall-2 of Outer Drain	1	44.92	0.23	0.15	1.55				
						4.76	Cum	6376.2 5	30374.92	DSR Item No_6.1.1
8	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level									
	Cement mortar 1:6 (1 cement : 6 coarse sand)									
	Center line	1	60.92	0.23	3	42.03				
	Deduction for Rolling shutter	1	5	0.23	3	-3.45				
						38.58	Cum	7590.4 5	292876.0 0	DSR Item No_6.4.2
9	12 mm cement plaster of mix : 1:6 (1 cement: 6 fine sand) on Internal Surface									
	Internal side	1	60		3	180.00				
	Deduct rolling shutter opening	1	5		3	-15.00				
						165.00	Sqm	254.25	41951.25	DSR Item No_13.1.2

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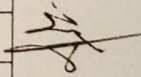
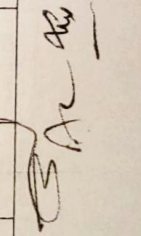


S. N	Item Description	No	Length h	Breadth h	Height	Qty	Unit	Rate	Amount	Item Reference
10	12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand) in drain									
	wall -1	1	46.58		0.53	24.69				
	wall-2	1	44.92		0.53	23.81				
	Bottom	1	45.52	0.3		13.66				
						62.15	Sqm	266.85	16584.99	DSR Item No_13.1.1
11	20 mm cement plaster of mix :1:4 (1 cement: 4 fine sand) on External Surface									
	External side	1	61.84		3	185.52				
	Deduct rolling shutter opening	1	5		3	-15.00				
						170.52	Sqm	365.25	62282.43	DSR Item No_13.3.1
12	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.									
						335.52	Sqm	115.15	38635.13	DSR Item No_13.80
13	Finishing walls with water proofing cement paint of required shade :New work (Two or more coats applied @ 3.84 kg/10 sqm)									
	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade :New work (two or more coats) over and including water thinnable priming coat with cement primer					170.52	Sqm	91.25	15559.95	DSR Item No_13.44.1
14						165.00	Sqm	153.45	26319.25	DSR Item No_13.41.1
15	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									
						9668.00	Kg	101.75	983719.00	DSR Item No-10.2

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S. N	Item Description	No	Length h	Breadth h	Height	Qty	Unit	Rate	Amount	Item Reference
16	Providing and fixing pre-coated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, 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.					244.00	Sqm	627.55	153122.20	DSR Item No- 12.5
17	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade. New work (two or more coats) including a coat of approved steel primer but excluding a coat of mordant solution					244.00	Sqm	138	33672.00	DSR Item No- 13.53.1
18	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete On steel work					322.27	Sqm	189.75	61150.10	DSR Item No- 13.52.1
19	Providing and fixing 15 cm wide, 45 cm overall semi-circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc., including making necessary connections with rain water pipes complete. 0.80 mm thick with zinc coating not less than 275 gm/m <sup>2</sup>					41.20	RM	765	31518.00	DSR Item No- 12.7.1



S. N	Item Description	No	Length h	Breadth h	Height	Qty	Unit	Rate	Amount	Item Reference
20	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.					50	RM	305.05	15252.50	DSR Item No-12.41.2
	110 mm diameter									
21	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.					12	Nos	129.85	1558.20	DSR Item No-12.42.5.2
	Bend 87.5°									
	Shoe (Plain)					6	Nos	113.8	682.80	DSR Item No-12.42.6.2
22	Providing & Fixing MS Clamp to hold wall mounted Rain water pipe in position including making necessary holes and fittings etc.					48	Nos	50	2400.00	NSI
23	Providing and fixing in position 12mm thick bitumen impregnated fiber per cm board conforming to IS: 1838, including cost of primer, sealing compound depth per Grade-A in expansion joints.					1	per cm dept h per 100 m	557.65	557.65	DSR Item No-5.28
24	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.									

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S. N	Item Description	No	Length h	Breadth ft	Height	Qty	Unit	Rate	Amount	Item Reference
25	80x0.90 mm M.S. laths with 0.90 mm thick top cover					15	Sqm	2654.2 5	39813.75	DSR Item No- 10.6.3
26	Providing and fixing ball bearing for rolling shutters					1	each	419.85	419.85	DSR Item No- 10.7
					Total of DSR Items				2916204. 25	2915236.75
					Total of NSI Items				2400.00	

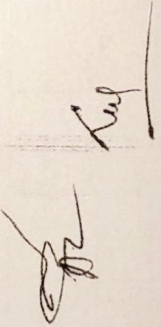
SI - Rs 29.15 per  
NSI - Rs 0.02 - 0

Stone Soling										
S.N	Item Description	No	Qty	Unit	Rate	Amount	Item Reference			
	Details of cost 3 m X 6 m and 150 mm thick area									
1	Stone Boulder 50 mm to 200 mm	1	2.7	Cum	850	2295.00	DSR_7753			
2	Gravel 5 mm to 10 mm to fill voids	1	0.54	Cum	850	459.00	DSR_7754			
3	Sand Filling	1	0.27	Cum	1953.05	527.32	DSR_2.27			
4	Beldar to spread boulder & Gravel	1	2	Day	558	1116.00	DSR_0114			
				Total		4397.32				
	Add 15% CPOH			15%		659.60				
				Total		5056.92				
				Total per Cum		1873.00				

Rs 1843.00



Qty Calculation of Truss of Open Shed (20x10)						
	10	x	20		m	
Size of shed						
No of trusses	5	Nos				
No of Bays	4	Nos				
length of bay/ purlin	5	m				
No. of purlins	12	Nos				
Width of building/ Width of truss	10	m				
No of columns per bay	2	Nos				
Length of top chord / sag rod	12.2	m				
<b>Steel quantities of Trusses</b>						
Description	Units	Nos.	Length m	Total length m	Weight per meter 'kg/m'	Total weight ' kgs'
Top & bottom chord ( 2 L 75X75X8 @17.8kg/m)	kg	5	24	120	17.8	2136
Chord members ( 2L 50X50X6 @ 9Kg/m)	kg	5	23	115	9	1035
purlins ( MC 150 @ 16.8Kg/m)	kg	48	5	240	16.8	4032
Tie members ( MC 150 @ 16.8Kg/m)	kg	22	5	110	16.8	1848
sag rod (12 dia @0.89kg/m)	kg	4	12.2	48.8	0.89	43.432
Cap plate (300x300x16thk@ 11.3kg/No)	kg	10	Nos		11.3	113
					Total weight of truss =	9668
Area of GI roof sheet cover	244	sqm				






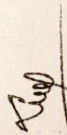
S. N	Item Description	No	Lengt h	Breadt h	Height/Dept h	Qty	Unit	Rate	Amount	Item Reference
1	Wall thick Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m. as directed by Engineer-in-charge Upto 1.5 meter depth	1	2.5	2.5	1.5	9.375	Cum	181.85	1704.844	DSR_Item No_2.6.1
2	Beyond 1.5 meter upto 3.0 meter	1	2.5	2.5	0.3	1.875	Cum	271.89	509.7938	DSR_Item No_2.6.1 + 2.26.1
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size)	1	2.5	2.5	0.1	0.625	Cum	5789.6	3618.5	DSR_Item No_4.1.8
4	Providing and laying in position machine batched and machine mixed design mix M-30 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.	1	2.3	2.3	0.2	1.058				
	Bottom of tank	2	1.7	0.2	1.5	0.51				
	Wall-1	2	1.7	0.2	1.5	0.51				
	Wall-2	2	1.7	0.2	1.5	0.51				

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S. N	Item Description	No	Length h	Breadth h	Height/Dept h	Qty	Unit	Rate	Amount	Item Reference
5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level and above.					2.078	Cum	9470.6	19679.91	DSR_Item No. 5.33.2 + 5.34.1
	Thermo-Mechanically Treated bars of grade Fe-500D or more.									
	Consider 1.5 % of Total volume									
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights. Foundations, footings, bases of columns, etc. for mass concrete					245	Kg	83.5	20431.16	DSR Item No. 5.22.6
	Sides of Foundation	2	4.6		0.2	1.84	Sqm	284.85	524.124	DSR Item No. 5.9.1
7	Centering and shuttering including strutting, propping etc. and removal of form for all heights. Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.									
	Wall-1	4	1.7		1.5	10.2				
	Wall-2	4	1.7		1.5	10.2				
						20.4	Sqm	609.3	12429.72	DSR Item No. 5.9.2
							Total		58898.04	


  

  
 SI - Rs 0.59603
   
 WSI Rs ML



Subwork 3: Procurement of Portable compactor along with hook loader for transfer and secondary transportation for Municipal Solid Waste at Muni Ki Reti

Item No.	Item Description	Unit	Quantity Per Set	Number of Set (nos.)	Rate in Rs. Per set	Amount in Rs.
1	Solid Waste Portable Compactor with integral 10.5 Cum Container unit including Hydraulic Loading Bucket/ Shovel arrangement as per technical specifications enclosed.	Nos.	2	1	7500000	7500000
2	Hook loader mounted on 16.2 T GWV BS - IV Truck Chassis capable of handling the compactor unit with 10.5 cum volume container unit as per technical specifications.	Nos.	1			7500000
Total cost for 1 Set						7500000

Rate 1/8 of vol - I

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51 - 211  
 Rs 75.00 lakhs  
 251 -



**Annexure I & II – BOQ, Drawings and Quotations**

**List of Sub-Work for Swargashram Town**



- Subwork 1: Site Development and Barbed Wire Fencing
- Subwork 2: Construction of Internal Road including KC drain
- Subwork 3: Construction of Approach Road
- Subwork 4: Construction of Entrance Gate
- Subwork 5: Construction of Admin Building
- Subwork 6: Construction of Dry Waste Shed
- Subwork 7: Construction of Windrow Platform
- Subwork 8: Construction of Leachate Tank
- Subwork 9: Construction of Septic Tank
- Subwork 10: Accessories, Machineries and Equipment's for processing facility
- Subwork 11: IEC Activity for Swargashram
- Subwork 12: Electric Cost

Sr. No.	Description	Amount in Lakhs Rs.			NSI depn
		DSR	SOR	NSI	
1	Site Clearance and barbed wire fencing	✓ 1.32	1.36	✓ 1.86	---
2	Construction of Internal road including KC drain	---	(1.43)	---	---
3	Construction of Approach Road	---	(8.38)	7.93	---
4	Construction Entrance Gate	0.57 (1.14)	---	---	---
5	Construction of Admin Building as per drawing	6.45 (6.67)	---	0.11	---
6	Construction of Dry Waste shed (25x10 )	35.11 (35.42)	---	2.09	---
7	Construction of Windrow Platform (14x10 )	3.33 (3.34)	---	---	---
8	Construction of Leachate Tank	✓ 0.59	---	---	---
9	Construction of Septic Tank	0.71	---	0.04	---
10	Accessories for facility	---	---	2.53	---
11	IEC Activity	---	---	(15.94)	9.94
12	Electrical Cost	1.36 (3.16)	---	(5.10)	4.88, 2.02
		49.74	9.29	21.45	2.02

Cost Index 0%

Sub total A

Add Contingency 3%

Subtotal B

Add 12% GST

₹ 51.23

S1 = ₹ 51.23 + ₹ 10.68

= ₹ 61.91 Lakhs

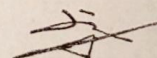
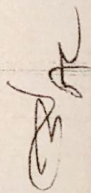

NSI = ₹ 21.45 + 2.02

= ₹ 23.47 Lakhs



**Subwork 1: Site Development and Barbed Wire Fencing**

Sl No	Reference	Description of Item	Unit	Qty	Rate			Amount			
					DSR	SOR	NSI	DSR	SOR	NSI	
A	Civil Work										
1	DSR_Item No 2.31	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	SQM	688.5	12.55			8640.675			
2	NSI	Filling excavated earth brought from outside (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m. Earth shall be free from any wood partical, stone, suitable for backfilling as per Indian standard	Cum	413.1		450				185895	NSI
3	DSR Item No_2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.	Cum	5.22	252.3			1318.14			
4	DSR Item No_2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	Cum	3.00	219.65			658.95			





Sl No	Reference	Description of Item	Unit	Qty	Rate			Amount		
					DSR	SOR	NSI	DSR	SOR	NSI
5	DSR Item No_4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size)	Cum	5.22	6126.25			32006.59		
6	DSR_Item No 16.15.1	R.C.C. Standards post/ struts/rails/ pales of mix 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 12.5 mm nominal size) with wooden plugs or 6mm bar ribs wherever required as per direction of Engineer-in-charge (cost of earth works in excavation, concrete works in foundation to be paid separately)	Cum	3.10	26754.35			82831.47		
7	DSR_Item No 16.17	Fencing with R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 metres (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar ribs fixed while casting the post (cost of R.C.C posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used								
7.1	DSR_Item No 16.17.1	With G.I. barbed wire	metre	546.10	12			6553.2		
		<b>TOTAL</b>						<b>132009.02</b>		<b>185895</b>

51 Rs 1.32 (over)  
 251 Rs 1.86 (over)

Key

*[Signature]*

*[Signature]*







S. No	Item Description	No	Lengt h	Breadt h	Heigh t	Qty	Uni t	Rate	Amount	Item Reference
3	Construction of Un-reinforced, Cement concrete pavement, thickness as per design, over a prepared sub base with 43 grade cement or any other type PCC Grade M-30, coarse and fine aggregates conforming to IS: 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (Steel channel, laying and fixing of wedges, steel plates including levelling the formwork and laying and fixing of 125 micron thick polythene film, as per drawing), spreading the concrete with shovels, rakes, compacted using needle, and plate vibrators, finished in continuous operation and curing of concrete slabs for 14 days, using curing compound where specified and water finishing to lines and grade as per drawings and technical specifications	1	20	3.75	0.15	11.25	cu m	5,375.40	60473.25	Misc Block 33 Doiwala Item No_ 2-3

*(Handwritten signatures and initials)*