



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

**Nimbutala to Swadesh Nagar
Section (Km 181 to 206)**

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,

Ghaziabad – 201010

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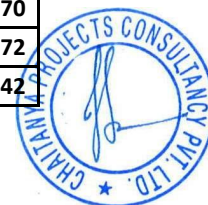


Bill No.1 : for strenghtening of CRZ Section on NH-4 in A&N Islands (Total Length=25 Km)						
Sl. No	Item No.	Description	Unit	Quantity	Rate in Rs (Including Labour cess)	Amount in Rs.
1	2.5	Scarifying existing bituminous surface				
		Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately				
		Bituminous courses	cum	7,004.00	914.05	6,402,006.20
		Granular courses	cum	20,061.50	648.42	13,008,277.83
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.)				
			cum	34,125.00	3254.22	111,050,257.50
2	5.19	Treated RAP				
		RAP (Using 60% of existing qty @ 2.2% bitumen & 40% of new qty @4.5% bitumen)				
			cum	25,987.50	6778.85	176,165,234.44
3	5.2	Tack Coat				
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.				
			Sqm	288,750.00	9.09	2,624,737.50
4	5.1	Prime Coat				
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.				
			Sqm	144,375.00	24.24	3,499,650.00



Package - 7

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 181-206</i>	cum	5,775.00	10306.04	59,517,381.00
7	4.5	Hard Shoulder with CT Subbase				
		Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.)				
			cum	5,500.00	3254.22	17,898,210.00
9	4.12	Drainage				
		Unlined Drain	m	10,152.00	71.71	728,000.00
		Lined PCC drain (10500m)	m	10,500.00	2061.29	21,643,585.00
		Covered RCC Drain (both sides)	m	1,900.00	15242.26	28,960,301.00
10	4.13	Repair & Maintenance of existing Bridges@ 200000/bridge	No	5.00	200000	1,000,000.00
11	4.14	Repair & Maintenance of existing culverts@ 50000/culvert	No	141.00	50000	7,050,000.00
12	8.00	TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES FOR EXISTING ALIGNMENT				
		Road Markings & Signages				11,073,474.82
		Road Markers/Road Stud with Lense Reflector				817,650.00
		Direction and Place Identification Signs Board.				888,026.34
		Overhead Signs				772,698.48
		Metal Beam Crash Barrier	m	7,000.00	3703.67	25,925,690.00
13	12.7B	Random Rubble Masonry	Cum	135.13	5588.33	755,151.03
14	12.8A	Plain Cement Conrete (PCC) Grade M15	Cum	33.78	7163.93	241,997.56
15		Premix Carpet with seal coat for patch repair work	Sqm	9,000.00	210.00	1,890,000.00
16					Sub-Total (In Rs)	491,912,328.70
17					GST @ 6%	29,514,739.72
18					Grand Total (In Rs)	521,427,068.42



Package - 7

	Maintainance Charges For 4 year @ 5% on A	26,071,353.42
	CONTINGENCIES @ 2.8% ON A	14,599,957.92
	CONSTRUCTION SUPERVISION CHARGES @ 3% ON A	15,642,812.05
	Administrative Charges of NHIDCL @ 3% ON A	15,642,812.05
	Pre-Construction Activities i.e. Resettlement and Shifting of Utilities etc. (Lump Sum) @ 5% of (A)	26,071,353.42
	TOTAL ESTIMATED COST =	619,455,357.28
	Say (In Crore)	61.95
	COST PER KM (In Crore)	2.48



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	25000	0.150		7500.00	859.51	6446325
	For Centre line Marking	Sqm	1	25000	0.100		2500.00	859.51	2148775
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	15	1.50	0.60	-	13.50	13578.44	183308.94
ii	more than 0.9 sqm size	Sqm	25	1.50	0.80	-	30.00	23490.58	704717.4
3	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	3450.00				3450.00	237	817650
4	Metal Beam Crash Barrier Type - A, "W" : Metal Beam Crash Barrier								
	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810								
	For Curved Portion	Rm	1	7000.0			7000.00	3703.67	25925690.0
5	Overhead Signs								
	Supplying and fixing overhead signs complete as per drawing and Technical Specifications Section 800 including cost of posts, truss, erection, fitting and foundations. Sheeting will be retro reflective type of high intensity grade and message/borders will be screen-printed as per drawings.								



Package - 7

S.NO	Description	Unit	Nos.	Length	Width	Depth	Quantity	Rate	Amount
	a) Truss and Vertical Support (Portal type)	MT.	12.0				12.00	61,473.65	737,683.80
	b) Aluminium alloy plate for over head sign	MT.	3.00				3.00	11,671.56	35,014.68
Total Cost									36999164.82



Drainage works

Item No.	SOR Ref No	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Rate (Rs.)	Amount (Rs.)
		Drainage works								
7.01	3.6 (ii)	Unlined Drains :- Earth work in excavation in trenches in unlined drain as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	1.00	37,600.0		0.27	10,152.00	71.71	727,999.92
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	10,500.0		0.29	2,992.50	68.68	205,524.90
(b)		PCC Grade M15	cum	1.00	10,500.0		0.29	2,992.50	7163.93	21,438,060.53
7.03		Lined RCC Covered Drains:- Providing covered RCC drain in urban areas excluding excavation as per drawing and technical specifications section 1500,1600,1700.								
(a)	3.6 (ii)	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	2.00	1,900.00	1.70	1.50	9,690.00	68.68	665,509.20
(b)	12.8 A	PCC Grade M15 in levelling course	cum	2.00	1,900.00	1.70	0.08	484.50	7163.93	3,470,924.09
(c)	12.8 B	Top Slab	cum	2.00	1,900.00	1.50	0.10	570.00	7759.83	4,423,103.10
(d)	12.8 C	Bottom Slab	cum	2.00	1,900.00	1.50	0.10	570.00	7759.83	4,423,103.10
(e)	12.8 D	Wall	cum	2.00	1,900.00	0.15	1.30	741.00	7759.83	5,750,034.03
(f)	12.40	HYSD Steel	MT	1.00		x 60 kg per cum		112.86	90622.25	10,227,627.14
Total Cost of RCC Covered Drain =										28,960,300.65



Quantity Calculation- Dismantling of Flexible Pavement

Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (cum)	Granular Layer		
	From	to					Width (m)	Thickness (m)	Volume (cum)
1	181	182	1000	4	0.080	320.0	4	0.190	760.00
2	182	183	1000	4.7	0.090	423.0	4.7	0.230	1081.00
3	183	184	1000	4.2	0.100	420.0	4.2	0.200	840.00
4	184	185	1000	3.4	0.070	238.0	3.4	0.220	748.00
5	185	186	1000	3.4	0.060	204.0	3.4	0.240	816.00
6	186	187	1000	3.4	0.080	272.0	3.4	0.210	714.00
7	187	188	1000	3.4	0.070	238.0	3.4	0.200	680.00
8	188	189	1000	3.4	0.090	306.0	3.4	0.200	680.00
9	189	190	1000	3.4	0.100	340.0	3.4	0.200	680.00
10	190	191	1000	3.4	0.070	238.0	3.4	0.270	918.00
11	191	192	1000	3.4	0.090	306.0	3.4	0.190	646.00
12	192	193	1000	5.5	0.050	275.0	5.5	0.200	1100.00
13	193	194	1000	4.1	0.060	246.0	4.1	0.190	779.00
14	194	195	1000	3.8	0.040	152.0	3.8	0.200	760.00
15	195	196	1000	3.8	0.090	342.0	3.8	0.140	532.00
16	196	197	1000	3.8	0.060	228.0	3.8	0.180	684.00
17	197	198	1000	3.8	0.045	171.0	3.8	0.230	874.00
18	198	199	1000	3.8	0.070	266.0	3.8	0.190	722.00
19	199	200	1000	3.8	0.080	304.0	3.8	0.200	760.00
20	200	201	1000	3.8	0.060	228.0	3.8	0.280	1064.00
21	201	202	1000	3.8	0.090	342.0	3.8	0.230	874.00
22	202	203	1000	3.8	0.100	380.0	3.8	0.200	760.00
23	203	204	1000	3.8	0.090	342.0	3.8	0.200	760.00
24	204	205	1000	3.8	0.060	228.0	3.8	0.230	874.00
25	205	206	1000	3.9	0.050	195.0	3.9	0.245	955.50
Total =						7004	20061.50		



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	181	182	1000	5.50	0.180	1039.5	6.50	0.200	1365
2	182	183	1000	5.50	0.180	1039.5	6.50	0.200	1365
3	183	184	1000	5.50	0.180	1039.5	6.50	0.200	1365
4	184	185	1000	5.50	0.180	1039.5	6.50	0.200	1365
5	185	186	1000	5.50	0.180	1039.5	6.50	0.200	1365
6	186	187	1000	5.50	0.180	1039.5	6.50	0.200	1365
7	187	188	1000	5.50	0.180	1039.5	6.50	0.200	1365
8	188	189	1000	5.50	0.180	1039.5	6.50	0.200	1365
9	189	190	1000	5.50	0.180	1039.5	6.50	0.200	1365
10	190	191	1000	5.50	0.180	1039.5	6.50	0.200	1365
11	191	192	1000	5.50	0.180	1039.5	6.50	0.200	1365
12	192	193	1000	5.50	0.180	1039.5	6.50	0.200	1365
13	193	194	1000	5.50	0.180	1039.5	6.50	0.200	1365
14	194	195	1000	5.50	0.180	1039.5	6.50	0.200	1365
15	195	196	1000	5.50	0.180	1039.5	6.50	0.200	1365
16	196	197	1000	5.50	0.180	1039.5	6.50	0.200	1365
17	197	198	1000	5.50	0.180	1039.5	6.50	0.200	1365
18	198	199	1000	5.50	0.180	1039.5	6.50	0.200	1365
19	199	200	1000	5.50	0.180	1039.5	6.50	0.200	1365
20	200	201	1000	5.50	0.180	1039.5	6.50	0.200	1365
21	201	202	1000	5.50	0.180	1039.5	6.50	0.200	1365
22	202	203	1000	5.50	0.180	1039.5	6.50	0.200	1365
23	203	204	1000	5.50	0.180	1039.5	6.50	0.200	1365
24	204	205	1000	5.50	0.180	1039.5	6.50	0.200	1365
25	205	206	1000	5.50	0.180	1039.5	6.50	0.200	1365
Total=						25987.5	34125		



Quantity of Tack coat					
Sl. No	Stretch		Length (m)	Width (m)	Area (incl 5% for Extra Widening) (sqm)
	From	to			
1	181	182	1000	5.5	5775
2	182	183	1000	5.5	5775
3	183	184	1000	5.5	5775
4	184	185	1000	5.5	5775
5	185	186	1000	5.5	5775
6	186	187	1000	5.5	5775
7	187	188	1000	5.5	5775
8	188	189	1000	5.5	5775
9	189	190	1000	5.5	5775
10	190	191	1000	5.5	5775
11	191	192	1000	5.5	5775
12	192	193	1000	5.5	5775
13	193	194	1000	5.5	5775
14	194	195	1000	5.5	5775
15	195	196	1000	5.5	5775
16	196	197	1000	5.5	5775
17	197	198	1000	5.5	5775
18	198	199	1000	5.5	5775
19	199	200	1000	5.5	5775
20	200	201	1000	5.5	5775
21	201	202	1000	5.5	5775
22	202	203	1000	5.5	5775
23	203	204	1000	5.5	5775
24	204	205	1000	5.5	5775
25	205	206	1000	5.5	5775
Total Quantity of Tack Coat (single layer)					144375
Total Quantity of Tack Coat (2 layer)					288750

b/w CT Subbase & RAP
coat b/w RAP & BC



Quantity of Prime coat					
Sl. No	Stretch		Length (m)	Width (m)	Area (incl 5% for Extra Widening) (sqm)
	From	to			
1	181	182	1000	5.5	5775
2	182	183	1000	5.5	5775
3	183	184	1000	5.5	5775
4	184	185	1000	5.5	5775
5	185	186	1000	5.5	5775
6	186	187	1000	5.5	5775
7	187	188	1000	5.5	5775
8	188	189	1000	5.5	5775
9	189	190	1000	5.5	5775
10	190	191	1000	5.5	5775
11	191	192	1000	5.5	5775
12	192	193	1000	5.5	5775
13	193	194	1000	5.5	5775
14	194	195	1000	5.5	5775
15	195	196	1000	5.5	5775
16	196	197	1000	5.5	5775
17	197	198	1000	5.5	5775
18	198	199	1000	5.5	5775
19	199	200	1000	5.5	5775
20	200	201	1000	5.5	5775
21	201	202	1000	5.5	5775
22	202	203	1000	5.5	5775
23	203	204	1000	5.5	5775
24	204	205	1000	5.5	5775
25	205	206	1000	5.5	5775
Total Quantity of Prime Coat (single layer)					144375



Quantity of BC						
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (incl 5% for Extra Widening) (cum)
	From	to				
1	181	182	1000	5.5	0.04	231
2	182	183	1000	5.5	0.04	231
3	183	184	1000	5.5	0.04	231
4	184	185	1000	5.5	0.04	231
5	185	186	1000	5.5	0.04	231
6	186	187	1000	5.5	0.04	231
7	187	188	1000	5.5	0.04	231
8	188	189	1000	5.5	0.04	231
9	189	190	1000	5.5	0.04	231
10	190	191	1000	5.5	0.04	231
11	191	192	1000	5.5	0.04	231
12	192	193	1000	5.5	0.04	231
13	193	194	1000	5.5	0.04	231
14	194	195	1000	5.5	0.04	231
15	195	196	1000	5.5	0.04	231
16	196	197	1000	5.5	0.04	231
17	197	198	1000	5.5	0.04	231
18	198	199	1000	5.5	0.04	231
19	199	200	1000	5.5	0.04	231
20	200	201	1000	5.5	0.04	231
21	201	202	1000	5.5	0.04	231
22	202	203	1000	5.5	0.04	231
23	203	204	1000	5.5	0.04	231
24	204	205	1000	5.5	0.04	231
25	205	206	1000	5.5	0.04	231
Total Quantity of BC						5775



Quantity of Hard Shoulder						
Sl. No	Stretch		Length (m)	Width (m)	Thickness (m)	Volume (cum)
	From	to				
1	181	182	1000	1.00	0.220	220
2	182	183	1000	1.00	0.220	220
3	183	184	1000	1.00	0.220	220
4	184	185	1000	1.00	0.220	220
5	185	186	1000	1.00	0.220	220
6	186	187	1000	1.00	0.220	220
7	187	188	1000	1.00	0.220	220
8	188	189	1000	1.00	0.220	220
9	189	190	1000	1.00	0.220	220
10	190	191	1000	1.00	0.220	220
11	191	192	1000	1.00	0.220	220
12	192	193	1000	1.00	0.220	220
13	193	194	1000	1.00	0.220	220
14	194	195	1000	1.00	0.220	220
15	195	196	1000	1.00	0.220	220
16	196	197	1000	1.00	0.220	220
17	197	198	1000	1.00	0.220	220
18	198	199	1000	1.00	0.220	220
19	199	200	1000	1.00	0.220	220
20	200	201	1000	1.00	0.220	220
21	201	202	1000	1.00	0.220	220
22	202	203	1000	1.00	0.220	220
23	203	204	1000	1.00	0.220	220
24	204	205	1000	1.00	0.220	220
25	205	206	1000	1.00	0.220	220
Total Quantity of Hard Shoulder =						5500

