Sl. No.	Bill No.	Items	Amount (Rs)	Remarks
A		**ROAD WORKS**		
1	Bill No.1	Site Clearance & Dismantling	2,093,706.99	
2	Bill No.2	Earthworks (including subgrade)	28,426,979.87	
3	Bill No.3	Sub-base (including hard shoulder)	90,456,776.00	
4	Bill No.4	Bituminous Works	187,214,917.68	
B		**BRIDGES AND STRUCTURES**		
6	**Bill No.5**			
		Reconstruction of Culverts [122 Nos]	**346,117,051.22**	CRZ Section having 3 Nos of New Culverts Total Cost=8511075.03 / 03=28,37,025.01 / No of Culvet 1] as per site condition 122 Nos of culverts to be Reconstruct & the Cost = 122 X 28,37,025.01 = **34,61,17,051.22** 2] 27 Nos of Culvets to be Widened 27 X 9,92,958.75 (35% of New Culvert) = **2,68,09,886.34** 1+2=(34,61,17,051.22+2,68,09,886.34)= **37,29,26,937.56**
		Widening of Existing Culverts (27 Nos)	**26,809,886.34**	
7	**Bill No.6**	**Bridges**		
		New Minor Bridges 1 Nos	**31,963,178.30**	
		Repair & Maintenance Existing Minor Bridge (3 Nos)	**600,000.00**	
C		**OTHER APPURENENCE/MISCELLANEOUS ITEMS**		
8	Bill No.7	Drainage and Protection works	72,633,836.72	
9	Bill No.8A ,8B	Junctions	39,698,778.41	
10	Bill No.8C	Parking Space	1,381,437.26	
11	Bill No.8D	Bus Shelter	10,500,000.00	

12	**Bill No.8E**	**Passing Places**	**10,550,453.42**	
13	Bill No.8F	Premix Carpet with Seal Coat for patch repair work	1,351,501.20	
14	**Bill No.9**	**Traffic Sign,Marking and other Appurtenances**	**24,948,583.86**	
		A] Total Construction Cost excluding GST,(Bill No.1 to Bill No.09)	**87,47,47,087.27**	
15	Bill No.10	Cost of strenghtening of section Km 316.0 to Km 330.662		
	2.5	Scarifying existing bituminous surface		
		Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately		
		Bituminous courses	2,429,237.78	
		Granular courses	7,126,759.58	
	4.5	CT Subbase		
		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and	65,791,225.30	
	5.19	Treated RAP		
		RAP (Using 60% of existing qty @ 2.2% bitumen & 40% of new qty @4.5% bitumen)	107,397,359.64	
	5.2	Tack Coat		
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on	1,520,562.93	
	5.1	Prime Coat		
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using	2,027,417.24	

	5.8	Bituminous Concrete		
		Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with	38,950,064.17	
	4.5	Hard Shoulder with CT Subbase		
		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed	10,603,713.97	
	4.12	Drainage		
		Unlined Drain	483,384.20	
		Lined RRM drain (2 x 2000m)	7,053,960.00	
	8	TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT		
		Road Markings & Signages	5,344,110.28	
		Road Markers/Road Stud with Lense Reflector	442,479.00	
		Metal Beam Crash Barrier	11,123,130.00	
		Premix Carpet with Seal Coat for Patch Repair Work	1,094,914.80	
		B] Cost of strenghtening of section Km 316.0 to Km 330.662	**261,388,318.89**	
		GRAND TOTAL A+B	**113,61,35,406.16**	
		GST @ 6%	68,168,124.00	
		Total Construction cost including GST @ 6% (A)	120,43,03,530.00	
		Maintenance Charge for 4Year @5% on (A)	60,215,177.00	
		TOTAL (In Crores) =	**126,45,18,707.00**	
		Cost put to bid	**126.45**	

1	Bill no 01 Site Cearence item is changed due to Cutting of Trees Girth from 900mm to 1800mm (Item no 1.02 (iii), Flexible Pavement Dismantling (Item no 1.03 (vii-a) & Dismantling of Kilometre Stone (Item no 1.07 (iii)

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
Bill No 1: SITE CLEARANCE					
1.01	**Clearing and Grubbing Road Land .**				
	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Ha	12.60	65,846.95	829,671.57
1.02	**Cutting of Trees, including cutting of Trunks, Branches and Removal**	no.			
	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 metres and earth filling in the depression/pit.				
i	**Girth from 300 mm to 600 mm**	No.	0.00	337.34	
ii	**Girth from 600 mm to 900 mm**	No.	0.00	586.81	
iii	**Girth from 900 mm to 1800 mm**	No.	4.00	1,164.53	4,658.12
iv	**Girth above 1800 mm**	No.	0.00	2,228.06	
1.03	**Dismantling of Structures**				
i	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres				
a	Cement Concrete Grade M-15 & M-20 in culverts	cum	824.98	558.53	460,776.08
e	Removing all type of hume pipes and stacking within a lead of 1000 metres including earthwork and dismantling of masonry works.				
	(I) Above 600 mm to 900 mm dia	m	397.55	337.34	134,109.52
vii	**Dismantling of Flexible Pavements**				
	Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately				
a	Bituminous courses	Cum	1,890.00	344.41	650,934.90
1.07	**Dismantling of Kilometre Stone**				
	Dismantling of kilometre stone including cutting of earth, foundation and disposal of dismantled material with all lifts and lead upto 1000 m and back filling of pit.	no.			
i	5th KM stone		4.00	484.80	1,939.20
ii	Ordinary KM Stone		20.00	290.88	5,817.60
iii	Hectometre Stone		100.00	58.00	5,800.00
				Sub Total =	**2093706.990**

QUANTITIY CALCULATION- SITE CLEARANCE & DISMANTLING

Item No.	Description	Unit	No.	Length	Width	Depth	Qty
1.01	**Clearing and Grubbing Road Land .**						
	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Ha		18000.0	7.0		12.60
1.02	**Cutting of Trees, including cutting of Trunks, Branches and Removal**	no.					
	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 metres and earth filling in the depression/pit.						
i	Girth from 300 mm to 600 mm		0				0
ii	Girth from 600 mm to 900 mm		0				0
iii	Girth from 900 mm to 1800 mm		4				4
iv	Girth above 1800 mm		0				0
1.03	**Dismantling of Structures**						
i	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres	cum					
a	Cement Concrete Grade M-15 & M-20 in culverts	cum					824.98
b	Cement Concrete Grade M-15 & M-20 in Bridges	cum					-
c	Dismantling of Brick work in cement mortar in substructure of Slab culverts	cum					-
d	Dismantling of Brick work in cement mortar	cum					-
e	Removing all type of hume pipes and stacking within a lead of 1000 metres including earthwork and dismantling of masonry works.						-
	(i)Above 600 mm to 900 mm dia	m					397.55
vii	**Dismantling of Flexible Pavements**						
	Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately						
b	Bituminous courses (3.5m Width)	cum	1.00	18000.00	3.50	0.03	1890.00
1.04	**Dismantling of Kilometre Stone**						
	Dismantling of kilometre stone including cutting of earth, foundation and disposal of dismantled material with all lifts and lead upto 1000 m and back filling of pit.						
i	5th KM stone	no.	4.00				4.00
ii	Ordinary KM Stone	no.	20.00				20.00
iii	Hectometre Stone	no.	100.00				100.00

COST ESTIMATE- RECONSTRUCTION OF EXISTING ALIGNMENT							
Item No.	Description	Unit	Quantity		Rate (in Rs.)	Amount (in Rs)	
			TCS Type-I ,II,III	TCS Type- IV		TCS Type-I ,II,III	TCS Type-IV
Length of TCS (Km)			16.540	1.243		16.540	1.243
Bill No 3: SUB BASE COURSES							
2.01	Earthwork						
	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	Cum	27917.45	0.00	477.73	13337004.580	0.00
2.02	Subgrade						
	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2	Cum	42809.66	0.00	352.49	15089975.290	0.00
					SubTotal =	28426979.87	0.0

QUANTITY CALCULATION OF PAVEMENT LAYERS FOR RECONSTRUCTION OF EXISTING ALIGNMENT

Type of TCS Applicable	Length (m)	Crust Details	Width of Layers	Thickness of Layers	Quantity	Increase in Qty due to Extra widening	Total Quantity
Type-I,II,III	16,540.0	Embankment	6.430	0.250	26,588.05	1329.4025	27,917.45
	16,540.0	SUBGRADE	4.930	0.500	40,771.10	2038.555	42,809.66

											Subgrade	Embankment	
298000	298400	400	TCS I	400	1	298000	298400	400		TCS I			
298400	298820	420	TCS III*	420	2	298820	299280	460		TCS I			
298820	299280	460	TCS I	460	3	299380	299800	420		TCS I			
299280	299380	100	TCS III*	100	4	299920	300020	100		TCS I			
299380	299800	420	TCS I	420	5	300400	300960	560	14560	TCS I	66830.4		Rehabilitation to IL in Rural section (Plain terrain)
299800	299920	120	TCS III*	120	6	301460	301800	340		TCS I			
299920	300020	100	TCS I	100	7	302100	307370	5270		TCS I			
300020	300400	380	TCS III*	380	8	309370	314280	4910		TCS I			
300400	300960	560	TCS I	560	9	318900	319900	1000		TCS I			
300960	301460	500	TCS III*	500	10	323600	324700	1100		TCS I			
301460	301800	340	TCS I	340	11	307370	308127	757	1657	TCS II	4556.75		Rehabilitation to IL in Urban section with Covered Drain on both sides (Plain terrain)
301800	302100	300	TCS III*	300	12	316800	317700	900		TCS II			
302100	307370	5270	TCS I	5270	13	298400	298820	420		TCS III			
307370	308127	757	TCS II	757	14	299280	299380	100		TCS III			
308127	309370	1243	TCS IV	1243	15	299800	299920	120		TCS III			
309370	314280	4910	TCS I	4910	16	300020	300400	380		TCS III			
314280	316800	2520	TCS III*	2520	17	300960	301460	500	14897	TCS III	48415.25		Rehabilitation to IL in Rural section (Rolling & Hilly terrain)
316800	317700	900	TCS II	900	18	301800	302100	300		TCS III			
317700	318900	1200	TCS III*	1200	19	314280	316800	2520		TCS III			
318900	319900	1000	TCS I	1000	20	317700	318900	1200		TCS III			
319900	323600	3700	TCS III*	3700	21	319900	323600	3700		TCS III			
323600	324700	1100	TCS I	1100	22	324700	330357	5657		TCS III			
324700	330357	5657	TCS III*	5657	23	308127	309370	1243	1243	TCS IV			Overlaying of existing carriageway + covered RCC drain on both sides in Urban area

COST ESTIMATE- RECONSTRUCTION OF EXISTING ALIGNMENT

Item No.	Description	Unit	Quantity		Rate (in Rs.)	Amount (in Rs)	
			TCS Type-I ,II,III	TCS Type- IV		TCS Type-I ,II,III	TCS Type-IV
	Length of TCS (Km)		**16.540**	**1.243**		**16.540**	**1.243**
	Bill No 3: SUB BASE COURSES						
3.01	**Granular Sub-Base with Cement Treated Crushed Rock**						
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)	Cum	22577.10	783.09	3327.95	75135459.95	2606084.37
3.02	**Hard Shoulder with CT Subbase**						
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)	Cum	3820.74	0.00	3327.95	12715231.68	0.00
					SubTotal =	**87850691.63**	**2606084.37**

Bill No 4: BITUMINOUS COURSES (FLEXIBLE PAVEMENT)							
			Quantity			Amount (in Rs)	
		Unit	TCS Type-I ,II,III	TCS Type- IV	Rate (in Rs.)	TCS Type-I ,II,III	TCS Type-IV
4.01	**Prime Coat**						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.6 kg/sqm using mechanical means as per clause 502.	Sqm	95518.50	19577.25	24.24	2315368.440	474552.540
4.02	**Tack Coat**						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	95518.50	0.00	9.09	868263.170	0.000
4.02	**Treated RAP**						
	RAP (Using 60% of existing qty @ 2.2% bitumen & 40% of new qty @4.5% bitumen)	cumec	17193.33	704.78	7133.63	122650854.690	5027639.750
4.03	**Bituminous Concrete**						
	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade VG-30 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	3820.74	978.86	11642.27	44482086.680	11396152.410
					SubTotal =	**170316572.98**	**16898344.70**

QUANTITY CALCULATION OF PAVEMENT LAYERS FOR RECONSTRUCTION OF EXISTING ALIGNMENT

Type of TCS Applicable	Length (m)	Crust Details	Width of Layers	Thickness of Layers	Quantity	Increase in Qty due to Extra widening	Total Quantity
Type-I,II,III	16,540.0	BC	5.500	0.040	3,638.80	181.94	3,820.74
	16,540.0	Treated RAP	5.500	0.180	16,374.60	818.73	17,193.33
	16,540.0	-	0.000	0.180	0.00	0	0.00
	16,540.0	CT SUB BASE	6.500	0.200	21,502.00	1,075.10	22,577.10
	16,540.0	EARTHEN SHOULDER	0.000		0	0	0.00
	16,540.0	Hard Shoulder with GSB material	1.000	0.220	3,638.80	181.94	3,820.74
	16,540.0	Prime Coat	5.500		90,970.00	4,548.50	95,518.50
	16,540.0	Tack Coat	5.500		90,970.00	4,548.50	95,518.50
Type -IV	1,243.0	BC	15.000	0.050	932.25	46.61	978.86
	1,243.0	Treated RAP	3.000	0.180	671.22	33.56	704.78
	1,243.0	CT SUB BASE	3.000	0.200	745.80	37.29	783.09
	1,243.0	SUBGRADE	0.000	0.500	0.00	0	0.00
	1,243.0	Hard Shoulder with GSB material	0.000	0.220	0.00	0	0.00
	1,243.0	Prime Coat	15.000		18,645.00	932.25	19,577.25

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 7: DRAINAGE & PROTECTIVE WORKS				
	Bill No. 7A :Drainage				
7.01	**Surface Drains in Soil**				
	Construction of unlined surface drains of average cross sectional area 0.48 sqm in soil to specified lines, grades, levels and dimensions to the requirement of clause 301 and 309. Excavated material to be used in embankment within a lead of 50 meters (average lead 25 meters.	Rm	7,975.80	71.71	571,944.620
7.01	**Lined Drain (RRM Drains)**				
	A.) Random Rubble Masonry	cum	626.40	6,119.00	3,832,941.600
7.02					
	Lined RCC Drains				
i	Earth work in excavation				
	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	10,200.00	186.85	1,905,870.000
ii	PCC Grade M15	cum	510.00	7,839.62	3,998,206.200
iii	RCC Grade M20	cum	1,980.00	8,442.59	16,716,328.200
iv	HYSD Steel	MT	118.80	87,731.63	10,422,517.640
				Sub Total =	**37,447,808.260**

Bill No 7: Drainage and Protective works

Item No.	SOR Ref No	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity
		Drainage works						
7.01	3.6 (ii)	**Unlined Drains :-** Earth work in excavation in trenches in unlined drain as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	1.00	29,540.00	0.27		7,975.80
7.01	3.6 (ii)	**Lined Drain (Random Rubble Masonary drain)**						
			cum	1.00	720.00	0.10		72.00
			cum	1.00	720.00	0.77		554.40
7.03		**RCC Covered Drains:-** Providing covered RCC drain in urban areas excluding excavation as per drawing and technical specifications section 1500,1600,1700.						
(a)	3.6 (ii)	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	2.00	2,000.00	1.70	1.50	10,200.00
(b)	12.8 A	PCC Grade M15 in levelling course	cum	2.00	2,000.00	1.70	0.08	510.00
(c)	12.8 B	Top Slab	cum	2.00	2,000.00	1.50	0.10	600.00
(d)	12.8 C	Bottom Slab	cum	2.00	2,000.00	1.50	0.10	600.00
(e)	12.8 D	Wall	cum	2.00	2,000.00	0.15	1.30	780.00
(f)	12.40	HYSD Steel	MT	1.00		x 60 kg per cum		118.80

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 7B : Protection Work				
7.04	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications.				
i	Earth work in excavation				
	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.				
	Breast Wall and Retaining wall	Cum	2572.00	68.68	176644.960
ii	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications.				
	A.) Random Rubble Masonry				
	Retaining wall	Cum	2294.00	6119.00	14036986.000
	Plain/Reinforced cement concrete in sub- structure complete as per drawing and Technical Specifications				
ii	A.) PCC M15				
	Breast Wall	Cum	1620.00	7839.62	12700184.400
vi	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing foce. Complete as per drawing and Technical Specifications				
	Breast Wall and Retaining wall	No.	1460.00	147.46	215291.60
vii	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification				
	Breast Wall and Retaining wall	cum	1425.00	2853.25	4065881.25
viii	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.				
	Breast Wall and Retaining wall	cum	1425.00	2800.73	3991040.25
				Sub Total =	**35186028.460**

Bill No 7: Drainage and Protective works

Item No.	Description	Unit	No.	Length	Width	Depth	Qty
	PROTECTION WORK						
	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications.						
	Breast Wall (Avg ht-3m),Length =			**720**		**3.0**	
	Retaining Wall (Avg ht-3.5m) ,Length =			**756**		**3.5**	
i	Earth work in excavation						
	For Breast Wall	Cum	1	720	0.9	1.0	648.00
	For Retaining Wall	Cum	1	740	2.6	1.0	1924.00
ii	Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications						
	A.) PCC M15						
	For Breast Wall	Cum	1	720	0.75	3.0	1620.00
ii	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications.						
	B.) Random Rubble Masonry						
	For Retaining Wall	Cum	1	740	1.55	2.0	2294.00
iii	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing foce. Complete as per drawing and Technical Specifications						
	For Breast Wall	No.	1	720			720.00
	For Retaining Wall	No.	1	740			740.00
iv	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification						
	For Breast Wall	Cum	1	720	0.3	3.0	648.00
	For Retaining Wall	Cum	1	740	0.3	3.5	777.00
v	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.						
	For Breast Wall	Cum	1	720	0.3	3.0	648.00
	For Retaining Wall	Cum	1	740	0.3	3.5	777.00

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 8A: MAJOR JUNCTIONS				
	Earthwork Items				
2.01	**Excavation in Soil using Hydraulic Excavator**				
	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m	cum	0.00	52.52	
2.02	**Construction of Embankment with Material Deposited from Roadway Cutting**				
	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	cum	0.00	149.48	
2.03	**Construction of Embankment with Material obtained from Borrowpits**				
	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	cum	0.00	1048.38	
2.04	**Construction of Subgrade and Earthen Shoulders**				
	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300- 2	cum	0.00	352.49	
				Sub Total =	**0.0**
	Granular Sub Base and Base Courses				
3.01	**Granular Sub-Base with Cement Treated Crushed Rock**				
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)	Cum	0.0	3328.0	
3.02	**Granular Base with Cement Treated Crushed Rock**				
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)	Cum	0.0	3512.8	
				Sub Total =	**0.0**
	Bituminous Courses (Flexible Pavement)				
4A.01	**Prime Coat**				
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.6 kg/sqm using mechanical means as per clause 502.	Sqm	0.0	24.2	
4A.02	**Treated RAP**				
	Reclaimed Aspalt Pavement	cum	0.0	7133.6	
4A.03	**Bituminous Concrete**				

	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade VG-30 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	280.0	11642.3	3259844.00
				Sub Total =	**3259844.0**

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 8A: MAJOR JUNCTIONS				
	Traffic Appurtenances				
9.1	**Cast in Situ Cement Concrete M20 Kerb**				
	Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408	Rm	1800.00	401.00	721800.00
9.2	**Construction of Median**				
	Construction of Median and Island with Soil Taken from Roadway Cutting (Construction of Median and Island above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread, graded and compacted as per clause 407)	Cum	100.0	384.81	38481.00
9.3	**Construction of Footpath/ Separator**				
	Construction of footpath/separator by providing a 150 mm compacted granular sub base as per clause 401 and 25 mm thick cement concrete grade M15, over laid with precast concrete tiles in cement mortar 1:3 including provision of all drainage arrangements but excluding kerb channel.	Sqm	2000.0	1239.27	2478540.00
				Sub Total =	**3238821.0**
				Total	**6498665.00**

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 8B: MINOR JUNCTIONS				
	Earthwork Items				
2.01	**Excavation in Soil using Hydraulic Excavator**				
	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m	cum	3607.76	52.52	189479.56
2.02	**Construction of Embankment with Material Deposited from Roadway Cutting**				
	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	cum	1,803.88	149.48	269643.98
2.03	**Construction of Embankment with Material obtained from Borrowpits**				
	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	cum	3607.50	477.73	1723410.98
2.04	**Construction of Subgrade and Earthen Shoulders**				
	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300- 2	cum	9477.00	352.49	3340547.73
				Sub Total =	**5523082.2**
	Sub Base and Base Courses				
3.01	**Granular Sub-Base with Cement Treated Crushed Rock**				
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)	Cum	1924.0	3328.0	6403072.00
				Sub Total =	**6403072.0**
	Bituminous Courses (Flexible Pavement)				
4A.01	**Prime Coat**				
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.6 kg/sqm using mechanical means as per clause 502.	Sqm	9620.0	24.20	232804.00
4A.03	**Treated RAP**				
		Cum	1731.6	7133.63	12352593.71
4A.04	**Bituminous Concrete**				
	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade VG-30 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	384.8	11642.27	4479945.50
				Sub Total =	**17065343.20**

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 8B: MINOR JUNCTIONS				
	Traffic Appurtenances				
9.1	**Cast in Situ Cement Concrete M20 Kerb**				
	Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408	Rm	3120.00	405.01	1263631.20
9.2	**Construction of Median**				
	Construction of Median and Island with Soil Taken from Roadway Cutting (Construction of Median and Island above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread, graded and compacted as per clause 407)	Cum	117.0	384.81	45022.77
9.3	**Construction of Footpath/ Separator**				
	Construction of footpath/separator by providing a 150 mm compacted granular sub base as per clause 401 and 25 mm thick cement concrete grade M15, over laid with precast concrete tiles in cement mortar 1:3 including provision of all drainage arrangements but excluding kerb channel.	Sqm	2340.0	1239.3	2899962.00
				Sub Total =	**4208616.0**
				Total	**33200113.410**

39698778.41

Sl. No.	Description	Unit	Nos.	Area (Sqm.)	Thickness of Layers	Quantity
	MAJOR JUNCTION					
10	BC	Cum	2	3,500.0	0.040	280.00
11	Cement Concrete M20 Kerb	Rm	2	900.0	-	1,800.00
12	Construction of Median with Soil from Roadway cutting	Cum	2	1,000.0	0.050	100.00
13	Providing & Laying Chequered Tiles	Sqm	2	1,000.0	-	2,000.00
	MINOR JUNCTION					
1	Excavation in Soil using Hydraulic Excavator	Cum	52	346.9	0.200	3607.76
2	Construction of Embankment with Material Deposited from Roadway Cutting	Cum		50% of Excavated Qty		1,803.88
3	Construction of Embankment with Material obtained from Borrowpits	Cum	52	346.9	0.200	3607.76
4	SUBGRADE	Cum	52	346.9	0.500	9019.40
5	SHOULDER	Cum	52	40.0	0.220	457.60
6	CT Sub Base	Cum	52	185.0	0.200	1924.00
8	Prime Coat	Sqm	52	185.0	-	9,620.00
9	Treated RAP	Cum	52	185.0	0.180	1731.60
10	BC	Cum	52	185.0	0.040	384.80
11	Cement Concrete M20 Kerb	Rm	52	60.0	-	3,120.00
12	Construction of Median with Soil from Roadway cutting	Cum	52	45.0	0.050	117.00
13	Providing & Laying Chequered Tiles	Sqm	52	45.0	-	2,340.00

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 8C: PARKING SPACE				
	Earthwork Items				
2.01	**Excavation in Soil using Hydraulic Excavator**				
	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m	cum	108.00	52.52	5672.16
2.02	**Construction of Embankment with Material Deposited from Roadway Cutting**				
	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	cum	54.00	149.48	8071.92
2.03	**Construction of Embankment with Material obtained from Borrowpits**				
	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	cum	108.00	1048.38	113225.04
2.04	**Construction of Subgrade and Earthen Shoulders**				
	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300- 2	cum	309.60	352.49	109130.90
				Sub Total =	**236100.0**
	Sub Base and Base Courses				
3.01	**Granular Sub-Base with Cement Treated Crushed Rock**				
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub- base/base.)	Cum	70.0	3327.95	232956.50
				Sub Total =	**232956.5**
	Bituminous Courses (Flexible Pavement)				
4A.01	**Prime Coat**				
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.6 kg/sqm using mechanical means as per clause 502.	Sqm	350.0	24.2	8470.00
4A.03	**Treated RAP**				
		Cum	63.0	7133.6	449416.80
4A.04	**Bituminous Concrete**				

	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade VG-30 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	14.0	11642.27	162991.78
				Sub Total =	**620878.58**

Traffic Appurtenances

9.1	**Cast in Situ Cement Concrete M20 Kerb**				
	Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408	Rm	140.00	417.13	58398.20
9.2	**Construction of Median**				
	Construction of Median and Island with Soil Taken from Roadway Cutting (Construction of Median and Island above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread, graded and compacted as per clause 407)	Cum	27.0	371.68	10035.36
9.3	**Construction of Footpath/ Separator**				
	Construction of footpath/separator by providing a 150 mm compacted granular sub base as per clause 401 and 25 mm thick cement concrete grade M15, over laid with precast concrete tiles in cement mortar 1:3 including provision of all drainage arrangements but excluding kerb channel.	Sqm	180.0	1239.27	223068.60
				Sub Total =	**291502.2**
				Total=	**1381437.26**

Sl. No.	Description	Unit	Nos.	Area (Sqm.)	Thickness of Layers	Quantity
	Parking Space					
1	Excavation in Soil using Hydraulic Excavator	Cum	2	270.0	0.200	108.00
2	Construction of Embankment with Material Deposited from Roadway Cutting	Cum		50%v of Excavated Qty		54.00
3	Construction of Embankment with Material obtained from Borrowpits	Cum	2	270.0	0.200	108.00
4	SUBGRADE	Cum	2	270.0	0.500	270.00
5	SHOULDER	Cum	2	90.0	0.220	39.60
6	CT Sub Base	Cum	2	175.0	0.200	70.00
8	Prime Coat	Sqm	2	175.0	-	350.00
10	Treated RAP	Cum	2	175.0	0.180	63.00
11	BC	Cum	2	175.0	0.040	14.00
12	Cement Concrete M20 Kerb	Rm	2	70.0	-	140.00
13	Construction of Median with Soil from Roadway cutting	Cum	2	90.0	0.150	27.00
14	Providing & Laying Chequered Tiles	Sqm	2	90.0	-	180.00

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)
	Bill No. 8E: PASSING PLACES				
	Earthwork Items				
2.01	**Excavation in Soil using Hydraulic Excavator**				
	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m	cum	700.00	52.52	36764.00
2.02	**Construction of Embankment with Material Deposited from Roadway Cutting**				
	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	cum	350.00	149.48	52318.00
2.03	**Construction of Embankment with Material obtained from Borrowpits**				
	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	cum	700.00	1048.38	733866.00
2.04	**Construction of Subgrade and Earthen Shoulders**				
	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300- 2	cum	1750.00	352.49	616857.50
				Sub Total =	**1439805.50**
	Sub Base and Base Courses				
3.01	**Granular Sub-Base with Cement Treated Crushed Rock**				
	Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub- base/base.)	Cum	680.0	3327.95	2263006.00
				Sub Total =	**2263006.0**
	Bituminous Courses (Flexible Pavement)				
4A.01	**Prime Coat**				
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.6 kg/sqm using mechanical means as per clause 502.	Sqm	3400.0	24.2	82280.00
4A.03	**Treated RAP**				
		Cum	612.0	7133.6	4365763.20
4A.04	**Bituminous Concrete**				
	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade VG-30 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	136.0	11642.27	1583348.72
	Cement Concrete M20 Kerb	Rmt	1250.0	413.00	516250.00
	Providing & Laying Chequered Tiles	Sqm	0.0		
	CC Benches 30 Nos	Nos	30.0	10000.00	300000.00
				Sub Total =	**6847641.9**

Sl. No.	Description	Unit	Nos.	Area (Sqm.)	Thickness of Layers	Quantity
	PASSING PLACES					
1	Excavation in Soil using Hydraulic Excavator	Cum	50	70.0	0.200	700.00
2	Construction of Embankment with Material Deposited from Roadway Cutting	Cum		50% of Excavated Qty		350.00
3	Construction of Embankment with Material obtained from Borrowpits	Cum	50	70.0	0.200	700.00
4	SUBGRADE	Cum	50	70.0	0.500	1750.00
6	CT Sub Base	Cum	50	68.0	0.200	680.00
8	Prime Coat	Sqm	50	68.0	-	3400.00
10	Treated RAP	Cum	50	68.0	0.180	612.00
11	BC	Cum	50	68.0	0.040	136.00
12	Cement Concrete M20 Kerb	Rmt	50	25.0	-	1250.00
13	Providing & Laying Chequered Tiles	Sqm	-	456.5	-	0.00

Item No.	Description	Unit	Qty	Rate (in Rs.)	Amount (Rs.)	
Bill No. 9: TRAFFIC APPURTENANCES						
9.1	**Road Marking**					
	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.					
	Lane/ Centre line/ Edge line/ Transverse marking and any other markings	Sqm	6357	859.5	5464204.64	6763528.46
9.2	**Retro-Reflectorised Traffic Signs**					
	Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing					
i	90 cm equilateral triangle	No	140	6405.42	896758.80	
ii	60 cm equilateral triangle	No	50	4317.75	215887.50	
iii	60 cm circular	No	50	5684.28	284214.00	
iv	80 mm x 60 mm rectangular	No	40	7803.26	312130.40	
v	60 cm x 45 cm rectangular	No	90	5543.89	498950.10	
vi	60 cm x 60 cm square	No	40	6512.48	260499.20	
vii	90 cm high octagon	No	40	9868.71	394748.40	
9.3	**Direction and Place Identification Signs Board.**					
	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawing					
i	up to 0.9 sqm size	Sqm	36.00	13670.4	492134.40	
ii	more than 0.9 sqm size	Sqm	33.60	23674.4	795459.84	
9.4	**Metal Beam Crash Barrier** **Type - A, "W" : Metal Beam Crash Barrier**					
	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810	**Rm**	**3600.00**	**3707.71**	**13347756.00**	
9.5	**Road Markers/Road Stud with Lense Reflector**					
	Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973	Nos	4000.00	237.00	948000.00	
9.6	**Kilometre Stone**					

	Reinforced cement concrete M15grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc				
i	**5th kilometre stone (precast)**	Nos.	6.0	4940.92	29645.52
ii	**Ordinary kilometer stone (precast)**	Nos.	24.0	3025.96	72623.04
iii	**Hectometer stone (precast)**	Nos.	180.0	816.08	146894.40
9.7	**Boundary Pillar**				
	Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering but excluding painting	Nos.	140	1075.7	150598.00
9.8	**Overhead Signs (2 Nos)**				
	Supplying and fixing overhead signs complete as per drawing and Technical Specifications Section 800 including cost of posts, truss, erection, fitting and foundations. Sheeting will be retro reflective type of high intensity grade and message/borders will be screen-printed as per drawings.				
	a) Truss and Vertical Support (Portal type)	MT	10.00	61473.65	614736.50
	b) Aluminium alloy plate for over head sign	MT	2.00	11671.56	23343.12
				TOTAL =	**24948583.9**

TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT							
Item No	**Description**	**Unit**	**Nos.**	**Length**	**Width**	**Depth**	**Quantity**
9.1	**Road Marking**						
	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.						
	For Edge Marking	Sqm	2	17783	0.150		5334.90
	For Centre line Marking	Sqm	1	8892	0.100		1022.52
9.2	**Retro-Reflectorised Traffic Signs**						
	Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing						
i	90 cm equilateral triangle	No	140				140.00
ii	60 cm equilateral triangle	No	50				50.00
iii	60 cm circular	No	50				50.00
iv	80 mm x 60 mm rectangular	No	40				40.00
v	60 cm x 45 cm rectangular	No	90				90.00
vi	60 cm x 60 cm square	No	40				40.00
vii	90 cm high octagon	No	40				40.00
9.3	**Direction and Place Identification Signs Board.**						
	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawing						
i	up to 0.9 sqm size	Sqm	40	1.50	0.60	-	36.00
ii	more than 0.9 sqm size	Sqm	28	1.50	0.80	-	33.60
9.4	**Road Markers/Road Stud with Lense Reflector**						
	Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973	Nos	4000.00				4000.00
9.5	**Metal Beam Crash Barrier** **Type - A, "W" : Metal Beam Crash Barrier**						

	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810						
	For High Embankment	Rm	1	0.0			0.00
	For Curved Portion	Rm	1	3600.0			3600.00
9.6	**Kilometre Stone**						
	Reinforced cement concrete M15grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc						
i	**5th kilometre stone (precast)**	Nos.	6				6
ii	**Ordinary kilometer stone (precast)**	Nos.	24				24
iii	**Hectometer stone (precast)**	Nos.	180				180
9.7	**Boundary Pillar**						
	Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering but excluding painting	Nos.	140				140
9.8	**Overhead Signs**						
	Supplying and fixing overhead signs complete as per drawing and Technical Specifications Section 800 including cost of posts, truss, erection, fitting and foundations. Sheeting will be retro reflective type of high intensity grade and message/borders will be screen-printed as per drawings.						
	a) Truss and Vertical Support (Portal	MT.	10.00				10
	b) Aluminium alloy plate for over head	MT.	2.00				2

	Bill No.1 : for strenghtening of CRZ Section on NH-4 in A&N Islands (Total Length=14.484 Km)					
Sl. No	**Item No.**	**Description**	**Unit**	**Quantity**	**Rate in Rs (Including Labour cess)**	**Amount in Rs.**
1	**2.5**	**Scarifying existing bituminous surface**				
		Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately				
		Bituminous courses	cum	2,657.66	914.05	2,429,237.780
		Granular courses	cum	10,990.96	648.42	7,126,759.580
2	**4.5**	**CT Subbase**				
		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)				
			cum	19,769.30	3327.95	65,791,225.300
2	**5.19**	**Treated RAP**				
		RAP (Using 60% of existing qty @ 2.2% bitumen & 40% of new qty @4.5% bitumen)				
			cum	15,055.08	7133.63	107,397,359.640
3	**5.2**	**Tack Coat**				
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.				
			Sqm	167,278.65	9.09	1,520,562.930
4	**5.1**	**Prime Coat**				
		Providing and applying primer coat with bitumen emulsion 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.				
			Sqm	83,639.33	24.24	2,027,417.240
6	**5.8**	**Bituminous Concrete**				
		Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade 60/70 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specification (5th edition) complete in all respect.				
		for GradingII (10 mm nominal size)	cum	3,345.57	11642.27	38,950,064.170
7	**4.5**	**Hard Shoulder with CT Subbase**				

		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)				
			cum	3,186.26	3327.95	10,603,713.970
9	**4.12**	**Drainage**				
		Unlined Drain	m	6,740.82	71.71	483,384.200
		Lined RRM drain (2 x 2000m)	m	4,000.00	1763.49	7,053,960.000
10	**4.13**	**3 Box Culverts at few locations**	No			
11	**4.14**	**Repair & Maintenance of existing culverts@ 50000/culvert**	No			
12	**4.14**	**Repair & Maintenance of existing Minor Bridge @ 200000 per bridge**	No			
13	**8.00**	**TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT**				
		Road Markings & Signages				5,344,110.28
		Road Markers/Road Stud with Lense Reflector				442,479.00
		Metal Beam Crash Barrier		3,000.00	3707.71	11,123,130.00
14		Premix Carpet with Seal Coat for Patch Repair Work	Sqm	5,213.88	210.00	1,094,914.80
					Sub-Total (In Rs)	**261,388,318.89**
					GST @ 6%	**15,683,299.13**
					Total Construction cost including GST @ 6% (A)	**277,071,618.02**

SR.NO.	ITEM NO	ITEM DES.	PRE QTY	REV QTY	DIFFERENCE	RATE	AMOUNT
1	2.5 A	DISMANTLING BITUMINOUS SURFACE	2574	2658	83.66	914.05	76473.0792
2	2.5 B	DISMANTLING GRANULAR COURSE	10701.79	10990.96	289.17	648.42	187504.908
3	4.5	CT SUBBASE	19632.8	19769.30	136.50	3327.95	454248.535
4	5.2	TACK COAT	161700	167279	5578.65	9.09	50709.9285
5	5.19	TREATED RAP	14553	15055	502.08	7133.63	3581642.25
						TOTAL	**4350578.7**

Quantity Calculation- Dismantling of Flexible Pavement									
			Bituminous Layer				Granular Layer		
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (cum)	Width (m)	Thickness (m)	Volume (cum)
	From	to							
1	315.874	316	126.00	**3.6**	**0.09**	40.8	3.6	0.220	99.79
2	316	317	1000.00	3.6	0.090	324.0	3.6	0.220	792.00
3	317	318	1000.00	3	0.060	180.0	3	0.220	660.00
4	318	319	1000.00	3	0.070	210.0	3	0.250	750.00
5	319	320	1000.00	3	0.040	120.0	3	0.280	840.00
6	320	321	1000.00	3	0.040	120.0	3	0.270	810.00
7	321	322	1000.00	3	0.070	210.0	3	0.220	660.00
8	322	323	1000.00	3	0.060	180.0	3	0.240	720.00
9	323	324	1000.00	3	0.080	240.0	3	0.270	810.00
10	324	325	1000.00	3	0.070	210.0	3	0.230	690.00
11	325	326	1000.00	3	0.050	150.0	3	0.270	810.00
12	326	327	1000.00	3	0.070	210.0	3	0.220	660.00
13	327	328	1000.00	3	0.040	120.0	3	0.280	840.00
14	328	329	1000.00	3	0.060	180.0	3	0.250	750.00
15	329	330	1000.00	3	0.040	120.0	3	0.270	810.00
16	330	330.357	357.00	3	0.040	42.8	3	0.270	289.17
					Total =	**2658**			**10990.96**

Quantity of Hard Shoulder						
Sl. No	**Stretch**		**Length (m)**	**Width (m)**	**Thickness (m)**	**Volume (cum)**
	From	**to**				
	315.874	**316**	126	1.00	0.220	27.720
1	316	317	1000	1.00	0.220	220.000
2	317	318	1000	1.00	0.220	220.000
3	318	319	1000	1.00	0.220	220.000
4	319	320	1000	1.00	0.220	220.000
5	320	321	1000	1.00	0.220	220.000
6	321	322	1000	1.00	0.220	220.000
7	322	323	1000	1.00	0.220	220.000
8	323	324	1000	1.00	0.220	220.000
9	324	325	1000	1.00	0.220	220.000
10	325	326	1000	1.00	0.220	220.000
11	326	327	1000	1.00	0.220	220.000
12	327	328	1000	1.00	0.220	220.000
13	328	329	1000	1.00	0.220	220.000
14	329	330	1000	1.00	0.220	220.000
15	330	330.357	357	1.00	0.220	78.540
Total Quantity of Hard Shoulder =						**3186.26**

Quantity of RAP & CT Subbase									
Sl. No	Stretch		Length (m)	Treated RAP			CT Subbase		
	From	to		Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (cum)	Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (cum)
1	315.874	316	126	5.50	0.180	130.98	6.50	0.200	171.99
2	316	317	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
3	317	318	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
4	318	319	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
5	319	320	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
6	320	321	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
7	321	322	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
8	322	323	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
9	323	324	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
10	324	325	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
11	325	326	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
12	326	327	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
13	327	328	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
14	328	329	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
15	329	330	1000	5.50	0.180	1039.50	6.50	0.200	1365.00
16	330	330.357	357	5.50	0.180	371.10	6.50	0.200	487.31
					Total=	15055			19769.295

Drainage works

Item No.	SOR Ref No	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Rate (Rs.)	Amount (Rs.)
		Drainage works								
7.01	3.6 (ii)	**Unlined Drains :-** Earth work in excavation in trenches in unlined drain as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	1.00	24,966.0		0.27	6,740.82	71.71	483,384.20
7.02		**Lined RRM Drains**								
(a)	3.6 (ii)	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	1.00	4,000.0		0.29	1,160.00	68.68	79,668.80
(b)		RRM	cum	2.00	2,000.0			4,000.00	6119.00	24,476,000.00

Quantity of Prime Coat					
Sl. No	**Stretch**		**Length (m)**	**Width (m)**	**Area (incl 5% for Extra Widening) (sqm)**
	From	**to**			
1	315.874	316	126	5.5	727.65
2	316	317	1000	5.5	5775.00
3	317	318	1000	5.5	5775.00
4	318	319	1000	5.5	5775.00
5	319	320	1000	5.5	5775.00
6	320	321	1000	5.5	5775.00
7	321	322	1000	5.5	5775.00
8	322	323	1000	5.5	5775.00
9	323	324	1000	5.5	5775.00
10	324	325	1000	5.5	5775.00
11	325	326	1000	5.5	5775.00
12	326	327	1000	5.5	5775.00
13	327	328	1000	5.5	5775.00
14	328	329	1000	5.5	5775.00
15	329	330	1000	5.5	5775.00
16	330	330.357	357	5.5	2061.68
Total Quantity of Prime Coat (single layer)					**83639.325**

Quantity of Tack Coat					
Sl. No	**Stretch**		**Length (m)**	**Width (m)**	**Area (incl 5% for Extra Widening) (sqm)**
	From	**to**			
1	315.874	316	126	5.5	727.65
2	316	317	1000	5.5	5775.00
3	317	318	1000	5.5	5775.00
4	318	319	1000	5.5	5775.00
5	319	320	1000	5.5	5775.00
6	320	321	1000	5.5	5775.00
7	321	322	1000	5.5	5775.00
8	322	323	1000	5.5	5775.00
9	323	324	1000	5.5	5775.00
10	324	325	1000	5.5	5775.00
11	325	326	1000	5.5	5775.00
12	326	327	1000	5.5	5775.00
13	327	328	1000	5.5	5775.00
14	328	329	1000	5.5	5775.00
15	329	330	1000	5.5	5775.00
16	330	330.357	357	5.5	2061.68
Total Quantity of Tack Coat (single layer)					**83639**
Total Quantity of Tack Coat (2 layer)					**167279**
b/w CT Subbase & RAP coat b/w RAP & BC					

Quantity of BC						
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (cum)
	From	to				
	315.874	**316**	126	5.5	0.04	29.106
1	316	317	1000	5.5	0.04	231.000
2	317	318	1000	5.5	0.04	231.000
3	318	319	1000	5.5	0.04	231.000
4	319	320	1000	5.5	0.04	231.000
5	320	321	1000	5.5	0.04	231.000
6	321	322	1000	5.5	0.04	231.000
7	322	323	1000	5.5	0.04	231.000
8	323	324	1000	5.5	0.04	231.000
9	324	325	1000	5.5	0.04	231.000
10	325	326	1000	5.5	0.04	231.000
11	326	327	1000	5.5	0.04	231.000
12	327	328	1000	5.5	0.04	231.000
13	328	329	1000	5.5	0.04	231.000
14	329	330	1000	5.5	0.04	231.000
15	330	330.357	357	5.5	0.04	82.467
Total Quantity of BC =						**3345.573**

TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT

S.NO	Description	Unit	Nos.	Length	Width	Depth	Quantity	Rate	Amount
1	**Road Marking**								
	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.								
	For Edge Marking	Sqm	2	14483	0.150		4344.90	859.51	*3734485.000*
	For Centre line Marking	Sqm	1	7242	0.100		832.77	859.51	*715776.290*
2	**Direction and Place Identification Signs Board.**								
	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawing								
i	up to 0.9 sqm size	Sqm	10	1.50	0.60	-	9.00	13670.35	*123033.150*
ii	more than 0.9 sqm size	Sqm	9	1.50	0.80	-	10.80	23674.40	*255683.520*
3	**Metal Beam Crash Barrier** **Type - A, "W" : Metal Beam Crash Barrier**								
	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810								
	For Curved Portion	Rm	1	3000.0			3000.00	3707.71	*11123130.000*
4	**Road Markers/Road Stud with Lense Reflector**								
	Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973	Nos.	1867				1867	237.00	
5	Overhead Signs								
	Supplying and fixing overhead signs complete as per drawing and Technical Specifications Section 800 including cost of posts, truss, erection, fitting and foundations. Sheeting will be retro reflective type of high intensity grade and message/borders will be screen-printed as per drawings.								
	a) Truss and Vertical Support (Portal type)	MT.	8.0				8.00	61,473.65	*491789.200*
	b) Aluminium alloy plate for over head sign	MT.	2.00				2.00	11,671.56	*23343.120*
								Total Cost	**16909719.280**

EXISTING			
Sl. No.	Existing chainage	Type of structures (Pipe. Slab Box, Arch)	Span Arrangement (No.x Length(m))
1	298.087	RCC SLAB	1X1.8
2	298.205	RCC SLAB	1X1.7
3	298.597	HP	1X1.0
4	298.660	HP	1X0.9
5	298.928	HP	1X1.2
6	299.052	HP	1X0.9
7	299.09	HP	1X1.2
8	299.384	HP	2X0.9
9	299.555	HP	2X0.9
10	299.772	HP	2X0.9
11	300.016	HP	2X0.9
12	300.167	RCC SLAB	1X6.0
13	300.435	HP	2x0.9
14	300.595	HP	2X0.9
15	300.795	HP	2X0.9
16	301.231	RCC SLAB	1X2.6
17	301.390	RCC SLAB	1X2.2
18	301.75	RCC SLAB	BLOCKED
19	302.064	RCC SLAB	1X5.7
20	302.212	RCC SLAB	1X2.7
21	302.428	RCC SLAB	1X3.1
22	302.605	RCC SLAB	1X2.3

LEGEND	
CONFIRM	
DOUBTFULL	
MISSING	

	Design Chainage (Km)	Type of culvert proposed	Span/ Opening with Span length (m)*	Deck Width
1	298+085	RCC Box		Widening
2	298+203	RCC Box		Widening
3	298+595	RCC Box	1x3.0	NEW
4	298+658	RCC Box	1X4.0	NEW
5	298+925	RCC Box	1x3.0	NEW
6	298+991	RCC Box	1X4.0	NEW
7	299+028	RCC Box	1x3.0	NEW
8	299+324	RCC Box	1x3.0	NEW
9	299+491	RCC Box	1x4.0	NEW
10	299+707	RCC Box	1x3.0	NEW
11	299+943	RCC Box	1x3.0	NEW
12	300+090	RCC BOX		NEW
13	300+358	RCC Box	1x3.0	NEW
14	300+516	RCC Box	1x3.0	NEW
15	300+717	RCC Box	1X4.0	NEW
16	301+167	RCC Box		Widening
17	301+326	RCC BOX		Widening
18	301+684	RCC Box	1x4.0	NEW
19	302+024	RCC Box		Widening
20	302+126	RCC Box		New
21	302+336	RCC Box		New
22	302+506	RCC Box		New

23	302.917	RCC SLAB	1X4.5
24	303.022	RCC SLAB	1X4.8
25			
26	303.267	HP	1X0.8
27	303.345	RCC SLAB	1X6.0
28	303.65	HP	1X0.90
29	303.762	RCC SLAB	1X1.9
30	304.084	RCC SLAB	1x2.5
31	304.22	RCC SLAB	1x2.5
32	304.595	RCC SLAB	1X3.6
33	304.723	HP	1X0.9
34	304.855	HP	1X0.9
35	305.219	HP	1X0.9
36	305.428	HP	1X0.9
37	305.589	HP	1X0.9
38	305.734	HP	1X0.9
39	306.075	RCC SLAB	1X2.3
40	306.274	RCC SLAB	1X4.7
41	306.913	RCC SLAB	1X4.5

23	302+826	RCC Box		New
24	302+910	RCC Box		Widening
25	303+181	RCC Box	1X4.0	NEW
26	303+259	HPC		New
27	303+564	RCC Box	1X3.0	NEW
28	303+675	RCC Box		New
29	303+977	RCC Box		New
30	304+113	RCC Box		Widening
31	304+487	RCC Box		New
32	304+616	RCC Box	1x2.0	NEW
33	304+743	RCC Box	1x2.0	NEW
34	305+106	RCC Box	1x2.0	NEW
35	305+316	RCC Box	1x2.0	NEW
36	305+477	RCC Box	1x2.0	NEW
37	305+621	RCC Box	1x2.0	NEW
38	305+974	HPC		New
39	306+178	RCC Box		New

42			
43	307.513	RCC SLAB	BLOCKED
44	307.779	RCC SLAB	1X4.70
45	308.005	RCC SLAB	1X2.4
46	308.256	RCC SLAB	1X1.7
47	308.802	RCC SLAB	1X2.6
48	309.071	RCC SLAB	1X5.5
49	309.225	HP	BLOCKED
50	309.315	HP	1 X 0.9
51	309.366	HP	2 X 1.2
52			
52	309.439	HP	2 X 1.2
53	309.637	RCC SLAB	1 X 2.5
54	310.98	RCC SLAB	1X5.9
55	311.715	RCC SLAB	1X2.7
56	312.107	RCC SLAB	1X1.8
57	312.232	RCC SLAB	1X1.3
58	312.314	RCC SLAB	1X1.5
59	312.475	RCC SLAB	1 X 2.1
60	312.608	RCC SLAB	1X2.8
61	313.163	RCC SLAB	1X2.6
62	313.294	RCC SLAB	1X1.2
63	313.323	RCC SLAB	1X1.85
64	313.435	RCC SLAB	1X1.3

40	306+811	RCC Box		New
41	307+387	RCC Box	1x4.0	NEW
42	307+654	RCC Box		New
43	307+888	RCC Box		New
44	308+141	RCC Box		New
45	308+700	RCC Box		New
46	308+957	RCC Box		New
47	309+108	RCC Box	1x2.0	NEW
48	309+251	RCC Box	1x3.0	NEW
49	309+323	RCC Box	1x2.0	NEW
50	309+363	RCC Box	1x3.0	NEW
51	309+520	RCC Box	1x2.5	NEW
52	310+864	RCC Box		New
53	311+600	RCC Box		New
54	311+992	RCC Box		New
55	312+117	RCC Box	1X1.8	NEW
56	312+199	RCC Box		Widening
57	312+357	RCC Box		Widening
58	312+494	RCC Box		Widening
59	313+044	RCC Box		New
60	313+171	RCC Box		Widening
61	313+202	RCC Box		Widening
62	313+315	RCC Box		Widening
63	313+416	RCC Box		Widening

65	313.536	RCC SLAB	1X5.4
66	313.857	RCC SLAB	1X1.70
67	314.614	RCC SLAB	1X2.1
68	315.138	RCC SLAB	1X1
69	315.507	RCC SLAB	1X1.2
70	315.601	RCC SLAB	1X2.9
71	315.842	RCC SLAB	1X1.5
72	316.032	RCC SLAB	1X.5
73	316.322	RCC SLAB	1X1.5
74	316.355	RCC SLAB	1X2
75	316.566	HP	1X0.6
76	316.708	RCC SLAB	1X1.5
77	316.767	RCC SLAB	1X0.8
78	316.897	RCC SLAB	1X1.1
79	316.966	RCC SLAB	1X0.8
80	317.104	RCC SLAB	1X0.65
81	317.313	RCC SLAB	1X0.91

64	313+737	RCC Box		New
65	314+443	RCC Box		New
66	315+009	RCC Box		New
67	315+378	RCC Box		New
68	315+471	RCC Box		New
69	315+713	RCC Box		New
70	315+905	RCC Box		Widening
71	316+194	RCC Box		New
72	316+229	RCC Box		New
73	316+440	RCC Box		New
74	316+582	RCC Box		New
75	316+641	RCC Box		New
76	316+772	RCC Box		Widening
77	316+838	RCC Box		Widening
78	316+960	RCC Box		Widening
79	317+169	RCC Box		Widening
80	317+217	RCC Box		New

82	317.36	RCC SLAB	1X1.7
83	317.684	RCC SLAB	1X0.9
84	317.768	RCC SLAB	1X0.8
85	317.825	RCC SLAB	1X1.1
86	318.035	RCC SLAB	1X1
87	318.234	RCC SLAB	1X1.15
88	318.37	RCC SLAB	1X1.7
89	318.445	RCC SLAB	1X0.8
90	318.543	RCC SLAB	1X0.8
91	318.580	RCC SLAB	1X0.83
92	318.717	HP	1X0.9
93	318.943	HP	1X0.6
94	319.153	HP	1X0.9
95	319.334	HP	1X0.6
96	319.46	HP	1X0.6
97	319.571	HP	1X0.6
98	319.651	HP	1X0.9
99	319.767	HP	2X0.6
100	319.915	HP	2X0.9
101	320.036	HP	2X0.9
102	320.571	HP	1X0.9

81	317+540	RCC Box		New
82	317+624	RCC Box		New
83	317+681	RCC Box		Widening
84	317+897	RCC Box		Widening
85	318+096	RCC Box		Widening
86	318+233	RCC Box		Widening
87	318+305	RCC Box		Widening
88	318+404	RCC Box		New
89	318+441	RCC Box		Widening
90	318+578	RCC Box		Widening
91	318+806	RCC Box		New
92	319+012	RCC Box		New
93	319+195	RCC Box		New
94	319+277	RCC Box		New
95	319+433	RCC Box		New
96	319+512	RCC Box		New
97	319+628	RCC Box		New
98	319+777	RCC Box		New
99	319+898	RCC Box		New
100	320+432	RCC Box		New
101	320+823	RCC Box		New

103	321.187	HP	1X0.6
104	321.308	RCC SLAB	1X1.8
105	321.312	HP	2X0.9
106	321.525	HP	1X0.9
107	321.952	HP	1X0.9
108	321.995	HP	1X0.9
109	322.133	HP	1X0.6
110	322.301	HP	1X0.9
111	322.372	HP	2X0.9
112	322.496	HP	1X1.2
113	322.683	HP	2X0.9
114	323.022	HP	1X0.9
115	323.14	HP	2X1.2
116	323.247	HP	2X0.9
117	323.325	HP	2X0.6
118	323.395	RCC SLAB	1X2.18
119	323.61	HP	1X0.6
120	323.84	HP	1X0.6

102	320+943	RCC Box		New
103	320+947	RCC Box		New
104	321+160	RCC Box		New
105	321+569	RCC Box		New
106	321+614	RCC Box		New
107	321+776	RCC Box		New
108	321+944	RCC Box		New
109	322+017	RCC Box		New
110	322+142	RCC Box		New
111	322+327	RCC Box		New
112	322+669	RCC Box		New
113	322+786	RCC Box		New
114	322+894	RCC Box		New
115	322+972	RCC Box		New
116	323+044	RCC Box		New
117	323+357	RCC Box		Widening
118	323+485	RCC Box		New
119	323+693	RCC Box		New
120	323+781	RCC Box		New

121	324.06	HP	1X0.6
122	324.135	HP	1X0.6
123	324.307	RCC SLAB	1X4.1
124	324.412	HP	1X0.6
125	324.525	HP	1X0.6
126	324.675	HP	1X0.6
127	324.739	HP	1X0.6
128	325.131	HP	2 X 0.9
129	325.754	RCC SLAB	1X6
130	326.437	HP	1X1.2
131	326.645	HP	2x1.2
132	326.792	HP	1X1.2
133	327.147	HP	1X1.2
134	327.295	RCC SLAB	1X3
135	327.897	RCC SLAB	1X3
136	328.192	RCC SLAB	1X4
137	328.549	RCC SLAB	1X2
138	328.61	RCC SLAB	1X1

121	323+956	RCC Box		New
122	324+061	RCC Box		New
123	324+173	RCC Box		New
124	324+324	RCC Box		New
125	324+387	RCC Box		New
126	324+774	RCC Box		New
127	325+450	RCC Box		New
128	326+131	RCC Box		New
129	326+339	RCC Box		New
130	326+486	RCC Box		New
131	326+842	RCC Box		New
132	326+990	RCC Box		New
133	327+591	RCC Box		New
134	328+244	RCC Box		New
135	328+305	RCC Box		New
136	328+874	RCC Box		New
137	328+887	RCC Box		New

139	329.181	RCC SLAB	1X5.8
140	329.276	RCC SLAB	1X1
141	329.511	RCC SLAB	1X1.7
142	329.709	RCC SLAB	1X1.4
143	329.799	RCC SLAB	1X1.2
144	329.849	RCC SLAB	1X2
145	329.963	RCC SLAB	1X1.2
146	330.115	RCC SLAB	1X1.2
147	330.198	RCC SLAB	1X1.2
148	330.319	RCC SLAB	1X1.2
149	330.417	RCC SLAB	1X1.2
150	330.525	RCC SLAB	1X1.2
151	330.663	RCC SLAB	1X1.2

138	328+971	RCC Box		New
139	329+206	RCC Box		New
140	329+404	RCC Box		New
141	329+494	RCC Box		New
142	329+546	RCC Box		New
143	329+658	RCC Box		New
144	329+810	RCC Box		New
145	329+893	RCC Box		New
146	330+013	RCC Box		New
147	330+112	RCC Box		New
148	330+221	RCC Box		New
149	330+359	RCC Box		New

RECONSTRUCTION OF MIOR BRIDGE

S. No	Bridge Location (Design Chainage, in Km)	Salient Features of Existing Bridge		Features of Proposed Bridge	
		No. of Spans with Span Length (c/c of exp. Gap)	Total Width (m)	Proposed Length (m)	Total proposed Width
1	310+476	27.5 + 24.4	4.9	56.600	8.5

7.6 Repairs and strengthening of bridges and structures

The existing bridges and structures to be repaired / strengthened as required, and the nature and extent of repairs /strengthening required are given below:

A. Bridges

S. No.	Design Chainage (Km)	Nature and extent of repairs /strengthening to be carried out
1	298+471	Minor repair works (Cleaning, Shotcreting, Painting, Pointing, Replacement of railing with Crash Barrier, repair of Expansion joints & bearings, replacement of wearing coat, etc.)
2	311+900	
3	314+370	

Schedule-H

(See Clauses 10.1.4 and 19.3)

Contract Price Weightages

1. (i) The Contract Price for this Agreement is **Rs. Crore.**

1. (ii) Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

113,61,35,406.16

Schedule-H

Item	Weightage in percentage to the Contract Price	Amount	Stage for Payment	Percentage weightage	Amount
1	2	3	4	5	6
			B.1- Reconstruction/ New 4-lane		
Road works including culverts, widening and repair of culverts	**80.71%**	**91,69,65,658.71**	**realignment/bypass (Flexible pavement)**		
			(1) Site Clearance, Dismantling and Scarifying	1.27%	11,649,704.350
			Earthwork up to top of Subgrade	3.10%	28,426,979.870
			(2) Sub-Base Course (Cement Treated)	15.65%	143,532,769.620
			(3) Treated RAP	25.64%	235,075,854.080
			(4) Bituminous Wearing Course	11.13%	102,034,467.580
			(5) Hard Shoulder with CT Sub-base	2.54%	23,318,945.650
			existing road, realignments, bypasses:		
			Culverts (lengths < 6m) 127 Nos	37.75%	346,117,051.220
			Culverts maintenance of 22 culvert as per **Revised schedule B**	2.92%	26,809,886.340
Minor Bridges/			**A.1- Widening and Repair of Minor bridges**		
			(length >6 m and < 60 m)		
			Repair of Minor bridges as per Schedule-B	1.84%	600,000.00
			A.2- New Minor bridges (length >6 m and < 60 m)		
			(1) Foundation + Sub- Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers upto the abutment/ pier cap.	56.68%	18,455,539.150

Schedule-H

(See Clauses 10.1.4 and 19.3)

Contract Price Weightages

1. (i) The Contract Price for this Agreement is **Rs. Crore.**

1. (ii) Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

113,61,35,406.16

Schedule-H

Item	Weightage in percentage to the Contract Price	Amount	Stage for Payment	Percentage weightage	Amount
1	2	3	4	5	6
Underpasses/ Overpasses	**2.87%**	**3,25,63,178.30**	**(2) Super-structure:** On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion in all respect.	40.42%	13,162,436.820
			(3) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	1.06%	345,202.330
Major Bridge works	**0.00%**	**0.00**	**A.1- Widening and Repair of Major bridges**		
			Major Bridges	0.00%	-
			A.2 -New major bridges & Viaduct		
			(1) Foundation	0.00%	-
			(2) Sub-structure	0.00%	-
			(3) Super-structure (including bearings)	0.00%	-
			(4) Wearing Coat including expansion joints	0.00%	-
			(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	-
			(6) Wing walls/ return walls	0.00%	-
			(7) Guide Bunds, River Training works etc.	0.00%	-
			(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	-
			(i) Road side drains		
			(a) Unlined Drains	0.57%	1,055,328.820

Schedule-H

(See Clauses 10.1.4 and 19.3)

Contract Price Weightages

1. (i) The Contract Price for this Agreement is **Rs.** **Crore.**

1. (ii) Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

113,61,35,406.16

Schedule-H

Item	Weightage in percentage to the Contract Price	Amount	Stage for Payment	Percentage weightage	Amount
1	2	3	4	5	6
			(b) Lined Drain (Random Rubble Masonary drain)	5.83%	10,886,901.600
			(c) RCC Covered Drains	17.71%	33,042,922.040
			(ii) Road signs, markings, km stones, safety devices	9.32%	17,387,417.140
			(iii) Junctions	21.27%	39,698,778.410
			(iv) Protection Works		
			(a) Breast Wall	9.10%	16,982,065.670
			(b) Retaining Wall	9.76%	18,203,962.790
			(c) Metal Beam Crash Barrier	13.11%	24,470,886.000
			(v) Project facilities		
Other works	16.42%	**186,606,569.15**	(a) Bus Bays & Shelters	5.63%	10,500,000.000
			(b) Passing Places	5.65%	10,550,453.420
			(c) Truck lay-byes	0.00%	-
			(d) Rest areas	0.00%	-

Schedule-H

(See Clauses 10.1.4 and 19.3)

Contract Price Weightages

1. (i) The Contract Price for this Agreement is **Rs. Crore.**

1. (ii) Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

113,61,35,406.16

Schedule-H

Item	Weightage in percentage to the Contract Price	Amount	Stage for Payment	Percentage weightage	Amount
1	2	3	4	5	6
			(e) Others (Parking Spaces)	0.74%	1,381,437.260
			(vi) Repair of Protection Works other than approaches to the bridges, elevated sections/ flyover/ grade separators and ROBs/ RUBs	0.00%	-
			(vii) Site Clearance & Dismantling	0.00%	-
			viii) Safety and traffic management during	0.00%	-
			construction	0.00%	-
			ix) Premix Carpeting for filling of pot holes and repair works as per Schedule-B	1.31%	2,446,416.000
	100.00%	**113,61,35,406.16**			**113,61,35,406.16**
				Total	**113.61**
				Per Km Civil Cost	**3.48**
				Civil Cost (A)=	**113.61**
				Contigency 2.80%	3.18
				Total Civil Construction cost B	**116.79**
				Agency Charges 3.00% on B	3.50
				Supervision 3.00% on B	3.50
				5.00% per year of A as per phasing Price Escalation	5.68
				2.50% Maintenance of A	2.84
				Quality Control @ 0.25% of (B) above	-
				Road Safety Audit Charges @ 0.25% of (B) above	-
				Total Project Cost	**132.31**
				Per Km Project Cost	**4.05**
				LA & Utility Shifting	
				Shifting of Electrical Poles	6.78
				Shifting of Water supply lines	7.16
				Land Aquasition	-
				Total For LA, Utility Shifting	13.94
				Total Capital Cost of Project	**146.25**
				Total Capital Cost of Project Per/Km Rs. In Cr.	**4.48**