



National Highways & Infrastructure Development Corporation Limited

**CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT
REPORT FOR REHABILITATION AND UPGRADING TO 2 LANE/2 LANE
WITH PAVED SHOULDERS CONFIGURATION AND STRENGTHENING
OF PORTBLAIR – MAYABUNDER - DIGLIPUR SECTION (KM 0.00 TO
KM 61, KM 104 TO KM 142 & KM 155 TO KM 333) OF NH-223 IN THE
UNION TERRITORY OF ANDAMAN & NICOBAR ISLANDS (PACKAGE
NO. SP/B/1)**

Cost Estimate

**Chidiya Tapu to Beodnabad Section
(Km 0 to 12)**

September-2018



C E C Projects Pvt. Ltd.

In JV with Chaitanya Projects Consultancy Pvt. Ltd

2nd Floor, Plot No. 21-22, R.K.Tower,

Sector-4, Vaishali,

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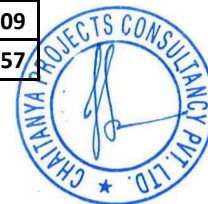
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Bill No.1 : for strenghtening of CRZ Section on NH-4 in A&N Islands (Total Length=12 Km)						
Sl. No	Item No.	Description	Unit	Quantity	Rate in Rs (Including Labour cess)	Amount in Rs.
1	2.5	Scarifying existing bituminous surface				
		Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately				
		Bituminous courses	cum	4,117.50	914.05	3,763,600.88
		Granular courses	cum	6,430.00	648.42	4,169,340.60
2	4.5	CT Subbase				
		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4 in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)				
		For Km 0-12	cum	16,380.00	3232.00	52,940,160.00
2	5.19	Treated RAP				
		RAP (Using 60% of existing qty @ 2.2% bitumen & 40% of new qty @4.5% bitumen)				
		For Km 0-12	cum	12,474.00	6650.07	82,952,973.18
3	5.2	Tack Coat				
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.				
		For Km 0-12	Sqm	138,600.00	9.09	1,259,874.00
4	5.1	Prime Coat				
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.				
		For Km 0-12	Sqm	69,300.00	24.24	1,679,832.00



6	5.8	Bituminous Concrete				
		Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of grading-I, premixed with bituminous binder grade 60/70 @ 5.5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specification (5th edition) complete in all respect.				
		<i>for GradingII (10 mm nominal size) For Km 0-12</i>	cum	2,772.00	10038.39	27,826,417.08
7	4.5	Hard Shoulder with CT Subbase				
		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)				
		For Km 0-12	cum	2,040.00	3232.00	6,593,280.00
9	4.12	Drainage				
		Unlined Drain				
		For Km 0-12	cum	5,400.00	71.71	387,234.00
		Lined PCC drain				
		For 4000 m length	m	4,000.00	2042.87	8,171,485.80
10	4.13	3 Box Culverts at few locations	No	3.00	1700000	5,100,000.00
11	4.14	Repair & Maintenance of existing culverts@ 50000/culvert	No	51.00	50000	2,550,000.00
12		Repair & Maintenance of existing Minor bridges@ 200000/bridge	No	4.00	200000	800,000.00
13	8.00	TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT				
		Road Markings & Signages				5,419,030.41
		Metal Beam Crash Barrier		4,000.00	3700.64	14,802,560.00
14	12.7B	Random Rubble Masonry	Cum	64.86	5555.00	360,297.30
15	12.8A	Plain Cement Concrete (PCC) Grade M15	Cum	16.22	7099.29	115,150.48
16		Premix Carpet with seal coat for patch repair work	Sqm	4,320.00	210.00	907,200.00
17	Sub-Total (In Rs)					219,798,435.73
18	GST @ 6%					13,187,906.14
19	Total Construction cost including GST @ 6% (A)					232,986,341.87
	Maintenance during DLP (4 years) @ 5% of A					11,649,317.09
	CONTINGENCIES @ 2.8% ON A					6,523,617.57



	CONSTRUCTION SUPERVISION CHARGES @ 3% ON A	6,989,590.26
	Administrative Charges of NHIDCL @ 3% ON A	6,989,590.26
	Pre-Construction Activities i.e. Resettlement and Shifting of Utilities etc. (Lump Sum) @ 5% of (A)	11,649,317.09
	TOTAL ESTIMATED COST =	276,787,774.15
	Say (In Crore)	27.68
	COST PER KM (In Crore)	2.31



TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT

S.NO	Description	Unit	Nos.	Length	Width	Depth	Quantity	Rate	Amount
1	Road Marking								
	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.								
	For Edge Marking	Sqm	2	12000	0.150		3600.00	859.51	3094236
	For Centre line Marking	Sqm	1	12000	0.100		1200.00	859.51	1031412
2	Direction and Place Identification Signs Board.								
	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawing								
i	up to 0.9 sqm size	Sqm	5	1.50	0.60	-	4.50	13569.35	61062.075
ii	more than 0.9 sqm size	Sqm	12	1.50	0.80	-	14.40	23471.39	337988.016
3	Metal Beam Crash Barrier Type - A, "W" : Metal Beam Crash Barrier								
	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810								
	For Curved Portion	Rm	1	4000.0			4000.00	3700.64	14802560.0
4	Road Markers/Road Stud with Lense Reflector								
	Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973	Nos.	1600				1600.00	237.00	379200.0
5	Overhead Signs								



S.NO	Description	Unit	Nos.	Length	Width	Depth	Quantity	Rate	Amount
	Supplying and fixing overhead signs complete as per drawing and Technical Specifications Section 800 including cost of posts, truss, erection, fitting and foundations. Sheeting will be retro reflective type of high intensity grade and message/borders will be screen-printed as per drawings.								
	a) Truss and Vertical Support (Portal type)	MT.	8.00				8.00	61,473.65	491,789.20
	b) Aluminium alloy plate for over head sign	MT.	2.00				2.00	11,671.56	23,343.12
Total Cost									20221590.41



Bituminous Layer							Granular Layer		
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (cum)	Width (m)	Thickness (m)	Volume (cum)
	From	to							
1	0	1	1000	3.5	0.125	437.5	3.5	0.195	682.500
2	1	2	1000	3.5	0.120	420.0	3.5	0.190	665.000
3	2	3	1000	3.5	0.100	350.0	3.5	0.110	385.000
4	3	4	1000	3.5	0.090	315.0	3.5	0.170	595.000
5	4	5	1000	3.5	0.080	280.0	3.5	0.105	367.500
6	5	6	1000	3.5	0.090	315.0	3.5	0.080	280.000
7	6	7	1000	3.5	0.050	175.0	3.5	0.160	560.000
8	7	8	1000	3.5	0.070	245.0	3.5	0.150	525.000
9	8	9	1000	3.5	0.110	385.0	3.5	0.100	350.000
10	9	10	1000	3.5	0.090	315.0	3.5	0.120	420.000
11	10	11	1000	4	0.120	480.0	4	0.200	800.000
12	11	12	1000	4	0.100	400.0	4	0.200	800.000
Total =						4117.5			6430.00



Quantity of RAP & CT Subbase

Sl. No	Stretch		Length (m)	Treated RAP			CT Subbase		
	From	to		Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (cum)	Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (Cum)
1	0	1	1000	5.50	0.180	1039.5	6.50	0.200	1365
2	1	2	1000	5.50	0.180	1039.5	6.50	0.200	1365
3	2	3	1000	5.50	0.180	1039.5	6.50	0.200	1365
4	3	4	1000	5.50	0.180	1039.5	6.50	0.200	1365
5	4	5	1000	5.50	0.180	1039.5	6.50	0.200	1365
6	5	6	1000	5.50	0.180	1039.5	6.50	0.200	1365
7	6	7	1000	5.50	0.180	1039.5	6.50	0.200	1365
8	7	8	1000	5.50	0.180	1039.5	6.50	0.200	1365
9	8	9	1000	5.50	0.180	1039.5	6.50	0.200	1365
10	9	10	1000	5.50	0.180	1039.5	6.50	0.200	1365
11	10	11	1000	5.50	0.180	1039.5	6.50	0.200	1365
12	11	12	1000	5.50	0.180	1039.5	6.50	0.200	1365
Total=						12474	16380		



Quantity of Tack coat					
Sl. No	Stretch		Length (m)	Width (m)	Area (incl 5% for Extra Widening) (sqm)
	From	to			
1	0	1	1000	5.5	5775
2	1	2	1000	5.5	5775
3	2	3	1000	5.5	5775
4	3	4	1000	5.5	5775
5	4	5	1000	5.5	5775
6	5	6	1000	5.5	5775
7	6	7	1000	5.5	5775
8	7	8	1000	5.5	5775
9	8	9	1000	5.5	5775
10	9	10	1000	5.5	5775
11	10	11	1000	5.5	5775
12	11	12	1000	5.5	5775
Total Quantity of Tack Coat (single layer)					69300
Total Quantity of Tack Coat (2 layer)					138600

1. Tack coat b/w CT Subbase & RAP
2. Tack coat b/w RAP & BC



Quantity of Hard Shoulder						
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (cum)
	From	to				
1	0	1	1000	1.00	0.170	170
2	1	2	1000	1.00	0.170	170
3	2	3	1000	1.00	0.170	170
4	3	4	1000	1.00	0.170	170
5	4	5	1000	1.00	0.170	170
6	5	6	1000	1.00	0.170	170
7	6	7	1000	1.00	0.170	170
8	7	8	1000	1.00	0.170	170
9	8	9	1000	1.00	0.170	170
10	9	10	1000	1.00	0.170	170
11	10	11	1000	1.00	0.170	170
12	11	12	1000	1.00	0.170	170
Total Quantity of Hard Shoulder						2040



Quantity of Prime coat					
Sl. No	Stretch		Length (m)	Width (m)	Area (incl 5% for Extra Widening) (sqm)
	From	to			
1	0	1	1000	5.5	5775
2	1	2	1000	5.5	5775
3	2	3	1000	5.5	5775
4	3	4	1000	5.5	5775
5	4	5	1000	5.5	5775
6	5	6	1000	5.5	5775
7	6	7	1000	5.5	5775
8	7	8	1000	5.5	5775
9	8	9	1000	5.5	5775
10	9	10	1000	5.5	5775
11	10	11	1000	5.5	5775
12	11	12	1000	5.5	5775
Total Quantity of Prime Coat (Single Layer)					69300



Quantity of BC						
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (cum)
	From	To				
1	0	1	1000	5.5	0.04	231
2	1	2	1000	5.5	0.04	231
3	2	3	1000	5.5	0.04	231
4	3	4	1000	5.5	0.04	231
5	4	5	1000	5.5	0.04	231
6	5	6	1000	5.5	0.04	231
7	6	7	1000	5.5	0.04	231
8	7	8	1000	5.5	0.04	231
9	8	9	1000	5.5	0.04	231
10	9	10	1000	5.5	0.04	231
11	10	11	1000	5.5	0.04	231
12	11	12	1000	5.5	0.04	231
Total Quantity of BC						2772



Drainage works(Km 0-12)

Item No.	SOR Ref No	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity
		Drainage works						
7.01	3.6 (ii)	Unlined Drains :- Earth work in excavation in trenches in unlined drain as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	1.00	20,000.00		0.27	5,400.00
7.02		Lined PCC Drains						
(a)	3.6 (ii)	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	1.00	4,000.00		0.29	1,140.00
(b)		PCC Grade M15	cum	1.00	4,000.00		0.29	1,140.00

