

C:WORKS ITEMS

1, The bill of Quqnyities contains the following part Bills

Package No GSHP-II, NCB-09

REHABILITATION OF THARAD DEESA ROAD

(Km 33+290 to 60+000 and KM 80+600 to 83+950 , SH-54)

Bill No	Description		Amount in Figure
Bill No. 1	GENERAL ITEMS	Rs	
Bill No. 2	SITE CLEARANCE AND DISMENTLING	Rs	
Bill No. 3	EARTH WORKS	Rs	
Bill No. 4	SUB-BASES, BASES (Non-Bituminous) and Shoulders	Rs	
Bill No. 5	BASE AND SURFACE COURSE (Bituminous)	Rs	
Bill No. 6	STRUCTURES (C D works / MNBR / MJBR)	Rs	
Bill No. 7	DRAINAGE AND PROTECTION WORKS	Rs	
Bill No. 8	TRAFFIC SIGNAGE AND ROAD APPURTENANCES	Rs	
Bill No. 9	SAFETY IN ROAD CONSTRUCTION ZONE	Rs	
Bill No. 10	IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT ACTION PLAN TO BE EXECUTED	Rs	
Bill No. 11	MAINTENANCE	Rs	
	Total cost of Construction	Rs	

SECTION 7 : BILL OF QUANTITIES

Package No GSHP-II, NCB-09
REHABILITATION OF THARAD DEESA ROAD
Km 33+290 TO 60+000 AND KM - 80+600 TO 83+950 (SH-54),

ABSTRACT COST

Sl.No.	Item No	Description of Item (with brief specification and reference to Book of Specification	Quantity	Unit	Rate		Amount in Rs.
					Rupees in figure	Rupees in words	
	Bill No. 1 GENERAL ITEMS						
	1.01	125	Supply of color record photographs as per Technical Specification clause 125				
1		a)	a) Electronic copy and two colour prints thereof mounted in album	600.00	Nos		
2		b)	b) Additional prints of above coloured photographs	200.00	Nos		
3	1.02		Supply of master video cassetts of important site activities with four copies complete playing time not less than 60 minutes and up to 180 minutes as per Technical Specification clause 126.	5.00	Set		
	Total General Items carried to Grand Summary						
	Bill No. 2 SITE CLEARANCE AND DISMANTLING						
4	2.01		Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, sapling and trees up to 300mm. Removal of stumps of trees cut earlier and disposal of unserviceable materials complete as per Technical Specification Clause 201 or as directed by the Engineer..(Area of light jungle)	16.00	Ha		
	2.02		Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, steel work, including T & P and scaffolding wherever necessary, disposal of unserviceable as well serviceable material with all lead and lift and dismantled material will be property of contractor.				

5		a)		a) Bituminous Pavement(Mechanical means)	90.00	Cum			
6		b)		b) Non-Bituminous Pavement(Manual means)	175.00	Cum			
Total Site clearance and Dismantling carried to Grand Summary									
Bill No. 3 EARTH WORKS									
7	3.01			Roadway excavation necessary for construction of road way , FDR, berm and widening of shoulder including disposal of material with all leads and lifts complete in all type of soil as per Technical Specification clause 301.	7510.00	Cum			
8	3.02			Loosening and re-compacting the existing ground up to required depth or as directed by the engineer and as per Technical Specification Clause 305.	120.00	Cum			
9	3.03			Construction of embankment with approved material obtained from borrow area with all lifts and leads transporting to site, spreading, grading to required slope and compacting complete as per drawing and Technical Specification Clause 305.	73975.00	Cum			
10	3.04			Construction of road embankment with approved material available from the road way excavation or any other excavation under this contract complete as per Technical Specification Clause 305.	3755.00	Cum			
11	3.05			Construction of road subgrade with approved borrow area material including all leads and lifts complete as per Technical Specification Clause 305.	26560.00	Cum			
Total Earthwork carried to Grand Summary									
Bill No. 4 SUB-BASEES, BASES (Non-Bituminous) and Shoulders									

	4.01			Construction of Granular sub-base / hard shoulders by providing coarse graded materials spreading, in uniform layers with motor grader on prepared surface, mix in place method with rotevator at OMC and compacting with vibrator roller to achieved to desire density complete as per directed and satisfying MORT&H Specification Table 400-2 with all leads lifts complete as per Technical Specification Clause 401.					
12		a)		a) Coarse Graded Grading - I	14160.00	Cum			
13		b)		b) Coarse Graded Grading - II	14010.00	Cum			
	4.02			Construction of Wet Mix Macadam (WMM) with crushed stone material premixed with water on a prepared sub base complete as per Technical Specification Clause 406.					
14		a)		a) Mechanically laid	270.00	Cum			
	Total Sub-bases, Bases (Non-Bituminous) and Shoulders carried to Grand Summary								
	Bill No. 5 BASE AND SURFACE COURSE (Bituminous)								
15	5.01			Providing and applying Primer Coat with bitumen emulsion (S.S.-1) on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per Technical Specification Clause 502	580.00	Sqm			
	5.02			Providing bituminous (RS-)Surface Dressing using 9.5mm nominal size of stone chipping and straight run bitumen penetration grade / cut back bitumen / emulsion complete as per Technical Specification Clause 510.					
16		a)		a) Second coat of Surface Dressing	580.00	Sqm			
17	5.03			Providing and spraying additional quantity of binder slow setting emulsion over and above the quantity specified in Technical specification Clause 510 for first and second coat of surface dressing with straight run bitumen penetration grade / Cutback bitumen / emulsion.	180.00	Kg			

18	5.04		Filling pot holes and patches repairs on existing bitumenous carriage way surface as per Technical Specification Clause 3004 and as per direction of the Engineer. A. Shallow Pot Holes	3320.00	Sqm			
19	5.05		Providing and laying 3mm thick slurry seal with Cationic Bitumen (R/S) Emulsion cinfirning to I S 8887 complete as per Technical Specification Clause 516 and as directed by the Engineer.	4710.00	Sqm			
20	5.06		Providing fog spray using Bitumen Emulsion (Slow setting type) confirming to IS 8887 complete as per Technical Specification Clause 3004.2 and as directed by the Engineer.	385.00	Sqm			
	5.07		Providingand applying tack coat with bitumen R.S.emulsion (@ 2.0 to 2.5 kg / 10sqm complete as per Technical Specification Clause 503.					
21		a)	a)2.00 to 2.50 Kg / 10 Sqm	683155.00	Sqm			
22		b)	b) 2.50 to 3.00 Kg / 10 Sqm	3945.00	Sqm			
23	5.08		Variation of quantity of bitumenous emulsion R.S.over and above the quantity specified in clause 503.	34360.00	Kg			
24	5.09		Providing Profile Corrective Course of varying thickness necessary as per Technical Specification Clause 501.6 & 501.7 with Bituminous Macadam (grading-II) with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed stone aggregate of specified grading premixede with bituminous binder of approved grade, transported to site, laid over a previously prepared surface with sensor paver finisher to required grade, level and alignment and rolling complete as per Technical Specification Clause 504 as per drawing or as directed by the Engineer.	18575.00	Cum			

25	5.10		Providing and laying 50mm Dense Bituminous Macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed stone aggregate of specified grading premixed with bituminous binder of approved grade as per approved mixed design, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to required grade, level and alignment, rolling with rollers specified in Technical specification complete to achieve desired compaction complete as per Technical Specification Clause 507 as per drawing or as directed by the Engineer.(Grade-II)	2420.00	Cum			
26	5.11		Providing and laying 30mm thick Bituminous concrete wearing course in a single layer with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed stone aggregate of specified grading premixed with bituminous binder of approved grade as per approved mixed design, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to required grade, level and alignment, rolling with rollers specified in Technical specification complete to achieve desired compaction complete as per Technical Specification Clause 509 as per drawing or as directed by the Engineer.with (Grade-II)	6900.00	Cum			
27	5.12		Variation of quantity of binder (VG-30 grade bitumen) over and above the quantity specified in Technical specification Clause 507 and 509.	117560.00	Kg			
	Total Base and Surface Course (Bituminous) carried to Grand Summary							
	Bill No. 6 STRUCTURES (CD works / MNBR / MJBR)							
	REPAIRS AND REHABILITATION							

	6.01		Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, steel work, including T & P and scaffolding wherever necessary, disposal of unserviceable as well serviceable material with all lead and lift and dismantled material will be property of contractor.					
28		a)	a) Plain cement concrete / R C C	20.00	Cum			
29		b)	b) Stone/ Brick masonry	155.00	Cum			
30		c)	c) Guide/Hand rails	40.00	Rmt			
31		d)	d) Footpath / Median Kerb	200.00	Rmt			
32		e)	e) NP 3 pipes / NP 4 pipes	25.00	Rmt			
33		f)	f) Spalling of Concrete	110.00	Sqm			
34		g)	g) Interlocking / Chequered tiles / tiles	225.00	Sqm			
	6.02		Excavation of foundation for structures including preparation of foundation bed complete as per drawing and Technical Specification 301 in the following strata.					
35		a)	a) Ordinary Soil / Hard Soil	290.00	Cum			
36		b)	b) Ordinary rock/soft rock (not require blasting)	25.00	Cum			
37	6.03		Providing and laying granular material for pipe bedding of Hume Pipe culverts and replcement of soft ans loose patches in the bearing area of Box structure with layers not exceeding 300mm as per drawing and Technical Specification Clause 2904	36.00	Cum			
38	6.04		Providing Plain Cement Concrete M15 grade in foundation complete as per drawing and Technical Specification Clause 1700.	1569.00	Cum			

39	6.05		Reinforced concrete / PCC Grade M20 in open foundation / sub structure complete as per drawing and Technical Specification Clause 1500 and 1700. Headwall, Abutment, Pier wall, Wingwall.	30.00	Cum			
	6.06		Providing, laying and jointing RC NP-4 Hume pipe for culverts or equivalents pipes under IS 458 - 1988, approved by Engineer complete as per Technical Specification Clause 2900.					
40		a)	a) Diameter 900 mm	30.00	Rmt			
41		b)	b) Diameter 1200 mm	10.00	Rmt			
42	6.07		Providing and filling at the back of abutment / around pipe in layers including watering and compacting with all leads and lifts with good local sand free from earth / selected granular material as per Technical specification clause 2500.	215.00	Cum			
43	6.08		Epoxy bonding of new concrete to old concrete complete as per Technical Specification	300.00	Sqm			
44	6.09		Reinforced concrete / PCC Grade M25 in super structure complete as per drawing and Technical Specification Clause 1500 and 1700. R C C slab, Approach slab, kerb etc.	5.00	Cum			
45	6.10		Providing and fixing in position Thermo Mechanically Treated (TMT) Fe-500 grade Reinforcement bars complete as per drawing and Technical Specification Clause 1000 and 1600.	4.65	MT			
46	6.11		Providing and fixing in position 20mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10m to cater or horizontal movement up to 20mm, covered with sealant complete as per drawing and technical specification Clause 2605	40.00	Rmt			
47	6.12		Providing drainage spout complete as per drawing and technical specification. As per clause MOST 2705	80.00	Nos			

48	6.13		Providing weep holes in BB masonry/Plain/RCC abutment, wingwall/return wall with 100 mm dia AC pipe extending through the full width of structure 1V:20H towards drawing face. complete as per drawing and technical specification. As per clause MOST 2706 & 2200.	50.00	Nos			
49	6.14		RR Stone Masonry work in Cement Mortar 1:4 for foundation, substructure, complete as per drawing and Technical Specification Clause 1400.	135.00	Cum			
50	6.15		Brick masonry work in cement mortar 1:3 sub structure complete excluding pointing and plastering as per Drawing and Technical Specification Clause 1300.& 2200	155.00	Cum			
51	6.16		Filter media beneath the pitching/revetment on slopes for protection of embankment as per drawing and Technical Specification clause 2504 and as directed by the Engineer.	45.00	Cum			
52	6.17		Pitching/revetment on slopes with cement concrete block in M15 grade conforming to section 1700 complete as per drawing and Technical Specification Clause 2504 and as directed by the Engineer.	25.00	Cum			
53	6.18		Providing and laying floorig complete as per drawing and Technical Specification laid over cement concrete bedding as per specification MOST clause-2505	180.00	Cum			
54	6.19		Repairs to spalling and patches by PMC mortar 25mm to 70mm thick at soffit of slab and vertical face of bridges and culvert as per Technical Specification clause 2804 and additional specification A-3 and as directed by the Engineer.	120.00	Sqm			
55	6.21		Plastering with cement mortar (1:3) on brick work in sub-structure as per technical specification and as per MOST clause-1300 & 2200	715.00	Sqm			

56	6.22		Providing, fixing and erecting 50mm dia Post and Pipe railing in three rows including replacing of damaged vertical steel post of 100mmx50mm, 1.2meters high above ground level, 2 m center to center with cement concrete M 20 foundation block of required complete as per drawing and Technical Specification and as directed by the Engineer.	40.00	Rmt			
57	6.23		Providing and applying two coats of ready mix paint of approved brand on steel surface after through cleaning of surface to give an even shade as per Technical Specification and as directed by the Engineer complete.	45.00	Sqm			
58	6.24		Providing and erecting flood gauge post on low level bridges / causeway made out of M S section 50mmx50mmx6mm and 30mmx30mmx3mm with M S sheet of 16 guage as per drawing, pre fabricated with phospheting process and coated with best quality epoxy primer and twow coats of epoxy paint. Reflectorised sheeting in front side with marking and fxed in C C M20 45cmsx45cmsx30cms foundation block complete as per Technical Specification and as directed by the Engineer complete.	10.00	Nos			
59	6.25		Construction of R C C railing of M30 grade (cast in situ) with 20mm nominal size aggregate, true to line and grade, center to center spacing between vertical post not to exceed 2000mm, leaving adequate space between vertical post for expansion, complete as per drawing and Technical Specification Clause No 1000,1500, 1700, 2200, 2815 and 2703	40.00	Rmt			
60	6.26		Providing and casting in situ cement concrete M20 for jacketing work in pier, piercap, abutment, abutmentcap as per detailed drawing, including centering, shuttering, scaffolding wherever necessary, laying, vibrating, curing and finishing complete. The item also includes drilling holes in old structure and filling drilled holes with epoxy grout as per Technical Specification Clause 1500, 1700 and additional specification.	45.00	Cum			

61	6.27			Cleaning choked HP/Slab/Box culvert including grubbing,removal of vegetation using refuse in filling up of scoured portion and disposal of surplus material within the lead of 1000m including all leads and lifts complete as per Technical Specification Clause 312.	585.00	Rmt			
62	6.28			Levelling and dressing over area at inlet and outlet of CD works including cleaning, grubbing of grass, vegetation etc. and disposal of surplus material within the lead of 1000m including all leads and lifts complete as per Technical Specification Clause 314.	1720.00	Sqm			
63	6.29			Painting and lettering over Cross Drainage/Retaining structures reference number complete as per Technical Specification Clause 804.	56.00	Nos			
Total Structures carried to Grand Summary									
Bill No. 7 DRAINAGE AND PROTECTION WORKS									
	7.01			Construction of median kerb, island kerb and footpath kerb of CC M20 including base preparation, foundation and haunch concrete complete as per drawing and Technical Specification and as directed by the Engineer by using Concreta mixture.					
64		a)		a) Kerb	100.00	Rmt			
65		b)		b) Kerb Channel	100.00	Rmt			
	7.02			Providing, laying and jointing RC NP-3 Hume pipe for culverts or equivalents pipes under IS 458 - 1988, approved by Engineer complete as per Technical Specification Clause 2900.					
66		a)		a) Diameter 450 mm	60.00	Rmt			
67		b)		b) Diameter 600 mm	20.00	Rmt			

68	7.03		Construction of Manhole including excavation, found concrete, wall cover with grating grill etc complete as per drawing and Technical Specification and as directed by the Engineer.	4.00	Nos			
69	7.04		Providing and fixing M S grill Manhole cover complete as per drawing and Technical Specification and as directed by the Engineer.	100.00	Kg			
70	7.05		Providing and laying interlocking C C block flooring 60mm thick made out of CC M20 complete comprising of necessary strength including 25mm to 50mm thick sand bedding in required pattern, shape, colour complete as per drawing and Technical Specification and as directed by the Engineer.	87.00	Sqm			
71	7.06		Painting on concrete surface by ready mix paint of approved brand by applying two coats aftter cleaning the surface of dirt, dust, oil, grease, efflorence complete as per drawing and Technical Specification and as directed by the Engineer. On kerb of median, island and foothpath with white & black or yellow & black	390.00	Sqm			
Total Drainage and Protection works carried to Grand Summary								
Bill No. 8 TRAFFIC SIGNAGE AND ROAD APPURTENANCES								
72	8.01		Metal Beam Crash Barrier Providing and erecting a "W" metal beam (single row) crash barrier comprising of 3mm thick corrugated sheet metal beam rail, 70cm above road/ground level, fixed on ISMC series channel vertical post 150 x 75 x 5 mm, spaced 2m center to center, total 1.8 m high, 1.1 m below ground/road level all steel parts and fitments to be galvanised by hot dip process, all fitting to confirm IS:1367,& 1364, metal beam rail to be fixed on the vertical postwith spacer of channel section 150 x 75 x 5 mm, 330 mm long cpmplete as per drawing and Technical Specification Clause 810.(HIGH INTENSITY GRADE)	2250.00	Rmt			

	8.02		Providing and fixing Retro-reflectorised Sign boards, cautionary, mandatory and informative sign as per IRC-67 made of High intensity grade sheeting wide clause-801-3 fixed over aluminium sheeting, 1.5mm thick supported on a M.S. Angle iron post 75mm x 75mm x 6mm firmly fixed to the ground means properly design foundation with M-15 grade C.C. 45 cm x 45 cm x 60 cm, 60 cm below ground level complete as per drawing and Technical Specification Clause 801.(HIGH INTENSITY GRADE)					
		a)	a) INFORMATORY SIGNS					
73		i)	i) Facility information / Chevrons sign 800mm x 600mm complete as per Technical Specification clause 801.	10.00	Nos			
74		ii)	ii) Advance direction sign 2240 mm x 1220 mm complete as per drawing and Technical Specification Clause 801.	118.00	Nos			
75		iii)	iii) Route marker sign 450 mm x 600 mm complete as per drawing and Technical Specification Clause 801.	24.00	Nos			
76		iv)	iv) Four / Two lane Ahead sign 1200mm x 1200mm complete as per drawing and Technical Specification Clause 801.	4.00	Nos			
77		v)	v) Village name board/Bump Ahead board 900mmx600mm side complete as per drawing and Technical Specification Clause 801.	192.00	Nos			
		b)	b) CAUTIONARY SIGNS					
78		i)	i) Triangular 900 mm side complete as per drawing and Technical Specification Clause 801.	211.00	Nos			
79		ii)	ii) Low level Hazard Marker 900mmx300mm side complete as per drawing and Technical Specification Clause 801.	8.00	Nos			
80		iii)	iii) Providing and fixing sign board made out of 2mm aluminium sheet size 30cm dia. Circle pretreated phosphating process and acid painted with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with retro reflective sheeting as per latest MOST specification.	100.00	Nos			
		c)	c) MANDATORY SIGNS					

81		i)	i) Triangular 900mm side (for 'GIVE WAY sign) complete as per drawings and as per Technical Specification clause 801.	90.00	Nos			
82		ii)	ii) Stop sign - Octagone of size 900mm complete as per drawings and as per Technical Specification clause 801.	4.00	Nos			
83		iii)	iii) Speed limit, compulsory keep left 600mm diameter side complete as per drawing and Technical Specification Clause 801.	36.00	Nos			
		d)	d) Kerb Guard Sign Board (Small)					
84			Providing and fixing sign boards made out of 2mm alluminium sheet size 240x30cms in 'U' shape as per attached drawing. Pretreated with phospheting process and acid etching coated with epoxy primer and two coats of best quality epoxy paint reflectorised with retro sheeting as per Technical Specification stand post and frame fabricated from iron angle of 50x50x50mm and 10mm sq. bar as required painted with best quality epoxy coating. The fixing at site shall be in 1:2:4 C C block of size 45x45x60cms for each leg including excavation, curing etc. complete as directed by the Engineer.	40.00	Nos			
		e)	e) Jumbo bollard Sign					
85			Supplying and fixing Jumbo bollard (High Intensity Grade) made out of 1.5mm crc sheet height 155/188 cms bottom diameter 30cms. Top diameter 18cms with direction plate of 45cms diameter fabricated as per drawing. Pretreated with phodpheting process. Painted with epoxy coating reflectorised with retro reflective sheeting as per specification and as directed by the Engineer complete.	40.00	Nos			
	8.03		Pavement marking with hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads @ 250 gms per sqm area, including cleaning, labour, material, tools, equipment with incidental cost complete as per the Technical Specification Clause 803.3 as per drawing or as directed by Engineer-in-Charge.					

86		a)	a) CENTER LINE / EDGE MRKING.	11010.00	Sqm			
		b)	b) DIRECTIONAL ARROES, LETTERING ETC.					
87			i) Straight arrows	65.00	Sqm			
88			ii) Left / Right arrows	75.00	Sqm			
	8.04		Providing and fixing Reinforced C C M15 grade stones of standard design as per IRC: 8 - 1980, fixing in position including painting numbering etc. complete as per drawing and Technical Specification Clause 804.					
		a)	a) NEW STONES					
89		i)	i) HECTOMETER STONES(PRE CAST)	120.00	Nos			
90		ii)	ii) KILOMETER STONES(PRE CAST)	25.00	Nos			
91		iii)	iii) 5th KILOMETER STONES(PRE CAST)	5.00	Nos			
92		iv)	iv) Indicator stone	1988.00	Nos			
		b)	REMOVING AND REFIXING OF EXISTING STONES					
93		i)	i) HECTOMETER STONES	4.00	Nos			
94		ii)	ii) KILOMETER STONES	5.00	Nos			
95		iii)	iii) 5th KILOMETER STONES	1.00	Nos			
	8.06		Road Delineators Sypplying andinstallatio of Delineators (Roadway indicator, hazzard markers, object markers) 80-100 cm high above ground level painted black and white in 15 cm wide streeps, fited with 80 x 100 rectangular or 75 dia circular reftorised pannels at the top, burried or pressed in to the ground and conferming to IRC-79 and drawing)					

96		a)	a) Long delineators at start & end of median gap)	54.00	Nos			
97		b)	b) Median Delineators (short on along median) supplying and fixing deleanators (small) madeout of 62.5 mm dia25mm dia circular hollow section closed at top and height 18cm fabricated as per attached drawing painted with epoxy coating colour with protetive grill reflecorised retro reflective sheetings side as per MOSTlatest specification. (enginer grade)	112.00	Nos			
98		c)	c) Supplying and fixing R C C M20 delineator (long) : made out R C C M20, 140 cms long, 10x10cms square / 10 cms diameter, including painting fitted with retro reflective sheeting on circular in 15 cms width at top and fixing in foundation in C C 1:3:6 complete as per the drawing, as per Technical Specification and as directed by the Engineer	560.00	Nos			
99	8.07		Providing and fixing of rod stud 100 x 100 mm die cast in alluminium resistant to corrosive effect of salt, and grit fitted with lense reflector installed in concree orasphaltic surface by drilling hole 30 mm upto depth of 60 mm and bedded in a suitable bitumenous grout or epoxy mortar, all as [er BS-873 part-4-1973.	2874.00	Nos			
100	8.08		Providing and constructing raised Rumble strip complete as per drawing and Technical Specification and as directed by the Engineer.	957.00	Rmt			
101	8.09		Providing fitting and fixing mild steel railing 1.20m high having vertical post of channel 75mm x 50mm x 5mm spacing at 1.50m center to center and horizontal angle 50mmx50mmx5mm at bottom and at top with a vertical square bar of 10mm at 10cms center to center complete including bracing if required, painting with two coats of epoxy paint and fixing channel in CC M20 foundation concrete of 30cms x 30cms x 45cms as per drawing, technical specification and as directed by the Engineer. Most clause-2703.2 and 1900	40.00	Rmt			

102	8.1		Construction of raised pedestrain crossing with foundation CC M15 and raised cum slope with CC M25 as per drawing and as directed by the Engineer.	50.00	Rmt			
103	8.11		Supplying and erecting MNES certified SOLAR STREET LIGHT in village area, fitting made from MS body powder coated / painted with corrossion resistant with gasket & transparent cover with following CFL non retro lamp with choke, holder & accessories. Fitting shall be mounted on 75/80 mm B class G.I. pipe pole up to 5.5 meter long complete, erected with C.C. foundation duly painted with two coats of red oxide and corrosive resistant paint complete with tubular battery, inverter, charge controller with photo sensor switch & necessary wiring complete erected, connected & commissioned in approved manner. (c) 2x11 W CFL (Double Luminaire with One CFL each), PV module : 120W Battery Capacity : 12V, 100AH	23.00	Nos			
104	8.12		Providing and fixing Aluminium backed flexible prismatic sheeting, consisting of yellow / black colored flexible prismatic sheet with non metallic prismatic lens as retro reflective elements and confirming to ASTM D4946 Type VI specifications for reboundable retro reflective sheeting. The prismatic sheet shall be laminated at the back with 50micron aluminium foil sensitive adhesive and liner with screen printed arrow / slant pattern in yellow / black color. The AFP shall be applied with adhesive, the edge of the sheeting shall be sealed all around with epoxy based structural adhesive and shall be extremely resistant to pill off complete as per manufacturer drawings approved by the Engineer.	57.00	Sqm			

	8.13			White washing / color washing with lime, geru on tree stem surfaces (1.2 mt height, 0.3 mt lime and 0.9 mt geru) two coats or more coat to give and even shading includin thoroughly brooming the surface to remove all dirt, dust, mortar drops and other foreign matters as per the direction of Engineer.					
105		a)		a) For tree up to avg. girth 450 mm.	5500.00	Nos			
106		b)		b) For tree above avg. girth 450 mm.	3500.00	Nos			
				Total Traffic Signaage and Road Appurtanances carried to Grand Summary					
Bill No. 9 SAFETY IN ROAD CONSTRUCTION ZONE									
	9.01			Supplying and fixing sign boards including the cost of posts, fixtures, foundation, fitting and fixing. Sheeting will be made of encapsulated lens type of Retro-reflective type and messages/ borders will be screen printed complete as per Technical Specification clause 801 and as directed by Engineer.and as per IRC-67-1977(HIGH INTENSITY GRADE)					
107		a)		a) Octagonal 900x 900 mm	4.00	Nos			
108		b)		b) Circular 600 dia	4.00	Nos			
109		c)		c) Informatory signs as per drawing	8.00	Nos			
110		d)		d) Cautionary warning signs (Triangular 900 sides) Type III	12.00	Nos			
111	9.02			Providing of red fluoescent with white reflective sleeve traffic cone made of low density polyethylene(LDPE) material with a square base of 390x390x35mm and a height of 770mm, 4Kg in weight, placed at 1.5m interval, all as per BS 873 including cost of all materials, labour, loading, unloading, lead, lift, transporting etc complete Technical Specification section & IRC SP 55-2001.	30.00	Nos			

112	9.03		Installation of a steel portable barricade with horizontal rail 300mm wide,2.5m in length fitted on a frame made with 45X45X5 mm angle iron section, 1.5m in height, horizontal rail painted(2coat) with yellow and white strips,150mm in width at angle of 45degree, A frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001 including cost of all materials, labour, loading, unloading, lead, lift, transporting etc complete as per drawings or as directed by the Engineer.	12.00	Nos			
113	9.04		Providing Barricading/Caution Tapes of High quality PVC tape tube type to Enclose construction area as per Technical Specification or as directed by the Engineer.	2000.00	Rmt			
			Total Safety road construction zone carried to Grand Summary					
Bill No. 10								
Implementation of Environmental Management Action Plan to be executed under								
114	10.01		Construction of Recharge pits within the selected water bodies along the project road as per approved design and drawing as developed by Central Ground Water Board.	16.00	Nos			
115	10.02		Construction of silt traps at the discharge points of channels into to fresh water bodies across the project road as per the Standard Details provided.	500.00	Rmt			
116	10.03		Periodic air quality monitoring during construction stage at construction camp sites, bitumen hot mix plants, crusher plants (if specifically established for Project), at major settlement areas along project road. The parameters to be monitored are SPM, RPM, SO2, NOx and CO, Lead. Each monitoring schedule shall be over a duration of 24 hours (in 8 hour shifts), once in a quarter and for 2 Years).	12.00	Nos			

117	10.05			Noise quality monitoring at specified silent receptors along Project Road, at construction camp sites, bitumen hot mix plants, crusher plants(if specifically established for Project), and at major settlement areas along project road. – Each monitoring schedule shall be over a duration of 12hours (6Am to 6PM), once in a quarter and for 2 Years). The monitoring shall be carried out in accordance with GPCB norms at locations given .	12.00	Nos			
118	10.06			Redevelopment of Borrow Area	100535.00	Smt			
	10.07			HIV prevention / alleviation programme comprising of conduction Information, Education and communication (IEC) campaign at least every other month, providing condoms, providing STI and HIV / AIDS screening, diagnosis and referral to dedicated national STI and HIV / AIDS programme and programme management support throughout the contract perieoeeed (including the defect notification period).					
119		a)		a) IEC materials - printing, publishing	6.00	set			
120		b)		b) Healthcare clinic	4.00	Nos			
121		c)		c) Condom vending machines	1.00	Nos			
122		d)		d) Condom supplies (Refillinig condom vending machine)	6.00	Refilling			
123		e)		e) Testing (All required test per person)	75.00	Per Person			
124		f)		f) Signages and hoardings	5.00	set			
				Total Implementation of Environmental Management Plan carried to Grand Summary					
	Bill No. 11 MAINTENANCE								
125	11.01			Maintenance of project road for first year after completion of Defect Liability Period as dirrected by the Engineer.	30.06	per km			

126	11.02		Maintenance of project road for second year, years after completion of Defect Liability Period as directed by the Engineer.	30.06	per km				
			Total Maintenance carried to Grand Summary						
								Total Cost of Corridor :	