Cost Estimate-Kohima Bypass (Flexible Pavement) 10.1

Package-I:- Km 14+000 to Km 29+000)

SUMMARY OF COST FOR FLEXIBLE PAVEMENT (Cl.10.1)			
Name of Road: Kohima Bypass			
Existing Length of Road: Nil		**Proposed length: 15+000**	
Bill No.	**Description**	**Item Price (Rupees)**	**Cost in Crores**
1	Site Clearance	1,929,561.57	0.19
2	Earthworks	1,242,317,811.56	124.23
3	Sub-base and Base Courses	695,766,699.60	69.58
4	Flexible Pavement	630,838,794.60	63.08
5	Structures		-
A	Culverts	271,063,147.31	27.11
B	Bridges	591,221,158.00	59.12
C	Tunnel	-	-
D	Landslide Protection	-	-
6	Road Junctions	32,658,242.16	3.27
7	Bus Bays / Bus Shelters	6,892,413.87	0.69
8	Drainage	31,154,458.62	3.12
9	Protection Works	787,274,950.51	78.73
10	Traffic Signs, Markings & Road Appurtenances including Toll Plaza	259,342,809.37	25.93
A	**Total Civil Cost of the project**	**4,550,460,047.17**	455.05
	Total Civil Cost of the project in Crores	**455.05**	0.00
	Cost Per Km in Rs (crores) =	**30.336**	0.00
	Add Contingency 2.8 % on A	**127,412,881.321**	12.74
	GST @ 6% of A	**273,027,602.830**	27.30
B	**Total 'B'**	**4,950,900,531.325**	495.09
	Escalation @ 15% of (A) for 3 years' construction period [5% every year; total 15%]	**682,569,007.076**	68.26
	Supervision Charges@ 3 % on (B)	**148,527,015.940**	14.85
	Agency charges @ 3% of (B)	**148,527,015.940**	14.85
	Quality Control @ 0.25% of (B)	**12,377,251.328**	1.24
	Road Safety @ 0.25% of (B)	**12,377,251.328**	1.24
	Total Cost of the project without EIA, Land & Utility Shifting	**5,955,278,072.937**	**595.53**

BILL NO: 1 - SITE CLEARANCE

Item No.	SOR Ref. No.	Description	Unit	Nos.	Length (m)	Breadth (m)	Height (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)
1.01	2.3 (ii) A & B	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness as per Technical Specifications Clause 201.								
			Ha	1	15000	30		45	42,879.15	1,929,561.57
									TOTAL FOR BILL NO: 1 (CARRIED FORWARD TO SUMMARY)	1,929,561.57

BILL NO: 2 - EARTHWORKS

Item No.	SOR Ref. No.	Description	Unit	Nos	Length (m)	Breadth (m)	Height (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)	Remarks
2.01	3.3	Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres.	cum	1	Refer Earthwork Calculation sheet			1,940,073.38	**195.49**	**379,257,572.78**	**Considering 50% of total Qty**
2.02	3.33	Excavation in hilly area in ordinary rock not requiring blasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres.	cum	1	Refer Earthwork Calculation sheet			1,358,051.37	**276.04**	**374,881,523.86**	**Considering 35% of total Qty**
2.03	3.34	Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 meters	cum	1	Refer Earthwork Calculation sheet			582,022.01	**424.27**	**246,934,188.87**	**Considering 15% of total Qty**
2.06	3.17	**Construction of Embankment** with Material Deposited from Roadway Cutting (Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2)									
			cum	1	Refer Earthwork Calculation			786,543.06	**270.67**	**212,896,126.99**	
2.07	**3.19**	**Compacting Original Ground**									
		Case-I Compacting original ground supporting sub-grade									
		Loosening of the ground upto a level of 500 mm below the sub-grade level, watered, graded and compacted in layers to meet requirement of table 300-2 for sub-grade construction.	cum	1	13560	25.00	0.5	169,500.00	**89.15**	**15,110,975.85**	**Total Length - Length of treatment**
2.08		**Case-II: Compacting original ground supporting embankment**									
		Loosening, leveling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 for embankment construction.	cum	1	13560	25.00	0.15	50,850.00	**55.85**	**2,840,135.22**	
2.09	3.22	**Turfing with Sods:** Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing or as directed by the engineer including preparation of ground, fetching of sods and watering.	Sqm	1	2000	10.00		20,000.00	**129.97**	**2,599,322.00**	
2.10	3.23	**Seeding and Mulching** Preparation of seed bed on previously laid top soil, furnishing and placing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of 0.23 litres per sqm and laying and **fixing jute netting**, including watering for 3 months all as per clause 308.	Sqm	1	2000	10.00		20,000.00	**389.90**	**7,797,966.00**	
									TOTAL FOR BILL NO: 2 (CARRIED FORWARD TO SUMMARY)	**1,242,317,811.56**	

Earthwork

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
50	0	0	0	0
100	0	0	0	0
150	0	0	0	0
200	0	0	0	0
250	0	0	0	0
300	0	0	0	0
350	0	0	0	0
400	0	0	0	0
450	0	0	0	0
500	0	0	0	0
550	0	0	0	0
600	0	0	0	0
650	0	0	0	0
700	0	0	0	0
750	0	0	0	0
800	0	0	0	0
850	0	0	0	0
900	0	0	0	0
950	0	0	0	0
1000	0	0	0	0
1050	0	0	0	0
1100	0	0	0	0
1150	0	0	0	0
1200	0	0	0	0
1250	0	0	0	0
1300	0	0	0	0
1350	0	0	0	0
1400	0	0	0	0
1450	0	0	0	0
1500	0	0	0	0
1550	0	0	0	0
1600	0	0	0	0
1650	0	0	0	0
1700	0	0	0	0
1750	0	0	0	0
1800	0	0	0	0
1850	0	0	0	0
1900	0	0	0	0
1950	0	0	0	0
2000	0	0	0	0
2050	0	0	0	0
2100	0	0	0	0
2150	0	0	0	0
2200	0	0	0	0
2250	0	0	0	0
2300	0	0	0	0
2350	0	0	0	0
2400	0	0	0	0
2450	0	0	0	0

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
2500	0	0	0	0
2550	0	0	0	0
2600	0	0	0	0
2650	0	0	0	0
2700	0	0	0	0
2750	0	0	0	0
2800	0	0	0	0
2850	0	0	0	0
2900	0	0	0	0
2950	0	0	0	0
3000	0	0	0	0
3050	0	0	0	0
3100	0	0	0	0
3150	0	0	0	0
3200	0	0	0	0
3250	0	0	0	0
3300	0	0	0	0
3350	0	0	0	0
3400	0	0	0	0
3450	0	0	0	0
3500	0	0	0	0
3550	0	0	0	0
3600	0	0	0	0
3650	0	0	0	0
3700	0	0	0	0
3750	0	0	0	0
3800	0	0	0	0
3850	0	0	0	0
3900	0	0	0	0
3950	0	0	0	0
4000	0	0	0	0
4050	0	0	0	0
4100	0	0	0	0
4150	0	0	0	0
4200	0	0	0	0
4250	0	0	0	0
4300	0	0	0	0
4350	0	0	0	0
4400	0	0	0	0
4450	0	0	0	0
4500	0	0	0	0
4550	0	0	0	0
4600	0	0	0	0
4650	0	0	0	0
4700	0	0	0	0
4750	0	0	0	0
4800	0	0	0	0
4850	0	0	0	0
4900	0	0	0	0
4950	0	0	0	0
5000	0	0	0	0
5050	0	0	0	0

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
5100	0	0	0	0
5150	0	0	0	0
5200	0	0	0	0
5250	0	0	0	0
5300	0	0	0	0
5350	0	0	0	0
5400	0	0	0	0
5450	0	0	0	0
5500	0	0	0	0
5550	0	0	0	0
5600	0	0	0	0
5650	0	0	0	0
5700	0	0	0	0
5750	0	0	0	0
5800	0	0	0	0
5850	0	0	0	0
5900	0	0	0	0
5950	0	0	0	0
6000	0	0	0	0
6050	0	0	0	0
6100	0	0	0	0
6150	0	0	0	0
6200	0	0	0	0
6250	0	0	0	0
6300	0	0	0	0
6350	0	0	0	0
6400	0	0	0	0
6450	0	0	0	0
6500	0	0	0	0
6550	0	0	0	0
6600	0	0	0	0
6650	0	0	0	0
6700	0	0	0	0
6750	0	0	0	0
6800	0	0	0	0
6850	0	0	0	0
6900	0	0	0	0
6950	0	0	0	0
7000	0	0	0	0
7050	0	0	0	0
7100	0	0	0	0
7150	0	0	0	0
7200	0	0	0	0
7250	0	0	0	0
7300	0	0	0	0
7350	0	0	0	0
7400	0	0	0	0
7450	0	0	0	0
7500	0	0	0	0
7550	0	0	0	0
7600	0	0	0	0
7650	0	0	0	0

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
7700	0	0	0	0
7750	0	0	0	0
7800	0	0	0	0
7850	0	0	0	0
7900	0	0	0	0
7950	0	0	0	0
8000	0	0	0	0
8050	0	0	0	0
8100	0	0	0	0
8150	0	0	0	0
8200	0	0	0	0
8250	0	0	0	0
8300	0	0	0	0
8350	0	0	0	0
8400	0	0	0	0
8450	0	0	0	0
8500	0	0	0	0
8550	0	0	0	0
8600	0	0	0	0
8650	0	0	0	0
8700	0	0	0	0
8750	0	0	0	0
8800	0	0	0	0
8850	0	0	0	0
8900	0	0	0	0
8950	0	0	0	0
9000	0	0	0	0
9050	0	0	0	0
9100	0	0	0	0
9150	0	0	0	0
9200	0	0	0	0
9250	0	0	0	0
9300	0	0	0	0
9350	0	0	0	0
9400	0	0	0	0
9450	0	0	0	0
9500	0	0	0	0
9550	0	0	0	0
9600	0	0	0	0
9650	0	0	0	0
9700	0	0	0	0
9750	0	0	0	0
9800	0	0	0	0
9850	0	0	0	0
9900	0	0	0	0
9950	0	0	0	0
10000	0	0	0	0
10050	0	0	0	0
10100	0	0	0	0
10150	0	0	0	0
10200	0	0	0	0
10250	0	0	0	0

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
10300	0	0	0	0
10350	0	0	0	0
10400	0	0	0	0
10450	0	0	0	0
10500	0	0	0	0
10550	0	0	0	0
10600	0	0	0	0
10650	0	0	0	0
10700	0	0	0	0
10750	0	0	0	0
10800	0	0	0	0
10850	0	0	0	0
10900	0	0	0	0
10950	0	0	0	0
11000	0	0	0	0
11050	0	0	0	0
11100	0	0	0	0
11150	0	0	0	0
11200	0	0	0	0
11250	0	0	0	0
11300	0	0	0	0
11350	0	0	0	0
11400	0	0	0	0
11450	0	0	0	0
11500	0	0	0	0
11550	0	0	0	0
11600	0	0	0	0
11650	0	0	0	0
11700	0	0	0	0
11750	0	0	0	0
11800	0	0	0	0
11850	0	0	0	0
11900	0	0	0	0
11950	0	0	0	0
12000	0	0	0	0
12050	0	0	0	0
12100	0	0	0	0
12150	0	0	0	0
12200	0	0	0	0
12250	0	0	0	0
12300	0	0	0	0
12350	0	0	0	0
12400	0	0	0	0
12450	0	0	0	0
12500	0	0	0	0
12550	0	0	0	0
12600	0	0	0	0
12650	0	0	0	0
12700	0	0	0	0
12750	0	0	0	0
12800	0	0	0	0
12850	0	0	0	0

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
12900	0	0	0	0
12950	0	0	0	0
13000	0	0	0	0
13050	0	0	0	0
13100		0	0	0
13150		0	0	0
13200		0	0	0
13250		0	0	0
13300		0	0	0
13350		0	0	0
13400		0	0	0
13450		0	0	0
13500		0	0	0
13550		0	0	0
13600		0	0	0
13650		0	0	0
13700		0	0	0
13750		0	0	0
13800		0	0	0
13850	0	0	0	0
13900	0	0	0	0
13950	0	0	0	0
14000	0	0	0	0
14050	9555.14	429.19	9555.14	429.19
14100	5950.72	512.49	15505.86	941.68
14150	3640.95	1125.09	19146.81	2066.77
14200	2335.07	3969.89	21481.88	6036.66
14250	2038.33	6670.39	23520.21	12707.05
14300	1526.25	5031.76	25046.46	17738.81
14350	2682.95	1633.23	27729.41	19372.04
14400	8336.09	382.21	36065.5	19754.25
14450	13769.09	908.71	49834.59	20662.96
14500	15807.33	1396.24	65641.92	22059.2
14550	18000.38	1080.68	83642.3	23139.88
14600	19540.09	360.36	103182.39	23500.24
14650	15905.5	81.96	119087.89	23582.2
14700	6066.51	2406.49	125154.4	25988.69
14750	0	11548.74	125154.4	37537.43
14800	197.33	19466.66	125351.73	57004.09
14850	1108.31	15097.83	126460.04	72101.92
14900	2101.49	5874.59	128561.53	77976.51
14950	4326.82	1282.23	132888.35	79258.74
15000	5589.9	1246.34	138478.25	80505.08
15050	4360.62	1945.98	142838.87	82451.06
15100	3710.83	2342.29	146549.7	84793.35
15150	3606.04	2551.44	150155.74	87344.79
15200	3760.26	2621.03	153916	89965.82
15250	3711.55	2528.75	157627.55	92494.57
15300	4631.57	2518.68	162259.12	95013.25
15350	6980.84	2189.03	169239.96	97202.28
15400	7507.33	2155.62	176747.29	99357.9
15450	5543.08	2755.11	182290.37	102113.01

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
15500	2767.22	4155.48	185057.59	106268.49
15550	2910.56	4400.71	187968.15	110669.2
15600	8717.74	2073.85	196685.89	112743.05
15650	18380.28	660.56	215066.17	113403.61
15700	23706.56	1362.03	238772.73	114765.64
15750	20202	2633.18	258974.73	117398.82
15800	14070.74	4453.77	273045.47	121852.59
15850	13261.36	5040.96	286306.83	126893.55
15900	18213.91	3947.19	304520.74	130840.74
15950	25489.83	2010.15	330010.57	132850.89
16000	24212.1	919.94	354222.67	133770.83
16050	18455.99	1275.36	372678.66	135046.19
16100	16408.19	1643.94	389086.85	136690.13
16150	11715.54	1650.03	400802.39	138340.16
16200	4653.01	2280.82	405455.4	140620.98
16250	302.96	4171.83	405758.36	144792.81
16300	486.18	3615.66	406244.54	148408.47
16350	2418.92	1615.77	408663.46	150024.24
16400	6354.88	1003.9	415018.34	151028.14
16450	10782.48	1640.07	425800.82	152668.21
16500	13469.11	2266.19	439269.93	154934.4
16550	16167.64	2474.48	455437.57	157408.88
16600	16686	2760.83	472123.57	160169.71
16650	12251.25	2327.4	484374.82	162497.11
16700	11216.62	1347.59	495591.44	163844.7
16750	14515.98	738.3	510107.42	164583
16800	17670.16	424.65	527777.58	165007.65
16850	20618.8	308.72	548396.38	165316.37
16900	23415.16	188.19	571811.54	165504.56
16950	26480.45	34.35	598291.99	165538.91
17000	27930.23	1.4	626222.22	165540.31
17050	25263.02	214.21	651485.24	165754.52
17100	21723	502.54	673208.24	166257.06
17150	15629.13	1574.34	688837.37	167831.4
17200	6730.71	4734.47	695568.08	172565.87
17250	3973.14	4656.12	699541.22	177221.99
17300	2876.31	3942.92	702417.53	181164.91
17350	1489.78	4775.66	703907.31	185940.57
17400	5618.72	2883.45	709526.03	188824.02
17450	14866.18	785.77	724392.21	189609.79
17500	26202.24	213.54	750594.45	189823.33
17550	32058.11	261.1	782652.56	190084.43
17600	34854.53	373.18	817507.09	190457.61
17650	35434.08	239.83	852941.17	190697.44
17700	27905.17	16.8	880846.34	190714.24
17750	17885.9	856.19	898732.24	191570.43
17800	8839.29	1710.87	907571.53	193281.3
17850	2483.91	2593.48	910055.44	195874.78
17900	539.46	5136.16	910594.9	201010.94
17950	714.66	5417.17	911309.56	206428.11
18000	1336.59	4044.49	912646.15	210472.6
18050	1299.31	3729.34	913945.46	214201.94

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
18100	904.43	4293.44	914849.89	218495.38
18150	2575.86	4487.18	917425.75	222982.56
18200	4715.63	3728.7	922141.38	226711.26
18250	6860.42	2710.75	929001.8	229422.01
18300	14093.51	1514.19	943095.31	230936.2
18350	27266.95	895.23	970362.26	231831.43
18400	41654.91	481.95	1012017.17	232313.38
18450	54805.05	208.78	1066822.22	232522.16
18500	49424.37	59.96	1116246.59	232582.12
18550	29466.62	0	1145713.21	232582.12
18600	14719.94	0	1160433.15	232582.12
18650	6510.39	195.69	1166943.54	232777.81
18700	2304.54	5753.32	1169248.08	238531.13
18750	754.12	16353.29	1170002.2	254884.42
18800	17757.34	11126.35	1187759.54	266010.77
18850	18157.95	9817.62	1205917.49	275828.39
18900	5417.82	15282.22	1211335.31	291110.61
18950	7308.4	9032.97	1218643.71	300143.58
19000	5544.06	4008.71	1224187.77	304152.29
19050	3365.63	1986.67	1227553.4	306138.96
19100	4340.91	1087.83	1231894.31	307226.79
19150	6017.3	415.97	1237911.61	307642.76
19200	5845.66	478.77	1243757.27	308121.53
19250	5496.13	325.43	1249253.4	308446.96
19300	5150.7	56.49	1254404.1	308503.45
19350	3675.84	146.32	1258079.94	308649.77
19400	1999.48	711.83	1260079.42	309361.6
19450	3283.38	871.23	1263362.8	310232.83
19500	12304.31	517.15	1275667.11	310749.98
19550	25773.4	274.52	1301440.51	311024.5
19600	30812.57	483.3	1332253.08	311507.8
19650	23777.44	1204.1	1356030.52	312711.9
19700	14290.69	1640.87	1370321.21	314352.77
19750	8897.7	1989.95	1379218.91	316342.72
19800	5368.47	2970.56	1384587.38	319313.28
19850	3973.2	4155.16	1388560.58	323468.44
19900	6578.75	4818.45	1395139.33	328286.89
19950	10885.28	3738.34	1406024.61	332025.23
20000	9883.93	1798.82	1415908.54	333824.05
20050	5466.75	2276.63	1421375.29	336100.68
20100	2698.95	4098.01	1424074.24	340198.69
20150	2418.16	3272.01	1426492.4	343470.7
20200	3946.81	1475.15	1430439.21	344945.85
20250	5309.68	379.53	1435748.89	345325.38
20300	5632.07	140.21	1441380.96	345465.59
20350	7240.37	28.93	1448621.33	345494.52
20400	10543.8	0	1459165.13	345494.52
20450	12366.38	140.92	1471531.51	345635.44
20500	15619.37	299.29	1487150.88	345934.73
20550	26644.8	161.11	1513795.68	346095.84
20600	39888.24	2.74	1553683.92	346098.58
20650	52033.09	192.31	1605717.01	346290.89

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
20700	54967.3	435.82	1660684.31	346726.71
20750	39055.13	896.97	1699739.44	347623.68
20800	19705.96	1725	1719445.4	349348.68
20850	8412.12	2117.91	1727857.52	351466.59
20900	3987.68	1990.61	1731845.2	353457.2
20950	3478.61	1100.05	1735323.81	354557.25
21000	8582.61	338.08	1743906.42	354895.33
21050	22927.4	0	1766833.82	354895.33
21100	42327.51	0.02	1809161.33	354895.35
21150	57150.82	0.02	1866312.15	354895.37
21200	47385.15	0	1913697.3	354895.37
21250	24926.59	0	1938623.89	354895.37
21300	14368.05	107.83	1952991.94	355003.2
21350	12014.77	113.23	1965006.71	355116.43
21400	14163.48	6.91	1979170.19	355123.34
21450	14853.04	3.32	1994023.23	355126.66
21500	13696.07	0	2007719.3	355126.66
21550	9580.85	0	2017300.15	355126.66
21600	5050.58	604.01	2022350.73	355730.67
21650	3297.89	1255.69	2025648.62	356986.36
21700	6582.94	687.82	2032231.56	357674.18
21750	11644.1	106.36	2043875.66	357780.54
21800	18387.83	109.52	2062263.49	357890.06
21850	24934.54	115.52	2087198.03	358005.58
21900	29830.06	219.67	2117028.09	358225.25
21950	34731.22	109.83	2151759.31	358335.08
22000	32800.68	0	2184559.99	358335.08
22050	22286.54	25.68	2206846.53	358360.76
22100	9496.7	1135.06	2216343.23	359495.82
22150	3393.61	5095.89	2219736.84	364591.71
22200	3622.37	4117.98	2223359.21	368709.69
22250	4019.82	386.32	2227379.03	369096.01
22300	2403.01	1847.84	2229782.04	370943.85
22350	594.59	5019.58	2230376.63	375963.43
22400	269.19	6161.68	2230645.82	382125.11
22450	4091.66	2821.89	2234737.48	384947
22500	11914.45	0	2246651.93	384947
22550	17546.62	0	2264198.55	384947
22600	18894.47	88.57	2283093.02	385035.57
22650	26970.62	94.52	2310063.64	385130.09
22700	22837.04	4361.56	2332900.68	389491.65
22750	12008.32	5241.31	2344909	394732.96
22800	14532.18	972.16	2359441.18	395705.12
22850	16202.98	997.98	2375644.16	396703.1
22900	24999.34	2944.62	2400643.5	399647.72
22950	35937.21	2569.91	2436580.71	402217.63
23000	34185.64	1215.66	2470766.35	403433.29
23050	32472.32	721.53	2503238.67	404154.82
23100	38283.02	51.46	2541521.69	404206.28
23150	41201.96	14.74	2582723.65	404221.02
23200	35108.61	198.87	2617832.26	404419.89
23250	28023.53	198.87	2645855.79	404618.76

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
23300	26771.18	0	2672626.97	404618.76
23350	25572.57	23.3	2698199.54	404642.06
23400	23036.77	155.41	2721236.31	404797.47
23450	20093.4	282.71	2741329.71	405080.18
23500	13844.77	395.95	2755174.48	405476.13
23550	4366.84	1655.56	2759541.32	407131.69
23600	0	9855.92	2759541.32	416987.61
23650	0	11498.85	2759541.32	428486.46
23700	1590.3	3041.05	2761131.62	431527.51
23750	3534.58	851.63	2764666.2	432379.14
23800	3022.52	2072.7	2767688.72	434451.84
23850	1711.01	2868.37	2769399.73	437320.21
23900	928.87	3173.26	2770328.6	440493.47
23950	561.75	3273.47	2770890.35	443766.94
24000	2352.01	3418.21	2773242.36	447185.15
24050	4854.36	3379.16	2778096.72	450564.31
24100	5227.1	2982.38	2783323.82	453546.69
24150	4554.7	2939.51	2787878.52	456486.2
24200	4633.39	2784.4	2792511.91	459270.6
24250	3821.22	2998.36	2796333.13	462268.96
24300	2629.45	3120.14	2798962.58	465389.1
24350	2334.57	2753.95	2801297.15	468143.05
24400	2243.42	3033.21	2803540.57	471176.26
24450	2906.01	3243.47	2806446.58	474419.73
24500	3166.65	3409.1	2809613.23	477828.83
24550	3841.53	2450.77	2813454.76	480279.6
24600	5149.09	1534.13	2818603.85	481813.73
24650	4705.26	1970.35	2823309.11	483784.08
24700	4032	1712.17	2827341.11	485496.25
24750	5294.65	1822.05	2832635.76	487318.3
24800	10302.56	1642.28	2842938.32	488960.58
24850	15685.26	1297.31	2858623.58	490257.89
24900	12970.77	1945.39	2871594.35	492203.28
24950	5357.48	2108.81	2876951.83	494312.09
25000	3162.09	2225.28	2880113.92	496537.37
25050	6286.85	2089.01	2886400.77	498626.38
25100	9030.73	1385.41	2895431.5	500011.79
25150	7857.9	1136.87	2903289.4	501148.66
25200	4364.79	1164.52	2907654.19	502313.18
25250	1198.19	4183.29	2908852.38	506496.47
25300	467.81	8200.9	2909320.19	514697.37
25350	1333.99	6962.9	2910654.18	521660.27
25400	3164.44	3396.31	2913818.62	525056.58
25450	7418.92	4728.93	2921237.54	529785.51
25500	12450.86	7953.41	2933688.4	537738.92
25550	15386.53	8706.56	2949074.93	546445.48
25600	14650.9	10295.77	2963725.83	556741.25
25650	10945.41	12963.74	2974671.24	569704.99
25700	16835.09	7173.51	2991506.33	576878.5
25750	18011.11	7263.67	3009517.44	584142.17
25800	10432.56	10419.06	3019950	594561.23
25850	9169.45	5145.53	3029119.45	599706.76

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
25900	9738.05	3723.94	3038857.5	603430.7
25950	14466.3	3075.29	3053323.8	606505.99
26000	17803.5	2518.57	3071127.3	609024.56
26050	16365.52	2291.73	3087492.82	611316.29
26100	11902.36	2417.19	3099395.18	613733.48
26150	7140.27	2918.69	3106535.45	616652.17
26200	5004.32	3206.29	3111539.77	619858.46
26250	5508.33	3869.01	3117048.1	623727.47
26300	8227.73	2401.39	3125275.83	626128.86
26350	11999.54	162.95	3137275.37	626291.81
26400	9743.71	851.19	3147019.08	627143
26450	5531.09	4749.46	3152550.17	631892.46
26500	6304.25	7086.17	3158854.42	638978.63
26550	8983.13	4162.13	3167837.55	643140.76
26600	15525.76	2021.53	3183363.31	645162.29
26650	22520.68	1838.41	3205883.99	647000.7
26700	25624.45	10983.03	3231508.44	657983.73
26750	18670.13	27078.1	3250178.57	685061.83
26800	21479.32	19588.85	3271657.89	704650.68
26850	25066.82	1364.58	3296724.71	706015.26
26900	15305.9	1254.05	3312030.61	707269.31
26950	13712.78	1749.63	3325743.39	709018.94
27000	8593.6	1848.86	3334336.99	710867.8
27050	2685.87	2338.21	3337022.86	713206.01
27100	7100.63	1438.43	3344123.49	714644.44
27150	15511.29	19.72	3359634.78	714664.16
27200	21414.84	0	3381049.62	714664.16
27250	20618.02	41.5	3401667.64	714705.66
27300	10200.49	2086.3	3411868.13	716791.96
27350	4437.78	3453.46	3416305.91	720245.42
27400	7849.67	2002.39	3424155.58	722247.81
27450	7965.6	1744.6	3432121.18	723992.41
27500	6225.13	2273.62	3438346.31	726266.03
27550	6169.5	2803.76	3444515.81	729069.79
27600	6972.51	5861.02	3451488.32	734930.81
27650	10237.93	5312.32	3461726.25	740243.13
27700	12316.77	227.6	3474043.02	740470.73
27750	10467.93	98.73	3484510.95	740569.46
27800	12621.5	246.08	3497132.45	740815.54
27850	18771.16	396.22	3515903.61	741211.76
27900	21930.86	584.82	3537834.47	741796.58
27950	19077.33	1226.11	3556911.8	743022.69
28000	14950.11	1949.25	3571861.91	744971.94
28050	13764.8	2968.06	3585626.71	747940
28100	18595.36	2903.95	3604222.07	750843.95
28150	26597.96	684.68	3630820.03	751528.63
28200	29874.13	930.69	3660694.16	752459.32
28250	26516.95	1301.47	3687211.11	753760.79
28300	15940.8	1561.89	3703151.91	755322.68
28350	7581.76	2585.93	3710733.67	757908.61
28400	4072.09	2131.39	3714805.76	760040
28450	1974.71	1940.08	3716780.47	761980.08

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
28500	4387.67	1712.1	3721168.14	763692.18
28550	10859.85	431.7	3732027.99	764123.88
28600	18363.14	36.11	3750391.13	764159.99
28650	22906.98	464.19	3773298.11	764624.18
28700	23348.72	448.6	3796646.83	765072.78
28750	18008.59	1008.94	3814655.42	766081.72
28800	6142.84	8786.69	3820798.26	774868.41
28850	840.67	8881.48	3821638.93	783749.89
28900	7030.85	1879.02	3828669.78	785628.91
28950	19533.49	734.1	3848203.27	786363.01
29000	31943.49	180.05	3880146.76	786543.06
29050	0	0	3880146.76	786543.06
29100	0	0	3880146.76	786543.06
29150	0	0	3880146.76	786543.06
29200	0	0	3880146.76	786543.06
29250	0	0	3880146.76	786543.06
29300	0	0	3880146.76	786543.06
29350	0	0	3880146.76	786543.06
29400	0	0	3880146.76	786543.06
29450	0	0	3880146.76	786543.06
29500	0	0	3880146.76	786543.06
29550	0	0	3880146.76	786543.06
29600	0	0	3880146.76	786543.06
29650	0	0	3880146.76	786543.06
29700	0	0	3880146.76	786543.06
29750	0	0	3880146.76	786543.06
29800	0	0	3880146.76	786543.06
29850	0	0	3880146.76	786543.06
29900	0	0	3880146.76	786543.06
29950	0	0	3880146.76	786543.06
30000	0	0	3880146.76	786543.06
30050	0	0	3880146.76	786543.06
30100	0	0	3880146.76	786543.06
30150	0	0	3880146.76	786543.06
30200	0	0	3880146.76	786543.06
30250	0	0	3880146.76	786543.06
30300	0	0	3880146.76	786543.06
30350	0	0	3880146.76	786543.06
30400	0	0	3880146.76	786543.06
30450	0	0	3880146.76	786543.06
30500	0	0	3880146.76	786543.06
30550	0	0	3880146.76	786543.06
30600	0	0	3880146.76	786543.06
30650	0	0	3880146.76	786543.06
30700	0	0	3880146.76	786543.06
30750	0	0	3880146.76	786543.06
30800	0	0	3880146.76	786543.06
30850	0	0	3880146.76	786543.06
30900	0	0	3880146.76	786543.06
30950	0	0	3880146.76	786543.06
31000	0	0	3880146.76	786543.06
31050	0	0	3880146.76	786543.06

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
31100	0	0	3880146.76	786543.06
31150	0	0	3880146.76	786543.06
31200	0	0	3880146.76	786543.06
31250	0	0	3880146.76	786543.06
31300	0	0	3880146.76	786543.06
31350	0	0	3880146.76	786543.06
31400	0	0	3880146.76	786543.06
31450	0	0	3880146.76	786543.06
31500	0	0	3880146.76	786543.06
31550	0	0	3880146.76	786543.06
31600	0	0	3880146.76	786543.06
31650	0	0	3880146.76	786543.06
31700	0	0	3880146.76	786543.06
31750	0	0	3880146.76	786543.06
31800	0	0	3880146.76	786543.06
31850	0	0	3880146.76	786543.06
31900	0	0	3880146.76	786543.06
31950	0	0	3880146.76	786543.06
32000	0	0	3880146.76	786543.06
32050	0	0	3880146.76	786543.06
32100	0	0	3880146.76	786543.06
32150	0	0	3880146.76	786543.06
32200	0	0	3880146.76	786543.06
32250	0	0	3880146.76	786543.06
32300	0	0	3880146.76	786543.06
32350	0	0	3880146.76	786543.06
32400	0	0	3880146.76	786543.06
32450	0	0	3880146.76	786543.06
32500	0	0	3880146.76	786543.06
32550	0	0	3880146.76	786543.06
32600	0	0	3880146.76	786543.06
32650	0	0	3880146.76	786543.06
32700	0	0	3880146.76	786543.06
32750	0	0	3880146.76	786543.06
32800	0	0	3880146.76	786543.06
32850	0	0	3880146.76	786543.06
32900	0	0	3880146.76	786543.06
32950	0	0	3880146.76	786543.06
33000	0	0	3880146.76	786543.06
33050	0	0	3880146.76	786543.06
33100	0	0	3880146.76	786543.06
33150	0	0	3880146.76	786543.06
33200	0	0	3880146.76	786543.06
33250	0	0	3880146.76	786543.06
33300	0	0	3880146.76	786543.06
33350	0	0	3880146.76	786543.06
33400	0	0	3880146.76	786543.06
33450	0	0	3880146.76	786543.06
33500	0	0	3880146.76	786543.06
33550	0	0	3880146.76	786543.06
33600	0	0	3880146.76	786543.06
33650	0	0	3880146.76	786543.06

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
33700	0	0	3880146.76	786543.06
33750	0	0	3880146.76	786543.06
33800	0	0	3880146.76	786543.06
33850	0	0	3880146.76	786543.06
33900	0	0	3880146.76	786543.06
33950	0	0	3880146.76	786543.06
34000	0	0	3880146.76	786543.06
34050	0	0	3880146.76	786543.06
34100	0	0	3880146.76	786543.06
34150	0	0	3880146.76	786543.06
34200	0	0	3880146.76	786543.06
34250	0	0	3880146.76	786543.06
34300	0	0	3880146.76	786543.06
34350	0	0	3880146.76	786543.06
34400	0	0	3880146.76	786543.06
34450	0	0	3880146.76	786543.06
34500	0	0	3880146.76	786543.06
34550	0	0	3880146.76	786543.06
34600	0	0	3880146.76	786543.06
34650	0	0	3880146.76	786543.06
34700	0	0	3880146.76	786543.06
34750	0	0	3880146.76	786543.06
34800	0	0	3880146.76	786543.06
34850	0	0	3880146.76	786543.06
34900	0	0	3880146.76	786543.06
34950	0	0	3880146.76	786543.06
35000	0	0	3880146.76	786543.06
35050	0	0	3880146.76	786543.06
35100	0	0	3880146.76	786543.06
35150	0	0	3880146.76	786543.06
35200	0	0	3880146.76	786543.06
35250	0	0	3880146.76	786543.06
35300	0	0	3880146.76	786543.06
35350	0	0	3880146.76	786543.06
35400	0	0	3880146.76	786543.06
35450	0	0	3880146.76	786543.06
35500	0	0	3880146.76	786543.06
35550	0	0	3880146.76	786543.06
35600	0	0	3880146.76	786543.06
35650	0	0	3880146.76	786543.06
35700	0	0	3880146.76	786543.06
35750	0	0	3880146.76	786543.06
35800	0	0	3880146.76	786543.06
35850	0	0	3880146.76	786543.06
35900	0	0	3880146.76	786543.06
35950	0	0	3880146.76	786543.06
36000	0	0	3880146.76	786543.06
36050	0	0	3880146.76	786543.06
36100	0	0	3880146.76	786543.06
36150	0	0	3880146.76	786543.06
36200	0	0	3880146.76	786543.06
36250	0	0	3880146.76	786543.06

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
36300	0	0	3880146.76	786543.06
36350	0	0	3880146.76	786543.06
36400	0	0	3880146.76	786543.06
36450	0	0	3880146.76	786543.06
36500	0	0	3880146.76	786543.06
36550	0	0	3880146.76	786543.06
36600	0	0	3880146.76	786543.06
36650	0	0	3880146.76	786543.06
36700	0	0	3880146.76	786543.06
36750	0	0	3880146.76	786543.06
36800	0	0	3880146.76	786543.06
36850	0	0	3880146.76	786543.06
36900	0	0	3880146.76	786543.06
36950	0	0	3880146.76	786543.06
37000	0	0	3880146.76	786543.06
37050	0	0	3880146.76	786543.06
37100	0	0	3880146.76	786543.06
37150	0	0	3880146.76	786543.06
37200	0	0	3880146.76	786543.06
37250	0	0	3880146.76	786543.06
37300	0	0	3880146.76	786543.06
37350	0	0	3880146.76	786543.06
37400	0	0	3880146.76	786543.06
37450	0	0	3880146.76	786543.06
37500	0	0	3880146.76	786543.06
37550	0	0	3880146.76	786543.06
37600	0	0	3880146.76	786543.06
37650	0	0	3880146.76	786543.06
37700	0	0	3880146.76	786543.06
37750	0	0	3880146.76	786543.06
37800	0	0	3880146.76	786543.06
37850	0	0	3880146.76	786543.06
37900	0	0	3880146.76	786543.06
37950	0	0	3880146.76	786543.06
38000	0	0	3880146.76	786543.06
38050	0	0	3880146.76	786543.06
38100	0	0	3880146.76	786543.06
38150	0	0	3880146.76	786543.06
38200	0	0	3880146.76	786543.06
38250	0	0	3880146.76	786543.06
38300	0	0	3880146.76	786543.06
38350	0	0	3880146.76	786543.06
38400	0	0	3880146.76	786543.06
38450	0	0	3880146.76	786543.06
38500	0	0	3880146.76	786543.06
38550	0	0	3880146.76	786543.06
38600	0	0	3880146.76	786543.06
38650	0	0	3880146.76	786543.06
38700	0	0	3880146.76	786543.06
38750	0	0	3880146.76	786543.06
38800	0	0	3880146.76	786543.06
38850	0	0	3880146.76	786543.06

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
38900	0	0	3880146.76	786543.06
38950	0	0	3880146.76	786543.06
39000	0	0	3880146.76	786543.06
39050	0	0	3880146.76	786543.06
39100	0	0	3880146.76	786543.06
39150	0	0	3880146.76	786543.06
39200	0	0	3880146.76	786543.06
39250	0	0	3880146.76	786543.06
39300	0	0	3880146.76	786543.06
39350	0	0	3880146.76	786543.06
39400	0	0	3880146.76	786543.06
39450	0	0	3880146.76	786543.06
39500	0	0	3880146.76	786543.06
39550	0	0	3880146.76	786543.06
39600	0	0	3880146.76	786543.06
39650	0	0	3880146.76	786543.06
39700	0	0	3880146.76	786543.06
39750	0	0	3880146.76	786543.06
39800	0	0	3880146.76	786543.06
39850	0	0	3880146.76	786543.06
39900	0	0	3880146.76	786543.06
39950	0	0	3880146.76	786543.06
40000	0	0	3880146.76	786543.06
40050	0	0	3880146.76	786543.06
40100	0	0	3880146.76	786543.06
40150	0	0	3880146.76	786543.06
40200	0	0	3880146.76	786543.06
40250	0	0	3880146.76	786543.06
40300	0	0	3880146.76	786543.06
40350	0	0	3880146.76	786543.06
40400	0	0	3880146.76	786543.06
40450	0	0	3880146.76	786543.06
40500	0	0	3880146.76	786543.06
40550	0	0	3880146.76	786543.06
40600	0	0	3880146.76	786543.06
40650	0	0	3880146.76	786543.06
40700	0	0	3880146.76	786543.06
40750	0	0	3880146.76	786543.06
40800	0	0	3880146.76	786543.06
40850	0	0	3880146.76	786543.06
40900	0	0	3880146.76	786543.06
40950	0	0	3880146.76	786543.06
41000	0	0	3880146.76	786543.06
41050	0	0	3880146.76	786543.06
41100	0	0	3880146.76	786543.06
41150	0	0	3880146.76	786543.06
41200	0	0	3880146.76	786543.06
41250	0	0	3880146.76	786543.06
41300	0	0	3880146.76	786543.06
41350	0	0	3880146.76	786543.06
41400	0	0	3880146.76	786543.06
41450	0	0	3880146.76	786543.06

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
41500	0	0	3880146.76	786543.06
41550	0	0	3880146.76	786543.06
41600	0	0	3880146.76	786543.06
41650	0	0	3880146.76	786543.06
41700	0	0	3880146.76	786543.06
41750	0	0	3880146.76	786543.06
41800	0	0	3880146.76	786543.06
41850	0	0	3880146.76	786543.06
41900	0	0	3880146.76	786543.06
41950	0	0	3880146.76	786543.06
42000	0	0	3880146.76	786543.06
42050	0	0	3880146.76	786543.06
42100	0	0	3880146.76	786543.06
42150	0	0	3880146.76	786543.06
42200	0	0	3880146.76	786543.06
42250	0	0	3880146.76	786543.06
42300	0	0	3880146.76	786543.06
42350	0	0	3880146.76	786543.06
42400	0	0	3880146.76	786543.06
42450	0	0	3880146.76	786543.06
42500	0	0	3880146.76	786543.06
42550	0	0	3880146.76	786543.06
42600	0	0	3880146.76	786543.06
42650	0	0	3880146.76	786543.06
42700	0	0	3880146.76	786543.06
42750	0	0	3880146.76	786543.06
42800	0	0	3880146.76	786543.06
42850	0	0	3880146.76	786543.06
42900	0	0	3880146.76	786543.06
42950	0	0	3880146.76	786543.06
43000	0	0	3880146.76	786543.06
43050	0	0	3880146.76	786543.06
43100	0	0	3880146.76	786543.06
43150	0	0	3880146.76	786543.06
43200	0	0	3880146.76	786543.06
43250	0	0	3880146.76	786543.06
43300	0	0	3880146.76	786543.06
43350	0	0	3880146.76	786543.06
43400	0	0	3880146.76	786543.06
43450	0	0	3880146.76	786543.06
43500	0	0	3880146.76	786543.06
43550	0	0	3880146.76	786543.06
43600	0	0	3880146.76	786543.06
43650	0	0	3880146.76	786543.06
43700	0	0	3880146.76	786543.06
43750	0	0	3880146.76	786543.06
43800	0	0	3880146.76	786543.06
43850	0	0	3880146.76	786543.06
43900	0	0	3880146.76	786543.06
43950	0	0	3880146.76	786543.06
44000	0	0	3880146.76	786543.06
44050	0	0	3880146.76	786543.06

Station	Cut Volume (Cu.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)
44100	0	0	3880146.76	786543.06
44150	0	0	3880146.76	786543.06
44200	0	0	3880146.76	786543.06
44250	0	0	3880146.76	786543.06
44300	0	0	3880146.76	786543.06
44350	0	0	3880146.76	786543.06
44400	0	0	3880146.76	786543.06
44450	0	0	3880146.76	786543.06
44500	0	0	3880146.76	786543.06

Total Cut Volume	3880146.76
Total Filling required	786543.06
Reused Quantity	786543.06
Balance quantity for disposal	3093603.70

BILL NO: 3 - SUB-BASE AND BASE COURSES FOR FLEXIBLE PAVEMENT

Item No.	SOR Ref	Description	Unit	Nos.	Length (m)	Breadth (m)	Height (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)	Remarks
3.01		**Granular Sub-Base** with Coarse Graded Material (Table:- 400- 2) (Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401)									
a)	4.2 (i)	Drainage layer of 100mm thick (Grading of Table - 400 -2 Grading I)	cum	1	15000.00	21.9	0.100	32,850.00	**4,574.00**	**150,255,900.00**	
b)	4.2 (ii)	Second layer of 100mm thick (Grading of Table - 400 -2 Grading II)	cum	1	13560.00	20.9	0.100	28,340.40	**4,574.00**	**129,628,989.60**	
3.02	4.12	**Wet Mix Macadam** (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)									
		a) For widening Portion (250mm thick) in two layers	cum	1	13560.00	21.5	0.250	72,885.00	**5,706.00**	**415,881,810.00**	
									TOTAL FOR BILL NO: 3B (CARRIED FORWARD TO SUMMARY)	**695,766,699.60**	

BILL NO: 4 - BITUMINOUS WORKS FOR FLEXIBLE PAVEMENT

Item No.	SOR Ref No.	Description	Unit	Nos.	Length (m)	Breadth (m)	Height (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)	Remarks
4.01		Providing and applying bituminous Prime Coat over granular surface with bitumen emulsion complete as per Technical Specifications Clause 502									
	5.1	**a) @ 6.0 kg per 10 sqm**	sqm	1	13,560.00	21		284,760.00	**40.00**	**11,390,400.00**	
4.02		Providing and applying bituminous Tack coat over prepared surface with bituminous emulsion all complete as per Technical Specification Clause 503									
	5.20	**a) @ 2.5 kg per 10 sqm over granular surface treated with**	sqm	1	13,560.00	21		284,760.00	**15.00**	**4,271,400.00**	
		b) @ 2.0 kg per 10 sqm over bituminous surface	cum	1	13,560.00	21		284,760.00	**15.00**	**4,271,400.00**	
4.03	5.6 (i)	Providing and laying Dense Bituminous Macadam (DBM) course complete as per Technical Specifications Clauses 507 and as directed by the Engineer	cum	1	13,560.00	21	0.095	27,052.20	**15,793.00**	**427,235,394.60**	
4.04	5.8 (i)	Providing and laying Bituminous Concrete wearing course using Modified Bitumen as per drawing and Technical Specifications Clauses 509 & 521.	cum	1	13,560.00	21	0.040	11,390.40	**16,125.00**	**183,670,200.00**	
TOTAL FOR BILL NO: 4 (CARRIED FORWARD TO SUMMARY)										**630,838,794.60**	

DETAILS OF QUANTITIES

Box Culverts **2X2 (12.00M. Width)**

No. of Box Culvert 90

SOR Ref.	SI. No.	Description	Unit	No.	Qty.	Total Quantity	Rate	Amount
	1	Earthwork in excavation of foundation for structures including pipe culverts in all types of soil complete as per drawings and Technical Specification Clause 304, 309 and 2903.	cum.					
3.13 i B		Box Cell		1	28.54			
		Wing wall at Abutment end		4	117.60			
		Wing wall at Return wall end		4	21.59			
		Flexible apron U/S		1	30.82			
		Flexible apron D/S		1	61.64			
		Floor apron U/S		1	9.11			
		Floor apron D/S		1	15.19			
		Curtain wall U/S		1	41.10			
		Curtain wall D/S		1	63.36			
					388.94	**35004.62**	**220.82**	**7729719.089**
	2	Cement concrete in foundation/M-15 levelling course on pipe culvert and under approach slab etc.including centering and shuttering all complete as drawing and Technical Specifications Sections 2100 and 2200.	cum.					
12.8 A		Box Cell		1	5.35			
		Wing wall at Abutment end		4	10.69			
		Wing wall at Return wall end		4	1.96			
		Floor apron U/S		1	3.04			
		Floor apron D/S		1	5.06			
		Curtain wall U/S		1	3.08			
		Curtain wall D/S		1	3.80			
					32.99	**2968.81**	**10438.32**	**30989403.14**
	3	Providing and laying filter medium, behind abutments, retaining wall and return wall complete as per drawing and Technical Specifications Clause 2504.	cum.					
13.10		Wing wall		4	18.93			
					18.93	**1703.92**	**5498.00**	**9368164.904**
	4	Back filling behind abutments, wing walls/ retaining and return walls or any other area with selected granular material of approved quality complete as per drawing and Technical Specification clause 300.	cum.					
13.9A		Wing wall		4	10.70			
					10.70	**962.86**	**1611.62**	**1551756.55**
	5	M-20 grade Plain cement concrete in foundation and substructure including centering and shuterring but excluding reinforcement, complete as per drawing and Technical Specifications Sections 1500, 1700, 2100, 2200 and 2300	cum.					
12.8 C ii		M-20 grade Concrete						
		Wing Wall Foundation at Abutment end		4	39.87			
		Wing Wall Foundation at end		4	6.52			
		Wing Wall Substructure at Abutment end		4	42.41			
		Wing Wall Substructure at end		4	3.78			
					92.58	**8332.38**	**9857.00**	**82132234.12**
	6	M-25 grade Reinforced cement concrete in Box Structure including centering and shuttering but excluding reinforcement, complete as per drawing and Technical Specifications Sections 1500 ,1700 and 2300.	cum.					
12.8 D ii		M-25 grade Concrete						
		Bottom Slab		1	10.92			
		Shear Key		2	3.20			
		Top Slab		1	9.36			
		Vertical outer wall		2	14.94			
		Vertical inner wall		0	0.00			
		Haunch		4	0.54			
		Bracket		0	0.00			
		Parapet wall		2	0.39			
					39.35	**3541.91**	**9980.00**	**35348211.9**

12.40	7	HYSD bar reinforcement for culverts, underpass, retaining walls etc. complete as per drawings and Technical Specifiations Section 1600.	MT					
		For Box			2.75			
		Wing Wall Skin Reinforcement			0.37			
		2X4X1/2(1.739+0.61)X6.72	63.108					
		4X0.5X0.3X2	1.2					
		4X0.35X0.4X2	1.12					
		Return Wall Skin Reinforcement						
		2X4X0.61X1.4	6.832					
		4X0.5X0.3X2	1.2					
		4X0.35X0.4X2	1.12					
					3.13	**281.49**	**84675.00**	**23835543**
13.8	8	Providing weep holes in abutments, wing walls, retaining walls, return walls etc. complete as per drawing and Technical Specifications Clause 2706.	Nr.					
		Wing wall		32	32			
					32	**2880.00**	**662.72**	**1908632.736**
8.8	9	Painting of culvert no. and span arrangement as per Technical Specifications Clause 803	Nr.					
		For Box		2	2			
					2	**180.00**	**147.62**	**26571.6**
15.4	10	Stone Pitching 300 mm thick on slopes as per drawings and Technical Specifications Section 2500.	cum.					
		Abutment Corner		4	15.14			
					15.14	**1362.25**	**2287.50**	**3116152.746**
15.5	11	Filter material underneath stone pitching on slopes complete as per drawing and Technical Specifications Section 2500.	cum.					
		Abutment Corner		4	7.57			
					7.57	**681.13**	**2017.88**	**1374431.104**
15.11	12	Providing and laying Flexible apron complete as per drawing and Technical Specifications.	cum.					
		Flxible apron u/s		1	30.82			
		Flxible apron d/s		1	61.64			
					92.47	**8321.88**	**3601.00**	**29967084.39**
15.1A	13	Providing and laying Stone apron complete as per drawing and Technical Specifications Clause 2500.	cum.					
		Floor apron U/S		1	6.07			
		Floor apron D/S		1	10.12			
					16.20	**1457.85**	**1936.00**	**2822388.041**
	14	Providing and fixing of Guard post complete as per drawing and Technical Specification or as directed by Engineer.	Nr.					
		For Span		2	2.00			
					2.00	**180.00**		
12.8 C ii	15	Providing cement concrete M-20 grade in cut off wall complete as per drawing and Technical Specifications Sections 1500 & 1700 and Clause 2507.	cum.					
		Wall u/s		1	20.103			
		Wall d/s		1	25.993			
					46.096	**4148.61**	**9857.00**	**40892853.98**
							TOTAL	**271063147.3**

Cost Summary of Kohima Bridges

Sl.no.	Chainage	Type	Span Arrangement	Total Cost
1	4+020	Truss	1 x 80m	0
2	14+850	Truss	1 x 80m	305369891.3
3	23+620	Truss	1 x 80m	285851266.7
4	32+400	PSC	13x30m	0
5	35+600	RCC Girder	1 x 24m	0
			Total Cost	**591,221,158.00**

Bill No. 7 Junctions

Item No.	SOR Ref. No.	Description	Unit	No.	Area	Depth	Qty	Unit Rate	Amount	Remarks
Major Junction										
Bill No 1: Site Clearance										
6.01	2.3 (i) A	Clearing and grubbing road land by mechanical means in area of light jungle including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Ha	0.0	1800.0		0.0	**42,879.15**	-	
6.02	3-32	Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres.	Cum	0.0	540.00	0.20	0.0	**195.49**	-	**Consederin g 30% of total area**
6.03	3-33	Excavation in hilly area in ordinary rock not requiring blasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres.	Cum	0.00	540.00	1.00	0.0	**276.04**	-	**Consederin g 30% of total area**
6.04	3-34	Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 meters	Cum	0.0	720.00	1.00	0.0	**424.27**	-	**Consederin g 40% of total area**
6.08	4.2 (ii)	**Granular Sub-Base with Coarse Graded Material (Table:- 400- 2)**								
		Granular Sub-Base with Coarse Graded Material (Table:- 400- 2) (Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401)	Cum	4.0	1800.0	0.200	1440.0	**4,574.00**	**6,586,560.00**	
6.09	4.12	**Wet Mix Macadam** (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)	Cum	4.0	1800.0	0.250	1800.0	**5,706.00**	**10,270,800.00**	
6.10	5.6 (i)	Providing and laying Dense Bituminous Macadam (DBM) course complete as per Technical Specifications Clauses 507 and as directed by the Engineer	Cum	4.0	1800.0	0.095	684.0	**15,793.00**	**10,802,412.00**	
6.11	5.8 (i)	Providing and laying Bituminous Concrete wearing course using Modified Bitumen as per drawing and Technical Specifications Clauses 509 & 521.	Cum	4.0	1800.0	0.040	288.0	**16,125.00**	**4,644,000.00**	

Item No.	SOR Ref. No.	Description	Unit	No.	Area	Depth	Qty	Unit Rate	Amount	Remarks
Minor Junction										
Bill No 1: Site Clearance										
6.01	2.3 (i) A	Clearing and grubbing road land by mechanical means in area of light jungle including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Ha	2.0	660.0		0.1	**42,879.15**	**5,660.05**	
6.02	3-32	Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres.	Cum	2.0	198.00	0.20	79.2	**195.49**	**15,482.51**	**Consederin g 30% of total area**
6.03	3-33	Excavation in hilly area in ordinary rock not requiring blasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres.	Cum	2.00	198.00	1.00	396.0	**276.04**	**109,313.31**	**Consederin g 30% of total area**
6.04	3-34	Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 meters	Cum	2.0	264.00	1.00	528.0	**424.27**	**224,014.30**	**Consederin g 40% of total area**
6.08	4.2 (ii)	**Granular Sub-Base with Coarse Graded Material (Table:- 400- 2)**								
		Granular Sub-Base with Coarse Graded Material (Table:- 400- 2) (Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401)	Cum	0.0	660.0	0.150	0.0	**4,574.00**	-	
6.09	4.12	**Wet Mix Macadam** (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)	Cum	0.0	660.0	0.250	0.0	**5,706.00**	-	
6.10	5.6 (i)	Providing and laying Dense Bituminous Macadam (DBM) course complete as per Technical Specifications Clauses 507 and as directed by the Engineer	Cum	0.0	660.0	0.095	0.0	**15,793.00**	-	
6.11	5.8 (i)	Providing and laying Bituminous Concrete wearing course using Modified Bitumen as per drawing and Technical Specifications Clauses 509 & 521.	Cum	0.0	660.0	0.040	0.0	**16,125.00**	-	
		TOTAL FOR BILL NO: 7 (CARRIED FORWARD TO SUMMARY)							**32,658,242.16**	

Bill 7 :- Bus Bays / Bus Shelter

Sl. No.	SOR Ref No	Item Description	Unit	Plan Area /Length	Nos. of Bus Bays	Effective Area/ Length	Depth (m)	Quantity	Unit Rate (per sqm/cum)	Amount
A)		**Bus Bay for One Buses:**								
i)		Approx. Area of Existing Pavement (sqm)		-		-				
ii)		Approx. Area of Pavement Improvement (sqm)		500.0	**2.0**	1,000.0				
iii)		Approx. Area of Islands & Medians (sqm)		-		-				
		Approx. Length along the edges of Islands & Medians (m)		-		-				
Quantities:										
1	5.8(i)	BC	Cum			1,000.0	0.040	40.0	16,125.0	**645,000.00**
2	5.6(i)	DBM	Cum			1,000.0	0.095	95.0	15,793.0	**1,500,335.00**
3	4.1	WMM	Cum			1,000.0	0.250	250.0	5,706.0	**1,426,500.00**
4	4.2 (ii)	GSB	Cum			1,000.0	0.200	200.0	4,574.0	**914,800.00**
5	4.14	Isand/Median Filling	Cum			35.0	0.610	21.4	270.7	**5,778.87**
5	4.16	Bus Shelter	Each			16.0		16.0	150,000.0	**2,400,000.0**
									TOTAL FOR BILL NO: 8 (CARRIED FORWARD TO SUMMARY)	**6,892,413.9**

Note:

Pavement Strength is considered to be equal to that of Service Road.

Tack coat shall be applied in 2 layers, in the case of Bus Bay.

1 layer shall be applied @ 2.0 kg/10 sqm on normal bituminous courses

1 layer shall be applied @ 2.5 kg/10 sqm (quantity can be taken as equal to that of Prime coat) on hungry Surface, etc.

* - Quantity for the Tack Coat applied @ 2.0 kg/10 sqm on normal bituminous courses

BILL NO: 8 - DRAINAGE

Item No.	SOR Ref No	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)	Remarks
8.01	3-29	Drain at Edge of Pavement (Construction of an underground drain 1 m x 1 m (inside dimensions) lined with RCC-20 cm thick and covered with RCC slab10 cm in thickness on urban roads)	m	2.00	1,100.00			2,200.00	**6,209.37**	**13,660,618.62**	Length of TCS-III
8.02	8.2 (B)	Cast in Situ Cement Concrete M 20 Kerb with Channel (Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCC M20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408)	m	1.00	12,460.00			12,460.00	**1,404.00**	**17,493,840.00**	
								TOTAL FOR BILL NO: 9 (CARRIED FORWARD TO SUMMARY)		**31,154,458.62**	

BILL NO: 9 - PROTECTION WORKS

Item No.	SOR Ref No	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)	Remarks
9.01	8.23 (A)	**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)	Rm	1.00	1,356.00			1,356.00	**3,878.58**	**5,259,347.84**	Length = total length - Length of bridges/structures
								TOTAL FOR BILL NO: 9 (CARRIED FORWARD TO SUMMARY)		**5,259,347.84**	

Detailed Estimate for the construction of 3.00m High Guard wall

Sl.	CLAUSE	MORTH SPECIFICATION	ITEM	UNIT	NOS	QTY	RATE	AMOUNT
1	3.2	301	Excavation for roadway in soil using manual means including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres. 1800 x 1.7 x 1.6	Cum	1	4896	**490.00**	**2399040.00**
2	12.8	1500,1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. 1800 x 1.7 x 0.2	Cum	1	612	**0.00**	**0.00**
3	12.7	1400	Stone Masonry Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical Specifications. $\frac{1800}{2}$ x (1.5+1.250) x 1.4	Cum	1	3465	**10534.00**	**36500310.00**
4	13.4	1400 & 2200	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications $\frac{1800}{2}$ x (1.05+.40) x 2	Cum	1	2610	**9215.78**	**24053181.00**
5	12.8	1500,1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. 1800 x 0.4 x 0.075	Cum	1	54	**0.00**	**0.00**
6	13.8	2200, 2706	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing foce. Complete as per drawing and Technical Specifications	Nos	2	0	**127.26**	**0.00**
7			Provinding cement flush pointing with clean coarse sand of F.M. 1.5 including screening curing with all leads and lifts of water including taxes and royalties all complete job as per specification and direction of E/I. 1800 x 2	Sqm	1	3600	**43.94**	**158184.00**
			Total (Rs.)					**63110715.00**

BILL OF QUANTITY (RETAINING WALL)

S.I. NO	CLAUSE	MORTH SPECIFICATION	ITEM	UNIT	NOS	LENGTH	WIDTH	HEIGHT	AREA	QUANTITY	RATE	AMOUNT
1	12.1(IB)	304	**Earthwork Excavation**									
			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, backfilling the excavation earth to the extent required and utilising the remaining earth locally for road work.									
				cum.	1	1100	4.3	2.1		9933.00		
									Total=	**9933.00**	**76.00**	**754940.94**
2	13.9	710.1.4.of IRC:78 & 2200	**BACKFILLING**									
			Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification									
				cum.	1	1100	1.80	5.00		9900.00		
									Total=	**9900.00**	**11925.50**	**118062450.00**
3	12.8	1500, 1700 & 2100	**PCC GRADE M15**									
			Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications									
				cum.	1	1100	4.3	0.10		473.00		
									Total=	**473.00**	**0.00**	**0.00**
4	13.10	710.1.4.of IRC:78 and 2200	**FILTER MEDIA**									
			Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.									
				cum.	1	1100.0	0.6	4.40		2904.00		
									Total=	**2904.00**	**17654.49**	**51268633.15**
5	12.8	1500, 1700 & 2100	**RCC GRADE M35 For Foundation**									
			Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.									
				cum.	1	1100.0			2.13	2343.00		

S.I. NO	CLAUSE	MORTH SPECIFICATION	ITEM	UNIT	NOS	LENGTH	WIDTH	HEIGHT	AREA	QUANTITY	RATE	AMOUNT
									Total=	**2343.00**	**770.40**	**1805047.20**
6	**13.5**	**1500,1700 & 2200**	**RCC GRADE M35 For Shaft**									
			Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications									
				cum.	1	1100			2.42	2662.00		
									Total=	**2662.00**	**662.04**	**1762359.26**
7	**12.40**	**1600**	**HYSD Fe 500**									
			For Foundation									
			Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications.									
			Steel @ 140kg/cum	MT						**328.02**	**0.00**	**0.00**
8	**13.6**	**1600 & 2200**	**For Shaft**									
			Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and Technical Specifications									
			Steel @ 140kg/cum	MT						**372.68**	**17308.92**	**6450688.40**
											TOTAL	**180104118.96**

BILL OF QUANTITY (RETAINING WALL)

S.I. NO	CLAUSE	MORTH SPECIFICATION	ITEM	UNIT	NOS	LENGTH	WIDTH	HEIGHT	AREA	QUANTITY	RATE	AMOUNT
1	12.1(IB)	304	**Earthwork Excavation**									
			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, backfilling the excavation earth to the extent required and utilising the remaining earth locally for road work.									
				cum.	1	1300	8.0	2.1		21840.00		
									Total=	**21840.00**	**76.00**	**1659912.42**
2	13.9	710.1.4.of IRC:78 & 2200	**BACKFILLING**									
			Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification									
				cum.	1	1300	3.30	8.00		34320.00		
									Total=	**34320.00**	**11925.50**	**409283160.00**
3	12.8	1500, 1700 & 2100	**PCC GRADE M15**									
			Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications									
				cum.	1	1300	8.0	0.10		1040.00		
									Total=	**1040.00**	**0.00**	**0.00**
4	13.10	710.1.4.of IRC:78 and 2200	**FILTER MEDIA**									
			Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.									
				cum.	1	1300.0	0.6	7.40		5772.00		
									Total=	**5772.00**	**17654.49**	**101901704.74**
5	12.8	1500, 1700 & 2100	**RCC GRADE M35 For Foundation**									
			Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.									
				cum.	1	1300.0			3.69	4797.00		

S.I. NO	CLAUSE	MORTH SPECIFICATION	ITEM	UNIT	NOS	LENGTH	WIDTH	HEIGHT	AREA	QUANTITY	RATE	AMOUNT
									Total=	**4797.00**	**770.40**	**3695608.80**
6	**13.5**	**1500,1700 & 2200**	**RCC GRADE M35 For Shaft**									
			Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications									
				cum.	1	1300			5.55	7215.00		
									Total=	**7215.00**	**662.04**	**4776642.41**
7	**12.40**	**1600**	**HYSD Fe 500**									
			For Foundation									
			Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications.									
			Steel @ 140kg/cum	MT						**671.58**	**0.00**	**0.00**
8	**13.6**	**1600 & 2200**	**For Shaft**									
			Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and Technical Specifications									
			Steel @ 140kg/cum	MT						**1010.10**	**17308.92**	**17483740.35**
											TOTAL	**538800768.72**

BILL NO: 10 - TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Item No.	SOR Ref No.	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)
10.01	8.16	Providing and fixing RCC boundary pillars including cost of reinforcement and two coats of painting with ready mix oil bound paint complete as per drawing and Technical Specifications Clause 806.	Nr.	75.00				75.00	**1,542.41**	**115,680.57**
10.02	8.14 (i), (ii), (iii)	Providing and fixing PCC/RCC hectometer, kilometer and 5th kilometer stones including cost of reinforcement complete as per Technical Specifications Clause 804.								
		a) 200-metre stone	Nr.	75.00				75.00	**1,045.10**	**78,382.45**
		b) Kilometre stone	Nr.	12.00				12.00	**4,090.17**	**49,082.07**
		c) 5th km. stone	Nr.	3.00				3.00	**6,625.05**	**19,875.15**
10.03	8.11 (i)	Providing and laying Pavement marking with hot applied thermoplastic material complete as per drawing and Technical Specifications Clause 803.								
		a) Lane/ Centre line/ Edge marking/ Transverse marking and any other marking.	Sqm	3.00	13,560.00	0.15		6,102.00	**300.75**	**1,835,164.30**
	8.11 (i)	b) Directional Arrows, Lettering etc. as per drawing No.61 of MORTH Type Designs for Intersections on National Highways.	Sqm	2.00	13,560.00	0.10		2,712.00	**300.75**	**815,628.58**
10.04	8.8	Providing and laying kerb painting with ordinary paints grade-I (IS:164) complete as per drawing and Technical Specifications Clause 803	Sqm	2.00	13,560.00	0.30		8,136.00	**216.97**	**1,765,253.28**
10.05	8.5, 8.4 (v)	Supplying and fixing sign boards complete as per Technical Specifications Clause 801 and as directed by Engineer, including the cost of posts, fitting and fixing. Sheeting will be retro reflecting type of high intensively grade and messages/borders will be screen printed								
A		Informatory signs								
		a) Advance Direction / Destination / Reassurance signs	Sqm	50.00		0.90		45.00	**11,210.38**	**504,467.18**
		b) Route marker signs (450mm x 600mm)	Nr.	50.00				50.00	**11,210.38**	**560,519.09**
B	8.4 (i)	Cautionary signs, size triangular 900mm side	Nr.	50.00				50.00	**5,804.44**	**290,221.82**
10.06	8.7 A & B	Supplying and fixing overhead signs complete as per drawing and Technical Specifications Section 800 including cost of posts, truss, erection, fitting and foundations. Sheeting will be retro reflective type of high intensity grade and message/borders will be screen-printed as per drawings.								
		a) Truss and Vertical Support (Portal type)	MT.	2.00				5.00	**109,433.60**	**547,168.02**
		b) Aluminium alloy plate for over head sign	MT.	4.00				10.00	**4,923.67**	**49,236.74**

BILL NO: 10 - TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Item No.	SOR Ref No.	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)
10.07	8.15	Providing and fixing road delineators complete as per drawing and Technical Specifications Clause 805 as directed by Engineer.								
		a) Road Indicators	Nr.	200.00				200.00	**1,163.25**	**232,650.06**
		b) Hazard Markers	Nr.	200.00				200.00	**1,163.25**	**232,650.06**
		c) Object Markers	Nr.	200.00				200.00	**1,163.25**	**232,650.06**
10.08	8.4	Retro- reflectorised Traffic signs (Providing and fixing of retro-reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of encapsulated lens type reflective sheeting vide clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing)								
	(i)	90 cm equilateral triangle	each	100.00				100.00	**5804.44**	**580,443.64**
	(v)	60 cm x 45 cm rectangular	each	100.00				100.00	**5177.16**	**517,716.20**
10.09	8.5	Direction and Place Identification signs upto 0.9 sqm size board. (Providing and erecting direction and place identification retro-reflectorised sign asper IRC:67 made of encapsulated lens type reflective 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)	Sqm	2.00				2.00	**11,210.38**	**22,420.76**
10.10	8.8	Painting Two Coats on New Concrete Surfaces (Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces)	Sqm	1.00	340.00	12.00		4,080.00	**216.97**	**885,230.26**
10.12	8.35	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)	each	2.00	200.00			133.33	**1,984.00**	**264,533.33**

BILL NO: 10 - TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Item No.	SOR Ref No.	Description	Unit	No.	Length (m)	Breadth (m)	Depth (m)	Quantity	Unit Rate (Rs.)	Amount (Rs.)
10.13	8.27	**Street Lighting**								
		Providing and erecting street light mounted on a steel circular hollow pole of standard specifications for street lighting, 9 m high spaced 40 m apart, 1.8 m overhang on both sides if fixed in the median and on one side if fixed on the footpath, fitted with sodium vapour lamp and fixed firmly in concrete foundation.								
	(i)	For Fixing in Median (At every 100 m excluding structures)	each	136.00				136.00	**59,529.84**	**8,096,058.82**
	(ii)	For fixing in Footpath (At every 100 m excluding structures)	each	136.00				136.00	**59,382.69**	**8,076,046.19**
10.14	8.28	**Lighting on Bridges**								
		Providing and fixing lighting on bridges, mounted on steel hollow circular poles of standard specifications, 5 m high fixed on parapets with cement concrete, 20 m apart and fitted with sodium vapour lamp	each	16				16.00	**31,762.21**	**508,195.38**
10.15	8.29	**Cable Duct Across the Road**								
		Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings.								
	(i)	Single row for one utility service	metre	-				-	**11,033.16**	**-**
10.16	8.40	**High Mast Pole Lighting at Interchanges and Flyovers**	each	-				-	**1,000,000.00**	**-**
10.17	11.9	Planting of Trees and their Maintenance for one Year (Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge mannure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year)	each	1,500.00				1,500.00	**2,220.00**	**3,330,000.00**
				TOTAL FOR BILL NO: 10 (CARRIED FORWARD TO SUMMARY)						**29,609,274.00**

BILL NO-13 COST ESTIMATE FOR TOLL PLAZA

Item No	Items Description	Unit	Quantity	Rate	Amount
13.01	Providing Toll Plaza buildings including arrangement of electric supply , all electrical items like fans , lights , socket receptacles , and complete wiring , with requisite earthing , providing fire alarm and fighting system like smoke detector, electric hooter with battery back-up cabling and CO2 hand extinguisher, providing water supply including all pipes, fittings, tanks, tube wells, pumps, valves etc. complete with septic tank, sewer lines, etc all complete as per drawing and additional technical specifications appendix-XIII of Volume-2				
(a)	Administrative block including changing room, pantry etc. (size-2)	No.	1	900000.00	900000
(b)	Single Toll booths	No.	12	80000.00	960000
(c)	Double Toll booths	No.	2	160000.00	320000
13.02	Providing, installing & commissioning electrically operated barrier gates.				
(a)	For 3.2 m wide toll lane	No.	12	150000.00	1800000
(b)	For 4.5 m wide toll lane	No.	2	150000.00	300000
13.03	Providing and installing canopy for toll plaza.	Sqm	257	8000.00	2059200
13.04	Construction of boundary wall.	Rmt	2000	6000	12000000
13.05	Providing & fixing barbed wire fencing.	Rmt	1,800	305.00	549000
13.06	Pavement				
(a)	Earthwork excavation	Cum	35,064	276	9679196.3
(b)	Providing 280 mm thick PQC for toll plaza as per Technical Specification Clause 602.	Cum	10,178	11,620.00	118271265
(c)	Providing 150 mm thick DLC (M15) for toll plaza as per Technical Specification Clause 601.	Cum	5,089	6,758.00	34392307
(d)	Construction of Sub grade satisfying the requirements of minimum 8% CBR value as indicated in the drawings and specification with approved material with all leads & lifts all complete as per Technical Specification Clause No 305.	cum	17,130	303.00	5190390
(e)	Constructing Granular Sub-base complete as per Technical Specification Clause No 401. Grading-I, Table 400-2.	Cu.m.	2,640	3,062.00	8083680
13.07	Construction of covered lateral Drain under road .				
(a)	Earthwork excavation	Cum	1,966	80	157248
(b)	125mm thick RCC M25	Cum	368	7568.00	2781240
(c)	100mm thick PCC M15	Cum	164	6339.00	1038328.2
(d)	HYSD	MT	26	55305.00	1422721.1
13.08	Providing and fixing 100mm dia GI pipe guard rail.	Rmt	105	1652.00	173460
13.09	Providing and fixing Hazard marker.	No.	14	865.00	12110
13.10	Supplying and fixing at site retro-reflectorised type sign boards.				
(a)	Toll Road start	No.	4	300000.00	1200000
(b)	Toll road End	No.	4	300000.00	1200000
(c)	Toll gate	No.	4	245000.00	980000
(d)	Toll booth ahead	No.	4	245000.00	980000
(e)	weigh bridge ahead	No.	4	245000.00	980000
(f)	User fee information board of size 4m x3m in hindi on LHS & RHS - T3	No.	4	245000.00	980000
(g)	User fee information board of size 4m x3m in English on lhs & rhs -T3 A	No.	4	245000.00	980000
(h)	Exempted vehicles information user fee information board of size 4m x3m in English on LHS & RHS -T4	No.	4	245000.00	980000
(i)	Exempted vehicles information user fee information bord of size 4m x3m in hindi on LHS & RHS -T4A	No.	4	245000.00	980000
(j)	User fee concession information board of size 4m x 3m in Hindi on LHS & RHS -T3B	No.	4	245000.00	980000
(k)	User fee concession information board of size 4m x 3m in English on LHS & RHS -T3C	No.	4	245000.00	980000
(l)	User fee concession information board of size 4m x 3m in hindi on LHS & RHS -T5	No.	4	245000.00	980000
(m)	tollbooth displaying rates, exempt vehicles and complainant telephone number & address information board of size 1m x 2m near toll booths at each lane T 7	No.	4	45000.00	180000
(n)	Supply and fixing of Over head lane assignment board of on approach side of board size 14m x 1.2m made out of high intensity grade micro prismatic sheeting and gantry structure complete on LHS & RHS	No.	4	350000.00	1400000
(o)	At 1000 m ahead on LHS & RHS -T2	No.	4	300000.00	1200000
13.11	Construction of plain cement concrete bull nose complete as per drawing & Technical Specifications Clause 408.	No.	10	6339.00	63390
13.12	Providing electronic weigh bridge 60 Tonne capacity	No.			
13.13	Providing electronic weigh bridge 120 Tonne capacity	No.	2	1000000	2000000
13.14	Construction of septic tank	No.	2	30000.00	60000
13.15	Construction of Toilets	No.	2	50000.00	100000
13.16	Construction of rain water harvesting system	No.	2	100000.00	200000

13.17	**Constuction of bore well**	No.	2	100000.00	200000
13.18	**Construction of Sub Station**	No.	2	200000.00	400000
13.19	**Provision of CCTV in Toll plaza**	No.	1	40000.00	40000
13.20	**Providing telecom system at Toll Plaza(STD/ISD Posts)**	No.	1	50000.00	50000
13.21	**Feeder Pillar**	No.	1	50000.00	50000
13.22	**Solar pannel**	No.	2	2500000.00	5000000
13.23	**Traffic aid post**	No.	2	500000.00	1000000
13.24	**Highway Nest Mini**	No.	2	2500000.00	5000000
13.25	**Tunnel for Cash Carrying from booth to Administrative building**	Rmt	55	500000.00	500000.00
			Total Cost of toll plaza		**229733535**