

Cost Estimate

Sr.No.	Description	Length	Amount in Rs.
1	Valley Side Protection work:		
	Chainage 123.140 to 123.180	40 M	18548815.2
	Chainage 123.190 to 123.220	30 M	14170930
	Chainage 123.650 to 123.850	200 M	98406510
	Total Amount Valley Side Protection work	270 M	131126255.2
2	Restoration and strenthening of existing retaining walls and exposed hard rocks by jacketing with skin reinforced concrete top width 250 mm and bottom width 400 mm on front face and exposed sides and 500 mm on top of the retaining wall	482 M	11646133.99
3	Cleaning, maintenance, pointing of waterways of the culverts of existing culvert (6 nos.), catch water pit & hill side abutments and restoaration/strenthening of the exposed valley side abutment & valley side haed wall of the culvert AND Construction of Water Chute in 5 steps of 1 m each at the outlet of Existing Culverts (05 nos.)		1313389.765
4	Hill Side Work: Provision of Breast wall up 5 m. height of reinforced gabion wall of 1 m height each as per design	155 M	2379466.08
5	Provision of surface lined drain along with Proposed Breast wall as per design	155 M	1030611.12
6	Pavement costruction (Leveling of 12 m road width as per specification of sub gade, 100 mm thick of GSB layer , 2 layer WMM total thickness 150mm each layer 75mm, DBM 85 mm and BC 40 mm including prime coat and Tack coat in 10 m width and hard shoulder of 200 mm thick GSB 1 m either side)	890 M	21737952.3
7	Type - A, "W" : Metal Beam Crash Barrier and Road Safety Features/ Paintining/ Sign Marking	890 M	4361891.3
8	Muck dumping and its stabilization, Disposal of the muck trasportation at suitable locations	LS	15000000
9	Total Amount Civil Work		188595699.8
10	GST @ 12% on Sr. No. 9		22631483.97
13	Civil cost		211227183.7

Sr.No.	Description	Amount in Rs.
1	Civil Cost	211227183.7
2	Maintenance cost @ 2.5 % on 1	5280679.593
3	Cost put to the tender (1+2)	216507863.3
4	Contingency @ 2.8 % on 1	5914361.144
5	Supervision Charges @ 3% of (1)	6336815.512
6	Administrative Charges @ 3% of (1)	6336815.512
7	Pre-construction activities	0
8	Total Project Cost (3 to 7)	235095855.5

New Proposal of Landslide Locations details							
Sr.No.	Description	Height (M)	Length (M)	Total No of Bar	Total Quantity	Rate	Total amount
(1) Valley Side Protection work : Chainage 123.140 to 123.180, complete slope treatment including mechanical bio engineering Length=40 m and Min height= 98 m							
i	32 mm Dia Fully Grouted Anchor Bar at Base of Steeped Structure @ 4 M long, 4 M c/c spacing in both direction	98	40	275	1100	2500	2750000
ii	Supply and installation of Rhomboidal wire rope panels of rope diameter 10 mm	98	40	0	3920	2473.62	9696590.4
iii	Supply and installation of Mechanically woven, twisted, hexagonal shaped wire mesh, mesh type 10x12,	98	40	0	3920	1056.69	4142224.8
iv	Mechanical Hydro Seeding for vegetation growth over hill slopes includes mixing of seed, mulch (meeting performance parameter as per technical sepcifications) fertilizer and soil amendment products if required in hydro seeder machine with water spraying the mixer with 100psi pressure pump on hilly slopes and exposed soil (end product must for a uniform blanket of vegetation and soil erosion must be controlled) including maintenance for 2 years.	98	40	0	3920	500	1960000
Total Amount							18548815.2
Valley Side Protection work : Chainage 123.190 to 123.220, complete slope treatment including bio engineering Length=30 m and Min height= 100 m							
(v)	32 mm Dia Fully Grouted Anchor Bar at Base of Steeped Structure @ 4 M long, 4 M c/c spacing in both direction	100	30	208	832	2500	2080000
vi	Supply and installation of Rhomboidal wire rope panels of rope diameter 10 mm	100	30	0	3000	2473.62	7420860
vii	Supply and installation of Mechanically woven, twisted, hexagonal shaped wire mesh, mesh type 10x12,	100	30	0	3000	1056.69	3170070
viii	Mechanical Hydro Seeding for vegetation growth over hill slopes includes mixing of seed, mulch (meeting performance parameter as per technical sepcifications) fertilizer and soil amendment products if required in hydro seeder machine with water spraying the mixer with 100psi pressure pump on hilly slopes and exposed soil (end product must for a uniform blanket of vegetation and soil erosion must be controlled) including maintenance for 2 years.	100	30	0	3000	500	1500000
Total Amount							14170930
Valley Side Protection work : Chainage 123.650 to 123.850, complete slope treatment including bio engineering Length=200 m and Min height= 105 m							

[illegible]

ESTIMATE OF ADDITIONAL WORK AT HILL & VALLEY SIDE AT NALUPANI SITE											
DETAIL OF MEASUREMENT											
Item No.	Name of Items	No.	Length	Width	Height	Quantity	Unit	Remarks	Rate	SOR Item (Block 04 Dunda)	Total amount
2	Restoration and strengthening of existing retaining walls and exposed hard rocks along the road side only by jacketing with skin reinforced concrete top width 250 mm and bottom width 400 mm on front face and exposed sides and 500 mm on top of the retaining wall										
i	Excavation in foundation for Structure in all type of soil & rock including all lead lift and disposal of surplus material as directed by Engineer in charge and MORTH specification.								222.7	SOR item 3-1	21468.28
	123+105-162, 123+430-490	1x1	117.00	0.40	0.50	23.40	cum.	6.0 m Height			
	123+305-430, 123+660-850	1x1	315.00	0.40	0.50	63.00	cum.	7.5 m Height			
	123+190-230, 123+280-305	1x1	50.00	0.40	0.50	10.00	cum.	9.0 m Height			
	TOTAL					96.40	Cum.				
ii	Providing and laying of Concrete for PCC for levelling course before laying of foundation of structure including supply of all material labour T&P, shuttering, Centering royalty etc. required for proper completion of work as directed by Engineer in charge and MORTH specification for Grade M10								4986.1	PCC 1:3:6 (item no. 9-1)	72099.006
	123+105-162, 123+430-490	1x1	117.00	0.30	0.10	3.51	cum.	6.0 m Height			
	123+305-430, 123+660-850	1x1	315.00	0.30	0.10	9.45	cum.	7.5 m Height			
	123+190-230, 123+280-305	1x1	50.00	0.30	0.10	1.50	cum.	9.0 m Height			
	TOTAL					14.46	Cum.				
iii	Providing and laying of Concrete for reinforced concrete for structure including supply of all material labour T&P, shuttering, Centering royalty etc. required for proper completion of work as directed by Engineer in charge and MORTH specification for RCC grade M25 (top width 250 mm and bottom width 400 mm)								8287.9	RCC M-25 (Item No. 12-8-E-2)	10586341.87
	123+105-162, 123+430-490	1x1	117.00	0.35	6.00	245.70	cum.				
	123+305-430, 123+660-850	1x1	315.00	0.35	7.50	826.88	cum.				
	123+190-230, 123+280-305	1x1	65.00	0.35	9.00	204.75	cum.				
	TOTAL					1277.33	Cum.				
iv	Supplying, fitting, and placing HYSD 10 mm dia bar reinforcement in superstructure complete as per drawing and technical specifications Clauses 1002, 1010 and 1202								63037	(item no. 12-40)	966224.8323
	123+105-162, 123+430-490	1x1				2.95	tonne				
	123+305-430, 123+660-850	1x1			0.5 % of RCC as per item no. 2 (iii)	9.92	tonne				
	123+190-230, 123+280-305	1x1				2.46	tonne				
	TOTAL					15.33	tonne				
Total amount of Sr.No. 2											11646133.99
3	Cleaning, maintenance, pointing of waterways of the culverts, catch water pit & hill side abutments AND restoration/strengthening of the exposed valley side abutment & valley side haed wall of the culvert AND Construction of Water Chute in 5 steps of 1 m each at the outlet of Existing Culverts (05 nos.)										
(i)	Cleaning, maintenance, pointing of waterways of the culvert and Repairing of Existing Slab Culvert (1x1.2) 6 Nos.								Lum Sum Amount = 500000		500000
	Ch. 123+445	1x1	11.00	1.20		13.20	Sqm.				
	Ch. 123+505	1x1	11.00	1.20		13.20	Sqm.				
	Ch. 123+560	1x1	11.00	1.20		13.20	Sqm.				
	Ch. 123+670	1x1	11.00	1.20		13.20	Sqm.				
	Ch. 123+760	1x1	11.00	1.20		13.20	Sqm.				
	Ch. 123+860	1x1	11.00	1.20		13.20	Sqm.				
ii	Excavation in foundation wall for Structure in all type of soil & rock including all lead lift and disposal of surplus material as directed by Engineer in charge and MORTH specification.								222.7	SOR item 3-1	5344.80
	Ch. 123+440-450	1x1	6.00	0.80	1.00	4.80	cum.				
	Ch. 123+500-510	1x1	6.00	0.80	1.00	4.80	cum.				
	Ch. 123+555-565	1x1	6.00	0.80	1.00	4.80	cum.				
	Ch. 123+665-675	1x1	6.00	0.80	1.00	4.80	cum.				
	Ch. 123+755-765	1x1	6.00	0.80	1.00	4.80	cum.				
	TOTAL					24.00	Cum.				

DETAIL OF MEASUREMENT											
Item No.	Name of Items	No.	Length	Width	Height	Quantity	Unit	Remarks	Rate	SOR Item (Block 04 Dunda)	Total amount
iii	Providing and laying of Concrete for reinforced concrete for structure including supply of all material labour T&P, shuttering, Centering royalty etc. including Backfilling with suitable material required for proper completion of work as directed by Engineer in charge and MORTH specification for RCC grade M25								8287.9	RCC M-25 (Item No. 12-8-F-2)	174045.9
	Ch. 123-440-450	1x1	6.00	0.50	1.00	3.00	cum.				
		1x1	4.00	0.50	2.00	4.00	cum.				
	Ch. 123-500-510	1x1	6.00	0.50	1.00	3.00	cum.				
		1x1	4.00	0.50	2.00	4.00	cum.				
	Ch. 123-555-565	1x1	6.00	0.50	1.00	3.00	cum.				
		1x1	4.00	0.50	2.00	4.00	cum.				
	Ch. 123-665-675	1x1	6.00	0.50	1.00	3.00	cum.				
		1x1	4.00	0.50	2.00	4.00	cum.				
	Ch. 123-755-765	1x1	6.00	0.50	1.00	3.00	cum.				
		1x1	4.00	0.50	2.00	4.00	cum.				
	TOTAL					21.00	Cum.				

DETAIL OF MEASUREMENT												
Item No.	Name of Items	No.	Length	Width	Height	Quantity	Unit	Remarks	Rate	SOR Item (Block 04 Dunda)	Total amount	
	Culvert (RCC water chute/energy disipating structure all as pecified in para 8.6 containg fig 8.5 and 8.6 of IRC:48-1998)											
iv	Excavation in Guide wall and appron for Culvert in all type of soil & rock including all lead lift and disposal of surplus material as directed by Engineer in charge and MoRTH specification.											
	Ch. 123-440-450		5.00	3.50	0.500	8.75	cum					
	Ch. 123-500-510		5.00	3.50	0.500	8.75	cum					
	Ch. 123-555-565		5.00	3.50	0.500	8.75	cum					
	Ch. 123-665-675		5.00	3.50	0.500	8.75	cum					
	Ch. 123-755-765		5.00	3.50	0.500	8.75	cum					
						43.75						
v	Providing and laying of Concrete for PCC for levelling course before laying of water chute of structure including supply of all material labour T&P, shuttering, Centering royalty etc. required for proper completion of work as directed by Engineer in charge and MoRTH specification for Grade M10											
	Ch. 123-440-450		5.00	4.00	0.100	2.00	cum					
	Ch. 123-500-510		5.00	4.00	0.100	2.00	cum					
	Ch. 123-555-565		5.00	4.00	0.100	2.00	cum					
	Ch. 123-665-675		5.00	4.00	0.100	2.00	cum					
	Ch. 123-755-765		5.00	4.00	0.100	2.00	cum					
	Total Quantity					10.00	cum					
vi	Providing and laying of Concrete for reinforced concrete for structure including supply of all material labour T&P, shuttering, Centering royalty etc. including Backfilling with suitable material required for proper completion of work as directed by Engineer in charge and MoRTH specification for RCC grade M20											
	Ch. 123-440-450	1*1	2.5	1	0.6	1.5	cum					
		1*1	3	1	0.6	1.8	cum					
		1*1	3.5	1	0.6	2.1	cum					
		1*1	4	1	0.6	2.4	cum					
		1*1	4.5	1	0.6	2.7	cum					
	Guide wall	1*1	5.154	0.5	0.5	1.2885	cum					
		1*1	5.154	0.5	0.5	1.2885	cum					
	Ch. 123-500-510	1*1	2.5	1	0.6	1.5	cum					
		1*1	3	1	0.6	1.8	cum					
		1*1	3.5	1	0.6	2.1	cum					
		1*1	4	1	0.6	2.4	cum					
		1*1	4.5	1	0.6	2.7	cum					
	Guide wall	1*1	5.154	0.5	0.5	1.2885	cum					
		1*1	5.154	0.5	0.5	1.2885	cum					
	Ch. 123-555-565	1*1	2.5	1	0.6	1.5	cum					
		1*1	3	1	0.6	1.8	cum					
		1*1	3.5	1	0.6	2.1	cum					
		1*1	4	1	0.6	2.4	cum					
		1*1	4.5	1	0.6	2.7	cum					
	Guide wall	1*1	5.154	0.5	0.5	1.2885	cum					
		1*1	5.154	0.5	0.5	1.2885	cum					
	Ch. 123-665-675	1*1	2.5	1	0.6	1.5	cum					
		1*1	3	1	0.6	1.8	cum					
		1*1	3.5	1	0.6	2.1	cum					
		1*1	4	1	0.6	2.4	cum					
		1*1	4.5	1	0.6	2.7	cum					
	Guide wall	1*1	5.154	0.5	0.5	1.2885	cum					
		1*1	5.154	0.5	0.5	1.2885	cum					
	Ch. 123-755-765	1*1	2.5	1	0.6	1.5	cum					
		1*1	3	1	0.6	1.8	cum					
		1*1	3.5	1	0.6	2.1	cum					
		1*1	4	1	0.6	2.4	cum					
		1*1	4.5	1	0.6	2.7	cum					
	Guide wall	1*1	5.154	0.5	0.5	1.2885	cum					
		1*1	5.154	0.5	0.5	1.2885	cum					
	TOTAL					65.39						

DETAIL OF MEASUREMENT											
Item No.	Name of Items	No.	Length	Width	Height	Quantity	Unit	Remarks	Rate	SOR Item (Block 04 Dunda)	Total amount
vii	Spur blocks size(200mm*200mm*200mm) provide for Guid wall and Apron										
	Ch. 123-440-450	5.00	2.50			125.00	Nos.		8000	Lum Sum	61600
	Ch. 123-500-510	5.00	3.00			200.00	Nos.				
	Ch. 123-555-565	5.00	3.50			112.50	Nos.				
	Ch. 123-665-675	5.00	4.00			250.00	Nos.				
	Ch. 123-755-765	5.00	4.50			275.00	Nos.				
	Total Nos. of Block					962.50	Nos.				
Total Quantity					7.70	CUM					
Total amount of Sr.No. 3											1313389.765
4	Hill Side Work: Provision of Breast wall up 5 m. height of reinforced gabion wall of 1 m height each as per design										
i	Excavation in foundation for Structure in all type of soil & rock including all lead lift and disposal of surplus material as directed by Engineer in charge and MORTH specification.								222.7	SOR item 3-1	56380.22
	Ch. 123-480 to 123-635	1x1	155.00	1.63	1.00	253.17	cum.				
ii	Providing and laying of Concrete for plain concrete in open foundation for structure including supply of all material labour T&P royalty etc. required for proper completion of work as directed by Engineer in charge and MORTH specification for PCC grade M10								4986.1	PCC 1:3:6 (Item no. 9-1)	252462.8633
	Ch. 123-480 to 123-635	1x1	155.00	1.63	0.20	50.63	cum.				
iii	Reinforced Gabion Structure for Erosion Control, River Training Works and Protection works (Providing and constructing gabion structures for erosion control, river training works and protection works with wire crates of size 2 m x 1 m x 1 m each divided into 1m 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 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire.) (The work includes filling boulders in the gabions) Ch. 123-480 to 123-635.	1x1	155			390	no.		4315.7	Item No. 15-13	1683123
iv	Mechanical Hydro Seeding for vegetation growth over hill slopes includes mixing of seed, mulch (meeting performance parameter as per technical specifications) fertilizer and soil amendment products if required in hydro seeder machine with water spraying the mixer with 100psi pressure pump on hilly slopes and exposed soil (end product must for a uniform blanket of vegetation and soil erosion must be controlled) including maintenance for 2 years.		155		5	775			500		387500
Total amount of Sr.No. 4											2379466.08
5	Provision of surface lined drain along with Proposed Breast wall as per design										
i	Excavation in foundation for Structure in all type of soil & rock including all lead lift and disposal of surplus material as directed by Engineer in charge and MORTH specification.								4986.1	PCC 1:3:6 (item no. 9-1)	649190.22
	Ch. 123-480 to 123-635	1x1	155.00	1.20	0.70	130.20	cum.				
ii	Plain/reinforced cement concrete in substructure complete as per drawings and technical specification (Clauses 802, 804, 805, 806, 807, 1202 and 1204 Nominal mix 1:2:4 (Hand mixed)								6322	(Item No 12-8-B)	88191.9
	Ch. 123-480 to 123-635	1x1	155.00	0.90	0.10	13.95	cum.				

DETAIL OF MEASUREMENT											
Item No.	Name of Items	No.	Length	Width	Height	Quantity	Unit	Remarks	Rate	SOR Item (Block 04 Dunda)	Total amount
iii	Construction of R. R. Stone Masonry in Cement Mortar 1:5 including supply of all material labour 1&P royalty etc. required for proper completion of work as directed by Engineer in charge and Mord specification for Rural Road 2014 and Plastering with cement mortar (1:4), 15 mm thick on brickwork in substructure as per technical specification Clauses 613.4 & 1204								4204	item No 17-B	293229
	Ch. 123+480 to 123+635	1x1	155.00	1.50	0.30	69.75	cum.				
Total amount of Sr.No. 5											1030611.12
6	Pavement construction (Leveling of 12 m road width as per specification of sub grade, 100 mm thick of GSB layer , 2 layer WMM total thickness 150mm each layer 75mm, DBM 85 mm and BC 40 mm including prime coat and Tack coat in 10 m width and hard shoulder of 200 mm thick GSB 1 m either side)										
i	Leveling of 12 m road width as per specification of subgrade	1x1	890.00	12.00		169.00	Cum.		760.9	Item No. 3-18	128592.10
ii	Gravel/Soil-Aggregate Base (Table 400.2) Grading A Construction of gravel/soil-aggregate base by providing well graded material, spreading in uniform layers with motor grader on prepared surface, mixing bixmix in place method with rotavator at OMC, and compacting with three wheel 80-100 kN static roller to achieve the desired density, complete as per Technical Specifications Clause 402								2167	4-1-A-1	2700082
	Ch. 123+080 to 123+970	1x1	890.00	14.00	0.100	1246.00	Cum.				
iii	WBM Grading I Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading I as per Technical Specification Clause 404. By Mechanical Means								4568.1	Item no 4-12	6708254.85
	Ch. 123+080 to 123+970 First Layer	1x1	890.00	10.00	0.075	667.50	Cum.				
	Ch. 123+080 to 123+970 Second Layer	1x1	890.00	10.00	0.075	667.50	Cum.				
	TOTAL					1335.00	Cum.				
	10% extra widening of Curve					133.50	Cum.				
	TOTAL					1468.50	Cum.				
iv	Prime coat over WMM (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)								25.5	Item No. 5-1	226950
	Ch. 123+080 to 123+970	1x1	890.00	10.00		8900.00	Sum.				
v	Tack coat for laying of DBM 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.								9.3	Item No 5-2	82770
	Ch. 123+080 to 123+970	1x1	890.00	10.00		8900.00	Sum.				
vi	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 I (40 mm nominal size)								10085.9	Item no 5-6-1	7629983.35
	Ch. 123+080 to 123+970	1x1	890.00	10.00	0.085	756.50	Cum.				
vii	Tack coat for laying of DBM 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.								9.3	Item No 5-2	82770
	Ch. 123+080 to 123+970	1x1	890.00	10.00		8900.00	Sum.				

