



PROJECT MANAGEMENT UNIT ODISHA STATE ROADS PROJECT

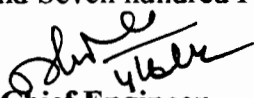
ESTIMATE

**NAME OF THE WORK : WIDENING AND STRENGTHENING
OF EXISTING CARRIAGEWAY TO 2-
LANE ROAD FROM BERHAMPUR TO
TAPTAPANI (KM 0/00 TO KM 41/00 OF
SH-17) (BALANCE WORK).**

ESTIMATED COST : Rs. 94,34,60,705.00

T/S No- 1 / 2012-13

Technically Sanctioned for Rs.94,34,60,705/- (Rupees Ninety-four Crore Thirty-four lakh
Sixty thousand Seven hundred Five) only.


Chief Engineer,
World Bank Projects, Odisha

General Abstract of Cost of Berhampur-Taptapani (Balance Work)

1	Site clearance and Dismantling	3,354,072.00
2	Earth Work	70,725,097.00
3	Sub-Base and Base Courses	183,105,648.00
4	Bituminous Courses	263,491,898.00
5	Culverts & Underpasses	86,699,539.00
6	Bridges	65,439,795.00
7	Drainage & Protective works	100,622,729.00
8	Road Safety and Amenities	107,176,279.00
9	Maintenance, Repair and Rehabilitation works	5,414,528.00
10	Environmental Mitigation Measures	35,792,606.00
	Sub total (A)	921,822,191.00
1	Total for Daywork: Labour	161,442.00
2	Total for Daywork: Materials	2,519,226.00
3	Total for Daywork: Contractor's Equipment	458,616.00
	Sub total (B)	3,139,284.00
	Subtotal (C=A+B)	924,961,475.00
1	Contingency (D = 1% of C)	9,249,615.00
2	Quality Control (E = 1% of C)	9,249,615.00
	Net Total (F =C+D+E)	943,460,705.00

ABSTRACT OF EXTIMATE FOR BALANCE WORK OF BERHAMPUR-TAPTAPANI ROAD

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	BILL NO.1 : SITE CLEARANCE				
1.01	Cleaning and Grubbing for road land complete as per Technical Specification Clause 201 and as per the direction of Engineer.	Hectare	46.00	30659.80	1,410,350.80
1.02	Dismantling structures and pavement including disposal of resulting material complete as per Technical Specification Clause 202, 2809 and as per the direction of Engineer.				
	a) Brick/ Stone Structures	Cum	2999.00	128.20	384,471.80
	b) Concrete/Reinforced concrete/ Prestressed concrete structures including cleaning straghtening & cutting of bars and separating them out from RCC/PSC.				
	For Slab Culverts & Box Culverts and Bridges				
	i)P.C.C.	Cum	1095.00	242.60	265,647.00
	ii)R.C.C.	Cum	3121.00	387.60	1,209,699.60
	c) Dismantling of Pavement course	Cum	100.00	143.50	14,350.00
	d) Hume pipe	Lm	484.00	59.60	28,846.40
	e) Kerb	Lm	60.00	7.30	438.00
	f) Dry stone pitching	Cum	51.00	96.00	4,896.00
	g) RCC railing	Lm	272.00	31.00	8,432.00
	h) Expansion joint	Lm	138.00	77.20	10,653.60
	i) Cement Concrete Wearing Coat	Sqm	271.00	60.10	16,287.10
				TOTAL	3,354,072.30
				Say,	3,354,072.00
	BILL NO.2 : EARTH WORKS				
2.01	Roadway and Drainage excavation necessary for construction of roadway complete as per Technical Specification Clause 301 and as per the direction of Engineer.				
	a) All kinds of soil	Cum	266256.00	48.00	12780288.00
	b) softrock (blasting not required) (LS)	Cum	1000.00	57.60	57600.00
	c) Hard rock (blasting required) (LS)	Cum	956.00	152.60	145885.60
	d) Hard rock (blasting not required) (LS)	Cum	1000.00	169.00	169000.00
2.02	Construction of embankment with approved material complete as per drawing and Technical Specification Clause 305 and as per the direction of Engineer.	Cum	48977.00	127.90	6264158.30
2.03	Construction of subgrade and earthen shoulder with approved material as per drawing complete and Technical Specification Clause 305 and as per the direction of Engineer.	Cum	291101.00	151.60	44130911.60

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
2.04	Construction of embankment and subgrade with suitable material deposited at site from roadway and drainage excavation all complete as per drawing and Technical Specification Clause 305 and as per the direction of Engineer.	Cum	54728.00	72.60	3973252.80
2.05	Loosening and recompacting subgrade in all kinds of soil complete as per Technical Specification Clause 305 and as per the direction of Engineer.	Cum	35375.00	42.60	1506975.00
2.06	Earthwork with agriculture soil for filling of median/island complete as per Technical Specification Clause 407 and as per the direction of the Engineer.	Cum	1620.00	152.40	246888.00
2.07	Scarifying the existing bituminous surface layers complete as per Technical Specification Clause 305 and as per the direction of Engineer.	Sqm	72488.00	3.30	239,210.40
2.08	Stripping, storing of top soil by road side at 15 m internal and re-application on embankment slopes, cut slopes and other areas in localities where the available embankment material is not conducive to plant growth as directed by the Engineer and as per technical specification-305.	Cum	13855.00	87.40	1,210,927.00
				TOTAL	70,725,096.70
				Say,	70,725,097.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	BILL NO.3 : SUB-BASE AND BASE COURSES				
3.01	Construction of Granular Sub-base course using crushed stone aggregate by providing the materials conforming to Gr-I of Table 400-2 complete as per Technical Specification Clause 401 and as per the direction of the Engineer.	Cum	90353.00	917.10	82,862,736.30
3.02	Construction of wet mix macadam complete as per Technical Specification clause 406 and as per the direction of Engineer.				
		Cum	85568.00	1171.50	100,242,912.00
				TOTAL	183,105,648.30
				Say,	183,105,648.00
	BILL NO.4 : BITUMINOUS COURSES				
4.01	Providing Primer coat over granular surface complete all as per Technical specification clause 502 and as per the direction of Engineer.	Sqm	329519.00	22.20	7,315,321.80
4.02	Providing Tack coat complete as per Technical Specification clause 503 and as per the direction of Engineer.				
	a) Granular surface treated with primer	Sqm	325069.00	8.20	2,665,565.80
	b) over normal bituminous surface	Sqm	401244.00	8.20	3,290,200.80
4.03	Providing Dense Bituminous Macdam course using Bitumen Grade-60/70 (VG-30) complete as per Technical Specification Clause 507 and as per the direction of Engineer.	Cum	22206.00	6126.30	136,040,617.80
4.04	Providing bituminous concrete wearing course using CRMB-55 complete as per Technical Specification Clause 509 and as per the direction of Engineer.	Cum	16182.00	7056.00	114,180,192.00
				TOTAL	263,491,898.20
				Say,	263,491,898.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	BILL NO.5 : CULVERTS AND UNDERPASSES				
5.01	Earthwork in excavation of foundation for structures complete as per drawing and technical specifications clause 304 including all leads and lifts and as per the direction of Engineer.	Cum	3821.00	32.00	122,272.00
5.02	Earth fill below pitching in quadrant portion with approved material complete as per drawing and Technical Specification Clause 305 with all leads and lifts and as per the direction of Engineer.	Cum	2347.00	152.40	357,682.80
5.03	Providing and filling behind abutment, wing wall and return wall etc. and below pipe bed in layers not exceeding 150mm thick including All leads and lifts complete as per drawings, direction of the Engineer and Technical specification clause 304 and as per the direction of Engineer.	Cum	3096.00	383.00	1,185,768.00
5.04	Providing filter media behind abutment, wing wall and return wall complete as per drawing and Technical Specification clause 2504, 2509, 2510 and as per the direction of Engineer.	Cum	1213.00	1418.10	1,720,155.30
5.05	Cement Concrete M-15 grade in leveling course etc. including centering and shuttering all complete as per Drawings and Technical Specification Sections 1500 and 1700 and as per the direction of Engineer.	Cum	1606.00	4065.60	6,529,353.60
5.06	Cement Concrete M-15 grade in foundation including centering and shuttering all complete as per Drawings and Technical Specification Sections 1500, 1700, 2200 and as per the direction of Engineer.	Cum	1304.00	4300.80	5,608,243.20
5.07	Cement Concrete M-15 grade in substructure & headwall including centering and shuttering all complete as per Drawings and Technical Specification Sections 1500, 1700, 2200 and as per the direction of Engineer.	Cum	3260.00	4300.80	14,020,608.00
5.08	Reinforced cement concrete in all types of culverts as per drawing and technical specification Section 1500, 1700 & 2200 and as per the direction of Engineer.				
	a) M-20 grade	Cum	2644.00	5110.90	13,513,219.60
	b) M-25 grade	Cum	10.00	5691.70	56,917.00
5.09	Reinforced cement concrete M-30 grade in approach slabs including cost of reinforcement all complete as per Drawing and Technical Specification Clause 2704 and as per the direction of Engineer.	Cum	701.00	9069.20	6,357,509.20

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
5.10	HYSD bar reinforcement complete as per drawing and technical specifications clause 1600 and as per the direction of Engineer.	MT	187.00	74682.00	13,965,534.00
5.11	Providing laying and joining NP-4(I.S 458) hume pipes with culvert complete as per drawing Tech. Specification section 2900 and IRC special publication no.13 and as per the direction of Engineer.				
	a) 1m dia. in single row	Lm	499.00	5193.00	2,591,307.00
	b) 1m dia. in two rows	Double Row-Lm	632.00	10440.10	6,598,143.20
	c) 1.2m dia. in multiple row	Double Row-Lm	275.00	13920.00	3,828,000.00
	d) 0.3m dia in single row for utility duct	Lm	375.00	1960.00	735,000.00
5.12	Providing laying and joining NP-3(I.S 458) hume pipes with culvert complete as per drawing Tech. Specification section 2900 and IRC special publication no.13 and as per the direction of Engineer.				
	a) 0.6m dia in single row for cross drain	Lm	620.00	1777.70	1,102,174.00
5.13	Providing and laying filter material underneath stone pitching in slopes complete as per drawings and technical specification section 2504, 2509, 2510 and as per the direction of Engineer.	Cum	939.00	1418.10	1,331,595.90
5.14	Providing and laying stone Pitching on embankment slopes complete as per drawing and technical specification Clause 2504.	Cum	1823.00	839.70	1,530,773.10
5.15	Providing Boulder apron for bed protection with stone boulders complete as per Drawing and Technical Specification Section 1400 and 2500	Cum	1099.00	839.70	922,830.30
5.16	Providing weep holes in box portion, return wall, wing wall etc. all complete as per drawing and technical specification clause . 2706 and as per the direction of Engineer.	Nos	1843.00	103.90	191,487.70
5.17	Supplying, fitting and fixing in position true to line and level tar paper bearings confirming to IRC-83 (para-II) section IX complete with all accessories as per drawings and technical specification clause 2011, IS 1398 and as per the direction of Engineer.	Sqm	82.00	50.00	4,100.00
5.18	Supplying and fixing Asphaltic Plug expansion joints complete as per Drawing and as per IRC: SP : 69-2005 and as per the direction of Engineer.	Lm	816.00	1131.00	922,896.00
5.19	Cement Concrete Parapet in M-15 complete as per Drawing and Technical Specification Section	Cum	320.00	4065.60	1,300,992.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
5.20	Bituminous wearing course 56mm thick comprising 50mm thick asphaltic concrete in a single layer over Bituminous mastic course 6mm thick with a prime coat complete as per Drawing and Technical Specification Section 2700, Clause 512 and as per the direction of Engineer.	Sqm	3749.00	573.60	2,150,426.40
5.21	Synthetic enamel painting of culvert no. and span arrangement as per IRC - 7 - 1971 and as per the direction of Engineer.	No.	112.00	46.70	5,230.40
5.22	Painting on concrete surface (Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 Sq.m.)	Sqm	1690.00	28.00	47,320.00
				TOTAL	86,699,538.70
				Say,	86,699,539.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	BILL NO.6 : BRIDGES				
6.01	Earthwork in excavation of foundation for structures complete as per drawing and technical specification clause 304 including all leads & lift and as per the direction of Engineer.	Cum	6019.00	32.00	192,608.00
6.02	Providing and filling foundation and at the back of abutment, wing wall and return wall etc. and below pipe bed in layers not exceeding 150mm thick including all leads & lifts as per Technical specification Clause 304 and as per the direction of Engineer.	Cum	1984.00	383.00	759,872.00
6.03	Providing Filter media behind abutment, wing wall and return wall complete as per drawing and technical Specification clause 2504 and as per the direction of Engineer.	Cum	135.00	1418.10	191,443.50
6.04	Cement concrete M-15 grade in leveling course etc including centering and shuttering all complete as per drawing and Technical specification Section 1500 and 1700 and as per the direction of Engineer.	Cum	333.00	4065.60	1,353,844.80
6.05	Cement concrete M-15 grade in foundation and substructure etc including centering and shuttering all complete as per drawing and Technical specification Section 1500, 1700, 2100, 2200 and as per the direction of Engineer.	Cum	768.00	4300.80	3,303,014.40
6.06	Reinforced cement concrete in foundation complete as per drawing & Technical specification sections 1500, 1700, 2100, 2200 and as per the direction of Engineer.				
	a) M-20 Grade	Cum	667.00	4832.00	3,222,944.00
6.07	Reinforced cement concrete in substructure complete as per drawing & Technical specification sections 1500, 1700, 2200 and as per the direction of Engineer.				
	a) M-20 Grade	Cum	1189.00	5728.00	6,810,592.00
6.08	Reinforced cement concrete in super structure complete as per drawing and Technical specification section 1500, 1700, 2300 and as per the direction of Engineer.				
	a) M-25 grade	Cum	149.00	6426.10	957,488.90
	b) M-30 grade	Cum	1772.00	6511.20	11,537,846.40
6.09	A)HYSD bar reinforcement complete as per drawing and technical specifications clause 1600 and as per the direction of Engineer.				
	a) in foundation	Tonne	39.00	74629.30	2,910,542.70
	b) in substructure	Tonne	119.00	74682.00	8,887,158.00
	c) in superstructure	Tonne	202.00	75155.60	15,181,431.20

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
6.10	Providing and fixing bearings complete as per Drawing and technical specification 2000 and as per the direction of Engineer.				
	a) Tar paper bearing	Sqm	246.00	50.00	12,300.00
6.11	Reinforced cement concrete M-30 grade for in approach slabs complete as per Drawing and Technical specification section 1500, 1600, 1700, 2700 and as per the direction of Engineer.	Cum	191.00	9069.20	1,732,217.20
6.12	Bituminous wearing course 56mm thick comprising 50mm thick asphaltic Concrete in a single layer over Bituminous mastic course 6 mm thick with a prime Coat Complete as per drawing and Technical Specification Section 2700 and as per the direction of Engineer.	Sqm	1258.00	573.60	721,588.80
6.13	Providing and fixing Drainage Spouts Complete as per drawing and Technical Specification Clause 2705 and as per the direction of Engineer.	No	32.00	870.00	27,840.00
6.14	Providing and laying Stone pitching in slopes complete as per drawing and Technical Specification Section 2500 and as per the direction of Engineer.	Cum	137.00	839.70	115,038.90
6.15	Providing as laying fitter material underneath Stone pitching in slopes Complete as per drawing and Technical Specification clause 2504 and as per the direction of Engineer.	Cum	324.00	1479.30	479,293.20
6.16	Providing weep holes in abutments, wing walls and return walls etc. as per drawing and Technical Specification clause 2706 and as per the direction of Engineer.	Nos	780.00	103.90	81,042.00
6.17	Providing rubble Stone flooring in Cement mortar (1Cement:3 sand) and joints Complete as per drawing and Technical Specification Section 1400 and 2500 and as per the direction of Engineer.	Cum	280.00	3690.70	1,033,396.00
6.18	Supplying as fixing the following types of expansion joints Complete as per Drawing and as per IRC: SP : 69-2005 and as per the direction of Engineer.				
	a) Asphaltic plug	Lm	381.00	1131.00	430,911.00
6.19	Synthetic enamel painting of Bridge No. and span arrangement as per IRC - 7 - 1971 and as per the direction of Engineer.	No.	32.00	46.70	1,494.40

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
6.20	Carrying and Confirmatory bores up to required depth as locations of bridges as directed by Engineer complete in all respects handling testing as per Technical Specification Section 2400 and interpretation of the bore data and presentation of the results and as per the direction of Engineer.				
	a) Up to 20 mtr. in all types of soil (except hard rock)	Lm	210.00	450.00	94,500.00
	b) Up to 20 mtr. in hard rock	Lm	50.00	1000.00	50,000.00
6.21	Providing and painting of flood gauge on substructure is fall height and 500mm width and as per the direction of Engineer.	Lm	120.00	277.40	33,288.00
6.22	Providing and laying 150mm dia. HDPE Service pipe as per drawing and as per the direction of Engineer.	Lm	678.00	300.00	203,400.00
6.23	Earth fill below pitching in quadrant portion with approved material complete as per drawing and Technical Specification Clause 305 with all leads and lifts and as per the direction of Engineer.	Cum	1314.00	152.40	200,253.60
6.24	PCC in flooring as per Drawing & Technical Specification section 1700, 2500 and as per the direction of Engineer.				
	a) M-15	Cum	653.00	4065.60	2,654,836.80
	b) M-20	Cum	218.00	4780.70	1,042,192.60
6.25	Reinforced cement concrete crash barrier to bridge structures as per the approved drawing and Technical Specification clause 809, and section 1500, 1600, 1700 and as per the direction of Engineer .	Lm	339.00	3591.20	1,217,416.80
				TOTAL	65,439,795.20
				Say,	65,439,795.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	BILL NO.7 : RETAINING WALL, DRAINAGE AND PROTECTIVE WORKS				
7.01	Retaining Wall				
(a)	Earthwork in excavation for foundation complete as per drawing and Technical Specification Clause 304 in Retaining wall for high embankment stretches as per the direction of Engineer.	Cum	2268.00	32.00	72,576.00
(b)	Providing and filling foundation and at the back of abutment, wing wall and return wall etc. and below pipe bed in layers not exceeding 150mm thick including all leads & lifts as per Technical specification Clause 305 and as per the direction of Engineer.	Cum	1631.00	383.00	624,673.00
(c)	Filter media behind wall complete as per drawing and Technical Specification Clauses 2504 and as per the direction of Engineer.	Cum	2880.00	1418.10	4,084,128.00
(d)	Plain cement concrete M -15 in foundation leveling course etc. including centering and shuttering all complete as per drawing and Technical Clauses 1500, 1700 and as per the direction of Engineer.	Cum	189.00	4065.60	768,398.40
(e)	Cement concrete M -20 for reinforced concrete in foundation including centering and shuttering all complete as per drawing and Technical Clauses 1500, 1700, 2100 and as per the direction of Engineer.	Cum	1314.00	4832.00	6,349,248.00
(f)	Providing steel reinforcement (HYSD) for retaining wall complete as per drawing and Technical Specification Clause 1600 and as per the direction of Engineer.	MT	79.00	74629.30	5,895,714.70
(g)	Providing guard post complete as per drawings and Technical specifications section 806 and as per the direction of Engineer.	No.	600.00	423.60	254,160.00
(h)	Providing weep holes in retaining wall complete as per drawing and Technical Specification Clause 2706 and as per the direction of Engineer.	No.	1200.00	103.90	124,680.00
7.02	Providing and laying stone pitching on embankment slopes as per drawing and Technical Specification Clause 2504 and as per the direction of Engineer.	Cum	1007.00	839.70	845,577.90
7.03	Providing and laying filter material underneath stone pitching on embankment slopes as per drawing and Technical Specification Clause 2504 and as per the direction of Engineer.	Cum	504.00	1479.30	745,567.20

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
7.04	Turfing side slopes of main road and service road with grass sods complete as per Technical Specification Clause 307 and as per the direction of Engineer.	Sqm	158274.00	19.70	3,117,997.80
7.05	Constructing precast saucer drain to the required lines and grades as per Drawing and Technical Specification and as per the direction of the Engineer.	Lm	24900.00	3014.80	75,068,520.00
7.06	Constructing box type drains to the required lines and grades as per drawing and technical specification section 1500, 1600, 1700, 2100 and as per the direction of Engineer.	Lm	360.00	7420.80	2,671,488.00
				TOTAL	100,622,729.00
				Say,	100,622,729.00
	BILL NO-8 : ROAD SAFETY AND AMENITIES				
8.01	Providing and laying plain cement concrete kerb as per drawing and Technical Specifications Clauses 408, section 1500 and as per the direction of Engineer.	Lm	1336.00	225.10	300,733.60
8.02	Providing and laying service ducts with 160/136mm dia HDPE Double Walled Corrugated Pipe conforming to IS:14930 (Part-II) including cutting of trenches and as per the direction of Engineer.	Lm	1650.00	324.00	534,600.00
8.03	Providing and fixing RCC boundary posts complete as per drawing and Technical Specification Clause 806 and as per the direction of Engineer.	No	449.00	353.40	158,676.60
8.04	Providing and fixing RCC/PCC hectometer, Kilometer and 5th kilometer stones complete as per Technical Specification Clause 804 and as per the direction of Engineer.				
	a) No of (200) Hectometer Stone	No	164.00	394.70	64,730.80
	b) No of Kilometer stone	No	32.00	1452.90	46,492.80
	c) No. of 5th Kilometer Stone	No	9.00	2338.40	21,045.60
8.05	Constructing islands complete as per drawing and Technical Specifications Clause 409 and 407 and as per the direction of Engineer.	Sqm	1230.00	2000.00	2,460,000.00
8.06	Providing passenger shelters for Bus Bays as per drawing and Technical Specifications Section 1500, 1600, 1700, 2100, 2200, 2300 and as per the direction of Engineer.	No	26.00	62517.00	1,625,442.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
8.07	Construction of temporary diversion including Cross drainage works where necessary and maintenance thereof including traffic control and safety complete as per Technical Specification Clause 112 and as per the direction of Engineer.	Lm	2665.00	6188.50	16,492,352.50
8.08(a)	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, as per Technical Specification section 800 and as per direction of Engineer.				
	Lane line / Edge marking	sqm	11262.00	557.90	6,283,069.80
8.08(b)	Painting lines, dashes, arrows etc on roads in two coats on new work with ready mixed road marking paint conforming to IS:164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control				
	Directional arrows and lettering etc. (over 10cm width)	sqm	1000.00	52.30	52,300.00
8.09	Supplying and fixing sign boards complete as per Technical Specifications Clause 801. Including the cost of Posts, Fitting & fixing. Sheeting will be retro reflective type of high intensively grade and messages / boarders and as per the direction of Engineer.				
(a)	Informatory Signs				
	(i) Facility Information (800 x 600)mm	No	56.00	4990.10	279,445.60
	(ii) Direction Signs (1200 x 700 mm)	No	62.00	9033.00	560,046.00
	(iii) Advance Direction (size 1800 x 1200mm) ,	No	7.00	9373.60	65,615.20
	(iv) Re-Assurance Sign (1800 X 1200 mm) ,	No	7.00	9373.60	65,615.20
	(v) Destination Sign (1500 X 900 mm) ,	No	7.00	7373.60	51,615.20
	(vi) Place Identification (1500 X 900 mm) ,	No	40.00	7373.60	294,944.00
	(vii) Toll Booth (1500 X 900 mm)	No	4.00	7373.60	29,494.40
	(viii) Bus Lane Sign (450mm x 600mm)	No	26.00	3493.20	90,823.20
	(ix) Other Informatory Signs (2100 x 1500mm)	No	2.00	9373.60	18,747.20
(b)	Cautionary Signs triangular 900mm side	No	200.00	4063.40	812,680.00
(c)	Mandatory Signs				
	(i) Circular 600mm dia	No	70.00	3585.90	251,013.00
	(ii) Octagon 900 mm height	No	85.00	6358.70	540,489.50
	(iii) Triangular 900 mm side	No	121.00	4063.40	491,671.40
8.10	Providing & fixing retro - reflectorised road delineators complete as per drawing , Technical specifications clause 805 and as per the direction of Engineer.				
	(I) Roadway delineator	No	391.00	787.90	308,068.90

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	(ii) Hazard Marker	No	80.00	787.90	63,032.00
	(iii) Object Marker	No	26.00	787.90	20,485.40
8.11	Providing and fixing RCC Guard post complete including end anchorage as per drawing and Technical Specifications Clause 806 and as per the direction of Engineer.	No.	1776.00	423.60	752,313.60
8.12	Providing and fixing of metal beam crash barrier made out of cold rolled steel strip W profile of 3 mm thick having a minimum yield strength of 2400 kg/sqcm, width of 313 mm and depth of corrugation as 83 mm hot dip galvanized of zinc coating @ 550 gm/sq.m.The post and spacer channel is made out of cold rolled channel 150x75x5 mm having minimum yield strength of 2400 kg/sqcm and hot dip galvanized of zinc coating @ 550 gm/sq.m. The total length of post shall be 1900 mm and minimum height of post above concrete foundation shall be 800 mm. The length of spacer channel shall be 330 mm. Job includes neatly fixing new post in cement concrete of M-20 grade complete (cost included) as directed by the Engineer including fasteners and fixing etc. complete. The spacing of the Steel posts shall be about 2 m.The guard rail reflectors of 100 mm dia circular made out of 2 mm thick GI sheet duly fixed with micro-prismatic type sheeting with Type 9 ASTM D 4956-01 standards @ every 5 metersThe work is to be executed as per drawing, Specifications and as directed by the Engineer.	Lm	800.00	2541.00	2,032,800.00
8.13	Providing and fixing Pedestrian guard rails in modules including painting with approved paint complete as per drawing and Technical Specification Clause 803,1008,1300 & 1700.	Lm	24900.00	2696.20	67,135,380.00
8.14	Supply of colour video coverage in Digital format during construction as per Technical Specifications Clause 126 As per requirement and as per the direction of the Engineer.	set	25.00	20000.00	500,000.00
8.15	Providing rumble strips complete at required places as per drawing and as per the direction of Engineer.	No.	12.00	5906.00	70,872.00
8.16	Providing road hump complete at required places as per drawing and as per the direction of Engineer.	No.	39.00	17425.00	679,575.00
8.17	Providing toll plaza as per drawing and technical specification and as per the direction of Engineer.	No.	1.00	1339888.00	1,339,888.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
8.18	Providing and fixing of bi-directional retro reflective raised pavement markers of approved colour, quality & make conforming to ASTM D-4280 as per approved drawing and locations provided in the schedule made from injection moulded high impact polymer including cleaning, preparation of surface and fixing at position with approved quality adhesives including cost of all materials, labour, transportation, taxes, duties, sundries, T&P etc. complete as per the technical specifications and direction of Engineer.	No	10580.00	159.00	1,682,220.00
8.19	Supplying, erecting and commissioning 100kVA diesel powered generator of approved make for Toll Plaza at required place as per the direction & approval of Engineer including cost of all labour, transportation, taxes, duties etc. complete.	No	1.00	1000000.00	1,000,000.00
				TOTAL	107,176,278.50
				Say,	107,176,279.00
	BILL NO.9 MAINTENANCE, REPAIR AND REHABILITATION				
9.01	Restoration of Rain Cuts (Restoration of rain cuts with soil, moorum, gravel or a mixture of these, clearing the loose soil, benching for 300 mm width, laying fresh material in layers not exceeding 250 mm and compacting with plate compactor or power rammers to restore the original alignment, levels and slopes)	Cum	297.00	61.50	18,265.50
9.02	Maintenance of Earthen Shoulder (filling with fresh soil) (Making up loss of material/ irregularities on shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment.)	Sqm	13200.00	25.80	340,560.00
9.03	Maintenance of Earth Shoulder (stripping excess soil) (Stripping excess soil from the shoulder surface to achieve the approved level and compacting with plate compactor)	Sqm	13200.00	7.60	100,320.00
9.04	Filling Pot- holes and Patch Repairs with open - graded Premix surfacing, 20mm. (Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 511, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2)	Sqm	24255.00	115.60	2,803,878.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
9.05	Epoxy bonding of new concrete to old concrete for jacketing as Technical Specification clause 2805 and as per the direction of Engineer.	Sqm	3934.00	546.90	2,151,504.60
				TOTAL	5,414,528.10
				Say,	5,414,528.00

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
	BILL NO.10 ENVIRONMENTAL MITIGATION MEASURES				
10.01	Earthwork in excavation in all kinds of soil of foundation for structures complete as per drawing no. OSRP/CEG/SH/ENV/1A,B,C,03,04-A,B,05-A,09,10 and Major Junction and technical specifications clause 304 including all leads and lifts	cum	5753.00	32.00	184,096.00
10.02	Filling sand below foundations for structures complete as per drawing no. OSRP/CEG/CDJN,09 and technical specifications clause 304 including all leads and lifts	cum	4728.00	389.40	1,841,083.20
10.03	Providing & laying in position Cement Concrete M-15 grade in foundation, levelling course etc. including centering and shuttering all complete as per drawing no. OSRP/CEG/SH/ENV/1A,B,C,03,04-A,B,05-A,09,10, Major Jns and Technical Specification Sections 1500 and 1700.	cum	3009.00	4065.60	12,233,390.40
10.04	Providing and laying in position PCC M-20 grade in (in kerbs) as per drawing no. OSRP/CEG/SH/ENV/01A,B,C and technical specifications clause 408 and section 1700 and direction of Engineer.	Lm	5459.00	225.10	1,228,820.90
10.05	Providing & laying in position Cement Concrete M-20 grade in foundation, levelling course etc. including centering and shuttering all complete as per drawing no. OSRP/CEG/SH/ENV/1A,B,C,09, Major Jns and Technical Specification Sections 1500 and 1700.	cum	341.00	4780.70	1,630,218.70
10.06	Providing & laying in position Reinceforcd Cement Concrete M-20 grade in foundation, levelling course etc. including centering and shuttering all complete as per drawing no. OSRP/CEG/SH/ENV/04-A,B,05,5-A,10, Major Jns and Technical Specification Sections 1500 and 1700.	cum	1219.00	4832.00	5,890,208.00
10.07	Providing & laying in position HYSD bars reinforcement bars with cutting, bending, binding, laying in position including cost of binding wires complete as per technical spection clause 1600 and direction of Engineer.	MT	61.00	74629.30	4,552,387.30

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
10.08	Supplying and fixing of MS Grill Gates at schools/ Government Buildings including cost of enamel painting two coats over a coat of red oxide as per drawing no OSRP/CEG/SH/ENV/05A as per technical spections on building items and direction of Engineer.	Kg	5470.00	50.00	273,500.00
10.09	Supplying and fixing of MS ISA 7575 of 5mm thick angle posts, split 70mm at botton end including cost of enamel painting two coats over a coat of red oxide to be fixed vertically in position in concrete and holes drilled drilled in it @ 150mm C/C as per drawing no OSRP/CEG/SH/ENV/04B,5 as per technical spections on building items and direction of Engineer.	Kg	5520.00	50.00	276,000.00
10.1	Providing and GI barbed wire twisted with 2 wires of 2.5mm dia @ including cost of material, labour all complete as per drawing No. OSRP/CEG/SH/ENV/04B,5 as per technical spections on building items and direction of Engineer.	Kg	484.00	55.00	26,620.00
10.11	Providing and laying Boulder aprpon with HG boulder at spilling locations as per technical specification clause 2506 and as per drawing no.OSRP/CEG/SH/ENV/10 and direction of Engineer.	Cum	154.00	839.70	129,313.80
10.12	Constructing course rubble hard granite stone masonry in C.M 1:3 (at bathing ghat) as per technical specification cl. No. 1400, 2200 as per Drawing No. OSRP/CEG/SH/ENV/09 and as per the direction of Engineer.	Cum	548.00	3618.00	1,982,664.00
10.13	Providing and laying filter material under neath the pitching in slopes at water bodies and ponds as per technical specification clause 2500, drawing no.OSRP/CEG/SH/ENV/3 and direction of Engineer	Cum	1201.00	1479.30	1,776,639.30
10.14	Providing and laying pitching on slopes over filter material at water bodies and ponds as per technical specification clause 2500, drawing no.OSRP/CEG/SH/ENV/3 and direction of Engineer.	Cum	1601.00	839.70	1,344,359.70

Sl. No.	Description	Unit	Balance Quantity	Rate	Amount
10.15	Providing cement pointing to CRHG stone masonry 20mm thick with CM(1:3) for side wlls at bathing Ghats locations as per drawing no. OSRP/CEG/SH/ENV/9 and as per direction of Engineer.	Sqm	702.00	80.00	56,160.00
10.16	Providing and fixing fixed flower vase of bottom(150x150), top (400x400) of depth 300mm as per drawing no OSRP/CEG/SH/ENV/4A and as per direction of Engineer.	No	252	250.00	63,000.00
10.17	Construction of approach road with GSB and moorum topping well mixed and compacted as hard sholder as per technical spection clause 400.2 drawing no OSRP/CEG/SH/ENV/05 and as per direction of Engineer.	Lm	300.00	250.00	75,000.00
10.18	Providing cement paint two coats to the walls as per drawing no. OSRP/CEG/SH/ENV/03, 04-A, B, 05, 05A, 10 as per direction of Engineer.	Sqm	6494.00	17.50	113,645.00
10.19	Maintenance of haulage road for 4 occurrences through out the construction period as per technical specification cl.no.3002 and as per the direction of Engineer.	Cum	22500.00	72.60	1,633,500.00
10.2	Providing and placing RCC M-20 Garbage collection bins of internal dia 1.0m and 75mm thich of 1.0M height at commercial locations and as per the direction of Engineer.	No	30.00	1500.00	45,000.00
10.21	Stripping of top soil from borrow areas located in agriculture fields, storing at a suitable place, spreading and re-laying after taking the borrow earth to maintain fertility of the agricultural field, finishing it to the required levels and satisfaction of the farmer etc. complete as per the direction of Engineer.	Cum	5000.00	87.40	437,000.00
				TOTAL	35792606.30
				Say,	35,792,606.00

DAY WORK ITEMS

Sl. No.	Description	Unit	Quantity	Rate	Amount
Schedule of Daywork Rates: 1. Labour					
D101	Labour (un-skilled)	Day	400	92.50	37000.00
D102	Mason Special	Day	50	131.50	6575.00
D103	Carpenter Special	Day	20	131.50	2630.00
D104	Steelworker Erector	Day	70	131.50	9205.00
D105	Driver for vehicle up to 10 tons	Day	50	131.50	6575.00
D106	Operator for excavator, dragline, shovel or crane	Day	50	131.50	6575.00
D107	Operator for tractor with dozer blade or ripper	Day	50	131.50	6575.00
D108	Operator grader	Day	50	131.50	6575.00
D109	Operator in other construction equipment	Day	50	131.50	6575.00
D110	Chowkidars for watch & ward	Day	500	92.50	46250.00
				Total	134535.00
D111	Allow 20% percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				26907.00
				Total	161442.00
Schedule of Daywork Rates: 2. Materials					
D201	Cement, ordinary Portland or equivalent in bags conforming to IS:269:1989 and IS 455:1989	Per Mt	20	5843.00	116860.00
D202	HYSD reinforcing bars upto 25 mm dia conforming to IS:1786:1989	Per Mt	5	48303.00	241515.00
D203	Bricks of class designation 75 as per IS:1077:1992	Per 1000 Nos	500	2789.50	1394750.00
D204	Anti Corrosive Bituminous paint	Per Lit	10	145.20	1452.03
D205	Enamel Paint of any shade & colour (IS:2932-1964 & IS 137-1975)	Per Lit	10	145.20	1452.03
D206	Coarse Sand as per IS 1542	Per Cum	50	224.80	11240.00
D207	R.R. Stone for masonry	Per Cum	50	430.40	21520.00
D208	Crusher broken stone aggregates up to 25 mm nominal size	Per Cum	50	701.25	35062.50
D209	Crusher broken stone aggregates Above 25 mm nominal size	Per Cum	50	594.00	29700.00
D210	Portable water at site	Per 1000 ltr	5000	10.00	50000.00
D211	Gravel/ Moorum for Road Work	Per Cum	50	162.40	8120.00
D212	Bitumen-VG-30	Per MT	5	37536.70	187683.50
				Total	2099355.00
D213	Allow 20% percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				419871.00
				Total	2519226.00

Schedule of Daywork Rates: 2. Contractor's Equipment					
D301	Excavator, face shovel, or dragging:				
0.1	Up to and including 1 m ³	Hour	50	840.00	42000.00
0.2	Over 1 m ³ to 2 m ³	Hour	30	840.00	25200.00
0.3	Over 2 m ³	Hour	10	840.00	8400.00
D302	Tractor, including bull or angle dozer:				
0.1	Up to and including 150 kW	Hour	50	231.00	11550.00
0.2	Over 150 kW to 200 kW	Hour	30	231.00	6930.00
0.3	Over 200 kW to 250 kW	Hour	10	231.00	2310.00
D303	Tractor with ripper:				
0.1	Up to and including 200 kW	Hour	30	249.00	7470.00
0.2	Over 200 kW to 250 kW	Hour	10	249.00	2490.00
D304	Motor grader	Hour	40	1545.00	61800.00
D305	Crane- 5 tonne	Hour	40	230.00	9200.00
D306	Diesel Road Roller, or Vibratory Compactor upto 10 t	Hour	40	994.00	39760.00
D307	Trucks, or Truck tipper, or Truck with mounted water tank or truck with crane for removal of accidental vehicles.	Hour	100	582.00	58200.00
D308	Tractor with trolley, or tractor with water tanker trailer, tractor with ripper Tractor with hydraulic scraper				
	(a) upto 25 HP	Hour	40	242.00	9680.00
	(b) For 25-40 HP	Hour	30	249.00	7470.00
D309	Bitumen mixture (10-14 Cft.) C.C Mix tyre (10-14 Cft.)	Hour	20	128.00	2560.00
D310	Water pumping sets mounted on trolley (diesel driven)with inlet & outlet pipes.				
	a) Sets up to 10 HP	Hour	10	100.00	1000.00
	b) Sets 11 to 20 HP	Hour	10	100.00	1000.00
	c) Sets above 20 HP	Hour	10	100.00	1000.00
D311	Generator sets mounted on trolley				
	a) Sets upto 5 Kva	Hour	10	240.00	2400.00
	b) Sets 5-15 Kva	Hour	10	240.00	2400.00
D312	Mobile Crane / Power winch	Hour	10	150.00	1500.00
D313	Bull Dozer 100/110 Hp	Hour	10	230.00	2300.00
D314	Plate compactors	Hour	10	100.00	1000.00
D315	Jack hammers for dismantling	Hour	10	100.00	1000.00
D316	Utility Vehicles	Hour	10	206.00	2060.00
D317	Mini Hot Mix Plant (5TPH)	Hour	10	7150.00	71500.00
				Total	382180.00
D318	Allow 20 percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				76436.00
				Total	458616.00