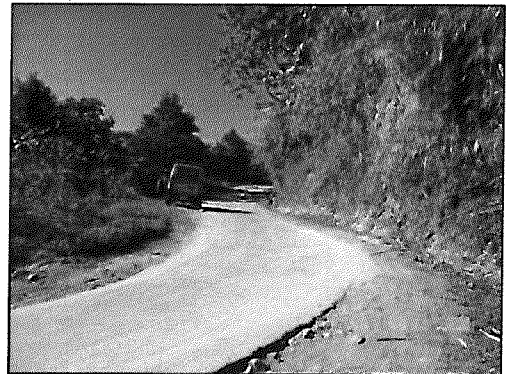
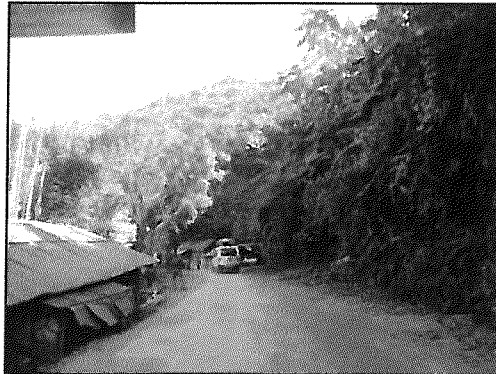




**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (NHIDCL)**

**Ministry of Road, Transport & Highways
Government of India**

3rd Flr, PTI Building, 4 Parliament Street, New Delhi 11001,



Consultancy Services for preparation of Feasibility Study and Detailed Project Report for Two laning of Joram - Koloriang Road (NH-713) from Km. 20.00 to Km. 70.00 & Km. 138.00 to Km. 158.00 (Total Length 70 Km) in the State of Arunachal Pradesh on EPC mode

DETAILED PROJECT REPORT

Volume VII -Cost Estimate

(Package III: km 44+000 - km 59+363)

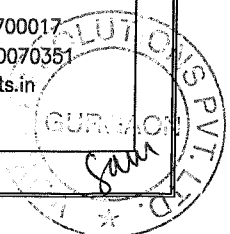
Revision : R0, September 2016

VOYANTS SOLUTIONS PVT LTD.



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ABSTRACT OF COST : PACKAGE- III (KM 44+000 to KM 59+363)

Sl. No	Description	Weightage in percentage to the Contact Price	Amount (in RS)	percentage Weightage vis a vis Overall Project Cost	References
	Design Length in Km	15.363			
	A- Widening and strengthening of existing road				
Road works including culverts, minor bridges, underpasses, overpasses, approaches to ROB/RUB/ Major Bridges/ Structures	(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.	74.18%	310392536	18.94%	Bill 1a,1b,1d,1e
	(2) Granular work (sub- base, shoulders)		57298638	3.50%	Bill 1a,1b,1d,1e
	(3) Bituminous work				
	a)DBM		69034849	4.21%	Bill 1a,1b,1d,1e
	b)BC with Tack coat and prime coat		37585134	2.29%	Bill 1a,1b,1d,1e
	c) Site Clearance		0	0.00%	Bill 1a,1b,1d,1e
	(4)Widening and repair of culvert		140000	0.01%	
	B - New 2-Lane alignment				
	(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.		326237944	19.91%	Bill 1c
	(2) Granular work (sub- base, shoulders)		78191619	4.77%	Bill 1c
	(3) Bituminous work				
	a)DBM		92164181	5.63%	Bill 1c
	b)BC with Tack coat and prime coat		50226051	3.07%	Bill 1c
	c)Site Clearance		0	0.00%	Bill 1c
	C- New culverts, minor bridges, underpasses, overpasses on existing road, realignments, bypasses:				
	(1)Box / Slab culvert		122023750	7.45%	Bill 4
	(2) Minor Bridge		72137970	4.40%	Bill 2
	D-Other Engineering Works				
	Road Appurtenances		640563	0.04%	Bill 9
	Protection Work (Rip-rap)		2583040	0.16%	Bill 10
Other Works	Road side drain & toe wall	25.82%	101696074	6.21%	Bill 10
	Traffic Sign		715900	0.04%	Bill 9
	Pavement Marking		6055356	0.37%	Bill 9
	Crash barrier/W metal crash barrier		10675657	0.65%	Bill 10
	Boundary stone, km Stone,5th km stone and hectometer stone		144871	0.01%	Bill 10
	Traffic blinker LED delineator,stud,reflective payment marker, tree reflector		513917	0.03%	Bill 10
	Bus bays and Bus Shelter		726312	0.04%	Bill 6
	Minor Junction		13723609	0.84%	Bill 5
	Overhead Sign board		313047	0.02%	Bill 10
	Vativer Plantation(Hydro seeding and Mulching)		0	0.00%	Bill 10
	Plantation		30384620	1.85%	Bill 10
	Road side drain		17936352	1.09%	Bill 10
	Maintanance of existing road		0	0.00%	Bill 11
	Truck layby		1435204	0.09%	Bill 7
	Passing Places		1018039	0.06%	Bill 8
	Breast Wall		204583917	12.49%	Bill 10
	Retaining Wall		15333363	0.94%	Bill 10
	Breast Wall Sausage Type		0	0.00%	Bill 10
	Parapet		14518656	0.89%	Bill 10
A	Civil Cost		1638431160	163.84	
	Cost/KM at Civil Cost		106647866	10.66	
B	Contingency Charges @ 2.8% of Civil Cost (A)	2.80%	45876072	4.59	
C	SUB TOTAL (A+B)		1684307232	168.43	
D	Supervision @ 3% on C	3.00%	50529217	5.05	
E	Agency Charges @ 3% on C	3.00%	50529217	5.05	
F	Quality Control @ 0.25 % on C	0.25%	4210768	0.42	
G	Road Safety Cell Audit Charges @ 0.25% on C	0.25%	4210768	0.42	
H	Sub-Total (C+D+E+F+G)		1793787202	179.38	
I	Maintenance for 4 years @ 5% on C	5.00%	84215362	8.42	
J	Escalation @ 5% per annum for 3 years on C	5.00%	252646085	25.26	
K	Grand Total (H+I+J)		2130648649	213.06	
	Cost of Land Acquisition etc.		8391000	0.84	
	Solatium Charges @ 30% on land value		2517300		
	Establishment Charges @ 8% on land value		671280		
	Contingency Charges @ 2% on land value		167820		
	Total Cost of Land Acquisition etc.		11747400		
	Total Cost of R&R		7500000		
	Shifting of Utility Service		6061000	0.61	
	Environment Cost		6061000	0.61	
	Total Cost		2162018049	216.20	
	Cost/KM at Total Cost		140728897	14.07	



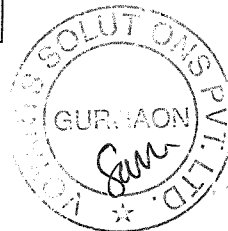
BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
Bill No. 1a :	TCS I Typical Cross Section of 2 Lane CM(Mountainous Terrain with Retaining Wall & Parapet)			580.000						
1.01	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.	Sqm	1	580.000	17.500			10150.000	5.25	53329.12
1.02	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									
	a) For Subgrade	Cum	1	580.000	13.000	0.500		3770.000		
	b) For Earthen Shoulder	Cum	1	580.000	0.500	0.370		107.300		
	Total of Subgrade							3877.300	242.00	938306.60
1.03	Construction of lined trapezoidal surface drains (Ref. dwg. VSPL/1438/JK/DFSR/MISC-O5) 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)	Rm	1	580.000			1.792	1039.152	2542.00	2641523.51
1.04	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per	Cum	1	580.000	12.440	0.200		1443.040	1479.00	2134256.16
1.05	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> 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	1	580.000	10.500	0.250		1522.500	1905.00	2900362.50
1.06	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	580.000	10.500			6090.000	33.00	200970.00
1.07	Providing and applying <u>tack coat</u> 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	2	580.000	10.000			11600.000	12.00	139200.00



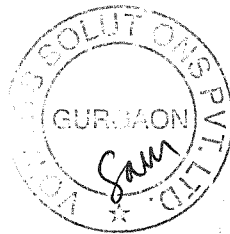
BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
1.08	Providing and laying bituminous concrete 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 @ 5.4 to 5.6 per cent by weight of total 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	1	580.000	10.000	0.040		232.000	13402.00	3109264.00
1.09	Providing and laying dense graded bituminous macadam 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 @ 4.5 to 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	Cum	1	580.000	10.000	0.080		464.000	12009.00	5572176.00
	Total of TCS I									17689387.88
Bill No. 1b :	TCS II Typical Cross Section of 2 Lane C/W(Mountainous Terrain without Retaining and Parapet Wall)			3456.000						
1.01	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.	Sqm	1	3456.000	20.000			69120.000	5.25	363163.39
1.02	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									
	a) For Subgrade	Cum	1	3456.000	14.640	0.500		25297.920		
	b) For Earthen Shoulder	Cum	2	3456.000	1.990	0.370		5089.306		
	Total of Subgrade									7353708.60
1.03	Construction of lined trapezoidal surface drains (Ref. dwg. VSPL/1438/JK/DFSR/MISC-O5) 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)	Rm	1	3456.000			1.792	3456.000	2542.00	8785152.00



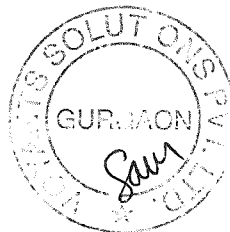
BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
1.04	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per	Cum	1	3456.000	12.910	0.200		8923.392	1479.00	13197696.77
1.05	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> 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	1	3456.000	10.500	0.250		9072.000	1905.00	17282160.00
1.06	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical broom.	Sqm	1	3456.000	10.500			36288.000	33.00	1197504.00
1.07	Providing and applying <u>tack coat</u> 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	2	3456.000	10.000			69120.000	12.00	829440.00
1.08	Providing and laying <u>bituminous concrete</u> 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 @ 5.4 to 5.6 per cent by weight of total 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	1	3456.000	10.000	0.040		1382.400	13402.00	18526924.80
1.09	Providing and laying <u>dense graded bituminous macadam</u> 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 @ 4.5 to 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	Cum	1	3456.000	10.000	0.080		2764.800	12009.00	33202483.20
	Total of TCS II									100738232.76
Bill No.1C:	TCS III (Typical Cross Section of Realignment By Hill Cutting)			9164.000						



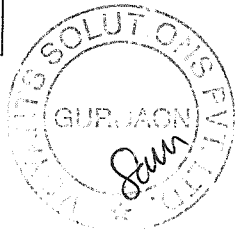
BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
1.01	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.	Sqm	1	9164.000	20.500			187862.000	5.25	987045.73
1.02	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									
	a) For Subgrade	Cum	1	9164.000	0.000	0.500		0.000		
	b) For Earthen Shoulder	Cum	1	9164.000	0.500	0.370		1695.340		
	Total of Subgrade							1695.340	242.00	410272.28
	c) Loosening, leveling and Compacting original ground supporting embankment / Subgrade to facilitate placement of first layer of embankment / Subgrade, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 for GSB construction.	Sqm	1	9164.000	14.500	0.150		19931.700	63.00	1255697.10
1.03	Construction of lined trapezoidal surface drains (Ref. dwg. VSPL/1438/JK/DFSR/MISC-O5) 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)	Rm	2	9164.000			1.792	18328.000	2542.00	46589776.00
1.04	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per	Cum	1	9164.000	11.940	0.200		21883.632	1479.00	32365891.73
1.05	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	1	9164.000	10.500	0.250		24055.500	1905.00	45825727.50
1.06	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	9164.000	10.000			91640.000	33.00	3024120.00



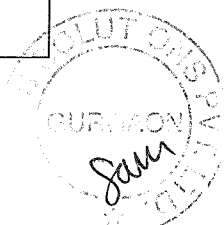
BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
1.07	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	2	9164.000	10.000			183280.000	12.00	2199360.00
1.08	Providing and laying bituminous concrete 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 @ 5.4 to 5.6 per cent by weight of total 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	1	9164.000	10.000	0.040		3665.600	13402.00	49126371.20
1.09	Providing and laying dense graded bituminous macadam 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 @ 4.5 to 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	1	9164.000	10.000	0.080		7331.200	12009.00	88040380.80
	Total of TCS III									269824642.34
Bill No. 1 d :	TCS IV (Typical Cross Section at Built up Strech)			2163.000						
1.01	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.	Sqm	1	2163.000	14.000			30282.000	5.25	159104.66
1.02	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									
a) For Subgrade		Cum	1	2163.000	0.000	0.500		0.000		
b) For Earthen Shoulder		Cum	2	2163.000	0.000	0.000		0.000		
	Total of Subgrade							0.000	242.00	0.00



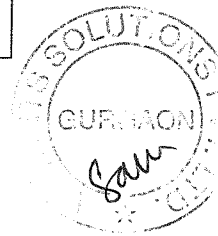
BILL OF QUANTITIES

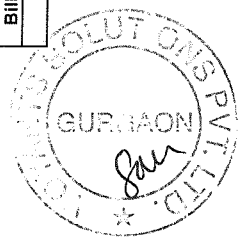
Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
1.03	Loosening, leveling and Compacting original ground supporting embankment / Subgrade to facilitate placement of first layer of water at OMC and then compacted by rolling so as to achieve minimum dry density for GSB construction.	Sqm	0	2163.000	10.000	0.150		3244.500	63.00	204403.50
1.03	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per	Cum	1	2163.000	10.000	0.200		4326.000	1479.00	6398154.00
1.04	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	1	2163.000	10.000	0.250		5407.500	1905.00	10301287.50
1.05	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	2163.000	10.000			21630.000	33.00	713790.00
1.06	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	2	2163.000	10.000			43260.000	12.00	519120.00
1.07	Providing and laying bituminous concrete 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 @ 5.4 to 5.6 per cent by weight of total 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	1	2163.000	10.000	0.040		865.200	13402.00	11595410.40
1.08	Providing and laying dense graded 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 @ 4.5 to 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	1	2163.000	10.000	0.080		1730.400	12009.00	20780373.60
1.09	Providing RCC Covered Drain	Rm	2	2163.000				4326.000	10097.00	43679622.00
	Total of TCS IV									94351265.66



BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
Bill No. 1 e :	Extra Widening									
1.01	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.	Sqm	1				6586.000	6586.000	5.25	34603.50
1.02	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									
	(i) Ordinary Soil	Cum	1				6586.000	5598.100	78.00	436651.80
	(ii) Ordinary Rock	Cum						658.600	302.00	198897.20
	(iii) Hard Rock without Blasting	Cum						197.580	460.00	90886.80
	(iv) Hard Rock with Control Blasting	Cum						131.720	383.00	50448.76
1.03	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									
a)	For Subgrade	Cum	1			0.500	6586.000	3293.000	242.00	796906.00
	Total of Subgrade									
1.04	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1			0.200	6586.000	1317.200	1479.00	1948138.80
1.05	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> 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	Cum	1			0.250	6586.000	1646.500	1905.00	3136582.50
1.06	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1			0.000	6586.000	6586.000	33.00	217338.00
1.07	Providing and applying <u>tack coat</u> 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	2			0.000	6586.000	13172.000	12.00	158064.00



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10 of 27

BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
5.07	Providing and laying dense graded 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 per cent by weight of total 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	1			0.075	5700.000		12009.00	5133848.00
5.08	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 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	1			0.040	5700.000		13402.00	3055656.00
	TOTAL OF BILL NO. - 5									13723600.00

Bill No. 6 :	Bus Bays (0 Nos), BUS SHELTERS(02 Nos.)									
6.01	Bus Shelters	Nos.	2					2.000	110000.00	220000.00
6.02	Chequered Tiles	Sqm	2	76.000	1.500			228.000	1146.00	261288.00
6.03	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	Rm	4	76.000				304.000	806.00	245024.00
	TOTAL OF BILL NO. - 7									726312.00
Bill No. 7 :	Truck Lay bye (1 No.)	Sqm	881.250							
7.01	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.	Sqm	1				881.250	882.000	5.25	4634.00



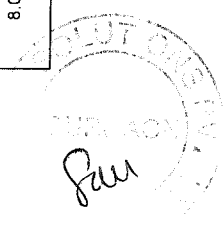
BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
7.02	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 to match link road profile	Cum	1			0.750	881.250	661.000	78.00	51658.00
7.03	Construction of embankment with approved materials deposited at site <u>from roadway cutting and excavation</u> from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	1			0.600	881.250	529.000	116.00	61364.00
7.04	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	1			0.400	881.250	353.000	242.00	85426.00
7.05	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1			0.200	881.250	177.000	1479.00	261783.00
7.06	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> 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	1			0.250	881.250	221.000	1905.00	421005.00
7.07	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1				881.250	882.000	33.00	29106.00
7.08	Providing and applying <u>tack coat</u> 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	2				881.250	1763.000	12.00	21156.00
7.09	<u>Dry Lean Cement Concrete Sub- base</u> (Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 1	Cum	1			0.150	881.250	133.000	0.00	0.00
7.10	<u>Cement Concrete Pavement</u> (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exc	Cum	1			0.340	881.250	300.000	0.00	0.00



BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
7.11	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	Rm	1	185.841				186.000	802.00	149172.00
7.12	Misc Items Like Tiles, Crash barriers, Road Markings etc	LS	1					1.000	350000.00	350000.00
TOTAL OF BILL NO. - 8										
Bill No. 8 :	Passing Places (1No.....@every 3km)	Sqm	2	235.000						
8.01	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.	Sqm	1				470.000	470.000	5.25	2469.00
8.02	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 to match link road profile	Cum	1			0.750	470.000	353.000	78.00	27534.00
8.03	Construction of embankment with approved materials deposited at site <u>from roadway cutting and excavation</u> from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	1			0.600	470.000	282.000	116.00	32712.00
8.04	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	1			0.400	470.000	188.000	242.00	45496.00
8.05	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1			0.200	470.000	94.000	1479.00	139026.00
8.06	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> 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	1			0.250	470.000	118.000	1905.00	224790.00
8.07	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1				470.000	470.000	33.00	15510.00

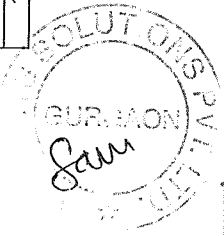


BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
8.08	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	2				470.000	940.000	12.00	11280.00
8.09	Dry Lean Cement Concrete Sub- base (Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 1	Cum	1			0.150	470.000	71.000	0.00	0.00
8.10	Cement Concrete Pavement (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exc	Cum	1			0.340	470.000	160.000	0.00	0.00
8.11	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	Rm	2	105.341				211.000	802.00	169222.00
8.12	Misc Items Like Tiles, Crash barriers, Road Markings etc	LS	1					1.000	350000.00	350000.00
TOTAL OF BILL NO. - 8										

Bill No - 9	Traffic Signages, Road Marking and other appurtenances			15363.000						
9.01	Road Marking: - Lane, Centre Line, Pedestrian crossing									
	Centre line on straight portion	Sqm	0.66	12290.400	0.150	-		1216.750		
	Centre line on curve portion	Sqm	1	3072.600	0.150	-		460.890		
	Edge Line at Paved Shoulder	Sqm	4	15363.000	0.100	-		6145.200		
	Add 15% for Misc. including Pedestrian X-ings etc							1173.426		
	Total							8997.000		
9.02	Directional Arrows, letter marking etc.	Nos.						56.000	668.00	6009996.00
9.03	Advance Direction signs size 1800X1200 mm	Nos.						7.000	810.00	45360.00
9.04	Village name boards size 600X900 mm	Nos.						60.000	8528.00	59696.00
9.05	Place Identification signs size 1200X900 mm	Nos.						5.000	2652.00	159120.00
9.06	90 cm Triangle	Nos.						9.000	3630.00	18150.00
9.07	90 cm Octagon	Nos.						9.000	2627.00	23643.00
9.08	Hazard plate 300X900 mm	Nos.						45.000	2689.00	24201.00
9.09	800 x 600 mm Size	Nos.						17.000	2612.00	117540.00
9.10	60 Cm circular	Nos.						75.000	2652.00	45084.00
9.10	Enamel Paint over MSCB	Sqm						965.880	2472.00	185400.00
	TOTAL OF BILL NO. - 10								86.00	83066.00
										6771256.00

Bill No. 10 :	Other Miscellaneous Works									
10.01	Catch Pit (2 x 2 mtrs)	Nos.	10					10.000	0.00	0.00
10.02	Catch Pit above 2 x 2 mtrs.	Nos.	10					10.000	0.00	0.00



BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
10.03	Providing & Maintaining HTMS	Rkm	0							
10.04	Slow Speed Weigh-in- Motion System including Civil work for foundation	No	0					0.000	1200000.00	0.00
10.05	Environmental Management Plan including mitigation / enhancement measures, monitoring, prevention of ribbon development, etc.	Km	0					0.000	2800000.00	0.00
10.06	Supply installation, testing and commissioning of GSM technology based emergency call boxes (SOS Phones) a) Way side equipment(ECB Boxes) with complete in all respect	No	0					0.000	380000.00	0.00
10.07	Supply installation, testing and commissioning of GSM technology based emergency call boxes (SOS Phones) a) Control Room Equipment with complete in all respect	Compl ete Set	0					0.000	380000.00	0.00
10.08	Way Side Amenities	No	0					0.000	3300000.00	0.00
10.09	Traffic Aid Post	LS	0					0.000	5000000.00	0
10.10	Transition Slab at Toll Plazas	Nos	0					0.000	256870.94	0.00
10.11	Parapet	Rm	1	3456.000				3456.000	4201.00	14518656.00
10.12	Breast Wall	Rm	1							0.00
	a) 1.5m height			1420.000					13714.90	19475158.00
	b) 2.0m height			3740.000					16951.00	63396740.00
	c) 3.0m height			3316.000					34364.30	113952018.80
10.13	d) Sausage Type Breast Wall	Rm	0	500.000				500.000	15520.00	7760000.00
	Along High Embankment	LM								
	On Curves <360m		0					0.000		
	At Super elevated Stretch		1	2683.000				2683.000		
	Total		0					2683.000	3979.00	10675657.00
10.14	River Training Works		0							0.00
10.15	Catch water trapezoidal drain (cut ht. >3m)	Rm	1	7056.000				7056.000	2542.00	17936352.00
10.17	Rumble Strips (Provision of 3 nos rumble strips covered with bituminous concrete, 15-20 mm high at center, 250 mm wide placed at 1 m center to center at approved locations to control speed, marked with white strips of road marking paint)	No	40						9780.00	391200.00
10.18	Provision of riprap protection at valley side	Rm		4036.000					640.00	2583040.00
10.19	Hydro seeding and mulching at hill side slope for erosion control	sqm		70560.000					400.00	28224000.00
10.21	Km stone	No		12.000					2888.00	34656.00
10.22	5th km stone	No		3.000					4705.00	14115.00
10.23	Boundary Stone	No		155.000					620.00	96100.00
10.24	Afforestation of trees	No		2135.000					1012.00	2160620.00
10.25	Cantilever Gantry	MT	1	1.500					89442.00	134163.00
10.26	Overhead Gantry	MT	1	3.500					89442.00	313047.00
10.27	Delineator at retaining wall	No	1345.33						382.00	513917.33
10.28	Convex Mirror at sharp curved	No	40						2880.00	115200.00
	TOTAL OF BILL NO. - 11									282294640.00

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BILL OF QUANTITIES

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Area (sqm)	Quantity	Rate	Amount
Bill No. 11 :	Maintenance									
1.1.01	Maintenance of Existing Road	Rm	1	0.000				0.000	5825.00	0.00

Agriculture Area :	Rs. 11 /Sq.m (Jhum Land)	362424.2
Built up Area :	Rs. 86 / Sq.m	51212.12
Fish Land (Standing) :	Rs. 300/ sq.m	

Total Area of acquisition (sqm)	413700
Cost of acquisition	8391000



Item	Description	Unit	Qty	Rate	Amount
	Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately)				
	By Mechanical Means				
	Bituminous course	Cum	4116	328.00	1350048.00
	Granular courses	Cum	8232	267.00	2197944.00
					3547992

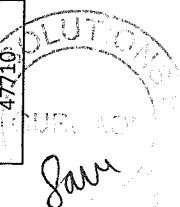
Item	Earth work	Unit	Qty	Rate	Amount
1	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead				
(i)	Ordinary Soil	Cum	254763.89082	78.00	19871583.48
(ii)	Soft rock	Cum	1358740.75	302.00	410339706.81
(iii)	Hard rock(Blasting)	Cum	84921.30	383.00	32524856.73
2	Removal of unserviceable soil including excavation, loading and disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid separately as per clause 305.	Cum	1637214.66	91.00	1489986533.95
3	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	15302.82	201.00	3075866.82
4	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	61211.28	116.00	7100508.48
Total Earthwork Cost					621899056.28

From	To	Length- m	nature of rock	%
138000	145000	7000	Hard Rock	9000
146000	153000	7000	Soft Rock	8000
154000	156000	2000	Hard Rock	
157000	158000	1000	Soft Rock	
Total		20000	ordinary soil	3000
Total fill volume		76,514		
Total cut volume		16,98,426		

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Package:- km 40.000-53.436

Chainage		Breast Wall Height(m)		Chainage		Retaining Wall Height(m)		Length of Breast Wall(m)		Length of Retaining wall(m)	
From	To	Left	Right	From	To	Left	Right				
44000	44050	2	3					50	50	0	0
44110	44150	3	3	44080	44100	0	0	40	40	0	0
44150	44210	0	3	44180	44200	0	0	0	60	0	0
44240	44420	0	2	44230	44340	0	0	0	180	0	0
44420	44630	0	2	44420	44540	0	0	0	210	0	0
44650	44710	2	3	44580	44640	0	0	60	60	0	0
44720	44920	0	2	44720	44790	2	0	0	200	70	0
44960	45130	3	0	44960	45070	0	0	170	0	0	0
45130	45290	1.5	1.5	45310	45430	0	0	160	160	0	0
45450	45510	2	2	45510	45590	0	0	60	60	0	0
45510	45590	1.5	0	45620	45670	0	0	80	0	0	0
45700	45800	1.5	0	45670	45730	0	0	100	0	0	0
45840	45910	2	2	45800	45830	0	0	70	70	0	0
46010	46100	1.5	1.5	45920	46000	0	0	90	90	0	0
46190	46220	2	2	46110	46190	0	0	30	30	0	0
46360	46360	2	2	46230	46360	0	0	0	0	0	0
46580	46660	2	2	46560	46580	0	0	80	80	0	0
46660	46700	1.5	0	46900	46960	0	0	40	0	0	0
46700	46740	3	2	47780	47800	0	0	40	40	0	0
46740	46870	3	3	47800	47810	0	0	130	130	0	0
				47810	47820	0	4	0	0	0	10
46970	47000	0	2	47830	47880	0	3	0	30	0	50
47000	47050		3					0	50	0	0
47050	47200	2	3					150	150	0	0
47200	47300	3	3					100	100	0	0
47300	47380	3	3					80	80	0	0
47380	47410	2	2					30	30	0	0
47410	47450	1.5	1.5					40	40	0	0
47450	47480	2	3					30	30	0	0
47480	47540	3	3					60	60	0	0
47540	47630	1.5	1.5					90	90	0	0
47630	47710	3	2					80	80	0	0
47710	47760	2	2					50	50	0	0



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Chainage			Breast Wall Height(m)			Chainage		Retaining Wall Height(m)		Length of Breast Wall(m)		Length of Retaining wall(m)	
From	To		Left	Right		From	To	Left	Right				
47910	48020		3	0						110	0	0	0
48020	48110		3	1.5						90	90	0	0
48110	48250		3	2						140	140	0	0
48250	48250		3	3						0	0	0	0
48250	48400		3	3						150	150	0	0
						48450	48490	0	0	0	0	0	0
48500	48530		0	3						0	0	0	0
48530	48580		2	3						0	30	0	0
48670	48730		2	3						50	50	0	0
48750	48850		0	2						60	60	0	0
48850	48950		0	2		48850	48880	0	0	0	100	0	0
48950	48970		0	2		49120	49230	2	0	0	100	0	0
						49250	49370	0	0	0	20	110	0
						49390	49420			0	0	0	0
49420	49650		0	2						0	0	0	0
						49650	49670	2	0	0	230	0	0
						49670	49690	3	0	0	0	20	0
49720	49760		1.5	2						40	40	0	0
49760	49840		2	3						80	80	0	0
49840	49890		1.5	3						50	50	0	0
49890	49960		2	3						70	70	0	0
						49980	50000	2	0	0	0	20	0
50020	50020		2	3						0	0	0	0
50070	50100		1.5	3						30	30	0	0
50100	50170		2	3						70	70	0	0
50170	50230		3	3						60	60	0	0
						50230	50270	0	0	0	0	0	0
50270	50320		0	3		50290	50310	0	0	0	50	0	0
50400	50480		0	3		50340	50460	0	0	0	80	0	0
50510	50580		0	2		50580	50630	2	0	0	70	50	0
50620	50750		0	2		50670	50960	0	0	0	130	0	0
50960	50980		2	3						20	20	0	0
50980	51080		3	3						100	100	0	0
						51080	51180	0	0	0	0	0	0
51180	51270		2	3		51270	51390	0	0	90	90	0	0

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Chainage			Breast Wall Height(m)		Chainage		Retaining Wall Height(m)		Length of Breast Wall(m)		Length of Retaining wall(m)	
From	To		Left	Right	From	To	Left	Right				
51390	51460		0	2	51460	51630	2	0	0	70	170	0
					51630	51830	0	0	0	0	0	0
					51830	52040	0	0	0	0	0	0
52040	52110		0	2					0	70	0	0
52110	52140		2	3					30	30	0	0
52140	52210		3	3					70	70	0	0
52210	52260		0	2					0	50	0	0
52260	52490		0	1.5					0	230	0	0
52490	52670		2	3	52310	52360	2	0	180	180	50	0
52670	52950		0	2	52680	52680	0	0	0	280	0	0
52950	52990		2	3	52840	52870	0	0	40	40	0	0
52990	53070		0	2	52950	53020	0	0	0	80	0	0
53070	53346		0	3	53070	53346	0	0	0	276	0	0
									3440	5536	510	60
Breast Wall Left Side			Sausage Wall		Retaining Wall		Length					
Breast Wall 1.5m	1.5	1420					Retaining Wall 1m	1	0			
Beast Wall 2m	2	3740		500			Retaining Wall 2m	2	490			
Breast wall 3m	3	3316					Retaining Wall 3m	3	70			
							Retaining Wall 4m	4	10			

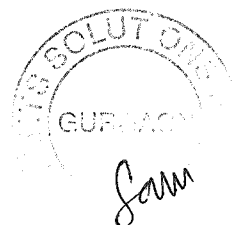
SCHEDULE OF TYPICAL CROSS SECTIONS OF NH-713

S.NO.	EXISTING CHAINAGE		DESIGN CHAINAGE		LENGTH (m)	Final	TYPE TCS	Remarks / Location
	FROM	TO	FROM	TO				
			44000	44080	80	80	3	Realignment
			44080	44100	20	20	2	Reconstruction and widening
			44100	44180	80	80	3	Reconstruction and widening
			44180	44200	20	20	2	Reconstruction and widening
			44200	44230	30	30	3	Reconstruction and widening
			44230	44340	110	110	2	Reconstruction and widening
			44340	44420	80	80	3	Reconstruction and widening
			44420	44540	120	120	2	Reconstruction and widening
			44540	44580	40	40	3	Reconstruction and widening
			44580	44640	60	60	2	Reconstruction and widening
			44640	44720	80	80	3	Reconstruction and widening
			44720	44790	70	70	1	Reconstruction and widening with Retaining wall
			44790	44960	170	170	3	Reconstruction and widening
			44960	45070	110	110	2	Reconstruction and widening
			45070	45310	240	240	3	Reconstruction and widening
			45310	45430	120	120	2	Reconstruction and widening
			45430	45510	80	80	3	Reconstruction and widening
			45510	45590	80	80	2	Reconstruction and widening
			45590	45620	30	30	3	Reconstruction and widening
			45620	45730	110	110	2	Reconstruction and widening
			45730	45800	70	70	3	Reconstruction and widening
			45800	45830	30	30	2	Reconstruction and widening
			45830	45920	90	90	3	Reconstruction and widening
			45920	46000	80	80	2	Reconstruction and widening
			46000	46110	110	110	3	Reconstruction and widening
			46110	46190	80	80	2	Reconstruction and widening
			46190	46230	40	40	3	Reconstruction and widening
			46230	46360	130	130	2	Reconstruction and widening
			46360	46560	200	200	3	Reconstruction and widening
			46560	46580	20	20	2	Reconstruction and widening
			46580	46900	320	320	3	Reconstruction and widening
			46900	46960	60	60	2	Reconstruction and widening
			46960	47780	820	820	3	Reconstruction and widening
			47780	47810	30	30	2	Reconstruction and widening
			47810	47830	20	20	1	Reconstruction and widening with Retaining wall
			47830	47880	50	50	1	Reconstruction and widening with Retaining wall
			47880	48000	120	120	3	Reconstruction and widening
			48000	48450	450	450	2	Reconstruction and widening
			48450	48490	40	40	2	Reconstruction and widening with Retaining wall
			48490	48500	10	10	2	Reconstruction and widening
			48500	48850	350	350	3	Reconstruction and widening
			48850	48880	30	30	2	Reconstruction and widening
			48880	48950	70	70	3	Reconstruction and widening
			48950	49120	170	170	2	Reconstruction and widening
			49120	49200	80	80	1	Reconstruction and widening with Retaining wall
			49200	49230	30	30	1	Reconstruction and widening with Retaining wall
			49230	49250	20	20	3	Reconstruction and widening
			49250	49370	120	120	2	Reconstruction and widening
			49370	49390	20	20	3	Reconstruction and widening
			49390	49420	30	30	2	Reconstruction and widening
			49420	49650	230	230	3	Reconstruction and widening
			49650	49690	40	40	1	Reconstruction and widening with Retaining wall
			49690	49980	290	290	3	Reconstruction and widening
			49980	50000	20	20	1	Reconstruction and widening with Retaining wall

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S.NO.	EXISTING CHAINAGE		DESIGN CHAINAGE		LENGTH (m)	Final	TYPE TCS	Remarks / Location
	FROM	TO	FROM	TO				
			50000	50230	230	230	3	Reconstruction and widening
			50230	50270	40	40	2	Reconstruction and widening
			50270	50290	20	20	3	Reconstruction and widening
			50290	50310	20	20	2	Reconstruction and widening
			50310	50340	30	30	3	Reconstruction and widening
			50340	50460	120	120	2	Reconstruction and widening
			50460	50580	120	120	3	Reconstruction and widening
			50580	50630	50	50	1	Reconstruction and widening with Retaining wall
			50630	50670	40	40	3	Reconstruction and widening
			50670	50960	290	290	2	Reconstruction and widening
			50960	51080	120	120	3	Reconstruction and widening
			51080	51180	100	100	2	Reconstruction and widening
			51180	51270	90	90	3	Reconstruction and widening
			51270	51390	120	120	2	Reconstruction and widening
			51390	51460	70	70	3	Reconstruction and widening
			51460	51630	170	170	1	Reconstruction and widening with Retaining wall
			51630	52310	680	680	3	Reconstruction and widening
			52310	52360	50	50	1	Reconstruction and widening with Retaining wall
			52360	52675	315	315	3	Reconstruction and widening
			52675	52685	10	10	2	Reconstruction and widening
			52685	52840	155	155	3	Reconstruction and widening
			52840	52870	30	30	2	Reconstruction and widening
			52870	52950	80	80	3	Reconstruction and widening
			52950	53020	70	70	2	Reconstruction and widening
			53020	53070	50	50	3	Reconstruction and widening
			53070	53346	276	276	2	Reconstruction and widening
			53346	53500	154	154	3	Reconstruction and widening
			53500	53700	200	200	2	Reconstruction and widening
			53700	55250	1550	1550	3	Reconstruction and widening
			55250	55400	150	150	2	Reconstruction and widening
			55400	57200	1800	1800	3	Realignment
			57200	59363	2163	2163	4	Built up area

15363



Major Junctions					
S.No.	Junction Type	Nos	Per Junction Area (Sqm)	Total Area	Remarks
	4 legged	0	820	0	
Total				0	1
Minor Junctions					
S.No.	Junction Type	Nos	Per Junction Area (Sqm)	Total Area	Remarks
1	Y/T Junctions	19	300	5700	
Total				5700	2
Total (1+2)				5700	
				5700	



Retaining Wall					
Sl. No	Height	Conc. area(m ²)	Conc. area(m ²)	Earthwork area(m ²)	Avg. Earthwork area(m ²)
1	1m height	2.096	2.096	1.4	1.4
2	2m height	3.189	3.189	1.7	1.7
3	3m height	4.984	4.984	2.2	2.2
4	4m height	6.9365	6.9365	2.55	2.55
		Length	Area	Rate	Amount
1	1m height	0	0	7705.00	0
2	2m height	490	1562.61	7705.00	12039910.05
3	3m height	70	348.88	7705.00	2688120.4
4	4m height	10	69.365	7705.00	534457.325
Earthwork for retaining wall			Area	Rate	Amount
1	1m height	0	1.4	70.00	0
2	2m height	490	1.7	70.00	58310
3	3m height	70	2.2	70.00	10780
4	4m height	10	2.55	70.00	1785
				Total	15333362.78
				Say	15333363

(i) Sausage Wall for 1.0m height			No	L(m)	B(m)	H(m)	Qty(cum)	Rate	Ammount
1	Eartwork in excavation	Cum		1	0.5	1.2	0.60	70.00	42
2	Sausage Wall(0.6 * 1 * 1)	Cum	2	1	1	0.60	1.20	4275.00	5130
									5172
								Say	5180

(ii) Sausage Wall for 2.0m height			No	L(m)	B(m)	H(m)	Qty(cum)	Rate	Ammount
1	Eartwork in excavation	Cum		1	0.5	2	1.00	70.00	70
2	Sausage Wall(0.6 * 1 * 1)	Cum	3	1	1	0.60	1.80	4275.00	7695
									7765
								Say	7770

(iii) Sausage Wall for 3.5m height			No	L(m)	B(m)	H(m)	Qty(cum)	Rate	Ammount
1	Eartwork in excavation	Cum		1	0.5	3.5	1.75	70.00	122.5
2	Sausage Wall(0.6 * 1 * 1)	Cum	6	1	1	0.60	3.60	4275.00	15390
									15512.5
								Say	15520

(iv) Sausage Wall for 5.0m height			No	L(m)	B(m)	H(m)	Qty(cum)	Rate	Ammount
1	Eartwork in excavation	Cum		1	0.5	5	2.50	70.00	175
2	Sausage Wall(0.6 * 1 * 1)	Cum	8	1	1	0.60	4.80	4275.00	20520
									20695
								Say	20700

Sl. No.	Item Description	Unit	Nos	Length	Width	Height	Qty	Rate	Amount	Rate/m
1.	Drain with RCC per m									



Sl. No.	Item Description	Unit	Nos	Length	Width	Height	Qty	Rate	Amount	Rate/m
1. Drain with RCC per m										
a	Earthwork in Excavation									481
	Ordinary Soil	Cum	1	1	1.5	0.6	0.9			862
	Soft Rock	Cum	1	1	1.5	0.6	0.9			2781
							1.8	267.00	481	1589
b	PCC M15 on bottom base	Cum	1	1	1.5	0.075	0.1125	7705.00	867	
c	RCC M20 in Vertical wall M15	Cum	2	1	0.15	1.05	0.315	8873.00	2795	1324
	PCC in Base M15	Cum	1	1	1.2	0.15	0.18	8873.00	1597	2720
							0			
d	Drain Cover RCC M20	Cum	1	1	1.5	0.1	0.15	8873.00	1331	
e	HYSD for Wall & Drain Cover	MT					0.0387	78203.00	3026	10097

(i) Parapet Wall per m										
a	Earthwork in excavation	Cum	1	1	0.75	0.7	0.53	267.00	140.18	
b	PCC M15	Cum	1	1	0.75	0.1	0.08	7705.00	577.88	
c	Rubble Masonry in Par	Cum	1	1	0.6	1.2	0.72	4516.00	3251.52	
d	Coping 5.0 cm thick	Cum	1	1	0.6	0.05	0.03	7705.00	231.15	4201.00

Trapezoidal Lined Drain		Quantity			Rate	Amount
		Area	Thickness	Vol.		
1	PCC M20	1.870	0.150	0.281		
	Total	1.870	0.150	0.281	8441.00	2368
2	Excavation	0.65		0.65	267.00	173.55
	Total					2542.00

		L	B	H	Area	Rate	Amount
Road Maintenance							
	Filling of Potholes with BC	1000	10	0.04	8000	536.08	4288640
	Filling of Potholes with Open Graded Pre	1000	10	0.04	8000	192.00	1536000
					Total for 1km		5824640
					For 1m		5825

Breast Wall					
Concrete Area		Length	Area	Rate	Amount
1	1.5m Height	1950	1.78	7705.00	13714.9
2	2m Height	4270	2.2	7705.00	16951
3	3m Height	4030	4.46	7705.00	34364.3



Extra-Widening								
SL. No	Design Chainage(m)		Length(m)	IRC-SP:73-2105		IRC-SP:48-1998		
				Radius of Curve		Radius of Curve		
	From	To		75-100	101-300	41-60	75-100	101-300
86	44+051.935	44+073.767	0+021.832	-	120	-	-	120
90	44+416.098	44+418.401	0+002.303	80	-	-	80	-
91	44+494.462	44+496.453	0+001.991	-	-	60	-	-
92	44+627.873	44+700.472	0+072.599	-	300	-	-	300
93	44+865.704	44+922.997	0+057.293	-	150	-	-	150
94	45+054.176	45+061.945	0+007.769	-	-	60	-	-
95	45+116.610	45+388.887	0+272.277	97	-	-	97	-
96	45+600.351	45+744.950	0+144.599	70	-	-	70	-
97	45+803.918	45+820.887	0+016.969	90	-	-	90	-
98	45+945.545	45+957.870	0+012.325	-	-	60	-	-
99	46+038.854	46+261.710	0+222.856	-	-	60	-	-
100	46+333.750	46+365.868	0+032.118	-	-	60	-	-
101	46+439.359	46+512.559	0+073.200	-	150	-	-	150
102	46+583.952	46+620.103	0+036.151	-	150	-	-	150
103	46+762.252	46+845.550	0+083.298	-	-	60	-	-
104	46+992.731	47+034.304	0+041.573	-	-	60	-	-
105	47+195.257	47+216.697	0+021.440	-	-	60	-	-
106	47+319.166	47+362.793	0+043.627	-	150	-	-	150
107	47+440.372	47+481.175	0+040.803	-	-	60	-	-
108	47+588.173	47+602.319	0+014.146	-	300	-	-	300
109	47+707.991	47+860.556	0+152.565	-	-	52	-	-
110	47+969.991	48+043.245	0+073.254	-	-	60	-	-
111	48+152.301	48+190.465	0+038.164	-	150	-	-	150
112	48+292.963	48+330.984	0+038.021	-	-	60	-	-
113	48+404.716	48+426.534	0+021.818	-	-	60	-	-
114	48+493.047	48+499.370	0+006.323	-	-	40	-	-
117	48+646.294	48+655.202	0+008.908	-	150	-	-	150
121	48+845.362	48+858.560	0+013.198	-	-	60	-	-
122	48+920.674	48+982.233	0+061.559	-	-	60	-	-
123	49+058.405	49+214.279	0+155.874	-	-	60	-	-
124	49+264.489	49+297.811	0+033.322	-	-	60	-	-
125	49+479.784	49+508.122	0+028.338	-	200	-	-	200
126	49+611.920	49+613.019	0+001.099	70	-	-	70	-
128	49+726.742	49+730.563	0+003.821	75	-	-	75	-
131	49+951.298	49+970.980	0+019.682	-	-	40	-	-
132	50+012.938	50+018.722	0+005.784	-	-	60	-	-
133	50+090.384	50+107.606	0+017.222	-	-	60	-	-
134	50+167.691	50+257.177	0+089.486	-	-	60	-	-
135	50+355.729	50+408.361	0+052.632	-	-	60	-	-
136	50+475.076	50+503.111	0+028.035	-	-	60	-	-
137	50+588.928	50+730.554	0+141.626	-	-	60	-	-
138	50+844.870	50+861.598	0+016.728	-	-	60	-	-
139	50+933.471	50+960.881	0+027.410	-	-	60	-	-
140	51+055.293	51+178.211	0+122.918	-	-	60	-	-
141	51+236.079	51+240.196	0+004.117	90	-	-	90	-
142	51+318.890	51+353.597	0+034.707	90	-	-	90	-
143	51+426.875	51+449.333	0+022.458	-	-	60	-	-
144	51+581.921	51+608.274	0+026.353	-	-	60	-	-
145	51+659.131	51+700.996	0+041.865	-	-	60	-	-
146	51+776.737	51+798.148	0+021.411	-	-	60	-	-
147	51+855.048	51+892.041	0+036.993	-	-	60	-	-
148	51+962.566	51+972.589	0+010.023	90	-	-	90	-



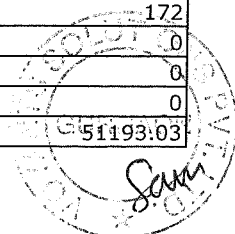
Extra-Widening								
SL. No	Design Chainage(m)		Length(m)	IRC-SP:73-2105		IRC-SP:48-1998		
				Radius of Curve		Radius of Curve		
	From	To		75-100	101-300	41-60	75-100	101-300
149	52+070.918	52+073.296	0+002.378	-	-	60	-	-
150	52+155.528	52+158.609	0+003.081	-	-	60	-	-
151	52+286.155	52+292.783	0+006.628	90	-	-	90	-
152	52+336.215	52+351.699	0+015.484	-	-	60	-	-
153	52+383.617	52+419.043	0+035.426	-	-	60	-	-
154	52+477.663	52+483.116	0+005.453	90	-	-	90	-
155	52+558.930	52+582.359	0+023.429	-	-	60	-	-
156	52+646.647	52+662.344	0+015.697	-	-	60	-	-



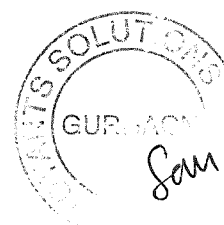
Project : NH-713 (Joram - Palin - Koloriang Road)		Total	Rate	Amount
MNBr. : 56+400 (1x7.0)				
Excavation				
Excavation in Hard Rock	Cum	124.55	640.00	79710.72
Excavation in Weathered Rock	Cum	205.96	190.00	39133.16
Excavation in Soil	Cum	0.00		0
Compacted Sand/Gravel Filling	Cum	0.00		0
Concrete grade M 15 for levelling course	Cum	37.13	7705.00	286086.65
Concrete grade M-15 in Open foundation of Retaining Wall	Cum	124.35	7705.00	958132.16
Concrete grade M-30 in Open foundation	Cum	97.44	9659.00	941172.96
Sand & boulder filling below raft	Cum	0.00		0
Rock anchoring in rock (Open foundation)	No.	0.00		0
Bored cast-in-situ M-35 grade RCC piles 1200mm dia		0.00		0
In soil	RM	0.00		0
Rock Socketing	RM	0.00		0
Concrete grade M-35 in pile cap	Cum	0.00		0
Cutting edge	MT	0.00		0
Curb Concrete (M-25 Grade)	Cum	0.00		0
Bottom Plug Concrete (M-25 Grade)	Cum	0.00		0
Intermediate Plug Concrete(M-25 Grade)	Cum	0.00		0
Well Steining concrete(M-25 Grade)	Cum	0.00		0
Well Top Plug Concrete(M-25 Grade)	Cum	0.00		0
Well cap concrete(M-25 Grade)	Cum	0.00		0
Sand filling in well	Cum	0.00		0
Well Sinking (Measured from well cap top)	Lin.m	0.00		0
7m Dia Well		0.00		0
0-3 m	Lin.m	0.00		0
3 -10 m	Lin.m	0.00		0
10m - 15m	Lin.m	0.00		0
15m - 20m	Lin.m	0.00		0
20m - 25m	Lin.m	0.00		0
25m - 30m	Lin.m	0.00		0
30m - 35m	Lin.m	0.00		0
35m - 40m	Lin.m	0.00		0
8m Dia Well		0.00		0
0-3 m	Lin.m	0.00		0
3 -10 m	Lin.m	0.00		0
10m - 15m	Lin.m	0.00		0
15m - 20m	Lin.m	0.00		0
20m - 25m	Lin.m	0.00		0
25m - 30m	Lin.m	0.00		0
30m - 35m	Lin.m	0.00		0
35m - 40m	Lin.m	0.00		0
10m Dia Well		0.00		0
0-3 m	Lin.m	0.00		0
3 -10 m	Lin.m	0.00		0
10m - 15m	Lin.m	0.00		0
15m - 20m	Lin.m	0.00		0
20m - 25m	Lin.m	0.00		0
25m - 30m	Lin.m	0.00		0
30m - 35m	Lin.m	0.00		0
35m - 40m	Lin.m	0.00		0
11m Dia Well		0.00		0
0-3 m	Lin.m	0.00		0
3 -10 m	Lin.m	0.00		0
10m - 15m	Lin.m	0.00		0
15m - 20m	Lin.m	0.00		0
20m - 25m	Lin.m	0.00		0
25m - 30m	Lin.m	0.00		0
30m - 35m	Lin.m	0.00		0
35m - 40m	Lin.m	0.00		0
Concrete grade M-15 in substructure of Retaining Wall	Cum	158.12	8150.00	1288678
Concrete grade M-30 in substructure	Cum	99.04	10465.00	1036453.6
Back filling	Cum	365.42	1070.00	391000.47
Filter media	Cum	158.30	2365.00	374388.96
RCC in Slab,grade M-30	Cum	94.08	11053.00	1039866.24

Sam

Project : NH-713 (Joram - Palin - Koloriang Road)				
MNBr. : 56+400 (1x7.0)		Total	Rate	Amount
RCC in Slab, grade M-45	Cum	0.00		0
RCC T-Girders concrete, grade M-35	Cum	0.00		0
i)PSC T-Girders concrete, grade M-45	Cum	0.00		0
ii)PSC voided slab concrete, grade M-40	Cum	0.00		0
iii)PSC box concrete, grade M-40	Cum	0.00		0
PSC Plank concrete, grade M-40	Cum	0.00		0
Reinforcement (HYSD Bar)		0.00		0
Foundation	MT	9.74	78203.00	762010.032
Sub-Structure	MT	9.90	78358.00	776057.632
Super-Structure	MT	9.41	79759.00	750372.672
PSC Strands	MT	0.00		0
Void Former "800mm dia"	Lin.m	0.00		0
Structural Steel	MT	0.00		0
RCC Deck slab for Composite Girder M-35	Cum	0.00		0
Elastomeric Bearings	Cucm	0	1.00	0
POT-PTFE Bearings		0.00		0
A. For 100 MT		0.00		0
i)Fixed	No.	0.00		0
ii)Free	No.	0.00		0
iii)Sliding	No.	0.00		0
B. For 200 MT		0.00		0
i)Fixed	No.	0.00	0	0
ii)Free	No.	0.00	0	0
iii)Sliding	No.	0.00	0	0
C. For 300 MT		0.00		0
i)Fixed	No.	0.00		0
ii)Free	No.	0.00		0
iii)Sliding	No.	0.00		0
D. For 400 MT		0.00		0
i)Fixed	No.	0.00		0
ii)Free	No.	0.00		0
iii)Sliding	No.	0.00		0
E. For 500 MT		0.00		0
i)Fixed	No.	0.00		0
ii)Free	No.	0.00		0
iii)Sliding	No.	0.00		0
F. For 600 MT		0.00		0
i)Fixed	No.	0.00		0
ii)Free	No.	0.00		0
iii)Sliding	No.	0.00		0
G. For 700 MT		0.00		0
i)Fixed	No.	0.00		0
ii)Free	No.	0.00		0
iii)Sliding	No.	0.00		0
Tar paper Bearings	Sqm	9.60	450	4320
Seismic Restrainer	Sqm	0.00		0
Approch Slab		0.00		0
M15 grade concrete	Cum	17.52	7409.00	129805.68
M30 grade concrete	Cum	33.60	13378.00	449500.8
RCC in Crash Barrier, Grade M-40	Lin.m	28.00	4892.00	136976
Painting of RCC in Crash Barrier	Cum	0.00		0
Pedestrian Railing	Lin.m	0.00		0
Expansion joint		0.00		0
Strip seal joints(40mm thick)	Lin.m	0.00	18494.00	0
Asphaltic Plug type joints(15mm thick)	Lin.m	32.00	3440.00	110080
Wearing coat	sqm	154.00		0
Drainage spouts	No.	3.00	1220.00	3660
Weep holes	No.	263.00	153.00	40239
RE Wall for across the road	Sqm	0.00		0
Painting of structures	No.	2.00	86.00	172
Raised Footpath M 25 Grade	cum	0.00		0
Unmountable Krebs M25 Grade	cum	0.00		0
Bed Protection Work		0.00		0
Excavation in soil	Cum	384.91	133.00	51193.03



Project : NH-713 (Joram - Palin - Koloriang Road)					
MNBr. : 56+400 (1x7.0)			Total	Rate	Amount
Concrete grade M 15 for levelling course	Cum		10.23	7705.00	78791.33
Rigid Apron	Cum		54.77	1302.00	71307.936
Flexible Apron	Cum		109.89	5810.00	638460.9
Curtain Wall M-15	Cum		67.79	7705.00	522329.655
Guide Bund in Upstream side	Lin.m		0.00		0
Filter media underneath stone pitching	Cum		25.98	2565.00	66631.005
Launching Apron	Cum		0.00		0
Stone Pitching on slopes	Cum		51.95	1252.00	65046.408
Rehabilitation			0.00		0
Dismantling of Rcc Concrete	Cum		0.00		0
Replacement of Railing M-30 Grade	M		0.00		0
Providing Reinforced cement concrete M-30 Grade in approach slab including reinforcement for existing bridge	Cu.m		0.00		0
Providing 75mm thick concrete wearing course	Sq.m		0.00		0
Providing & fixing new drainage spouts in replacement of existing drainage spouts	No.		0.00		0
			OK		11091580



Project : NH-713 (Joram - Palin - Koloriang Road)					
MNBr. : 56+600 (1x7.0)			Total	Rate	Amount
Excavation					
Excavation in Hard Rock	Cum	124.55	640.00	79710.72	
Excavation in Weathered Rock	Cum	205.96	190.00	39133.16	
Excavation in Soil	Cum	0.00		0	
Compacted Sand/Gravel Filling	Cum	0.00		0	
Concrete grade M 15 for levelling course	Cum	37.13	7705.00	286086.65	
Concrete grade M-15 in Open foundation of Retaining Wall	Cum	124.35	7705.00	958132.16	
Concrete grade M-30 in Open foundation	Cum	97.44	9659.00	941172.96	
Sand & boulder filling below raft	Cum	0.00			
Rock anchoring in rock (Open foundation)	No.	0.00		0	
Bored cast-in-situ M-35 grade RCC piles 1200mm dia		0.00		0	
In soil	RM	0.00		0	
Rock Socketing	RM	0.00		0	
Concrete grade M-35 in pile cap	Cum	0.00		0	
Cutting edge	MT	0.00		0	
Curb Concrete (M-25 Grade)	Cum	0.00		0	
Bottom Plug Concrete (M-25 Grade)	Cum	0.00		0	
Intermediate Plug Concrete(M-25 Grade)	Cum	0.00		0	
Well Steining concrete(M-25 Grade)	Cum	0.00		0	
Well Top Plug Concrete(M-25 Grade)	Cum	0.00		0	
Well cap concrete(M-25 Grade)	Cum	0.00		0	
Sand filling in well	Cum	0.00		0	
Well Sinking (Measured from well cap top)	Lin.m	0.00		0	
7m Dia Well		0.00		0	
0-3 m	Lin.m	0.00		0	
3 -10 m	Lin.m	0.00		0	
10m - 15m	Lin.m	0.00		0	
15m - 20m	Lin.m	0.00		0	
20m - 25m	Lin.m	0.00		0	
25m - 30m	Lin.m	0.00		0	
30m - 35m	Lin.m	0.00		0	
35m - 40m	Lin.m	0.00		0	
8m Dia Well		0.00		0	
0-3 m	Lin.m	0.00		0	
3 -10 m	Lin.m	0.00		0	
10m - 15m	Lin.m	0.00		0	
15m - 20m	Lin.m	0.00		0	
20m - 25m	Lin.m	0.00		0	
25m - 30m	Lin.m	0.00		0	
30m - 35m	Lin.m	0.00		0	
35m - 40m	Lin.m	0.00		0	
10m Dia Well		0.00		0	
0-3 m	Lin.m	0.00		0	
3 -10 m	Lin.m	0.00		0	
10m - 15m	Lin.m	0.00		0	
15m - 20m	Lin.m	0.00		0	
20m - 25m	Lin.m	0.00		0	
25m - 30m	Lin.m	0.00		0	
30m - 35m	Lin.m	0.00		0	
35m - 40m	Lin.m	0.00		0	
11m Dia Well		0.00		0	
0-3 m	Lin.m	0.00		0	
3 -10 m	Lin.m	0.00		0	
10m - 15m	Lin.m	0.00		0	
15m - 20m	Lin.m	0.00		0	
20m - 25m	Lin.m	0.00		0	
25m - 30m	Lin.m	0.00		0	
30m - 35m	Lin.m	0.00		0	
35m - 40m	Lin.m	0.00		0	
Concrete grade M-15 in substructure of Retaining Wall	Cum	158.12	8150.00	1288678	
Concrete grade M-30 in substructure	Cum	99.04	10465.00	1036453.6	

Sam

Project : NH-713 (Joram - Palin - Koloriang Road)			Total	Rate	Amount
MNBr. : 56+600 (1x7.0)					
Back filling	Cum	365.42	1070.00	391000.47	
Filter media	Cum	158.30	2365.00	374388.96	
RCC in Slab,grade M-30	Cum	94.08	11053.00	1039866.24	
RCC in Slab,grade M-45	Cum	0.00		0	
RCC T-Girders concrete, grade M-35	Cum	0.00		0	
i)PSC T-Girders concrete, grade M-45	Cum	0.00		0	
ii)PSC voided slab concrete, grade M-40	Cum	0.00		0	
iii)PSC box concrete, grade M-40	Cum	0.00		0	
PSC Plank concrete, grade M-40	Cum	0.00		0	
Reinforcement (HYSD Bar)		0.00		0	
Foundation	MT	9.74	78203.00	762010.032	
Sub-Structure	MT	9.90	78358.00	776057.632	
Super-Structure	MT	9.41	79759.00	750372.672	
PSC Strands	MT	0.00		0	
Void Former "800mm dia"	Lin.m	0.00		0	
Structural Steel	MT	0.00		0	
RCC Deck slab for Composite Girder M-35	Cum	0.00		0	
Elastomeric Bearings	Cucm	0	1.00	0	
POT-PTFE Bearings		0.00		0	
A. For 100 MT		0.00		0	
i)Fixed	No.	0.00		0	
ii)Free	No.	0.00		0	
iii)Sliding	No.	0.00		0	
B. For 200 MT		0.00		0	
i)Fixed	No.	0.00	0	0	
ii)Free	No.	0.00	0	0	
iii)Sliding	No.	0.00	0	0	
C. For 300 MT		0.00		0	
i)Fixed	No.	0.00		0	
ii)Free	No.	0.00		0	
iii)Sliding	No.	0.00		0	
D. For 400 MT		0.00		0	
i)Fixed	No.	0.00		0	
ii)Free	No.	0.00		0	
iii)Sliding	No.	0.00		0	
E. For 500 MT		0.00		0	
i)Fixed	No.	0.00		0	
ii)Free	No.	0.00		0	
iii)Sliding	No.	0.00		0	
F. For 600 MT		0.00		0	
i)Fixed	No.	0.00		0	
ii)Free	No.	0.00		0	
iii)Sliding	No.	0.00		0	
G. For 700 MT		0.00		0	
i)Fixed	No.	0.00		0	
ii)Free	No.	0.00		0	
iii)Sliding	No.	0.00		0	
Tar paper Bearings	Sqm	9.60	450	4320	
Seismic Restrainer	Sqm	0.00		0	
Approch Slab		0.00		0	
M15 grade concrete	Cum	17.52	7409.00	129805.68	
M30 grade concrete	Cum	33.60	13378.00	449500.8	
RCC in Crash Barrier, Grade M-40	Lin.m	28.00	4892.00	136976	
Painting of RCC in Crash Barrier	Cum	0.00		0	
Pedestrian Railing	Lin.m	0.00		0	
Expansion joint		0.00		0	
Strip seal joints(40mm thick)	Lin.m	0.00	18494.00	0	
Asphaltic Plug type joints(15mm thick)	Lin.m	32.00	3440.00	110080	
Wearing coat	sqm	154.00		0	
Drainage spouts	No.	3.00	1220.00	3660	
Weep holes	No.	263.00	153.00	40239	

Sam

Project : NH-713 (Joram - Palin - Koloriang Road)					
MNBr. : 56+600 (1x7.0)			Total	Rate	Amount
RE Wall for across the road	Sqm	0.00			0
Painting of structures	No.	2.00	86.00		172
Raised Footpath M 25 Grade	cum	0.00			0
Unmountable Krebs M25 Grade	cum	0.00			0
Bed Protection Work		0.00			0
Excavation in soil	Cum	384.91	133.00		51193.03
Concrete grade M 15 for levelling course	Cum	10.23	7705.00		78791.33
Rigid Apron	Cum	54.77	1302.00		71307.936
Flexible Apron	Cum	109.89	5810.00		638460.9
Curtain Wall M-15	Cum	67.79	7705.00		522329.655
Guide Bund in Upstream side	Lin.m	0.00			0
Filter media underneath stone pitching	Cum	25.98	2565.00		66631.005
Launching Apron	Cum	0.00			0
Stone Pitching on slopes	Cum	51.95	1252.00		65046.408
Rehabilitation		0.00			0
Dismantling of Rcc Concrete	Cum	0.00			0
Replacement of Railing M-30 Grade	M	0.00			0
Providing Reinforced cement concrete M-30 Grade in approach slab including reinforcement for existing bridge	Cu.m.	0.00			0
Providing 75mm thick concrete wearing course	Sq.m.	0.00			0
Providing & fixing new drainage spouts in replacement of existing drainage spouts	No.	0.00			0
OK					11091580



Project : NH-713 (Joram - Palin - Koloriang Road)					
MNBr. : 62+900 (1x16.0)			Total	Rate	Amount
Excavation					
Excavation in Hard Rock	Cum	835.22	640.00	534542.72	
Excavation in Weathered Rock	Cum	132.58	190.00	25189.25	
Excavation in Soil	Cum	0.00		0.00	
Compacted Sand/Gravel Filling	Cum	0.00		0.00	
Concrete grade M 15 for levelling course	Cum	39.77	7705.00	306450.97	
Concrete grade M-15 in Open foundation of Retaining Wall	Cum	65.89	7705.00	507667.04	
Concrete grade M-35 in Open foundation	Cum	217.60	9659.00	2101798.40	
Sand & boulder filling below raft	Cum	0.00		0.00	
Rock anchoring in rock (Open foundation)	No.	0.00		0.00	
Bored cast-in-situ M-35 grade RCC piles 1200mm dia		0.00		0.00	
In soil	RM	0.00		0.00	
Rock Socketing	RM	0.00		0.00	
Concrete grade M-35 in pile cap	Cum	0.00		0.00	
Cutting edge	MT	0.00		0.00	
Curb Concrete (M-25 Grade)	Cum	0.00		0.00	
Bottom Plug Concrete (M-25 Grade)	Cum	0.00		0.00	
Intermediate Plug Concrete(M-25 Grade)	Cum	0.00		0.00	
Well Steining concrete(M-25 Grade)	Cum	0.00		0.00	
Well Top Plug Concrete(M-25 Grade)	Cum	0.00		0.00	
Well cap concrete(M-25 Grade)	Cum	0.00		0.00	
Sand filling in well	Cum	0.00		0.00	
Well Sinking (Measured from well cap top)	Lin.m	0.00		0.00	
7m Dia Well		0.00		0.00	
0-3 m	Lin.m	0.00		0.00	
3 -10 m	Lin.m	0.00		0.00	
10m - 15m	Lin.m	0.00		0.00	
15m - 20m	Lin.m	0.00		0.00	
20m - 25m	Lin.m	0.00		0.00	
25m - 30m	Lin.m	0.00		0.00	
30m - 35m	Lin.m	0.00		0.00	
35m - 40m	Lin.m	0.00		0.00	
8m Dia Well		0.00		0.00	
0-3 m	Lin.m	0.00		0.00	
3 -10 m	Lin.m	0.00		0.00	
10m - 15m	Lin.m	0.00		0.00	
15m - 20m	Lin.m	0.00		0.00	
20m - 25m	Lin.m	0.00		0.00	
25m - 30m	Lin.m	0.00		0.00	
30m - 35m	Lin.m	0.00		0.00	
35m - 40m	Lin.m	0.00		0.00	
10m Dia Well		0.00		0.00	
0-3 m	Lin.m	0.00		0.00	
3 -10 m	Lin.m	0.00		0.00	
10m - 15m	Lin.m	0.00		0.00	
15m - 20m	Lin.m	0.00		0.00	
20m - 25m	Lin.m	0.00		0.00	
25m - 30m	Lin.m	0.00		0.00	
30m - 35m	Lin.m	0.00		0.00	
35m - 40m	Lin.m	0.00		0.00	
11m Dia Well		0.00		0.00	
0-3 m	Lin.m	0.00		0.00	
3 -10 m	Lin.m	0.00		0.00	
10m - 15m	Lin.m	0.00		0.00	
15m - 20m	Lin.m	0.00		0.00	
20m - 25m	Lin.m	0.00		0.00	
25m - 30m	Lin.m	0.00		0.00	
30m - 35m	Lin.m	0.00		0.00	
35m - 40m	Lin.m	0.00		0.00	
Concrete grade M-15 in substructure of Retaining Wall	Cum	83.78	8150.00	682807.00	
Concrete grade M-35 in substructure	Cum	230.06	10465.00	2407546.51	
Back filling	Cum	761.70	1070.00	815016.86	
Filter media	Cum	215.47	2365.00	509591.28	

Sam

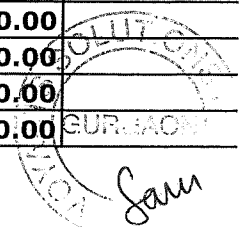
Project : NH-713 (Joram - Palin - Koloriang Road)			Total	Rate	Amount
MNBr. : 62+900 (1x16.0)					
RCC in Slab,grade M-30	Cum	0.00	11053.00	0.00	
RCC in Slab,grade M-45	Cum	58.88	11625.00	684480.00	
RCC T-Girders concrete, grade M-35	Cum	54.89	11070.00	607665.51	
i)PSC T-Girders concrete, grade M-45	Cum	0.00		0.00	
ii)PSC voided slab concrete, grade M-40	Cum	0.00		0.00	
iii)PSC box concrete, grade M-40	Cum	0.00		0.00	
PSC Plank concrete, grade M-40	Cum	0.00		0.00	
Reinforcement (HYSD Bar)		0.00		0.00	
Foundation	MT	21.76	78203.00	1701697.28	
Sub-Structure	MT	23.24	78358.00	1821118.28	
Super-Structure	MT	22.39	79759.00	1785963.53	
PSC Strands	MT	0.00		0.00	
Void Former "800mm dia"	Lin.m	0.00		0.00	
Structural Steel	MT	0.00		0.00	
RCC Deck slab for Composite Girder M-35	Cum	0.00		0.00	
Elastomeric Bearings	Cucm	17500	1.00	17500.00	
POT-PTFE Bearings		0.00		0.00	
A. For 100 MT		0.00		0.00	
i)Fixed	No.	0.00		0.00	
ii)Free	No.	0.00		0.00	
iii)Sliding	No.	0.00		0.00	
B. For 200 MT		0.00		0.00	
i)Fixed	No.	1.00	42652.5	42652.50	
ii)Free	No.	1.00	34897.5	34897.50	
iii)Sliding	No.	8.00	52604.75	420838.00	
C. For 300 MT		0.00		0.00	
i)Fixed	No.	0.00		0.00	
ii)Free	No.	0.00		0.00	
iii)Sliding	No.	0.00		0.00	
D. For 400 MT		0.00		0.00	
i)Fixed	No.	0.00		0.00	
ii)Free	No.	0.00		0.00	
iii)Sliding	No.	0.00		0.00	
E. For 500 MT		0.00		0.00	
i)Fixed	No.	0.00		0.00	
ii)Free	No.	0.00		0.00	
iii)Sliding	No.	0.00		0.00	
F. For 600 MT		0.00		0.00	
i)Fixed	No.	0.00		0.00	
ii)Free	No.	0.00		0.00	
iii)Sliding	No.	0.00		0.00	
G. For 700 MT		0.00		0.00	
i)Fixed	No.	0.00		0.00	
ii)Free	No.	0.00		0.00	
iii)Sliding	No.	0.00		0.00	
Tar paper Bearings	Sqm	9.60	450	4320.00	
Seismic Restrainer	Sqm	5.04	18908.33333	95298.00	
Approch Slab		0.00		0.00	
M15 grade concrete	Cum	17.52	7409.00	129805.68	
M30 grade concrete	Cum	33.60	13378.00	449500.80	
RCC in Crash Barrier, Grade M-40	Lin.m	46.00	4892.00	225032.00	
Painting of RCC in Crash Barrier	Cum	0.00		0.00	
Pedestrian Railing	Lin.m	0.00		0.00	
Expansion joint		0.00		0.00	
Strip seal joints(40mm thick)	Lin.m	32.00	18494.00	591808.00	
Asphaltic Plug type joints(15mm thick)	Lin.m	0.00	3440.00	0.00	
Wearing coat	sqm	253.00		0.00	
Drainage spouts	No.	7.00	1220.00	8540.00	
Weep holes	No.	375.00	153.00	57375.00	
RE Wall for across the road	Sqm	0.00		0.00	
Painting of structures	No.	2.00	86.00	172.00	
Raised Footpath M 25 Grade	cum	0.00		0.00	
Unmountable Krebs M25 Grade	cum	0.00		0.00	

Sam

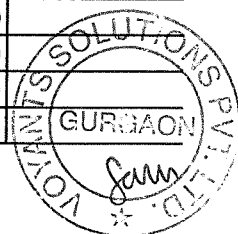
Project : NH-713 (Joram - Palin - Koloriang Road)					
MNBr. : 62+900 (1x16.0)			Total	Rate	Amount
Bed Protection Work			0.00		0.00
Excavation in soil	Cum		0.00	133.00	0.00
Concrete grade M 15 for levelling course	Cum		0.00	7705.00	0.00
Rigid Apron	Cum		0.00	1302.00	0.00
Flexible Apron	Cum		0.00	5810.00	0.00
Curtain Wall M-15	Cum		0.00	7705.00	0.00
Guide Bund in Upstream side	Lin.m		0.00		0.00
Filter media underneath stone pitching	Cum		28.33	2565.00	72663.89
Launching Apron	Cum		0.00		0.00
Stone Pitching on slopes	Cum		56.66	1252.00	70937.07
Rehabilitation			0.00		0.00
Dismantling of Rcc Concrete	Cum		0.00		0.00
Replacement of Railing M-30 Grade	M		0.00		0.00
Providing Reinforced cement concrete M-30 Grade in approach slab including reinforcement for existing bridge	Cu.m		0.00		0.00
Providing 75mm thick concrete wearing course	Sq.m		0.00		0.00
Providing & fixing new drainage spouts in replacement of existing drainage spouts	No.		0.00		0.00
			OK		16712880.00



Project : NH-713 (Joram - Palin - Koloriang Road)			Total	Rate
MNBr. : 69+975 (1x33.0)				
Excavation				
Excavation in Hard Rock	Cum	1161.41	640.00	
Excavation in Weathered Rock	Cum	184.35	190.00	
Excavation in Soil	Cum	0.00		
Compacted Sand/Gravel Filling	Cum	0.00		
Concrete grade M 15 for levelling course	Cum	55.31	7705.00	
Concrete grade M-15 in Open foundation of Retaining Wall	Cum	164.70	7705.00	
Concrete grade M-35 in Open foundation	Cum	249.60	9659.00	
Sand & boulder filling below raft	Cum	0.00		
Rock anchoring in rock (Open foundation)	No.	0.00		
Bored cast-in-situ M-35 grade RCC piles 1200mm dia		0.00		
In soil	RM	0.00		
Rock Socketing	RM	0.00		
Concrete grade M-35 in pile cap	Cum	0.00		
Cutting edge	MT	0.00		
Curb Concrete (M-25 Grade)	Cum	0.00		
Bottom Plug Concrete (M-25 Grade)	Cum	0.00		
Intermediate Plug Concrete(M-25 Grade)	Cum	0.00		
Well Steining concrete(M-25 Grade)	Cum	0.00		
Well Top Plug Concrete(M-25 Grade)	Cum	0.00		
Well cap concrete(M-25 Grade)	Cum	0.00		
Sand filling in well	Cum	0.00		
Well Sinking (Measured from well cap top)	Lin.m	0.00		
7m Dia Well		0.00		
0-3 m	Lin.m	0.00		
3 -10 m	Lin.m	0.00		
10m - 15m	Lin.m	0.00		
15m - 20m	Lin.m	0.00		
20m - 25m	Lin.m	0.00		
25m - 30m	Lin.m	0.00		
30m - 35m	Lin.m	0.00		
35m - 40m	Lin.m	0.00		
8m Dia Well		0.00		
0-3 m	Lin.m	0.00		
3 -10 m	Lin.m	0.00		
10m - 15m	Lin.m	0.00		
15m - 20m	Lin.m	0.00		
20m - 25m	Lin.m	0.00		
25m - 30m	Lin.m	0.00		
30m - 35m	Lin.m	0.00		
35m - 40m	Lin.m	0.00		
10m Dia Well		0.00		
0-3 m	Lin.m	0.00		
3 -10 m	Lin.m	0.00		
10m - 15m	Lin.m	0.00		
15m - 20m	Lin.m	0.00		
20m - 25m	Lin.m	0.00		
25m - 30m	Lin.m	0.00		
30m - 35m	Lin.m	0.00		
35m - 40m	Lin.m	0.00		
11m Dia Well		0.00		
0-3 m	Lin.m	0.00		
3 -10 m	Lin.m	0.00		



Project : NH-713 (Joram - Palin - Koloriang Road)				
MNBr. : 69+975 (1x33.0)			Total	Rate
10m - 15m	Lin.m	0.00		
15m - 20m	Lin.m	0.00		
20m - 25m	Lin.m	0.00		
25m - 30m	Lin.m	0.00		
30m - 35m	Lin.m	0.00		
35m - 40m	Lin.m	0.00		
Concrete grade M-15 in substructure of Retaining Wall	Cum	294.30	8150.00	
Concrete grade M-35 in substructure	Cum	311.64	10465.00	
Back filling	Cum	1886.26	1070.00	
Filter media	Cum	387.25	2365.00	
RCC in Slab, grade M-30	Cum	0.00		
RCC in Slab, grade M-35	Cum	155.38	11348.00	
RCC T-Girders concrete, grade M-35	Cum	0.00		
i)PSC T-Girders concrete, grade M-45	Cum	177.85	12627.00	
ii)PSC voided slab concrete, grade M-40	Cum	0.00		
iii)PSC box concrete, grade M-40	Cum	0.00		
PSC Plank concrete, grade M-40	Cum	0.00		
Reinforcement (HYSD Bar)		0.00		
Foundation	MT	24.96	78203.00	
Sub-Structure	MT	31.08	78358.00	
Super-Structure	MT	55.56	79759.00	
PSC Strands	MT	11.56	377280.00	
Void Former "800mm dia"	Lin.m	0.00		
Structural Steel	MT	0.00		
RCC Deck slab for Composite Girder M-35	Cum	0.00		
Elastomeric Bearings	Cucm	17500	1.00	
POT-PTFE Bearings		0.00		
A. For 100 MT		0.00		
i)Fixed	No.	0.00		
ii)Free	No.	0.00		
iii)Sliding	No.	0.00		
B. For 200 MT		0.00		
i)Fixed	No.	1.00	42652.5	
ii)Free	No.	1.00	34897.5	
iii)Sliding	No.	8.00	52604.75	
C. For 300 MT		0.00		
i)Fixed	No.	0.00		
ii)Free	No.	0.00		
iii)Sliding	No.	0.00		
D. For 400 MT		0.00		
i)Fixed	No.	0.00		
ii)Free	No.	0.00		
iii)Sliding	No.	0.00		
E. For 500 MT		0.00		
i)Fixed	No.	0.00		
ii)Free	No.	0.00		
iii)Sliding	No.	0.00		
F. For 600 MT		0.00		
i)Fixed	No.	0.00		
ii)Free	No.	0.00		
iii)Sliding	No.	0.00		
G. For 700 MT		0.00		
i)Fixed	No.	0.00		



Project : NH-713 (Joram - Palin - Koloriang Road)				
MNBr. : 69+975 (1x33.0)			Total	Rate
ii)Free	No.		0.00	
iii)Sliding	No.		0.00	
Tar paper Bearings	Sqm		9.60	450
Seismic Restrainer	Sqm		5.04	7260.8
Approch Slab			0.00	
M15 grade concrete	Cum		17.52	7409.00
M30 grade concrete	Cum		33.60	13378.00
RCC in Crash Barrier, Grade M-40	Lin.m		80.00	4892.00
Painting of RCC in Crash Barrier	Cum		0.00	
Pedestrian Railing	Lin.m		0.00	
Expansion joint			0.00	
Strip seal joints(40mm thick)	Lin.m		32.00	18494.00
Asphaltic Plug type joints(15mm thick)	Lin.m		0.00	
Wearing coat	sqm		440.00	
Drainage spouts	No.		14.00	1220.00
Weep holes	No.		667.00	153.00
RE Wall for across the road	Sqm		0.00	
Painting of structures	No.		2.00	
Raised Footpath M 25 Grade	cum		0.00	
Unmountable Krebs M25 Grade	cum		0.00	
Bed Protection Work			0.00	
Excavation in soil	Cum		0.00	
Concrete grade M 15 for levelling course	Cum		0.00	
Rigid Apron	Cum		0.00	
Flexible Apron	Cum		0.00	
Curtain Wall M-15	Cum		0.00	
Guide Bund in Upstream side	Lin.m		0.00	
Filter media underneath stone pitching	Cum		66.34	2565.00
Launching Apron	Cum		0.00	
Stone Pitching on slopes	Cum		132.67	1252.00
Rehabilitation			0.00	
Dismantling of Rcc Concrete	Cum		0.00	
Replacement of Railing M-30 Grade	M		0.00	
Providing Reinforced cement concrete M-30 Grade in approach slab including reinforcement for existing bridge	Cu.m		0.00	
Providing 75mm thick concrete wearing course	Sq.m		0.00	
Providing & fixing new drainage spouts in replacement of existing drainage spouts	No.		0.00	



Summary of Quantity of each Box Culvert (44 Km to 59.363Km)

INR

S.No.	Description	Unit	0 1x1x2	90 1x2x2	0 1x2.5x2.0	2 1x3x3	1 1x6x4	Total Qty.	Rate	Cost
1	Earth work in excavation	cum	0.00	9745.34	0.00	317.20	277.52	10340.06	70.00	7,23,804.18
2	PCC M-15 for leveling course	cum	0.00	760.73	0.00	157.88	110.19	1028.80	7705.00	79,26,902.54
3	PCC M-15	cum	0.00	417.60	0.00	9.28	4.64	431.52	7705.00	33,24,861.60
4	PCC M-15 for curtain wall	cum	0.00	229.50	0.00	7.75	7.14	244.39	7705.00	18,83,040.36
5	For Box Barrel									0.00
5.a.	RCC M-25 grade conc. For foundation	cum	0.00	810.00	0.00	33.74	46.20	889.94	9509.00	84,62,477.50
5.b.	RCC M-25 grade conc. For sub-structure	cum	0.00	1128.60	0.00	58.68	48.54	1235.82	10224.00	1,26,35,023.68
5.c.	RCC M-25 grade conc. For super-structure (box)	cum	0.00	675.00	0.00	33.74	46.20	754.94	10733.00	81,02,813.95
6	For Return Wall									0.00
6.a	M15 PLUM CONCRETE .For foundation	cum	0.00	2351.70	0.00	71.40	46.63	2469.73	7705.00	1,90,29,248.08
6.b	M15 PLUM CONCRETE .For Sub-structure	cum	0.00	2018.25	0.00	61.27	40.02	2119.54	8150.00	1,72,74,267.30
7	Reinforcement	Mt	0.00	196.02	0.00	9.46	86.65	292.13	79759.00	2,33,00,363.56
8	Weep Hole	No.	0.00	4680.00	0.00	154.00	103.00	4937.00	153.00	7,55,361.00
9	Filter media	cum	0.00	2776.68	0.00	92.22	61.49	2930.39	2365.00	69,30,361.94
10	450mm thk floor apron	cum	0.00	303.75	0.00	10.26	9.45	323.46	5810.00	18,79,302.60
11	750 mm thk Stone Apron floor(flexible)	cum	0.00	506.25	0.00	17.10	15.75	539.10	1302.00	7,01,908.20
12	RCC Railing M30	Rm	0.00	900.00	0.00	30.40	28.00	958.40	2379.00	22,80,033.60
13	Guard Stone	No.	0.00	720.00	0.00	28.00	26.00	774.00	2317.00	17,93,358.00
14	Mark Post	No.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
15	Back Filling	cum	0.00	2494.15	0.00	55.43	27.71	2577.29	1070.00	27,57,702.01
16	Stone Pitching on slop	cum	0.00	917.50	0.00	20.39	10.19	948.08	1252.00	11,87,001.69
17	Filter media under stone pitching	cum	0.00	458.75	0.00	10.19	5.10	474.04	2565.00	12,15,918.26
TOTAL									12,21,63,750.00	


 Gurukul One
 Sam