

BILL OF SUMMARY for Pfutsero Phek Road (Design Km 0.000 to Km 20.000)					
DESIGN ROAD LENGTH IN KM (0 Km to 20.000 Km)			20.00		
Widening portion= 18260 m			Realignment portion= 1740 m		
Bill No	Weightage in percentage to the contract price	Description of Items		Amount (in Rs.)	Percentage weightage
1	68.61%	WIDENING AND STRENGTHENING OF EXISTING ROAD			
		A1.1	Earthwork up to top of the sub-grade including excavation in soil/ soft rock/ hard rock and Cleaning & grubbing	19,19,33,725	11.22%
		A1.2	Sub-Base Course	11,76,91,328	6.88%
		A1.3	Non Bituminous Base Course	16,05,34,434	9.38%
		A1.4	Bituminous Base Course	9,44,40,538	5.52%
		A1.5	Wearing Coat	6,07,60,448	3.55%
		A1.6	Widening and repair of culverts	-	0.00%
		A1.7	Hard Shoulder	3,50,63,328	2.05%
2		RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(FLEXIBLE PAVEMENT)			
		A2.1	Earthwork up to top of the sub-grade including excavation in soil/ soft rock/ hard rock and Cleaning & grubbing	6,00,96,766	3.51%
		A2.2	Sub-Base Course	1,10,81,232	0.65%
		A2.3	Non Bituminous Base Course	1,50,38,472	0.88%
		A2.4	Bituminous Base Course	88,19,961	0.52%
		A2.5	Wearing Coat	56,56,537	0.33%
		A2.6	Hard Shoulder	35,55,728	0.21%
3		RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(RIGID PAVEMENT)			
		A3.1	Earthwork up to top of the sub-grade including excavation in	-	0.00%
		A3.2	Sub-Base Course	-	0.00%
		A3.3	Dry Lean Concrete(DLC) Course	-	0.00%
		A3.4	Pavement Quality Control(PQC) Course	-	0.00%
4		RECONSTRUCTION/NEW SERVICE ROAD (FLEXIBLE PAVEMENT)			
		A4.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	-	0.00%
		A4.2	Sub-Base Course	-	0.00%
		A4.3	Non Bituminous Base Course	-	0.00%
		A4.4	Bituminous Base Course	-	0.00%
		A4.5	Wearing Coat	-	0.00%
5		RECONSTRUCTION/NEW SERVICE ROAD (RIGID PAVEMENT)			
		A5.1	Earthwork up to top of the sub-grade including excavation in	-	0.00%
		A5.2	Sub-Base Course	-	0.00%
		A5.3	Dry Lean Concrete(DLC) Course	-	0.00%
		A5.4	Pavement Quality Control(PQC) Course	-	0.00%
6		RECONSTRUCTION AND NEW CULVERTS ON EXISTING ROAD, REALIGNMENTS, BYPASSES			
		A6.1	Culverts and associated Protection Works (Length < 6m)	40,90,23,364	23.91%
7	0.00%	WIDENING AND REPAIR OF MINOR BRIDGES (Length > 6 m and < 60 m)			
8		A7.1	Minor Bridges	-	0.00%
		NEW MINOR BRIDGES (Length > 6 m and < 60 m)			
		A8.1	Foundation + Sub Structures: On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.	-	0.00%
		A8.2	Super-structure: On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	-	0.00%
		A8.3	Approaches: On completion of approaches including retaining wall, stone pitching, protection works complete in all respect and fit for use.	-	0.00%
8		A8.4	Guide Bunds and River Training Works: On completion of Guide bunds and river training works complete in all respects.	-	0.00%

Bill No	Weightage in percentage to the contract price	Description of Items	Amount (in Rs.)	Percentage weightage
9		WIDENING AND REPAIRS OF UNDERPASSES/ OVERPASSES		0.00%
		A9.1 Underpasses/ Overpasses	-	0.00%
10		NEW UNDERPASSES/ OVERPASSES		0.00%
		A10.1 Foundation + Sub Structures: On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.	-	0.00%
		A10.2 Super-structure: On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of overpass- wearing coat including expansion joint complete in all respects as specified and (b) in case of underpass- Rigid pavement including drainage facility complete in all respects as specified.	-	0.00%
		A10.3 Approaches: On completion of approaches including retaining walls/ Reinforced earth walls, stone pitching, protection works complete in all respect and fit for use.	-	0.00%
11	0.00%	WIDENING AND REPAIRS OF MAJOR BRIDGES		0.00%
		A11.1 Foundation	-	0.00%
		A11.2 Sub-structure	-	0.00%
		A11.3 Super-structure(including bearings)	-	0.00%
		A11.4 Wearing Coat including expansion joints		0.00%
		A11.5 Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		A11.6 Wing walls/ Return walls		0.00%
		A11.7 Guide Bunds, River Training Works etc		0.00%
		A11.8 Approaches (including Retaining walls, stone pitching and protection works)	-	0.00%
12		NEW MAJOR BRIDGES		0.00%
		A12.1 Foundation	-	0.00%
		A12.2 Sub-structure	-	0.00%
		A12.3 Super-structure(including bearings)	-	0.00%
		A12.4 Wearing Coat including expansion joints		0.00%
		A12.5 Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		A12.6 Wing walls/ Return walls		0.00%
		A12.7 Guide Bunds, River Training Works etc		0.00%
		A12.8 Approaches (including Retaining walls, stone pitching and protection works)	-	0.00%
13		WIDENING AND REPAIR OF ROB/RUB		0.00%
		A13.1 (a) ROB	-	0.00%
		(i) Foundation	-	0.00%
		(ii) Sub-structure	-	0.00%
		(iii) Super-structure(including bearings)	-	0.00%
		(iv) Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.	-	0.00%
		(v) Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi) Wing walls/ Return walls		0.00%
		(vii) Approaches (including Retaining walls, stone pitching and protection works)	-	0.00%
		A13.2 (b) RUB	-	0.00%
		(i) Foundation	-	0.00%
		(ii) Sub-structure	-	0.00%
		(iii) Super-structure(including bearings)	-	0.00%

Bill No	Weightage in percentage to the contract price	Description of Items			Amount (in Rs.)	Percentage weightage
		(iv)	Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.	-		0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.			0.00%
		(vi)	Wing walls/ Return walls			0.00%
		(vii)	Approaches (including Retaining walls, stone pitching and protection works)	-		0.00%
14		NEW ROB/RUB				0.00%
		A14.1	(a) ROB		-	0.00%
		(i)	Foundation	-		0.00%
		(ii)	Sub-structure	-		0.00%
		(iii)	Super-structure(including bearings)	-		0.00%
		(iv)	Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.	-		0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.			0.00%
		(vi)	Wing walls/ Return walls			0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-		0.00%
		A14.2	(b) RUB		-	0.00%
		(i)	Foundation	-		0.00%
		(ii)	Sub-structure	-		0.00%
		(iii)	Super-structure(including bearings)	-		0.00%
		(iv)	Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.	-		0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.			0.00%
		(vi)	Wing walls/ Return walls			0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-		0.00%
15		WIDENING AND REPAIR OF ELEVATED SECTION/ FLYOVERS/				0.00%
		A.15.1	(i) Foundation	-		0.00%
		(ii)	Sub-structure	-		0.00%
		(iii)	Super-structure(including bearings)	-		0.00%
		(iv)	Wearing Coat including expansion joint.	-		0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.			0.00%
		(vi)	Wing walls/ Return walls			0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-		0.00%
16		NEW ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS				0.00%
		A.16.1	(i) Foundation	-		0.00%
		(ii)	Sub-structure	-		0.00%
		(iii)	Super-structure(including bearings)	-		0.00%
		(iv)	Wearing Coat including expansion joint.	-		0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.			0.00%
		(vi)	Wing walls/ Return walls			0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-		0.00%

Bill No	Weightage in percentage to the contract price	Description of Items		Amount (in Rs.)	Percentage weightage	
17	31.39%	OTHER WORKS			0.00%	
		A17.1	Toll Plaza	-	0.00%	
		A17.2	Road side drains	5,28,69,025	3.09%	
		A17.3	Road signs, marking, Km stones, Safety devices etc.			0.00%
			(a)	Pavement Markings	2,38,63,632	1.40%
			(b)	Crash barriers/W metal crash barriers	1,33,63,155	0.78%
			(c)	Road/Traffic Sign	61,65,465	0.36%
			(d)	Road Boundary stones, km Stones,5th km stones and hectometer stones, rumble strip, other items etc.	4,80,925	0.03%
			(e)	Traffic blinker LED delineator, stud, reflective payment marker, tree reflector	2,66,78,600	1.56%
			(f)	Road furniture (overhead signboard etc.)	6,46,369	0.04%
			A17.4	Project facilities		
		(a)	Truck lay-byes	-	0.00%	
		(b)	Bus bays/ Bus Shelter	31,86,000	0.19%	
		(c)	Junctions (Major & Minor)	2,84,08,337	1.66%	
		(d)	Rest areas (viewpoint/recreational areas)		0.00%	
		A17.5	Road Side Plantation			0.00%
		A17.6	Repair of protection works other than approaches to the bridges, elevated sections/ fly-overs/ grade separator and ROBs/ RUBs.		-	0.00%
		A17.7	Traffic diversion, Safety and traffic management during construction		-	0.00%
		A17.8	Slope Protection Works as special requirement for hill road			0.00%
			(a)	Hydro Seeding	11,64,940	0.07%
			(b)	Seeding and Mulching with Jute net	5,15,51,934	3.01%
			(c)	Catchwater Drain	14,07,480	0.08%
			(d)	Retaining Structure on valley side of varying height between 1 to 6 metre including parapets	26,42,72,894	15.45%
			(e)	Reinforced earth wall	-	0.00%
			(f)	Breast wall with PCC	4,70,68,540	2.75%
			(g)	Sub Surface drain with perforated pipe	67,11,390	0.39%
			(h)	Parapet wall	91,15,320	0.53%
Total Civil Cost (In Rs.)				1,71,06,49,867	100.00%	
Civil Cost Per Km (In Cr.)				8.55		

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A1.1	-	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.				
A1.1.01	2.3 (ii) A	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.) by Mechanical Means in area of light Jungle.	ha	51	39,921	20,35,971
A1.1.02	2.4	Dismantling of Structures (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	(iii) B	Rubble stone masonry in cement mortar	cum	2,583	493	12,73,419
b	(i) II A	Cement Concrete Grade M-15 & M-20	cum	224	945	2,11,680
c	(i) II B	Prestressed / Reinforced cement concrete grade M-20 & above	cum	38	1,628	61,864
e	2.10 B	Ordinary KM stone/Guard stone/Sign Post	Number	2	376	752
f	2.4 (ix) B	Removing all types of hume pipes and stacking serviceable material with all leads & lifts including earthwork and dismantling of masonry works.Above 600 mm to 900 mm dia.	m	709	468	3,31,812
A1.1.03	2.1	Cutting of Trees, including Cutting of Trunks, Branches and Removal (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 mtrs and earth filling in the depression/nit)				
a	(i)	Girth from 300mm to 600mm	Number	63	440	27,720
b	(ii)	Girth above 600mm to 900mm	Number	77	732	56,364
c	(iii)	Girth above 900mm to 1800mm	Number	95	1,505	1,42,975
d	(iv)	Girth above 1800mm	Number	77	2,923	2,25,071
A1.1.04	3.32	Excavation in Hill Area in Soil by Mechanical Means (Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres)	cum	3,43,984	182	6,26,05,088
A1.1.05	3.33	Excavation in Hilly Area in Ordinary Rock by Mechanical Means not Requiring Blasting (Excavation in hilly area in ordinary rock not requiring ballasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres)	cum	3,43,984	257	8,84,03,888
A1.1.06	3.34 - Credit of Rs 500/-	Excavation in Hilly Areas in Hard Rock Requiring Blasting (Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 metres)	cum	12,279	(89)	(10,92,831)
A1.1.07	3.9 - Credit of Rs 500/-	Excavation in Hard Rock (controlled blasting) with disposal upto 1000 metres (Excavation for roadway in hard rock with controlled blasting by drilling, blasting and breaking,trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres)	cum	-	(131)	-
A1.1.08	3.17	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)- for Embankment only	cum	35,066	252	88,36,632

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A1.1.09	Rate Analysis	Construction of Subgrade and Shoulder 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	80,284	326	2,61,72,584
A1.1.10	3.19 Case-I	Compacting original ground supporting subgrade (Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.) where Subgrade CBR is more than 8%,200 mm depth is taken for this item	cum	18,302	83	15,19,066
A1.1.11	4.12' x 0.1	Preparation of Subgrade in Rocky Formation as per Technical Specification Clause 301 for grading-I Material	sqm	3,090	363	11,21,670
		Total for A1.1 (Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.) : Carried Forward to Bill Summary				19,19,33,725
A1.2		Sub Base Course				
A1.2.01	4.1 A (i)	Granular Sub-base with Close Graded Material (Table:- 400-1)Plant Mix Method (Construction of granular sub-base by providing close graded Material,mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401) for grading-I material	cum	32,404	3,632	11,76,91,328
		Total for A1.2 Sub Base Course : Carried Forward to Bill Summary				11,76,91,328
A1.3		Non Bituminous Base Course				
A1.3.01	4.12	Wet Mix Macadam (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)	cum	38,387	4,182	16,05,34,434
		Total for A1.3 Non Bituminous Base Course : Carried Forward to Bill Summary				16,05,34,434
A1.4		Bituminous Base Course				
A1.4.01	5.6 (ii)	Dense Graded Bituminous Macadam (Providing and laying dense bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix 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. 507 complete in all respects.) For Grading-II (19 mm nominal size)	cum	7,399	12,020	8,89,35,980
A1.4.02	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 ko/sqm using mechanical means.)	sqm	1,47,972	37.2	55,04,558
		Total for A1.4 Bituminous Base Course : Carried Forward to Bill Summary				9,44,40,538

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A1.5		Wearing Course				
A1.5.01	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	1,47,148	13.6	20,01,213
A1.5.02	5.8(i)	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 specified grading, premixed with bituminous binder @ 5.4 to 5.6 % 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) For grading-I (13 mm nominal size)	cum	4,415	13,309	5,87,59,235
		Total for A1.5 (Wearing Coat) : Carried Forward to Bill Summary				6,07,60,448
A1.6		Widening and repair of culverts				
A1.6.01	-	-				-
		Total for A1.6 (Widening and repair of culverts) : Carried Forward to Bill Summary				-
A1.7		Hard shoulder				
A1.7.01	4.5	Cementitious base for hard shoulder (Total 3 metre wide including both sides having thickness 200 mm)	cum	9,654	3,632	3,50,63,328
		Total for A1.7 (Hard Shoulder) : Carried Forward to Bill Summary				3,50,63,328

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A2.1	-	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.				
A2.1.01	2.3 (ii) A	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.) by Mechanical Means in area of light jungle	ha	5	39,921	1,99,605
A2.1.02	2.1	Cutting of Trees, including Cutting of Trunks, Branches and Removal (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 mtrs and earth filling in the depression/nit.)				
a	(i)	Girth from 300mm to 600mm	Number	7	440	3,080
b	(ii)	Girth above 600mm to 900mm	Number	9	732	6,588
c	(iii)	Girth above 900mm to 1800mm	Number	11	1,505	16,555
d	(iv)	Girth above 1800mm	Number	9	2,923	26,307
A2.1.03	3.32	Excavation in Hill Area in Soil by Mechanical Means (Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres)	cum	1,37,878	182	2,50,93,796
A2.1.04	3.33	Excavation in Hilly Area in Ordinary Rock by Mechanical Means not Requiring Blasting (Excavation in hilly area in ordinary rock not requiring ballasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres)	cum	1,37,878	257	3,54,34,646
A2.1.05	3.34 - Credit of Rs 500/-	Excavation in Hilly Areas in Hard Rock Requiring Blasting (Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 metres.)	cum	8,357	(89)	(7,43,773)
A2.1.06	3.9 - Credit of Rs 500/-	Excavation in Hard Rock (controlled blasting) with disposal upto 1000 metres (Excavation for roadway in hard rock with controlled blasting by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres)	cum	27,391	(131)	(35,88,221)
A2.1.07	3.17	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)- for Embankment only	cum	2,550	252	6,42,600
A2.1.08	Rate Analysis	Construction of Subgrade and Shoulder 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	7,521	326	24,51,846
A2.1.09	3.19 Case-I	Compacting original ground supporting subgrade (Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.) where Subgrade CBR is more than 8%, 200 mm depth is taken for this item	cum	1,683	83	1,39,689
A2.1.10	4.12' x 0.1'	Preparation of Subgrade in Rocky Formation as per Technical Specification Clause 301 for grading-I Material	sqm	1,140	363	4,14,048
		Total for A2.1 (Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.) : Carried Forward to Bill Summary				6,00,96,766

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A2.2		Granular work (Sub base, Base, Shoulders)				
A2.2.01	4.1 A (i)	Granular Sub-base with Close Graded Material (Table:- 400-1)Plant Mix Method (Construction of granular sub-base by providing close graded Material,mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401) for grading-I material.	cum	3,051	3,632	1,10,81,232
		Total for A2.2 Sub Base Course : Carried Forward to Bill Summary				1,10,81,232
A2.3		Non Bituminous Base Course				
A2.3.01	4.12	Wet Mix Macadam (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)	cum	3,596	4,182	1,50,38,472
		Total for A2.3 Non Bituminous Base Course : Carried Forward to Bill Summary				1,50,38,472
A2.4		Bituminous Base Course				
A2.4.01	5.6 (ii)	Dense Graded Bituminous Macadam (Providing and laying dense bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix 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. 507 complete in all respects.)	cum	691	12,020	83,05,820
A2.4.02	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	13,821	37	5,14,141
		Total for A2.4 Bituminous Base Course : Carried Forward to Bill Summary				88,19,961
A2.5		Wearing Coat				
A2.5.01	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	13,716	14	1,86,538
A2.5.02	5.8(i)	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 specified grading, premixed with bituminous binder @ 5.4 to 5.6 % 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) For grading-I (13 mm nominal size)	cum	411	13,309	54,69,999
		Total for A2.5 (Wearing Coat) : Carried Forward to Bill Summary				56,56,537
A2.6		Hard shoulder				
A2.6.01	4.5	Cementitious base for hard shoulder (Total 3 metre wide including both sides having thickness 200 mm)	cum	979	3,632	35,55,728
		Total for A2.6 (Hard Shoulder) : Carried Forward to Bill Summary				35,55,728

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A6.1		Culverts and associated Protection Works				
A6.1.01	3.13 (i)	Excavation for structures (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 sites and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work.)				
	Case B	Ordinary Soil (Mechanical means)				
(a)		(i) Box Culverts & Retaining walls	cum	3,304	53	1,75,112
(b)		(ii) Protection Works & Catchpits	cum	2,796	53	1,48,188
A6.1.02	3.13 (ii)	Excavation for structures (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 sites and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work.)				
	Case B	Ordinary Rock (Mechanical means)				
(c)		(i) Box Culverts & Retaining walls	cum	3,304	67	2,21,368
(d)		(ii) Protection Works & Catchpits	cum	2,796	67	1,87,332
A6.1.03	3.8 A	Excavation in Hard Rock (blasting prohibited) (Excavation for roadway in hard rock (blasting prohibited) with rock breakers including breaking rock, loading in tippers and disposal within all lifts and lead upto 1000 metres, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.)				
(e)		(i) Box Culverts & Retaining walls	cum	15,418	577	88,96,186
(f)		(ii) Protection Works & Catchpits	cum	13,049	577	75,29,273
A6.1.04	12.8 A	Plain/Reinforced cement concrete in open foundation complete as per drawing and technical specifications PCC grade M-15				
(a)		(i) Box Culverts & Retaining walls	cum	1,915	12,992	2,48,79,680
(b)		(ii) Protection Works & Catchpits	cum	672	12,992	87,30,624
A6.1.05	13.5	Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications.				
		(a) M 25 Grade	cum			0
	G(p) Case-II	(b) M 30 Grade				0
		(i) Box Culverts & Retaining walls	cum	10,118	12,971	13,12,40,578
A6.1.06	(12.40+13.6+14.2)/3	Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation,Sub-structure and superstructure complete as per drawing and technical specifications.				
(a)		(i) Box Culverts	MT	438	90,691	3,97,22,658
(b)		(ii) Retaining walls	MT	169	90,691	1,53,26,779
(c)		(iii) Protection Works & Catchpits	MT	152	90,691	1,37,85,032
A6.1.07	14.11	Approach Slab (RCC M 30 Grade) including reinforcement complete as per drawings and Technical Specification Section 2700.	cum	2,943	16,643	4,89,80,349
A6.1.08	13.10	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.	cum	2,484	3,787	94,06,908
A6.1.09	Rate Analysis	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification	cum	12,493	704	87,95,072
A6.1.10	14.18 (ii)	Providing and fixing 20mm thick compressible fibre board in expansion joint complete as per drawing and technical specification	m	2,402	705	16,93,410
A6.1.11	14.9	Drainage Spouts complete as per drawing and Technical specification.	Number	440	4,716	20,75,040

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A6.1.12	15.2	Boulder apron laid in wire crates (Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10% extra for laps and joints laid with stone boulders weighing not less than 40 kg each.)	cum	4,865	5,768	2,80,61,320
A6.1.13	8.3 (ii)	Printing new letter and figures of any shade (Printing new letter and figures of any shade with synthetic enamel paint black or any other approved colour to give an even shade). English and Roman	Number	5,850	1	5,850
A6.1.14	14.16	Painting on concrete surface (Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease,efflorescence and applying paint @ of 1 litre for 2 Sq.m.)	sqm	1,294	288	3,72,672
A6.1.15	13.8	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 face. Complete as per drawing and Technical specifications.	Number	4,680	730	34,16,400
A6.1.16	12.8 E case-II	RCC/PCC for rigid flooring,buffle pier,blocks,chutes etc.excluding reinforcement complete as per drawings and Technical Specification Section 1700 and 2200				
(a)		(i) Protection Works & Catchpits	cum	3,061	12,178	3,72,76,858
A6.1.17	((5.8*.040) for grading I)+5.14)	Bituminous (Type 2) Wearing Coat as per drawings and Technical Specification Section 2700.	sqm	11,945	1,515	1,80,96,675
		Total for A6.1 (Culverts and associated Protection Works) : Carried Forward to Bill Summary				40,90,23,364

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A8.01		FOUNDATION AND SUBSTRUCTURE				
A8.01.01		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.				
a	12.1 I B	In ordinary soil by Mechanical means upto 3m depth	cum	0	75	-
b	12.1 II B	In ordinary rock(not requiring blasting) by Mechanical means upto 3m depth	cum	0	91	-
c	12.1 IV A	Excavation for Structure (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. Hard rock (blasting prohibited) Mechanical means.	cum	0	1108	-
A8.01.02	12.8 A	Plain/Reinforced cement concrete in open foundation using concrete Mixer complete as per drawing and technical specifications	cum	0	12992	-
A8.01.03	12.8	Plain/Reinforced cement concrete in open foundation using concrete Mixer complete as per drawing and technical specifications				-
a	H case-II	M 35 Grade	cum	0	12380	-
A8.01.04	13.5	Plain/Reinforced cement concrete in sub-structure, complete as per drawing and technical specifications.				
a	F Case-II	M 25 Grade upto 10m height	cum	Nil		-
b	G Case-II	M 30 Grade upto 10m height	cum	Nil		-
c	H(q) Case-II	M 35 Grade upto 10m height	cum	0	14489	-
	H(r) Case-II	M 35 Grade above 10m height	cum	Nil		-
A8.01.05	(12.40+13.6+14.2)/3	Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation, sub-structure and superstructure complete as per drawing and technical specifications	MT	0	90691	-
A8.01.06	12.43 of MORTH Data Book	Boulder Grouted with Cement Mortar (1 : 3) in annular space around footings complete as per drawings and Technical Specification 304 and 2100	cum	0	10532	-
A8.01.07	13.5 A(p)	PCC M-15 in annular space around footings complete as per drawings and Technical Specification 304.1700 and 2100	cum	0	13743	-
A8.01.08	16.4 + 16.5(b) + (16.1)/3 of MORTH Data Book	Preparation of rock foundation surface and filling/sealing of seams with cement grout or mortar complete as per drawings and Technical Specifications Sections 304 and 2806.	sqm	0	354	-
A8.01.09	Market Rate	Carrying out sub soil investigation / confirmatory boreholes at specified foundation locations before commencement of construction complete as per drawings and Technical Specifications section 2400 or as directed by Engineer.				-
a		In Soil/Soft rock	Lm	0	6000	-
b		Hard Rock	Lm	0	8000	-
A8.01.10	12.8 A	Plain/Reinforced cement concrete in open foundation using concrete Mixer complete as per drawing and technical specifications	cum	0	9995	-

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A8.01.11	13.5	Plain/Reinforced cement concrete in sub-structure, complete as per drawing and technical specifications.				-
a	H(r)Case-II	M 35 Grade above 10m height	cum		14753	-
A8.01.12	(12.40+13.6+14.2)/3	Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation, sub-structure and superstructure complete as per drawing and technical specifications	MT		85638	-
A8.01.13	13.8	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 face. Complete as per drawing and Technical specifications	Number	0	730	-
A8.01.14	Rate Analysis	Back filling behind abutment, wing wall and return wall with granular material, complete as per drawing and Technical specification. Granular material	cum	0	704	-
A8.01.15	13.10	Providing and laying of Filter media with granular materials/stone crushed aggregate 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 specifications	cum	0	3787	-
		Total for A8.02 (Foundation+Sub Structure) : Carried Forward to Bill Summary				-
A8.02		SUPER STRUCTURE				
A8.02.01		Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification.				
a	14.1C Case-II (i) (a)	Solid Slab super-structure, RCC grade M30	cum	0	14755	-
A8.02.02	(12.40+13.6+14.2)/3	Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation, sub-structure and superstructure complete as per drawing and technical specifications	MT	0	90691	-
A8.02.03	14.25(i) of MORTH DATA BOOK	Steel Girder for Steel Composite Superstructure including railing and fixing of girder with Bearing complete as per drawings and Technical Specification 1000 and 1900.	MT	0	158829	-
A8.02.04	((5.8*0.40) for grading (1+5.14)	Bituminous (Type 2) Wearing Coat as per drawings and Technical Specification Section 2700.	sqm	0	1515	-
A8.02.05	13.5 F (p) Case-II of MORTH Data Book	40 thk. PCC (M25) finished with 15 thk plaster (1:3) complete as per drawings and Technical Specification.	cum	0	15881	-
A8.02.06		Bearings, of following Type, as per drawings and Technical Specification Section 2000				-
a		Tar Paper Bearings	sqm	0	200	-

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A8.02.07		Expansion Joints, of following Type as per drawings and Technical Specification Section 2600				-
a	14.18 (iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m	m	0	227	-
A8.02.08	14.9	Drainage Spouts complete as per drawing and Technical specification.	Number	0	4716	-
A8.02.09	14.11	Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification	cum	0	16643	-
A8.02.10	(14.6+14.7)/2	Construction of precast RCC railing with cast-in-situ vertical post of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.	Rm	0	2824	-
A8.02.11	8.22 (i) of MORTH Data Book	RCC Crash Barrier (M 40 Grade) excluding cost of reinforcement complete as per drawings and Technical Specification Section 1700 and 2700	cum	0	15609	-
A8.02.12	8.3 (ii)	Printing new letter and figures in English and Roman of any shade with synthetic enamel paint black or any other approved colour to give an even shade. English and Roman	Number	0	1	-
A8.02.13	14.16	Painting on concrete surface (Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 Sq.m.)	sqm	0	288	-
		Total for A8.02 (Super Structure) : Carried Forward to Bill Summary				-
A8.03		APPROACHES (INCLUDING RETAINING WALL)				
A7.08.01		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				
a	12.1 I B	In ordinary soil by Mechanical means upto 3m depth	cum	0	75	-
b	12.1 II B	In ordinary rock(not requiring blasting) by Mechanical means upto 3m depth	cum	0	91	-
e	12.1 IV A	Excavation for Structure(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. Hard rock (blasting prohibited) Mechanical means	cum	0	1108	-
A8.03.02	12.8 A	Plain/Reinforced cement concrete in open foundation using concrete Mixer complete as per drawing and technical specifications	cum	0	12992	-
A8.03.03	12.8	Plain/Reinforced cement concrete in open foundation using concrete Mixer complete as per drawing and technical specifications				-
a	H case-II	M 35 Grade	cum	0	12380	-
A8.03.04	13.5	Plain/Reinforced cement concrete in sub-structure, complete as per drawing and technical specifications.				-

BILL NO- 8: MINOR BRIDGES
PP Road

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
a	H(r)Case- II	M 35 Grade above 10m height	cum	0	14489	-
A8.03.05	(12.40+13 .6+14.2)/ 3	Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation, sub-structure and superstructure complete as per drawing and technical specifications	MT	0	90691	-
A8.03.06	13.8	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 face. Complete as per drawing and Technical specifications	Number	0	730	-
A8.03.07	Rate Analysis	Back filling behind abutment, wing wall and return wall with granular material, complete as per drawing and Technical specification. Granular material	cum	0	704	-
A8.03.08	13.10	Providing and laying of Filter media with granular materials/stone crushed aggregate 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 specifications	cum	0	3787	-
Total for A8.03 (RETAINING WALL) : Carried Forward to Bill Summary						-

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A17.2		Road Side Drain				
A17.2.01	8.2 B' x 1.5	Road side drain (PCC M-20 grade concrete) of minimum opening area as 0.42 sqm	Rm	17,488	1,544	2,70,00,700
A17.2.02	0.88 X 12.8E Case I + 0.16 x 14.10 + 60 x (12.4+13.6+14 2)/3'	Covered RCC Rectangular Drain including Reinforcement complete as per drawing and Technical Specification Sections 300, 1000, 1400,1500,1600, 1700 and as directed by Engineer	Rm	1,225	21,117	2,58,68,325
		Total A17.3 Road Side Drain : Carried Forward to Bill Summary				5,28,69,025
A17.3		Road signs, marking, Km stones, Safety devices etc.				
A17.3a		Pavement Marking				
A17.3a.01	8.13	Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface 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.				
a	8.13	a) Centre line / Edge / Lane / any other marking	sqm	6,930	3,435	2,38,04,550
b	8.13*0.86	b) Directional Arrows / Lettering	Number	20	2,954	59,082
		Total A17.4a Pavement Marking : Carried Forward to Bill Summary				2,38,63,632
A17.3b		Crash barrier/W metal crash barrier				
A17.3b.01	8.23.A	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 fittings 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	m	3,445	3,879	1,33,63,155
		Total A17.4b Crash barrier / W Metal Crash Barrier : Carried Forward to Bill Summary				1,33,63,155
A17.3c		Traffic Signs				
A17.3c.01	8.4	Retro- reflectorised Traffic signs Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of encapsulated lens type reflective 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	Number	-		
	(ii)	60 cm equilateral triangle	Number	154	4,666	7,18,564
	(iii)	60 cm circular	Number	36	5,757	2,07,252
	(iv)	80 mm x 60 mm rectangular	Number	-		-
	(v)	60 cm x 45 cm rectangular	Number	13	5,645	73,385
	(vi)	60 cm x 60 cm square	Number	-		-
	(vii)	90 cm high octagon	Number	-		-
	Rate Analysis	90 cm Circular	Number	-		-
	(vii)*2/3	60 cm high octagon	Number	18	6,065	1,09,176
	(v)*0.5/0.45	60 cm x 50 cm Chevron Sign	Number	722	6,272	45,28,544

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A17.3c.02	8.5	Direction and Place Identification signs upto 0.9 sqm size board. Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective 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	sqm	38	12,215	4,64,170
A17.3c.02	8.6	Direction and Place Identification signs with size more than 0.9 sqm size board. Providing and erecting direction and place identification retro-reflectorised sign as per IRC :67 made of encapsulated lens type reflective sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm, 2 Nos. firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing	sqm	3	21,458	64,374
		Total A17.3c Traffic Signs : Carried Forward to Bill Summary				61,65,465
A17.3d		Road Boundary stone, km Stone, 5th km stone and hectometer stone				
A17.3d.01	8.14	Kilo Metre Stone Reinforced cement concrete M15 grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc				
	(i)	5th kilometre stone (precast)	Number	3	7,400	22,200
	(ii)	Ordinary Kilometer stone (Precast)	Number	16	4,644	74,304
	(iii)	Hectometer stone (Precast)	Number	80	1,079	86,320
A17.3d.02	8.16	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	Number	199	1,449	2,88,351
A17.3d.03	Rate analysis	Rumble Strips Complete as per Technical Specification Clause A-5	sqm	75	130	9,750
		Total A17.3d Road Boundary stone, km Stone, 5th km stone and hectometer stone: Carried Forward to Bill Summary				4,80,925
A17.3e		Traffic blinker LED delineator, stud, reflective payment marker, tree reflector				
A17.3e.01	8.15	Road Delineators Supplying and installation of delineators (road way indicators, hazard markers, object markers), 80-100 cm high above ground level, painted black and white in 15 cm wide stripes, fitted with 80 x 100 mm rectangular or 75 mm dia circular reflectorised panels at the top, buried or pressed into the ground and conforming to IRC-79 and the drawings.	Number	1,559	1,270	19,79,930
A17.3e.02	8.35	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	Number	10,000	2,331	2,33,10,000
A17.3e.03	8.4 (v)	Retro- reflectorised Traffic signs (Providing and fixing of retro- reflectorised cautionary, mandatory and informative sign as per IRC :67 made of encapsulated lens type reflective 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)	Number	246	5,645	13,88,670
		Total A17.4e Traffic blinker LED delineator, stud, reflective payment marker, tree reflector: Carried Forward to Bill Summary				2,66,78,600

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
		-				-
		Total A17.4f Traffic impact Attenuators at Abutments and Piers traffic island: Carried Forward to Bill Summary				-
A17.3f		Road furniture (overhead signboard etc.)				
A17.3f.01		Overhead Signs Providing and erecting overhead signs with a corrosion resistant aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans				
a	8.7 A	Truss and Vertical Support	MT	3	1,07,540	3,22,620
b	8.7 B	Aluminium alloy plate for over head sign	sqm	20	5,358	1,07,160
c	12.1 I B	Excavation for Structure (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.) Ordinary Soil(Mechanical means) Depth upto 3 m	cum	15	75	1,125
d	12.1 II B	Excavation for Structure (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.) Ordinary rock(not required blasting) Depth upto 3 m (Mechanical means)	cum	15	91	1,365
e	12.8 A	Plain/Reinforced cement concrete in open foundation complete as per drawing and technical specifications PCC grade M-15	cum	2	12,992	25,984
f	12.8 E case -II	Plain/Reinforced cement concrete in open foundation complete as per drawing and technical specifications RCC M-25	cum	8	12,178	97,424
g	(12.40 +13.6+14.2)/3	Steel Reinforcement Fe 500D in Foundation, Substructures Superstructure etc. complete as per drawings and Technical Specification Section 1600	MT	1	90,691	90,691
		Total A17.3f Road furniture (overhead signboard etc.): Carried Forward to Bill Summary				6,46,369
A17.4		Project Facilities				
A17.4a		Truck Laybye				
		-				-
		Total A17.5a: Truck Laybye : Carried Forward to Bill Summary				-
A17.4b		Bus Bye and Bus Shelter				
A17.4b.01	Rate Analysis	Bus Bay Shelter (As per Drawing)	Number	6.00	5,31,000	31,86,000
		Total A17.5b: Bus Bye : Carried Forward to Bill Summary				31,86,000
A17.4c		Junctions (Major & Minor)				
A17.4c.01	Rate Analysis	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	5,773	334	19,28,182
A17.4c.02	4.2	Granular Sub-base with Close Graded Material (Table:- 400-1) Plant Mix Method (Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401) for grading-I	cum	1,735	3,632	63,01,520

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A17.4c.03	4.12	Wet Mix Macadam (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)	cum	2,169	4,182	90,70,758
A17.4c.04	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	8,675	37	3,20,975
A17.4c.05	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	8,675	14	1,21,450
A17.4c.06	5.6 (ii)	Dense Graded Bituminous Macadam (Providing and laying dense bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix 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. 507 complete in all respects.) For Grading-II(19 mm nominal size)	cum	434	12,020	52,16,680
A17.4c.07	5.8(i)	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 specified grading, premixed with bituminous binder @ 5.4 to 5.6 % 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) For grading-I (13 mm nominal size)	cum	260	13,309	34,60,340
A17.4c.08	8.2	Cast in Situ Cement Concrete M 20 Kerb Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCC M20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408				
	B	Using Concrete Batching and Mixing Plant	m	547	1,029	5,62,863
A17.4c.09	8.2	Cast in Situ Cement Concrete M 20 Kerb with Channel Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCC M20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408				
	B	Using Concrete Batching and Mixing Plant	metre	1,225	1,029	12,60,525
A17.4c.10	4.13	Construction of Median and Island with soil taken from	Cum	341	484	1,65,044
		Total A17.4c: Junctions (Major & Minor) : Carried Forward to Bill Summary				2,84,08,337
A17.4d		Others including Cable duct & Lighting on Bridges, etc.				
A17.4d.01		Others including Cable duct & Lighting on Bridges, etc.				-
		Total A17.4d: Others including Cable duct & Lighting on Bridges, etc.: Carried Forward to Bill Summary				-
A17.4e		Rest Areas including View point/recreational areas				
A17.4e.01	Rate Analysis	View Point / Recreational Areas as per Technical Specification Clause A-3.	Number	-	1,03,721	-
		Total A17.5e: Rest Areas including view pont/recreational areas: Carried Forward to Bill Summary				-

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A17.8		Slope Protection Works as special requirement for hill road				
A17.8a		Hydroseeding				
A17.8a.01	Market rate	Hydro Seeding of Cut Slopes in Soil	sqm	58,247	20	11,64,940
		Total A17.8a: Hydroseeding : Carried Forward to Bill Summary				11,64,940
A17.8b		Seeding and Mulching with Jute net all along the perpetual slide locations				
A17.8b.01	3.23	Seeding and Mulching (Preparation of seed bed on previously laid top soil, furnishing and placing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of 0.23 litres per sqm and laying and fixing jute netting, including watering for 3 months all as per clause 308)	sqm	1,38,954	371	5,15,51,934
		Total A17.8a: Seeding and Mulching: Carried Forward to Bill Summary				5,15,51,934
A17.10c		Catch water drain				
A17.8c.01	3.24 A	Surface Drains in Soil : Catch Water Drain Construction of unlined surface drains of average cross sectional area 0.40 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 metres (average lead 25 metres)	m	19,020	74	14,07,480
		Total A17.8c: Catchwater Drain : Carried Forward to Bill Summary				14,07,480
A17.8d		Gabion Structure on hill side/valley side of varying height between 1 to 6 metre depending upon the slope				
A17.8d.01		Excavation for Gabion wall as per drawings and Technical Specification				
a)	3.13 (i)	Excavation for structures (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 sites and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work.)				
	Case B	Ordinary Soil (Mechanical means)	cum	7,667	53	4,06,351
b)	3.13 (ii)	Excavation for structures (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 sites and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work.)				
	Case B	Ordinary Rock (Mechanical means)	cum	7,667	67	5,13,689
c)	3.8 A	Excavation in Hard Rock (blasting prohibited) (Excavation for roadway in hard rock (blasting prohibited) with rock breakers including breaking rock, loading in tippers and disposal within all lifts and lead upto 1000 metres, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.)	cum	35,780	577	2,06,45,060
A17.8d.02	Rate Analysis	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification	cum	23,805	704	1,67,58,720
A17.8d.03	15.12	Gabion Structure for Retaining Earth (Providing and construction of a gabion structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire)	cum	36,686	6,159	22,59,49,074

Item No	Ref : SOR 2016-17	Descriptions	Unit	Estimated Quantity	Rate (Rs.)	Amount (Rs.)
A17.8d.04	16 x (7.5 (ii) A Type-5)+ 7.5(i) + 0.01x(12.8 B)	Facia panels as per Technical Specification Section 3105 including soil reinforcing element, foundation pad, coping beam, all accessories, consumables and components of drainage system (filter media, drainage layer, drain pipe, catch pit etc.), including ground improvement complete.	sqm	-	13,003	-
		Total A17.8d: Gabion wall : Carried Forward to Bill Summary				26,42,72,894
A17.8e		Reinforced earth wall				
A17.8e.01		Excavation for RE wall as per drawings and Technical Specification				
a)	3.13 (i)	Excavation for structures (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 sites and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work.)				
	Case B	Ordinary Soil (Mechanical means)	cum	-	53	-
b)	3.13 (ii)	Excavation for structures (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 sites and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work.)				
	Case B	Ordinary Rock (Mechanical means)	cum	-	67	-
c)	3.8 A	Excavation in Hard Rock (blasting prohibited) (Excavation for roadway in hard rock (blasting prohibited) with rock breakers including breaking rock, loading in tipper and disposal within all lifts and lead upto 1000 metres, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.)	cum	-	577	-
A17.8e.02	Rate Analysis	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification	cum	-	704	-
		Total A17.8e: Reinforced earth Wall : Carried Forward to Bill Summary				-
A17.8f		Breast wall				
A17.8f.01	12.8	Plain/ Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. Including steel shuttering formwork PCC Grade M15	cum	590	12,992	76,65,280
A17.8f.02	13.4	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications in Random Rubble Masonary 1:6	cum	3,510	11,226	3,94,03,260
		Total A17.8f: Breast Wall : Carried Forward to Bill Summary				4,70,68,540
A17.8g		Sub Surface drain with perforated pipe for collection of seepage water to avoid sinking				
A17.8g.01	3.27	Sub Surface Drains with Perforated Pipe (Construction of subsurface drain with perforated pipe of 100 mm internal diameter of metal/ asbestos cement/ cement concrete/PVC,	m	420	4,038	16,95,960
A17.8g.02	3.28	Aggregate Sub- Surface Drains (Construction of aggregate sub surface drain 300 mm x 450 mm with aggregates conforming to table 300-4, excavated material to be utilised in	m	2,394	2,095	50,15,430
		Total A17.8g: Subsurface drain : Carried Forward to Bill Summary				67,11,390
A17.8h		Parapet Wall				
A17.8h.01	13.4	Gabion Parapet Wall as per drawing and technical specification	cum	1,480	6,159	91,15,320
		Total A17.8h: Parapet Wall : Carried Forward to Bill Summary				91,15,320

