CHAPTER-II

LIST OF APPROVED BASIC RATES OF CONSTRUCTION MATERIALS AT SOURCE FOR THE YEAR 2015-2016

The rate are inclusive of all taxes and Royality and Exclusive of Contractor's profit and Overhead charges

Sr.No.	Ref. Code No.	NAME OF MATERIALS	UNIT	Basic rate without Tax & Royality	Enhanced by ..... % as per R.B.I.Price index	Revised rate without VAT & Royality Enhanced by.... % as per R.B.I.Price index	Royality	Revised Rate with Royality and without VAT	VAT IN %(In Rate witout Royality)	Revised Rate with ALL TAXES & ROYALITY	Refrence
1	2	3	4	5	6	7	8	9	10	11	12
1		**Cement (as per T.E.C Letter No.23 dated 28.02.06,capacity of one bag of cement = 0.034 Cum)**									
	M-1	**(i) Ordinary Portland Cement (O.P.C-43 Grade)** (Unit-Per bag of 50 kg)approved by State Level schedule rate Committee(for preparation of schedule of rate only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.									**Per M^3**
		Patna	Per bags	263.50	0	263.50		263.50	15	303.00	8912.00
		Muzaffarpur	Per bags	263.50	0	263.50		263.50	15	303.00	8912.00
		Darbhanga	Per bags	263.50	0	263.50		263.50	15	303.00	8912.00
		Bhagalpur	Per bags	259.50	0	259.50		259.50	15	298.00	8765.00
		Munger	Per bags	259.50	0	259.50		259.50	15	298.00	8765.00
		Saharsa	Per bags	263.50	0	263.50		263.50	15	303.00	8912.00
		Purnea	Per bags	263.50	0	263.50		263.50	15	303.00	8912.00
		Gaya	Per bags	249.60	0	249.60		249.60	15	287.00	8441.00
		Saran	Per bags	259.20	0	259.20		259.20	15	298.00	8765.00

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1	2	3	4	5	6	7	8	9	10	11	12
	M-2	**(ii) Ordinary Portland Cement (O.P.C-33 Grade)** (Unit-Per bag of 50 kg)approved by State Level Committee(for preparation of schedule of rate only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.									
		Patna	Per bags	225.30	0	225.30		225.30	15	259.00	7618.00
		Muzaffarpur	Per bags	228.40	0	228.40		228.40	15	263.00	7735.00
		Darbhanga	Per bags	235.90	0	235.90		235.90	15	271.00	7971.00
		Bhagalpur	Per bags	235.90	0	235.90		235.90	15	271.00	7971.00
		Munger	Per bags	235.90	0	235.90		235.90	15	271.00	7971.00
		Saharsa	Per bags	243.70	0	243.70		243.70	15	280.00	8235.00
		Purnea	Per bags	243.70	0	243.70		243.70	15	280.00	8235.00
		Gaya	Per bags	213.30	0	213.30		213.30	15	245.00	7206.00
		Saran	Per bags	228.40	0	228.40		228.40	15	263.00	7735.00
	M-3A	**(iii) Portland Pozzolana Cement (P.P.C)** (Unit-Per bag of 50 kg)approved by State Level Committee(for preparation of schedule of rate only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.									
		Patna	Per bags	225.30	0	225.30		225.30	15	259.00	7618.00
		Muzaffarpur	Per bags	225.30	0	225.30		225.30	15	259.00	7618.00
		Darbhanga	Per bags	229.00	0	229.00		229.00	15	263.00	7735.00
		Bhagalpur	Per bags	225.30	0	225.30		225.30	15	259.00	7618.00

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1	2	3	4	5	6	7	8	9	10	11	12
		Munger	Per bags	223.10	0	223.10		223.10	15	257.00	7559.00
		Saharsa	Per bags	229.00	0	229.00		229.00	15	263.00	7735.00
		Purnea	Per bags	229.00	0	229.00		229.00	15	263.00	7735.00
		Gaya	Per bags	198.00	0	198.00		198.00	15	228.00	6706.00
		Saran	Per bags	220.20	0	220.20		220.20	15	253.00	7441.00
	M-3B	**(iv) Portland Slag Cement (P.S.C)** (Unit-Per bag of 50 kg)approved by State Level Committee(for preparation of schedule of rate only)-Materials should conform to relevant BIS/IRC/MORT&H Specifications.									
		Patna	Per bags	278.80	0	278.80		278.80	15	321.00	9441.00
		Muzaffarpur	Per bags	278.80	0	278.80		278.80	15	321.00	9441.00
		Darbhanga	Per bags	278.80	0	278.80		278.80	15	321.00	9441.00
		Bhagalpur	Per bags	278.80	0	278.80		278.80	15	321.00	9441.00
		Munger	Per bags	267.90	0	267.90		267.90	15	308.00	9059.00
		Saharsa	Per bags	278.80	0	278.80		278.80	15	321.00	9441.00
		Purnea	Per bags	275.40	0	275.40		275.40	15	317.00	9324.00
		Gaya	Per bags	266.80	0	266.80		266.80	15	307.00	9029.00
		Saran	Per bags	274.60	0	274.60		274.60	15	316.00	9294.00

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1	2	3	4	5	6	7	8	9	10	11	12
2	**M-4**	**BITUMEN**									
	a	**Bitumen Grade VG 40 (30/40) Packed**									
		(i) Ex.Haldia	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(ii) Ex.Barauni	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(iii) Ex.Giddha	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(iv) Ex.Patna	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(v) Ex.Muzaffarpur	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(vi).Ex.Gaya	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
	b	**Bitumen Grade VG 30 (60/70) Packed**									
		(i) Ex.Barauni	Per M.T	32423.90	0	32423.90		32423.90	6	34369.00	
		(ii).Ex.Gaya	Per M.T	32287.10	0	32287.10		32287.10	6	34224.00	
		(iii) Ex.Patna	Per M.T	32512.20	0	32512.20		32512.20	6	34463.00	
		(iv) Ex.Muzaffarpur	Per M.T	32797.20	0	32797.20		32797.20	6	34765.00	
	c	**Bitumen Grade VG10 (80/100) Packed**									
		(i) Ex.Barauni	Per M.T	31511.90	0	31511.90		31511.90	6	33403.00	

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1	2	3	4	5	6	7	8	9	10	11	12
		(ii).Ex.Gaya	Per M.T	31375.10	0	31375.10		31375.10	6	33258.00	
		(iii) Ex.Patna	Per M.T	31600.20	0	31600.20		31600.20	6	33496.00	
		(iv) Ex.Muzaffarpur	Per M.T	31885.20	0	31885.20		31885.20	6	33798.00	
	d	**Bitumen GradeVG30 (60/70) Bulk**									
		(i) Ex.Haldia	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(ii) Ex.Barauni	Per M.T	24976.26	0	24976.26		24976.26	6	26474.80	
	e	**Bitumen Grade VG 10 (80/100) Bulk**									
		(i) Ex.Haldia	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(ii) Ex.Barauni	Per M.T	26290.70	0	26290.70		26290.70	6	27868.14	
	f	**Modified Graded Bitumen**									
		(i)CRMB- 50 Packed Ex.Barauni	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(ii)CRMB -50 Packed Ex.Muzaffarpur	Per M.T	INPUT	0	#REF!		#REF!	6	#REF!	
		(iii)CRMB- 50 Packed Ex.Gaya	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(iv)CRMB- 50 Packed Ex.Patna	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(v) CRMB -55 Packed Ex.Barauni	Per M.T	34829.30	0	34829.30		34829.30	6	36919.06	
		(vi)CRMB -55 Packed Ex.Gaya	Per M.T	36516.50	0	36516.50		36516.50	6	38707.49	

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1	2	3	4	5	6	7	8	9	10	11	12
		(vii)CRMB- 55 Packed Ex Patna	Per M.T	34917.60	0	34917.60		34917.60	6	37012.66	
		(viii)CRMB- 55 Packed Ex Muzaffarpur	Per M.T	37026.60	0	37026.60		37026.60	6	39248.20	
		(ix)CRMB- 60 Packed Ex.Barauni	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(x)CRMB -60 Packed Ex-Patna	Per M.T	36285.60	0	36285.60		36285.60	6	38462.74	
		(xi) CRMB- 60 Packed Ex Muzaffarpur	Per M.T	36570.60	0	36570.60		36570.60	6	38764.84	
		(xii)CRMB -60 Packed Ex Gaya	Per M.T	36060.50	0	36060.50		36060.50	6	38224.13	
	g	**Bitumen Emulsion**									
		(i) Packed M.S Grade(Paharpur) 200kg Drum	Per M.T	27741.20	0	27741.20		27741.20	6	29405.67	
		(ii) RB1 EX- Rukunpura (HINCOL)	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
3	0368	White Cement	Per M.T	12667.74	0	12667.74		12667.74	15	14567.90	
4	**M-5**	**G.C sheets thickness in mm**									
		ii. 0.63	Per M.T	42845.00	0	42845.00		42845.00	6	45416.00	
		iii. O.50	Per M.T	44555.00	0	44555.00		44555.00	6	47228.00	
		iv. 0.40	Per M.T	63440.05	0	63440.05		63440.05	6	67246.00	
		v. 0.35	Per M.T	64957.20	0	64957.20		64957.20	6	68855.00	
5	**M-6**	**Wire Rod in COIL**									
		(i) 5.5mm	Per M.T	32950.00	0	32950.00		32950.00	6	34927.00	
		(ii)6.0 mm	Per M.T	32800.00	0	32800.00		32800.00	6	34768.00	
		(iii) 6.5 mm	Per M.T	32650.00	0	32650.00		32650.00	6	34609.00	
		(iv) 7.0 mm	Per M.T	32500.00	0	32500.00		32500.00	6	34450.00	

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1	2	3	4	5	6	7	8	9	10	11	12
		(v) 8.00 mm	Per M.T	32350.00	0	32350.00		32350.00	6	34291.00	
		(vi)10.0 mm	Per M.T	32950.00	0	32950.00		32950.00	6	34927.00	
		(vii)12.0/12.7 mm	Per M.T	32950.00	0	32950.00		32950.00	6	34927.00	
6	M-7	**Joist size in mm**									
		iv. 200x100	Per M.T	INPUT	0	INPUT		INPUT	6	#VALUE!	
		vi. 250x125	Per M.T	INPUT	0	INPUT		INPUT	6	#VALUE!	
		vii. 300x140	Per M.T	INPUT	0	INPUT		INPUT	6	#VALUE!	
		ix.400x140	Per M.T	INPUT	0	INPUT		INPUT	6	#VALUE!	
		x. 450 x 150	Per M.T	INPUT	0	INPUT		INPUT	6	#VALUE!	
		xii. 600x210	Per M.T	INPUT	0	INPUT		#REF!	6	#REF!	
7	M-8	**Channel size in mm**									
		i. 75x40	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		ii. 100 x 50	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		iii.125 x 65	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		iv.150 x 75	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		v.175x75	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		vi.200 x 75	Per M.T	input	0	#VALUE!		#VALUE!	6	#VALUE!	
		vii.250 x 82	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		viii.300 x 90	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		ix.400 x 100	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
8	M-9	**Steel Angle size in mm**									

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1	2	3	4	5	6	7	8	9	10	11	12
		i) 50 x50 x6	Per M.T	input	0	#VALUE!		#VALUE!	6	#VALUE!	
		ii) 60 x 60 x6	Per M.T	input	0	#VALUE!		#VALUE!	6	#VALUE!	
		iii) 65x65x6	Per M.T	input	0	#VALUE!		#VALUE!	6	#VALUE!	
		iv) 75 x75 x6	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		v) 80 x80 x8 /10 /12	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		vi) 90x90x6/8	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		vii) 100x100 x 8 /10 /12	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		viii) 110x110 x 8 /10 /12	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		ix) 130 x130 x10 /12	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		x) 150x150 x12 /16/20	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
		xi) 200 x200 x16 /18 /20	Per M.T	31350.00	0	31350.00		31350.00	6	33231.00	
9	**M-10A**	**T.M.T bars**									
		T.M.T Fe -500- 8 mm	Per M.T	31300.00	0	31300.00		31300.00	6	33178.00	
		T.M.T Fe -500- 10 mm	Per M.T	30300.00	0	30300.00		30300.00	6	32118.00	
		T.M.T Fe -500-12 mm	Per M.T	29800.00	0	29800.00		29800.00	6	31588.00	
		T.M.T Fe -500- 16 mm	Per M.T	29800.00	0	29800.00		29800.00	6	31588.00	
		T.M.T Fe -500-20 mm	Per M.T	29500.00	0	29500.00		29500.00	6	31270.00	

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1	2	3	4	5	6	7	8	9	10	11	12
		T.M.T Fe -500-25 mm	Per M.T	29500.00	0	29500.00		29500.00	6	31270.00	
		T.M.T Fe -500-28 mm	Per M.T	29500.00	0	29500.00		29500.00	6	31270.00	
		T.M.T Fe -500- 32 mm	Per M.T	29500.00	0	29500.00		29500.00	6	31270.00	
		T.M.T Fe -500- 36 mm	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
10	**M-11**	**100A Bricks**									
	a	(i) For Urban Patna	Per %0 nos	6656.00	0	6656.00	29.00	6685.00	6	7084.00	
		(ii) For Darbhanga,Bhagalpur,Munger &Muzaffarpur	Per %0 nos	5612.00	0	5612.00	29.00	5641.00	6	5978.00	
		(iii) For Gaya & Saran	Per %0 nos	5308.00	0	5308.00	29.00	5337.00	6	5655.00	
		(iv) For Saharsa	Per %0 nos	5765.00	0	5765.00	29.00	5794.00	6	6140.00	
		(v) For Purnea	Per %0 nos	6072.00	0	6072.00	29.00	6101.00	6	6465.00	
		(vi) For Rural Patna	Per %0 nos	5537.00	0	5537.00	29.00	5566.00	6	5898.00	
	b	**(ii) 100B**									
		(i) For Urban Patna	Per %0 nos	6175.00	0	6175.00	29.00	6204.00	6	6575.00	
		(ii) For Darbhanga,Baghalpur,Munger &Muzaffarpur	Per %0 nos	5152.00	0	5152.00	29.00	5181.00	6	5490.00	
		(iii) For Gaya & Saran	Per %0 nos	4847.00	0	4847.00	29.00	4876.00	6	5167.00	

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1	2	3	4	5	6	7	8	9	10	11	12
		(iv) For Saharsa	Per %0 nos	5308.00	0	5308.00	29.00	5337.00	6	5655.00	
		(v) For Purnea	Per %0 nos	5612.00	0	5612.00	29.00	5641.00	6	5978.00	
		(vi) For Rural Patna	Per %0 nos	5057.00	0	5057.00	29.00	5086.00	6	5389.00	
	c	**(iii).Bricks Tiles (300mmx150mmx50mm)**		0.00		0.00					
		(i) For Urban Patna and Rural Patna	Per %0 nos	6656.00	0	6656.00	29.00	6685.00	6	7084.00	
		(ii) For Saharsa,Bhagalpur,Darbhanga,& Muzaffarpur	Per %0 nos	6685.00	0	6685.00	29.00	6714.00	6	7115.00	
		(iii) For Purnea	Per %0 nos	6993.00	0	6993.00	29.00	7022.00	6	7442.00	
		(iv) For Other Places	Per %0 nos	6378.00	0	6378.00	29.00	6407.00	6	6790.00	
	d	**Picket Jhama Brick**									
		(i) For Urban Patna	Per %0 nos	5698.00	0	5698.00	29.00	5727.00	6	6069.00	
		(ii) For Darbhanga,Bhagalpur,munger & Muzaffarpur	Per %0 nos	4694.00	0	4694.00	29.00	4723.00	6	5005.00	
		(iii) For Gaya & Saran	Per %0 nos	4383.00	0	4383.00	29.00	4412.00	6	4675.00	
		(iv) For Purnea	Per %0 nos	5152.00	0	5152.00	29.00	5181.00	6	5490.00	
		(v) For Saharsa	Per %0 nos	4847.00	0	4847.00	29.00	4876.00	6	5167.00	

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1	2	3	4	5	6	7	8	9	10	11	12
		(vi) For Rural Patna	Per %0 nos	4588.00	0	4588.00	29.00	4617.00	6	4892.00	
	e	**Brick Bats**		0.00		0.00					
		(i) For UrbanPatna	Per M^3	1166.40	0	1166.40	11.60	1178.00	6	1248.00	
		(ii) For Purnea,Saharsa,Bhagalpur, Munger & Darbhanga	Per M^3	1118.40	0	1118.40	11.60	1130.00	6	1197.00	
		(iii) For Rural Patna	Per M^3	1117.40	0	1117.40	11.60	1129.00	6	1196.00	
		(iv) For Other Places	Per M^3	1069.40	0	1069.40	11.60	1081.00	6	1145.00	
	f	**Jhama metal**									
		(a) 63mm to 40mm size									
		(i) For Urban Patna	Per M^3	1388.40	0	1388.40	11.60	1400.00	6	1483.00	
		(ii) For Purnea,Saharsa,Bhagalpur, Munger & Darbhanga	Per M^3	1328.40	0	1328.40	11.60	1340.00	6	1420.00	
		(iii) For Rural Patna	Per M^3	1356.40	0	1356.40	11.60	1368.00	6	1449.00	
		(iv) For Other Places	Per M^3	1301.40	0	1301.40	11.60	1313.00	6	1391.00	
		(b) 40mm to 20mm size							6		
		(i) For UrbanPatna	Per M^3	1547.40	0	1547.40	11.60	1559.00	6	1652.00	

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1	2	3	4	5	6	7	8	9	10	11	12
		(ii) For Purnea,Saharsa,Bhagalpur, Munger & Darbhanga	Per M^3	1483.40	0	1483.40	11.60	1495.00	6	1584.00	
		(iii) For Rural Patna	Per M^3	1500.40	0	1500.40	11.60	1512.00	6	1602.00	
		(iv) For Other Places	Per M^3	1439.40	0	1439.40	11.60	1451.00	6	1537.00	
		(c) 20mm & down									
		(i) For UrbanPatna	Per M^3	1773.40	0	1773.40	11.60	1785.00	6	1891.00	
		(ii) For Purnea,Saharsa,Bhagalpur,Munger & Darbhanga	Per M^3	1700.40	0	1700.40	11.60	1712.00	6	1814.00	
		(iii) For Rural Patna	Per M^3	1711.40	0	1711.40	11.60	1723.00	6	1826.00	
		(iv) For Other Places	Per M^3	1638.40	0	1638.40	11.60	1650.00	6	1748.00	
11	g	**Surkhi**									
		(i) For UrbanPatna	Per M^3	1837.40	0	1837.40	11.60	1849.00	6	1959.00	
		(ii) For Purnea,Saharsa,Bhagalpur, Munger & Darbhanga	Per M^3	1761.40	0	1761.40	11.60	1773.00	6	1879.00	
		(iii) For Rural Patna	Per M^3	1773.40	0	1773.40	11.60	1785.00	6	1891.00	
		(iv) For Other Places	Per M^3	1700.40	0	1700.40	11.60	1712.00	6	1814.00	
12	1157	Rough dressed stone boulder masonary work	Per M^3	592.82	0	592.82	100	692.82	6	728.39	
13	1158	Stone for pitching 150mmX225mm	Cum	347.42		347.42	100	447.42	6	468.26	

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1	2	3	4	5	6	7	8	9	10	11	12
14		Ashlar stone masonary	Per M^3	INPUT	0	#VALUE!	100	#VALUE!	6	#VALUE!	
15	M-001	Stone Boulder of size 150 mm and below at Crusher Plant	Per M^3	209.21	0	209.21	100	309.21	6	321.80	
16	M-002	Supply of quarried stone 150 - 200 mm size for Hand Broken	Per M^3	209.21	0	209.21	100	309.21	6	321.80	
17	M-003	Boulder with minimum size of 300 mm for Pitching	Per M^3	209.21	0	209.21	100	309.21	6	321.80	
18	M-004	Coarse sand at source quary Koilwar/Sone sand	Per M^3	89.69	0	89.69	50	139.69	6	145.10	
19	M-005	Coarse sand at Doriganj Equivelent to koilwar/Sone sand	Per M^3	223.05	0	223.05	50	273.05	6	286.40	
20	M-006	Fine sand at site	Per M^3	68.61	0	68.61	50	118.61	6	122.70	
21	M-007	Moorum at site	Per M^3	78.29	0	78.29	55	133.29	6	138.00	
22	M-008	Gravel/Quarry spall	Per M^3	209.21	0	209.21	100	309.21	6	321.80	
23	M-006 M-008	River bed material (30 % sand And 70 % Quarry spall)	Per M^3	167.03	0	167.03	85.00	252.03	6	262.10	
		River bed material (50% sand And 50% Quarry spall)	Per Cum	138.91	0	138.91	75.00	213.91	6	222.25	
24	M-009	Granular Material or hard murrum for GSB works at site	Per M^3	83.67	0	83.67	50	133.67	6	138.70	
25	M-010	Granular Material or hard murrum for GSB works at Mixing Plant	Per Cum	83.67	0	83.67	50	133.67	6	138.70	
26	M-011	Fly ash conforming to IS: 3812 (Part II & I) at Plant	Per M^3	#VALUE!	0	#VALUE!	0	Input	6	#VALUE!	
27	M-012	Filter media/Filter Material as per Table 300-3 (MoRT&H Specification)	Per M^3	368.26	0	368.26	50	418.26	6	440.40	
28	M-013	Close graded Granular sub-base Material 53 mm to 9.5 mm	Per M^3	478.68	0	478.68	50	528.68	6	557.40	
29	M-014	Close graded Granular sub-base Material 37.5 mm to 9.5 mm	Per M^3	454.35	0	454.35	50	504.35	6	531.60	

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1	2	3	4	5	6	7	8	9	10	11	12
30	M-015	Close graded Granular sub-base Material 26.5 mm to 9.5 mm	Per M^3	516.55	0	516.55	50	566.55	6	597.50	
31	M-016	Close graded Granular sub-base Material 9.5 mm to 4.75 mm	Per M^3	494.06	0	494.06	50	544.06	6	573.70	
32	M-017	Close graded Granular sub-base Material 9.5 mm to 2.36 mm	Per M^3	370.82	0	370.82	50	420.82	6	443.10	
33	M-018	Close graded Granular sub-base Material 4.75mm to 2.36 mm	Per M^3	156.93	0	156.93	50	206.93	6	216.30	
34	M-019	Close graded Granular sub-base Material 4.75mm to 75 micron	Per M^3	142.03	0	142.03	50	192.03	6	200.60	
35	M-020	Close graded Granular sub-base Material 2.36 mm	Per M^3	142.03	0	142.03	50	192.03	6	200.60	
36	M-021	Stone crusher dust finer than 3mm with not more than 10% passing	Per M^3	90.63	0	90.63	9.06	99.69	6	105.10	
37	M-022	Coarse graded Granular sub-base Material 2.36 mm & below	Per M^3	88.19	0	88.19	100	188.19	6	193.50	
38	M-023	Coarse graded Granular sub-base Material 4.75mm to 75 micron m	Per M^3	88.19	0	88.19	100	188.19	6	193.50	
39	M-024	Coarse graded Granular sub-base Material 4.75 mm to 2.36mm	Per M^3	103.09	0	103.09	100	203.09	6	209.30	
40	M-025	Coarse graded Granular sub-base Material 9.5 mm to 4.75 mm	Per M^3	440.21	0	440.21	100	540.21	6	566.60	
41	M-026	Coarse graded Granular sub-base Materia 26.5 mm to 4.75 mm	Per M^3	410.27	0	410.27	100	510.27	6	534.90	
42	M-027	Coarse graded Granular sub-base Material 26.5 mm to 9.5 mm	Per M^3	462.70	0	462.70	100	562.70	6	590.50	
43	M-028	Coarse graded Granular sub-base Material 37.5 mm to 9.5 mm	Per M^3	400.49	0	400.49	100	500.49	6	524.50	
44	M-029	Coarse graded Granular sub-base Material 53 mm to 26 .5mm	Per M^3	367.63	0	367.63	100	467.63	6	489.70	
45	M-030	Aggregates below 5.6 mm	Per M^3	103.09	0	103.09	100	203.09	6	209.30	

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1	2	3	4	5	6	7	8	9	10	11	12
46	M-031	Aggregates 22.4 mm to 2.36 mm	Per M^3	439.39	0	439.39	100	539.39	6	565.80	
47	M-032	Aggregates 22.4 mm to 5.6 mm	Per M^3	439.39	0	439.39	100	539.39	6	565.80	
48	M-033	Aggregates 45 mm to 2.8 mm	Per M^3	380.68	0	380.68	100	480.68	6	503.50	
49	M-034	Aggregates 45 mm to 22.4 mm	Per M^3	389.07	0	389.07	100	489.07	6	512.40	
50	M-035	Aggregates 53 mm to 2.8 mm	Per M^3	380.68	0	380.68	100	480.68	6	503.50	
51	M-036	Aggregates 53 mm to 22.4 mm (Grade III)	Per M^3	367.63	0	367.63	100	467.63	6	489.70	
52	M-037	Aggregates 63 mm to 2.8 mm	Per M^3	336.42	0	336.42	100	436.42	6	456.60	
53	M-038	Aggregates 63 mm to 45 mm (Grade II)	Per M^3	336.30	0	336.30	100	436.30	6	456.50	
54	M-039	Aggregates 90 mm to 45 mm (Grade I)	Per M^3	304.03	0	304.03	100	404.03	6	422.30	
55	M-040	Aggregates 10 mm to 5 mm	Per M^3	440.21	0	440.21	100	540.21	6	566.60	
56	M-041	Aggregates 11.2 mm to 0.09 mm (Key aggregate Type B)	Per M^3	251.97	0	251.97	100	351.97	6	367.10	
57	M-042	Aggregates 13.2 mm to 0.09 mm (Key aggregate Type A)	Per M^3	379.76	0	379.76	100	479.76	6	502.50	
58	M-043	Aggregates 13.2 mm to 5.6 mm	Per M^3	527.69	0	527.69	100	627.69	6	659.40	
59	M-044	Aggregates 13.2 mm to 10 mm	Per M^3	556.93	0	556.93	100	656.93	6	690.30	
60	M-045	Aggregates 20 mm to 10 mm	Per M^3	556.93	0	556.93	100	656.93	6	690.30	
61	M-046	Aggregates 25 mm to 10 mm	Per M^3	526.06	0	526.06	100	626.06	6	657.60	
62	M-047	Aggregates 19 mm to 6 mm	Per M^3	439.39	0	439.39	100	539.39	6	565.80	
63	M-048	Aggregates 37.5 mm to 19 mm (Grade IV)	Per M^3	389.07	0	389.07	100	489.07	6	512.40	
64	M-049	Aggregates 37.5 mm to 25 mm	Per M^3	389.07	0	389.07	100	489.07	6	512.40	
65	M-050	Aggregates 6 mm nominal size	Per M^3	316.85	0	316.85	100	416.85	6	435.90	

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1	2	3	4	5	6	7	8	9	10	11	12
66	M-051	Aggregates 10 mm nominal size	Per M^3	527.69	0	527.69	100	627.69	6	659.40	
67	M-052	Aggregates 13.2/12.5 mm nominal size	Per M^3	556.93	0	556.93	100	656.93	6	690.30	
68	M-053	Aggregates 20 mm nominal size	Per M^3	462.70	0	462.70	100	562.70	6	590.50	
69	M-054	Aggregates 25 mm nominal size	Per M^3	436.49	0	436.49	100	536.49	6	562.70	
70	M-055	Aggregates 40 mm nominal size	Per M^3	350.04	0	350.04	100	450.04	6	471.00	
71	M-056	AC pipe 100 mm dia	metre	47.11	0	47.11		45.83	6	48.70	
72	M-057	Acrylic polymer bonding coat	litre	input	0	#VALUE!		INPUT	6	#VALUE!	
73	M-058	Alluminium Paint	litre	120.58	0	120.58		120.58	6	127.80	
74	M-059	Aluminium alloy plate 2mm Thick	sqm	9364.51	0	9364.51		9364.51	6	9926.40	
75	M-060	Aluminium alloy/galvanised steel	tonne	37458.03	0	37458.03		37458.03	6	39705.50	
76	M-061	Aluminium sheeting fixed with encapsulated lens type reflective sheeting including 2% towards lettering, cost of angle iron, cost of drilling holes, nuts, bolts etc.and signs as applicable	sqm	8740.21	0	8740.21		8740.21	6	9264.60	
77	M-062	Road Stud with Micro Prismatic lens reflectors(with shank)	each	169.12	0	169.12		169.12	6	179.30	
78	M-063	Barbed wire	kg	55.83	0	55.83		55.83	6	59.20	
79	M-064	Bearing (Cost of parts)	nos	input	0	#VALUE!		input	6	#VALUE!	
80	M-065	Bearing (Cast steel rocker bearing assembly of 250 tonne)	nos	77649.64	0	77649.64		77649.64	6	82308.60	
81	M-066	Bearing (Elastomeric bearing assembly consisting of 7 internal layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)	cubic cm	0.61	0	0.61		0.61	6	0.65	
82	M-067	Bearing (Forged steel roller bearing of 250 tonne)	nos	46589.77	0	46589.77		46589.77	6	49385.20	

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1	2	3	4	5	6	7	8	9	10	11	12
83	M-068	Bearing (Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against stainless steel mating together with cast steel assemblies/ fabricated structural steel assemblies duly painted with all components	MT	140.00	0	140.00		140.00	6	148.40	
		(a)Fixed POT-PTFE Bearing	MT	140.00	0	140.00		140.00	6	148.40	
		(b) Free POT-PTFE Bearing	MT	150.00	0	150.00		150.00	6	159.00	
		(c) Guide Slide (L) POT-PTFE Bearing	MT	160.00	0	160.00		160.00	6	169.60	
		(d) Guide Slide (T) POT-PTFE Bearing	MT	155.00	0	155.00		155.00	6	164.30	
84	M-069	Bearing (PTFE sliding plate bearing assembly of 80 T)	nos	input	0	#VALUE!		input	6	#VALUE!	
85	M-070	Bearing (Supply of sliding plate bearing of 80 tonne)	nos	31373.59	0	31373.59		31373.59	6	33256.00	
86	M-071	Bentonite	kg	3.25	0	3.25		3.25	6	3.40	
87	M-072	Binding wire	kg	56.79	0	56.79		56.79	6	60.20	
88	M-073	Bitumen (Cationic Emulsion) PackedEx- Paharpur (M.S)	tonne	26062	0	26062.00		26062.00	6	27625.70	
89	M-074	Bitumen (60-70 grade) Packed Ex- Barauni	tonne	30197.5	0	30197.50		30197.50	6	32009.40	
90	M-075	Bitumen (80-100 grade) Packed Ex- Barauni	tonne	29285.5	0	29285.50		29285.50	6	31042.60	
91	M-076	Bitumen (Cutback) Packed Ex- Barauni	tonne	30197.5	0	30197.50		30197.50	6	32009.40	
92	M-077	Bitumen (emulsion) Packed Ex- Paharpur (M.S)	tonne	26062	0	26062.00		26062.00	6	27625.70	
93	M-078	Bitumen (modified graded) Packed Ex - Barauni (CRMB - 55)	tonne	32648.5	0	32648.50		32648.50	6	34607.40	
94	M-079	Brick 100A for - Patna Urban, Darbhanga, Bhagalpur, Munger, Muzzarfarpur, Gaya, Patna, Saran, Saharsa, Purnea	each	6.97	0	6.97		6.97	6	7.40	
95	M-080	C.I. shoes for the pile	kg	47.37	0	47.37		47.37	6	50.20	

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1	2	3	4	5	6	7	8	9	10	11	12
96	M-081	Cement - OPC 43 Grade at Patna	tonne	5286.00	0	5286.00		5286.00	15	6078.90	
97	M-082	Cold twisted bars (HYSD Bars) - Fe 500	tonne	33700.00	0	33700.00		33700.00	6	35722.00	
98	M-083	Coller for joints 300 mm dia	nos	input	0	#VALUE!		input	6	#VALUE!	
99	M-084	Compressible Fibre Board (20mm thick)	sqm	935.54	0	935.54		935.54	6	991.70	
100	M-085	Connectors / Staples	each	input	0	#VALUE!		input	6	#VALUE!	
101	M-086	Copper Plate (12m long x 250mm wide)	kg	708.64	0	708.64		708.64	6	751.20	
102	M-087	Corrosion resistant Structural steel	tonne	45061.38	0	45061.38		45061.38	6	47765.10	
103	M-088	Corrugated sheet, 3 mm thick, "Thrie" beam section railing	kg	48.65	0	48.65		48.65	6	51.60	
104	M-089	Credit for excavated rock found suitable for use	cum	145.40	0	145.40		145.40	6	154.10	
105	M-090	Curing compound	litre	122.99	0	122.99		122.99	6	130.40	
106	M-091	Delineators from ISI certified firm as per the standard drawing given in IRC - 79	each	793.71	0	793.71		793.71	6	841.30	
107	M-092	Earth Cost or compensation for earth taken from private land	cum	23.65	0	23.65		23.65		23.70	
108	M-093	Elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II)	metre	26366.47	0	26366.47		26366.47	6	27948.50	
109	M-094	Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	100 nos	614.96	0	614.96		614.96	6	651.90	
110	M-095	Epoxy compound with accessories for preparing epoxy mortar	kg	538.10	0	538.10		538.10	6	570.40	
111	M-096	Epoxy mortar	kg	737.95	0	737.95		737.95	6	782.20	
112	M-097	Epoxy primer	kg	12.30	0	12.30		12.30	6	13.00	
113	M-098	Epoxy resin-hardner mix for prime coat	kg	653.40	0	653.40		653.40	6	692.60	

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1	2	3	4	5	6	7	8	9	10	11	12
114	M-099	Flag of red color cloth 600 x 600 mm	each	46.12	0	46.12		46.12	6	48.90	
115	M-100	Flowering Plants	each	30.75	0	30.75		30.75	6	32.60	
116	M-101	Galvanised MS flat clamp	nos	15.46	0	15.46		15.46	6	16.40	
117	M-102	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	99.02	0	99.02		99.02	6	105.00	
118	M-103	Galvanised structural steel plate 200 mm wide, 6 mm thick, 24 m long	kg	45.02	0	45.02		45.02	6	47.70	
119	M-104	Gelatin 80%	kg	875.53	0	875.53		875.53	6	928.10	
120	M-105	Geo grids	sqm	input	0	#VALUE!		input	6	#VALUE!	
121	M-106	Geomembrane	sqm	input	0	#VALUE!		input	6	#VALUE!	
122	M-107	Geonets	sqm	105.70	0	105.70		105.70	6	112.00	
123	M-108	Geotextile	sqm	82.63	0	82.63		82.63	6	87.60	
124	M-109	Geotextile filter fabric	sqm	82.63	0	82.63		82.63	6	87.60	
125	M-110	GI bolt 10 mm Dia	nos	15.10	0	15.10		15.10	6	16.00	
126	M-111	Grouting pump with agitator	hour	153.74	0	153.74		153.74	6	163.00	
127	M-112	Grass (Doob)	kg	3.98	0	3.98		3.98	6	4.20	
128	M-113	Grass (Fine)	kg	3.98	0	3.98		3.98	6	4.20	
129	M-114	HDPE pipes 75mm dia	metre	220.44	0	220.44		220.44	6	233.70	
130	M-115	HDPE pipes 90mm dia	metre	220.44	0	220.44		220.44	6	233.70	
131	M-116	Hedge plants	each	30.75	0	30.75		30.75	6	32.60	
132	M-117	Helical pipes 600mm diameter	metre	input	0	#VALUE!		input	6	#VALUE!	
133	M-118	Hot applied thermoplastic compound (Sp.gr. - 2.10)	litre	200.01	0	200.01		200.01	6	212.00	

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1	2	3	4	5	6	7	8	9	10	11	12
134	M-119	HTS strand	tonne	69232.2	0	69232.20		69232.20	6	73386.10	
135	M-120	Joint Sealant Compound	kg	24.60	0	24.60		24.60	6	26.10	
136	M-121	Jute netting, open weave, 2.5 cm square opening for seeding and Mulching	sqm	38.43	0	38.43		38.43	6	40.70	
137	M-122	LDO for steam curing	litre	input	0	#VALUE!		input	6	#VALUE!	
138	M-123	M.S. Clamps	nos	33.35	0	33.35		33.35	6	35.40	
139	M-124	M.S. Clamps	kg	60.37	0	60.37		60.37	6	64.00	
140	M-125	M.S.shoes @ 35 Kg per pile of 15 m	kg	23.09	0	23.09		23.09	6	24.50	
141	M-126	Mild Steel bars	tonne	30635.71	0	30635.71		30635.71	6	32473.90	
142	M-127	Modular strip/box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm assembly comprising of edge beams, central beam, 2 modules chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	29056.91	0	29056.91		29056.91	6	30800.30	

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1	2	3	4	5	6	7	8	9	10	11	12
143	M-128	Modular strip/box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm box/box seal joint assembly containing 3 modules/cells and comprising of edge beams, two central beams, chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	input	0	#VALUE!		input	6	#VALUE!	
144	M-129	Nipples 12mm	nos	input	0	#VALUE!		input	6	#VALUE!	
145	M-130	Nuts and bolts	kg	58.41	0	58.41		58.41	6	61.90	
146	M-131	Paint	litre	238.48	0	238.48		238.48	6	252.80	
147	M-132	Pavement Marking Paint	litre	238.48	0	238.48		238.48	6	252.80	
148	M-133	Paving Fabric	sqm	input	0	#VALUE!		input	6	#VALUE!	
149	M-134	Perforated geosynthetic pipe 150 mm dia	metre	27.84	0	27.84		27.84	6	29.50	
150	M-135	Perforated pipe of cement concrete, internal dia 100 mm	metre	117.57	0	117.57		117.57	6	124.60	
151	M-136	Pesticide	kg	80.63	0	80.63		80.63	6	85.50	
152	M-137	Pipes 200 mm dia, 2.5 m long for drainage	metre	179.62	0	179.62		179.62	6	190.40	
153	M-138	Plastic sheath, 1.25 mm thick for dowel bars	sqm	15.37	0	15.37		15.37	6	16.30	
154	M-139	Plastic tubes 50 cm dia, 1.2 m high	nos	input	0	#VALUE!		input	6	#VALUE!	
155	M-140	Polymer braids	metre	input	0	#VALUE!		input	6	#VALUE!	
156	M-141	Pre moulded Joint filler, 25 mm thick for expansion joint.	sqm	960.88	0	960.88		960.88	6	1018.50	
157	M-142	Pre-coated stone chips of 13.2 mm nominal size	cum	664.66	0	664.66		664.66	6	704.50	

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1	2	3	4	5	6	7	8	9	10	11	12
158	M-143	Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness.	metre	input	0	#VALUE!		input	6	#VALUE!	
159	M-144	Pre-moulded asphalt filler board	sqm	960.88	0	960.88		960.88	6	1018.50	
160	M-145	Pre-packed cement based polymer concrete of strength 45 Mpa at 28 days	kg	input	0	#VALUE!		input	6	#VALUE!	
161	M-146	Primer	kg	13.14	0	13.14		13.14	6	13.90	
162	M-147	Quick setting compound	kg	input	0	#VALUE!		input	6	#VALUE!	
163	M-148	Random Rubble Stone	cum	316.93	0	316.93		316.93	6	335.90	
164	M-149	RCC Pipe NP 4 heavy duty non presure pipe 1000 mm dia	metre	2881.74	0	2881.74		2881.74	15	3314.00	
165	M-150	RCC Pipe NP 4 heavy duty non presure pipe 1200 mm dia	metre	4096.92	0	4096.92		4096.92	15	4711.50	
166	M-151	RCC Pipe NP 4 heavy duty non presure pipe 300 mm dia	metre	527.74	0	527.74		527.74	15	606.90	
167	M-152	Reflectorising glass beads	kg	65.00	0	65.00		65.00	6	68.90	
168	M-153	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Copper Strips)	metre	input	0	#VALUE!		input	6	#VALUE!	
169	M-154	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Galvanised carbon steel strips)	metre	input	0	#VALUE!		input	6	#VALUE!	
170	M-155	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Glass reinforced polymer/fibre reinforced polymer/polymeric strips)	metre	input	0	#VALUE!		input	6	#VALUE!	

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1	2	3	4	5	6	7	8	9	10	11	12
171	M-156	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Stainless steel strips)	metre	input	0	#VALUE!		input	6	#VALUE!	
172	M-157	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Aluminium strips)	metre	input	0	#VALUE!		input	6	#VALUE!	
173	M-158	Rivets	each	7.80	0	7.80		7.80	6	8.30	
174	M-159	Sand bags (Cost of sand and Empty cement bag)	nos	6.90	0	6.90		6.90	6	7.30	
175	M-160	Sapling 2 m high 25 mm dia	each	23.07	0	23.07		23.07	6	24.50	
176	M-161	Scrap tyres of size 900 x 20	nos	76.87	0	76.87		76.87	6	81.50	
177	M-162	Seeds	kg	30.75	0	30.75		30.75	6	32.60	
178	M-163	Selected earth (Including royalty @ Rs 22.0 per cum & compensation @ Rs 1.65 per cum)	cum	23.65	0	23.65		23.65	6	25.10	
179	M-164	Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	15.37	0	15.37		15.37	6	16.30	
180	M-165	Sheathing duct	metre	84.56	0	84.56		84.56	6	89.60	
181	M-166	Shrubs	each	15.37	0	15.37		15.37	6	16.30	
182	M-167	Sludge / Farm yard manure @ 0.18 cum per 100 sqm at site of work for turfing	cum	691.83	0	691.83		691.83	6	733.30	
183	M-168	Sodium vapour lamp	each	input	0	#VALUE!		input	6	#VALUE!	
184	M-169	Square Rubble Coursed Stone	cum	316.92	0	316.92		316.92	6	335.90	
185	M-170	Steel circular hollow pole of standard specification for street lighting to mount light at 5 m height above deck level	each	input	0	#VALUE!		input	6	#VALUE!	

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1	2	3	4	5	6	7	8	9	10	11	12
186	M-171	Steel circular hollow pole of standard specification for street lighting to mount light at 9 m height above road level	each	input	0	#VALUE!		input	6	#VALUE!	
187	M-172	Steel drum 300 mm dia 1.2 m high/empty bitumen drum	nos	124.81	0	124.81		124.81	6	132.30	
188	M-173	Steel helmet and cushion block on top of pile head during driving.	kg	41.10	0	41.10		41.10	6	43.60	
189	M-174	Steel pipe 25 mm external dia as per IS:1239	metre	128.49	0	128.49		128.49	6	136.20	
190	M-175	Steel pipe 50 mm external dia as per IS:1239	metre	229.96	0	229.96		229.96	6	243.80	
191	M-176	Steel wire rope 20 mm	kg	40.39	0	40.39		40.39	6	42.80	
192	M-177	Steel wire rope 40 mm	kg	40.39	0	40.39		40.39	6	42.80	
193	M-178	Strip seal expansion join	metre	8179.95	0	8179.95		8179.95	6	8670.70	
194	M-179	Structural Steel	tonne	33878.57	0	33878.57		33878.57	6	35911.30	
195	M-180	Super plastisizer admixture IS marked as per 9103-1999	kg	153.74	0	153.74		153.74	6	163.00	
196	M-181	Synthetic Geogrids as per clause 3102.8 and approved design and specifications.	sqm	input	0	#VALUE!		input	6	#VALUE!	
197	M-182	Through and bond stone	each	12.11	0	12.11		12.11	6	12.80	
198	M-183	Tie rods 20mm diameter	nos	input	0	#VALUE!		input	6	#VALUE!	
199	M-184	Tiles size 300 x 300 mm and 25 mm thick	each	45.92	0	45.92		45.92	6	48.70	
200	M-185	Timber	cum	49591.50	0	49591.50		49591.50	6	52567.00	
201	M-186	Traffic cones with 150 mm reflective sleeve	nos	input	0	#VALUE!		input	6	#VALUE!	
202	M-187	Tube anchorage set complete with bearing plate, permanent wedges etc	nos	46.12	0	46.12		46.12	6	48.90	
203	M-188	Unslaked lime	tonne	3305.45	0	3305.45		3305.45	6	3503.80	

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1	2	3	4	5	6	7	8	9	10	11	12
204	M-189	Water	KL	230.6	0	230.60		230.60	6	244.40	
205	M-190	Water based cement paint	litre	121.37	0	121.37		121.37	6	128.70	
206	M-191	Welded steel wire fabric	kg	39.09	0	39.09		39.09	6	41.40	
207	M-192	Wire mesh 50mm x 50mm size of 3mm wire	kg	39.09	0	39.09		39.09	6	41.40	
208	M-193	Wooden ballies 2" Dia for bracing (Sal)	each	24.6	0	24.60		24.60	6	26.10	
209	M-194	Wooden ballies 8" Dia and 9 m long (9 m @ Rs 67.94/m) - Sal	each	594.97	0	594.97		594.97	6	630.70	
210	M-195	Wooden packing	cum	input	0	#VALUE!		input	6	#VALUE!	
211	M-196	Wooden staff for fastening of flag 25 mm dia, 1.0 m long	each	30.75	0	30.75		30.75	6	32.60	
212	M-197	Bitumen (30/40 grade) Ex-Patna Packed	tonne	input	0	input		input	6	#VALUE!	
213	M-198	Fly Ash Brick conforming to IS: 3812 (Part I & II) (Excluding the carrige cost* of Fly Ash from point of production to Kiln site) (*Carrige cost of fly ash is same as of sand)(Cost of 1000nos. is Rs. 5691)	each	5.50	0	5.50		5.50	6	5.80	
214	M-199	**Paver Block**									
		i) M -35 Grade and 60 mm thickness									
		(a) White	Per M^2	457.26	0	457.26		457.26	6	484.70	
		(b) Red	Per M^2	465.46	0	465.46		465.46	6	493.40	
		(c)Yellow	Per M^2	480.09	0	480.09		480.09	6	508.90	
		ii) M-40 Grade and 80mm thickness									
		(a) White	Per M^2	524.8	0	524.80		524.80	6	556.30	

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1	2	3	4	5	6	7	8	9	10	11	12
		(b) Red	Per M^2	538.5	0	538.50		538.50	6	570.80	
		(c)Yellow	Per M^2	555.84	0	555.84		555.84	6	589.20	
215	M-200	Ker-Stone Block-M30 Grade(sise 375mmx300mmx150mm)	each	76.97	0	76.97		76.97	6	81.60	
216	M-201	Autoclved Airated concrete(AAC) block	cum	2336.54	0	2336.54		2336.54	6	2476.70	
217	1199	Seasonal Sal wood Scantling	Per M^3	55163.00	0	55163.00		55163.00	6	54109.00	
218	1195	Local Wood in scantling	Per M^3	32671.00	0	31670.00		31670.00	6	33253.00	
219	1196	local wood Planks 25mm to 40mm	Per M^3	32671.00	0	32671.00		31670.00	6	33253.00	
220	1198	Local wood Planks12mm to 20mm	Per M^3	32671.00	0	32671.00		31670.00	6	33253.00	
221		**Bamboo**									
		i. 75 mm dia 6m long to 8m long	Each	141.50	0	141.50		141.50	6	150.00	
		ii. 100 mm dia 6m long to 8m long	Each	151.00	0	151.00		151.00	6	160.00	
		iii. 50 mm dia Hill Bamboo	Each	94.35	0	94.35		94.35	6	100.00	
222		**Sal Ballah Post**			0						
		i. 100 mm dia	Per M	input	0	INPUT		Value	6	#VALUE!	
		ii. 125 mm dia	Per M	28.57	0	28.57		28.57	6	30.30	
		iii.150 mm dia	Per M	38.39	0	38.39		38.39	6	40.70	
223		**Wire**									
		i. G.I wire,3.15mm dia (IS 4826-79)	Per Kg	60.95	0	60.95		**66.04**	6	64.00	
		ii. Black annealed wire 3.15mm dia.(IS 280-78)	Per kg.	57.100	0	57.10		**57.10**	6	60.50	
		i. Annealled wire (20 to 25 gauge)	Per Kg	input	0	#VALUE!		#VALUE!	6	#VALUE!	
		ii. Black annealed wire (8 to 10 gauge)	Per Kg	input	0	#VALUE!		#VALUE!	6	#VALUE!	

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1	2	3	4	5	6	7	8	9	10	11	12
224	1029	Galvanised steel Barbed wire	Per M.T	51052.26	0	51052.26		51052.26	6	54109.40	
		Welded mesh (8 to 10 SWG) 100 to 125 mm square size	Per M^2	94.44	0	94.44		94.44	6	100.00	
225	1213	Ciko Powder / Impermoo water proofing compound	Per Kg	28.96	0	28.96		28.96	15	33.30	
226	1219	Wire Nails	Per Kg	60.76	0	60.76		60.76	6	64.41	
227		Narial coir string	Per Kg	31.48	0	31.48		31.48	6	33.40	
228		Narial rope 20 mm to 25 mm dia	Per Kg	39.81	0	39.81		39.81	6	42.20	
229		Narial rope above 25 mm dia	Per Kg	48.15	0	48.15		48.15	6	51.00	
230		Sutali	Per Kg	22.22	0	22.22		22.22	6	23.60	
231		Sabey string	Per Kg	16.67	0	16.67		16.67	6	17.70	
232	322	Bitumen feltType 3,grade I,confirming toIS 1322-1992	Sqm	58.90	0	58.90		58.90	6	62.43	
233	370	Coal (steam)	Per quintal					392.66	6	416.22	
234	1207	Limpmat washer G.I.(cadmium Coated)	Per % nos					34.36	6	36.42	
235	1208	Bitumen washer	Per % nos	30.70	0			29.44	6	31.21	
236	341	Flat pressed 3 layer particle board(medium density)Grade-I 12mm thick	Per M^2					319.04	6	338.18	
237	1701	NP_2 RCC 150mm dia.Hume pipe as per I.S 458-1971	Per M	190.02	0	190.02		190.02	15	218.52	
238	1703	NP_2 RCC 300mm dia.Hume pipe as per I.S 458-1971	Per M	271.45	0	271.45		271.45	15	312.17	
239	1706	NP_2 RCC 600mm dia.Hume pipe as per I.S 458-1971	Per M	832.45	0	832.45		832.45	15	957.32	
240	1710	NP_2 RCC 1200mm dia.Hume pipe as per I.S 458-1971	Per M	1158.19	0	1158.19		1158.19	15	1331.92	
241	1713	NP_2 RCC 150mm dia.Hume pipe as per I.S 458-1971	Per M	1741.82	0	1741.82		1741.82	15	2003.09	

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1	2	3	4	5	6	7	8	9	10	11	12
242	1715	RCC Collars NP2 class Hume ppipe 150mm dia.	Each	31.67	0	31.67		31.67	15	36.42	
243	1717	RCC Collars NP2 class Hume ppipe 300mm dia.	Each	49.77	0	49.77		49.77	15	57.23	
244	1720	RCC Collars NP2 class Hume ppipe 600mm dia.	Each	126.68	0	126.68		126.68	15	145.68	
245	1724	RCC Collars NP2 class Hume ppipe 900mm dia.	Each	212.63	0	212.63		212.63	15	244.53	
246	1727	RCC Collars NP2 class Hume ppipe 1200mm dia.	Each	316.70	0	316.70		316.70	15	364.20	
247		**(i) Analysis of rate of brick khoa (63 mm to 40 mm size)**									
		For 2.832 Cum Khoa (i) **Material-** 100B Bricks (Patna Urban)-800Nos.@ Rs 6575.00Per %0nos.=Rs 5260.00									
		(ii) Labour -Unskilled mazdoor -3 nos@ Rs 206.00= Rs 618.00									
		Rate per Cum= Rs (5260+618)/2.832= Rs2075.56,say **Rs 2075.55**									
248		**(ii) Analysis of rate of brick khoa (40 mm to 20 mm size)**									
		For 2.832 Cum Khoa (i) **Material -**100B Bricks (Patna Urban)-850Nos.@ Rs 6575.00Per %0nos.=Rs 5588.75									
		(ii) Labour- Unskilled mazdoor - 4 nos @ Rs 206.00= Rs 824.00									
		Rate per Cum= Rs (5577.75+824.00)/2.832= Rs2264.39,say **Rs 2264.40**									
249		**(ii) Analysis of rate of brick khoa (20 mm and down)**									
		For 2.832 Cum Khoa (i) **Material-** 100B Bricks (Patna Urban)-900Nos.@ Rs 6575.00Per %0nos.=Rs5917.50									
		(ii) Labour- Unskilled mazdoor -5 nos@ Rs 206.00= Rs 1030.00									
		Rate per Cum= Rs (5917.50+1030.00)/2.832= Rs2453.21,say **Rs 2453.20**									
250		Pressure release valves(Vertical non return valve)	Each	INPUT	#REF!	#VALUE!		#VALUE!	6	#VALUE!	
251		Pocket valve (non return pocket valve)	Each	INPUT	#REF!	#VALUE!		#VALUE!	6	#VALUE!	
252		Safety valve	Each	INPUT	#REF!	#VALUE!		#VALUE!	6	#VALUE!	
253		Reflex valve	Each	INPUT	#REF!	#VALUE!		#VALUE!	6	#VALUE!	
254		Burnt clay pipe of internal dia 30 mm . External dia 31.75 mm									

LIST OF APPROVED BASIC RATES OF CONSTRUCTION MATERIALS AT SOURCE FOR THE YEAR 2015-2016

The rate are inclusive of all taxes and Royality and Exclusive of Contractor's profit and Overhead charges

Sr.No.	Ref. Code No.	NAME OF MATERIALS	UNIT	Basic rate without Tax & Royality	Enhanced by ..... % as per R.B.I.Price index	Revised rate without VAT & Royality Enhanced by.... % as per R.B.I.Price index	Royality	Revised Rate with Royality and without VAT	VAT IN %(In Rate witout Royality)	Revised Rate with ALL TAXES & ROYALITY	Refrence
1	2	3	4	5	6	7	8	9	10	11	12
		(a). 100 mm long	Each	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
		(b) 222mm long	Each	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
255		Jute	Per Kg	23.00	0	23.00		23.00	6	24.40	
256		M.S Bends	Each	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
257		Rubber seal	metre	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
258		Sheet Pile	Per M.T	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
259		Tree branches of dia150 mm to 200 mm and 3 M to 4.5 M long with jhankhi covering the space of 100 cft in volume	nos	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
260	0761	Fuel (wood)	Kg	4.91	0	4.91		4.91	6	5.20	
261	0326	Blasting Material/blasting fuse(Fuse coil)	nos	14.73	0	14.73		14.73	6	15.61	
262		Cardium compound	kg	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
263		M.S. Bolt 20mm dia.,25 Cm long	Each	37.00	0	37.00		37.00	6	39.20	
264	8509	Special primer (C.W)	Litre	81.48	0	81.48		81.48	6	86.37	
265	8510	Metal Primer (U.G)	Litre	117.80	0	117.80		117.80	6	124.87	
266	0818	Oil/Fuel Linssed oil(double boiled)	lit	107.98	0	107.98		107.98	6	114.46	
267		Electric Charge	K.W.H	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
268		Slotted pins and wedges 10 mm dia and 60 mm long	nos	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
269		Tube and nuts 26 no. 25 mm dia and above	nos	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
270		M.S Electrodes	nos	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
	818	K.Oil	lit	46.00		46.00		46.00	6	48.80	
271		Gun metal in gate	Kg	INPUT	0	#VALUE!		#VALUE!	6	#VALUE!	
233		Empty plastic cement bag	Per % nos	254.70	0	254.70		254.70	6	270.00	

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LIST OF APPROVED BASIC RATES OF CONSTRUCTION MATERIALS AT SOURCE FOR THE YEAR 2015-2016

The rate are inclusive of all taxes and Royality and Exclusive of Contractor's profit and Overhead charges

Sr.No.	Ref. Code No.	NAME OF MATERIALS	UNIT	Basic rate without Tax & Royality	Enhanced by ..... % as per R.B.I.Price index	Revised rate without VAT & Royality Enhanced by.... % as per R.B.I.Price index	Royality	Revised Rate with Royality and without VAT	VAT IN %(In Rate witout Royality)	Revised Rate with ALL TAXES & ROYALITY	Refrence
1	2	3	4	5	6	7	8	9	10	11	12
272		Nylon Crate of size 1mx1mx1m (As per Annex-I)	Each	34.90	0	35.24		35.24	6	37.00	
273		Geo bag (non woven)size 1mx0.70m (As per Annex-II)	nos	93.40	0	93.40		93.40	6	99.00	
274		Geo Bag of size 2mx1.5m (As per Annex-III)	nos	614.15	0	614.15		614.15	6	651.00	
275		P.P.Gabion of size 1.80mx1.80mx0.5m (As per Annex-IV)	nos.	1809.40	0	1809.40		1809.40	6	1918.00	
276		P.P.Gabion of size 1.80mx1.20mx0.5m (As per Annex-V)	Nos.	1243.40	0	1243.40		1243.40	6	1318.00	
277	7754	Gravel 5mm to 10mm	Cum	687.16	0	687.16		687.16	6	728.39	
278		Shalitex Board(For use as per expansion Joint)									
		(i)25mm thick	Per Sqm	537.96	0	537.96		537.96	15	618.70	
		(ii)12mm thick	Per Sqm	307.41	0	307.41		307.41	15	353.50	
		(iii)18mm thick	Per Sqm	450.93	0	450.93		450.93	15	518.60	
279		Shalitex Primer	Per litre	37.04	0	37.04		37.04	15	42.60	
280	312	Bitumen grade PMB-40	M.T	40640.915		40640.92		40640.92	6	43079.37	

CHAPTER - III

Schedule -P&M/ MORTH-1A

Date: 15.03.16/22.09.16

Approved Usages Rates of Plants and Machinery. The Usages charges for the machines include ownership charges, cost of repair & maintenance including replacement of tyre and running and operating charges which includes crew, fuel & lubricants. These rates are for the preparation of Schedule of Rates only

Sl. No.	Description of Machine	Activity	Output of Machine	Output	Unit	Rate(Rs)
P&M-001	Air Compressor	General Purpose	capacity in cfm	170/250	hour	417.00
P&M-002	Batching and Mixing Plant (a) 30 cum	Concrete Mixing	cum/hour	20	hour	2596.00
P&M-003	Batching and Mixing Plant (b) 15 - 20 cum capacity	Concrete Mixing	cum/hour	13	hour	1558.00
P&M-004	Bitumen Pressure Distributor	Applying bitumen tack coat	sqm/hour	1750	hour	1397.00
P&M-005	Bitumen Boiler oil fired	Bitumen Spraying	capacity in litre	1500	hour	258.00
P&M-006	Concrete Paver Finisher with 40 HP Motor	Paving of concrete surface	cum / hour	20	hour	1273.00
P&M-007	Concrete Pump of 45 & 30 cum capacity	Pumping of concrete	cum / hour	33 / 22	hour	333.00
P&M-008	Concrete Bucket	For Pouring concrete	capacity in cum	1	hour	21.00
P&M-009	Concrete Mixer (a) 0.4/0.28 cum	Concrete Mixing	cum/hour	2.5	hour	66.00
P&M-010	Concrete Mixer (b) 1 cum	Concrete Mixing	cum/hour	7.5	hour	215.00
P&M-011	Crane (a) 80 tonnes	Lifting Purpose			hour	1666.00
P&M-012	Cranes b) 35 tonnes	Lifting Purpose			hour	1111.00
P&M-013	Cranes c) 3 tonnes	Lifting Purpose			hour	465.00
P&M-014	Dozer D - 80 - A 12	Spreading /Cutting / Clearing	cum/hour	300/ 150/250	hour	4846.00
P&M-015	Dozer D - 50 - A 15	Spreading /Cutting / Clearing	cum/hour	200/ 120/150	hour	2873.00
P&M-016	Emulsion Pressure Distributor	Applying emulsion tack coat	sqm/hour	1750	hour	1042.00
P&M-017	Front End loader 1 cum bucket capacity	Soil loading / Aggregate loading	cum/hour	60 /25	hour	1185.00
P&M-018	Generator (a) 125 KVA	Genration of electric Energy	KVA	100	hour	2293.00
P&M-019	Generator(b) 63 KVA	Genration of electric Energy	KVA	50	hour	920.00
P&M-020	GSB Plant 50 cum	Producing GSB	cum/hour	40	hour	1354.00
P&M-021	Hotmix Plant - 120 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	40	hour	43907.00
P&M-022	Hotmix Plant - 100 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	30	hour	33389.00
P&M-023	Hotmix Plant - 60 to 90 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	25	hour	28127.00

P&M-024	Hotmix Plant - 40 to 60 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	17	hour	19671.00
P&M-025	Hydraulic Chip Spreader	Surface Dressing	sqm/hour	1500	hour	3432.00
P&M-026	Hydraulic Excavator of 1 cum bucket	Soil Ordinary/Soil Marshy / Soil Unsuitable	cum/hour	60 /60 /60	hour	1695.00
P&M-027	Integrated Stone Crusher 100THP	Crushing of Spalls	TPH	100	hour	11287.00
P&M-028	Integrated Stone Crusher 200 THP	Crushing of Spalls	TPH	200	hour	23744.00
P&M-029	Kerb Casting Machine	Kerb Making	Rm/hour	80	hour	404.00
P&M-030	Mastic Cooker	Mastic Wearing coat	capacity in tonne	1	hour	80.00
P&M-031	Mechanical Broom Hydraulic	Surface Cleaning	sqm/hour	1250	hour	477.00
P&M-032	Motor Grader 3.35 mtr blade	Clearing /Spreading /GSB /WBM	cum/hour	200/200/50 /50	hour	2576.00
P&M-033	Mobile slurry seal equipment	Mixing and laying slurry seal	sqm/hour	2700	hour	1313.00
P&M-034	Paver Finisher Hydrostatic with sensor control 100 TPH	Paving of DBM/ BM/SDC/ Premix	cum/hour	40	hour	3121.00
P&M-035	Paver Finisher Mechanical 75/ 100 TPH	Paving of WMM /Paving of DLC	cum/hour	40/30	hour	1225.00
P&M-036	Piling Rig with Bantonite Pump	0.75 m dia to 1.2 m dia Boring attachment	Rm/hour	2 to 3	hour	7117.00
P&M-037	Pneumatic Road Roller	Rolling of Asphalt Surface	cum/hour	25	hour	1621.00
P&M-038	Pneumatic Sinking Plant	Pneumatic Sinking of wells	cum/hour	1.5 to 2.00	hour	5432.00
P&M-039	Pot Hole Repair Machine	Repair of potholes	cum/hour	4	hour	1180.00
P&M-040	Prestressing Jack with Pump & access	Stressing of steel wires/stands			hour	168.00
P&M-041	Ripper	Scarifying	cum/hour	60	hour	37.00
P&M-042	Rotavator	Scarifying	cum/hour	25	hour	23.00
P&M-043	Road marking machine	Road marking	Sqm/hour	100	hour	122.00
P&M-044	Smooth Wheeled Roller 8 tonne	Soil Compaction /BM Compaction	cum/hour	70/25	hour	675.00
P&M-045	Tandem Road Roller	Rolling of Aspalt Surface	cum/hour	30	hour	1491.00
P&M-046	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	km	32.00
P&M-047	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	tonne.km	7.00
P&M-048	Tipper -10T(out put- 5.5 cum,4.0 km/lt)	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	hour	876.00
P&M-049	Transit Mixer 4.0/4.5 cum	Transportation of Concrete Mix to site	cum/hour	4.5	hour	1211.00

P&M-050	Transit Mixer 4/4.5 cum	Transportation of Concrete Mix to site	cum/hour	4.5	tonne.km	6.00
P&M-051	Transit Mixer 3.0 cum	Transportation of Concrete Mix to site	cum/hour	3	hour	1111.00
P&M-052	Transit Mixer 3.0 cum	Transportation of Concrete Mix to site	cum/hour	3	tonne.km	8.00
P&M-053	Tractor	Pulling	capacity in HP	50	hour	473.00
P&M-054	Tractor with Rotevator	Rate of Tractor + Rotevator			hour	494.00
P&M-055	Tractor with Ripper	Rate of Tractor 6+ Ripper			hour	509.00
P&M-056	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	km	29.00
P&M-057	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	hour	805.00
P&M-058	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	tonne.km	3.00
P&M-059	Vibratory Roller 8 tonne	Earth or soil / GSB / WBM	cum/hour	100/60/60	hour	1769.00
P&M-060	Water Tanker	Water Transport	capacity in KL	6	hour	159.00
P&M-061	Water Tanker	Water Transport	capacity in KL	6	km	32.00
P&M-062	Wet Mix Plant 60 TPH	Wet Mix	cum/hour	25	hour	1569.00

Approved Usages Rates of Plants and Machinery **The Usages charges for the machines include ownership charges, cost of repair & maintenance including replacement of tyre and running and operating charges which includes crew, fuel & lubricants. These rates are for the preparation of Schedule of Rates only**

Sl. No.	Description of Machine	Unit	Rate (₹)
P&M-063	Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	808.00
P&M-064	Batch type cold mixing plant 100-120 TPH capacity producing an average	hour	3230.00
P&M-065	Belt conveyor system	hour	input
P&M-066	Boat to carry atleast 20 persons	hour	202.00
P&M-067	Cement concrete batch mix plant @ 175 cum per hour (effective output)	hour	6782.00
P&M-068	Cement concrete batch mix plant @ 75 cum per hour	hour	2906.00
P&M-069	Cold milling machine @ 20 cum per hour	hour	1211.00
P&M-070	Crane 5 tonne capacity	hour	1111.00
P&M-071	Crane 10 tonne capacity	hour	1111.00
P&M-072	Crane 15 tonne capacity	hour	1111.00
P&M-073	Crane 20 tonne capacity	hour	1111.00
P&M-074	Crane 40 T capacity	hour	1666.00
P&M-075	Crane with grab 0.75 cum capacity	hour	1666.00
P&M-076	Compressor with guniting equipment along with accessories	hour	202.00
P&M-077	Drum mix plant for cold mixes of appropriate capacity but not less than 75	hour	1569.00
P&M-078	Epoxy Injection gun	hour	151.00
P&M-079	Generator 33 KVA	hour	484.00
P&M-080	Generator 100 KVA	hour	1698.00
P&M-081	Generator 250 KVA	hour	3204.00
P&M-082	Induction, deinduction and erection of plant and equipment including all	hour	input
P&M-083	Joint Cutting Machine with 2-3 blades (for rigid pavement)	hour	303.00
P&M-084	Jack for Lifting 40 tonne lifting capacity.	day	1111.00
P&M-085	Piling rig Including double acting pile driving hammer (Hydraulic rig)	hrs	7117.00
P&M-086	Plate compactor	hour	404.00

P&M-087	Snow blower equipment 140 HP @ 600 cum per hour	hour	input
P&M-088	Texturing machine (for rigid pavement)	hour	102.00
P&M-089	Truck Trailor 30 tonne capacity	hour	3230.00
P&M-090	Truck Trailor 30 tonne capacity	t.km	3.00
P&M-091	Tunnel Boring machine	hour	input
P&M-092	Vibrating Pile driving hammer complete with power unit and accessories.	hour	input
P&M-093	Wet Mix Plant 100 TPH	hour	2355.00
P&M-094	Wet Mix Plant 75 TPH	hour	2551.00
P&M-095	5 KVA Silent Type Generator set	hour	172.00
002	Hire Charge of concrete Mixer 0.14 cubic metre	day	800.00

Schedule -P&M/ MORTH-1B

Date: 22.09.16

Approved Usages Rates of Plants and Machinery. The Usages charges for the machines include ownership charges, cost of repair & maintenance including replacement of tyre and running and operating charges which includes crew, fuel & lubricants. These rates are for the preparation of Schedule of Rates only

Sl. No.	Description of Machine	Activity	Output of Machine	Output	Unit	Rate(Rs)
	WMM Paver Finisher	Paving of WMM/Paving of DLC	Cum/hour		hour	1417.00
	Tipping Truck 14Cum	Transportation of Soil,Gsb,WMM,Hot Mix etc.	Capacity in cum		hour	1988.00
	6.5 KVA Generator	Generator of electric energy	KVA		hour	215.00
	Vibratory Earth Compactor		Cum/hour		hour	1605.00
	Tractor(25 HP)	carriage	25 HP	2.25 cum	hour	447.00

CHAPTER ---III

Usage Rate of Plant And Machinery

TABULATION OF OPERATING & MAINTENANCE CREW ADOPTED IN THE HOURLY USE RATE OF EQUIPMENT

S.N	Name of Equipment	Operation & Maintenance crew required for the operational of the M/C																
		Fore-man	Operator	Mechanic	Helper	Watchman	Electrician	Supervisior	Driver	Cableman	Beldar	Cleaner	Chargeman	Fitter	Grea-ser	Khalasi	Tar man
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3.1	Drill Jumbo	1/8	2	1/4	4	1/4											
3.2	Jack hamner (52 lb)		1	1/8	1/2	1/8		1/5									
3.3	Scalling hammer		1		1/2	1/10		1/8									
3.4	Diamond core drilling machine and diesel pump.	1/8	2	1/4	3	1/4											
3.5	Wagon Drill	1/8	1	1/8	1	1/4		1/4									
3.6	Paving Breakers (85 Lb or 38.6 Kg)																
3.7	Hoist winch (30 T)		1	1/8	1/2	1/8											
3.8	Shot crete Machine	1/8	1	1/2	1	1/4											
3.9	Convey muckers (1.5 cubic yard 42 " wide conveyor)	1/8	1	1/6	1	1/4											
3.10	Shovel (Diesel) 2 cum 262 H.P	1/4	1	1/2	1	1/4		1									
	Shovel (Electric) 5 cum 350 H.P	1/4	1	1/2	1	1/4	1/2	1		2							
3.11	D.8 Tractor Dozer (Push Plate)H.P 270	1/4		1/4	1	1/4			1								
	D.9 Tractor Dozer H.P 385	1/4		1/4	1	1/4			1								
3.12	Dumper /Tipper (7 T) 4.5 cum		1	1/8		1/6						1					
	Dumper (15 T)	1/8	1	1/6	1	1/6											
	Rear Dumper(35 T) 17 cum	1/4	1	1/4	1	1/4											
3.13	Batching and mixing plant (25-35 cum)	1/2	2	1/2		1					6						
3.14	Ventilation blower (20000cfm)		1/4	1/4	1/2												
3.15	Pump																
	Disel																
	5 H.P		1														
	10 H.P																
	15 H.P																
	20 H.P																
	25 H.P																
	30 H.P																
	Electric Pump																
	5 H.P																
	10 H.P																
	15 H.P		1	1/4			1/8										
	20 H.P																
	30 H.P																
	40 H.P																
	50 H.P		1	1/4	1		1/6										
	Vacuum pumping set																
	5 H.P		1														
3.16	Roller																
	Smooth drum(8-10 MT)																
	Vibratory roller	1/8	1	1/4	1	1/8											
	Pneumatic tyred rollers	1/8	1	1/4	1	1/8											
	Drawn Sheep foot roller																
	D-4 Tractor (drawn by) For Sheep foot roller	1/8		1/6	1/2				1								

3.17	Locomotives																
	Diesel Locomotives	1/8	1	1/4	1	1/4											
	Battery Locomotive	1/8	1	1/4	1	1/4											
3.18	Grouting machine	1/8	1	1/6	1	1/6											
3.19	Air Compressor.																
	A. Diesel compressors																
	210 cfm	1/8	1	1/4	1	1/4											
	300 cfm.	1/8	1	1/4	1	1/4											
	500 cfm	1/8	1	1/4	1	1/4											
	B.Electric compressors																
	500 cfm	1/8	1	1/4	1	1/4	1/2										
	1500 cfm Stationery	1/8	1	1/3	1	1/4	1/2										
3.20	Crane																
	Mobile Crawler Mounted Upto 10 T	1/4	1	1/4	1	1/4		1/4					1				
3.21	Muck / Car (12 cubic yard)																
3.22	Concrete vibrator		1														
3.23	Scraper Motorised Push Loaded Upto 10 cuyds	1/4	1	1/4	1	1/4											
3.24	GRADER 115 hp	1/8	1	0	1	1/2											
3.25	Concrete mixer																
3.26	Diesel Truck				1				1								
3.27	Ripper																
3.28	Tractors				1				1								
3.29	Water Tanker 6kl				1				1								
3.30	Concrete buckets																
3.31	Trolley																
3.32	Drill extractors (electrical)	1/8	1	1/8	1	1/4	1/4	1/4									
	Compressed air	1/8	1	1/8	1	1/4		1/4									
3.33	Grinder	1/8	1	1/8	1	1/4											
3.34	Pile Driving plant	1/8	1	1/4	1	1/4											
3.35	Loader																
	Front end loader 2cu.yd	1/8	1	1/4	1	1/2											
	Overhead loader 1cu. yd	1/8	1	1/4	1	1/6											
3.36	Pneumatic concrete placer (1 Cubic yard)	1/8	1	1/6	1	1/6											
3.37	Draglines (Diesel) 2 cum 262 H.P	1/4	1	1/2	1	1/4		1									
	Draglines (Electric) 5 cum 350 H.P	1/4	1	1/2	1	1/4	1/2	1		1							
3.38	Hydraulic excavators (Diesel)1.25cu.yd or 0.96 cum	1/4	1	1/4	1	1/4											
	Hydraulic excavators (Diesel)0.3 cum	1/4	1	1/4	1	1/4											
3.39	Wet Mix Plant (Soil Stabilization Plantr) 60 TPH	1/4	2	1/4	2	1/4					2						
	Wet Mix Plant (Soil Stabilization Plantr) 110 HP	1/4	2	1/4	2	1/4					2						
3.40	Agitating car 4cu.yd	1/8	1/2	1/4	1/2	1/6											
3.41	Generator set																
	250 KVA		1	1/4		1/6	1/4			1							
	125 KVA		1	1/4		1/6	1/4			1							
	63 KVA		1	1/4		1/6	1/4			1							
	32 KVA		1	1/4		1/6	1/4			1							
3.42	Crushing & Processing Plant																
	Integrated Stone Crusher 100 TPH	1	2	1/4		1					15						
	Integrated Stone Crusher 200 TPH	1	2	1/4		1					20						
3.43	40 quintal capacity boat		2														
	100 quintal capacity boat		2														
	100 quintal capacity boat (Motor Fitted)		1		1												
3.44	Bullock cart		1		1												
3.45	Transit Mixer 4.0/4.5 cum	1/8	1	1/4	1	1/6											
	Transit Mixer 3.0 cum	1/8	1	1/4	1	1/6											

CHAPTER ---III

TABULATION OF COST & LIFE OF MACHINES , FUEL CONSUMPTION ADOPTED IN THE HOURLY USE RATE OF EQUIPMENT & ADOPTED USE RATE

Sl No	Description of machine		Cost of machine	Life of Machine		Repair provision in X%	Horse Power	Fuel consumption per hours		Output of machine		Hourly use rate(By calculation)		Adopted Use Rate of Machine vide P.W.D.S.R.			
	Machine	Activity		Year	In Hours		Engine Power	Quty	Unit	Output	Unit	Rates	Unit	Rate	Ref	Building	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
3.1	Drill Jumbo	Number of holes drilled simultaneou	IINPUT	10	12000	60						#VALUE!	Per hr	#VALUE!			
3.2	Jack hammer (52 lb)	Drilling	IINPUT	10	10000	60		100	cfm	2.3 M	mmhole/h	#VALUE!	Per hr	#REF!			
3.3	Scalling hammer	Drilling	IINPUT	10	10000	60		100	cfm			#VALUE!	Per hr	#VALUE!			
3.4	Diamond core drilling machine and diesel pump.	Core samples	IINPUT	8	8000	80	32.25	3.55	lit/hr	0.5	mtr/hour	#VALUE!	Per hr	#VALUE!			
3.5	Wagon Drill	Drilling	IINPUT	8	8000	80		400.00	cfm	0.2	mtr/hour	#VALUE!	Per hr	#VALUE!			
3.6	Pneumatic Breakers (85 Lb or 38.6 Kg)		IINPUT	10	10000	60		100.00	cfm				Per hr	#REF!			
3.7	Hoist winch 30T		IINPUT	12	15000	120		0	lit/hr			#VALUE!	Per hr	#REF!			
3.8	Shot crete Machine	Pumping of Concrete	IINPUT	10	15000	80		600	cfm	33/22	cum/hour	#VALUE!	Per hr	#REF!			
3.9	Convey muckers (1.5 cubic yard 42 " wide conveyor) or 1.15 cum	Transporting	IINPUT	10	15000	100	165	123.09	KWH	76.5	cum/hour	#VALUE!	Per hr	#VALUE!			
3.10	Shovel (Diesel) 2 cum 262 H.P	Excavation	IINPUT	12	15000	150	262	28.55	lit/hr	100	cum/hour	#VALUE!	Per hr	#VALUE!			
	Shovel (Electric) 5 cum 350 H.P		IINPUT	20	40000	150	350	175.86	KWH	28.08		#VALUE!	Per hr				
3.11	D.8 Tractor Dozer (Push Plate)H.P 270	Spreading	IINPUT	10	12000	100	270	29.42	lit/hr	300	cum/hour	#VALUE!	Per hr				
b	D.9 Tractor Dozer H.P 385		IINPUT	10	12000	100	385	41.95	lit/hr			#VALUE!	Per hr	#VALUE!			
c	ED 50 Bulldozer with suitable diesel engine	Spreading, cutting clearing	IINPUT	10	12000	100	50	5.45	lit/hr	200 100 150	cum/hour		Per hr	2873.00	P&M-015		
d	ED 80 Bulldozer with suitable diesel engine	Spreading, cutting clearing	IINPUT	10	12000	100	80	8.72	lit/hr	300 150 250	cum/hour		Per hr	4846.00	P&M-014		
3.12	Dumper or Tipper(7 T) 4.5 cum	Trasportatio	IINPUT	8	10000	140	110	11.99	lit/hr			#VALUE!	Per hr	#VALUE!			
b	Dumper or Tipper(10 T) 5.5 cum	n of soil,	IINPUT	8	10000	140		0.00	lit/hr				Per hr	876.00	P&M-048		
c	Dumper (15 T)	GSB,WMM,	IINPUT	8	10000	140	200	21.79	lit/hr	25.22	cum/hour	#VALUE!	Per hr	#VALUE!			
d	Rear Dumper(35 T) 17 cum	Hotmix etc	IINPUT	10	12000	140	560	61.02	lit/hr			#VALUE!	Per hr	#VALUE!			
3.13	Batching and mixing plant (35 cu.yd/hr)or 27 cum	Cocrete Mixing	IINPUT	18	30000	75	80	59.68	kwh	27	cum/hour	#VALUE!	Per hr	2596.00	P&M-002		
b	Batching and mixing plant (15- 20 cum)		IINPUT							13	cum/hour		Per hr	1558.00	P&M-003		
3.14	Ventilation blower (20000cfm)		IINPUT	12	58000	80	20	14.92	kwh			#VALUE!	Per hr	#VALUE!			
3.15	Pump	Pumping,															
(i)	Dsel																
a	5 H.P		IINPUT	8	10000	100	5	0.61	lit/hr			#VALUE!	Per hr	#VALUE!			
b	10 H.P		IINPUT	8	10000	100	10	1.21	lit/hr			#VALUE!	Per hr	#VALUE!			
c	15 H.P		IINPUT	8	10000	100	15	1.82	lit/hr			#VALUE!	Per hr	#VALUE!			
d	20 H.P		IINPUT	8	10000	100	20	2.42	lit/hr			#VALUE!	Per hr	#VALUE!			
e	25 H.P		IINPUT	8	10000	100	25	3.03	lit/hr			#VALUE!	Per hr	#VALUE!			
f	30 H.P		IINPUT	8	10000	100	30	3.63	lit/hr			#VALUE!	Per hr	#VALUE!			
(ii)	Electric Pump																
g	5 H.P		IINPUT	12	20000	70	5	3.73	kwh			#VALUE!	Per hr	#VALUE!			
h	10 H.P		IINPUT	12	20000	70	10	7.46	kwh			#VALUE!	Per hr	#VALUE!			
i	15 H.P		IINPUT	12	20000	70	15	11.19	kwh			#VALUE!	Per hr	#VALUE!			
j	20 H.P		IINPUT	12	20000	70	20	14.92	kwh			#VALUE!	Per hr	#VALUE!			

k	30 H.P		IINPUT	12	20000	70	30	22.38	kwh			#VALUE!	Per hr	#VALUE!			
l	40 H.P		IINPUT	12	20000	70	40	29.84	kwh			#VALUE!	Per hr	#VALUE!			
m	50 H.P		IINPUT	12	20000	70	50	37.3	kwh			#VALUE!	Per hr	#VALUE!			
(iii)	Vacaum pumping set 5 H.P		IINPUT	12	20000	50	5	3.73	kwh			#VALUE!	Per hr	#VALUE!			
3.16	Roler																
a	Smooth drum(8-10 MT) Roller	Soil, BM	IINPUT	8	12000	80		3	lit/hr				Per hr	675.00	P&M-044		
b	Vibratory roller	Earth/ Soil	IINPUT	8	8000	150	62	7.51	lit/hr				Per hr	1759.00	P&M-059		
c	Pneumatic Road rollers	Rolling of Aspalt	IINPUT	8	10000	80	60	7.26	lit/hr				Per hr	1621.00	P&M-037		
d	Sheep foot roller	Compaction										#VALUE!	Per hr	#VALUE!			
	Sheep foot roller Drawn by Tractor	of Earth	IINPUT	8	10000	70							Per hr	#VALUE!	P&M-053+Sheep foot roller		
3.17	Locomotives																
a	Diesel Locomotives		IINPUT	10	16000	120	98	10.79	lit/hr			#VALUE!	Per hr	#VALUE!			
b	Battery Locomotive (For 12 cubic yard capacity muckurcar)		IINPUT	22	40000	120						#VALUE!	Per hr	#VALUE!			
3.18	Grouting machine		IINPUT	10	10000	80		200	cfm			#VALUE!	Per hr	202.00			
3.19	Air Compressor.	General Purpose															
	A. Diesel compressors																
	210 cfm		IINPUT	8	10000	100	61.50	6.77	lit/hr			#VALUE!	Per hr	417.00	P&M-007		
	300 cfm.		IINPUT	10	10000	100	94.30	10.38	lit/hr			#VALUE!	Per hr	#VALUE!			
	500 cfm		IINPUT	10	12000	100	148.00	16.13	lit/hr			#VALUE!	Per hr	#VALUE!			
	B.Electric compressors																
	500 cfm		IINPUT	12	20000	80		90.00	kwh			#VALUE!	Per hr	#VALUE!			
	1500 cfm Staionery		IINPUT	20	30000	80		240.00	kwh			#VALUE!	Per hr	#VALUE!			
3.20	Crane 10 torne capacity	Lifting purpose	IINPUT	10	12000	120			lit/hr			#VALUE!	Per hr	1111.00	P&M-027		
3.21	Muck car (12 cubic yard)	Transporting	IINPUT	20	30000	50						#VALUE!	Per hr	#VALUE!			
3.22	Concrete vibrator			5	8000	150		1.5	lit/hr			93.60	Per hr	93.65			
3.23	Scraper Motcrised Push Loaded upto 10 cuyds		IINPUT	8	9000	150	165	17.98	lit/hr			#VALUE!	Per hr	#VALUE!			
3.24	GRADER 115 hp	Clearing Spreading GSB WMM	IINPUT	10	12000	150	115	12.53	lit/hr	200 200 50 50	Per hour	#VALUE!	Per hr	2576.00	P&M-032		
3.25	Concrete mixer		IINPUT														
	(i). Concrete mixer 0.4.0.28 cum	Concrete	IINPUT	5	8000	80		5	lit/hr	0.40	cum/hour		Per hr	66.00	P&M-009		
	(ii). 10/7 (0.20 cum) cft. Capacity fitting drum type concrete mixer etc. radiator cooled diseal engine.	Concrete Mixing	IINPUT	5	8000	80		4.5	lit/hr	2.5	cum/hour		Per hr	#REF!			
3.26	Truck 5.5 cum per 10 tonnes	Material Transport	IINPUT	10	12000	150		3.2	lit/hr	8/4.8cum	one,cum		Per hr	805.00	P&M-057		
3.27	a. Farm Tractor with Ripper	Loosen the hard earth and other material	IINPUT							150	cum/hour		Per hr	509.00	P&M-055		
	b Tractor 50H.P		IINPUT	5	12000	150	50	6.05	lit/hr		cum/hour		Per hr	473.00	P&M-053		
	c.Ripper		IINPUT	10	12000	100		nil					Per hr	37.00	P&M-041		
3.28	Tractor 30H.P with Leveller/Bucket	avation of Ea	684000	5	12000	150	30	2.75	lit/hr			#VALUE!	Per hr	494.00	P&M-054		
3.29a	Water Tanker 6kl	Water Transport	IINPUT	10	16000	100							Per hr	159.00	P&M-060		
b	Water Tanker 6kl(With Tractor)												Per hr	632.00	(P&M-060)+(P&M-053)		
3.30	Concrete buckets 3.06 cum 4 cuyd		IINPUT	10	15000	50							Per hr	21.00	P&M-008		

3.31	Trolley	Transporting	IINPUT	10	15000	50							Per hr	#REF!			
3.32	Drill extractors (Compressed air)		IINPUT	8	8000	80		400	cfm			#VALUE!	Per hr	#VALUE!			
3.33	Grinder		IINPUT	8	8000	80		400	cfm			#VALUE!	Per hr	#VALUE!			
3.34	Sheet Pile Driving plant	Sheet Pile Driving	INPUT	10	15000	50		400	cfm			#VALUE!	Per hr	#VALUE!			
3.35	Loader																
a	Front end loader 1.0cum bucket capacity	Soil, Aggregate loading	IINPUT	10	15000	150	130	12.79	lit/hr	60 /25	cum/hour	#VALUE!	Per hr	1185.00	P&M-017		
b	Overhead loader 1cu. Yd or 0.768 cum		IINPUT	16	20000	70	150	119.36	kwh			#VALUE!	Per hr	#VALUE!			
3.36	Pneumatic concrete placer (1 Cubic yard) or 0.768 cum	Placing Concrete	IINPUT	10	10000	120		200	Cfm			#VALUE!	Per hr	#VALUE!			
3.37	Draglines (Diesel) 2 cum 262 H.P (Crane with grab)	In well Shinking,	IINPUT	12	15000	150	262	28.55	lit/hr			#VALUE!	Per hr	1666.00	P&M-075		
3.38	Hydraulic excavators (Diesel) 1 cum bucket	Excavators	4283885	10	12000	150	103.5	11.28		60/60/60	cum/hour	#VALUE!	Per hr	1695.00	P&M-026		
3.39	Wet Mix Plant (Soil Stabilization Plant) 60 TPH	Stabilization Wet Mix	IINPUT	10	12000	150	38.5	4.19	lit/hr	25	cum/hour		Per hr	1569.00	P&M-062		
3.40	Agitating car 4cu.yd or 3.07 cum		IINPUT	10	10000	120	5	5.33	kwh			#VALUE!	Per hr	#VALUE!			
3.41	Generator set																
a	250 KVA	Generation of Electric Energy	IINPUT	15	30000	120		0.00	lit/hr				Per hr	3204.00	P&M-081		
b	125 KVA		IINPUT	15	30000	120		0.00	lit/hr	100	KVA		Per hr	2293.00	P&M-018		
c	100 KVA		IINPUT	15	30000	120		0.00	lit/hr				Per hr	1698.00	P&M-080		
d	63 KVA		IINPUT	15	30000	120		0.00	lit/hr				Per hr	920.00	P&M-019		
e	33 KVA		IINPUT	10	20000	100		0.00	lit/hr	50	KVA		Per hr	484.00	P&M-079		
f																	
3.42	Crushing & Processing Plant																
a	Integrated Stone Crusher 100 TPH	Crushing of Spoil	IINPUT	12	18000	80		400	kwh	100	TPH	#VALUE!	Per hr	11287.00	P&M-027		
b	Integrated Stone Crusher 200 TPH		IINPUT	12	18000	80		800	kwh	200	TPH	#VALUE!	Per hr	23744.00	P&M-028		
3.43	40 quintal capacity boat	Transportation in River	500000	8	35000	150		nil				#VALUE!	hour	191.00	Approved Rate in S.R(Sharsa Zone)		
b	100 quintal capacity boat		900000	8	35000	150		nil				#VALUE!	Per day	252.70	Approved Rate in S.R(Sharsa Zone)		
c	100 quintal capacity boat (Moter Fitted)		1000000	8	35000	150	5	0.54	lit/hr			#VALUE!	Per day	#VALUE!			
d	Boat to carry atleast 20 persons		7500000										per hr	202.00	P&M-086		
3.44	Bullock cart	Transportation	IINPUT	8	40000	50							Per day	136.60	Approved Rate in S.R(Sharsa Zone)		
3.45	Transit Mixer 4.0/4.5 cum	Transportation of concrete mix to site	IINPUT	10	10000	120		0	lit/hr	4.5	cum/hour		Per hr	1211.00	P&M-049		
b	Transit Mixer 3.0 cum		IINPUT	10	10000	120		0	lit/hr	3	cum/hour		Per hr	1111.00	P&M-051		

CHAPTER ---III

Machine Related Material						
Sl.No	Material	Cost	Unit	Life of Material	Approved Rate	
						Unit
1	Jumbo drill steel	IINPUT	per mtr		IINPUT	per mtr
2a.	Jack Hammer drill rod	IINPUT	per mtr	130	IINPUT	per mtr
2b.	Jack Hammer drill bit	IINPUT	per mtr	130	IINPUT	per mtr
3	For Diamond core drilling machine	IINPUT				
3a	Diamond bit for N x size (53 mm to 75 mm)(Internal dia To External dia) 'D'	IINPUT	per mtr	10	IINPUT	per mtr
3b	Diamond bit for (Bxsize (41mm to 59 mm)(Internal dia To External dia) 'T'	IINPUT	per mtr	10	IINPUT	per mtr
3c	Tungaton Carbide bit	IINPUT	per mtr	20	IINPUT	per mtr
3d	(NxSize) Reaming shell 'S'	IINPUT	per mtr	50	IINPUT	per mtr
3e	(BxSize) Reaming shell 'TK'	IINPUT	per mtr	50	IINPUT	per mtr
3f	Reaming shell 'N'	IINPUT	per mtr	100	IINPUT	per mtr
3g	Core box (wooden 3m long x 0.85 m wide x 0.15 m deep) with longitudinal compartment to acccomodate 5 rows of 3 m long cores. i.e total 15 m	IINPUT	Each		IINPUT	Each
4	Wagon Drill(Steel) equipment required with Wagon drill	IINPUT				
4a	Shank adopter	IINPUT	per mtr	460	IINPUT	per mtr
4b	Coupling sleeves	IINPUT	per mtr	460	IINPUT	per mtr
4c	Extension rod 1 x 3.00metre	IINPUT	per mtr	460	IINPUT	per mtr
4d	Extension rod 1 x 2.50 metre	IINPUT	per mtr	460	IINPUT	per mtr
4e	Extension rod 1 x 2.00 metre	IINPUT	per mtr	460	IINPUT	per mtr
4f	Extension rod 1 x 1.50 metre	IINPUT	per mtr	460	IINPUT	per mtr
4g	Extension rod 1 x 1.00 metre	IINPUT	per mtr	460	IINPUT	per mtr
4h	Cost of 4 point drill bit	IINPUT	per mtr	130	IINPUT	per mtr

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
3.1	**Drill Jumbo**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	12000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1200	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Rated life of Machines	0			#VALUE!	A
B	**Repaire and Maintenance charge** **60** % of Depreciation of machine /hr	60	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel				0.00	
	b.Lubricant and grease waste etc 25% of above Fuel	25	%		0.00	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	2	30	249.00	14940.00	
	ii.Helper	4	30	220.00	26400.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Chowkidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				46687.50	
	Direct labour charge per hr (Total labour charge/Working hr in year)				466.88	D
	Hourly use rate				#VALUE!	Per hr
3.2	**Jack hammer (52 lb)**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	10000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	60	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel compressed air	100/100cfm			#VALUE!	
	b.Lubricant and grease waste etc 25% of above F	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	d.Pneumatic rubber hose pipe 38 mm with fitting per 100 working hrs	15	mtr	46.80	7.02	
	Total charge				#VALUE!	C
D	**Labour charge**					
	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1/2	30	220.00	3300.00	
	iii.Mechanic	1/8	30	323.00	1211.25	
	iv.Chawkidar	1/8	30	213.00	798.75	
	v. Supervisor	1/5	30	338.00	2028.00	
	Total Direct labour charge				12780.00	Per hr

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	Direct labour charge per hr=					
	Total labour charge/Working hr in year				153.36	D
	Hourly use rate				#VALUE!	
3.2a	**.Jack Hammer drill rod**					
	Cost of m drill rod at site		per mtr		IINPUT	Per mtr
	Economic life	130	mtr			
	Use rate of drill rod				#VALUE!	
3.2b	**b.Jack Hammer drill bit**					
	Cost of bit				IINPUT	
	Economic life	130	mtr			
	Use rate of drill bit				#VALUE!	Per mtr
3.3	**Scalling hammer**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	10000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	60	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel compressed air	100	/100cfm		0.00	
	b.Lubricant and grease waste etc 25% of above F	25	%		0.00	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1/2	30	220.00	3300.00	
	iii.Chaukidar	1/10	30	213.00	639.00	
	iv. Supervisor	1/8	30	338.00	1267.50	
	Total Direct labour charge				11409.00	
	Direct labour charge per hr				136.91	D
	Hourly use rate				#VALUE!	Per hr
3.4	**Diamond core drilling machine and diesel pump.**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	8	Year			
	Rated life of machine	8000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel:-Diesel (2/3x0.5x0.6xH.Px4.54/8.26)	3.55	lit	56.10	199.15	
	b.Lubricant and grease waste etc 25% of above F	25	%		49.79	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
(a)	Direct labour charge	Nos	Days	Rate	Amount	
1	For Drilling Machine					
	i.Operator Gr I	2	30	249.00	14940.00	
	ii.Helper	3	30	220.00	19800.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Chaukidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				40087.50	
	Direct labour charge per hr				481.05	D
	Hourly use rate				#VALUE!	Per hr
3.5	**Wagon Drill**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	8	Year			
	Rated life of machine	8000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Compressed air	400	/100cfm	0.00	0.00	
	b.Lubricant and grease waste etc 25% of above F	25	%		0.00	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/8	30	323.00	1211.25	
	v.Chaukidar	1/4	30	213.00	1597.50	
	iv. Supervisor	1/4	30	338.00	2535.00	
	Total Direct labour charge				20741.25	
	Direct labour charge per hr				248.90	D
	Hourly use rate				#VALUE!	
3.7	**Hoist winch 30T**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	12	Year			
	Rated life of machine	15000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1250	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	120	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Diesel		lit	56.10	0.00	
	b.Lubricant and grease waste etc 25% of above F	25	%		0.00	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	ii.Helper	0	30	220.00	0.00	
	iii.Formen	0	30	354.00	0.00	
	iv.Mechanic	0	30	323.00	0.00	
	v.Choukidar	0	30	213.00	0.00	
	iv. Supervisor	0	30	338.00	0.00	
	Total Direct labour charge				7470.00	
	Direct labour charge per hr				71.71	D
	Hourly use rate				#VALUE!	
3.8	**Shot crete Machine**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	15000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1500	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Compressed air	600	per100cfm	input	#VALUE!	
	b.Lubricant and grease waste etc 25% of above F	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/2	30	323.00	4845.00	
	v.Choukidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				21840.00	
	Direct labour charge per hr				174.72	D
	Hourly use rate				#VALUE!	
3.9	**Convey muckers (1.5 cubic yard42 "wide converyor 165 H.P)**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	15000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1500	hrs			
	Depreciation of machine /hr = 0.9x				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	100	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Electtrical energy charge (H.Px0.746)	123.09	KWH	#VALUE!	#VALUE!	
	b.Lubricant and grease waste etc 25% of above F	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	iv.Mechanic	1/6	30	323.00	1615.00	
	v.Choukidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				18610.00	
	Direct labour charge per hr				148.88	D
	Hourly use rate				#VALUE!	Per hr
3.10	**Shovel (Diesel) 2 cum 262 H.P**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	12	Year			
	Rated life of machine	15000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1250	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150.00	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Diesel (2/3x0.5xh.Px0.6x4.546/8.26)	28.55	lit	56.10	1601.50	
	b.Lubricant and grease waste etc 25% of above F	25	%		400.37	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/4	30	354.00	2655.00	
	iv.Mechanic	1/2	30	323.00	4845.00	
	v.Chokidar	1/4	30	213.00	1597.50	
	iv. Supervisor	1	30	338.00	10140.00	
	Total Direct labour charge				33307.50	
	Direct labour charge per hr				319.75	D
	Hourly use rate				#VALUE!	Per hr
	Shovel (Electric) 5 cum 350 H.P					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	20	Year			
	Rated life of machine	40000	hrs			
	Working Hours per year (Rated life in hrs/yr)	2000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =350 Electric energy required=350x0.746=261 KWH Electric energy for 40 kv .A.C. control @ 0.80 Power factor=40x0.80=32 KWH Total Electric energy required=261+32=-293 KWH Assuming diversity factor @ 60 % energy required=0.6x293=175.86 KWH					
	a.Electtrical energy charge	175.86	KWH	#VALUE!	#VALUE!	
	b.Lubricant and grease waste etc 25% of above F	25	%		#VALUE!	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		0.00	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	249.00	7470.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/4	30	354.00	2655.00	
	iv.Mechanic	1/2	30	323.00	4845.00	
	v.Chokidar	1/4	30	213.00	1597.50	
	vi. Electrician	1/2	30	265.00	3975.00	
	vii. Cableman	2	30	220.00	13200.00	
	viii.Supervisor	1	30	338.00	10140.00	
	Total Direct labour charge				50482.50	
	Direct labour charge per hr				302.90	D
	Hourly use rate				#VALUE!	Per hr
3.11	**D.8 Tractor Dozer (Push Plate) 270 H.P**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	12000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1200	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	100	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	Rated H.P=270 Consumption of diesel oil= 0.5xB.H.P x0.6/8.26 Gallons / hr =0.04 BHP gallons / hr Actual consumption adoped= 65 % or 2/3 of above =0.026 BHPx4.546 litres/hr=					
	a.Fuel Diesel	29.42	lit	56.10	1650.40	
	b.Lubricant and grease waste					
	Hydraulic oil	0.25	lit	Input	#VALUE!	
	Petrol	1	lit	Input	#VALUE!	
	Lubricant oil	0.75	lit	Input	#VALUE!	
	Filter oil	0.6	lit	Input	#VALUE!	
	Gear oil	0.25	lit	254.00	63.50	
	Grease	0.5	kg	Input	#VALUE!	
	Cardium compound	200	gm	Input	#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 15 % of R/M(B)	15	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator	1	30	299.00	8970.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/4	30	354.00	2655.00	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Chokidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				22245.00	
	Direct labour charge per hr				222.45	D
	Hourly use rate				#VALUE!	Per hr
	D.9 Tractor Dozer 385 H.P					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	Life of machine	10	Year			
	Rated life of machine	12000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1200	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	100	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	Rated H.P=385 Consumption of diesel oil= 0.5xB.H.P x0.6/8.26 Gallons / hr =0.04 BHP gallons / hr Actual consumption adoped= 65 % or 2/3 of above =0.026 BHPx4.546 litres/hr					
	a.Fuel Diesel	41.95	lit	input	#VALUE!	
	b.Lubricant and grease waste					
	Hydraulic oil	0.25	lit	Input	#VALUE!	
	Petrol	1	lit	Input	#VALUE!	
	Lubricant oil	0.75	lit	Input	#VALUE!	
	Filter oil	0.6	lit	Input	#VALUE!	
	Gear oil	0.25	lit	254.00	63.50	
	Grease	0.5	kg	Input	#VALUE!	
	Cardium compound	200	gm	Input	#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 15 % of R/M(B)	15	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	26	299.00	7774.00	
	ii.Helper	1	26	220.00	5720.00	
	iii.Formen	1/4	26	354.00	2301.00	
	iv.Mechanic	1/4	26	323.00	2099.50	
	v.Chokidar	1/4	26	213.00	1384.50	
	Total Direct labour charge				19279.00	
	Direct labour charge per hr				192.79	D
	Hourly use rate				#VALUE!	Per hr
3.12	**Dumper or Tipper(7T) 4.5 cum**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	8	Year			
	Rated life of machine	10000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1250	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	140	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =110					
	a.Diesel (2/3X0.5XHPx0.6x4.546/8.26)	11.99	lit	56.10	672.38	
	b.Lubricant and grease waste etc 25% of abov	25	%		168.10	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Driver	1	30	300.00	9000.00	
	ii.Cleaner	1	30	204.00	6120.00	
	iv.Mechanic	1/8	30	323.00	1211.25	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	v.Chokidar	1/6	30	213.00	1065.00	
	Total Direct labour charge				17396.25	
	Direct labour charge per hr				167.00	
	Hourly use rate				#VALUE!	Per hr
	Dumper or Tipper(15 T)			**Rear Dumper 35 T**		
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	8	Year			
	Rated life of machine	10000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1250	hrs			
	Depreciation of machine /hr = 0.9x				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	140	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =200					
	a.Diesel (2/3X0.5XHPx0.6x4.546/8.26)	21.79	lit	56.10	1222.52	
	b.Lubricant and grease waste etc 25% of abov	25	%		305.63	
	c.Sundries and miscellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator	1	30	300.00	9000.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/6	30	323.00	1615.00	
	v.Choukidar	1/6	30	213.00	1065.00	
	Total Direct labour charge				19607.50	
	Direct labour charge per hr				188.23	D
	Hourly use rate				#VALUE!	Per hr
	Dumper or Tipper(35 T)					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	12000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1200	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	140	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =560					
	a.Diesel (2/3X0.5XHPx0.6x4.546/8.26)	61.02	lir	56.10	3423.05	
	b.Lubricant and grease waste etc 25% of above	25	%		855.76	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)				#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator	1	30	300.00	9000.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/4	30	354.00	2655.00	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Choukidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				22275.00	
	Direct labour charge per hr				222.75	D

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	Hourly use rate				#VALUE!	Per hr
3.13	**Batching and mixing plant (35cu.yd/hr)**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	18	Year			
	Rated life of machine	30000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1666.67	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	100	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Electtrical energy charge	59.68	KWH	#VALUE!	#VALUE!	
	b.Lubricant and grease waste etc 25% of above F	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	2	30	354.00	21240.00	
	ii.Welder	6	30	315.00	56700.00	
	iii.Formen	- 1/2	30	354.00	-5310.00	
	iv.Mechanic	1/2	30	323.00	4845.00	
	v.Choukidar	1	30	213.00	6390.00	
	Total Direct labour charge				83865.00	
	Direct labour charge per hr				603.83	D
	Hourly use rate				#VALUE!	Per hr
3.14	**Ventilation blower (20000cfm)**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	12	Year			
	Rated life of machine	58000	hrs			
	Working Hours per year (Rated life in hrs/yr)	4833.33	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of blower /hr	80	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =20					
	a.Electtrical energy charge	14.92	KWH	#VALUE!	#VALUE!	
	b.Lubricant and grease waste etc 25% of above F	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator	1/4	30	300.00	2250.00	
	ii.Helper	1/4	30	220.00	1650.00	
	iii.Mechanic	1/2	30	323.00	4845.00	
	Total Direct labour charge				8745.00	
	Direct labour charge per hr				21.71	D
	Hourly use rate				#VALUE!	Per hr

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.				
3.15	**Pump**									
(I).	**DIESEL PUMP**									
	Capital cost				**5 H.P**	**10H.P**	**15H.P**	**20H.P**	**30 H.P**	
	Life in year				IINPUT	IINPUT	IINPUT	IINPUT	IINPUT	
	Rated life	8	Years							
	Annual operational hours	10000	hrs							
	Annual operational days	1250	hrs							
	Depreciation of machine /hr = 0.9x	300.00	Days							
A	Cost of Machine/Tated life of Machines				#VALUE!	######	#VALUE!	#VALUE!	#VALUE!	
B	Major & Minor repair @ 100 % of depreciation	80	%		#VALUE!	######	#VALUE!	#VALUE!	#VALUE!	
C	Operation charge									
		Nos	Days	Rate	Amount					
	Operator -----x26 per month .	1.00	30	223.00	6690					
	Annual operational hours	1250.00	hr		0.01	0.01	0.01	0.01	0.01	
D	Fuel									
	i.H.S.D ---- lit / hr				0.61	1.21	1.82	2.42	3.63	
				56.10	33.96	67.92	101.88	135.84	203.76	
	ii. Lubricant, cotton waste etc 10 % of (i)	10	%		3.40	6.79	10.19	13.58	20.38	
	Hourly use rate (A+B+C+D)				37.36	74.71	112.07	149.42	224.13	
					#VALUE!	######	#VALUE!	#VALUE!	#VALUE!	
(II).	**ELECTRIC PUMP**									
	Capital cost				**5 H.P**	**10H.P**	**15HP**	**20H.P**	**40H.P**	**50H.P**
	Life in year				IINPUT	IINPUT	IINPUT	IINPUT	IINPUT	IINPUT
	Rated life	12	Years							
a.	Depreciation /hr	20000	hrs							
	Major & Minor repair @ --- % of depreciation				#VALUE!	######	#VALUE!	#VALUE!	#VALUE!	#VALUE!
b.		70	%		#VALUE!	######	#VALUE!	#VALUE!	#VALUE!	#VALUE!
c	**Labour charge**	**Upto 15 H.P**				**Above 15 H.P**				
		Nos	Days	Rate	Amount	Nos	Days	Rate		
	Operator	1	30	265.00	7950		1	265.00		
	Mechanic	1/4	30	323.00	2422.5		1/4	323.00		
	Electrician	1/8	30	265.00	993.75		1/6	265.00		
	Helper			220.00			1	220.00		
					11366.25					
	Rated life in hrs/yr	1666.67								
d	**Running charges (P.O.L)**				81.84	81.84	81.84	131.74	131.74	131.74
				Unit =	3.73	7.46	11.19	14.92	29.84	37.30
	a.Electtrical energy charge			Rate =	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	b.Lubricant and grease waste etc 25% of above Fuel	25	%	Amount =	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Total charge				#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Hire charge of Electric Pump Per /hour (a+b+c+d)			Per hour	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
(iii).	**5 H.P vacaum pumping set**							
A	Capital cost of machine				IINPUT			
	Life of machine	12	Year					
	Rated life of machine	20000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1666.67	hrs					
	a. Depreciation of machine /hr				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of blower /hr	50	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =20							
	a.Electrical energy charge	3.73	KWH	#VALUE!	#VALUE!			
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Operator	1	26	265.00	6890			
	Direct labour charge per hr				49.61	D		
	Hourly use rate				#VALUE!	Per hr		
3.16	**Roller**							
	Sheep foot roller							
A	Capital cost of machine				IINPUT			
	Life of machine	8	Year					
	Rated life of machine	10000	hrs					
	Working Hours per year	1250	hrs					
	a. Depreciation of machine /hr				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	70	%		#VALUE!	B		
	Hourly use rate of Sheep foot roller				**#VALUE!**	Per hr		
3.17	**Locomotives**							
1	**Diesel Locomotives**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	10	Year					
	Rated life of machine	16000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1600	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	120	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	10.79	lit	56.10	605.16			
	b.Lubricant and grease waste etc 25% of above Fuel	25	%		151.29			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Choukidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				22567.50			
	Direct labour charge per hr				169.26			
	Hourly use rate				#VALUE!	Per hr		
2	**Battery Locomotive**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	22	Year					
	Rated life of machine	40000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1818.18	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	120	%		#VALUE!	B		

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
	Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Choukidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				22567.50			
	Direct labour charge per hr				148.95			
	Hourly use rate				#VALUE!	Per hr		
3.18	**Grouting machine**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	10	Year					
	Rated life of machine	10000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1000	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Fuel Compressed air	200.00	/100cfm	input	#VALUE!			
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	249.00	7470.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/6	30	323.00	1615.00			
	v.Choukidar	1/6	30	213.00	1065.00			
	Total Direct labour charge				18077.50			
	Direct labour charge per hr				216.93			
	Hourly use rate				#VALUE!	Per hr		
3.19	Air Compressor.							
	A. Diesel compressors							
	1.Diesel Air compressor ....cfm				**210cfm**		**300cfm**	
A	**Depreciation charge**							
	Capital cost of machine				IINPUT		IINPUT	
	Life of machine	8	Year					
	Rated life of machine	10000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1250	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A	#VALUE!	
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	100	%		#VALUE!	B	#VALUE!	
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	6.77	lit	56.10	379.77	10.38	582.31	16.13
	b.Lubricant and grease waste etc 25% of above	25	%		94.94		145.58	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!		#VALUE!	
	Total charge				#VALUE!	C	#VALUE!	
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount		Amount	
	i.Driver	1	30	265.00	7950.00		7950.00	
	ii.Helper	1	30	220.00	6600.00		6600.00	
	iii.Formen	1/8	30	354.00	1327.50		1327.50	
	iv.Mechanic	1/4	30	323.00	2422.50		2422.50	
	v.Choukidar	1/4	30	213.00	1597.50		1597.50	
	Total Direct labour charge				19897.50		19897.50	
	Direct labour charge per hr				191.02	D	191.02	
	Hourly use rate				#VALUE!	Per hr	#VALUE!	Per hr
	B.Electric compressors							
	1.Electric Air compressor 500 cfm							

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	12	Year					
	Rated life of machine	20000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1666.67	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of	80	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Electrical energy charge	90.00	KWH	#VALUE!	#VALUE!			
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	265.00	7950.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Elctrician	1/2	30	249.00	3735.00			
	vi.Choukidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				23632.50			
	Direct labour charge per hr				170.15			
	Hourly use rate				#VALUE!	Per hr		
	2.Electric Air compressor 1500 cfm							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	8	Year					
	Rated life of machine	8000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1000	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Electrical energy charge	240.00	KWH	#VALUE!	#VALUE!			
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	265.00	7950.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/3	30	323.00	3230.00			
	v.Elctrician	1/2	30	249.00	3735.00			
	vi.Choukidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				24440.00			
	Direct labour charge per hr				293.28			
	Hourly use rate				#VALUE!	Per hr		
3.20	**Crane**							
	Crawler Mounted 10 T							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	10	Year					
	Rated life of machine	12000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1200	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	120	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.i.Diesel	3.50	lit	56.10	196.35			
	ii.Petrol	8.00	lit	Input	#VALUE!			
	b.Lubricant and grease waste etc 25% of abov	25	%		#VALUE!			

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/4	30	354.00	2655.00			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Choukidar	1/4	30	213.00	1597.50			
	vi.Supervisor	1/4	31	338.00	2619.50			
	Total Direct labour charge				23895.00			
	Direct labour charge per hr				238.95			
	Hourly use rate				#VALUE!	Per hr		
3.21	**Muck / car (12 cubic yard)**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	20	Year					
	Rated life of machine	30000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1500	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
	Running charges (P.O.L)							
	Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
C	**Hourly use rate**				#VALUE!	Per hr		
3.22	**Vibrator**							
A	**Depreciation charge**							
	Capital cost of machine				21840.00			
	Life of machine	5	Year					
	Rated life of machine	8000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1600	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				2.46	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		3.69	B		
C	**Running charges (P.O.L)**							
	H.P motor =5							
	a.Diesel	0.50	lit	56.10	27.95			
	b.Lubricant and grease waste etc 25% of above	25	%		6.99			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		0.37			
	Total charge				35.30	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	232.00	6960.00			
	Total Direct labour charge				6960.00			
	Direct labour charge per hr				52.20			
	Hourly use rate				**93.65**	Per hr		
3.23	**Scraper**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	8	Year					
	Rated life of machine	9000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1125	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	17.98	lit	56.10	1008.58			
	b.Lubricant and grease waste etc 25% of above	25	%		252.14			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/4	30	354.00	2655.00			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Choukidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				23895.00			
	Direct labour charge per hr				254.88			
	Hourly use rate				#VALUE!	Per hr		
3.24	**GRADER 110 hp**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	10	Year					
	Rated life of machine	12000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1200	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	12.53	lit	56.10	702.95			
	b.Lubricant and grease waste etc 25% of above	25	%		175.74			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	0	30	323.00	0.00			
	v.Choukidar	1/2	30	213.00	3195.00			
	Total Direct labour charge				21742.50			
	Direct labour charge per hr				217.43			
	Hourly use rate				#VALUE!	Per hr		
3.28	**Tractors**							
A	**Depreciation charge**							
	Capital cost of machine				input			
	Life of machine	5	Year					
	Rated life of machine	12000	hrs					
	Working Hours per year (Rated life in hrs/yr)	2400	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	2.75	lit	56.10	154.28			
	b.Lubricant and grease waste etc 25% of above Fuel	25	%		38.57			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	299.00	8970.00			
	ii.Helper	1	30	220.00	6600.00			
	Total Direct labour charge				15570.00			
	Direct labour charge per hr				77.85	D		
	Hourly use rate				**#VALUE!**	Per hr		
	Hire charge of Tractor per day				**#VALUE!**	Per day		
3.32	**Drill extractors (Compressed air)**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	8	Year					
	Rated life of machine	8000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1000	hrs					

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Compressed air	400	/100cfm	input	#VALUE!	
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	265.00	7950.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/8	30	323.00	1211.25	
	v.Choukidar	1/4	30	213.00	1597.50	
	iv. Supervisor	1/4	30	338.00	2535.00	
	Total Direct labour charge				21221.25	
	Direct labour charge per hr				254.66	D
	Hourly use rate				#VALUE!	
3.33	**Grinder**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	8	Year			
	Rated life of machine	8000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Compressed air	400	/100cfm	input	#VALUE!	
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	265.00	7950.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/8	30	323.00	1211.25	
	v.Choukidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				18686.25	
	Direct labour charge per hr				224.24	D
	Hourly use rate				#VALUE!	
3.34	**Sheet Pile Driving plant**					
A	**Depreciation charge**					
	Capital cost of machine				INPUT	
	Life of machine	10	Year			
	Rated life of machine	15000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1500	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	50	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	a.Fuel Compressed air	400	/100cfm	input	#VALUE!	
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Operator Gr I	1	30	265.00	7950.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Choukidar	1/4	30	213.00	1597.50	
	Total Direct labour charge				19897.50	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.
	Direct labour charge per hr				159.18	D
	Hourly use rate				#VALUE!	
3.35	**Loader**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	15000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1500	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =110					
	a.Diesel	12.79	lit	56.10	717.70	
	b.Lubricant and grease waste etc 25% of above	25	%		179.43	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Driver	1	30	265.00	7950.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Chokidar	1/2	30	213.00	3195.00	
	Total Direct labour charge				21495.00	
	Direct labour charge per hr				171.96	
	Hourly use rate				#VALUE!	Per hr
	Overhead loader 1cu. yd					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	16	Year			
	Rated life of machine	20000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1250	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	70	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =110					
	a.Diesel	119.36	lit	56.10	6696.10	
	b.Lubricant and grease waste etc 25% of above	25	%		1674.02	
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	
	Total charge				#VALUE!	C
D	**Labour charge**					
(a)	Direct labour charge	Nos	Days	Rate	Amount	
	i.Driver	1	30	265.00	7950.00	
	ii.Helper	1	30	220.00	6600.00	
	iii.Formen	1/8	30	354.00	1327.50	
	iv.Mechanic	1/4	30	323.00	2422.50	
	v.Choukidar	1/6	30	213.00	1065.00	
	Total Direct labour charge				19365.00	
	Direct labour charge per hr				185.90	
	Hourly use rate				#VALUE!	Per hr
3.36	**Pneumatic concrete placer (1 CUBIC YARD)**					
A	**Depreciation charge**					
	Capital cost of machine				IINPUT	
	Life of machine	10	Year			
	Rated life of machine	10000	hrs			
	Working Hours per year (Rated life in hrs/yr)	1000	hrs			
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	120	%		#VALUE!	B
C	**Running charges (P.O.L)**					
	H.P motor =110					
	a.Fuel Compressed air	200.00	/100cfm	input	#VALUE!	
	b.Lubricant and grease waste etc 25% of above	25	%		#VALUE!	

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	265.00	7950.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/6	30	323.00	1615.00			
	v.Chokidar	1/6	30	213.00	1065.00			
	Total Direct labour charge				18557.50			
	Direct labour charge per hr				222.69			
	Hourly use rate				#VALUE!	Per hr		
3.37	**Draglines 2 cum 262 H.P**							
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			
	Life of machine	12	Year					
	Rated life of machine	15000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1250	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	28.55	lit	56.10	1601.50			
	b.Lubricant and grease waste etc 25% of above	25	%		400.37			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/4	30	354.00	2655.00			
	iv.Mechanic	1/2	30	323.00	4845.00			
	v.Chokidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				26317.50			
	Direct labour charge per hr				252.65			
	Hourly use rate				#VALUE!	Per hr		
3.38	**Hydraulic excavators (Diesel)1.25cu.yd**							
A	**Depreciation charge**							
	Capital cost of machine				input			
	Life of machine	10	Year					
	Rated life of machine	12000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1200	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Rated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	11.28	lit	56.10	632.65			
	b.Lubricant and grease waste etc 25% of above	25	%		158.16			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	10620.00			
	ii.Helper	1	30	220.00	6600.00			
	iii.Formen	1/4	30	354.00	2655.00			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Choukidar	1/4	30	213.00	1597.50			
	Total Direct labour charge				23895.00			
	Direct labour charge per hr				238.95			
	Hourly use rate				#VALUE!	Per hr		
3.40	**Agitating car 4cu.yd**							
A	Depreciation charge							

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
	Capital cost of machine				IINPUT			
	Life of machine	10	Year					
	Rated life of machine	10000	hrs					
	Working Hours per year (Rated life in hrs/yr)	1000	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	120	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	5.33	lit	56.10	298.93			
	b.Lubricant and grease waste etc 25% of above	25	%		74.73			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	354.00	5310.00			
	ii.Helper	1	30	220.00	3300.00			
	iii.Formen	1/8	30	354.00	1327.50			
	iv.Mechanic	1/4	30	323.00	2422.50			
	v.Choukidar	1/6	30	213.00	1065.00			
	Total Direct labour charge				13425.00			
	Direct labour charge per hr				161.10			
	Hourly use rate				#VALUE!	Per hr		
3.42	**Crushing & Processing Plant**							
	Integrated Stone Crusher.... TPH	100 TPH					200TPH	
A	**Depreciation charge**							
	Capital cost of machine				IINPUT			IINPUT
	Life of machine	12	Year					
	Rated life of machine	8000	hrs					
	Working Hours per year (Rated life in hrs/yr)	666.67	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		#VALUE!
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	80	%		#VALUE!	B		#VALUE!
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	400.00	lit	56.10		800.00		0
	b.Lubricant and grease waste etc 25% of above	25	%		0.00			0.00
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			#VALUE!
	Total charge				#VALUE!	C		#VALUE!
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	2	30	354.00	21240.00	2		21240
	ii.Helper	0	30	220.00	0.00	0		0
	iii.Formen	1	30	354.00	10620.00	1		10620
	iv.Mechanic	1/4	30	323.00	2422.50	1/4		2422.5
	v.Chokidar	1	30	213.00	6390.00	1		6390
	vi.Beldar	15	30	206.00	92700.00	20		123600
	Total Direct labour charge				40672.50			164272.5
	Direct labour charge per hr				732.11			2956.91
	Hourly use rate				#VALUE!	Per hr		#VALUE!
3.43	**Boat**							
	40 quintal capacity boat						**100 quintal capacity boat**	
A	**Depreciation charge**							
	Capital cost of machine				Input			input
	Life of machine	8	Year					
	Rated life of machine	35000	hrs					
	Working Hours per year (Rated life in hrs/yr)	4375	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Tated life of Machines				#VALUE!	A		#VALUE!
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		#VALUE!
C	**Running charges**							

CALCULATION OF HIRE CHARGES OF MACHINE

Sr.No.	Description	Quantity	Unit	Rate	Amount	Ref.		
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!	C		#VALUE!
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	Driver	1	30	319.00	9570.00			9570.00
	Total Direct labour charge				9570.00			9570.00
	Direct labour charge per hr				26.25	D		26.25
	Hourly use rate				#VALUE!	Per hr		#VALUE!
					#VALUE!	Per day		#VALUE!
	100 quintal capacity boat (Pump Fitted)							
A	**Depreciation charge**							
	Capital cost of machine				input			
	Life of machine	8	Year					
	Rated life of machine	35000	hrs					
	Working Hours per year (Rated life in hrs/yr)	4375	hrs					
	Depreciation of machine /hr = 0.9x Cost of Machine/Rated life of Machines				#VALUE!	A		
B	**Repaire and Maintenance charge** % of Depreciation of machine /hr	150	%		#VALUE!	B		
C	**Running charges (P.O.L)**							
	H.P motor =110							
	a.Diesel	0.54	lit	56.10	30.56			
	b.Lubricant and grease waste etc 25% of above Fuel	25	%		7.64			
	c.Sundries and miseellenceous supplies at site @ 10 % of R/M(B)	10	%		#VALUE!			
	Total charge				#VALUE!	C		
D	**Labour charge**							
(a)	Direct labour charge	Nos	Days	Rate	Amount			
	i.Driver	1	30	319.00	9570.00			
	ii.Helper	1	30	220.00	6600.00			
	Direct labour charge per hr				44.35			
	Hourly use rate				#VALUE!	Per hr		
					#VALUE!	**Per day**		

CHAPTER - IV

CARRIAGE OF MATERIALS (By TRACTOR)

Sl.No	Description	Unit	Quantity	Rate(Rs)	Cost(Rs)	Ref.
4.1	**Loading and Unloading of Stone Boulder/ Stone aggregates/Sand /Kanker/Moorum**					
	Placing tractor at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip.					
	Unit = cum					
	Taking output = 2.25 cum					
	Time required for					
	i) Positioning of tipper at loading point		1Min			
	ii) Loading by front end loader 1cum bucket capacity @ 25 cum per hour		5 Min			
	Total		6 Min			
	a) Labour					
	Mate	no.	0.03	225.00	6.75	
	Mazdoor for loading and unloading	no.	0.72	206.00	148.32	
	b) Machinery					
	Tractor 3.6 tonnes capacity	hour	0.100	447.00	44.70	P&M-
	Front end-loader 1cum bucket capacity @ 25 cum/hour	hour	0.083	1185.00	98.36	P&M017
					298.13	
	Overhead charges & C.P @ 15%				44.72	
	Cost for 2.25 cum				342.85	
	Rate per cum				152.38	
				say	**152.40**	
	Note:-Unloading will be done manually.					
4.2	**Loading and Unloading of stone Boulders by Manual means**					
	Unit = cum					
	Taking output = 2.25 cum					
	a) Labour					
	Mate	no.	0.05	225.00	11.25	
	Mazdoor for loading and unloading	no.	0.31	206.00	63.86	
	b) Machinery					
	Tractor 3.60 tonne capacity	hour	0.31	447	138.57	
					213.68	
	Overhead charaes & C.P @ 15%				32.05	
	Cost for 2.25 cum				245.73	
	Rate per cum				109.21	
				say	**109.20**	**Xa**
	Note:-Unloading will be done manually.					
4.3	**Loading and Unloading of Cement or Steel by manual means and stacking**					
	Unit = tonne					
	Taking output = 3.6 tonnes					
	a) Labour					
	Mate	no.	0.03	225.00	6.75	
	Mazdoor for loadina and unloading	no.	0.72	206.00	148.32	

	b) Machinery					
	Tractor 3.6 tonne capacity	hour	0.72	447.00	321.84	
					476.91	
	c) Overhead charges & C.P@ 15%				71.54	
	Cost for 3.6 tonnes				548.45	
	Rate per tonnes				152.35	
				say	**152.40**	**Xb**
4.4	**Cost of Haulage Excluding Loading and Unloading**					
	Haulage of materials by tractor excluding cost of loading, unloading and stacking.					
	Unit = t.km or cum.km					
	Taking output (3.60 tonnes load and lead 10					
4.4a	**Surfaced Road**					
	Speed with load : 15 km / hour.					
	Speed while Returning empty :25 km / hour.					
	a) Machinery					
	Tractor 3.60 tonne capacity					
	Time taken for onward haulage with load	hour	0.667	447.00	298.15	
	Time taken for empty return trip.	hour	0.40	447.00	178.8	
					476.95	
	Overhead charges & C.P @ 15%				71.54	
	cost for 36 t km				548.49	
	Rate per t.km				15.24	
				say	**15.20**	**Hsb**
4.4b	**Unsurfaced Graveled Road**					
	Speed with load: 12 km / hour					
	Speed for empty return trip : 20 km / hour					
	a) Machinery					
	Tractor 3.6 tonnes capacity					
	Time taken for onward haulage with load	hour	0.833	447.00	372.35	
	Time taken for empty return trip	hour	0.50	447.00	223.5	
	b) Overhead charges & C.P @15%				89.38	
	Cost for 36 t .km				685.23	
	Rate per t.Km				19.03	
				say	**19.00**	**Hub**
4.4c	**Katcha Track and Track in River Bed/Nallah Bed and choe Bed**					
	Speed with load :10 km / hour					
	Soeed while returning empty : 15 km / hour					
	a) Machinery					
	Tractor 3.6 tonnes capacitv					
	Time taken for onward haulage	hour	1.00	447.00	447.00	
	Time taken for empty return trip	hour	0.667	447.00	298.15	
					745.15	
	b)Overhead charges & C.P.@ 15%				111.77	
	Cost for 36 t.km				856.92	
	Rate per t.Km				23.8	
				say	**23.80**	**Hkb**

CARRIAGE OF MATERIALS (By TIPPER)

No.	Description	Unit	Quantity	Rate	Cost	
4.1	**Loading and Unloading of Stone Boulder/ Stone aggregates/Sand /Kanker/Moorum**					
	Placing tipper at loading point, loading with front end loader, dumping,					
	Unit = cum					
	Taking output = 5.5 cum					
	Time required for					
	i) Positioning of tipper at loading point		1Min			
	ii) Loading by front end loader 1cum bucket capacity @ 25 cum per hour		13 Min			
	iii) Maneuvering, reversing, dumping and turning for return		2 Min			
	iv) Waiting time, unforeseen contingencies etc		4 Min			
	Total		20 Min			
	a) Machinery					
	Tipper 5.5 tonnes capacity	hour	0.33	876.00	289.08	P&M048
	Front end-loader 1cum bucket capacity @ 25 cum/hour	hour	0.33	1185.00	391.05	
					680.13	
	b) Overhead charges &C.P.@ 15%				102.02	
	Cost for 5.5 cum				782.15	
	Rate per cum				142.21	
				say	**142.20**	
	Note:-Unloading will be by tipping.					
4.2	**Loading and Unloading of Stone Boulders by Manual means**					
	Unit = cum					
	Takina output = 5.5 cum					
	a) Labour					
	Mate	no.	0.11	225.00	24.75	
	Mazdoor for loading and unloading	no.	0.75	206.00	154.50	
	b) Machinery					
	Tipper 5.5 tonne capacity	hour	0.75	876.00	657	
					836.25	
	c) Overhead charges &C.P.@ 15%				125.44	
	Cost for 5.5 cum				961.69	
	Rate oer cum = (a+b+c+d)/5.5				174.85	
				say	**174.90**	**Xa**
	Note:-Unloading will be by tipping.					
4.3	**Loading and Unloading of Cement or Steel by manual means and stacking.**					
	Unit = tonne					
	Taking output = 10 tonnes					
	a) Labour					
	Mate	no.	0.08	225.00	18	
	Mazdoor for loading and unloading	no.	2.00	206.00	412.00	
	b) Machinery					
	Truck 10 tonne capacity	hour	2.00	805.00	1610	P&M057
					2040	
	Overhead charges &C.P @ 15%				306	
	Cost for 10 tonnes				2346	
	Rate per tonnes				234.6	
				say	**234.60**	**Xb**
4.4	**Cost of Haulage Excluding Loading and Unloading**					
	Haulage of materials by tipper excluding cost of loading, unloading and stacking.					

	Unit = t.km					
	Taking output (for 10 tonnes or 5.5 cum load and lead 10 km)					
4.4a	**Surfaced Road**					
	Speed with load : 25 km / hour.					
	Speed while Returning empty :35 km / hour.					
	a) Machinery					
	Tipper 10 tonne capacity					
	Time taken for onward haulage with load	hour	0.40	876.00	350.4	
	Time taken for empty return trip.	hour	0.29	876.00	254.04	
					604.44	
	Overhead charges &C.P @ 15%				90.67	
	cost for 100 t.km or 55cum.km				695.11	
	Rate per t.km				6.95	
				say	**7.00**	**Hsb**
	Rate per cum.km				12.64	
				say	**12.60**	**Has**
4.4b	**Unsurfaced Graveled Road**					
	Speed with load: 20 km / hour					
	Speed for empty return trip :30 km / hour					
	a) Machinery					
	Tipper 10 tonnes or 5.5 cum capacity					
	Time taken for onward haulage with load	hour	0.50	876.00	438.00	
	Time taken for empty return trip	hour	0.33	876.00	289.08	
					727.08	
	Overhead charges &C.P @ 15%				109.06	
	Cost for 100 t .km or 55cum.km				836.14	
	Rate per t.Km				8.36	
				say	**8.40**	**Hub**
	Rate per cum.km				15.20	
				say	**15.20**	**Hua**
4.4c	**Katcha Track and Track in River Bed/Nallah Bed and choe Bed**					
	Speed with load :10 km / hour					
	Speed while returning empty: 15 km / hour					
	a) Machinery					
	Tipper 10 tonnes capacitv					
	Time taken for onward haulage	hour	1.00	876.00	876.00	
	Time taken for empty return trip	hour	0.67	876.00	586.92	
					1462.92	
	Overhead charges & C.P.@ 15%				219.44	
	Cost for 100 t .km				1682.36	
	Rate per t.Km				16.82	
				say	**16.80**	**Hkb**
	Rate per cum.km				30.59	
				say	**30.60**	**Hka**

CARRIAGE OF MATERIAL BY TIPPER OF 5.5 CUM CAPACITY INCLUDING OVER HEAD CHARGES & C.P.

Sr.No	Name of Materials	Unit	Gross Tipper Capacity per trip	(F0r void) Multiplying Factor	Net Tippeer capacity (Payable Qyantity) Per Triop	Cost of loading,Unloading & Stacking per Trip Of Tipper (Tipper capacity 5.5 cumx Xa)	Cost Of Haulage Per cum			Cost of Haulage per Tipper of 5.5 cum capacity (Tipper capacity 5.5cumx H)			Lead in KM			Cost of Carriage= [(5.5Hsa.Ls+5.5Hua.Lu+5.5Hka.Lk)+5.5Xa]	Per Unit Rate =(col17/Net Payable capacity)
							For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed		
						$5.5X_a$	H_{sa}	H_{ua}	H_{ka}	$5.5H_{sa}$	$5.5H_{ua}$	$5.5H_{ka}$	L_s	L_u	L_k		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Lime, Moorum, Rubbish	M^3	6	1	6	961.95	12.50	15.20	30.60	69.30	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
2	Earth	M^3	6	0.8	4.8	961.95	12.50	15.20	30.60	69.30	83.60	168.3	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
3	Manur or Sludge	M^3	6	0.92	5.52	961.95	12.50	15.20	30.60	69.30	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
4	Excavated Rock (120lbs)	M^3	6	0.67	4.02	961.95	12.50	15.20	30.60	69.30	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
5	Stone metal (above 50	M^3	5.4	0.85	4.59	961.95	12.50	15.20	30.60	69.30	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
6	Boulder	M^3	6	0.8	4.8	961.95	12.50	15.20	30.60	69.30	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
7	Stone chips / Sand /	M^3	5.4	0.92	4.99	961.95	12.50	15.20	30.60	69.3	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
8	Soling stone	M^3	5	0.85	4.25	961.95	12.50	15.20	30.60	69.30	83.60	168.30	INPUT	INPUT	INPUT	#VALUE!	#VALUE!

CARRIAGE OF MATERIAL BY TIPPER OF 10 Tonnes CAPACITY INCLUDING OVERHEAD CHARGES & C.P.

Sr.No	Name of Materials	Unit	Gross Tipper Capacity per trip	(F0r void) Multiplying Factor	Net Tippeer capacity (Payable Qyantity) Per Triop	Cost of loading,Unloading & Stacking per Trip Of Tipper (Tipper capacity 8t x Xb)	Cost Of Haulage Per cum			Cost of Haulage per Tipper of t capacity (8x H)			Lead in KM			Cost of carriage= [(8Hsb.Ls+8Hub.Lu+8Hkb.Lk)+8Xb]	Per Unit Rate =(col17/Net Payable capacity)
							For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	1100 & 1200 m dia	mtr	7.5	1	7.5	1878.80	7.00	8.40	16.80	56	67.2	134.4	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
6	Bamboo																
	75 mm to 100 mm dia	Per %	280	1	280	1878.80	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	50 mm to 75 mm dia	Per %	300	1	300	1878.80	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
7	E.C bag 30000 nos	Per %0	30000	1	30000	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
8	Timber	Cum	9.6	1	9.6	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
9	Sal ballah av.6m length																
	100 mm dia	Nos	125	1	125	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	125 mm dia	Nos	80	1	80	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	150 mm dia	Nos	60	1	60	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	175 mm dia	Nos	45	1	45	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	200 mm dia	Nos	25	1	25	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	225 mm dia	Nos	20	1	20	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
10	S.W.Pipe 60 cm length																
	100 mm dia	Mtr	480	1	480	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	150 mm dia	Mtr	240	1	240	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	200 mm dia	Mtr	135	1	135	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!

CARRIAGE OF MATERIAL BY TIPPER OF 10 Tonnes CAPACITY INCLUDING OVERHEAD CHARGES & C.P.

Sr.No	Name of Materials	Unit	Gross Tipper Capacity per trip	(F0r void) Multiplying Factor	Net Tippeer capacity (Payable Qyantity) Per Triop	Cost of loading,Unloading & Stacking per Trip Of Tipper (Tipper capacity 8t x Xb)	Cost Of Haulage Per cum			Cost of Haulage per Tipper of t capacity (8x H)			Lead in KM			Cost of carriage= [(8Hsb.Ls+8Hub.Lu+8Hkb.Lk)+8Xb]	Per Unit Rate =(col17/Net Payable capacity)
							For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Cement, Steel, Stone CC pipe	M.T	8	1	8	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
2	Brick (93/4x43/4x23/4)	Per %0	2000	1	2000	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
3	G.I. Crate (3x1.5x0.75)	Per %	80	1	80	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
4	Bitumen, Tar, Steam, Coal	MT	8	1	8	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
5	R.C.C hume, A.C. pipe					1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	100 mm dia	mtr	290	1	290	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	125 mm dia	mtr	200	1	200	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	150 mm dia	mtr	180	1	180	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	200 mm dia	mtr	100	1	100	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	250 mm dia	mtr	75	1	75	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	300 mm dia	mtr	60	1	60	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	350 mm dia	mtr	47.5	1	47.5	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	400 mm & 450 dia	mtr	32.5	1	32.5	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	500 mm & 600 mm dia	mtr	15	1	15	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	700 mm & 800 mm dia	mtr	12.5	1	12.5	1876.80	7.00	8.40	16.80	56	67.2	134.40	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	900mm & 1000 mm dia	mtr	10	1	10	1876.80	7.00	8.40	16.80	56	67.2	134.4	INPUT	INPUT	INPUT	#VALUE!	#VALUE!

CARRIAGE OF MATERIAL BY TIPPER OF 10 Tonnes CAPACITY INCLUDING OVERHEAD CHARGES & C.P.

Sr.No	Name of Materials	Unit	Gross Tipper Capacity per trip	(For void) Multiplying Factor	Net Tippeer capacity (Payable Qyantity) Per Triop	Cost of loading,Unloading & Stacking per Trip Of Tipper (Tipper capacity 8t x Xb)	Cost Of Haulage Per cum			Cost of Haulage per Tipper of t capacity (8x H)			Lead in KM			Cost of carriage= [(8Hsb.Ls+8Hub.Lu+8Hkb.Lk)+8Xb]	Per Unit Rate =(col17/Net Payable capacity)
							For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	230 mm dia	Mtr	105.6	1	105	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	250 mm dia	Mtr	84	1	84	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	300 mm dia	Mtr	67.2	1	67.2	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	350 mm dia	Mtr	48	1	48	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	400 mm dia	Mtr	33.6	1	33.6	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	450 mm dia	Mtr	26.4	1	26.4	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	500 mm dia	Mtr	24	1	24	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	600 mm dia	Mtr	19.2	1	19.2	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
11	Tiles (Manglore / Mosaic)	Per %0	3200	1	3200	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
12	Brick Tiles(300x150x50mm)	Per %0	1760	1	1760	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
13	Steel and C.I pipe																
	100 mm dia	Mtr	292.8	1	292.8	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	125 mm dia	Mtr	219.6	1	219.6	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	150 mm dia	Mtr	183	1	183	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	200 mm dia	Mtr	109.8	1	109.8	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	250 mm dia	Mtr	80.52	1	80.52	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	300 mm dia	Mtr	62.22	1	62.22	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!

CARRIAGE OF MATERIAL BY TIPPER OF 10 Tonnes CAPACITY INCLUDING OVERHEAD CHARGES & C.P.

Sr.No	Name of Materials	Unit	Gross Tipper Capacity per trip	(F0r void) Multiplying Factor	Net Tippeer capacity (Payable Qyantity) Per Triop	Cost of loading,Unloading & Stacking per Trip Of Tipper (Tipper capacity 8t x Xb)	Cost Of Haulage Per cum			Cost of Haulage per Tipper of t capacity (8x H)			Lead in KM			Cost of carriage= [(8Hsb.Ls+8Hub.Lu+8Hkb.Lk)+8Xb]	Per Unit Rate =(col17/Net Payable capacity)
							For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed	For Surface Road	For Unsurfaced graveted Road	For Hatcha track & Track in river bed/ Nallah bed & Choe Bed		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
						$8X_b$	H_{sb}	H_{ub}	H_{kb}	$8H_{sb}$	$8H_{ub}$	$8H_{kb}$	L_s	L_u	L_k		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	350 mm dia	Mtr	43.92	1	43.92	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	400 mm dia	Mtr	32.94	1	32.94	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	500 mm dia	Mtr	25.62	1	25.62	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	600 mm dia	Mtr	18.3	1	18.3	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	700 mm & 800 mm dia	Mtr	15	1	15	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	900mm & 1000 mm dia	Mtr	10	1	10	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!
	1100mm & 1200mm dia	Mtr	7.5	1	7.5	1876.8	0.00	0.00	0.00	0	0	0	INPUT	INPUT	INPUT	#VALUE!	#VALUE!

CHAPTER ---V

CANAL EMBANKMENT AND STRUCTURE

5.1 EARTH WORK

Sr.No	Items	Rate	Unit
5.1.1	Preparation of seat of embankment or canals by 75 mm ploughing and removing the grass roots etc.as per specifications and direction of E/I.	3.2	Per M^2
5.1.2	Preparation of borrow areas of embankment or canals by removing the grass and the jungle, bushes from the top including weeding out shrubs including roots and leveling all complete as per specifications and direction of E/I.	1.90	Per M^2
5.1.3	Jungle clearance and weeding out shrubs including small tree up to 0.50 M girth and removal as per specifications and direction of E/I.	5.8	Per M^2
5.1.4	Cutting of trees along with branches and their removal away from the work site and stacking the same as per specifications and direction of E/I.(Measurement of girth at a height of one meter above the ground level)		
	(a) Girth above 0.50 meter but up to 0.75 meter	191.90	Each
	(b) Girth above 0.75 meter but up to 1.50 meter	383.90	Each
	(c) Girth above 1.5 meter but upto2.50 meter	695.40	Each
	(d) Girth above 2.50 meter but up to 4.00 meter	1126.70	Each
	(e) Girth above 4.00 meter	1630.20	Each
5.1.5	Uprooting of stumps and their removal ,away from the work site as per specifications and direction of E/I.		
	(a) Girth above 0.50 meter but up to 0.75 meter	119.60	Each
	(b) Girth above 0.75 meter but up to 1.50 meter	119.60	Each
	(c) Girth above 1.5 meter but upto2.50 meter	159.50	Each
	(d) Girth above 2.50 meter but up to 4.00 meter	239.30	Each
	(e) Girth above 4.00 meter	299.10	Each
5.1.6	Earth work in excavation of canals and dhars caring minimum full supply discharge above 28 cumecs (1000 cusecs) in ordinary soil (vide classification of soil item -A) and making the banks with excavated earth in proper profile and clod breaking and laying earth in 225 mm layers with an initial lead of 30 M and lift of 1.5 M all complete as per specifications and direction of E/I.	123.60	Per M^3
5.1.7	Earth work in excavation of canals and dhars caring minimum full supply discharge between28 cumecs (1000 cusecs) and 8.5 cumecs (300 cusecs) in ordinary soil (vide classification of soil item A) and making the banks with excavated earth in proper profile and clod breaking and laying earth in 225 mm layers and rough dressing with an initial lead of 30 M and lift of 1.5 M all complete as per specifications and direction of E/I.	103.00	Per M^3
5.1.8	Earth work in excavation of canals and dhars caring minimum full supply discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item A) and making the banks with excavated earth in proper profile and clod breaking and laying earth in 225 mm layers and rough dressing with an initial lead of 30 M and lift of 1.5 M all complete as per specifications and direction of E/I.	98.80	Per M^3
5.1.9	Earth work in filling for the maintenance of canals having minimum full supply discharge up to 28 cumecs (1000 cusecs) and flood embankment in ordinary soil (vide classification of soil item A) including clod breaking having earth in 225 mm layers and rough dressing of soil with all leads and lift all complete as per specifications and direction of E/I.	98.80	Per M^3

5.1.10	Extra for earth work in hard soil (vide classification of soil item B) all complete as per specifications and direction of E/I.	16.90	Per M^3
5.1.11	Extra for earth work in marshy, slushy and daldal soil (vide classification of soil item F) all complete as per specifications and direction of E/I.	25.30	Per M^3
5.1.12.1	Earth work in excavation in soft rock or ordinary rock (vide classification of soil item C)with initial lead of 10 M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I. (Soft rock where blasting is required and approved by concerned Chief Engineer)	476.50	Per M^3
5.1.12.2	Earth work in excavation in soft rock or ordinary rock (where blasting is not required) (vide classification of soil item C)with initial lead of 10M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I.	289.90	Per M^3
5.1.13.1	Earth work in excavation in soft rock or ordinary rock (vide classification of soil item C)with initial lead of 300M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I. (Soft rock where blasting is required and approved by concerned Chief Engineer)	488.50	Per M^3
5.1.13.2	Earth work in excavation in soft rock or ordinary rock (where blasting is not required) (vide classification of soil item C)with initial lead of 30M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I.	301.80	Per M^3
5.1.14	Earth work in excavation in hard rock (vide classification of soil item D) where blasting is needed with initial lead of 10 mtr and lift of 1.5 mtr including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I.	771.90	Per M^3
5.1.15	Earth work in excavation in hard rock (vide classification of soil item D) where blasting is needed with initial lead of 30 M and lift of 1.5 M including dressing , making the sides in proper profile and dressing the bed in proper grade as well as fine dressing of side and slopes etc. all complete as per specifications and direction of E/I.	783.80	Per M^3
5.1.16	Earth work in excavation of water course in ordinary soil with all lead and lift including clod breaking ,rough dressing all complete as per specifications and direction of E/I.	98.80	Per M^3
5.1.17	Earth work in maintenance of canals having discharge less than 28 cumecs (1000 cusecs) in ordinary soil (vide classification of soil item A) including clod breaking and rough dressing of soil with all leads and lift all complete as per specifications and direction of E/I.	98.80	Per M^3
5.1.18	Earth work in bed clearance or desilting of canals caring full supply discharge of 28 cumecs (1000 cusecs) or more in dead courses of river etc, in ordinary soil and removing the excavated earth in proper profile in spoils etc.with an initial lead of 30 mtr and lift of 1.5M all complete as per specifications and direction of E/I.	100.30	Per M^3
5.1.19	Earth work in bed clearance or desilting of canals having full supply discharge between of 28 cumecs (1000 cusecs) and 8.5cumecs (300 Cusecs) including rough dressing .with all lead and lift all complete as per specifications and direction of E/I.	98.80	Per M^3
5.1.20	Earth work in bed clearance or desilting of canals having full supply discharge between 8.5 cumecs (300 cusecs) and 0.14cumecs (5 Cusecs) and renovation of pynes etc. in ordinary soil and disposal of excavated earth etc.including rough dressing .with all lead and lift all complete as per specifications and direction of E/I.	98.80	Per M^3

5.1.21	Earth work in leap cutting in side slopes and bed of canal in ordinary soil with initial lead of 30 M and lift of 1.5 M including the cost of formation of sub grade of canal lining profiling, leveling ,controlling of slopes and fine dressing ,disposal of excavated earth and nominal dewatering if any all complete as per approved design , specifications and direction of E/I.	96.40	Per M^3
5.1.22	Extra for wet earth all complete as per specifications and direction of E/I.	8.40	Per M^3
5.1.23	Earth work in excavation of filling of E.R.P.set channels, tube well channels (lined or unlined) in ordinary soil with all lead and lift including clod breaking dressing of sides of banks etc. all complete as per specifications and direction of E/I.	98.80	Per M^3
5.1.24	Earth work in filling in flood embankment ,canal banks (canals discharge above 28 cumecs)as well as special repairs of embankment and canal banks in ordinary soil in proper profile (vide classification of soil item A) obtained from borrow area or any other source free from logs, roots or any other ingredients etc. with initial lead of 30 M and initial lift of 1.5 M including breaking the clods to maximum 60 mm.cube ,placing the earth in layers not exceeding 225 mm, thick all complete as per specifications and direction of E/I. **(mode of measurement-sectional measurement of compacted earth)**	111.10	Per M^3
5.1.25	Earth work in filling in canal banks (canals discharge up to 28 cumecs)as well as special repairs of canal banks in ordinary soil in proper profile (vide classification of soil item A) obtained from borrow area or any other source free from logs, roots or any other ingredients etc. with initial lead of 30 M and initial lift of 1.5 M including breaking the clods to maximum 60 mm.cube ,placing the earth in layers not exceeding 225mm, thick all complete as per specifications and direction of E/I. (mode of measurement-sectional measurement of compacted earth)	103.00	Per M^3
5.1.26	Deleted		
5.1.27	Earth work in excavation of foundation trenches in ordinary soil (vide classification of soil item A) and disposal of excavated earth so obtained to a distance up to 50 mtr and average lift of 1.5 M including leveling , ramming the foundation trenches, removing the roots of shrubs etc. all complete as per specifications and direction of E/I.	95.80	Per M^3
5.1.28	Earth work in excavation of foundation trenches in soft rock or ordinary rock (vide classification of soil item C)with initial lead of 300M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I. (Soft rock where **blasting** is required and approved by concerned Chief Engineer)	488.50	Per M^3
5.1.29	Earth work in excavation of foundation trenches in proper section in hard rock (vide classification of soil item D) (non- blasting zone) with chisel and hammer with. disposal of excavated rock to a distance up to 30 M lifts of 1.5 M in proper stack including leveling, dressing of foundation trenches all complete as per specifications and direction of E/I.	348.50	Per M^3
5.1.30	Earth work in excavation of foundation trenches in hard rock (vide classification of soil item D) in proper section by blasting disposal of excavated rock in proper stack sat places beyond working site with initial lead of 30 mtr and lift of 1.5M including leveling, dressing of foundation trenches all complete as per specifications and direction of E/I.	#VALUE!	Per M^3
5.1.31	Earth work in filling in foundation trenches and back filling of structures in layers not exceeding 150 mm thick well watered, rammed and fully compacted and finally dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30 mtr and lift of 1.5 mtr. complete job as per specifications and direction of E/I.	14169.40	Per M^3

5.1.32	Earth work in filling in foundation trenches and back filling of structures in layers not exceeding 150 mm thick well watered, rammed and fully compacted and finally dressed with semi -pervious or suitable earth obtained after cutting of borrow pits within a lead of 30 M and lift of 1.5 M complete job as per specifications and direction of E/I.	15836.20	Per M^3
5.1.33.1	Extra for earth work for ordinary or hard soil (vide classification of soil item-A and B) in each additional lead up to 25 M beyond the initial lead of 30 M as per specifications and direction of E/I.	1666.80	Per M^3
5.1.33.2	Extra for earth work for ordinary or hard soil (vide classification of soil item-C and D) in each additional lead up to 25 M beyond the initial lead of 30 M as per specifications and direction of E/I.	2500.20	Per M^3
5.1.34.1	Extra for earth work for ordinary or hard soil(vide classification of soil item-A and B) of each subsequent lift up to 1 M over the initial lift of 1.5 M as per specification and direction of E/I.	1666.80	Per M^3
5.1.34.2	Extra for earth work for ordinary soft or hard rock(vide classification of soil item-C and D) of each subsequent lift up to 1 M over the initial lift of 1.5 M as per specification and direction of E/I.	2500.20	Per M^3
5.1.35	Deleted		
5.1.36	Trimming and fine dressing the side slopes of canal (of preparation of soil of lining for precast P.C.C. slab) to proper section and profile and disposal of spoil at a suitable place complete job as per specifications and direction of E/I.	16.90	Per % M^3
5.1.37	Providing coarse clean local sand in filling in foundation trenches including ramming, watering ,royalty and all other taxes complete job as per specifications and direction of E/I.	227.00	Per M^3
5.1.38	Watering and consolidation of earth laid in 150 mm to 225 mm layers by manual labour with C.I hammer to achieve minimum 85 % of dry density including supply of water and necessary tools and plants with all leads and lifts all complete as per specifications and direction of E/I.	51.40	Per M^3
5.1.39	Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C by sheep foot roller driven by tractor to achieve minimum 95 % of dry density including sprinkling the required quantity of water, making arrangement for supply and carriage of water with all leads and lifts, finishing the surfaces as per plan and drawing including hire charge of compaction, machine and other tools and plants etc. for lined canal all complete as per specifications and direction of E/I. (mode of measurement-sectional measurement of compacted earth)	#VALUE!	Per M^3
5.1.40	Close timbering in trenches including strutting, shoring and packing cavities(wherever required)depth not exceeding 1.5 M, complete as per specifications and direction of E/I (measurement to be taken of the face area timbered).	134.40	Per M^2
5.1.41	Close timbering in trenches including strutting, shoring and packing cavities(wherever required)depth not exceeding 1.5 M, but up to 3.0 M complete as per specifications and direction of E/I. (measurement to be taken of the face area timbered).	137.90	Per M^2
5.1.42.1	Fine dressing of the canals banks or embankment and turfing with 75 mm thick grass sod obtained within a lead of 150 mtr including the cost of watering the grass surface till it acquires greenness as per specifications and direction of E/I.	1695.80	Per % M^2
5.1.42.2	Extra for each lead of 150 mtr over initial lead of 150 mtr including the cost of watering the grass surface till it acquires greenness as per specifications and direction of E/I.	358.90	Per % M^2
5.1.43	Jungle clearance in borrow area, building premises; flanks, slope of existing road and canal etc,embankment by removing the jungle , bushes from top including weeding out shrubs including roots and leveling complete job as per specifications and direction of E/I.	1.90	Per M^2

5.1.44	Earth work by tractor (Rajashani) with bucket (Doli) with spreader (Tractor leveler or Tractor Dozer) in canal or flood embankment or dhar all types of work like filling and making of canal banks or embankment of earth free from logs, roots or any other gradients, desilting of canal bed and dhar in proper profile with dressing and finishing including new construction, repair or restoration in ordinary soil including cutting, loading, carriage from pit to banks or embankments, unloading, spreading, clod-breaking and laying in layers and construction & removal of dhalas properly with lead of .... meter (lead will be considered as perpendicular distance from C.G. of Pit to C.G. of banks or embankment) and with all lifts all complete as per specifications and direction of E/I. (mode of measurement-sectional measurement of compacted earth)(Lead should be taken C.G to C.G. perpendicular to the bank Maximum Lead Upto - 150 mtr. Note:- Track Path may not be taken as lead)		
5.1.44.1	**For C.G to C.G Lead 15 M**	80.90	Per M^3
5.1.44.2	**For C.G To C.G Lead 30 M**	89.80	Per M^3
5.44.3.	**For C.G to C.G Lead 55 M**	100.90	Per M^3
5.44.4	**For C.G to C.G Lead 80 M**	109.90	Per M^3
5.44.5	**For C.G to C.G Lead 100 M**	115.50	Per M^3
	NOTE :- Add Royalty of Earth Rs 22.00 Where needed without overhead charge & C.P		
5.1.45	Deleted		
5.1.46	Earth work by Mechanical means with help of Excavator, Tipper and Spreader in canal or flood embankment or dhar all types of work like filling and making of canal banks or embankment of earth free from logs, roots or any other gradients, desilting of canal bed and dhar in proper profile with dressing and finishing including new construction, repair or restoration in ordinary soil including cutting, loading, carriage from pit to banks or embankments, unloading, spreading, clod-breaking and laying in layers properly with lead of ..... meter (lead will be considered as track path i.e. half of distance travelled in one cycle i.e. half of haulage path from pit to bank or embankment. Pit will be beyond 150 meter from centre of bank i.e. perpendicular distance from centre of bank to nearest boundary of pit will be more than 150 meter) and with all lifts all complete job as per specifications and direction of E/I. (mode of measurement-sectional measurement of compacted earth)		
5.1.46.1	Beyond 150M but upto 1/2 K.M	123.50	Per M^3
5.1.46.2	Beyond 1/2 K.M but upto 1 K.M	150.00	Per M^3
5.1.46.3	Beyond 1.00 K.M but upto 1.50 K.M	181.10	Per M^3
5.1.46.4	Beyond 1.50 K.M but upto 2.00K.M	212.10	Per M^3
5.1.46.5	Beyond 2.0 K.M but upto 2.50 K.M	243.20	Per M^3
5.1.46.6	Beyond 2.50 K.M but upto 3.00 K.M	274.30	Per M^3
	NOTE :- Add Royalty of Earth Rs 22.00 Where needed without overhead charge & C.P		
5.1.47	Earth work by excavator and spreader or tractor- leveler in lower level canal or flood embankment or dhar (Like, Minor, Sub -minor, Jamindari bundh, Pynes etc where tipper is not needed) all types of work like filling and making of canal banks or embankment of earth free from logs, roots or any other gradients, desilting of canal bed and dhar in proper profile with dressing and finishing including new construction, repair or restoration in ordinary soil including cutting, loading, carriage from pit to banks or embankments, unloading, spreading, clod-breaking and laying in layers properly with lead below 15 meter and with. all lifts all complete job as per specifications and direction of E/I. (mode of measurement-sectional measurement of compacted earth) **NOTE :- Add Royality of Earth Rs 22.00 Where needed without overhead charge & C.P**	55.70	Per M^3

CHAPTER ---V

CANAL EMBANKMENT AND STRUCTURE

5.1 EARTH WORK

S.No.	Description	Quantity	Unit	Rate	Amount	Ref
5.1.1	Preparation of seat of embankment or canals by 75 mm ploughing and removing the grass roots etc.as per specifications and direction of E/I.					
	Unit :- **Per Sqm.**					
	Taking Out put:- 92.94 Sqm					
	Unskilled mazdoor for leveling and ploughing	0.50	nos	206.00	103.00	
	Unskilled mazdoor for removing grass roots and leveling	0.75	nos	206.00	154.50	
					257.50	
	Add Overhead charge & C.P @ 15%				38.63	
					296.13	
	Add cess @ 1%				2.96	
					299.09	
	Rate per Sqm.				3.22	
				say,Rs	**3.20**	Per M^2
5.1.2	Preparation of borrow areas of embankment or canals by removing the grass and the jungle, bushes from the top including weeding out shrubs including roots and leveling all complete as per specifications and direction of E/I.					
	Unit :- **Per Sqm.**					
	Taking Out put:-92.94 Sqm					
	Unskilled mazdoor for leveling and ploughing	0.75	nos	206.00	154.50	
	Add Overhead charge & C.P @ 15%				23.18	
					177.68	
	Add cess @ 1%				1.78	
					179.45	
	Rate per Sqm			Rs	1.93	
				say,Rs.	**1.90**	Per M^2
5.1.3	Jungle clearance and weeding out shrubs including small tree up to 0.50 mtr girth and removal as per specifications and direction of E/I.					
	Unit :- **Per Sqm**					
	Taking Out put:- 92.94 Sqm					
	Unskilled mazdoor for cutting shrubs and trees	1.50	nos	206.00	309.00	
	Unskilled mazdoor for collecting and removing shrubs, weeds and trees.	0.75	nos	206.00	154.50	
					463.50	
	Add Overhead charge & C.P @ 15%				69.53	
					533.03	
	Add cess @ 1%				5.33	
					538.36	
	Rate per Sqm				5.79	

				say, Rs	**5.80**	Per M^2
5.1.4	Cutting of trees along with branches and their removal away from the work site and stacking the same as per specifications and direction of E/I.(Measurement of girth at a height of one metre above the ground level)					
	Unit :- **Each**					
	(a) Girth above 0.50 metre but up to 0.75 metre					
	Carpenter Gr II	0.25	nos	249.00	62.25	
	Unskilled mazdoor	0.50	nos	206.00	103.00	
					165.25	
	Add Overhead charge & C.P@ 15%				24.79	
					190.04	
	Add cess @1%				1.90	
					191.94	
	Rate for each			say,Rs	**191.90**	Each
	(b) Girth above 0.75 metre but up to 1.50 metre					
	Carpenter Gr II	0.50	nos	249.00	124.50	
	Unskilled mazdoor	1	nos	206.00	206.00	
					330.50	
	Add Overhead charge & C.P@15%				49.58	
					380.08	
	Add cess @1%				3.80	
					383.88	
	Rate for each			say,Rs	**383.90**	
	(c) Girth above 1.5 metre but up to 2.50 metre					
	Carpenter Gr II	0.75	nos	249.00	186.75	
	Unskilled mazdoor	2	nos	206.00	412.00	
					598.75	
	Add Overhead charge & C.P@ 15%				89.81	
					688.56	
	Add cess @1%				6.89	
					695.45	
	Rate for each			say,Rs	**695.40**	Each
	(d) Girth above 2.50 metre but up to 4.00 metre					
	Carpenter Gr II	1	nos	249.00	249.00	
	Unskilled mazdoor	3.50	nos	206.00	721.00	
					970.00	
	Add Overhead charge & C.P@15%				145.50	
					1115.50	
	Add cess @ 1%				11.16	
					1126.66	
	Rate for each			say,Rs	**1126.70**	each
	(e) Girth above 4.00 metre					
	Carpenter Gr II	1.50	nos	249.00	373.50	
	Unskilled mazdoor	5	nos	206.00	1030.00	
					1403.50	
	Add Overhead charge & C.P@15%				210.53	
					1614.03	

	Add cess@1%				16.14	
					1630.17	
	Rate for each			say,Rs	**1630.20**	Each
5.1.5	Up rooting of stumps and their removal ,away from the work site as per specifications and direction of E/I.					
	Unit :- Each					
	(a) Girth above 0.50 metre but up to 0.75 metre					
	Unskilled mazdoor	0.50	nos	206.00	103.00	
					103.00	
	Add Overhead charge & C.P@15%				15.45	
					118.45	
	Add cess @1%				1.18	
					119.63	
				say,Rs	**119.60**	each
	(b) Girth above 0.75 metre but up to 1.50 metre					
	Unskilled mazdoor	0.50	nos	206.00	103.00	
					103.00	
	Add Overhead charge & C.P@15%				15.45	
					118.45	
	Add cess @1%				1.18	
					119.63	
				say,Rs	**119.60**	Each
	(c) Girth above 1.5 metre but upto2.50 metre					
	Unskilled mazdoor	0.67	nos	206.00	137.33	
					137.33	
	Add Overhead charge & C.P@15%				20.60	
					157.93	
	Add cess@1%				1.58	
					159.51	
				say,Rs	**159.50**	Each
	(d) Girth above 2.50 metre but up to 4.00 metre					
	Unskilled mazdoor	1	nos	206.00	206.00	
					206.00	
	Add Overhead charge & C.P @15%				30.90	
					236.90	
	Add cess @1%				2.37	
					239.27	
				say, Rs	**239.30**	each
	(e) Girth above 4.00 metre					
	Unskilled mazdoor	1.25	nos	206.00	257.50	
					257.50	
	Add Overhead charge & C.P*15%				38.63	
					296.13	
	Add cess @1%				2.96	
					299.09	
				say,Rs	**299.10**	Each

5.1.6	Earth work in excavation of canals and dhars carrying minimum full supply discharge above 28 cumecs (1000 cusecs) in ordinary soil (vide classification of soil item A) and making the banks with excavated earth in proper profile, clod breaking and laying earth in 225 mm layers with an initial lead of 30 M and lift of 1.5 M all complete as per specifications and direction of E/I.					
	Unit :- Per **Cum**					
	Taking Out put =28.32 Cum					
	Unskilled mazdoor for cutting	5	nos	206.00	1030.00	
	Unskilled mazdoor for carrying	6	nos	206.00	1236.00	
	Unskilled mazdoor for clod breaking	0.75	nos	206.00	154.50	
	Mate	0.25	nos	225.00	56.25	
					2476.75	
	Add Overhead charge & C.P @15%				371.51	
					2848.26	
	Add cess @1%				28.48	
					2876.75	101.58
	Add Royality on Earth					22.00
	Rate Per Cum					123.58
				say,Rs	**123.60**	Per M^3
5.1.7	Earth work in excavation of canals and dhars carrying minimum full supply discharge between28 cumecs (1000 cusecs) and 8.5 cumecs (300 cusecs) in ordinary soil (vide classification of soil item A) and making the banks with excavated earth in proper profile , clod breaking and laying earth in 225 mm layers and rough dressing with an initial lead of 15M and lift of 1.5 M all complete as per specifications and direction of E/I.					
	AS per labour deptt .Norms (Vide T.E.C no 63 dt 7.10.94)					
	Unit :- Per **Cum**					
	Taking Out put =28.32 Cum					
	Unskilled mazdoor for cutting, carrying	9.09	nos	206.00	1872.54	
	Add extra wage of 1/2 no unskilled labour per 28.32 M^3	0.5	nos	206.00	103.00	
					1975.54	
	Add Overhead charge & C.P @15%				296.33	
					2271.87	
	Add cess 1%				22.72	
					2294.59	81.02
	Add Royality on Earth					22.00
	Rate per Cum					103.02
				say,Rs	**103.00**	Per M^3

5.1.8	Earth work in excavation of canals and dhars carrying minimum full supply discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item A) and making the banks with excavated earth in proper profile and clod breaking and laying earth in 225 mm layers and rough dressing with an initial lead of 10 M and lift of 1.5 M all complete as per specifications and direction of E/I.					
	As per labour deptt .Norms (Vide T.E.C no 63 dt 7.10.94)					
	Unit :- Per **Cum**					
	Taking Out put = 28.32 Cum					
	Unskilled mazdoor for cutting, carrying	9.09	nos	206.00	1872.54	
					1872.54	
	Add Overhead charge & C.P@15%				280.88	
					2153.42	
	Add cess@1%				21.53	
					2174.96	76.80
	Add Royality on Earth					22.00
	Rate per Cum					98.80
				say,Rs	**98.80**	Per M^3
5.1.9	Earth work in filling for the maintenance of canals having minimum full supply discharge up to 28 cumecs (1000 cusecs) and flood embankment in ordinary soil (vide classification of soil item A) including clod breaking having earth in 225 mm layers and rough dressing of soil with all leads and lift all complete as per specifications and direction of E/I.					
	As per labour deptt .Norms (Vide T.E.C no 63 dt 7.10.94)					
	Unit :- Per **Cum**					
	Taking Out put =28.32 Cum					
	Unskilled mazdoor for cutting, carrying	9.09	nos	206.00	1872.54	
					1872.54	
	Add Overhead charge & C.P @15%				280.88	
					2153.42	
	Add cess @ 1%				21.53	
					2174.96	76.80
	Add Royality on Earth					22.00
	Rate per Cum					98.80
				say,Rs	**98.80**	Per M^3
5.1.10	Extra for earth work in hard soil (vide classification of soil item B) all complete as per specifications and direction of E/I.					
	Unit :- Per **Cum**					
	Taking Out put =28.32 Cum					
	Unskilled mazdoor for cutting	2	nos	206.00	412.00	
					412.00	
	Add Overhead charge & C.P @15%				61.80	
					473.80	
	Add cess @1%				4.74	
	Rate Per Cum				478.54	16.90

				say,Rs	**16.90**	Per M^3
5.1.11	Extra for earth work in marshy, slushy and daldal soil (vide classification of soil item F) all complete as per specifications and direction of E/I.					
	Unit :- Per **Cum**					
	Taking Out put=28.32 Cum	28.32	Cum			
	Unskilled mazdoor for cutting	1.5	nos	206.00	309.00	
	Unskilled mazdoor for carrying	1.5	nos	206.00	309.00	
					618.00	
	Add Overhead charge & C.P @15%				92.70	
					710.70	
	Add cess @1%				7.11	
					717.81	25.35
	Rate Per Cum			say,Rs	**25.30**	Per M^3
5.1.12.1	Earth work in excavation in soft rock or ordinary rock (vide classification of soil item C)with initial lead of 10 M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I.(Soft rock where blasting is required and approved by concerned Chief Engineer)					
	Unit :- per **Cum**					
	Taking Out put =10 cum					
	Labour					
	Hammer man	2.75	nos	220.00	605.00	
	Unskilled mazdoor for all work	6.50	nos	206.00	1339.00	
	Mason Gr I	0.33	nos	279.00	92.07	
	Blaster	0.33	nos	347.00	114.51	
	Materials					
	Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.					
	Special Gelatin	2.00	Kg	928.10	1856.20	
	Detonator	10	nos	6.52	65.19	
	Fuse coil	1	nos	15.61	15.61	
	Tools and Plants					
	Cost of hire charge of compressor, drilling equipment and other accessories				15.00	
					4102.58	
	Add Overhead charge & C.P@15%				615.39	
					4717.97	
	Add cess @1%				47.18	
					4765.15	476.51
	Rate per Cum			say,Rs	**476.50**	
5.1.12.2	Earth work in excavation in soft rock or ordinary rock (where blasting is not required) (vide classification of soil item C)with initial lead of 10 mtr and lift of 1.5M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I.					
	Unit :- Per **Cum**					
	Taking Out put =10 Cum					

	Labour					
	Hammer man	2.75	nos	220.00	605.00	
	Unskilled mazdoor for all work	8.50	nos	206.00	1751.00	
	Mason Gr I	0.50	nos	279.00	139.50	
					2495.50	
	Add Overhead charge & C.P @15%				374.33	
					2869.83	
	Add cess @1%				28.70	
					2898.52	289.85
		Say	Rs	**289.90**	Per M^3	
5.1.13.1	Earth work in excavation in soft rock or ordinary rock (vide classification of soil item C)with initial lead of 300 M and lift of 1.5 M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I. (Soft rock where blasting is required and approved by concerned Chief Engineer)					
	Unit :- Per **Cum**					
	Taking Out put= 10 Cum					
	Labour					
	Hammer man	2.75	nos	220.00	605.00	
	Unskilled mazdoor for all work	7.00	nos	206.00	1442.00	
	Mason Gr I	0.33	nos	279.00	92.07	
	Blaster	0.33	nos	347.00	114.51	
	Materials					
	Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.					
	Special Gelatin	2.00	Kg	928.10	1856.20	
	Detonator	10	nos	6.52	65.19	
	Fuse coil	1	nos	15.61	15.61	
	Tools and Plants					
	Cost of hire charge of compressor, drilling equipment and other accessories				15.00	
					4205.58	
	Add Overhead charge & C.P @15%				630.84	
					4836.42	
	Add cess @1%				48.36	
					4884.78	488.48
		Say	Rs	**488.50**	Per M^3	
5.1.13.2	Earth work in excavation in soft rock or ordinary rock (where blasting is not required) (vide classification of soil item C)with initial lead of 30M and lift of 1.5M including dressing , making the sides in profile and dressing the bed in proper grade etc. all complete as per specifications and direction of E/I.					
	Unit :- Per **Cum**					
	Taking Out put =10 Cum					
	Labour					
	Hammer man	2.75	nos	220.00	605.00	
	Unskilled mazdoor for all work	9.00	nos	206.00	1854.00	