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GOVERNMENT OF ORISSA WORKS DEPARTMENT

ORISSA STATE ROAD PROJECT

FEASIBILITY STUDY AND DETAILED PROJECT PREPARATION FOR PHASE-I ROADS

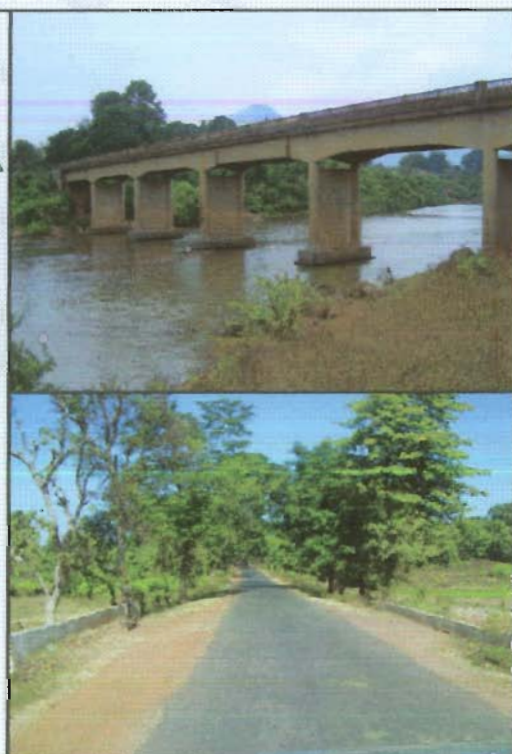
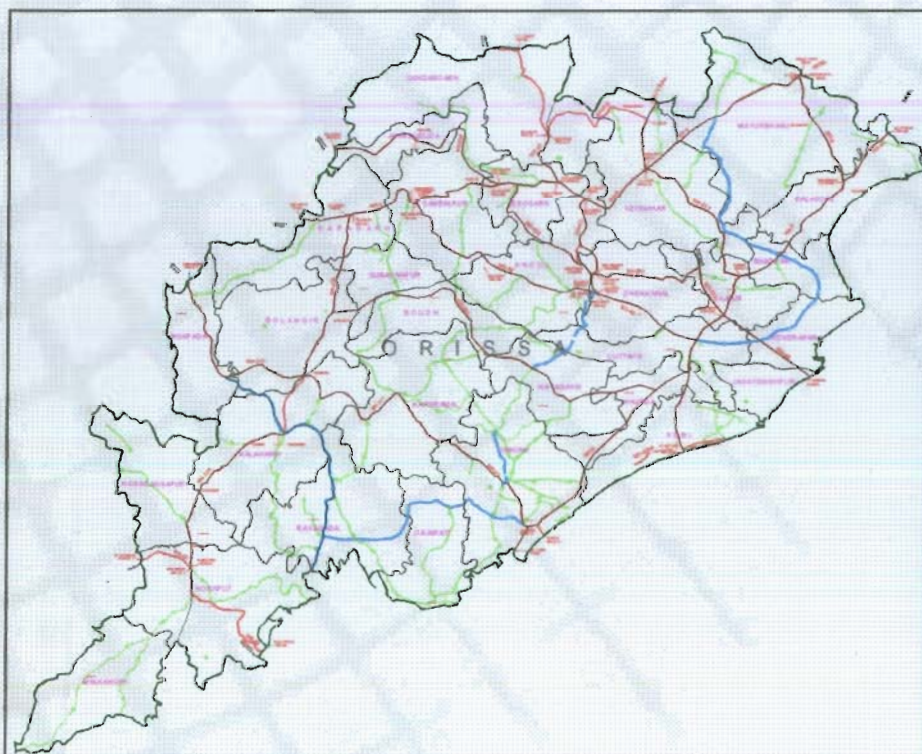
FINAL DETAIL ENGINEERING REPORT BHAWANIPATNA - KHARIAR ROAD

DETAIL COST ESTIMATE



**CONSULTING
ENGINEERS GROUP LTD.**

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General Abstract of Cost of Bhawanipatna-Khariar

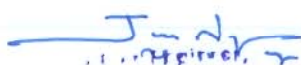
1	Site clearance and Dismantling	9,841,626.00
2	Earth Work	149,130,049.00
3	Sub-base and base courses	209,199,325.00
4	Bituminous courses	225,590,248.00
5	Culverts & Underpasses	111,203,244.00
6	Bridges	141,007,007.00
7	Drainage & Protective works	80,067,634.00
8	Miscellaneous items	33,656,136.00
9	Maintenance, Repair and Rehabilitation works	13,620,563.00
10	Environmental mitigation measures	23,823,346.00
11	Provisional Item	34,604,324.00
	Sub total (A)	1,031,743,502.00
1	Total for Daywork: Labour	140,400.00
2	Total for Daywork: Materials	1,685,343.60
3	Total for Daywork: Contractor's Equipment	375,000.00
4	Specified provisional sum	450,000.00
	Sub total (B)	2,650,743.60
	Subtotal (C=A+B)	1,034,394,245.60
1	Contingency (D = 1% of C)	10343942.46
2	Quality Control (E = 1% of C)	10,343,942.46
	Net Total (F = C+D+E)	1,055,082,130.51
	Prorata (G = 16% of F)	168,813,140.88
	Grand Total (F+G)	1,223,895,271.00

SAY 1,223,895,000.00

Rupees One hundred twenty two crores thirty-eight lakhs ninety-five thousands only

T/s NO 4/07.08

Technically Sanctioned for Rs 122,38,95,000/- (Rupees One hundred twenty two Crores thirty eight lakhs - ninety five thousand) only.


 J. N. Singh
 World Bank Project
 O/o the E.I.C. (Civil)
 Chhota Bhanuwar.

B. Work Items					
Sl. No.	Description	Unit	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-in-charge.	Hectare	124.00	26639.50	3,303,298.00
1.02	Dismantling structures and pavement including disposal of resulting material and/or salvaging useful materials complete as per Technical Specification Clause 202, 2809 and as per the direction of Engineer-in-charge.				
	a) Brick/ Stone Structures of dry or in lime/cement mortar	Cum	444.00	111.50	49,506.00
	b) Concrete/Reinforced concrete/ Prestressed concrete structures including cleaning straightening & cutting of bars and separating them out from RCC/PSC.				
	For Slab Culverts & Box Culverts and Bridges				
	i) P.C.C.	Cum	827.00	230.00	190,210.00
	ii) R.C.C.	Cum	790.00	355.70	281,003.00
	c) Dismantling of all type of Pavement course	Cum	41714.00	135.20	5,639,732.80
	d) Hume pipe	Lm	768.00	45.10	34,636.80
	e) Kerb	Lm	14.00	6.80	95.20
	f) Dry stone pitching	Cum	60.00	87.10	5,226.00
	g) RCC railing	Lm	253.00	26.80	6,780.40
	h) Expansion joint	Lm	208.00	1647.60	342,700.80
	i) Wearing coat				
	a) Bituminous concrete	Sqm	265.00	43.20	11,448.00
	b) Cement concrete	Sqm	1573.00	56.70	89,189.10
1.03	Rebate towards salvage value of scarified/dismantled material for each type of item				
	a) Steel	MT	15.00	-6000.00	(90,000.00)
	b) Aggregate	Cum	100.00	-148.00	(14,800.00)
	c) Concrete	Cum	100.00	-74.00	(7,400.00)
				TOTAL	9,841,626.10
				Say,	9,841,626.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
	BILL NO.2 : EARTH WORKS				
2.01	Roadway excavation including removal of unsuitable soil necessary for construction of roadway complete as per Technical Specification Clause 301 and as per the direction of Engineer-in-charge.				
	a) All kinds of soil	Cum	427482.00	43.80	18,723,711.60
	b) softrock (blasting not required) (LS)	Cum	1000.00	53.20	53,200.00
	c) Hard rock (blasting required) (LS)	Cum	1000.00	133.00	133,000.00
	d) Hard rock (blasting not required) (LS)	Cum	1000.00	211.00	211,000.00
2.02	Construction of embankment with approved material from approved borrow areas complete as per drawing and Technical Specification Clause 305 and as per the direction of Engineer-in-charge.	Cum	203885.00	120.40	24,547,754.00
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-in-charge.	Cum	603207.00	143.70	86,680,845.90
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-in-charge.	Cum	256490.00	70.50	18,082,545.00
2.05	Loosening and recompacting the existing subgrade in all kinds of soil upto a depth of 300mm/500mm to meet the requirement of table 300-2 complete as per Technical Specification Clause 305 and as per the direction of Engineer-in-charge.	Cum	5675.00	42.50	241,187.50
2.06	Earthwork with agriculture soil for filling of median/island complete as per Technical Specification Clause 407 and as per the direction of Engineer-in-charge.	Cum	2700.00	139.00	375,300.00
2.07	Scarifying the existing bituminous surface layers without disturbing the base including carrying , processing , laying and disposal of waste material complete as per Technical Specification Clause 501 and as per the direction of Engineer-in-charge.	Sqm	26292.00	3.10	81,505.20
				TOTAL	149,130,049.20
				Say,	149,130,049.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
BILL NO.3 : SUB-BASE AND BASE COURSES					
3.01	Construction of Granular Sub-base course by providing the materials i.e. naturally occurring morrum , gravel , sand or combination thereof conforming to Gr-I of Table 400-2 complete as per Technical Specification clause 401 and as per the direction of Engineer-in-charge.	Cum	201749.00	412.30	83,181,112.70
3.02	Construction of wet mix macadam complete as per Technical Specification clause 406 and as per the direction of Engineer-in-charge.				
	a) for Base	Cum	134119.00	939.60	126,018,212.40
				TOTAL	209,199,325.10
				Say,	209,199,325.00
BILL NO.4 : BITUMINOUS COURSES					
4.01	Providing bituminous Primer coat over granular surface complete all as per Technical specification clause 502 and as per the direction of Engineer-in-charge.	Sqm	505567.00	12.00	6,066,804.00
4.02	Providing Tack coat complete as per Technical Specification clause 503 and as per the direction of Engineer-in-charge.				
	a) Granular surface treated with primer	Sqm	505567.00	4.60	2,325,608.20
	b) over normal bituminous surface	Sqm	505567.00	4.60	2,325,608.20
4.03	Providing dense bituminous macadam course complete as per Technical Specification Clause 507 and as per the direction of Engineer-in-charge.	Cum	31896.00	3880.60	123,775,617.60
4.04	Providing bituminous concrete wearing course using CRMB-55 complete as per Technical Specification Clause 509 & 521 and as per the direction of Engineer-in-charge.	Cum	20432.00	4454.30	91,010,257.60
4.05	Providing, laying mixed seal surfacing in spur roads complete as per technical specification clause 512 and as per the direction of Engineer-in-charge.	Sqm	1028.00	84.00	86,352.00
				TOTAL	225,590,247.60
				Say,	225,590,248.00

Sl. No.	Description	Unit	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-in-charge.	Cum	14150.00	30.90	437,235.00
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-in-charge.	Cum	5073.00	120.40	610,789.20
5.03	Providing and filling behind abutment, wing wall and return wall with granular material 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-in-charge.	Cum	7379.00	325.70	2,403,340.30
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-in-charge.	Cum	2880.00	1049.90	3,023,712.00
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-in-	Cum	2898.00	2715.70	7,870,098.60
5.06	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-in-charge.	Cum	1511.00	2873.50	4,341,858.50
5.07	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-in-charge.				
	a) M-20 grade	Cum	9567.00	3581.00	34,259,427.00
5.08	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-in-charge.	Cum	1580.00	5708.30	9,019,114.00
5.09	HYSD(TMT) bar reinforcement complete as per drawing and technical specifications clause 1600 and as per the direction of Engineer-in-charge.	MT	574.00	42653.60	24,483,166.40
5.10	Providing laying and joining NP-4(I.S 458) hume pipes for culverts complete as per drawing Tech. Specification section 2900 and IRC special publication no.13 and as per the direction of Engineer-in-charge.				
	a) 1m dia. hume pipe in single row	Lm	634.00	3445.80	2,184,637.20
	b) 1m dia. hume pipe in double row	Lm	1098.00	6938.10	7,618,033.80

Sl. No.	Description	Unit	Quantity	Rate	Amount
5.11	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-in-charge.	Cum	1684.00	1049.90	1,768,031.60
5.12	Providing and laying stone Pitching on embankment slopes complete as per drawing and technical specification Clause 2504 and as per the direction of Engineer-in-charge	Cum	3369.00	577.50	1,945,597.50
5.13	Providing rubble stone flooring in Cement mortar (1 Cement:3 Sand) and joints complete as per Drawing and Technical Specification Section 1400, 2504 and as per the direction of Engineer-in-charge.	Cum	1797.00	2413.20	4,336,520.40
5.14	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-in-charge.	Nos	8974.00	99.60	893,810.40
5.15	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-in-charge.	Lm	1584.00	803.00	1,271,952.00
5.16	Reinforced cement concrete railing complete as per Drawing and Technical Specification Section 2700 (Including cost of Reinforcement) and as per the direction of Engineer-in-charge.	Lm	1381.00	1142.20	1,577,378.20
5.17	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-in-charge.	Sqm	7874.00	399.60	3,146,450.40
5.18	Synthetic enamel painting of culvert no. and span arrangement as per IRC - 7 - 1971 and as per the direction of Engineer-in-charge.	No.	264.00	45.80	12,091.20
				TOTAL	111,203,243.70
				Say,	111,203,244.00

Sl. No.	Description	Unit	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-in-charge.	Cum	19254.00	30.90	594,948.60
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 with granular material including all leads & lifts as per Technical specification Clause 304 and as per the direction of Engineer-in-charge.	Cum	9145.00	325.70	2,978,526.50
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-in-charge.	Cum	669.00	1049.90	702,383.10
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-in-charge.	Cum	730.00	2715.70	1,982,461.00
6.05	Cement concrete 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-in-charge.				
	a) M-15 Grade	Cum	3326.00	2873.50	9,557,261.00
	b) M-20 Grade	Cum	1764.00	3344.00	5,898,816.00
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-in-charge.				
	a) M-25 Grade	Cum	691.00	3596.20	2,484,974.20
	b) M-35 Grade	Cum	1080.00	3733.60	4,032,288.00
6.07	Reinforced cement concrete in substructure complete as per drawing & Technical specification sections 1500, 1700, 2200 and as per the direction of Engineer-in-charge.				
	a) M-20 Grade	Cum	2242.00	3455.20	7,746,558.40
	b) M-25 Grade	Cum	1011.00	3813.00	3,854,943.00
	c) M-30 Grade	Cum	310.00	3835.00	1,188,850.00
	d) M-35 Grade	Cum	357.00	4031.30	1,439,174.10
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-in-charge.				
	a) M-25 grade	Cum	211.00	4307.20	908,819.20
	b) M-30 grade	Cum	891.00	4359.80	3,884,581.80
	c) M-35 grade	Cum	350.00	4377.00	1,531,950.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
6.09	Prestressed cement concrete of M-40 grade in super structure complete as per drawing and Technical specification section 1500, 1700, 1800, 2300 and as per the direction of Engineer-in-charge.	Cum	2184.00	4569.50	9,979,788.00
6.10	Reinforced cement concrete railing complete as per drawing and Technical specification section 2703 and as per the direction of Engineer-in-charge.	Lm	203.00	1142.20	231,866.60
6.11	Bored cast-in-situ M-35 grade RCC Pile etc. complete as per drawing and technical specification clause 1100, 1700 and as per the direction of Engineer-in-charge.	Lm	698.00	7650.50	5,340,049.00
6.12	HYSD(TMT)bar reinforcement complete as per drawing and technical specifications clause 1600 and as per the direction of Engineer-in-charge.				
	a) in foundation	MT	278.00	42613.70	11,846,608.60
	b) in substructure	MT	291.00	42653.60	12,412,197.60
	c) in superstructure	MT	487.00	43037.70	20,959,359.90
6.13	High tensile steel strand complete as per drawing and technical specifications section 1800 and as per the direction of Engineer-in-charge.	MT	60.00	69481.20	4,168,872.00
6.14	Providing and fixing specified bearings complete as per Drawing and technical specification 2000 and as per the direction of Engineer-in-charge.				
	a) Elastomeric bearing	Cucm	150000.00	1.60	240,000.00
	b) Tar paper bearing	Sqm	187.00	50.00	9,350.00
	c) POT-PTFE Bearing				
	i) fixed (305 MT Capacity)	No.	32.00	31232.00	999,424.00
	ii) sliding (305 MT Capacity)	No.	32.00	31232.00	999,424.00
6.15	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-in-charge.	Cum	343.00	5708.30	1,957,946.90
6.16	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 509 & 2700 and as per the direction of Engineer-in-charge.	Sqm	5765.00	400.00	2,306,000.00
6.17	Cement concrete wearing course 75mm thick Complete as per drawing and Technical Specification Section 2700 and as per the direction of Engineer-in-charge.	Sqm	290.00	504.70	146,363.00
6.18	Providing and fixing Drainage Spouts Complete as per drawing and Technical Specification Clause 2705 and as per the direction of Engineer-in-charge.	No	213.00	733.80	156,299.40
6.19	Providing and laying Stone pitching in slopes complete as per drawing and Technical Specification Section 2500 and as per the direction of Engineer-in-charge.	Cum	3551.00	577.50	2,050,702.50

Sl. No.	Description	Unit	Quantity	Rate	Amount
6.20	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-in-charge.	Cum	1776.00	1095.30	1,945,252.80
6.21	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	Nos	1822.00	99.60	181,471.20
6.22	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-in-charge.	Cum	3644.00	2413.20	8,793,700.80
6.23	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-in-charge.				
	a) Asphaltic plug	Lm	494.00	803.00	396,682.00
	b) Compression seal type plug	Lm	108.00	6578.00	710,424.00
6.24	Synthetic enamel painting of culvert no. and span arrangement as per IRC - 7 - 1971 and as per the direction of Engineer-in-charge.	No.	56.00	45.80	2,564.80
6.25	Carrying and Confirmatory bores up to required depth at locations of bridges as directed be Engineer complete in all respects, conducting all the tests required as directed by the Engineer and as per Technical Specification Section 2400 and interpretation of the bore data and presentation of the results and as per the direction of Engineer-in-charge.				
	a) In all types of soil (except rock)				
	i) depth from 0m to 10m	Lm	200.00	400.00	80,000.00
6.26	Providing and painting of flood gauge on substructure is fall height and 500mm width and as per the direction of Engineer-in-charge.	Lm	120.00	282.60	33,912.00
6.27	Providing and laying 150mm dia. HDPE Service pipe as per drawing and as per the direction of Engineer-in-charge.	Lm	3290.00	300.00	987,000.00
6.28	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-in-charge.	Cum	7298.00	120.40	878,679.20
6.29	PCC in flooring as per Drawing & Technical Specification section 1700, 2500 and as per the direction of Engineer-in-charge.				
	a) M-15	Cum	352.00	2715.70	955,926.40
	b) M-20	Cum	117.00	3161.30	369,872.10
6.30	Reinforced cement concrete crash barrier including cost of steel and its fabrication 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-in-charge .	Lm	1381.00	2230.80	3,080,734.80
				TOTAL	141,007,006.50
				Say,	141,007,007.00

Sl. No.	Description	Unit	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-in-charge.	Cum	4275.00	30.90	132,097.50
(b)	Filter media behind wall complete as per drawing and Technical Specification Clauses 2504 and as per the direction of Engineer-in-charge.	Cum	2700.00	1049.90	2,834,730.00
(c)	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-in-charge.	Cum	713.00	2873.50	2,048,805.50
(d)	Cement concrete M -25 for reinforced concrete in foundation and substructure including centering and shuttering all complete as per drawing and Technical Clauses 1500, 1700, 2100 and as per the direction of Engineer-in-charge.	Cum	4785.00	3455.20	16,533,132.00
(e)	Providing steel reinforcement HYSD(TMT) for retaining wall complete as per drawing and Technical Specification Clause 1600 and as per the direction of Engineer-in-charge.	MT	383.00	42653.60	16,336,328.80
(f)	Providing guard post complete as per drawings and Technical specifications section 806 and as per the direction of Engineer-in-charge.	No.	1000.00	320.00	320,000.00
(g)	Providing weep holes in retaining wall complete as per drawing and Technical Specification Clause 2706 and as per the direction of Engineer-in-charge.	No.	3000.00	99.60	298,800.00
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-in-charge.	Cum	1409.00	577.50	813,697.50
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-in-charge.	Cum	705.00	1095.30	772,186.50
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-in-charge.	Sqm	346620.00	18.90	6,551,118.00
7.05	Constructing lined surface drains/ sub surface 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-in-charge.	Lm	8820.00	3680.50	32,462,010.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
7.06	Constructing box type drains to the required lines and grades including cost of steel and its fabrication as per drawing and technical specification section 1500, 1600, 1700, 2100 and as per the direction of Engineer-in-charge.	Lm	120.00	8039.40	964,728.00
				TOTAL	80,067,633.80
				Say,	80,067,634.00
	BILL NO-8 : MISCELLANEOUS ITEMS.				
8.01	Providing and laying plain cement concrete kerb as per drawing and Technical Specifications Clauses 408, section 1500,1700 and as per the direction of Engineer-in-charge.	Lm	480.00	155.80	74,784.00
8.02	Providing and fixing RCC boundary posts complete as per drawing and Technical Specification Clause 806 and as per the direction of Engineer-in-charge.	No	743.00	245.20	182,183.60
8.03	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-in-charge.				
	a) No of (200) Hectometer Stone	No	271.00	274.80	74,470.80
	b) No of Kilometer stone	No	54.00	1021.20	55,144.80
	c) No. of 5th Kilometer Stone	No	14.00	1679.30	23,510.20
8.04	Constructing footpath/ paved separator at toll plaza, passenger platform / paved part of medians and islands complete as per drawing and Technical Specifications Clause 409 and 407 and as per the direction of Engineer-in-charge.	Sqm	863.00	2000.00	1,726,000.00
8.05	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-in-charge.	No	34.00	80000.00	2,720,000.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
8.06	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-in-charge.	Lm	7875.00	1582.50	12,462,187.50
8.07	Pavement marking with hot applies thermoplastic paints confirming to ASTM D86 / BS 3262-Part as per drawing and Technical specifications Clause 803.4 and as per the direction of Engineer-in-charge.				
	a) Lane line / Edge marking	sqm	17394.00	557.80	9,702,373.20
	b) Directional arrows and lettering etc.	No	192.00	39.30	7,545.60
8.08	Supplying and fixing sign boards complete as per Technical Specifications Clause 801. Including the cost of Posts, Fitting & fixing. Sheetting will be retro reflective type of high intensively grade and messages / boards and as per the direction of Engineer-in-charge.				
(a)	Informatory Signs				
	(i) Facility Information (800 x 600)mm	No	2.00	4490.30	8,980.60
	(ii) Direction Signs (1200 x 700 mm)	No	4.00	8472.00	33,888.00
	(iii) Advance Direction (size 1800 x 1200mm) ,	No	1.00	8702.30	8,702.30
	(iv) Re-Assurance Sign (1800 X 1200 mm) ,	No	1.00	8702.30	8,702.30
	(v) Destination Sign (1500 X 900 mm) ,	No	2.00	6702.30	13,404.60
	(vi) Place Identification (1500 X 900 mm) ,	No	1.00	6702.30	6,702.30
	(vii) Route Marker Sign (450mm x 600mm)	No	4.00	2993.40	11,973.60
	(viii) Other Informatory Signs (2100mm x 1500mm)	No	4.00	8702.30	34,809.20
(b)	CAUTIONARY SIGNS triangular 900mm side	No	130.00	3563.60	463,268.00
(c)	Mandatory signs				
	(i) Circular 600mm dia	No	30.00	3086.10	92,583.00
	(ii) Octagon 900 mm height	No	20.00	5858.80	117,176.00
	(iii) Triangular 900 mm side	No	30.00	3563.60	106,908.00
8.09	Providing & fixing retro - reflectorised road delineators complete as per drawing , Technical specifications clause 805 and as per the direction of Engineer-in-charge.				
	(I) Roadway delineator	No	452.00	787.00	355,724.00
	(ii) Hazard Marker	No	168.00	787.00	132,216.00
	(iii) Object Marker	No	52.00	787.00	40,924.00
8.10	Providing and fixing RCC Guard post with reflective paint marking on the top 25mm width band complete including end anchorage as per drawing and Technical Specifications Clause 806 and as per the direction of Engineer-in-charge.	No.	3357.00	320.00	1,074,240.00
8.11	Supply of colour recorded photographs negative and two colour prints there-from mounted in album and also in digital form in CD as per Technical Specifications Clause 125 As per requirements and as per the direction of Engineer-in-charge.	No	700.00	5.00	3,500.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
8.12	Supply of additional prints of coloured photographs referred to above as per Technical Specifications Clause 125 As per requirements and as per the direction of Engineer-in-charge.	No	1400.00	5.00	7,000.00
8.13	Supply of colour video coverage in CD form during construction as per Technical Specifications Clause 126 As per requirement and as per the direction of Engineer-in-charge.	set	3.00	200.00	600.00
8.14	Providing rumble strips for complete carriageway width at required places as per drawing and as per the direction of Engineer-in-charge.	No.	26.00	5253.00	136,578.00
8.15	Providing road hump complete at required places as per drawing and as per the direction of Engineer-in-charge.	No.	42.00	13418.00	563,556.00
8.16	Providing toll plaza as per drawing and technical specification and as per the direction of Engineer-in-charge.	No.	1.00	1170506.00	1,170,506.00
8.17	Providing utility duct across the road in specified locations as per the schedule mentioned in drawing and as per the direction of Engineer-in-charge.	Lm.	18.00	124221.90	2,235,994.20
				TOTAL	33,656,135.80
				Say,	33,656,136.00
	BILL NO.9 MAINTENANCE, REPAIR AND REHABILITATION				
9.01	Carrying out all such as pothole repairs, shoulders making up, jungle clearance, crack sealing etc. routine maintenance of Highway as per Technical Specifications Section 3000 and as per direction of the Engineer-in-charge.	Km-month	955.00	1500.00	1,432,500.00
9.02	Carrying out surface treatment and any necessary patching to the existing bituminous carriageway surfacing with 2 coat surface dressing as per Technical Specification Section 3000 & Clause 510 and as per direction of the Engineer-in-charge.	Sqm	85000.00	41.90	3,561,500.00
9.03	Guniting by 25mm thick complete as per Technical specification clause 2807 and as per direction of the Engineer-in-charge.	Sqm	134.00	588.20	78,818.80
9.04	Grouting with polymer modified cementitious material complete as per Technical specification clause 2806 and as per direction of the Engineer-in-charge.	Sqm	495.00	9093.70	4,501,381.50
9.05	Providing and laying 75mm thick Cement concrete wearing coat M-30 grade complete as per technical specification section 2700 and as per direction of the Engineer-in-charge.	Sqm	290.00	504.70	146,363.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
9.06	Lifting of deck slab by jacking, shifting the entire deck slab to the side of the existing bridge and holding the same till the completion of the raising of the substructure and replacing the decks slab complete as per direction of the Engineer-in-charge.	No.	13.00	300000.00	3,900,000.00
				TOTAL	13,620,563.30
				Say,	13,620,563.00
BILL NO.10 ENVIRONMENTAL MITIGATION MEASURES					
10.01	Earthwork in excavation of foundation for structures complete as per drawing no. OSRP/CEG/SH/ENV/1-A,B,C,D,03,04-A,B,05,05-A,07,09,10,12 and technical specifications clause 304 including all leads and lifts and as per the direction of Engineer-in-charge.	Cum	2045.00	30.90	63,190.50
10.02	Sand filling below foundation of wing wall and return wall, pipe bed in layers not exceeding 150mm thick including All leads and lifts complete as per drawing no. OSRP/CEG/SH/ENV/1-A,B,C,D,03,04-A,B,05,05-A,07,09,10,12 direction of the Engineer and Technical specification clause 304 and as per the direction of Engineer-in-charge.	Cum	388.00	120.40	46,715.20
10.03	Providing & making K.B. Brick masonry work in 1:3 cement mortar in sub-structure complete as per the drawing as per drawing no.OSRP/CEG/SH/ENV/06,07 and Technical Specifications 1300 and as per the direction of Engineer-in-charge.	Cum	461.00	2304.40	1,062,328.40
10.04	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/1-A,B,C,D,03,04-A,05-A,07,09,10,12 and Technical Specification Sections 1500 and 1700 and as per the direction of Engineer-in-charge.	Cum	326.00	2715.70	885,318.20
10.05	Providing & laying in position plain cement concrete M 20 grade (in kerbs) as per drawing no. OSRP/CEG/SH/ENV/01-A.01-B,01-C and Technical Specifications Clause 408 and section 1700 and as per the direction of Engineer-in-charge.	Lm	2880.00	155.80	448,704.00
10.06	Providing & laying in position Cement Concrete M-20 grade over stone masonry, levelling course etc. including centering and shuttering all complete as per Drawing no. OSRP/CEG/SH/ENV/03/09/10 and Technical Specification Sections 1500 and 1700 and as per the direction of Engineer-in-charge.	Cum	1379.00	3161.30	4,359,432.70

Sl. No.	Description	Unit	Quantity	Rate	Amount
10.07	Providing weep holes in PCC toe wall with 100mm dia AC pipe at 1mtrs horizontal interval all complete as per Drawing no. OSRP/CEG/SH/ENV/03 and Technical Specification section. 2700 & 2200 and as per the direction of Engineer-in-charge.	Nos	1235.00	99.60	123,006.00
10.08	Providing & laying in position Reinforced cement concrete of M-20 Grade in foundation complete as per drawing no.OSRP/CEG/SH/ENV/04-A,B,C,05,05-A,06,07,10 & Technical specification sections 1700, 2100 & 2200 and as per the direction of Engineer-in-charge.	Cum	428.00	3455.20	1,478,825.60
10.09	Providing & laying in position Reinforced cement concrete in superstructure complete as per drawing no.OSRP/CEG/SH/ENV/04-A,B,05 & Technical specification sections 1500, 1700 & 2300 and as per the direction of Engineer-in-charge.	Cum	106.00	3726.20	394,977.20
10.10	HYSD(TMT) bar reinforcement with anti-corrosive treatment coating complete as per drawing no.OSRP/CEG/SH/ENV/04-A,B,C,D,05,06,07,10 and technical specifications clause 1600 and as per the direction of Engineer-in-charge.	MT	22.00	42613.70	937,501.40
10.11	Painting two coats with synthetic enamel paint on new concrete surface as per drawing no.OSRP/CEG/SH/ENV/01-A,B,C and technical specification on building items and as per the direction of Engineer-in-charge.	Sqm	576.00	31.90	18,374.40
10.12	Supplying and fixing of M.S.GRILL at junctions including cost of painting as per drawing no.OSRP/CEG/SH/ENV/01-B as per technical specifications on building items and as per the direction of Engineer-in-charge.	kg	11088.00	35.00	388,080.00
10.13	Supplying and fixing of M.S grill gate for sensitive receptors complete as per Drawing no.OSRP/CEG/SH/ENV/05-A as per technical specifications for building items and as per the direction of Engineer-in-charge.	kg	3875.00	35.00	135,625.00
10.14	Supplying and fixing of 50X50X6 mm angle post, split 70 mm at the bottom end and galvanised, to be fixed vertically in position in concrete (cost of concrete to be paid separately) and holes drilled in it, at a spacing of 1500mm c/c as per drawing OSRP/CEG/SH/ENV/04-B,C,D and 05 and as per the direction of Engineer-in-charge.	kg	1828.00	35.00	63,980.00
10.15	Providing and fixing pedestrian guard rail (Footpath barrier) for interception as per drawing no. OSRP/CEG/FB technical specification cl no. 808 and as per the direction of Engineer-in-charge.	Lm	110.00	2753.00	302,830.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
10.16	Providing and fixing of G.I wire of 4mm dia @ 100 gms/m including cost of material , labour all complete as per drawing no. OSRP/CEG/SH/ENV/04-B,C and 05 and as per the direction of Engineer-in-charge.	kg	3600.00	55.00	198,000.00
10.17	Providing and fixing in position ' Tree Guard ', including cost of all materials, labbour, fabrication & painting with approved synthetic enamel paint using 25mm X50mmX13 G welded mesh, as per drawing no.OSRP/CEG/SH/ENV/08 and as per the direction of Engineer-in-charge.	Nos	8811.00	955.00	8,414,505.00
10.18	Providing & planting tree species as per the schedule attached and maintaining the same upto 3 years and as per the direction of Engineer-in-charge.	Nos	8681.00	111.88	971,230.28
10.19	Providing 100mm dia PVC pipe for soak pit as per Drawing no. OSRP/CEG/SH/ENV/07 and as per the direction of Engineer-in-charge.	Lm	650.00	40.00	26,000.00
10.20	Laying of 20mtrs long 20mm PVC pipe with all fittings and tap point in position for stand post including digging of pipe line and connecting the mains supply with ferrule.as per Drawing no. OSRP/CEG/SH/ENV/07 and as per the direction of Engineer-in-charge.	Lm	60.00	1500.00	90,000.00
10.21	Providing & laying in position of PCC M15 for fixing of PVC pipe from platform to soak pit below G.L with a base and cover as per Technical specification cl. 1500, 1700, 2100 as per Drawing no. OSRP/CEG/SH/ENV/07 and as per the direction of Engineer-in-charge.	Cum	38.00	2715.70	103,196.60
10.22	Providing and laying of boulder apron with HG Boulders at spilling locations as per technical specification Cl.2506 and as per Drawing no. OSRP/CEG/SH/ENV/10 and as per the direction of Engineer-in-charge.	Cum	103.00	675.10	69,535.30
10.23	Constructing course rubble hard granite stone masonry in CM1:3 (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-in-charge.	Cum	218.00	2792.90	608,852.20
10.24	Providing and laying filter material underneath pitching in slopes at water bodies and ponds as per technical specification Section 2500 and as per Drawing No.OSRP/CEG/SH/ENV/03 and as per the direction of Engineer-in-charge.	Cum	500.00	1095.30	547,650.00
10.25	Providing and laying pitching on slopes over filter media as per technical specification Section 2500 and as per Drawing No.OSRP/CEG/SH/ENV/03 and as per the direction of Engineer-in-charge.	Cum	1000.00	577.50	577,500.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
10.26	Providing Cement plastering 12mm with punning 1:3 for platform as per technical specification cl.1300& 2200 & as per Drawing No.OSRP/CEG/SH/ENV/01-A,B,C,04-A,B,C,D,05,05-A,06,07 and as per the direction of Engineer-in-charge.	Sqm	2490.00	58.50	145,665.00
10.27	Providing and making site enhancement by planting of two trees at tube well and water stand post as per Drawing no. OSRP/CEG/SH/ENV/07 and as per the direction of Engineer-in-charge.	No	130.00	50.00	6,500.00
10.28	Planting at junction as per drawing no. OSRP/CEG/SH/ENV/01-A,01-B,01-C and as per the direction of Engineer-in-charge.	No	25200.00	15.00	378,000.00
10.29	Providing and fixing fixed flower vase as per drawing no. OSRP/CEG/SH/ENV/04-A and as per the direction of Engineer-in-charge.	No	105.00	100.00	10,500.00
10.30	Planting of shrubs & trees at 2.5m spacing including digging of pits manure as per drawing no. OSRP/CEG/SH/ENV/04-A, B, C, D, 05 and as per the direction of Engineer-in-charge.	No	1520.00	50.00	76,000.00
10.31	Planting of shrubs on both sides of approach road at 30cm interval with digging of pits,30/30/30cm manuring insecticides and pesticides as per drawing no. OSRP/CEG/SH/ENV/04-A,B,C,D,05 and as per the direction of Engineer-in-charge.	No	2660.00	20.00	53,200.00
10.32	Planting of climbers at 50cm interval from plant to plant inside the compound near boundary wall and interception wall with digging of pits 30/30/30cm manuring, watering etc for 1yr as per drawing no. OSRP/CEG/SH/ENV/04-A,B,C,D,05 and as per the direction of Engineer-in-charge.	No	1330.00	20.00	26,600.00
10.33	Construction of approach road with GSB and murrom topping well mixed and compacted as hard shoulder as per technical specification Cl.400-2 drawing no. OSRP/CEG/SH/ENV/04-A,B,C,D,05 and as per the direction of Engineer-in-charge.	Lm	365.00	412.30	150,489.50
10.34	Providing Cement paint two coats to the walls as per drawing no. OSRP/CEG/SH/ENV/04-A,B,C,D,05 and as per the direction of Engineer-in-charge.	Sqm	998.00	8.00	7,984.00
10.35	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-in-charge.	Lm	11440.00	55.00	629,200.00
10.36	Providing and making site enhancement Plantation including maintenance with specified enclosed in schedule and as per the direction of Engineer-in-charge.	No	2400.00	9.94	23,850.00
				TOTAL	23,823,346.48
				Say,	23,823,346.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
	BILL NO. - 11 : PROVISIONAL ITEMS				
11.01	Cutting of trees including cutting of trunks, branches and removal of stumps including stacking of serviceable material within a lead of 1000 metres and earthfilling in the depression/pit				
	a) Girth From 300mm to 600mm	No	82.00	79.20	6,494.40
	b) Girth From 600mm to 900mm	No	175.00	161.00	28,175.00
	c) Girth From 900mm to 1800mm	No	1935.00	283.70	548,959.50
	d) Girth From 1800mm to Above	No	98.00	512.50	50,225.00
11.02	A) Plantation of trees	No	9150.00	10.00	91,500.00
	B) Planting of plants & shrubs in median/ verges	Lm	25000.00	20.00	500,000.00
11.03	Boring for soil investigation including conducting necessary tests and preparation of report, as per direction of the Engineer and Technical Specification Clause 2400.	Lm	300.00	400.00	120,000.00
11.04	Co-ordination for Shifting of Utilities as per Technical Specification Clause 110.	Km	68.00	2000.00	136,000.00
11.05	Construction of building (plinth area 9 sq m.) and installation of weigh bridge including arrangement for electric supply, all electrical items like lights, exhaust fans, sockets, receptacles and complete wiring with necessary earthing etc. complete as directed by Engineer.	No	2.00	40500.00	81,000.00
11.06	Providing and fixing Pedestrian guard rails in 2m and 1m modules including painting with approved paint complete as per drawing and Technical Specification Clause 803,1008,1300 & 1700	Lm	10000.00	3000.00	30,000,000.00
11.07	Conducting drilling a perfectly vertical bore hole of specified dia and depth through consolidated & unconsolidated rock with down the hole with own hammer drilling rigs or combination drilling rigs as required to suit the site condition as per Eng-in-Charge and including tools, plants and consumables etc., for lowering of 125mm dia PVC/CI pipes for housing fitted with socket and with or without well screen as per the necessity for soft, medium, hard and boulder formation (CI/PVC) casing pipes if prevent to collapse of over burden is to be provide by the contraactor including lowering and withdrawing after completion of the tube well 125/100mm dia bore.as per drawing no.OSRP/CEG/SH/ENV/07,				
	0 to 30mtr.	Mtr	1860.00	345.00	641,700.00
	31Mtr to 60mtr.	Mtr	1860.00	342.00	636,120.00
	60mtr. To 75mtr	Mtr	930.00	279.00	259,470.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
11.08	Providing labour for lowering the following size of PVC or GI pipes or without strainers as per necessity and fitted and fixed including cutting and threading the pipe as may be necessity and supplying all jointing materials extra socket (Gi or PVC of heavy quality) T&P etc, complete and keeping the top of the casing pipe threaded including plugging the tube well to prevent the entry of foreign matter from above.90 to 60mtr and above.as per drawing no.OSRP/CEG/SH/ENV/07and labour as per direction of Eng-in-Charge.	Mtr	1860.00	36.00	66,960.00
11.09	Cleaning & developing the tube wells with Compressor supplied by the contractor continuously worked till clear and the quota discharge is obtained from the tubewells including supply and use of necessary equipment and labour as per direction of Eng-in-Charge.	Each	62.00	200.00	12,400.00
	Providing labour for fixing of 1m II hand pump	Each	62.00	100.00	6,200.00
	Supplying 125mm PVC pipe	RM	1860.00	500.00	930,000.00
	Supplying 1m II hand pump	Each	62.00	5000.00	310,000.00
	Supplying 32mm GI riser pipe	Each	496.00	350.00	173,600.00
11.10	Conducting enumeration of trees jointly by forest, revenue, private individual, PIU and contractors representaives with blazing 15/15cm removal of blazed bark, encircling the cut end with approved paint digit hammering of the property hammer and marking hammer impression	Nos	69.00	80.00	5,520.00
				TOTAL	34,604,323.90
				Say,	34,604,324.00

Sl. No.	Description	Unit	Quantity	Rate	Amount
Schedule of Daywork Rates: 1. Labour					
D101	Labour	Day	400	70	28000
D102	Mason	Day	50	100	5000
D103	Carpenter	Day	20	100	2000
D104	Steelworker Erector	Day	70	100	7000
D105	Driver for vehicle up to 10 tons	Day	50	100	5000
D106	Operator for excavator, dragline, shovel or crane	Day	50	100	5000
D107	Operator for tractor with dozer blade or ripper	Day	50	100	5000
D108	Operator grader	Day	50	100	5000
D109	Operator in other construction equipment	Day	50	100	5000
D110	Chowkidars for watch & ward	Day	500	100	50000
				Total	117000
D112	Allow 20% percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				23400
				Total	140400
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	4325.00	86500
D202	HYSD reinforcing bars upto 25 mm dia conforming to IS:1786:1989	Per Mt	5	29827.00	149135
D203	Bricks of class designation 75 as per IS:1077:1992	Per 1000 Nos	500	1859.50	929750
D204	Anti Corrosive Bituminous paint	Per Lit	10	132.17	1321.65
D205	Enamel Paint of any shade & colour (IS:2932-1964 & IS 137-1975)	Per Lit	10	132.17	1321.65
D206	Coarse Sand as per IS 1542	Per Cum	50	171.50	8575
D207	R.R. Stone for masonry	Per Cum	50	2,382.00	119100
D208	Crusher broken stone aggregates up to 25 mm nominal size	Per Cum	50	587.50	29375
D209	Crusher broken stone aggregates Above 25 mm nominal size	Per Cum	50	587.50	29375
D210	Portable water at site	Per 1000 ltr	5000	10	50000
				Total	1404453
D211	Allow 20% percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				280890.6
				Total	1685343.6

Sl. No.	Description	Unit	Quantity	Rate	Amount
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	42000
0.2	Over 1 m ³ to 2 m ³	Hour	30	840	25200
0.3	Over 2 m ³	Hour	10	840	8400
D302	Tractor, including bull or angle dozer:				
0.1	Up to and including 150 kW	Hour	50	231	11550
0.2	Over 150 kW to 200 kW	Hour	30	231	6930
0.3	Over 200 kW to 250 kW	Hour	10	231	2310
D303	Tractor with ripper:				
0.1	Up to and including 200 kW	Hour	30	249	7470
0.2	Over 200 kW to 250 kW	Hour	10	249	2490
D304	Motor grader	Hour	40	249	9960
D305	Crane- 5 tonne	Hour	40	230	9200
D306	Diesel Road Roller, or Vibratory Compactor upto 10 t	Hour	40	738	29520
D307	Trucks, or Truck tipper, or Truck with mounted water tank or truck with crane for removal of accidental vehicles.	Hour	100	506	50600
D308	Tractor with trolley, or tractor with water tanker trailer, tractor with ripper Tractor with hydraulic scraper				
	(a) upto 25 HP	Hour	40	242	9680
	(b) For 25-40 HP	Hour	30	249	7470
D309	Bitumen mixture (10-14 Cft.) C.C	Hour	20	128	2560
	Mix tyre (10-14 Cft.)				
D310	Water pumping sets mounted on trolley (diesel driven)with inlet & outlet pipes.				
	a) Sets up to 10 HP	Hour	10	100	1000
	b) Sets 11 to 20 HP	Hour	10	100	1000
	c) Sets above 20 HP	Hour	10	100	1000
D311	Generator sets mounted on trolley				
	a) Sets upto 5 Kva	Hour	10	240	2400
	b) Sets 5-15 Kva	Hour	10	240	2400
D312	Mobile Crane / Power winch	Hour	10	150	1500
D313	Bull Dozer 100/110 Hp	Hour	10	230	2300
D314	Plate compactors	Hour	10	100	1000
D315	Jack hammers for dismantling	Hour	10	100	1000
D316	Utility Vehicles	Hour	10	206.00	2060
D317	Mini Hot Mix Plant (5TPH)	Hour	10	7150	71500
				Total	312500
D211	Allow _____percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				62500
				Total	375000