

Environment Management Cost (Ch- Km 23.400 to km 44.400)

	Description	Unit	Quantity	
A. Environmental Pollution Monitoring				
Environmental Monitoring for air, water, noise and soil attributes				
1	Ambient air quality monitoring along the project road for particulate matter (PM _{2.5} and PM ₁₀), sulphur dioxide (SO ₂), oxides of nitrogen (NO _x); and carbon monoxides (CO) using standard analysis technique in accordance with the National Ambient Air Quality Standards formulated by MoEF&CC and the World Bank (IFC) Air Quality Standards	Nos.	30	It has already been included in BOQ item no. 10.14
2	Sound Pressure Level (SPL) measurements along the project road using standard analysis technique in accordance with the National Ambient Air Quality Standards in respect of noise formulated by MoEF&CC and the World Bank (IFC) Air Quality Standards	Nos.	30	
3	Soil Quality Testing along the project road in accordance with CPCB norms	Nos.	12	
4	Water Quality Testing for parameters as per IS: 10500-2012 along the road in accordance with CPCB norms (ground water and surface water samples)	Nos.	49	
B. Environmental Mitigation Measures				
1	Dust suppression in haul roads, material storage location and all active locations @ 3 tanker per day for 200 days	Nos.	600	As per MoRT&H Technical specification (Fifth Revision) Clause 111 it is incidental to the work. No separate payment to the Contractor is required.
2	Bio Toilets in Construction Camp			
	Supply of D.R.D.O Technology Bio-Digester tanks Rota-molded double wall manufactured in automatic Rota-molding machines using superior grade Virgin LLDPE (Polymer) with 2.5% Carbon Black, UV Resistant Polymer leading to highest quality consistency. Thickness of the outer shell of minimum 6mm, partitions made from HDPE Polymer of 8mm thick. Immobilization Matrices of Heavy Duty Poly Grass PVC Matting lining along the partitions on both sides. Heavy duty pipes & fitting shall be used in these tanks of Finolex or equivalent make. Fasteners made of Brass shall be used inside the tank with manufacturer's test certificate and including AMI (Bacteria) of 600 liters per tank. Size of Tank: 2000 Litres capacity upto 20-30 users per day; Tank Diameter of 1425mm; Tank Height of 1600mm; Outlet pipe diameter 75mm; inlet pipe diameter 110mm.	Nos.	2	
	FRP Toilet Cabin IWC (Ceramic Pan) type of size 1250mm X 915mm X 2400mm with ± 5% tolerance.	Nos.	4	
	Installation Charges			
	i) Plumber (Skilled)	Nos.	1	
	ii) Plumber (Unskilled)	Nos.	1	
3	Providing solid waste management facility in construction camp, HDPE Garbage Container, Size: 940 X 480 X 550mm(LxWxD)	Nos.	6	
5	Oil trap/ interceptor at parking/ servicing of construction vehicles	Nos.	2	
6	Occupational safety appliances and PPEs for Covid-19	Month	24	
7	Silt Fencing near water bodies adjacent to road	Rm	1288	As per MoRT&H Clause 111.8.3 it is incidental to the work. No separate payment to the Contractor is required.
8	Rainwater Harvesting Structures complete in all respect and confirming to the relevant specifications	Nos.	46	This item shall be impleted as variation to the contract
9	Noise Barrier with hollow brick compound wall to 3.5m height using mortar, plastering and intermediate brick pillars viz; School/ college at km 27+100 (LHS), km 27+700 (LHS), km 29+400 (RHS) and km 35+200 (RHS).	Rm	332	This item shall be impleted as variation to the contract
13	Informatory Signage for safety near noise sensitive locations and all built-up sections	Nos.	-	Included in civil cost
14	Slope / Embankment protection with Turfing of embankment and Stone pitching	Sqm	-	As per requirement already included in BOQ
C Environmental Enhancement Measures				
1	Provision for Solar Lighting in important major Junctions and bus bays.	Nos.	12	Included in civil cost
5	Enhancement of Road side Canal at km 25.300 (RHS) as bathing ghat for community usage (Stepped access (brickwork C.M. 1:4) or as specified by the engineer)	Rm	375	This item shall be impleted as variation to the contract