

**TENDER DOCUMENT**  
**FOR THE CONSTRUCTION OF PHASE – 1**  
**OF THE SECURED ENGINEERED HAZARDOUS SOLID WASTE**  
**LANDFILL SITE FOR**  
**DISPOSAL OF HAZARDOUS SOLID WASTES**

**OF MEMBERS OF VARNI ENVIRO CARE PRIVATE LIMITED**

**LOCATED AT: SURVEY NO. 283, AT VILLAGE – SURAI, TALUKA – CHOTILA, DISTRICT – SURENDRANAGAR, GUJARAT, INDIA.**

**WORK NO.: VECPL/SWM/01/2022**

**VOLUME – 2: FINANCIAL BID DOCUMENT FOR CIVIL AND LINER**

**OWNED AND MANAGED BY:**

**VARNI ENVIRO CARE PRIVATE LIMITED,**  
**101, FIRST FLOOR, AROHI – III,**  
**OPP. KARNAVATI CLUB, S G HIGHWAY,**  
**AHMEDABAD – 380 015, GUJARAT, INDIA**

**TECHNICAL CONSULTANTS OF THE PROJECT:**

**ENVIRONMENT ENGINEERING LABORATORY,**  
**THE GUJARAT INSTITUTE OF CIVIL ENGINEERS AND ARCHITECTS,**  
**NIRMAN BHAVAN, LAW COLLEGE ROAD, ELLIS BRIDGE,**  
**AHMEDABAD – 380 006, GUJARAT, INDIA.**

**Jun-22**

**VARNI ENVIRO CARE PVT. LTD., S. NO. 283, VILLAGE -  
SURAI, TALUKA - CHOTILA, DISTRICT - SURENDRANAGAR  
CONSTRUCTION OF SECURED LANDFILL FOR HAZARDOUS SOLID  
WASTE DISPOSAL  
SUMMARY OF WORKS**

<b>SL NO</b>	<b>PARTICULARS</b>	<b>BIDDER ESTIMATE AMOUNT IN RS.</b>
1	Landfill Phase Construction Civil Works, Rs.	
2	Landfill Phase Construction Liner Works, Rs.	
	<b>TOTAL AMOUNT WITHOUT GST, Rs.</b>	

NAME OF WORK - SECURED LANDFILL PHASE FOR HAZARDOUS SOLID WASTE DISPOSAL					
VARNI ENVIRO CARE PVT. LTD.					
BILL OF QUANTITY FOR CIVIL WORKS					
SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
<b>Mass Excavation Work with Side Slope in 1:1</b>					
1a	Mass Excavation executed with mechanised efforts/machineries for foundation upto 1.5 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Soft Rock Not requiring Blasting	Cu.M.	37168.00		
1b	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 1.5 m to 3.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Soft Rock Not requiring Blasting	Cu.M.	35464.00		
1c	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 3.0 m to 5.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Soft Rock Not requiring Blasting	Cu.M.	44633.00		
1d	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 5.0 m to 6.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	21180.00		
1e	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 6.0 m to 7.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	20422.00		
1f	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 7.0 m to 8.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	19665.00		
1g	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 8.0 m to 9.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	18907.00		
1h	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 9.0 m to 10.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	18150.00		
1i	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 10.0 m to 11.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. Ref.: Govt. of Gujarat, R& B Department, SOR for Building works - year 2015-2016, applicable to Ahmedabad District. Pg. No. 297-298, Ch.4, Item No. 3 - 0.0 (E) + {Item No. 4 (E) x 6} + Item No. 5 - 0.0 (A) + (B) for additional lead, Pg. No. 297 - 298. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	17392.00		

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
1j	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 11.0 m to 12.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	16634.00		
1k	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 12.0 m to 13.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	15877.00		
1l	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 13.0 m to 14.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	15119.00		
1m	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 14.0 m to 14.75 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	10842.00		
	<b>Mass Excavation in vertical direction of 1.50 m depth at the bottom most portion for accomodating Bottom liner</b>				
1n	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 14.0 m to 15.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				
	(a) Hard Rock requiring Blasting	Cu.M.	3543.00		
1o	Mass Excavation executed with mechanised efforts/machineries for foundation for depth from 15.0 m to 16.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. See item No.1 of Item wise specifications				

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
	(a) Hard Rock requiring Blasting	Cu.M.	17715.00		
	Filling of Voids of Excavated Rock with small size stones and soil to prepare a smooth surface for application of liners on the side slope				
1p	The item includes earth filling, back filling of voids of the excavated rock in the side slope with small size stones and soil brought from outside and site grading and dressing to prepare a smooth surface for application of liners on the side slope.				
		Cu.M.	2459.00		
	<b>Sub Total of Item 1</b>				
	<b>Amended Clay Liner at the Bottom of the Phase - for Double Liner system - 2 layers of 450 mm thickness each</b>				
2	The item includes P/L of amended clay liner using the available soil obtained from the nearby borrow pits and mixing with good quality sodium bentonite in the appropriate proportion as determined in the laboratory with soil to achieve the desired permeability as specified in criteria of CPCB, on the bottom surface of the phase in two layers each of 450 mm thickness as shown in the bottom liner section. The contractor shall mix the excavated soil and bentonite in specified thickness and with rolling, watering and compaction thoroughly. See Item No.2 of Item wise specifications.	Cu.M.	12755.00		
	<b>Sub Total of Item 2</b>				

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
<b>Concrete Work on the inner side slope of the phase</b>					
3a	Providing and laying Plain Cement Concrete M-20 200 mm thickness for very severe conditions with minimum cement content of 260 Kg/Cu.m. and minimum free water - cement ratio of 0.45 as per IS456 at the inner side slope of the phase for providing a solid support and covering of HDPE and Geotextile liner on the side slope from bottom of the phase to the earthen bund top with curing complete, exculding form work as shown in the drawing. See Item No.3 of Item wise specifications.				
	(a) On Inner Side Slope (1:1) from GL to bottom including horizontal berm between the slopes.	Cu.M.	2839.00		
	(b) On 3.1 m horizontal berm from GL to Retaining Wall Inner Edge.	Cu.M.	441.00		
3b	Providing and Laying of Form work with sheeting of steel sheets so as to give a fair finish for concrete structure as shown in the drawing and including centering, shuttering and propping etc. Height of propping and centering below supporting floor to ceiling not exceeding 4 m and removal of the same for in situ reinforced concrete and plain concrete work. See Item No.3 of Item wise specifications.	Sq.M.	5669.00		
<b>Sub Total of Item 3</b>					
<b>Drainage Layer at the Bottom of phase</b>					
4	The item includes providing and laying of 300 mm drainage layer comprising of 100mm thick 10-20MM Coarse Aggregate + 100MM thick 6-10mm (Grit) Coarse Aggregate + 100 mm thk. Coarse sand as shown in drawing. The item includes providing, laying, leveling, compaction etc. complete. See Item No.4 of Item wise specifications.				
a	100 mm thk. 10 -20 mm coarse aggregate	Cu.M.	2834.00		
b	100 mm thk. 6 -10 mm coarse aggregate	Cu.M.	2834.00		
c	100 mm thk. Coarse sand	Cu.M.	2834.00		
<b>Sub Total of Item 4</b>					
<b>Storm Water Drain around landfill and infrastructure facilities (total site) - 1 m wide - 1082 m in length, 0.50 m depth</b>					
5	The item includes construction of Storm Water Drain in RCC M20 on the G/L. The item includes excavation, rubble soling, PCC, RCC M20 and steel reinforcement. See Item No. 5 of Item wise specifications.				
a	Excavation for foundation upto 1.50 mt. depth including sorting out stacking of useful material & disposing of excavated stuff upto 200 mt. lead. (a) Dense or Hard Soil.	Cu.M.	1343.00		
b	Providing and laying 230mm thk.rubble stone filling with 33% murrum in specified thickness with watering, compaction etc. complete.	cu.m.	324.00		
c	Providing and laying plain cement concrete (1:4:8) at the excavated areas and it includes machine mixing, watering, laying, spreading, leveling, consolidating, curing etc. complete with all labour and materials without form work and reinforcement.	Cu.M.	141.00		
d	Providing and laying controlled cement concrete M-20 on the PCC laid above and curing complete, exculding form work and reinforcement for reinforced concrete work as shown in the drawing in Foundations, footings, base of columns and mass concrete.	Cu.M.	243.00		
e	Supplying, cutting, bending, binding and hooking and binding with wire for RCC work tor steel TMT Fe 500 D round bar including bending, binding and placing in position complete all costs upto floor two level.	Kg	20693.00		

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
f	Providing and Laying of Form work with sheeting of steel sheets so as to give a fair finish for concrete structure as shown in the drawing and including centering, shuttering and propping etc. Height of propping and centering below supporting floor to ceiling not exceeding 4 m and removal of the same for in situ reinforced concrete and plain concrete work.	Sq.M.	2651.00		
<b>Sub Total of Item 5</b>					

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
	<b>Leachate Well in RCC M25 - 2 Nos. - 2.0 m x 2.0 m x 38.50 m (H)</b>				
6	The leachate wells have to be constructed in RCC M250 grade concrete of size 2.0 m x 2.0 m x 38.50 m (H) with 175 mm thickness wall as shown in the drawing. The well shall be kept open from the top. See Item No. 6 of Item wise specifications.				
a	Excavation for foundation from the bottom of the phase upto 1.50 mt. depth including sorting out stacking of useful material & disposing of excavated stuff upto 200 mt. lead. (a) Dense or Hard Soil.	Cu.M.	52.00		
b	Excavation for foundation from the bottom of the phase for depth from 1.5 m to 3.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. (a) Soft Rock Not requiring Blasting	Cu.M.	52.00		
c	Excavation for foundation from the bottom of the phase for depth from 3.0 m to 5.0 m depth from EGL including sorting out stacking of useful material & disposing off excavated stuff upto 200 mt. lead. (a) Soft Rock Not Requiring Blasting	Cu.M.	52.00		
d	Providing and laying 230mm thk.rubble stone filling with 33% murrum in specified thickness with watering, compaction etc. complete.	cu.m.	10.00		
e	Providing and laying plain cement concrete (1:4:8) at the excavated areas and it includes machine mixing, watering, laying, spreading, leveling, consolidating, curing etc. complete with all labour and materials without form work and reinforcement.	Cu.M.	7.00		
f	Providing and laying controlled cement concrete M-25 on the PCC laid above and curing complete, exculding form work and reinforcement for reinforced concrete work as shown in the drawing in Foundations, footings, base of columns and mass concrete.				
i)	(A) In Foundations, footings, base of columns and mass concrete.	Cu.M.	3.00		
ii)	(B) In Walls from top of foundation level upto floor two level.	Cu.M.	127.00		
g	Supplying, cutting, bending, binding and hooking and binding with wire for RCC work tor steel TMT Fe 500 D round bar including bending, binding and placing in position complete all costs upto floor two level.	kg	11713.00		
h	Providing and Laying of Form work with sheeting of steel sheets so as to give a fair finish for concrete structure as shown in the drawing and including centering, shuttering and propping etc. Height of propping and centering below supporting floor to ceiling not exceeding 4 m and removal of the same for in situ reinforced concrete and plain concrete work.	Sq.M.	1351.00		
i	Providing and applying 20 mm thick cement plaster in single coat on single or half brick wall for interior plastering upto floor two level finished even and smooth in cement mortar 1:4 (1 cement : 4 fine sand) incl. racking of joints of masonry and roughening of concrete surface (i.e. hacking) to receive plaster, as well as providing and mixing water proofing of 50 kg of material in cement mortar and finishing smooth with a floating coat of neat cement slurry mixing, applying, watering, curing with all labour and materials.	Sq.M.	1345.00		
j	P/L 25 -50 mm Thk. IPS on inside of the Bottom	Sq.M.	8.00		
k	Providing and Fixing of 110 mm dia UPVC water spouts-200 mm long.	nos.	816.00		
	<b>Sub Total of Item 6</b>				



SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
	<b>Leachate Collection system - Leachate pipes - 160 mm dia lateral pipes - 748 m length and 225 mm dia main header pipes - 53 m length laid in RCC leachate Collection trench placed at the bottom of the phase</b>				
7	<p>The item includes providing and laying of 160 mm outer diameter size HDPE pipes of 10 Kg/cm<sup>2</sup> pressure grade and ISI make as per IS – 4984 with material grade PE – 80 and material density of 946.40 Kg/cm<sup>2</sup> and having holes of 10 mm @ center to center 200 mm distance in the upper half section of the pipes, through out the length of the pipes as shown in the diagram attached. The pipes are to be laid horizontally in the primary drainage layer at the bottom of the phase as shown in the layout plan of the landfill and are connected with the RCC leachate wells. The pipes connecting the leachate well are to be laid in such a way so as to make a slope of 1.0 % available to allow leachate to flow easily in to the Leachate well.</p> <p>The pipes are to be laid in a RCC leachate collection trench. The Leachate wells are to be connected to a 225 mm outer diameter main header. The leachate wells shall have a leachate lifting system with sludge pumps provided at the G/L and delivery pipe brought to the G/L at the approach ramps and provided with valves for discharging leachate to the leachate tank. See Item No. 7 of Item wise specifications.</p>				
a	Providing and Laying of 160 mm diameter HDPE pipes of 10 Kg/CM <sup>2</sup> grade and ISI make with perforations for leachate collection.	R.mt.	748.00		
b	Providing and Laying of 225 mm diameter HDPE pipes of 10 Kg/CM <sup>2</sup> grade and ISI make without perforations for leachate collection - whole main header pipe.	R.mt.	53.00		
c	Providing and Laying of 75 mm diameter HDPE pipe of 6 Kg/CM <sup>2</sup> grade and ISI make for leachate withdrawal from tank with complete pipe fittings and other auxiliaries as needed.	R.mt.	100.00		
d	Providing and Laying of RCC Leachate Collection Trench in the Amended Clay liner top to fix pipes at specified locations – 748 m for 160 mm Perforated HDPE pipes and 53 m for 225 mm main Header Pipe:				
d.1	Excavation for foundation upto 1.50 mt. depth including sorting out stacking of useful material & disposing of excavated stuff upto 200 mt. lead. (a) Dense or Hard Soil.	Cu.M.	433.00		
d.2	Providing and laying plain cement concrete (1:4:8) at the excavated areas and it includes machine mixing, watering, laying, spreading, leveling, consolidating, curing etc. complete with all labour and materials without form work and reinforcement.	Cu.M.	144.00		
d.3	Providing and laying controlled cement concrete M-20 on the PCC laid above and curing complete, excluding form work and reinforcement for reinforced concrete work as shown in the drawing in Foundations, footings, base of columns and mass concrete.	Cu.m.	112.00		
d.4	Supplying, cutting, bending, binding and hooking and binding with wire for RCC work tor steel TMT Fe 500 D round bar including bending, binding and placing in position complete all costs upto floor two level.	Kg	6728.00		
e	Providing and Laying of Sludge pumps with complete electrical system including high efficiency motor, operating at a discharge head of 50 m minimum and delivering the leachate at the rate of 100 Cum/Hr.	No.	2.00		
	<b>Sub Total of Item 7</b>				
	<b>Construction of Approach Ramp 7 m wide 118 m slope length in 1:8 slope in RCC with Entrance Area Development</b>				

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
8	The item includes construction of approach ramp in RCC for truck movement into and out of the phase. Total area of ramp with slope and entrance area shall be 4421 Sq.m. Slope length is 118 m and it shall be open from the GL level. See Item No. 8 of Item wise specifications.				
a	Providing and laying plain cement concrete (1:4:8) at the excavated areas and it includes machine mixing, watering, laying, spreading, leveling, consolidating, curing etc. complete with all labour and materials without form work and reinforcement.	Cu.M.	449.00		
b	Providing and laying controlled cement concrete M-20 on the PCC laid above and curing complete, excuding form work and reinforcement for reinforced concrete work as shown in the drawing in Foundations, footings, base of columns and mass concrete.	Cu.M.	805.00		
c	Supplying, cutting, bending, binding and hooking and binding with wire for RCC work tor steel TMT Fe 500 D round bar including bending, binding and placing in position complete all costs upto floor two level.	Kg	56333.00		
d	Providing and Laying of Form work with sheeting of steel sheets so as to give a fair finish for concrete structure as shown in the drawing and including centering, shuttering and propping etc. Height of propping and centering below supporting floor to ceiling not exceeding 4 m and removal of the same for in situ reinforced concrete and plain concrete work.	Sq.M.	778.00		
<b>Sub Total of Item 8</b>					

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
	<b>Construction of Retaining Wall in RCC M30 at the EGL of 12.55 m height on both sides of Top Service Road:</b>				
9	The item includes construction of RCC M30 retaining wall of 300 mm thickness on waste filling side of top service road - 711 m length and 230 mm thickness wall on outer side of top service road - 752 m length and 12.55 m total height at the existing ground level to increase the capacity of the phase. The walls shall be supported with each other by construction of columns at specified intervals and beams joint together. The design and details are shown in the drawings. See item No.9 of Item wise specifications				
	<b>Earth Work</b>				
a	Excavation for foundation upto 1.50 mt. depth including sorting out stacking of useful material & disposing of excavated stuff upto 200 mt. lead. (a) Dense or Hard Soil.	Cu.M.	7215.00		
b	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 23 cm. in depth consolidation each deposited layer by ramming and watering.	Cu.M.	995.00		
	<b>PCC Work</b>				
c	Providing and laying plain cement concrete M15 at the excavated areas and it includes machine mixing, watering, laying, spreading, leveling, consolidating, curing etc. complete with all labour and materials including form work but excluding reinforcement.	Cu.M.	1236.00		
	<b>RCC Work</b>				
d	Providing and laying controlled cement concrete M-30 on the PCC laid above and curing complete, excluding form work and reinforcement for reinforced concrete work as shown in the drawing in Foundations, footings, base of columns and mass concrete, walls, beams and columns.	Cu.M.	13422.00		
e	Supplying, cutting, bending, binding and hooking and binding with wire for RCC work tor steel TMT Fe 500 D round bar including bending, binding and placing in position complete all costs upto floor two level.	Kg	2936574.00		
	<b>Plaster Work</b>				
e	Providing 15 mm. thick cement plaster in single coat on fair side of brick concrete walls for plastering as per drawing upto floor two level and finished even and smooth in (a) Cement mortar 1:3 (1 cement : 3 sand)	Sq.M.	18361.00		
	<b>Colour Work</b>				
f	Finishing wall with water proofing cement paint on an undecorated wall surfaces (two coats) to give an approved brand and manufacture (Snowcem, Deorocem or other similar brands approved) and of required shape even shade after thoroughly brushing the surface to remove all dirt and remains of loose powered materials.	Sq.M.	9438.00		
g	<b>Supplying and applying HOT BITUMEN VG10 grade conforming to IS:73 @2.0 Kg/sq.m. on Concrete/Brick work surfaces etc.</b>				
	The item includes Supplying and applying one coat of HOT BITUMEN VG10 grade conforming to IS:73 @1.2 Kg/sq.m. & Supplying and applying Second coat of HOT BITUMEN VG10 grade conforming to IS:73 @0.8 Kg/sq.m. to be applied on the RCC retaining wall surface inside as well as on outside to prevent corrosion of RCC and Steel due to coastal area. This shall prevent any chemical attack on the concrete surface from the chemicals present in the hazardous wastes. The hot bitumen shall be applying over the retaining wall and on outer slope in hot conditions as shown in the drawing.	Sq.M.	8923.00		
h	<b>Rubble Filling work in between Retaining walls</b>				

SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
	Providing and laying rubble stone filling with 33% murrum in specified thickness with watering, compaction etc. complete.	Cu.M.	32956.00		
i	<b>P/L of Expansion Joint Filler Board</b>				
	Providing and fixing 25 mm thk. HD100 Polymer Expansion joint filler board in the expansion joint of the retaining wall and its counter fortes structure: 25 mm thk. HD100 Polymer based expansion joint filler board is a cross linked, pre moulded high performance joint filler board. It is readily compressible and ensures low load transfer. It is a closed cell with excellent chemical resistance, thermally stable upto 70oC, and very compressible as well as elastic with almost more than 90% recoverable to its original state and rot proof and bacteria resistant. The item includes procuring the product, preparation of application system and fixing the product all inclusive.	Sq.M.	128.00		
j	<b>P/L of PVC Water Stopper</b>				
	Providing and Laying of flat ribbed PVC Water stopper in the 25 mm wide expansion joint provided in the retaining RCC wall of size 300 mm x 8 mm over the total height of the wall. The item includes procuring the product, preparation of application system and fixing the product all inclusive.	Rmt	213.00		
	<b>Sub Total of Item 9</b>				
	<b>Construction of Kerb Walls on both sides of the top service road in RCC M20. - 1) On top edge of outer side retaining wall - 600 mm high and 100 mm thk. - 752 m long, 2) On top edge of Inner side retaining wall - 600 mm high and 100 mm thk. - 711 m long.</b>				
10	The item includes making of Kerb Wall on both side edges of the phase top service road. The work includes providing and laying of RCC M 20 including form work for RCC, curing and steel reinforcement. See item No.10 of Item wise specifications				
a	Providing and Laying of specified thickness of RCC work M20 for very severe conditions with minimum cement content and minimum free water - cement ratio as specified in IS 456, 2000 for footing using aggregate of size 10-20 mm, centring, curing, finishing etc. complete. RCC item includes providing and laying of RCC M20 including form work for RCC, curing and steel reinforcement. It includes Providing and Laying controlled cement concrete M-20 and curing complete so as to give a rough finish including centering, shuttering, strutting and propping etc.	Cu.M.	88.00		
b	Supplying, cutting, bending, binding and hooking and binding with wire for RCC work tor steel TMT Fe 500 D round bar including bending, binding and placing in position complete all costs upto floor two level.	Kg	6145.00		
c	Providing and Laying of Form work with sheeting of steel sheets so as to give a fair finish for concrete structure as shown in the drawing and including centering, shuttering and propping etc. Height of propping and centering below supporting floor to ceiling not exceeding 4 m and removal of the same for in situ reinforced concrete and plain concrete work.	Sq.M.	1756.00		
	<b>Sub Total of Item 10</b>				
	<b>TOTAL AMOUNT</b>				

NAME OF WORK - SECURED LANDFILL PHASE FOR HAZARDOUS SOLID WASTE DISPOSAL					
VARNI ENVIRO CARE PVT. LTD.					
BILL OF QUANTITY FOR LINER SYSTEMS IN DIFFERENT COMPONENTS OF LANDFILL PHASE					
SL NO	BRIEF DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT IN RS.
1	<b>Providing and Laying of 1.5 mm HDPE Liner</b>				
	The item includes providing and laying of 1500 microns virgin quality HDPE liner. It shall be applied on the Compacted Clay Liner/Geosynthetic Clay Liner and anchored below as shown in the section drawing. It shall be sealed and packed from both ends with the existing layers by employing combiwedge fusion process. The over lapping between two HDPE sheets shall be minimum 100 mm and the machine welding shall produce two sealing lines between one overlap for perfect sealing of the liner. The lining material shall be of highest quality high density polyethylene (HDPE) sheeting, manufactured in using virgin high density polyethylene resin entirely free of Plasticizers or other filler materials with all labours, tools, tackles, machineries and transportation. The material should comply all the physico chemical properties as specified i.e. Tear resistance, Puncture resistance, Tensile strength at yield and break, Carbon black content, density, etc. All the individual sheets shall be tested accordingly. The measurements shall be taken of the covered area only and no overlaps will be considered. Refer Item No. 1 for detailed specifications of Technical Specifications of liner works in the Technical Bid Document.	Sq.M.	83203.00		
2	<b>Providing and Laying of 500 gsm PP Nonwoven Geotextile Liner on HDPE Liner as a Protective Liner.</b>				
	The item includes providing and laying of 500 gsm PP Nonwoven Geotextile liner on the HDPE liner applied as a protective liner. Refer Item No. 2 for detailed specifications of Technical Specifications of liner works in the Technical Bid Document.	Sq.M.	50438.00		
3	<b>Providing and Laying of 1200 gsm PP Nonwoven Geotextile Liner on HDPE Liner as a Protective Liner.</b>				
	The item includes providing and laying of 1200 gsm PP Nonwoven Geotextile liner on the HDPE liner applied as a protective liner on the bottom of the phase. Refer Item No. 3 for detailed specifications of Technical Specifications of liner works in the Technical Bid Document.	Sq.M.	32765.00		
4	<b>Providing and Laying of 5 Kg/Sq.m. Sodium Bentonite based GeoSynthetic Clay Liner on Inner Side Slope and on Inner Side of Vertical Retaining Wall</b>				
	The item includes providing and laying of 5 kg/Sq.m. Sodium Bentonite based GeoSynthetic Clay liner. It shall be applied on the Compacted base on the Inner Side Slope and on Inner Side of the Vertical Retaining Wall as Secondary as well as Primary Liner and anchored below as shown in the section drawing. It shall be sealed and packed from both ends with the existing layers by filling with bentonite between the two joints. All the individual sheets shall be tested accordingly. The measurements shall be taken of the covered area only and no overlaps will be considered. Refer Item No. 4 for detailed specifications of Technical Specifications of liner works in the Technical Bid Document.	Sq.M.	54859.00		
<b>Total Amount In Rs.</b>					