



**GOVERNMENT OF HIMACHAL PRADESH
PUBLIC WORKS DEPARTMENT**



**ANALYSIS OF RATES
2016
PMGSY
BRIDGE WORKS**

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ANNEXURE-A

USAGE RATES OF PLANT & MACHINERY

Sr.No.	Description of machinery		Output of Machine		Unit	Av. Rate 2016
	Machine	Activity	Unit	Output		
1	Air Compressor 210 cfm	Supplying compressed air	cfm	210	per hour	465
2	Batch mix HMP 40-60 TPH	BM, DBM, SDBC, PM	t/h	50	per hour	16896
3	Batch type HMP 30/40 TPH	BM, DBM, SDBC, PM	t/h	35	per hour	13798
4	Bitumen boiler oil fired	Heating of bitumen				
	200 litre		litre / h	400	per hour	445
	1000 litre		litre / h	2000	per hour	1408
5	Bitumen emulsion pressure	Applying bitumen tack coat	sqm/h	1750	per hour	1569
6	Concrete mixer 0.28/0.4 cum	Mixing of ingredients	cum/h	2.50	per hour	350
7	Crane upto 8T	Lifting of materials			per hour	916
8	Dozer D 50	Dozing cutting	cum/h	200.00	per hour	6285
			cum/h	100.00		3160
9	Electric generator set, 125 KVA	Electricity generation	KVA	100.00	per hour	1125
10	Emulsion Sprayer with Tractor	Spraying of Emulsion			per hour	1258
11	Front end-loader 1 cum bucket capacity @ 45 cum/hour	Loading Aggregates	cum/h	45.00	per hour	1281
		Loading Soil	cum/h	100.00		1321
12	Hydraulic broom with tractor	Surface cleaning	sqm/h	1250	per hour	528
13	Hydraulic Excavator 0.9 cum	Excavation	cum/h	100.00	per hour	1843
14	Hydraulic self propelled chip	Surface Dressing	sqm/h	1500	per hour	4130
15	Jack Hammer with tractor	Pavement breaking & rock drilling	cum/h	05. to 1	per hour	2316
16	Joint Cutting Machine with 2-3	Cutting of Joints	h		per hour	1191
17	Mixall 6-10 t capacity	Mixing of bituminous materials	t/h	8.00	per hour	2519
18	Motor Grader	Scarifier & levelling	cum/h	200.00	per hour	3513
				50.00		2318
19	Needle vibrator	Vibrating cement concrete mix	cum/h	3.50	per hour	113
20	Paver finisher	Laying/spreading	t/h	75.00	per hour	4300
21	Plate compactor	Compaction	cum/h		per hour	105
22	Plate vibrator	Compaction	cum/h		per hour	98
23	Screed vibrator	Compaction	cum/h		per hour	98
24	Smooth wheeled 80-100 kN tandem	Compaction of Sub-base/ Asphalt	cum/h	30.00	per hour	1319
25	Stone crusher (Integrated) of 200	Crushing of Spalls	t/h	200.00	per hour	3983
26	Three wheel 80-100 kN Static Roller	Compaction/ Rolling			per hour	
		Earth:- Embankment or sub-grade	cum/h	80/70		791
		Sub-base G-I	cum/h	10.00		745
		Sub-base G-II/G-III	cum/h	8.00		741
		WMM	cum/h	16.00		741
		BUSG	cum/h	10.00		741
		BM 50/75 mm	cum/h	12.00		741
		Premix 20 mm	sqm/h	250.00		741
		Seal Coat	sqm/h	500.00		741
		Surface Dressing 1st Coat	sqm/h	400.00		741

Sr.No.	Description of machinery		Output of Machine		Unit	Av. Rate 2016
	Machine	Activity	Unit	Output		
		Surface Dressing 2ndCoat	sqm/h	500.00		741
27	Tipper 5.5 cum/10 t	Carriage	cum/trip	5.50	per hour	513
28	Tractor with Disc Harrows	Pulverisation of soil	cum/h	80.00	per hour	801
29	Tractor with ripper @ 60 cum per	Ripping Pavements, uprooting	cum/h	60.00	per hour	687
30	Tractor with trolley	Transportation of materials	t/trip	3 to 5	per hour	581
31	Tractor with Rotavator	Scarifier	cum/h	25.00	per hour	688
32	Tractor Mount Grader	Spreading	cum/h	26.00	per hour	1192
33	Truck 10 t capacity	Carriage	cum/trip	5.50	per hour	589
34	Vibratory roller 80-100 kN	Compaction of soil WMM	cum/h	100.00	per hour	2417
		Compaction of BM	cum/h	60.00		2417
35	Water tanker 6 kl capacity (Truck	Carriage of water	litre / h	12000	per hour	500
36	Wet mix plant (Pug Mill)	Wet Mix	cum/h	25	per hour	1840
37	Grout pump with agitator and accessories		hour	0	0	682
38	Concrete Pump		hour	0	0	1565
39	Epoxy Injection gun		hour	0	0	809
40	Stressing jack with pump		hour	0	0	328
41	Grouting pump with agitator		hour	0	0	680
42	i) Hire charges for jack of 40 tonne lifting capacity.		Day	0	0	546
43	Mastic cooker 1 tonne capacity		hour	0	0	109
44	Trailer 35 tonne capacity for transporting to site.		tonne.km	0	0	2202
45	Trailor 30 tonne capacity during placement.		hour	0	0	2224
46	Transit Mixer 4.0/4.5 cum		hour	0	0	1601
47	Transit Mixer 30 cum		hour	0	0	1464
48	Integrated Stone Crusher 100THP	100 TPH	hour	0	0	15044
49	Integrated Stone Crusher 200 HP	200 TPH	hour	0	0	20872
50	Hire and running charges of hydraulic piling rig with power unit and complete accessories including shifting from one bore location to another.		hour	0	0	8327

ANNEXURE-B

BASIC RATES OF LABOUR

Sr. No.	Description of Labour	Unit	Rate including 1/6th Paid Holiday (Rs.)
1	Bhisti	day	210.00
2	Bitumen Sprayer	day	210.00
3	Blacksmith	day	315.00
4	Blaster	day	259.00
5	Carpenter 1st Class	day	351.17
6	Chips spreader	day	210.00
7	Chiseller	day	210.00
8	Dresser (Skilled)	day	210.00
9	Driller	day	210.00
10	Electrician	day	315.00
11	Fitter	day	259.00
12	Mason (1st class)	day	315.00
13	Mason (2nd Class)	day	259.00
14	Mate	day	210.00
15	Mazdoor (Unskilled)	day	210.00
16	Mazdoor (Semi skilled)	day	210.00
17	Mazdoor (Skilled)	day	210.00
18	Painter (Ist class)	day	259.00
19	Plumber	day	259.00
20	Surveyor	day	315.00
21	White Washer	day	210.00
22	Driver	day	274.17

Rates approved by the Govt. of HP vide notification No. Fin-(PR)B(7)-33/2010 dated 17-04-2015.

ANNEXURE-C
BASIC RATES OF MATERIAL

Sr. No.	Description	Unit	Av. Rate
1	Aggregate - Grading I (40 mm nominal Size) 37.25 mm - 25 mm	cum	1093.00
2	Aggregate - Grading I (40 mm nominal Size) 5 mm and below	cum	1227.00
3	Aggregate - Grading II (19 mm nominal Size) 10 mm - 5 mm	cum	5573.00
4	Aggregate - Grading II (19 mm nominal Size) 25 mm – 10 mm	cum	5573.00
5	Aggregate - Grading II (19 mm nominal Size) 5 mm and below	cum	1158.00
6	Aggregate 10 mm	cum	1281.00
7	Aggregate 20 mm	cum	1276.00
8	Aggregate 40 mm	cum	1069.00
9	Aggregate- Crushable type such as moorum or Gravel for Grading I	cum	907.00
10	Aggregate- Crushable type such as moorum or Gravel for Grading II	cum	914.00
11	Aggregate- Crushable type such as moorum or Gravel for Grading III	cum	957.00
12	Aggregate-Grading I 90 mm to 45 mm	cum	952.00
13	Aggregate-Grading II 63 mm to 45 mm	cum	999.00
14	Aggregate-Grading III 53 mm to 22.4 mm	cum	1067.00
15	Aggregates 22.4 mm to 2.36 mm for wet mix macadam	cum	1103.00
16	Aggregates 45 mm to 22.4 mm for wet mix macadam	cum	1073.00
17	Aluminium sheeting (1.5 mm thick)	sqm	406.00
18	Angle Iron 50 mm x 50 mm x 6 mm	Kg	74.00
19	Binding Material for road	cum	663.00
20	Binding wire	kg	83.00
21	Bitumen (Crumb Rubber Modified)	tonne	52350.00
22	Bitumen (S-90)	t	50100.00
23	Bitumen Emulsion (RS-1)	t	50383.00
24	Bitumen Emulsion (SS-1)	t	52574.00
25	Bitumen emulsion (MS)	t	60519.00
26	Bond stone (400 mm x 150 mm x 150 mm)	No.	30.00
27	Brick 1st Class	No.	9.00
28	Cement	t	7688.00

Sr. No.	Description	Unit	Av. Rate
29	Crushed Sand or Grit Passing 2.36 mm and retained on 180 micron	cum	1093.00
30	Crushed Stone Aggregate 26.5 mm to 75 micron	cum	1145.00
31	Crushed Stone chipping 13.2 mm nominal size	cum	1220.00
32	Crushed Stone Chipping 6.7 mm size 100% passing 11.2 mm and retained on 2.36 mm	cum	1231.00
33	Crushed Stone Chipping 6.7 mm size 100% passing 9.5 mm and retained on 2.36 mm	cum	1231.00
34	Crushed Stone chipping 9.5 mm nominal size	cum	1227.00
35	Crushed Stone Coarse Aggregate Passing 53 mm and retained on 2.8 mm	cum	1130.00
36	Electric Detonator	each	16.00
37	Filter media	cum	751.00
38	Fine aggregate/Crushed sand 2.36 mm to 75 micron	cum	1132.00
39	Fuel wood	Qtl	863.00
40	Gelatine 80 per cent	kg	98.00
41	Graded stone aggregate	cum	1029.00
42	Hand Broken Metal 40 mm size	cum	1022.00
43	Key Aggregates passing 22.4 mm and retained on 2.8 mm	cum	1117.00
44	Lime	t	11793.00
45	Loose stone for filling	cum	760.00
46	RCC Pipe NP2 (1200 mm dia) i/c collars	m	3809.00
47	RCC Pipe NP2 (1000 mm dia) i/c collars	m	3583.00
48	RCC Pipe NP2 (900 mm dia) i/c collars	m	3016.00
49	RCC Pipe NP3 (900 mm dia) i/c collars	m	4119.00
50	Road marking paint	litre	422.00
51	Sand (Coarse)	cum	1101.00
52	Sand (Fine)	cum	1111.00
53	Steel Reinforcement (HYSD Bars)	t	56871.00
54	Steel Reinforcement (MS Round Bars)	t	52548.00
55	Steel Reinforcement (TMT Bars)	t	55559.00
56	Stone Boulder of size 150 mm and below (minimum 25 kg net)	cum	766.00
57	Stone Chips 12 mm size	cum	1208.00

Sr. No.	Description	Unit	Av. Rate
58	Stone Chips 13.2 mm to 5.6 mm	cum	1217.00
59	Stone Crushed Aggregate 11.2 mm to 0.09 mm	cum	1218.00
60	Stone for Coarse Rubble Masonry 1st Sort	cum	1368.00
61	Stone for Coarse Rubble Masonry 2nd Sort	cum	1303.00
62	Stone for Random Rubble Masonry	cum	1170.00
63	Stone for Stone Set Pavement (300 mm x 200 mm x 150 mm)	No.	21.00
64	Stone Screening - Type A 13.2 mm for Grading-1	cum	1213.00
65	Stone Screening - Type A 13.2 mm for Grading-2	cum	1213.00
66	Steel (ISMC) 100 mm	t	50100.00
67	Stone Screening - Type B 11.2 mm for Grading-2	cum	1213.00
68	Stone Screening - Type B 11.2 mm for Grading-3	cum	1213.00
69	Water	kl	102.00
70	Well graded Granular Base Material - Grading A 2.36 mm below	cum	956.00
71	Well graded Granular Base Material - Grading A 26.5 mm to 4.75 mm	cum	913.00
72	Well graded Granular Base Material - Grading A 53 mm to 26.5 mm	cum	872.00
73	Well graded Granular Base Material - Grading B 2.36 mm below	cum	888.00
74	Well graded Granular Base Material - Grading B 26.5 mm to 4.75 mm	cum	880.00
75	Well graded Granular Base Material - Grading C 2.36 mm below	cum	863.00
76	Well graded Granular Base Material - Grading C 2.36 mm below	cum	883.00
77	Well Graded Material for Sub-Base - Grading I 2.36 mm below	cum	856.00
78	Well Graded Granular sub-base material of Grading-I as per table 400.1 of Specification.	cum	938.00
79	Well Graded Granular sub-base material of Grading-II as per table 400.1 of Specification.	cum	924.00
80	Well Graded Granular sub-base material of Grading-III as per table 400.1 of Specification.	cum	914.00
81	Well Graded Gravel/Soil aggregate base material of Grading-A as per table 400.2 of Specification.	cum	920.00
82	Well Graded Gravel/Soil aggregate base material of Grading-B as per table 400.2 of Specification.	cum	938.00
83	Well Graded Gravel/Soil aggregate base material of Grading-C as per table 400.2 of Specification.	cum	946.00
84	Well Graded Gravel/Soil aggregate surface course material as per table 400.3 of Specification.	cum	922.00

Sr. No.	Description	Unit	Av. Rate
85	Well Graded Gravel/Soil aggregate base material of nominal maximum size 80 mm as per table 2.3 of IRC SP 77-2008.	cum	929.00
86	Well Graded Gravel/Soil aggregate base material of nominal maximum size 40 mm as per table 2.3 of IRC SP 77-2008.	cum	935.00
87	Well Graded Gravel/Soil aggregate base material of nominal maximum size 20 mm as per table 2.3 of IRC SP 77-2008.	cum	936.00
88	Well Graded Gravel/Soil aggregate base material of nominal maximum size 10 mm as per table 2.3 of IRC SP 77-2008.	cum	910.00
89	Well Graded Gravel/Soil aggregate base material of nominal maximum size 5 mm as per table 2.3 of IRC SP 77-2008.	cum	958.00
90	Apoxy Primer	Ltr.	206.00
91	Apoxy Paint	Ltr.	374.00
92	Steel paint	Ltr.	293.00
93	1.6 mm thick MS Sheet strengthened by 25mmX5mm MS flat iron on logo and middle plate angle iron 25mm X 25 mm X 5 mm on bottom plate painting with stove enameled paint on both sides as per MORD specification.	Per Sqm	1451.00
94	PVC pipe 100 mm dia.	Per rmt.	260.00
95	G.I.Wire		82.00
96	Granular material (Natural occurring, soil gravel mixture / quarry waste, Kankar, laterite, dhandla.		376.00
97	1.5 mm thick M.S. Sheet duly painted with stove enamelled paint including lettering, signs, border, message with reflective tape of engineering grade required size, shade and colour as per Technical Specifications	Per Sqm	1554.00
98	Cement Primer as per specifications	Ltr.	149.00
99	Paint conforming to requirement of Clause 1701.3.8	Ltr.	312.00
100	Compensation for earth taken from private land	Cum	63.00
101	Corrosion resistant structural steel grating including 5 per cent wastage	Kg	151.00
102	G I pipe 100 mm dia	Mtr.	837.00
103	MS tubes	Kg	91.00
104	Angle iron	kg	79.00
105	Wire mesh 50mm x 50mm size of 3mm wire	kg	134.00
106	Epoxy	kg	213.00
107	Accelerator compound for guniting @ 4 per cent of weight of cement	kg	156.00
108	Nipples	each	155.00
109	Pre-packed polymer concrete based on epoxy system complete with curing compound, initiator and promoter including 5 per cent wastage.	kg	17.00

Sr. No.	Description	Unit	Av. Rate
110	Epoxy resin-hardener mix for prime coat	kg	1804.00
111	Epoxy mortar	kg	2738.00
112	Epoxy resin -hardener mix for seal coat.	kg	1784.00
113	Quick setting compound	kg	106.00
114	Acrylic polymer bonding coat	Litre	289.00
115	pre-packed cement based polymer mortar of strength 45 Mpa at 28 days	kg	17.00
116	Epoxy resin with pot life not less than 60-90 minutes and satisfying testing as per clause 2803.9	kg	1796.00
117	HTS strand including 5 per cent wastage and extra length for jacking	tonne	138583.00
118	HDPE pipes 90 mm dia including 5 per cent wastage	metre	264.00
119	HDPE pipes 75mm dia including 5 per cent wastage	metre	218.00
120	Tube anchorage set complete with bearing plate, permanent wedges etc	each	481.00
121	MS plates for deviator (where deviator blocks are not provided)	tonne	58919.00
122	v) Wooden packing	cum	57606.00
123	MS Bolt and nuts	kg	8590.00
124	Polyester trinagular synthetic fibres	kg	427.00
125	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	189.00
126	Permeable synthetic geotextile including 5 per cent for overlap and wastage	sqm	178.00
127	4mm GI wire crates woven in mesh size of 100 mm x 100 mm.	sqm	191.00
128	Admixture @ 0.4 per cent of cement	kg	160.00
129	H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking	tonne	138583.00
130	Sheathing duct ID 66 mm along with 5 per cent extra length $40 \times 1.05 = 42$ m.	metre	245.00
131	i) Bitumen 80/100 or 60/70 or 30/40 @ 10.2 per cent by weight of mix. $2 \times 10.2/100 = 0.204$	tonne	52236.00
132	ii) Crusher stone dust @ 31.9 per cent by weight of mix $= 2 \times 31.9/100 = 0.638$ tonnes $= 0.638/1.625 = 0.39$	cum	410.00
133	Lime stone dust filler with calcium carbonate content not less than 80 per cent by weight @ 17.92 per cent by weight of mix $= 2 \times 17.92/100 = 0.36$	tonne	7715.00
134	Pre-coated stone chips of 9.5 mm nominal size for skid resistance $= 72.46 \times 0.005/10 = 0.036$	cum	1100.00
135	Corrosion resistant Structural steel including 5 per cent wastage	Kg	115.00
136	GI pipe 100mm dia	metre	788.00
137	GI bolt 10 mm Dia	each	9.00
138	Galvanised MS flat clamp	each	176.00

Sr. No.	Description	Unit	Av. Rate
139	LDO for steam curing	Litre	59.00
140	Helical pipes 600mm diameter	metre	6927.00
141	Tie rods 20mm diameter	each	119.00
142	Galvanised M.S plate 200 mm wide,12 mm thick @ 94.20 kg/sqm including 5 per cent wastage	kg	78.00
143	Copper plate - 12m long x 250 mm wide	kg	834.00
144	20 mm thick compressible fibre board 12 m long x 25 cm deep.	sqm	405.00
145	Premoulded joint filler 12 m long,20 mm thick and 300 mm deep.	sqm	1807.00
147	Polymer modified bitumen	kg	60.00
148	Galvanised structural steel plate 200 mm wide,6 mm thick, 12 m long (2.4 sqm) @ 47.10 kg/sqm including 5 per cent wastage	kg	103.00
149	Supply of 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), complete as per approved drawings and standard specification conforming to clause 2606 of MoRT&H Specification	metre	8306.00
150	Galvanised angle sections 100mm x 100mm of 12mm thickness weldable structural steel as per IS: 2062, 2 nos. of 12 m length each @ 17.7 kg/m and 5 per cent wastage.	kg	103.00
151	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	19244.00
152	Supply of complete assembly of strip seal expansion joint comprising of edge beams, anchorage, strip seal element and complete accessories as per approved specifications and drawings.	metre	21876.00
153	Supply of a modular strip/box seal joint 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	24967.00
154	Supply of a modular 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	30353.00
155	Cast steel rocker bearing assembly of 250 tonne design load capacity duly painted complete with all its components as per drawing and specifications	each.	73472.00
156	Forged steel roller bearing of 250 tonne design load capacity duly painted complete with all its components as per drawing and specifications	each.	111803.00
157	PTFE sliding plate bearing assembly of 80 tonnes design load capacity duly painted complete with all its components as per drawing and Technical Specifications	each.	184472.00

Sr. No.	Description	Unit	Av. Rate
158	Elastomeric bearing assembly consisting of 7 layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation, complete with all components as per drawing and Technical Specifications.	each.	91928.00
159	Supply of sliding plate bearing of 80 tonne design capacity complete as per drawings and Technical Specifications.	each.	56446.00
160	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 as per clause 2006 and complete as per drawings and Technical Specifications.	each.	185583.00

Chapter-I:

Carriage of Materials

Preamble:

1. The provision of tipper has been made in hours where lead is known like disposal of the materials up to 1000 m. In case where lead is variable like carriage of hot mix or concrete mix from plant or earth from borrow areas, provision has been made in term soft tone-kilometer (t-km), which can be adopted as per actual conditions.
2. Provision has been made for a tractor trolley instead of tipper where dismantled materials of sorts or material having more volume as compared with weight are required to be transported. This arrangement will be economical.
3. The cost of carriage will vary depending upon the riding surface of the road. Provision has accordingly been made considering surface road, unsurfaced gravel roads and kutcha tracks.
4. Analysis for loading has been done both for manual and mechanical means for adoption as per actual situations.
5. Where loading is done by mechanical plant like H.M.P. or batching plant and there is automatic loading in tippers, provision of loading and un-loading has been made at the rate of 10 percent of cost of carriage to account for time by the tipper for getting loaded at the plant and un-loaded in the paver or otherwise at the site.
6. Although the market rates for supply of aggregate at site are generally taken for estimation purpose, rate for crushing of aggregate have also been analysed as most of the contractors prefer to crush their own aggregates in case of large projects exceeding Rs 50 crore in value.
7. The cost of material shall be evaluated considering the cost at crushing plants and cost of carriage including loading and unloading or the rates for supply at site depending upon system being followed at particular locations. These rates should be compared with the rates for own crushing and carriage by the construction agency.

CHAPTER-1
CARRIAGE OF MATERIALS

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
1.1		Loading and Unloading of Stone Boulder/Stone aggregates / Sand/Kanker / Moorum.	cum			
		Placing tipper at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip				
		Unit = cum				
		Taking output = 5.5 cum				
		Time required for				
		i) Positioning of tipper at loading point		1 Min		
		ii) Loading by front end loader 1 cum 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	0.330	513.00	169.29
		Front end-loader 1 cum bucket capacity @ 25 cum/hour	hour	0.330	1281.00	422.73
		b) Overhead charges @ 2.5 % on (a)				14.80
		c) Contractor's profit @ 10 % on (a+b)				60.68
						667.50
		Add 1% labour cess				6.68
		Cost for 5.5 cum = a+b+c				674.18
		Rate per cum = (a+b+c)/ 5.5				122.58
		Note Unloading will be by tipping.			say	<u>123.00</u>
1.2		Loading and Unloading of Boulders by Manual Means				
		Unit = cum				
		Taking output = 5.5 cum				
		a) Labour				
		Mate	day	0.110	210.00	23.10
		Mazdoor for loading and unloading	day	0.750	210.00	157.50
		b) Machinery				
		Tipper 5.5 tonne capacity	hour	0.750	513.00	384.75
		c) Overhead charges @ 2.5 % on (a+b)				14.13
		d) Contractor's profit @ 10 % on (a+b+c)				57.95

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							637.43
			Add 1% labour cess				6.37
			Cost for 5.5 cum = a+b+c+d				643.81
			Rate per cum = (a+b+c+d)/5.5				117.06
		Note	Unloading will be by tipping.			say	117.00
1.3			Loading and Unloading of Cement or Steel by Manual Means and Stacking.				
			Unit = tonne				
			Taking output = 10 tonnes				
			a) Labour				
			Mate	day	0.080	210.00	16.80
			Mazdoor for loading and unloading	day	2.000	210.00	420.00
			b) Machinery				
			Truck 10 tonne capacity	hour	2.000	589.00	1178.00
			c) Overhead charges @ 2.5 % on (a+b)				40.37
			d) Contractor's profit @ 10 % on (a+b+c)				165.52
							1820.69
			Add 1% labour cess				18.21
			Cost for 10 tonnes = a+b+c+d				1838.89
			Rate per tonnes = (a+b+c+d)/10				183.89
						say	184.00
1.4			Cost of Haulage Excluding Loading and Unloading				
			Haulage of materials by tipper excluding cost of loading, unloading and stacking.				
			Unit = t.km				
			Taking output 10 tonnes load and lead 10 km = 100 t.km				
		(i)	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	0.400	513.00	205.20
			Time taken for empty return trip.	hour	0.290	513.00	148.77
			b) Overhead charges @ 2.5 % on (a)				8.85
			c) Contractor's profit @ 10 % on (a+b)				36.28
							399.10
			Add 1% labour cess				3.99
			cost for 100 t km = a+b+c				403.09
			Rate per t.km = (a+b+c)/100				4.03
						say	4.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
1.4		(ii)	Unsurfaced Graveled Road				
			Speed with load: 20 km / hour				
			Speed for empty return trip :30 km / hour				
			a) Machinery				
			Tipper 10 tonnes capacity				
			Time taken for onward haulage with load	hour	0.500	513.00	256.50
			Time taken for empty return trip	hour	0.330	513.00	169.29
			b) Overhead charges @ 2.5 % on (a)				10.64
			c) Contractor's profit @ 10 % on (a+b)				43.64
							480.08
			Add 1% labour cess				4.80
			Cost for 100 t .km = a+b+c				484.88
			Rate per t.Km = (a+b+c)/100				4.85
						say	<u>4.80</u>
1.4		(iii)	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 capacity				
			Time taken for onward haulage	hour	1.000	513.00	513.00
			Time taken for empty return trip	hour	0.670	513.00	343.71
			b) Overhead charges @ 2.5 % on (a)				21.42
			c) Contractor's profit @ 10 % on (a+b)				87.81
							965.94
			Add 1% labour cess				9.66
			Cost for 100 t .km = a+b+c				975.60
			Rate per t.Km = (a+b+c)/100				9.76
						say	<u>9.80</u>
1.5			Hand Broken Stone Aggregates 63 mm Nominal Size				
			Supply of quarried stone, hand breaking into coarse aggregate 63 mm nominal size (passing 80 mm and retained on 50 mm sieve) and stacking as directed				
			Unit = cum				
			Taking output = 1 cum				
			a) Labour				
			Mate	day	0.060	210.00	12.60
			Mazdoor	day	1.500	210.00	315.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		b) Material				
		Supply of quarried stone 150 - 200 mm size	cum	1.100	766.00	842.60
		c) Overhead charges @ 2.5 % on (a+b)				29.26
		d) Contractor's profit @ 10 % on (a+b+c)				119.95
						1319.40
		Add 1% labour cess				13.19
		Rate per cum = a+b+c+d				1332.59
					say	<u>1333.00</u>
		Labour Rate				327.60
		Overhead charges 2.5 %				8.19
		Contractor's profit @ 10%				33.58
						369.37
		Add 1% labour cess				3.69
		Rate per cum				373.06
					say	<u>373.00</u>
1.6		Crushing of Stone Aggregates 13.2 mm Nominal Size.				
		Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 13.2 mm nominal size.				
		Unit = cum				
		Taking Output = 600 cum at crusher location.				
		a) Labour				
		Mate	day	0.760	210.00	159.60
		Mazdoor Skilled	day	2.000	210.00	420.00
		Mazdoor including breaking of any oversize boulder.	day	17.000	210.00	3570.00
		b) Material				
		Stone Boulder of size 150 mm and below	cum	800.000	766.00	612800.00
		c) Machinery				
		Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	3983.00	23898.00
		Front end loader 1 cum bucket capacity	Hour	20.000	1281.00	25620.00
		Tipper 5.5 cum capacity	Hour	20.000	513.00	10260.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		d) Overhead charges @ 2.5 % on (a+b+c)				16918.19
		e) Contractor's profit @ 10 % on (a+b+c+d)				69364.58
						763010.37
		Add 1% labour cess				7630.10
		Cost for 600 cum = a+b+c+d+e				770640.47
		Rate per cum = (a+b+c+d+e)*0.95/600				1220.18
					say	<u>1220.00</u>
		Labour Rate				4149.60
		Overhead charges 2.5 %				103.74
		Contractor's profit @ 10%				425.33
						4678.67
		Add 1% labour cess				46.79
		Rate per 600cum				4725.46
		Rate per cum				7.48
					say	<u>7.00</u>
		Note 1. 800 cum of stone boulders are needed to get 600 cum of stone chips of size 13.2 mm.				
		2. 95 per cent of above cost will be attributed to the production of 600 cum of stone chips of 13.2 mm size and balance 5 per cent to the production of stone dust which comes out as a by-product.				
		3. The integrated stone crusher includes primary and secondary crushing units.				
1.7		Crushing of Stone Aggregates 20 mm Nominal Size				
		Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 20 mm nominal size.				
		Unit = cum				
		Taking Output = 670 cum at crusher location.				
		a) Labour				
		Mate	day	0.760	210.00	159.60
		Mazdoor Skilled	day	2.000	210.00	420.00
		Mazdoor including breaking of any size boulder.	day	17.000	210.00	3570.00
		b) Material				
		Stone Boulder of size 150 mm and below	cum	800.000	766.00	612800.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			c) Machinery				
			Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	3983.00	23898.00
			Front end loader 1 cum bucket capacity	Hour	20.000	1281.00	25620.00
			Tipper 5.5 cum capacity	Hour	20.000	513.00	10260.00
			d) Overhead charges @ 2.5 % on (a+b+c)				16918.19
			e) Contractor's profit @ 10 % on (a+b+c+d)				69364.58
							763010.37
			Add 1% labour cess				7630.10
			Cost for 670 cum = a+b+c+d+e				770640.47
			Rate per cum = (a+b+c+d+e)*0.90/670				1035.19
						say	<u>1035.00</u>
			Labour Rate				4149.60
			Overhead charges 2.5 %				103.74
			Contractor's profit @ 10%				425.33
							4678.67
			Add 1% labour cess				46.79
			Cost for 750 cum =				4725.46
			Rate per cum /750				<u>6.30</u>
						say	<u>6.00</u>
		Note	1. 800 cum of stone boulders are needed to get 600 cum of stone chips of size 20 and 40 mm.				
			2. 90 per cent of above cost will be attributed to the production of 670 cum of stone aggregates of 20mm size and balance 10 per cent will be for smaller size aggregates and stone dust which comes out as a by-product.				
			3. The integrated stone crusher includes primary and secondary crushing units.				
1.8			Crushing of Stone Aggregates 40 mm Nominal Size				
			Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 40 mm nominal size.				
			Unit = cum				
			Taking Output = 750 cum at crusher location.				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		a) Labour				
		Mate	day	0.760	210.00	159.60
		Mazdoor Skilled	day	2.000	210.00	420.00
		Mazdoor	day	17.000	210.00	3570.00
		b) Material				
		Stone Boulder of size 150 mm and below	cum	800.000	766.00	612800.00
		c) Machinery				
		Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	3983.00	23898.00
		Front end loader 1 cum bucket capacity	Hour	20.000	1281.00	25620.00
		Tipper 5.5 cum capacity	Hour	20.000	513.00	10260.00
		d) Overhead charges @ 2.5 % on (a+b+c)				16918.19
		e) Contractor's profit @ 10 % on (a+b+c+d)				69364.58
						763010.37
		Add 1% labour cess				7630.10
		Cost for 750 cum = (a+b+c+d+e)x0.85				770640.47
		Rate per cum = (a+b+c+d+e)x0.85/750				1027.52
					say	<u>1028.00</u>
		Labour Rate				4149.60
		Overhead charges 2.5 %				103.74
		Contractor's profit @ 10%				425.33
						4678.67
		Add 1% labour cess				46.79
		Cost for 750 cum =				4725.46
		Rate per cum /750				6.30
					say	<u>6.00</u>
		Note 1. 800 cum of stone boulders are needed to get 600 cum of stone chips of size 13.2 mm.				
		2. 85 per cent of above cost will be attributed to the production of 750 cum of stone aggregates of 40mm size and balance 15 per cent will be for smaller size aggregates and stone dust which comes out as a by-product.				
		3. The integrated stone crusher includes primary and secondary crushing units.				

Chapter-2:

Foundation

Preamble:

1. Excavation for structure has been provided both by manual and mechanical means. The rate relevant to a particular situation may be adopted.
2. The earth excavated from foundation has been proposed to be backfilled and balance quantity utilized for road work locally except for marshy soil where disposal has been provided.
3. The rock foundations are required to be prepared which has been analysed.
4. In case rocks excavation has been considered up to a depth of 3 m only.
5. Embedment of foundation in soft and hard rocks has been provided as required by the specifications.
6. Dewatering has been provided in excavations for foundations. In case dewatering is not required for a particular site condition, the same may be omitted.
7. Mixing of cement concrete has been considered both by using concrete mixer and batching plant. The rate can be adopted depending upon availability of equipment as approved by the Engineer.
8. Concrete batching plant is generally placed within one km of the bridge site. In case of longer lead, transportation cost may be worked out based on tone km.
9. The coarse and fine aggregate for cement concrete shall be as per IS : 383.
10. Description of item has been given very briefly. Relevant clauses of M & T & H Specifications may be referred for detailed specifications.
11. The rate analysis for well foundation has been included for diameter varying from 6 m to 12 m. Well for twin D-type has also been included.
12. Pneumatic sinking is a specialized job. All safety precaution as per IS : 4138 are required to be taken. Medical supervision for such work is considered very essential. Depth of pneumatic sinking has been restricted to 30 m below normal water level.
13. Rate analysis for various types of piles like bored cast-in-situ, driven precast, RCC & steel piles of H-section have been included. If the steel casing in case of driven piles is required to be retained, the same is required to be priced separately.
14. Pipe driving rigs including vibratory hammers are assumed to be self-contained with power units and necessary accessories required for driving.

15. The quantity of concrete which is required to be stripped off up to a minimum height of 600 mm above the designed top level of the pile has been taken into account in the rate analysis.
16. The amount indicated for testing of piles is for the base year 2001-2002. For subsequent years these are required to be escalated depending upon market situation.
17. The leveling course below the pile cap is proposed with M 15 grade concrete.
18. Steel reinforcement for cement concrete works is required to be provided separately. The rate for the same has been analysed.
19. Appendix-4 of IRC: 78-2000 may be referred regarding precautions to be taken during sinking of wells.
20. In case of blasting, during sinking of wells, the inner face of the curb is required to be protected with the steel plates of thickness not less than 10 mm up to top level of well curb. For height above top of curb, the thickness of steel plate may be reduced to 6 mm. This extra height of steel lining should be limited to 3 m.
21. The concrete mix used in bottom plug shall have minimum cement content of 330 kg/cum and a slump of about 150 mm to permit easy flow of concrete through tremie to fill-up all cavities.
22. Necessary safety precautions shall be taken for excavation on open foundation for which guidance may be taken from IS:3764.
23. A leveling course of 100 mm thickness in M 10 (1 : 3 : 6) shall be provided before laying open foundations.
24. In case of open foundations in rock, dewatering shall not be permitted from the time of placing of concrete up to 24 hours after placement.
25. In case of open foundation in rock, the trenches around the footing shall be filled-up with concrete of M 15 grade up to a level of 0.6m for hard rock and 1.5 m for soft rock above the foundation level. The portion above this may be filled by boulders grouted with cement.
26. When there are two or more compartments in a well, the lower edge of the cutting edge of the middle stem of such well shall be kept about 300 mm above that of outer stems to prevent rocking.
27. The well curb shall be in RCC of mix not leaner than M 25 grade with minimum steel reinforcement of 72 kg/cum excluding bond rods.
28. The top of the bottom plug shall be at least 300 mm above top of curb.
29. No dewatering shall be carried out within 7 days of casting of bottom plug.

30. In case of cement concrete piles, the minimum grade of concrete shall be M 35 with minimum cement concrete of 400 kg/cum.
31. The top of the pile shall project 50 mm into the pile cap and reinforcement of pile shall be fully anchored in pile cap.
32. The minimum thickness of pile cap should be at least 0.6 m or 1.5 times the diameter of the pile whichever is more.
33. Guidance for piles is to be obtained from IS : 2911.
34. Concrete in driven cast-in-situ piles shall be cast up to a minimum height of 600 mm above the designed top level of piles, which shall be stripped off to obtain sound concrete either before final set or after 3 days.

CHAPTER-2
FOUNDATIONS

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.1	304		Excavation for Structures				
			Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.				
		I	Ordinary soil				
			<i>Unit = cum</i>				
			<i>Taking output = 10 cum</i>				
		A	Manual Means				
		(i)	Depth upto 3 m				
		a)	Labour				
			Mate	day	0.14	210.00	29.40
			Mazdoor	day	3.50	210.00	735.00
		b)	Overhead charges @ 10 % on (a)				76.44
		c)	Contractor's profit @ 10 % on (a+b)				84.08
							924.92
			Add 1% labour cess				9.25
			Cost for 10 cum = a+b+c				934.17
			Rate per cum = (a+b+c)/10				93.42
						say	<u>93.00</u>
			Labour Rate				
			Labour				764.40
			Overhead charges @ 10%				76.44
			Contractors Profit @10%				84.08
							924.92
			Add 1% labour cess				9.25
			Cost for 10 cum				934.17
			Rate per cum				93.42
						say	<u>93.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	1. Cost of dewatering may be added where required upto, 10 per cent of labour cost. Assessment for dewatering shall be made as per site conditions.				
			2. The excavated earth can be used partially for backfilling of foundation pit and partly for road work except for marshy soil. Hence cost of disposal has not been added except for marshy soil. This remark is common to all cases of item 12.1 excluding marshy soil.				
			3. The cost of shoring and shuttering, where needed, may be added @ 1 per cent on cost of excavation for open foundation.				
2.1 (I) A		(ii)	Depth 3 m to 6 m				
			a) Labour				
			Mate/Supervisor	day	0.18	210.00	37.80
			Mazdoor	day	4.50	210.00	945.00
			b) Overhead charges @ 10 % on (a)				98.28
			c) Contractor's profit @ 10 % on (a+b)				108.11
							1189.19
			Add 1% labour cess				11.89
			Cost for 10 cum = a+b+c				1201.08
			Rate per cum = (a+b+c)/10				120.11
						say	<u>120.00</u>
		Note	Cost of dewatering may be added where required upto 15 per cent of labour cost. Assessment for dewatering shall be done as per actual ground conditions.				
			Labour Rate				
			Labour				982.80
			Overhead charges @ 10%				98.28
			Contractors Profit @10%				108.11
							1189.19
			Add 1% labour cess				11.89
			Cost for 10 cum				1201.08
			Rate per cum				120.11

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>120.00</u>
2.1 (I) A		(iii)	Depth above 6 m				
			a) Labour				
			Mate/Supervisor	day	0.24	210.00	50.40
			Mazdoor	day	6.00	210.00	1260.00
			b) Overhead charges @ 10 % on (a)				131.04
			c) Contractor's profit @ 10 % on (a+b)				144.14
							1585.58
			Add 1% labour cess				15.86
			Cost for 10 cum = a+b+c				1601.44
			Rate per cum = (a+b+c)/10				160.14
						say	<u>160.00</u>
		Note	1. Cost of dewatering may be added where required upto 20 per cent of labour cost. Assessment for dewatering shall be made as per site conditions..				
			Labour Rate				
			Labour				1310.40
			Overhead charges @ 10%				131.04
			Contractors Profit @10%				144.14
							1585.58
			Add 1% labour cess				15.86
			Cost for 10 cum				1601.44
			Rate per cum				160.14
						say	<u>160.00</u>
2.1 (I)		B	Mechanical Means				
		(i)	Depth upto 3 m				
			Unit = cum				
			Taking output = 240 cum				
			a) Labour				
			Mate	day	0.32	210.00	67.20
			Mazdoor	day	8.00	210.00	1680.00
			b) Machinery				
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.00	1843.00	11058.00
			c) Overhead charges @ 10 % on (a+b)				1280.52
			d) Contractor's profit @ 10 % on (a+b+c)				1408.57

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							15494.29
			Add 1% labour cess				154.94
			Cost for 240 cum = a+b+c+d				15649.23
			Rate per cum = (a+b+c+d)/240				65.21
						say	<u>65.00</u>
			e) Labour Rate				
			Labour				1747.20
			Overhead charges @ 10%				174.72
			Contractors Profit @10%				101.92
							2154.05
			Add 1% labour cess				21.54
			Cost for 240cum				2175.59
			Rate per cum = e/240				9.06
						say	<u>9.00</u>
			Cost of dewatering upto 5 per cent of (a+b) may be added, where required. Assessment for dewatering shall be made as per site conditions..				
2.1 (I) B		Note	Depth 3 m to 6 m				
		(ii)	Unit = cum				
			Taking output = 210 cum				
			a) Labour				
			Mate	day	0.32	210.00	67.20
			Mazdoor	day	8.00	210.00	1680.00
			b) Machinery				
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.00	1843.00	11058.00
			c) Overhead charges @ 10 % on (a+b)				1280.52
			d) Contractor's profit @ 10 % on (a+b+c)				1408.57
							15494.29
			Add 1% labour cess				154.94
			Cost for 210 cum = a+b+c+d				15649.23
			Rate per cum = (a+b+c+d)/210				74.52
						say	<u>75.00</u>
			e) Labour Rate				
			Labour				1747.20
			Overhead charges @ 10%				174.72

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Contractors Profit @10%				192.19
							2114.11
			Add 1% labour cess				21.14
			Cost for 210cum				2135.25
			Rate per cum = e/210				10.17
						say	<u>10.00</u>
			Cost of dewatering upto 7.5 per cent of (a+b) may be added, where required. Assessment for dewatering shall be made as per site conditions..				
2.1 (I) B		Note	Depth above 6m				
		(iii)	Unit = cum				
			Taking output = 180 cum				
			a) Labour				
			Mate	day	0.40	210.00	84.00
			Mazdoor	day	10.00	210.00	2100.00
			b) Machinery				
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.00	1843.00	11058.00
			c) Overhead charges @ 10 % on (a+b)				1324.20
			d) Contractor's profit @ 10 % on (a+b+c)				1456.62
							16022.82
			Add 1% labour cess				160.23
			Cost for 180 cum = a+b+c+d				16183.05
			Rate per cum = (a+b+c+d)/180				89.91
						say	<u>90.00</u>
			e) Labour Rate				
			Labour				2184.00
			Overhead charges @ 10%				218.40
			Contractors Profit @10%				240.24
							2642.64
			Add 1% labour cess				26.43
			Cost for 180cum				2669.07
			Rate per cum = e/180				14.83
						say	<u>15.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	2.Labour provided for excavation by mechanical means includes that required for trimming of bottom and side slopes.				
2.1			Ordinary Rock (not requiring blasting)				
		II	Manual Means				
		A	Depth upto 3 m				
		(i)	Unit = cum				
			Taking output = 10 cum				
		a)	Labour				
			Mate	day	0.20	210.00	42.00
			Mazdoor	day	5.00	210.00	1050.00
		b)	Overhead charges @ 10 % on (a)				109.20
		c)	Contractor's profit @ 10 % on (a+b)				120.12
							1321.32
			Add 1% labour cess				13.21
			Cost for 10 cum = a+b+c				1334.53
			Labour Rate per cum = (a+b+c)/10				133.45
						say	<u>133.00</u>
			Cost of dewatering upto 10 per cent of labour cost may be added, where required. Assessment for dewatering shall be made as per site conditions..				
2.1(II)		Note	Mechanical Means				
		B	Unit = cum				
			Taking output = 180 cum				
		a)	Labour				
			Mate	day	0.24	210.00	50.40
			Mazdoor	day	6.00	210.00	1260.00
		b)	Machinery				
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.00	1843.00	11058.00
		c)	Overhead charges @ 10 % on (a+b)				1236.84
		d)	Contractor's profit @ 10 % on (a+b+c)				1360.52
							14965.76

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				149.66
			Cost for 180 cum = a+b+c+d				15115.42
			Rate per cum = (a+b+c+d)/180				83.97
						say	<u>84.00</u>
			e) Labour Rate				
			Labour				1310.40
			Overhead charges @ 10%				131.04
			Contractors Profit @10%				144.14
							1585.58
			Add 1% labour cess				15.86
			Cost for 180 cum				1601.44
			Rate per cum = e/180				8.90
						say	<u>9.00</u>
			1. Cost of dewatering upto 10 per cent of (a+b), may be added, where required Assessment for dewatering shall be made as per site conditions.				
		Note	2. In case of rock, foundation beyond 3 m is not dug and hence not included.				
2.1			Hard Rock (requiring blasting)				
		III	Manual Means				
		A	Unit = cum				
			Taking output = 10 cum				
			a) Labour				
			Mate	day	0.35	210.00	73.50
			Driller	day	0.50	210.00	105.00
			Blaster	day	0.25	259.00	64.75
			Mazdoor	day	8.00	210.00	1680.00
			b) Machinery				
			Air Compressor 250 cfm with 2 jack hammer for drilling.	hour	1.00	465.00	465.00
			c) Material				
			Blasting Material	kg	3.50	98.00	343.00
			Detonator electric	each	14.00	16.00	224.00
			d) Overhead charges @ 10 % on (a+b+c)				295.53
			e) Contractor's profit @ 10 % on (a+b+c+d)				325.08
							3575.85
			Add 1% labour cess				35.76
			Cost for 10 cum = a+b+c+d+e				3611.61

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per cum = (a+b+c+d+e)/10				361.16
						say	<u>361.00</u>
			e) Labour Rate				
			Labour				1923.25
			Overhead charges @ 10%				192.33
			Contractors Profit @10%				211.56
							2327.13
			Add 1% labour cess				23.27
			Cost for 10 cum				2350.40
			Rate per cum = e/10				<u>235.04</u>
						say	<u>235.00</u>
			Cost of dewatering @ 10 per cent of (a+b) may be added, where required Assessment for dewatering shall be made as per site conditions.				
2.1		Note	Hard Rock (blasting prohibited)				
		IV	Unit = cum				
			Taking output = 10 cum				
			Mechanical Means				
		A	a) Labour				
			Mate	day	0.20	210.00	42.00
			Mazdoor	day	5.00	210.00	1050.00
			b) Machinery				
			Air Compressor 250 cfm with 2 leads of pneumatic breaker	hour	6.00	465.00	2790.00
			c) Overhead charges @ 10 % on (a+b)				388.20
			d) Contractor's profit @ 10 % on (a+b+c)				427.02
							4697.22
			Add 1% labour cess				46.97
			Cost for 10 cum = a+b+c+d				4744.19
			Rate per cum = (a+b+c+d)/10				474.42
						say	<u>474.00</u>
			e) Labour Rate				
			Labour				1092.00
			Overhead charges @ 10%				109.20
			Contractors Profit @10%				120.12
							1321.32
			Add 1% labour cess				13.21
			Cost for 10 cum				1334.53
			Rate per cum = e/10				<u>133.45</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>133.00</u>
			1. Cost of dewatering upto 10 per cent of (a+b), may be added, where required Assessment for dewatering shall be made as per site conditions.				
		Note	2. In case of rock, foundation beyond 3 m is not dug and hence not included.				
2.1			Marshy Soil				
		V	Unit = cum				
			Taking output = 10 cum				
			Depth upto 3 m				
			Manual means				
		A	a) Labour				
			Mate/Supervisor	day	0.40	210.00	84.00
			Mazdoor	day	10.00	210.00	2100.00
			b) Machinery				
			Tractor-trolley for removal.	hour	2.67	581.00	1551.27
			c) Overhead charges @ 10 % on (a+b)				373.53
			d) Contractor's profit @ 10 % on (a+b+c)				410.88
							4519.68
			Add 1% labour cess				45.20
			Cost for 10 cum = a+b+c+d				4564.87
			Rate per cum = (a+b+c+d)/ 10				456.49
						say	<u>456.00</u>
			e) Labour Rate				
			Labour				2184.00
			Overhead charges @ 10%				218.40
			Contractors Profit @ 10%				240.24
							2642.64
			Add 1% labour cess				26.43
			Cost for 10 cum				2669.07
			Rate per cum = e/10				<u>266.91</u>
						say	<u>267.00</u>
			1. Cost of dewatering @ 30 per cent of (a), may be added, where required Assessment for dewatering shall be made as per site conditions.				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	2. Shoring & strutting 15 per cent of (a), where required may be added				
			3. It is assumed that Marshy Soil will be available upto 3 m depth only. For deeper excavation below 3 m depth, refer analysis in item 12.1 (i) to (iv) for ordinary soil				
2.1 (V)			Mechanical Means				
		B	a) Labour				
			Mate	day	0.08	210.00	16.80
			Mazdoor for dressing sides, bottom and backfilling	day	2.00	210.00	420.00
			b) Machinery				
			Hydraulic excavator 1.0 cum bucket capacity @ 60 cum per hour	hour	0.17	1843.00	313.31
			Tipper 5.5 cum capacity, 4 trips per hour.	hour	0.45	513.00	230.85
			c) Overhead charges @ 10 % on (a+b)				98.10
			d) Contractor's profit @ 10 % on (a+b+c)				107.91
							1186.96
			Add 1% labour cess				11.87
			Cost for 10 cum = a+b+c+d				1198.83
			Rate per cum = (a+b+c+d)/10				119.88
						say	<u>120.00</u>
			e) Labour Rate				
			Labour				436.80
			Overhead charges @ 10%=				43.68
			Contractors Profit @10%				48.05
							528.53
			Add 1% labour cess				5.29
			Cost for 10 cum				533.81
			Rate per cum = e/10				<u>53.38</u>
						say	<u>53.00</u>
			1. Cost of dewatering @ 20 per cent of (a+b) may be added, where required				
		Note	2. Shoring & strutting @ 10 per cent of (a+b), where required may be added				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			3. It is assumed that Marshy Soil will be available upto 3 m depth only. For deeper excavation below 3 m depth, refer analysis in item 12.1 (i) to (iv) for ordinary soil				
			Back Filling in Marshy Foundation Pits				
		VI	Unit : Cum				
			Taking Output : 6 cum				
			a) Labour				
			Mate	day	0.12	210.00	25.20
			Mazdoor for dressing sides, bottom and backfilling	day	3.00	210.00	630.00
			b) Machinery				
			Tractor-trolley for transportation	hour	2.00	581.00	1162.00
			c) Overhead charges @ 10 % on (a+b)				181.72
			d) Contractor's profit @ 10 % on (a+b+c)				199.89
							2198.81
			Add 1% labour cess				21.99
			Cost for 6 cum = a+b+c+d				2220.80
			Rate per cum = (a+b+c+d)/6				370.13
						say	<u>370.00</u>
			Labour Rate				
			Labour				655.20
			Overhead charges @ 10%=				65.52
			Contractors Profit @10%=				72.07
							792.79
			Add 1% labour cess				7.93
			Cost for 6 cum				800.72
			Rate per cum				<u>133.45</u>
						say	<u>133.00</u>
2.2	304		Filling Annular Space Around Footing in Rock				
			Unit = cum				
			Taking out put = 1 cum				
			Lean cement concrete 1:3:6 nominal mix. Rate may be taken as per item 2.4.				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
2.3	304	Sand Filling in Foundation Trenches as per Drawing & Technical Specification				
		Unit = cum				
		Taking output = 1 cum				
		a) Labour				
		Mate	day	0.01	210.00	2.10
		Mazdoor	day	0.30	210.00	63.00
		b) Material				
		Sand (assuming 20 per cent voids)	cum	1.20	1111.00	1333.20
		c) Overhead charges @ 10 % on (a+b)				139.83
		d) Contractor's profit @ 10 % on (a+b+c)				153.81
						1691.94
		Add 1% labour cess				16.92
		Rate per cum = a+b+c+d				1708.86
					say	<u>1709.00</u>
		Labour Rate				
		Labour				65.10
		Overhead charges @ 10%=				6.51
		Contractors Profit @10%=				7.16
						78.77
		Add 1% labour cess				0.79
		Cost for 1cum				79.56
		Rate per cum =				<u>79.56</u>
					say	<u>80.00</u>
2.4	2100	PCC 1:3:6 in Foundation				
		Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.				
		Unit = cum				
		Taking output = 15 cum				
		a) Labour				
		Mate	day	0.64	210.00	134.40
		Mason	day	1.00	315.00	315.00
		Mazdoor	day	15.00	210.00	3150.00
		b) Material				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			40 mm Aggregate	cum	13.50	1069.00	14431.50
			coarse Sand	cum	6.75	1101.00	7431.75
			cement	tonne	3.45	7688.00	26523.60
			Cost of water	KL	18.00	102.00	1836.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Water tanker 6 KL capacity	hour	2.00	500.00	1000.00
			d) Overhead charges @ 10 % on (a+b+c)				6127.23
			e) Contractor's profit @ 10 % on (a+b+c+d)				6739.95
							74139.42
			Add 1% labour cess				741.39
			Cost for 15 cum = a+b+c+d+e				74880.82
			Rate per cum = (a+b+c+d+e)/15				4992.05
						say	<u>4992.00</u>
			Labour Rate				
			Labour				3599.40
			Overhead charges @ 10%=				359.94
			Contractors Profit @10%=				395.93
							4355.27
			Add 1% labour cess				43.55
			Cost for 15cum				4398.83
			Rate per cum				<u>293.26</u>
						say	<u>293.00</u>
			Vibrator is a part of minor T & P which is already included in overhead charges of the contractor.				
2.5	1300	Note	Brick Masonry Work in Cement Mortar 1:3 in Foundation complete excluding Pointing and Plastering, as per Drawing and Technical Specifications.				
			Unit = cum				
			Taking output = 5 cum				
			a) Material				
			Bricks 1st class	each	2500.00	9.00	22500.00
			Cement mortar 1:3 (Rate as in Item 12.6 A sub-analysis)	cum	1.20	5274.00	6328.80
			b) Labour				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mate	day	0.48	210.00	100.80
			Mason	day	4.00	315.00	1260.00
			Mazdoor	day	8.00	210.00	1680.00
			c) Overhead charges @ 10 % on (a+b)				3186.96
			d) Contractor's profit @ 10 % on (a+b+c)				3505.66
							38562.22
			Add 1% labour cess				385.62
			Cost for 5 cum = a+b+c+d				38947.84
			Rate per cum (a+b+c+d)/5				7789.57
						say	<u>7790.00</u>
			Labour Rate				
			Labour				28828.80
			Overhead charges @ 10%=				2882.88
			Contractors Profit @10%=				3171.17
							34882.85
			Add 1% labour cess				348.83
			Cost for 5cum				35231.68
			Rate per cum				<u>7046.34</u>
						say	<u>7046.00</u>
2.6	Sub-analysis		Cement Mortar 1:3 (1 cement : 3 sand)				
		(A)	Unit = 1 cum				
			Taking output = 1 cum				
			a) Materials				
			Cement	tonne	0.51	7688.00	3920.88
			Sand	cum	1.05	1101.00	1156.05
			b) Labour				
			Mate	day	0.04	210.00	8.40
			Mazdoor	day	0.90	210.00	189.00
			Total Material and Labour = (a+b)			say	5274.00
	Sub-analysis (Addl.)		Cement Mortar 1:2 (1 cement : 2 sand)				
		(B)	Unit = 1 cum				
			Taking output = 1 cum				
			a) Materials				
			Cement	tonne	0.67	7688.00	5166.34
			Sand	cum	0.93	1101.00	1023.93

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			b) Labour				
			Mate	day	0.04	210.00	8.40
			Mazdoor	day	0.90	210.00	189.00
			Total Material and Labour = (a+b)			say	6388.00
	Sub-analysis (Addl.)		Cement Mortar 1:4 (1 cement : 4 sand)				
		(C)	Unit = 1 cum				
			Taking output = 1 cum				
			a) Materials				
			Cement	tonne	0.40	7688.00	3099.80
			Sand	cum	1.12	1101.00	1233.12
			b) Labour				
			Mate	day	0.04	210.00	8.40
			Mazdoor	day	0.90	210.00	189.00
			Total Material and Labour = (a+b)			say	4530.00
	Sub-analysis (Addl.)		Cement Mortar 1:6 (1 cement : 6 sand)				
		(D)	Unit = 1 cum				
			Taking output = 1 cum				
			a) Materials				
			Cement	tonne	0.29	7688.00	2214.14
			Sand	cum	1.34	1101.00	1472.19
			b) Labour				
			Mate	day	0.04	210.00	8.40
			Mazdoor	day	0.90	210.00	189.00
			Total Material and Labour = (a+b)			say	3884.00
2.7	1400		Stone Masonry Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical Specifications.				
			Unit = cum				
			Taking output = 5 cum				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
	1405.4		Square Rubble Coursed Rubble Masonry (first sort)				
		(A)	a) Material				
			Stone	cum	5.50	1368.00	7524.00
			Through and bond stone	each	35.00	30.00	1050.00
			(35no.x0.24mx0.24mx0.39m = 0.79 cu.m)				
			Cement mortar 1:3 (Rate as in Item 12.6 A sub-analysis)	cum	1.50	5274.00	7911.00
			b) Labour				
			Mason	day	7.50	315.00	1583.78
			Mate	day	0.66	210.00	138.60
			Mazdoor	day	9.00	210.00	1890.00
			c) Overhead charges @ 10 % on (a+b)				2009.74
			d) Contractor's profit @ 10 % on (a+b+c)				2210.71
							24317.83
			Add 1% labour cess				243.18
			Cost for 5 cum = a+b+c+d				24561.01
			Rate per cum (a+b+c+d)/5				4912.20
						say	<u>4912.00</u>
			Labour Rate				
			Labour				3612.38
			Overhead charges @ 10%				361.24
			Contractors Profit @10%				397.36
							4370.98
			Add 1% labour cess				43.71
			Cost for 5cum				4414.69
			Rate per cum				<u>882.94</u>
						say	<u>883.00</u>
	1405.3		Random Rubble Masonry				
		(B)	(coursed/uncoursed)				
			Unit = cum				
			Taking output = 5 cum				
			a) Material				
			Stone	cum	5.50	1170.00	6435.00
			Through and bond stone	each	35.00	30.00	1050.00
			(35nos.x0.24mx0.24mx0.39m = 0.79 cu.m)				
			Cement mortar 1:3 (Rate as in Item 12.6 A sub-analysis)	cum	1.55	5274.00	8174.70
			b) Labour				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mate	day	0.62	210.00	130.20
			Mason	day	6.00	315.00	1890.00
			Mazdoor	day	9.00	210.00	1890.00
							19569.90
			c) Overhead charges @ 10 % on (a+b)				1956.99
			d) Contractor's profit @ 10 % on (a+b+c)				2152.69
							23679.58
			Add 1% labour cess				236.80
			Cost for 5 cum = a+b+c+d				23916.37
			Rate per cum (a+b+c+d)/5				4783.27
						say	<u>4783.00</u>
			The labour already considered in cement mortar has been taken into account while proposing labour for masonry works.				
			Labour Rate				
			Labour				3910.20
			Overhead charges @ 10%				391.02
			Contractors Profit @10%				430.12
							4731.34
			Add 1% labour cess				47.31
			Cost for 5cum				4778.66
			Rate per cum				<u>955.73</u>
						say	<u>956.00</u>
2.8	1500, 1700 & 2100	Note	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.				
			PCC Grade M15				
		A	Unit = cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	4.13	7688.00	31751.44
			Coarse sand	cum	6.75	1101.00	7431.75
			40 mm Aggregate	cum	8.10	1069.00	8658.90
			20 mm Aggregate	cum	4.05	1276.00	5167.80
			10 mm Aggregate	cum	1.35	1281.00	1729.35
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		c) Machinery				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
		Generator 63 KVA	hour	6.00	585.00	3510.00
		<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		<i>4347.00</i>		
		d) Formwork @ 4 per cent on cost of concrete i.e. cost of material, labour and machinery				2608.09
		e) Overhead charges @ 10 % on (a+b+c+d)				6781.04
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				7459.15
						82050.62
		Add 1% labour cess				820.51
		Cost for 15 cum = a+b+c+d+e+f				82871.13
		Rate per cum = (a+b+c+d+e+f)/15				5524.74
					say	<u>5525.00</u>
		Needle Vibrator is an item of minor T & P which is already included in overhead charges. Hence not added in rate analysis of cement concrete works.				
		Labour Rate				
		Labour				4853.10
		Overhead charges @ 10%				485.31
		Contractors Profit @10%				533.84
						5872.25
		Add 1% labour cess				58.72
		Cost for 15cum				5930.97
		Rate per cum				<u>395.40</u>
					say	<u>395.00</u>
2.8	Note	PCC Grade M20				
	B	Unit : cum				
		Taking output = 15 cum				
		a) Material				
		Cement	tonne	5.16	7688.00	39670.08
		Coarse sand	cum	6.75	1101.00	7431.75
		40 mm Aggregate	cum	5.40	1069.00	5772.60
		20 mm Aggregate	cum	5.40	1276.00	6890.40
		10 mm Aggregate	cum	2.70	1281.00	3458.70

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		b) Labour				
		Mate	day	0.86	210.00	180.60
		Mason	day	1.50	315.00	472.50
		Mazdoor	day	20.00	210.00	4200.00
		c) Machinery				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
		Generator 33 KVA	hour	6.00	725.00	4350.00
		<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		4969.00		
		d) Formwork @ 4 per cent on cost of concrete i.e. cost of material, labour and machinery				2981.07
		e) Overhead charges @ 10 % on (a+b+c+d)				7750.77
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				8525.85
						93784.31
		Add 1% labour cess				937.84
		Cost for 15 cum = a+b+c+d+e+f				94722.15
		Rate per cum = (a+b+c+d+e+f)/15				6314.81
					say	<u>6315.00</u>
		Labour Rate				
		Labour				4853.10
		Overhead charges @ 10%				485.31
		Contractors Profit @10%				533.84
						5872.25
		Add 1% labour cess				58.72
		Cost for 15cum				5872.25
		Rate per cum				<u>391.48</u>
					say	<u>391.00</u>
2.8		RCC Grade M20				
	C	Using Concrete Mixer				
	Case I	Unit = cum				
		Taking output = 15 cum				
		a) Material				
		Cement	tonne	5.21	7688.00	40054.48
		Coarse sand	cum	6.75	1101.00	7431.75
		20 mm Aggregate	cum	8.10	1276.00	10335.60
		10 mm Aggregate	cum	5.40	1281.00	6917.40
		b) Labour				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		5070.00		
			d) Formwork @ 4 per cent on (a+b+c)				3041.69
			e) Overhead charges @ 10 % on (a+b+c+d)				7908.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				8699.24
							95691.67
			Add 1% labour cess				956.92
			Cost for 15 cum = a+b+c+d+e+f				96648.58
			Rate per cum = (a+b+c+d+e+f)/15				6443.24
						say	<u>6443.00</u>
			Labour Rate				
			Labour				4853.10
			Overhead charges @ 10%				485.31
			Contractors Profit @10%				533.84
							5872.25
			Add 1% labour cess				58.72
			Cost for 15cum				5872.25
			Rate per cum				<u>391.48</u>
						say	<u>391.00</u>
2.8 C			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit : cum				
			Taking Output = 120 cum				
			a) Material				
			Cement	tonne	41.66	7688.00	320282.08
			Coarse Sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Lead beyond 1 km, L-lead in km	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6	1565.00	9390.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		5445.00		
			d) Formwork @ 4 per cent on cost of concrete i.e. cost of material, labour and machinery				26131.62
			e) Overhead charges @ 10 % on (a+b+c+d)				67942.21
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				74736.43
							822100.74
			Add 1% labour cess				8221.01
			Cost for 120 cum = a+b+c+d+e+f				830321.75
			Rate per cum = (a+b+c+d+e+f)/120				6919.35
						say	<u>6919.00</u>
			Labour Rate				
			Labour				4901.40
			Overhead charges @ 10%				490.14
			Contractors Profit @10%				539.15
							5930.69
			Add 1% labour cess				59.31
			Cost for 120cum				5990.00
			Rate per cum				<u>49.92</u>
						say	<u>50.00</u>
2.8			With Batching Plant, Transit Mixer and Concrete Pump				
		D	Using Concrete Mixer				
		Case I	<i>Unit = cum</i>				
			<i>Taking output = 15 cum</i>				
			a) Material				
			Cement	tonne	5.99	7688.00	46051.12

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Coarse sand	cum	6.75	1101.00	7431.75
			40 mm Aggregate	cum	5.40	1069.00	5772.60
			20 mm Aggregate	cum	5.40	1276.00	6890.40
			10 mm Aggregate	cum	2.70	1281.00	3458.70
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		5394.00		
			d) Formwork @ 3.75 per cent of (a+b+c)				3034.04
			e) Overhead charges @ 10 % on (a+b+c+d)				8394.17
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				9233.59
							101569.47
			Add 1% labour cess				1015.69
			Cost for 15 cum = a+b+c+d+e+f				102585.16
			Rate per cum = (a+b+c+d+e+f)/15				6839.01
						say	<u>6839.00</u>
			Labour Rate				
			Labour				4853.10
			Overhead charges @ 10%				485.31
			Contractors Profit @10%				533.84
			Cost for 15cum				5872.25
			Rate per cum				<u>391.48</u>
						say	<u>391.00</u>
2.8 D			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit : cum				
			Taking Output = 120 cum				
			a) Material				
			Cement	tonne	47.95	7688.00	368639.60
			Coarse sand	cum	54.00	1101.00	59454.00
			40 mm Aggregate	cum	43.20	1069.00	46180.80
			20 mm Aggregate	cum	43.20	1276.00	55123.20
			10 mm Aggregate	cum	21.60	1281.00	27669.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6	1565.00	9390.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		5772.00		
			d) Formwork @ 3.75 per cent of cost of concrete i.e. cost of material, labour and machinery				25972.41
			e) Overhead charges @ 10 % on (a+b+c+d)				71857.00
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				79042.70
							869469.71
			Add 1% labour cess				8694.70
			cost of 120 cum = a+b+c+d+e+f				878164.41
			Rate per cum = (a+b+c+d+e+f)/120				7318.04
						say	<u>7318.00</u>
			Labour Rate				
			Labour				4901.40
			Overhead charges @ 10%				490.14
			Contractors Profit @10%				539.15
							5930.69
			Add 1% labour cess				59.31
			Cost for 120cum				5990.00
			Rate per cum				<u>49.92</u>
2.8						say	<u>50.00</u>
		E	Using Concrete Mixer				
		Case I	Unit = cum				
			Taking output = 15 cum				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			a) Material				
			Cement	tonne	6.05	7688.00	46512.40
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		<i>5501.00</i>		
			d) Formwork @ 3.75 per cent of a+b+c.				3093.76
			e) Overhead charges @ 10 % on (a+b+c+d)				8559.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				9415.34
							103618.75
			Add 1% labour cess				1036.19
			cost of 15 cum = a+b+c+d+e+f				104654.94
			Rate per cum (a+b+c+d+e+f)/15				6977.00
						say	<u>6977.00</u>
			Labour Rate				
			Labour				4853.10
			Overhead charges @ 10 %				485.31
			Contractors Profit @10%				533.84
							5872.25
			Add 1% labour cess				58.72
			Cost for 15cum				5930.97
			Rate per cum				<u>395.40</u>
						say	<u>395.00</u>
2.8 E			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit: cum				
			Taking Output = 120 cum				
			a) Material				
			Cement	tonne	48.38	7688.00	371945.44
			Coarse sand	cum	54.00	1101.00	59454.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity 1 cum	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		<i>5875.00</i>		
			d) Formwork @ 3.75 per cent on cost of concrete i.e. cost of material, labour and machinery				26435.77
			e) Overhead charges @ 10 % on (a+b+c+d)				73138.96
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				80452.86
							884981.43
			Add 1% labour cess				8849.81
			cost of 120 cum = a+b+c+d+e+f				893831.24
			Rate per cum (a+b+c+d+e+f)/120				7448.59
						say	<u>7449.00</u>
			Labour Rate				
			Labour				4901.40
			Overhead charges @ 10%				490.14
			Contractors Profit @10%				539.15
							5930.69
			Add 1% labour cess				59.31
			Cost for 120cum				5990.00
			Rate per cum				<u>49.92</u>
						say	<u>50.00</u>
2.8			PCC Grade M30				
		F	Using Concrete Mixer				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Case I	Unit = cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	6.08	7688.00	46743.04
			Coarse sand	cum	6.75	1101.00	7431.75
			40 mm Aggregate	cum	5.40	1069.00	5772.60
			20 mm Aggregate	cum	5.40	1276.00	6890.40
			10 mm Aggregate	cum	2.70	1281.00	3458.70
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5440.00		
			d) Formwork @ 3.50 per cent of cost of concrete i.e. cost of material, labour and machinery				2855.99
			e) Overhead charges @ 10 % on (a+b+c+d)				8445.56
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				9290.11
							102191.25
			Add 1% labour cess				1021.91
			cost of 15 cum = a+b+c+d+e+f				103213.16
			Rate per cum (a+b+c+d+e+f)/15				6880.88
						say	<u>6881.00</u>
			Labour Rate				
			Labour				4853.10
			Overhead charges @ 10%				485.31
			Contractors Profit @10%				533.84
							5872.25
			Add 1% labour cess				58.72
			Cost for 15cum				5930.97
			Rate per cum				<u>395.40</u>
						say	<u>395.00</u>
2.8 F			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit : cum				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		<i>Taking Output = 120 cum</i>				
		a) Material				
		Cement	tonne	48.60	7688.00	373636.80
		Coarse sand	cum	54.00	1101.00	59454.00
		40 mm Aggregate	cum	43.20	1069.00	46180.80
		20 mm Aggregate	cum	43.20	1276.00	55123.20
		10 mm Aggregate	cum	21.60	1281.00	27669.60
		b) Labour				
		Mate	day	0.84	210.00	176.40
		Mason	day	3.00	315.00	945.00
		Mazdoor	day	18.00	210.00	3780.00
		c) Machinery				
		Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
		Generator 100 KVA	hour	6.00	1125.00	6750.00
		Loader 1 cum capacity	hour	6.00	1281.00	7686.00
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
		Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
		Concrete Pump	hour	6.00	1565.00	9390.00
		<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		5814.00		
		d) Formwork @ 3.50 per cent of cost of concrete i.e. cost of material, labour and machinery				24415.82
		e) Overhead charges @ 10 % on (a+b+c+d)				72201.06
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				79421.17
						873632.85
		Add 1% labour cess				8736.33
		cost of 120 cum = a+b+c+d+e+f				882369.18
		Rate per cum (a+b+c+d+e+f)/120				7353.08
					say	<u>7353.00</u>
		Labour Rate				
		Labour				4901.40
		Overhead charges @ 10%				490.14
		Contractors Profit @10%				539.15
						5930.69
		Add 1% labour cess				59.31
		Cost for 120cum				5990.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per cum				<u>49.92</u>
						say	<u>50.00</u>
2.8			RCC Grade M30				
		G	Using Concrete Mixer				
		Case I	Unit = cum				
			Taking output = 15 cum				
		a)	Material				
			Cement	tonne	6.10	7688.00	46896.80
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
		b)	Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
		c)	Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5526.00		
		d)	Formwork @ 3.5 per cent on cost of concrete i.e. cost of material, labour and machinery				2900.96
		e)	Overhead charges @ 10 % on (a+b+c+d)				8578.56
		f)	Contractor's profit @ 10 % on (a+b+c+d+e)				9436.42
							103800.59
			Add 1% labour cess				1038.01
			cost of 15 cum = a+b+c+d+e+f				104838.60
			Rate per cum = (a+b+c+d+e+f)/15				6989.24
						say	<u>6989.00</u>
			Labour Rate				
			Labour				4853.10
			Overhead charges @ 10%				485.31
			Contractors Profit @10%				533.84
							5872.25
			Add 1% labour cess				58.72
			Cost for 15cum				5930.97
			Rate per cum				<u>395.40</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>395.00</u>
2.8 G			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	48.80	7688.00	375174.40
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5902.00		
			d) Formwork @ 3.5 per cent of cost of concrete i.e. cost of material, labour and machinery				24786.40
			e) Overhead charges @ 10 % on (a+b+c+d)				73296.92
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				80626.61
							886892.73
			Add 1% labour cess				8868.93
			cost of 120 cum = a+b+c+d+e+f				895761.66
			Rate per cum (a+b+c+d+e+f)/120				7464.68
						say	<u>7465.00</u>
			Labour Rate				
			Labour				4901.40
			Overhead charges @ 10%				514.65

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Contractors Profit @10%				541.60
							5957.65
			Add 1% labour cess				59.58
			Cost for 120cum				5957.65
			Rate per cum				<u>49.65</u>
						say	<u>50.00</u>
2.8			RCC Grade M35				
		H	Using Concrete Mixer				
		Case I	Unit = cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	6.33	7688.00	48665.04
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5644.00		
			d) Formwork @ 3 per cent on a+b+c				2539.59
			e) Overhead charges @ 10 % on (a+b+c+d)				8719.25
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				9591.17
							105502.90
			Add 1% labour cess				1055.03
			cost of 15 cum = a+b+c+d+e+f				106557.93
			Rate per cum = (a+b+c+d+e+f)/15				7103.86
						say	<u>7104.00</u>
			Labour Rate				
			Labour				4853.10
			Overhead charges @ 10%				485.31
			Contractors Profit @10%				533.84
							5872.25

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				58.72
			Cost for 15cum				5930.97
			Rate per cum				<u>395.40</u>
						say	<u>395.00</u>
2.8 H			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit ; cum				
			Taking Output = 120 cum				
			a) Material				
			Cement	tonne	50.64	7688.00	389320.32
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6020.00		
			d) Formwork @ 3 per cent on cost of concrete i.e. cost of material, labour and machinery				21669.86
			e) Overhead charges @ 10 % on (a+b+c+d)				74399.86
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				81839.84
							900238.28
			Add 1% labour cess				9002.38
			cost of 120 cum = a+b+c+d+e+f				909240.67
			Rate per cum = (a+b+c+d+e+f)/120				7577.01
						say	<u>7577.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Where ever concrete is carried out using batching plant, transit mixer, concrete pump, Admixtures @ 0.4 per cent of weight of cement may be added for achieving desired slump of concrete.				
			Labour Rate				
			Labour				4901.40
			Overhead charges @ 10%				490.14
			Contractors Profit @10%				539.15
							5930.69
			Add 1% labour cess				59.31
			Cost for 120cum				5990.00
			Rate per cum				<u>49.92</u>
						say	<u>50.00</u>
		Note:	WELL FOUNDATION				
2.9	1200		Providing and Constructing Temporary Island 16 m diameter for Construction of Well Foundation for 8m dia. Well.				
			Assuming depth of water 1.0 m and height of island to be 1.25 m.				
		A	Unit = 1 No				
			Taking output = 1 No.				
			a) Material				
			Earth (compacted)	cum	251.20	63.00	15825.60
			Sand bags	each	750.00	8.00	6000.00
			b) Labour				
			Mate	day	0.40	210.00	84.00
			Mazdoor for filling sand bags, stitching and placing	day	15.00	210.00	3150.00
			c) Machinery				
			Crane with grab 1 cum capacity	hour	20.00	916.00	18320.00
			Consumables @ 2.5 per cent of (c) above				458.00
			d) Overhead charges @ 10 % on (a+b+c)				4383.76
			e) Contractor's profit @ 10 % on (a+b+c+d)				4822.14
							53043.50
			Add 1% labour cess				530.43
			Rate per No. (a+b+c+d+e)				53573.93

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>53574.00</u>
			It is assumed that earth will be available within the working space of crane with grab bucket.				
			Labour Rate				
			Labour				3234.00
			Overhead charges @ 10%				323.40
			Contractors Profit @10%				355.74
							3913.14
			Add 1% labour cess				39.13
			Cost for 1No.				3952.27
			Rate per Unit				3952.27
						say	<u>3952.00</u>
2.9		Note	Assuming depth of water 4.0 m and height of island 4.5 m.				
		B	Unit = 1No				
			Taking output = 1 No				
		a)	Material				
			Earth (compacted)	cum	904.32	63.00	56972.16
			Sand bags	each	6000.00	8.00	48000.00
			Wooden ballies 8" Dia and 9 m long	each	95.00	1800.00	171000.00
			Wooden ballies 2" Dia for bracing	metre	190.00	100.00	19000.00
		b)	Labour				
			Mate	day	5.60	210.00	1176.00
			Mazdoor for piling 8" dia ballies for piling 8" dia ballies	day	18.00	210.00	3780.00
			Mazdoor for bracing with 2" dia ballies	day	12.00	210.00	2520.00
			Mazdoor for filling sand bags, stitching and placing	day	110.00	210.00	23100.00
		c)	Machinery				
			Crane with grab 1 cum capacity	hour	50.00	916.00	45800.00
			Consumables and other arrangements for piling ballies @ 2.5 per cent of (a+b+c).				9283.70
		d)	Overhead charges @ 10 % on (a+b+c)				38063.19
		e)	Contractor's profit @ 10 % on (a+b+c+d)				41869.51
							460564.56
			Add 1% labour cess				4605.65

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per No. (a+b+c+d+e)				465170.20
						say	<u>465170.00</u>
			For other well diameters rate can be worked out on the basis of cross-sectional area of well. The diameter of the island shall be in the conformity with clause 1203.2 of MoRTH specifications.				
			Labour Rate				
			Labour				30576.00
			Overhead charges @ 10%				3057.60
			Contractors Profit @10%				3363.36
							36996.96
			Add 1% labour cess				369.97
			Cost for 1No.				37366.93
			Rate per Unit				37366.93
						say	<u>37367.00</u>
2.9	C	Note	Providing and constructing one span service road to reach island location from one pier location to another pier location				
			Assuming span length 30 m, width of service road 10m and depth of water 1m				
			Unit = 1 meter				
			Taking output = 30 metre				
			a) Material				
			Earth	cum	450.00	63.00	28350.00
			Sand bags	each	300.00	8.00	2400.00
			b) Labour				
			Mate	day	0.24	210.00	50.40
			Mazdoor for filling sand bags, stitching and placing	day	6.00	210.00	1260.00
			c) Machinery				
			Front end Loader 1 cum capacity	hour	27.00	1281.00	34587.00
			Tipper 5.5 cum capacity	hour	28.00	513.00	14364.00
			d) Overhead charges @ 10 % on (a+b+c)				8101.14
			e) Contractor's profit @ 10 % on (a+b+c+d)				8911.25
							98023.79
			Add 1% labour cess				980.24
			Cost for 30 m (a+b+c+d+e)				98023.79

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per m (a+b+c+d+e)/30				3267.46
					say	<u>3267.00</u>
		Labour Rate				
		Labour				1310.40
		Overhead charges @ 10%				131.04
		Contractors Profit @10%				144.14
						1585.58
		Add 1% labour cess				15.86
		Cost for 30 Mtr..				1601.44
		Rate per Mtr.				53.38
					say	<u>53.00</u>
2.10	1200 & 1900	Providing and Laying Cutting Edge of Mild Steel weighing 40 kg per metre for Well Foundation complete as per Drawing and Technical Specification.				
		Unit = 1 MT				
		Taking output = 1 MT				
		a) Material				
		Structural steel in plates, angles, etc including 5 per cent wastage	tonne	1.05	50100.00	52605.00
		Nuts & bolts	Kg	20.00	85.90	1718.00
		b) Labour				
		(for cutting, bending, making holes, joining, welding and erecting in position)				
		Mate	day	1.32	210.00	277.20
		Fitter	day	5.50	259.00	1424.50
		Blacksmith	day	5.50	315.00	1732.50
		Welder	day	5.50	315.00	1732.50
		Mazdoor	day	16.50	210.00	3465.00
		Electrodes, cutting gas and other consumables @ 10 per cent of cost of (a) above				5432.30
		c) Overhead charges @ 10 % on (a+b)				6838.70
		d) Contractor's profit @ 10 % on (a+b+c)				7522.57
						82748.27
		Add 1% labour cess				827.48
		Rate per MT (a+b+c+d)				83575.75
					say	<u>83576.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Labour Rate				
			Labour				8631.70
			Overhead charges @ 10%				863.17
			Contractors Profit @10%				949.49
							10444.36
			Add 1% labour cess				104.44
			Cost for 1 MT.				10548.80
			Rate per MT.				10548.80
						say	<u>10549.00</u>
2.11	1200, 1500 & 1700		Plain/Reinforced Cement Concrete, in Well Foundation complete as per Drawing and Technical Specification.				
			Unit = 1 cum				
			Taking output = 1 cum				
			Well curb				
		A	RCC M20 Grade				
		(i)	Same as for 12.8 (C) except for formwork which shall be @ 20 per cent of the cost of concrete instead of 4 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5070.00
			d) formwork @ 20 per cent of the cost of concrete				1014.00
			e) Overhead charges @ 10 % on (a+b+c+d)				608.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				669.24
							7361.64
			Add 1% labour cess				73.62
			Rate perm (a+b+c+d+e+f)				7435.26
						say	<u>7435.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				324.79
						say	<u>325.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.11 A (i)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5445.00
			d) formwork @ 20 per cent of the cost of concrete				1089.00
			e) Overhead charges @ 10 % on (a+b+c+d)				653.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				718.74
							7906.14
			Add 1% labour cess				79.06
			Rate perm (a+b+c+d+e+f)				7985.20
						say	<u>7985.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 A			RCC M25 Grade				
		(ii)	Same as for 12.8 (E) except for formwork which shall be @ 20 per cent of the cost of concrete instead of 3.75 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5501.00
			d) formwork @ 20 per cent of the cost of concrete				1100.20
			e) Overhead charges @ 10 % on (a+b+c+d)				660.12
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				726.13
							7987.45
			Add 1% labour cess				79.87
			Rate perm (a+b+c+d+e+f)				8067.33
						say	<u>8067.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 5%				199.33

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Contractors Profit @10%				418.58
							4604.41
			Add 1% labour cess				46.04
			Cost for 15 cum				4650.45
			Rate per cum				<u>310.03</u>
						say	<u>310.00</u>
2.11 A (ii)			RCC M25 Grade				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6127.00
			d) formwork @ 20 per cent of the cost of concrete				1225.40
			e) Overhead charges @ 10 % on (a+b+c+d)				735.24
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				808.76
							8896.40
			Add 1% labour cess				88.96
			Rate perm (a+b+c+d+e+f)				8985.37
						say	<u>8985.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 A			RCC M35 Grade				
		(iii)	Same as for 12.8 (H) except for formwork which shall be @ 20 per cent of the cost of concrete instead of 3.0 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5644.00
			d) formwork @ 20 per cent of the cost of concrete				1128.80
			e) Overhead charges @ 10 % on (a+b+c+d)				677.28
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				745.01
							8195.09

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				81.95
			Rate perm (a+b+c+d+e+f)				8277.04
						say	<u>8277.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 A (iii)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6283.00
			d) formwork @ 20 per cent of the cost of concrete				1256.60
			e) Overhead charges @ 10 % on (a+b+c+d)				753.96
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				829.36
			Rate perm (a+b+c+d+e+f)				9122.92
						say	<u>9123.00</u>
		Note.	If curb concrete is carried out within steel liner, cost of formwork shall be excluded.				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11			Well steining				
		B	PCC M15 Grade				
		(I)	Same as for 12.8 (A) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 4 per cent.				
			Using Concrete Mixer				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				4347.00
			d) formwork @ 10 per cent of the cost of concrete				434.70
			e) Overhead charges @ 10 % on (a+b+c+d)				478.17
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				525.99
							5785.86
			Add 1% labour cess				57.86
			Rate perm (a+b+c+d+e+f)				5843.72
						say	<u>5844.00</u>
			Labour				3986.50
			Overhead charges @ 10%				438.52
			Contractors Profit @10%				442.50
							4867.52
			Add 1% labour cess				48.68
			Cost for 15 cum				4916.19
			Rate per cum				<u>327.75</u>
						say	<u>328.00</u>
2.11 B			PCC M20 Grade				
		(ii)	Same as for 12.8 (B) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 4 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				4969.00
			d) formwork @ 10 per cent of the cost of concrete				496.90
			e) Overhead charges @ 10 % on (a+b+c+d)				546.59
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				601.25
							6613.74
			Add 1% labour cess				66.14
			Rate perm (a+b+c+d+e+f)				6679.88
						say	<u>6680.00</u>
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 B			RCC M20 Grade				
		(iii)	Same as for 12.8 (C) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 4 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5070.00
			d) formwork @ 10 per cent of the cost of concrete				507.00
			e) Overhead charges @ 10 % on (a+b+c+d)				557.70
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				613.47
							6748.17
			Add 1% labour cess				67.48
			Rate perm (a+b+c+d+e+f)				6815.65
						say	<u>6816.00</u>
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 B (iii)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5445.00
			d) formwork @ 10 per cent of the cost of concrete				544.50
			e) Overhead charges @ 10 % on (a+b+c+d)				598.95
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				658.85
							7247.30
			Add 1% labour cess				72.47
			Rate perm (a+b+c+d+e+f)				7319.77

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>7320.00</u>
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 B			PCC M25 Grade				
		(iv)	Same as for 12.8 (D) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 4 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5394.00
			d) formwork @ 10 per cent of the cost of concrete				539.40
			e) Overhead charges @ 10 % on (a+b+c+d)				593.34
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				652.67
							7179.41
			Add 1% labour cess				71.79
			Rate perm (a+b+c+d+e+f)				7251.21
						say	<u>7251.00</u>
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 B (iv)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5772.00
			d) formwork @ 10 per cent of the cost of concrete				577.20

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		e) Overhead charges @ 10 % on (a+b+c+d)				634.92
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				698.41
						7682.53
		Add 1% labour cess				76.83
		Rate perm (a+b+c+d+e+f)				7759.36
					say	<u>7759.00</u>
		Labour Rate				
		Labour				3969.00
		Overhead charges @ 10%				396.90
		Contractors Profit @10%				436.59
						4802.49
		Add 1% labour cess				48.02
		Cost for 120 cum				4850.51
		Rate per cum				<u>40.42</u>
					say	<u>40.00</u>
2.11 B		RCC M25 Grade				
	(v)	Same as for 12.8 (E) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 3.5 per cent.				
		Using Concrete Mixer				
	Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5501.00
		d) formwork @ 10 per cent of the cost of concrete				550.10
		e) Overhead charges @ 10 % on (a+b+c+d)				605.11
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				665.62
						7321.83
		Add 1% labour cess				73.22
		Rate perm (a+b+c+d+e+f)				7395.05
					say	<u>7395.00</u>
		Labour				3986.50
		Overhead charges @ 5%				199.33
		Contractors Profit @10%				418.58
						4604.41
		Add 1% labour cess				46.04
		Cost for 15 cum				4650.45
		Rate per cum				<u>310.03</u>
					say	<u>310.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.11 B (v)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6127.00
			d) formwork @ 10 per cent of the cost of concrete				612.70
			e) Overhead charges @ 10 % on (a+b+c+d)				673.97
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				741.37
			Rate perm (a+b+c+d+e+f)				8155.04
						say	<u>8155.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 B			PCC M30 Grade				
		(vi)	Same as for 12.8 (F) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 3.5 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5440.00
			d) formwork @ 10 per cent of the cost of concrete				544.00
			e) Overhead charges @ 10 % on (a+b+c+d)				598.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				658.24
							7240.64
			Add 1% labour cess				72.41
			Rate perm (a+b+c+d+e+f)				7313.05
						say	<u>7313.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 B (vi)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5814.00
			d) formwork @ 10 per cent of the cost of concrete				581.40
			e) Overhead charges @ 10 % on (a+b+c+d)				639.54
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				703.49
							7738.43
			Add 1% labour cess				77.38
			Rate perm (a+b+c+d+e+f)				7815.82
						say	<u>7816.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 B			RCC M30 Grade				
		(vii)	Same as for 12.8 (G) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 3.5 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5526.00
			d) formwork @ 10 per cent of the cost of concrete				552.60
			e) Overhead charges @ 10 % on (a+b+c+d)				607.86
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				668.65
							7355.11
			Add 1% labour cess				73.55

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate perm (a+b+c+d+e+f)				7428.66
						say	<u>7429.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 B (vii)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5902.00
			d) formwork @ 10 per cent of the cost of concrete				590.20
			e) Overhead charges @ 10 % on (a+b+c+d)				649.22
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				714.14
							7855.56
			Add 1% labour cess				78.56
			Rate perm (a+b+c+d+e+f)				7934.12
						say	<u>7934.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 B			RCC M35 Grade				
		(viii)	Same as for 12.8 (H) except for formwork which shall be @ 10 per cent of the cost of concrete instead of 3 per cent.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5644.00
			d) formwork @ 10 per cent of the cost of concrete				564.40

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			e) Overhead charges @ 10 % on (a+b+c+d)				620.84
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				682.92
							7512.16
			Add 1% labour cess				75.12
			Rate perm (a+b+c+d+e+f)				7587.29
						say	<u>7587.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 5%				199.33
			Contractors Profit @10%				418.58
							4604.41
			Add 1% labour cess				46.04
			Cost for 15 cum				4650.45
			Rate per cum				<u>310.03</u>
						say	<u>310.00</u>
2.11 B (viii)			With Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6283.00
			d) formwork @ 10 per cent of the cost of concrete				628.30
			e) Overhead charges @ 10 % on (a+b+c+d)				691.13
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				760.24
							8362.67
			Add 1% labour cess				83.63
			Rate perm (a+b+c+d+e+f)				8446.30
						say	<u>8446.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 B			RCC M40 Grade				
		(ix)	Using Batching Plant, Transit Mixer and Concrete Pump				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		<i>Unit = cum</i>				
		<i>Taking output = 120 cum</i>				
		a) Material				
		Cement	tonne	51.60	7688.00	396700.80
		Coarse Sand	cum	54.00	1101.00	59454.00
		20 mm Aggregate	cum	64.80	1276.00	82684.80
		10 mm Aggregate	cum	43.20	1281.00	55339.20
		Admixture	kg	206.00	156.00	32136.00
		b) Labour				
		Mate	day	0.84	210.00	176.40
		Meson	day	3.00	315.00	945.00
		Mazdoor	day	18.00	210.00	3780.00
		c) Machinery				
		Batching Plant	hour	6.00	13798.00	82788.00
		Generator 100 KVA	hour	6.00	1125.00	6750.00
		Loader 1 cum capacity	hour	6.00	1281.00	7686.00
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
		Transit Mixer 4 cum capacity for lead beyond 1 km.	tonne.km	300xL	0.00	0.00
		Concrete Pump	hour	6.00	1565.00	9390.00
		<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		50790		
		d) Formwork @ 10 per cent on cost of concrete i.e. cost of material, labour and machinery				76184.52
		e) Overhead charges @ 10 % on (a+b+c+d)				83802.97
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				92183.27
						1014015.96
		Add 1% labour cess				10140.16
		cost of 120 cum = a+b+c+d+e+f				1024156.12
		Rate per cum = (a+b+c+d+e+f)/120				8534.63
					say	<u>8535.00</u>
		Labour Rate				
		Labour				3969.00
		Overhead charges @ 10%				396.90
		Contractors Profit @10%				436.59
						4802.49
		Add 1% labour cess				48.02
		Cost for 120 cum				4850.51

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 C			Bottom Plug				
		C	Concrete to be placed using tremie pipe				
			Note: 10% extra cement to be added where under water concreting is involved				
			PCC Grade M20				
		(i)	Using Concrete Mixer				
		Case I	Unit = cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	5.55	7688.00	42668.40
			Coarse sand	cum	6.75	1101.00	7431.75
			40 mm Aggregate	cum	5.40	1069.00	5772.60
			20 mm Aggregate	cum	5.40	1276.00	6890.40
			10 mm Aggregate	cum	2.70	1281.00	3458.70
			Admixture	Kg	18.60	156.00	2901.60
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Light Crane 3 tonnes capacity for handling tremie pipe	hour	6.00	916.00	5496.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5729.00		
			Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				3699.25
			d) Overhead charges @ 10 % on (a+b+c)				8963.02
			e) Contractor's profit @ 10 % on (a+b+c+d)				9859.32
							108452.54

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				1084.53
			cost of 15 cum = a+b+c+d+e				109537.06
			Rate per cum = (a+b+c+d+e)/15				7302.47
						say	<u>7302.00</u>
			Labour Rate				
			Labour				4861.50
			Overhead charges @ 10%				486.15
			Contractors Profit @10%				534.77
							5882.42
			Add 1% labour cess				58.82
			Cost for 15 cum				5941.24
			Rate per cum				<u>396.08</u>
						say	<u>396.00</u>
2.11 C (i)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Unit ; cum				
			Taking Output = 120 cum				
			a) Material				
			Cement	tonne	44.40	7688.00	341347.20
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture	Kg	148.80	156.00	23212.80
			b) Labour				
			Mate	day	0.88	210.00	184.80
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5814.00		

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				28347.39
			d) Overhead charges @ 10 % on (a+b+c)				72592.42
			e) Contractor's profit @ 10 % on (a+b+c+d)				79851.66
							878368.27
			Add 1% labour cess				8783.68
			cost of 120 cum = a+b+c+d+e				887151.95
			Rate per cum = (a+b+c+d+e)/120				7392.93
						say	<u>7393.00</u>
			Labour Rate				
			Labour				4909.80
			Overhead charges @ 10%				490.98
			Contractors Profit @10%				540.08
							5940.86
			Add 1% labour cess				59.41
			Cost for 120 cum				6000.27
			Rate per cum				<u>50.00</u>
						say	<u>50.00</u>
2.11 C			PCC Grade M25				
		(ii)	Using Concrete Mixer				
		Case I	Unit = cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	5.99	7688.00	46051.12
			Coarse sand	cum	6.75	1101.00	7431.75
			40 mm Aggregate	cum	5.40	1069.00	5772.60
			20 mm Aggregate	cum	5.40	1276.00	6890.40
			10 mm Aggregate	cum	2.70	1281.00	3458.70
			Admixture	Kg	21.60	156.00	3369.60
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Light Crane of 3 tonnes capacity for handling tremie pipe	hour	6.00	916.00	5496.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		5986.00		
			Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				3891.78
			d) Overhead charges @ 10 % on (a+b+c)				9367.35
			e) Contractor's profit @ 10 % on (a+b+c+d)				10304.08
							113344.88
			Add 1% labour cess				1133.45
			cost of 15 cum = a+b+c+d+e				114478.33
			Rate per cum = (a+b+c+d+e)/15				7631.89
						say	<u>7632.00</u>
			Labour Rate				
			Labour				4861.50
			Overhead charges @ 10%				486.15
			Contractors Profit @10%				534.77
							5882.42
			Add 1% labour cess				58.82
			Cost for 15 cum				5941.24
			Rate per cum				<u>396.08</u>
						say	<u>396.00</u>
2.11 C (ii)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	47.88	7688.00	368101.44
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture	Kg	172.80	156.00	26956.80

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		b) Labour				
		Mate	day	0.88	210.00	184.80
		Mason	day	3.00	315.00	945.00
		Mazdoor	day	18.00	210.00	3780.00
		c) Machinery				
		Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
		Generator 100 KVA	hour	6.00	1125.00	6750.00
		Loader 1 cum capacity	hour	6.00	1281.00	7686.00
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
		Concrete Pump	hour	6.00	1565.00	9390.00
		<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		6068.00		
		Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				29872.30
		d) Overhead charges @ 10 % on (a+b+c)				75794.73
		e) Contractor's profit @ 10 % on (a+b+c+d)				83374.21
						917116.28
		Add 1% labour cess				9171.16
		cost of 120 cum = a+b+c+d+e				926287.45
		Rate per cum = (a+b+c+d+e)/120				7719.06
					say	<u>7719.00</u>
		Labour Rate				
		Labour				4909.80
		Overhead charges @ 5%				490.98
		Contractors Profit @10%				540.08
						5940.86
		Add 1% labour cess				59.41
		Cost for 120 cum				6000.27
		Rate per cum				<u>50.00</u>
					say	<u>50.00</u>
2.11 C		PCC Grade M30				
	(iii)	Using Concrete Mixer				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Case I	Unit = 1 cum				
			Taking output = 15 cum				
		a)	Material				
			Cement	tonne	6.08	7688.00	46743.04
			Coarse sand	cum	6.75	1101.00	7431.75
			40 mm Aggregate	cum	5.40	1069.00	5772.60
			20 mm Aggregate	cum	5.40	1276.00	6890.40
			10 mm Aggregate	cum	2.70	1281.00	3458.70
			Admixture	Kg	21.60	156.00	3369.60
		b)	Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
		c)	Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Light Crane of 3 tonnes capacity for handling tremie pipe	hour	6.00	916.00	5496.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6032.00		
			Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				3926.38
		d)	Overhead charges @ 10 % on (a+b+c)				9440.00
		e)	Contractor's profit @ 10 % on (a+b+c+d)				10384.00
							114223.96
			Add 1% labour cess				1142.24
			cost of 15 cum = a+b+c+d+e				115366.20
			Rate per cum = (a+b+c+d+e)/15				7691.08
						say	<u>7691.00</u>
			Labour Rate				
			Labour				4861.50
			Overhead charges @ 10%				486.15
			Contractors Profit @10%				534.77
							5882.42
			Add 1% labour cess				58.82

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cost for 15 cum				5941.24
			Rate per cum				<u>396.08</u>
						say	<u>396.00</u>
2.11 C (iii)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	48.64	7688.00	373944.32
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture	Kg	172.80	156.00	26956.80
			b) Labour				
			Mate	day	0.88	210.00	184.80
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6116.00		
			Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				30164.45
			d) Overhead charges @ 10 % on (a+b+c)				76408.24
			e) Contractor's profit @ 10 % on (a+b+c+d)				84049.06
							924539.66
			Add 1% labour cess				9245.40
			cost of 120 cum = a+b+c+d+e				933785.06

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per cum = (a+b+c+d+e)/120				7781.54
					say	<u>7782.00</u>
		Labour Rate				
		Labour				4909.80
		Overhead charges @ 10%				490.98
		Contractors Profit @10%				540.08
						5940.86
		Add 1% labour cess				59.41
		Cost for 120 cum				6000.27
		Rate per cum				<u>50.00</u>
					say	<u>50.00</u>
2.11 C		PCC Grade M35				
		(iv) Using Concrete Mixer				
	Case I	Unit = 1 cum				
		Taking output = 15 cum				
		a) Material				
		Cement	tonne	6.29	7688.00	48357.52
		Coarse sand	cum	6.75	1101.00	7431.75
		40 mm Aggregate	cum	5.40	1069.00	5772.60
		20 mm Aggregate	cum	5.40	1276.00	6890.40
		10 mm Aggregate	cum	2.70	1281.00	3458.70
		Admixture	Kg	21.60	156.00	3369.60
		b) Labour				
		Mate	day	0.90	210.00	189.00
		Mason	day	1.50	315.00	472.50
		Mazdoor	day	20.00	210.00	4200.00
		c) Machinery				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
		Generator 33 KVA	hour	6.00	725.00	4350.00
		Light Crane of 3 tonnes capacity for handling tremie pipe	hour	6.00	916.00	5496.00
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6140.00		
		Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				4007.10

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Overhead charges @ 10 % on (a+b+c)				9609.52
			e) Contractor's profit @ 10 % on (a+b+c+d)				10570.47
							116275.16
			Add 1% labour cess				1162.75
			cost of 15 cum = a+b+c+d+e				117437.91
			Rate per cum = (a+b+c+d+e)/15				7829.19
						say	<u>7829.00</u>
			Labour Rate				
			Labour				4861.50
			Overhead charges @ 10%				486.15
			Contractors Profit @10%				534.77
							5882.42
			Add 1% labour cess				58.82
			Cost for 15 cum				5941.24
			Rate per cum				<u>396.08</u>
						say	<u>396.00</u>
2.11 C (iv)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	50.28	7688.00	386552.64
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture	Kg	172.80	156.00	26956.80
			b) Labour				
			Mate	day	0.88	210.00	184.80
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	0.00	0.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Concrete Pump	hour	6.00	1565.00	9390.00
			<i>Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)</i>		6222.00		
			Add 5 per cent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe..				30794.86
			d) Overhead charges @ 10 % on (a+b+c)				77732.11
			e) Contractor's profit @ 10 % on (a+b+c+d)				85505.32
							940558.53
			Add 1% labour cess				9405.59
			cost of 120 cum = a+b+c+d+e				949964.12
			Rate per cum = (a+b+c+d+e)/120				7916.37
						say	<u>7916.00</u>
			Labour Rate				
			Labour				4909.80
			Overhead charges @ 10%				490.98
			Contractors Profit @10%				540.08
							5940.86
			Add 1% labour cess				59.41
			Cost for 120 cum				6000.27
			Rate per cum				<u>50.00</u>
						say	<u>50.00</u>
2.11			Intermediate plug				
		D	Grade M20 PCC				
		(i)	Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5729.00
			d) Overhead charges @ 10 % on (a+b+c)				572.90
			e) Contractor's profit @ 10 % on (a+b+c+d)				630.19
			Rate per cum = (a+b+c+d+e)				6932.09
						say	<u>6932.00</u>
			Labour Rate				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Labour				3993.50
			Overhead charges @ 10%				399.35
			Contractors Profit @10%				439.29
			Cost for 15 cum				4832.14
			Rate per cum				<u>322.14</u>
						say	<u>322.00</u>
2.11 D (i)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5814.00
			d) Overhead charges @ 10 % on (a+b+c)				581.40
			e) Contractor's profit @ 10 % on (a+b+c+d)				639.54
							7034.94
			Add 1% labour cess				70.35
			Rate per cum = (a+b+c+d+e)				7105.29
						say	<u>7105.00</u>
			Labour Rate				
			Labour				3976.00
			Overhead charges @ 10%				397.60
			Contractors Profit @10%				437.36
							4810.96
			Add 1% labour cess				48.11
			Cost for 120 cum				4859.07
			Rate per cum				<u>40.49</u>
						say	<u>40.00</u>
2.11 D			Grade M25 PCC				
		(ii)	Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5986.00
			d) Overhead charges @ 10 % on (a+b+c)				598.60
			e) Contractor's profit @ 10 % on (a+b+c+d)				658.46
							7243.06
			Add 1% labour cess				72.43
			Rate per cum = (a+b+c+d+e)				7315.49
						say	<u>7315.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Labour Rate				
			Labour				3993.50
			Overhead charges @ 10%				399.35
			Contractors Profit @10%				439.29
							4832.14
			Add 1% labour cess				48.32
			Cost for 15 cum				4880.46
			Rate per cum				<u>325.36</u>
						say	<u>325.00</u>
2.11 D (ii)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6068.00
			d) Overhead charges @ 10 % on (a+b+c)				606.80
			e) Contractor's profit @ 10 % on (a+b+c+d)				667.48
							7342.28
			Add 1% labour cess				73.42
			Rate per cum = (a+b+c+d+e)				7415.70
						say	<u>7416.00</u>
			Labour Rate				
			Labour				3976.00
			Overhead charges @ 10%				397.60
			Contractors Profit @10%				437.36
							4810.96
			Add 1% labour cess				48.11
			Cost for 120 cum				4859.07
			Rate per cum				<u>40.49</u>
						say	<u>40.00</u>
2.11 D			Grade M30 PCC				
		(iii)	Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6032.00
			d) Overhead charges @ 10 % on (a+b+c)				603.20
			e) Contractor's profit @ 10 % on (a+b+c+d)				663.52
							7298.72
			Add 1% labour cess				72.99

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per cum = (a+b+c+d+e)				7371.71
						say	<u>7372.00</u>
			Labour Rate				
			Labour				3993.50
			Overhead charges @ 10%				399.35
			Contractors Profit @10%				439.29
							4832.14
			Add 1% labour cess				48.32
			Cost for 15 cum				4880.46
			Rate per cum				<u>325.36</u>
						say	<u>325.00</u>
2.11 D (iii)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				6116.00
			d) Overhead charges @ 10 % on (a+b+c)				611.60
			e) Contractor's profit @ 10 % on (a+b+c+d)				672.76
							7400.36
			Add 1% labour cess				74.00
			Rate per cum = (a+b+c+d+e)				7474.36
						say	<u>7474.00</u>
			Labour Rate				
			Labour				3976.00
			Overhead charges @ 10%				397.60
			Contractors Profit @10%				437.36
							4810.96
			Add 1% labour cess				48.11
			Cost for 120 cum				4859.07
			Rate per cum				<u>40.49</u>
						say	<u>40.00</u>
2.11			Top plug				
		E	Grade M15 PCC				
		(i)	Same as Item 12.8(a) excluding formwork				
			Using Concrete Mixer				
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				4347.00
			d) Overhead charges @ 10 % on (a+b+c)				434.70
			e) Contractor's profit @ 10 % on (a+b+c+d)				478.17

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
						5259.87
		Add 1% labour cess				52.60
		Rate per cum = (a+b+c+d+e)				5312.47
					say	<u>5312.00</u>
		Labour Rate				
		Labour				3986.50
		Overhead charges @ 10%				398.65
		Contractors Profit @10%				438.52
						4823.67
		Add 1% labour cess				48.24
		Cost for 15 cum				4871.90
		Rate per cum				<u>324.79</u>
					say	<u>325.00</u>
2.11 E		Grade M20 PCC				
	(ii)	Same as Item 12.8(b) excluding formwork				
		Using Concrete Mixer				
	Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				4969.00
		d) Overhead charges @ 10 % on (a+b+c)				496.90
		e) Contractor's profit @ 10 % on (a+b+c+d)				546.59
						6012.49
		Add 1% labour cess				60.12
		Rate per cum = (a+b+c+d+e)				6072.61
					say	<u>6073.00</u>
		Labour Rate				
		Labour				3986.50
		Overhead charges @ 10%				398.65
		Contractors Profit @10%				438.52
						4823.67
		Add 1% labour cess				48.24
		Cost for 15 cum				4871.90
		Rate per cum				<u>324.79</u>
					say	<u>325.00</u>
2.11 E		Grade M25 PCC				
	(iii)	Same as Item 12.8 (d) excluding formwork				
		Using Concrete Mixer				
	Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5394.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Overhead charges @ 10 % on (a+b+c)				539.40
			e) Contractor's profit @ 10 % on (a+b+c+d)				593.34
							6526.74
			Add 1% labour cess				65.27
			Rate per cum = (a+b+c+d+e)				6592.01
						say	<u>6592.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 E (iii)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5772.00
			d) Overhead charges @ 10 % on (a+b+c)				577.20
			e) Contractor's profit @ 10 % on (a+b+c+d)				634.92
							6984.12
			Add 1% labour cess				69.84
			Rate per cum = (a+b+c+d+e)				7053.96
						say	<u>7054.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 E			Grade M30 PCC				
		(iv)	Same as Item 12.8(f) excluding formwork				
			Using Concrete Mixer				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Case I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5440.00
			d) Overhead charges @ 10 % on (a+b+c)				544.00
			e) Contractor's profit @ 10 % on (a+b+c+d)				598.40
							6582.40
			Add 1% labour cess				65.82
			Rate per cum = (a+b+c+d+e)				6648.22
						say	<u>6648.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 E (iv)			Using Batching Plant, Transit Mixer and Crane/concrete pump				
		Case II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)				5814.00
			d) Overhead charges @ 10 % on (a+b+c)				581.40
			e) Contractor's profit @ 10 % on (a+b+c+d)				639.54
							7034.94
			Add 1% labour cess				70.35
			Rate per cum = (a+b+c+d+e)				7105.29
						say	<u>7105.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11			Well cap				
		F	RCC Grade M20				
		(i)	Using Concrete Mixer				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Case I	Unit = cum				
			Taking output = 15 cum				
		a)	Material				
			Cement	tonne	5.12	7688.00	39362.56
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
		b)	Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
		c)	Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Form Work @ 4 per cent of a+b+c				3014.02
		d)	Overhead charges @ 10 % on (a+b+c)				7836.44
		e)	Contractor's profit @ 10 % on (a+b+c+d)				8620.09
							94820.96
			Add 1% labour cess				948.21
			cost of 15 cum = a+b+c+d+e				95769.17
			Rate per cum = (a+b+c+d+e)/15				6384.61
						say	<u>6385.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 F (i)			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
		a)	Material				
			Cement	tonne	40.92	7688.00	314592.96

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader (capacity 1 cum)	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Formwork @ 4 per cent of (a+b+c)				25904.05
			d) Overhead charges @ 10 % on (a+b+c)				67350.54
			e) Contractor's profit @ 10 % on (a+b+c+d)				74085.60
							814941.55
			Add 1% labour cess				8149.42
			cost of 120 cum = a+b+c+d+e				823090.97
			Rate per cum = (a+b+c+d+e)/120				6859.09
						say	<u>6859.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 F			RCC Grade M25				
		(ii)	Using Concrete Mixer				
		Case I	Unit = cum				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			<i>Taking output = 15 cum</i>				
			a) Material				
			Cement	tonne	6.05	7688.00	46512.40
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Form Work @ 3.75 per cent of a+b+c				3093.76
			d) Overhead charges @ 10 % on (a+b+c)				8559.40
			e) Contractor's profit @ 10 % on (a+b+c+d)				9415.34
							103568.75
			Add 1% labour cess				1035.69
			cost of 15 cum = a+b+c+d+e				104604.44
			Rate per cum = (a+b+c+d+e)/15				6973.63
						say	<u>6974.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 F (ii)			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	<i>Unit = cum</i>				
			<i>Taking output = 120 cum</i>				
			a) Material				
			Cement	tonne	48.40	7688.00	372099.20
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		10 mm Aggregate	cum	43.20	1281.00	55339.20
		b) Labour				
		Mate	day	0.84	210.00	176.40
		Mason	day	3.00	315.00	945.00
		Mazdoor	day	18.00	210.00	3780.00
		c) Machinery				
		Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
		Generator 100 KVA	hour	6.00	1125.00	6750.00
		Loader (capacity 1 cum)	hour	6.00	1281.00	7686.00
		Transit Mixer (capacity 4.0 cu.m)				
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
		Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
		Concrete Pump	hour	6.00	1565.00	9390.00
		Formwork @ 3.75 per cent of (a+b+c)				26441.54
		d) Overhead charges @ 10 % on (a+b+c)				73154.91
		e) Contractor's profit @ 10 % on (a+b+c+d)				80470.40
						885174.45
		Add 1% labour cess				8851.74
		cost of 120 cum = a+b+c+d+e				894026.20
		Rate per cum = (a+b+c+d+e)/120				7450.22
					say	<u>7450.00</u>
		Labour Rate				
		Labour				3969.00
		Overhead charges @ 10%				396.90
		Contractors Profit @10%				436.59
						4802.49
		Add 1% labour cess				48.02
		Cost for 120 cum				4850.51
		Rate per cum				<u>40.42</u>
					say	<u>40.00</u>
2.11 F		RCC Grade M30				
		(iii) Using Concrete Mixer				
	Case I	Unit = cum				
		Taking output = 15 cum				
		a) Material				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cement	tonne	6.10	7688.00	46896.80
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Formwork @ 3.5 per cent of (a+b+c)				2900.96
			d) Overhead charges @ 10 % on (a+b+c)				8578.56
			e) Contractor's profit @ 10 % on (a+b+c+d)				9436.42
							103800.59
			Add 1% labour cess				1038.01
			cost of 15 cum = a+b+c+d+e				104838.60
			Rate per cum = (a+b+c+d+e)/15				6989.24
						say	<u>6989.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>211.78</u>
						say	<u>212.00</u>
2.11 F (iii)			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	48.79	7688.00	375097.52
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
		c)	Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader (capacity 1 cum)	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Formwork @ 3.5 per cent of (a+b+c)				24783.71
		d)	Overhead charges @ 10 % on (a+b+c)				73288.96
		e)	Contractor's profit @ 10 % on (a+b+c+d)				80617.86
							886796.45
			Add 1% labour cess				8867.96
			cost of 120 cum = a+b+c+d+e				895664.41
			Rate per cum = (a+b+c+d+e)/120				7463.87
						say	<u>7464.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 F			RCC Grade M35				
		(iv)	Using Concrete Mixer				
		Case I	Unit = cum				
			Taking output = 15 cum				
		a)	Material				
			Cement	tonne	6.33	7688.00	48665.04
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Formwork @ 3 per cent of (a+b+c)				2539.59
			d) Overhead charges @ 10 % on (a+b+c)				8719.25
			e) Contractor's profit @ 10 % on (a+b+c+d)				9591.17
							105502.90
			Add 1% labour cess				1055.03
			cost of 15 cum = a+b+c+d+e				106557.93
			Rate per cum = (a+b+c+d+e)/15				7103.86
						say	<u>7104.00</u>
			Labour Rate				
			Labour				3986.50
			Overhead charges @ 10%				398.65
			Contractors Profit @10%				438.52
							4823.67
			Add 1% labour cess				48.24
			Cost for 15 cum				4871.90
			Rate per cum				<u>324.79</u>
						say	<u>325.00</u>
2.11 F (iv)			Using Batching Plant, Transit Mixer and Concrete Pump				
		Case II	Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	50.64	7688.00	389320.32
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader (capacity 1 cum)	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Formwork @ 3 per cent of (a+b+c)				21669.86
			d) Overhead charges @ 10 % on (a+b+c)				74399.86
			e) Contractor's profit @ 10 % on (a+b+c+d)				81839.84
							900238.28
			Add 1% labour cess				9002.38
			cost of 120 cum = a+b+c+d+e				909240.67
			Rate per cum = (a+b+c+d+e)/120				7577.01
						say	<u>7577.00</u>
			Where ever concrete is carried out using batching plant, transit mixer, concrete pump, Admixtures @ 0.4 per cent of weight of cement may be added for achieving desired slump of concrete.				
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>
2.11 F		Note	RCC M40 Grade				
		(v)	Using Batching Plant, Transit Mixer and Concrete Pump				
			Unit = cum				
			Taking output = 120 cum				
			a) Material				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cement	tonne	52.20	7688.00	401313.60
			Coarse Sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture	kg	206.00	156.00	32136.00
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader 1 cum capacity	hour	6.00	1281.00	7686.00
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1601.00	24015.00
			Transit Mixer 4 cum capacity for lead beyond 1 km.	tonne.k m	300.L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Formwork @ 3 per cent on cost of concrete i.e. cost of material, labour and machinery				22993.74
			d) Overhead charges @ 10 % on (a+b+c)				78945.17
			e) Contractor's profit @ 10 % on (a+b+c+d)				86839.69
							955236.61
			Add 1% labour cess				9552.37
			cost of 120 cum = a+b+c+d+e				964788.97
			Rate per cum = (a+b+c+d+e)/120				8039.91
						say	<u>8040.00</u>
			Labour Rate				
			Labour				3969.00
			Overhead charges @ 10%				396.90
			Contractors Profit @10%				436.59
							4802.49
			Add 1% labour cess				48.02
			Cost for 120 cum				4850.51
			Rate per cum				<u>40.42</u>
						say	<u>40.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.12	Section 1200		Sinking of 6 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			<i>Unit = Running Meter.</i>				
			<i>Taking output = 1 m</i>				
			Diameter of well - 6 m.				
			Sandy Soil				
		A	Depth below bed level upto 3.0 M				
		(i)	Rate of sinking = 0.50 m per hour.				
		a)	Labour				
			Mate	day	0.12	210.00	25.20
			Sinker (skilled)	day	1.00	210.00	210.00
			Sinking helper (semi-skilled)	day	2.00	210.00	420.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	2.00	916.00	1832.00
			Consumables in sinking @10 per cent of (b)				183.20
		c)	Overhead charges @ 10 % on (a+b)				267.04
		d)	Contractor's profit @ 10 % on (a+b+c)				293.74
							3231.18
			Add 1% labour cess				32.31
			Rate per metre = (a+b+c+d)				3263.50
						say	<u>3263.00</u>
			Labour Rate				
			Labour				655.20
			Overhead charges @ 10%				65.52
			Contractors Profit @10%				72.07
							792.79
			Add 1% labour cess				7.93
			Cost for 1 m				792.79
			Rate per m				<u>792.79</u>
						say	<u>793.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.12 A			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking = 0.33 m per hour.				
			a) Labour				
			Mate	day	0.15	210.00	31.50
			Sinker	day	1.25	210.00	262.50
			Sinking helper (semi-skilled)	day	2.50	210.00	525.00
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories	hour	3.00	916.00	2748.00
			Consumables in sinking @10 per cent of (b)				274.80
			c) Overhead charges @ 10 % on (a+b)				384.18
			d) Contractor's profit @ 10 % on (a+b+c)				422.60
							4648.58
			Add 1% labour cess				46.49
			Rate per metre = (a+b+c+d)				4695.06
						say	<u>4695.00</u>
			Labour Rate				
			Labour				819.00
			Overhead charges @ 10%				81.90
			Contractors Profit @10%				90.09
							990.99
			Add 1% labour cess				9.91
			Cost for 1 m				1000.90
			Rate per m				<u>1000.90</u>
						say	<u>1001.00</u>
2.12 A			Beyond 10m upto 20m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	11th m	5%	4930.00		
			12th m	5%	5177.00		
			13th m	5%	5436.00		
			14th m	5%	5708.00		
			15th m	5%	5993.00		
			16th m	5%	6293.00		
			17th m	5%	6608.00		

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			18th m	5%	6938.00		
			19th m	5%	7285.00		
			20th m	5%	7649.00		
			Total Cost from 10m upto 20m		62017.00		
			<i>Avg Rate per metre</i>		<u>6202.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	1051.00		
			12th m	5%	1104.00		
			13th m	5%	1159.00		
			14th m	5%	1217.00		
			15th m	5%	1278.00		
			16th m	5%	1342.00		
			17th m	5%	1409.00		
			18th m	5%	1479.00		
			19th m	5%	1553.00		
			20th m	5%	1631.00		
			Total Cost from 10m upto 20m		13223.00		
			<i>Avg Rate per metre</i>		<u>1322.00</u>		
2.12 A			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	21st m	7.5%	8223.00	9868.00	
			22nd m	7.5%	8840.00	10608.00	
			23rd m	7.5%	9503.00	11404.00	
			24th m	7.5%	10216.00	12259.00	
			25th m	7.5%	10982.00	13178.00	
			26th m	7.5%	11806.00	14167.00	
			27th m	7.5%	12691.00	15229.00	
			28th m	7.5%	13643.00	16372.00	
			29th m	7.5%	14666.00	17599.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			30th m	7.5%	15766.00	18919.00	
			Total Cost from 20m upto 30m		116336.00	139603.00	
			<i>Avg Rate per metre</i>		<u>11634.00</u>	<u>13960.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	1753.00	2104.00	
			22nd m	7.5%	1884.00	2261.00	
			23rd m	7.5%	2025.00	2430.00	
			24th m	7.5%	2177.00	2612.00	
			25th m	7.5%	2340.00	2808.00	
			26th m	7.5%	2516.00	3019.00	
			27th m	7.5%	2705.00	3246.00	
			28th m	7.5%	2908.00	3490.00	
			29th m	7.5%	3126.00	3751.00	
			30th m	7.5%	3360.00	4032.00	
			Total Cost from 20m upto 30m		24794.00	29753.00	
			<i>Avg Rate per metre</i>		<u>2479.00</u>	<u>2975.00</u>	
2.12 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	31st m	10%	17343.00	20812.00	
			32nd	10%	19077.00	22892.00	
			33rd m	10%	20985.00	25182.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			34th m	10%	23084.00	27701.00	
			35th m	10%	25392.00	30470.00	
			36th m	10%	27931.00	33517.00	
			37th m	10%	30724.00	36869.00	
			38th m	10%	33796.00	40555.00	
			39th m	10%	37176.00	44611.00	
			40th m	10%	40894.00	49073.00	
			Total Cost from 30m upto 40m		276402	331682.00	
			<i>Avg Rate per metre</i>		<u>27640</u>	<u>33168.00</u>	
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			31st m	10%	3696.00	4435.00	
			32nd	10%	4066.00	4879.00	
			33rd m	10%	4473.00	5368.00	
			34th m	10%	4920.00	5904.00	
			35th m	10%	5412.00	6494.00	
			36th m	10%	5953.00	7144.00	
			37th m	10%	6548.00	7858.00	
			38th m	10%	7203.00	8644.00	
			39th m	10%	7923.00	9508.00	
			40th m	10%	8715.00	10458.00	
			Total Cost from 30m upto 40m		58909.00	70692.00	
			<i>Avg Rate per metre</i>		<u>5891.00</u>	<u>7069.00</u>	
2.12			Clayey Soil (6m dia. Well)				
		B	Unit = Running Meter.				
			Taking output = 1 meter				
			Depth below bed level upto 3.0 M				
		(i)	Rate of sinking = 0.33 m per hour.				
			a) Labour				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mate	day	0.15	210.00	31.50
			Sinker (skilled)	day	1.50	210.00	315.00
			Sinking helper (semi-skilled)	day	2.25	210.00	472.50
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories	hour	3.00	916.00	2748.00
			Consumables in sinking @ 10 per cent of (b)				274.80
			c) Overhead charges @ 10 % on (a+b)				384.18
			d) Contractor's profit @ 10 % on (a+b+c)				422.60
							4648.58
			Add 1% labour cess				46.49
			Rate per metre = (a+b+c+d)				4695.06
						say	<u>4695.00</u>
			Labour Rate				
			Labour				819.00
			Overhead charges @ 10%				81.90
			Contractors Profit @10%				90.09
							990.99
			Add 1% labour cess				9.91
			Cost for 1 m				1000.90
			Rate per m				<u>1000.90</u>
						say	<u>1001.00</u>
2.12 B			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking = 0.17 m per hour.				
			a) Labour				
			Mate	day	0.30	210.00	63.00
			Sinker	day	3.00	210.00	630.00
			Sinking helper (semi-skilled)	day	4.50	210.00	945.00
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	2.00	465.00	930.00
			Consumables in sinking @ 10 per cent of (b)				642.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			c) Overhead charges @ 10 % on (a+b)				870.66
			d) Contractor's profit @ 10 % on (a+b+c)				957.73
							10534.99
			Add 1% labour cess				105.35
			Rate per metre = (a+b+c+d)				10640.34
						say	<u>10640.00</u>
			Labour Rate				
			Labour				1638.00
			Overhead charges @ 10%				163.80
			Contractors Profit @10%				180.18
							1981.98
			Add 1% labour cess				19.82
			Cost for 1 m				2001.80
			Rate per m				<u>2001.80</u>
						say	<u>2002.00</u>
2.12 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	11172.00	11731.00	
			12th m	5%	11731.00	12318.00	
			13th m	5%	12318.00	12934.00	
			14th m	5%	12934.00	13581.00	
			15th m	5%	13581.00	14260.00	
			16th m	5%	14260.00	14973.00	
			17th m	5%	14973.00	15722.00	
			18th m	5%	15722.00	16508.00	
			19th m	5%	16508.00	17333.00	
			20th m	5%	17333.00	18200.00	
			Total Cost from 10m upto 20m		140532.00	147560.00	
			<i>Avg Rate per metre</i>		<u>14053.00</u>	<u>14756.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	2102.00	2207.00	
			12th m	5%	2207.00	2317.00	
			13th m	5%	2317.00	2433.00	
			14th m	5%	2433.00	2555.00	
			15th m	5%	2555.00	2683.00	
			16th m	5%	2683.00	2817.00	
			17th m	5%	2817.00	2958.00	
			18th m	5%	2958.00	3106.00	
			19th m	5%	3106.00	3261.00	
			20th m	5%	3261.00	3424.00	
			Total Cost from 10m upto 20m		26439.00	27761.00	
			<i>Avg Rate per metre</i>		<u>2644.00</u>	<u>2776.00</u>	
2.12 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering of the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	28422.00	35528.00	37304.00
			22nd m	7.5%	30554.00	38193.00	40103.00
			23rd m	7.5%	32846.00	41058.00	43111.00
			24th m	7.5%	35309.00	44136.00	46343.00
			25th m	7.5%	37957.00	47446.00	49818.00
			26th m	7.5%	40804.00	51005.00	53555.00
			27th m	7.5%	43864.00	54830.00	57572.00
			28th m	7.5%	47154.00	58943.00	61890.00
			29th m	7.5%	50691.00	63364.00	66532.00
			30th m	7.5%	54493.00	68116.00	71522.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Total Cost from 20m upto 30m		402094.00	502619.00	527750.00
			<i>Avg Rate per metre</i>		<u>40209.00</u>	<u>50262.00</u>	<u>52775.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering of the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	3506.00	4383.00	4602.00
			22nd m	7.5%	3769.00	4711.00	4947.00
			23rd m	7.5%	4052.00	5065.00	5318.00
			24th m	7.5%	4356.00	5445.00	5717.00
			25th m	7.5%	4683.00	5854.00	6147.00
			26th m	7.5%	5034.00	6293.00	6608.00
			27th m	7.5%	5412.00	6765.00	7103.00
			28th m	7.5%	5818.00	7273.00	7637.00
			29th m	7.5%	6254.00	7818.00	8209.00
			30th m	7.5%	6723.00	8404.00	8824.00
			Total Cost from 20m upto 30m		49607.00	62011.00	65112.00
			<i>Avg Rate per metre</i>		<u>4961.00</u>	<u>6201.00</u>	<u>6511.00</u>
2.12 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	59942.00	71930.00	75527.00
			32nd	10%	65936.00	79123.00	83079.00
			33rd m	10%	72530.00	87036.00	91388.00
			34th m	10%	79783.00	95740.00	100527.00
			35th m	10%	87761.00	105313.00	110579.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			36th m	10%	96537.00	115844.00	121636.00
			37th m	10%	106191.00	127429.00	133800.00
			38th m	10%	116810.00	140172.00	147181.00
			39th m	10%	128491.00	154189.00	161898.00
			40th m	10%	141340.00	169608.00	178088.00
			Total Cost from 30m upto 40m		955321.00	1146384.00	1203703.00
			<i>Avg Rate per metre</i>		<u>95532.00</u>	<u>114638.00</u>	<u>120370.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	7395.00	8874.00	9318.00
			32nd	10%	8135.00	9762.00	10250.00
			33rd m	10%	8949.00	10739.00	11276.00
			34th m	10%	9844.00	11813.00	12404.00
			35th m	10%	10828.00	12994.00	13644.00
			36th m	10%	11911.00	14293.00	15008.00
			37th m	10%	13102.00	15722.00	16508.00
			38th m	10%	14412.00	17294.00	18159.00
			39th m	10%	15853.00	19024.00	19975.00
			40th m	10%	17438.00	20926	21972.00
			Total Cost from 30m upto 40m		117867.00	141441	148514.00
			<i>Avg Rate per metre</i>		<u>11787.00</u>	<u>14144</u>	<u>14851.00</u>
2.12							
		C	Soft Rock				
			Taking output = 1 m				
			Depth in Soft rock strata up to 3m				
			Rate of sinking = 0.25 m per hour.				
			a) Labour				
			Mate	day	0.92	210.00	193.20
			Sinker (skilled)	day	3.00	210.00	630.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Sinking helper (semi-skilled)	day	20.00	210.00	4200.00
			Diver	day	0.50	274.17	137.09
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.00	916.00	3664.00
			Air compressor with pneumatic breakers	hour	3.50	465.00	1627.50
			Consumables in sinking @ 10 per cent of (b)				529.15
			Add for dewatering @ of 5 per cent of (a+b), if required				549.05
		c)	Overhead charges @ 10 % on (a+b)				1153.00
		d)	Contractor's profit @ 10 % on (a+b+c)				1268.30
							13951.28
			Add 1% labour cess				139.51
			Rate per metre = (a+b+c+d)				14090.79
						say	<u>14091.00</u>
			Labour Rate				
			Labour				5160.29
			Overhead charges @ 10%				516.03
			Contractors Profit @10%				567.63
							6243.94
			Add 1% labour cess				62.44
			Cost for 1 m				6306.38
			Rate per m				<u>6306.38</u>
						say	<u>6306.00</u>
2.12			Hard Rock (6m dia well)				
		D	Unit = Running Meter				
			Taking output = 1 m				
			Depth in hard rock strata upto 3 m				
			Rate of sinking = 0.17 m per hour.				
		a)	Material				
			Gelatine 80 per cent	Kg	4.00	98.00	392.00
			Electric Detonators	each	18.00	16.00	288.00
		b)	Labour				
			Mate	day	1.56	210.00	327.60
			Driller	day	2.00	210.00	420.00
			Blaster	day	0.25	259.00	64.75

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mazdoor	day	12.00	210.00	2520.00
			Mazdoor (Skilled)	day	4.00	210.00	840.00
		c)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Hire & running charges of compressor with pneumatic breaker/Jack hammer for drilling.	hour	2.00	465.00	930.00
			Dewatering @ 5 per cent of cost of (b+c), if required.				529.92
			Consumables in sinking @ 10 per cent of cost of (b).				642.60
		d)	Overhead charges @ 10 % on (a+b+c)				1245.09
		e)	Contractor's profit @ 10 % on (a+b+c+d)				1369.60
							15065.55
			Add 1% labour cess				150.66
			Rate per metre = (a+b+c+d+e)				15216.21
						say	<u>15216.00</u>
			Labour Rate				
			Labour				4852.35
			Overhead charges @ 10%				485.24
			Contractors Profit @10%				533.76
							5871.34
			Add 1% labour cess				58.71
			Cost for 1 m				5930.06
			Rate per m				<u>5930.06</u>
						say	<u>5930.00</u>
2.13	Section 1200		Sinking of 7 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			<i>Unit = Running Meter.</i>				
			<i>Taking output = 1 m</i>				
			Diameter of well - 7 m.				
			Sandy Soil				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		A	Depth below bed level upto 3.0 M				
		(i)	Rate of sinking = 0.30 m per hour.				
		a)	Labour				
			Mate	day	0.15	210.00	31.50
			Sinker (skilled)	day	1.25	210.00	262.50
			Sinking helper (semi-skilled)	day	2.50	210.00	525.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	3.25	916.00	2977.00
			Consumables in sinking @10 per cent of (b)				297.70
		c)	Overhead charges @ 10 % on (a+b)				409.37
		d)	Contractor's profit @ 10 % on (a+b+c)				409.37
							4912.44
			Add 1% labour cess				49.12
			Rate per metre = (a+b+c+d)				4961.56
			Labour Rate				
			Labour				819.00
			Overhead charges @ 10%				81.90
			Contractors Profit @10%				90.09
							990.99
			Add 1% labour cess				9.91
			Cost for 1 m				1000.90
			Rate per m				<u>525.55</u>
						say	<u>526.00</u>
2.13 A			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking = 0.22 m per hour.				
		a)	Labour				
			Mate	day	0.18	210.00	37.80
			Sinker	day	1.50	210.00	315.00
			Sinking helper (semi-skilled)	day	3.00	210.00	630.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.50	916.00	4122.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Consumables in sinking @10 per cent of (b)				412.20
			c) Overhead charges @ 10 % on (a+b)				551.70
			d) Contractor's profit @ 10 % on (a+b+c)				606.87
							6675.57
			Add 1% labour cess				66.76
			Rate per metre = (a+b+c+d)				6742.33
						say	<u>6742.00</u>
			Labour Rate				
			Labour				982.80
			Overhead charges @ 10%				98.28
			Contractors Profit @10%				108.11
							1189.19
			Add 1% labour cess				11.89
			Cost for 1 m				1201.08
			Rate per m				<u>1201.08</u>
						say	<u>1201.00</u>
2.13 A			Beyond 10m upto 20m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	11th m	5%	7079.00		
			12th m	5%	7433.00		
			13th m	5%	7805.00		
			14th m	5%	8195.00		
	0.165		15th m	5%	8605.00		
			16th m	5%	9035.00		
			17th m	5%	9487.00		
			18th m	5%	9961.00		
			19th m	5%	10459.00		
			20th m	5%	10982.00		
			Total Cost from 10m upto 20m		89041.00		
			<i>Avg Rate per metre</i>		<u>8904.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			11th m	5%	1261.00		
			12th m	5%	1324.00		
			13th m	5%	1390.00		
			14th m	5%	1460.00		
			15th m	5%	1533.00		
			16th m	5%	1610.00		
			17th m	5%	1691.00		
			18th m	5%	1776.00		
			19th m	5%	1865.00		
			20th m	5%	1958.00		
			Total Cost from 10m upto 20m		15868.00		
			<i>Avg Rate per metre</i>		<u>1587.00</u>		
2.13 A			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	
		b	21st m	7.5%	11806.00	14167.00	
			22nd m	7.5%	12691.00	15229.00	
			23rd m	7.5%	13643.00	16372.00	
			24th m	7.5%	14666.00	17599.00	
			25th m	7.5%	15766.00	18919.00	
			26th m	7.5%	16948.00	20338.00	
			27th m	7.5%	18219.00	21863.00	
			28th m	7.5%	19585.00	23502.00	
			29th m	7.5%	21054.00	25265.00	
			30th m	7.5%	22633.00	27160.00	
			Total Cost from 20m upto 30m		167011.00	200414.00	
			<i>Avg Rate per metre</i>		<u>16701.00</u>	<u>20041.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	
			21st m	7.5%	2105.00	2526.00	
			22nd m	7.5%	2263.00	2716.00	
			23rd m	7.5%	2433.00	2920.00	
			24th m	7.5%	2615.00	3138.00	
			25th m	7.5%	2811.00	3373.00	
			26th m	7.5%	3022.00	3626.00	
			27th m	7.5%	3249.00	3899.00	
			28th m	7.5%	3493.00	4192.00	
			29th m	7.5%	3755.00	4506.00	
			30th m	7.5%	4037.00	4844.00	
			Total Cost from 20m upto 30m		29783.00	35740.00	
			<i>Avg Rate per metre</i>		<u>2978.00</u>	<u>3574.00</u>	
2.13 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	24896.00	29875.00	
			32nd	10%	27386.00	32863.00	
			33rd m	10%	30125.00	36150.00	
			34th m	10%	33138.00	39766.00	
			35th m	10%	36452.00	43742.00	
			36th m	10%	40097.00	48116.00	
			37th m	10%	44107.00	52928.00	
			38th m	10%	48518.00	58222.00	
			39th m	10%	53370.00	64044.00	
			40th m	10%	58707.00	70448.00	
			Total Cost from 30m upto 40m		396796.00	476154.00	
			<i>Avg Rate per metre</i>		<u>39680.00</u>	<u>47615.00</u>	
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
			31st m	10%	4441.00	5329.00	
			32nd	10%	4885.00	5862.00	
			33rd m	10%	5374.00	6449.00	
			34th m	10%	5911.00	7093.00	
			35th m	10%	6502.00	7802.00	
			36th m	10%	7152.00	8582.00	
			37th m	10%	7867.00	9440.00	
			38th m	10%	8654.00	10385.00	
			39th m	10%	9519.00	11423.00	
			40th m	10%	10471.00	12565.00	
			Total Cost from 30m upto 40m		70776.00	84930.00	
			<i>Avg Rate per metre</i>		<u>7078.00</u>	<u>8493.00</u>	
2.13			Clayey Soil (7m dia. Well)				
		B	Unit = Running Meter.				
			Taking output = 1 cum				
			Depth below bed level upto 3.0 M				
		(I)	Rate of sinking = 0.22 m per hour.				
		a)	Labour				
			Mate	day	0.18	210.00	37.80
			Sinker (skilled)	day	1.50	210.00	315.00
			Sinking helper (semi-skilled)	day	3.00	210.00	630.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.50	916.00	4122.00
			Consumables in sinking @ 10 per cent of (b)				412.20
		d)	Overhead charges @ 10 % on (a+b)				551.70
		e)	Contractor's profit @ 10 % on (a+b+c)				606.87
							6675.57
			Add 1% labour cess				66.76

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per metre = (a+b+c+d)				6742.33
					say	<u>6742.00</u>
		Labour Rate				
		Labour				982.80
		Overhead charges @ 10%				98.28
		Contractors Profit @10%				108.11
						1189.19
		Add 1% labour cess				11.89
		Cost for 1 m				1201.08
		Rate per m				<u>1201.08</u>
					say	<u>1201.00</u>
2.13 B		Beyond 3m upto 10m depth				
	(ii)	Rate of sinking = 0.17 m per hour.				
		a) Labour				
		Mate	day	0.26	210.00	54.60
		Sinker	day	2.00	210.00	420.00
		Sinking helper (semi-skilled)	day	4.00	210.00	840.00
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
		Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.25	465.00	549.60
		Consumables in sinking @ 10 per cent of (b)				604.56
		c) Overhead charges @ 10 % on (a+b)				796.48
		d) Contractor's profit @ 10 % on (a+b+c)				876.12
						9637.36
		Add 1% labour cess				96.37
		Rate per metre = (a+b+c+d)				9733.73
					say	<u>9734.00</u>
		Labour Rate				
		Labour				1314.60
		Overhead charges @ 10%				131.46
		Contractors Profit @10%				144.61
						1590.67
		Add 1% labour cess				15.91
		Cost for 1 m				1606.57

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per m				<u>1606.57</u>
						say	<u>1607.00</u>
2.13 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	10220.00	10731.00	
			12th m	5%	10731.00	11268.00	
			13th m	5%	11268.00	11831.00	
			14th m	5%	11831.00	12423.00	
			15th m	5%	12423.00	13044.00	
			16th m	5%	13044.00	13696.00	
			17th m	5%	13696.00	14381.00	
			18th m	5%	14381.00	15100.00	
			19th m	5%	15100.00	15855.00	
			20th m	5%	15855.00	16648.00	
			Total Cost from 10m upto 20m		128549.00	134977.00	
			<i>Avg Rate per metre</i>		<u>12855.00</u>	<u>13498.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	1687.00	1771.00	
			12th m	5%	1771.00	1860.00	
			13th m	5%	1860.00	1953.00	
			14th m	5%	1953.00	2051.00	
			15th m	5%	2051.00	2154.00	
			16th m	5%	2154.00	2262.00	
			17th m	5%	2262.00	2375.00	
			18th m	5%	2375.00	2494.00	
			19th m	5%	2494.00	2619.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			20th m	5%	2619.00	2750.00	
			Total Cost from 10m upto 20m		21226.00	22289.00	
			<i>Avg Rate per metre</i>		<u>2123.00</u>	<u>2229.00</u>	
2.13 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering on the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	17044.00	21305.00	22370.00
			22nd	7.5%	18322.00	22903.00	24048.00
			23rd m	7.5%	19696.00	24620.00	25851.00
			24th m	7.5%	21173.00	26466.00	27789.00
			25th m	7.5%	22761.00	28451.00	29874.00
			26th m	7.5%	24468.00	30585.00	32114.00
			27th m	7.5%	26303.00	32879.00	34523.00
			28th m	7.5%	28276.00	35345.00	37112.00
			29th m	7.5%	30397.00	37996.00	39896.00
			30th m	7.5%	32677.00	40846.00	42888.00
			Total Cost from 30m upto 40m		241117.00	301396.00	316465.00
			<i>Avg Rate per metre</i>		<u>24112.00</u>	<u>30140.00</u>	<u>31647.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	2815.00	3519.00	3695.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			22nd	7.5%	3026.00	3783.00	3972.00
			23rd m	7.5%	3253.00	4066.00	4269.00
			24th m	7.5%	3497.00	4371.00	4590.00
			25th m	7.5%	3759.00	4699.00	4934.00
			26th m	7.5%	4041.00	5051.00	5304.00
			27th m	7.5%	4344.00	5430.00	5702.00
			28th m	7.5%	4670.00	5838.00	6130.00
			29th m	7.5%	5020.00	6275.00	6589.00
			30th m	7.5%	5397.00	6746.00	7083.00
			Total Cost from 30m upto 40m		39822.00	49778.00	52268.00
			<i>Avg Rate per metre</i>		<u>3982.00</u>	<u>4978.00</u>	<u>5227.00</u>
2.13 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	35945.00	43134.00	45291.00
			32nd	10%	39540.00	47448.00	49820.00
			33rd m	10%	43494.00	52193.00	54803.00
			34th m	10%	47843.00	57412.00	60283.00
			35th m	10%	52627.00	63152.00	66310.00
			36th m	10%	57890.00	69468.00	72941.00
			37th m	10%	63679.00	76415.00	80236.00
			38th m	10%	70047.00	84056.00	88259.00
			39th m	10%	77052.00	92462.00	97085.00
			40th m	10%	84757.00	101708.00	106793.00
			Total Cost from 30m upto 40m		572874.00	687448.00	721821.00
			<i>Avg Rate per metre</i>		<u>57287.00</u>	<u>68745.00</u>	<u>72182.00</u>
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	5937.00	7124.00	7480.00
			32nd	10%	6531.00	7837.00	8229.00
			33rd m	10%	7184.00	8621.00	9052.00
			34th m	10%	7902.00	9482.00	9956.00
			35th m	10%	8692.00	10430.00	10952.00
			36th m	10%	9561.00	11473.00	12047.00
			37th m	10%	10517.00	12620.00	13251.00
			38th m	10%	11569.00	13883.00	14577.00
			39th m	10%	12726.00	15271.00	16035.00
			40th m	10%	13999.00	16799.00	17639.00
			Total Cost from 30m upto 40m		94618.00	113540.00	119218.00
			<i>Avg Rate per metre</i>		<u>9462.00</u>	<u>11354.00</u>	<u>11922.00</u>
2.13			Soft Rock (7m dia well)				
		C	Unit = Running Meter.				
			Taking output = 1 m				
			Depth in soft rock strata upto 3m				
			Rate of sinking = 0.22 m per hour.				
			a) Labour				
			Mate	day	0.58	210.00	121.80
			Sinker (skilled)	day	4.00	210.00	840.00
			Sinking helper (semi-skilled)	day	10.00	210.00	2100.00
			Diver	day	0.75	274.17	205.63
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.50	916.00	4122.00
			Air compressor with pneumatic breakers	hour	3.75	465.00	1743.75

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Consumables in sinking @ 10 per cent of (b)				586.58
			Add for dewatering @ of 5 per cent of (a+b), if required				456.66
			c) Overhead charges @ 10 % on (a+b)				1017.64
			d) Contractor's profit @ 10 % on (a+b+c)				1119.41
							12313.46
			Add 1% labour cess				123.13
			Rate per metre = (a+b+c+d)				12436.59
						say	<u>12437.00</u>
			Labour Rate				
			Labour				1820.05
			Overhead charges @ 10%				182.01
			Contractors Profit @10%				200.21
							2202.26
			Add 1% labour cess				22.02
			Cost for 1 m				2224.28
			Rate per m				<u>2224.28</u>
						say	<u>2224.00</u>
2.13			Hard Rock (7m dia well)				
		D	Unit = Running Meter				
			Taking output = 1 m				
			Depth in Hard rock strata up to 3 m				
			Rate of sinking = 0.17 m per hour.				
			a) Material				
			Gelatine 80 per cent	Kg	7.00	98.00	686.00
			Electric Detonators	each	30.00	16.00	480.00
			b) Labour				
			Mate	day	1.60	210.00	336.00
			Driller	day	2.00	210.00	420.00
			Blaster	day	0.25	259.00	64.75
			Mazdoor	day	18.00	210.00	3780.00
			Mazdoor (Skilled)	day	4.00	210.00	840.00
			Diver	day	0.50	274.17	137.09
			c) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Hire & running charges of compressor with pneumatic breaker/Jack hammer for drilling.	hour	2.00	465.00	930.00
			Dewatering @ 5 per cent of cost of (b+c), if required.				600.19
			Consumables in sinking @ 10 per cent of cost of (b).				702.62
			d) Overhead charges @ 10 % on (a+b+c)				1447.26
			e) Contractor's profit @ 10 % on (a+b+c+d)				1591.99
							17511.90
			Add 1% labour cess				175.12
			Rate per metre = (a+b+c+d+e)				17687.02
						say	<u>17687.00</u>
			Labour Rate				
			Labour				5577.84
			Overhead charges @ 10%				557.78
			Contractors Profit @10%				613.56
							6749.18
			Add 1% labour cess				67.49
			Cost for 1 m				6816.67
			Rate per m				<u>6816.67</u>
						say	<u>6817.00</u>
2.14	Section 1200		Sinking of 8 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			<i>Unit = Running Meter.</i>				
			<i>Taking output = 1 m</i>				
			Diameter of well - 8 m.				
			Sandy Soil				
		A	Depth below bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.25 m/hour				
			a) Labour				
			Mate	day	0.18	210.00	37.80
			Sinker (skilled)	day	1.50	210.00	315.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Sinking helper (semi-skilled)	day	3.00	210.00	630.00
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.00	916.00	3664.00
		Consumables in sinking @10 per cent of (b)				366.40
		c) Overhead charges @ 10 % on (a+b)				501.32
		d) Contractor's profit @ 10 % on (a+b+c)				551.45
						6065.97
		Add 1% labour cess				60.66
		Rate per metre = (a+b+c+d)				6126.63
					say	<u>6127.00</u>
		Labour Rate				
		Labour				2746.02
		Overhead charges @ 10%				274.60
		Contractors Profit @10%				302.06
						3322.68
		Add 1% labour cess				33.23
		Cost for 1 m				3355.91
		Rate per m				3355.91
					say	<u>3356.00</u>
2.14 A		Beyond 3m upto 10m depth				
	(ii)	Rate of sinking @ 0.20 m/hour				
		a) Labour				
		Mate	day	0.25	210.00	52.50
		Sinker	day	1.75	210.00	367.50
		Sinking helper (semi-skilled)	day	3.50	210.00	735.00
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.00	916.00	4580.00
		Consumables in sinking @10 per cent of (b)				458.00
		c) Overhead charges @ 10 % on (a+b)				619.30
		d) Contractor's profit @ 10 % on (a+b+c)				681.23
						7493.53
		Add 1% labour cess				74.94

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per metre = (a+b+c+d)				7568.47
						say	<u>7568.00</u>
			Labour Rate				
			Labour				1155.00
			Overhead charges @ 5%				57.75
			Contractors Profit @10%				121.28
							1334.03
			Add 1% labour cess				13.34
			Cost for 1 m				1334.03
			Rate per m				1334.03
						say	<u>1334.00</u>
2.14 A			Beyond 10m upto 20m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	11th m	5%	7947.00		
			12th m	5%	8344.00		
			13th m	5%	8761.00		
			14th m	5%	9199.00		
			15th m	5%	9659.00		
			16th m	5%	10142.00		
			17th m	5%	10649.00		
			18th m	5%	11181.00		
			19th m	5%	11740.00		
			20th m	5%	12327.00		
			Total Cost from 10m upto 20m		99949.00		
			Avg Rate per metre		<u>9995.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	1401.00		
			12th m	5%	1471.00		
			13th m	5%	1545.00		
			14th m	5%	1622.00		
			15th m	5%	1703.00		
			16th m	5%	1788.00		
			17th m	5%	1877.00		

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			18th m	5%	1971.00		
			19th m	5%	2070.00		
			20th m	5%	2174.00		
			Total Cost from 10m upto 20m		17622.00		
			<i>Avg Rate per metre</i>		<u>1762.00</u>		
2.14 A			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	21st m	7.5%	13252.00	15902.00	
			22nd m	7.5%	14246.00	17095.00	
			23rd m	7.5%	15314.00	18377.00	
			24th m	7.5%	16463.00	19756.00	
			25th m	7.5%	17698.00	21238.00	
			26th m	7.5%	19025.00	22830.00	
			27th m	7.5%	20452.00	24542.00	
			28th m	7.5%	21986.00	26383.00	
			29th m	7.5%	23635.00	28362.00	
			30th m	7.5%	25408.00	30490.00	
			Total Cost from 20m upto 30m		187479.00	224975.00	
			<i>Avg Rate per metre</i>		<u>18748.00</u>	<u>22498.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	1894.00	2273.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			22nd m	7.5%	2036.00	2443.00	
			23rd m	7.5%	2189.00	2627.00	
			24th m	7.5%	2353.00	2824.00	
			25th m	7.5%	2529.00	3035.00	
			26th m	7.5%	2719.00	3263.00	
			27th m	7.5%	2923.00	3508.00	
			28th m	7.5%	3142.00	3770.00	
			29th m	7.5%	3378.00	4054.00	
			30th m	7.5%	3631.00	4357.00	
			Total Cost from 20m upto 30m		26794.00	32154.00	
			<i>Avg Rate per metre</i>		<u>2679.00</u>	<u>3215.00</u>	
2.14 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	27949.00	33539.00	
			32nd	10%	30744.00	36893.00	
			33rd m	10%	33818.00	40582.00	
			34th m	10%	37200.00	44640.00	
			35th m	10%	40920.00	49104.00	
			36th m	10%	45012.00	54014.00	
			37th m	10%	49513.00	59416.00	
			38th m	10%	54464.00	65357.00	
			39th m	10%	59910.00	71892.00	
			40th m	10%	65901.00	79081.00	
			Total Cost from 30m upto 40m		44543.10	53452.00	
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			31st m	10%	3994.00	4793.00	
			32nd	10%	4393.00	5272.00	
			33rd m	10%	4832.00	5798.00	
			34th m	10%	5315.00	6378.00	
			35th m	10%	5847.00	7016.00	
			36th m	10%	6432.00	7718.00	
			37th m	10%	7075.00	8490.00	
			38th m	10%	7783.00	9340.00	
			39th m	10%	8561.00	10273.00	
			40th m	10%	9417.00	11300.00	
			Total Cost from 30m upto 40m		63649.00	76378.00	
			<i>Avg Rate per metre</i>		<u>6365.00</u>	<u>7638.00</u>	
2.14			Clayey Soil (8m dia. Well)				
		B	Unit = Running Meter.				
			Taking output = 1 meter				
			Depth from bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.18 m/hour				
		a)	Labour				
			Mate	day	0.22	210.00	46.20
			Sinker (skilled)	day	2.00	210.00	420.00
			Sinking helper (semi-skilled)	hour	3.50	210.00	735.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.		5.50	916.00	5038.00
			Consumables in sinking @ 10 per cent of (b)				503.80
		c)	Overhead charges @ 10 % on (a+b)				674.30
		d)	Contractor's profit @ 10 % on (a+b+c)				741.73
							8159.03
			Add 1% labour cess				81.59
			Rate per metre = (a+b+c+d)				8240.62
						say	<u>8241.00</u>
			Labour Rate				
			Labour				1201.20
			Overhead charges @ 10%				120.12

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Contractors Profit @10%				132.13
						1453.45
		Add 1% labour cess				14.53
		Cost for 1 m				1467.99
		Rate per m				1467.99
					say	<u>1468.00</u>
2.14 B		Beyond 3m upto 10m depth				
	(ii)	Rate of sinking @ 0.17 m/hour				
		a) Labour				
		Mate	day	0.32	210.00	67.20
		Sinker	day	2.50	210.00	525.00
		Sinking helper (semi-skilled)	day	4.50	210.00	945.00
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
		Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.50	465.00	1627.50
		Consumables in sinking @ 10 per cent of (b)				712.35
		c) Overhead charges @ 10 % on (a+b)				937.31
		d) Contractor's profit @ 10 % on (a+b+c)				1031.04
						11341.39
		Add 1% labour cess				113.41
		Rate per metre = (a+b+c+d)				11454.80
					say	<u>11455.00</u>
		Labour Rate				
		Labour				1537.20
		Overhead charges @ 10%				153.72
		Contractors Profit @10%				169.09
						1860.01
		Add 1% labour cess				18.60
		Cost for 1 m				1878.61
		Rate per m				1878.61
					say	<u>1879.00</u>
2.14 B		Beyond 10 m upto 20 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	12028.00	12629.00	
			12th m	5%	12629.00	13260.00	
			13th m	5%	13260.00	13923.00	
			14th m	5%	13923.00	14619.00	
			15th m	5%	14619.00	15350.00	
			16th m	5%	15350.00	16118.00	
			17th m	5%	16118.00	16924.00	
			18th m	5%	16924.00	17770.00	
			19th m	5%	17770.00	18659.00	
			20th m	5%	18659.00	19592.00	
			Total Cost from 10m upto 20m		151280.00	158844.00	
			<i>Avg Rate per metre</i>		<u>15128.00</u>	<u>15884.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	1973.00	2072.00	
			12th m	5%	2072.00	2176.00	
			13th m	5%	2176.00	2285.00	
			14th m	5%	2285.00	2399.00	
			15th m	5%	2399.00	2519.00	
			16th m	5%	2519.00	2645.00	
			17th m	5%	2645.00	2777.00	
			18th m	5%	2777.00	2916.00	
			19th m	5%	2916.00	3062.00	
			20th m	5%	3062.00	3215.00	
			Total Cost from 10m upto 20m		24824.00	26066.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			<i>Avg Rate per metre</i>		<u>2482.00</u>	<u>2607.00</u>	
2.14 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering on the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	20058.00	25073.00	26327.00
			22nd m	7.5%	21562.00	26953.00	28301.00
			23rd m	7.5%	23179.00	28974.00	30423.00
			24th m	7.5%	24917.00	31146.00	32703.00
			25th m	7.5%	26786.00	33483.00	35157.00
			26th m	7.5%	28795.00	35994.00	37794.00
			27th m	7.5%	30955.00	38694.00	40629.00
			28th m	7.5%	33277.00	41596.00	43676.00
			29th m	7.5%	35773.00	44716.00	46952.00
			30th m	7.5%	38456.00	48070.00	50474.00
			Total Cost from 30m upto 40m		283758.00	354699.00	372436.00
			<i>Avg Rate per metre</i>		<u>28376.00</u>	<u>35470.00</u>	<u>37244.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	3292.00	4115.00	4321.00
			22nd m	7.5%	3539.00	4424.00	4645.00
			23rd m	7.5%	3804.00	4755.00	4993.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			24th m	7.5%	4089.00	5111.00	5367.00
			25th m	7.5%	4396.00	5495.00	5770.00
			26th m	7.5%	4726.00	5908.00	6203.00
			27th m	7.5%	5080.00	6350.00	6668.00
			28th m	7.5%	5461.00	6826.00	7167.00
			29th m	7.5%	5871.00	7339.00	7706.00
			30th m	7.5%	6311.00	7889.00	8283.00
			Total Cost from 30m upto 40m		46569.00	58212.00	61123.00
			<i>Avg Rate per metre</i>		<u>4657.00</u>	<u>5821.00</u>	<u>6112.00</u>
2.14 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	42302.00	50762.00	53300.00
			32nd	10%	46532.00	55838.00	58630.00
			33rd m	10%	51185.00	61422.00	64493.00
			34th m	10%	56304.00	67565.00	70943.00
			35th m	10%	61934.00	74321.00	78037.00
			36th m	10%	68127.00	81752.00	85840.00
			37th m	10%	74940.00	89928.00	94424.00
			38th m	10%	82434.00	98921.00	103867.00
			39th m	10%	90677.00	108812.00	114253.00
			40th m	10%	99745.00	119694.00	125679.00
			Total Cost from 30m upto 40m		674180.00	809015.00	849466.00
			<i>Avg Rate per metre</i>		<u>67418.00</u>	<u>80902.00</u>	<u>84947.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	6942.00	8330.00	8747.00
			32nd	10%	7636.00	9163.00	9621.00
			33rd m	10%	8400.00	10080.00	10584.00
			34th m	10%	9240.00	11088.00	11642.00
			35th m	10%	10164.00	12197.00	12807.00
			36th m	10%	11180.00	13416.00	14087.00
			37th m	10%	12298.00	14758.00	15496.00
			38th m	10%	13528.00	16234.00	17046.00
			39th m	10%	14881.00	17857.00	18750.00
			40th m	10%	16369.00	19643.00	20625.00
			Total Cost from 30m upto 40m		110638.00	132766.00	139405.00
			<i>Avg Rate per metre</i>		<u>11064.00</u>	<u>13277.00</u>	<u>13941.00</u>
2.14			Soft Rock (8m dia well)				
		C	Unit = Running Meter.				
			Taking output = 1 m				
			Depth in soft rock strata upto 3m				
			Rate of sinking @ 0.20 m/hour				
			a) Labour				
			Mate	day	0.68	210.00	142.80
			Sinker (skilled)	day	4.00	210.00	840.00
			Sinking helper (semi-skilled)	day	12.00	210.00	2520.00
			Diver	day	1.00	274.17	274.17
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.00	916.00	4580.00
			Air compressor with pneumatic breakers	hour	3.75	465.00	1743.75
			Consumables in sinking @ 10 per cent of (b)				632.38
			Add for dewatering @ of 5 per cent of (a+b), if required				536.65
			c) Overhead charges @ 10 % on (a+b)				1126.97
			d) Contractor's profit @ 10 % on (a+b+c)				1239.67
							13636.40

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Add 1% labour cess				136.36
		Rate per metre = (a+b+c+d)				13772.76
					say	<u>13773.00</u>
		Labour Rate				
		Labour				3776.97
		Overhead charges @ 10%				377.70
		Contractors Profit @10%				415.47
						4570.13
		Add 1% labour cess				45.70
		Cost for 1 m				4615.84
		Rate per m				4615.84
					say	<u>4616.00</u>
2.14		Hard Rock (8m dia well)				
	D	Unit = Running Meter				
		Taking output = 1 m				
		Depth in hard rock strata upto 3 m				
		Rate of sinking @ 0.17 m/hour				
		a) Material				
		Gelatine 80 per cent	Kg	8.00	98.00	784.00
		Electric Detonators	each	32.00	16.00	512.00
		b) Labour				
		Mate	day	1.09	210.00	228.90
		Driller	day	2.00	210.00	420.00
		Blaster	day	0.25	259.00	64.75
		Mazdoor	day	20.00	210.00	4200.00
		Mazdoor (Skilled)	day	4.00	210.00	840.00
		c) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
		Hire & running charges of compressor with pneumatic breaker/Jack hammer for drilling.	hour	2.00	465.00	930.00
		Dewatering @ 5 per cent of cost of (b+c), if required.				608.98
		Consumables in sinking @ 10 per cent of cost of (b).				575.37
		d) Overhead charges @ 10 % on (a+b+c)				1466.00
		e) Contractor's profit @ 10 % on (a+b+c+d)				1612.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							17738.60
			Add 1% labour cess				177.39
			Rate per metre = (a+b+c+d+e)				17915.98
						say	<u>17916.00</u>
			Labour Rate				
			Labour				3200.26
			Overhead charges @ 10%				320.03
			Contractors Profit @10%				352.03
							3872.31
			Add 1% labour cess				38.72
			Cost for 1 m				3911.04
			Rate per m				3911.04
						say	<u>3911.00</u>
2.15	Section 1200		Sinking of 9 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			<i>Unit = Running Meter.</i>				
			<i>Taking output = 1 m</i>				
			Diameter of well - 9 m.				
			Sandy Soil				
		A	Depth below bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.25 m/hour				
		a)	Labour				
			Mate	day	0.19	210.00	39.90
			Sinker (skilled)	day	1.50	210.00	315.00
			Sinking helper (semi-skilled)	day	3.25	210.00	682.50
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.00	916.00	3664.00
			Consumables in sinking @10 per cent of (b)				366.40
		c)	Overhead charges @ 10 % on (a+b)				506.78
		d)	Contractor's profit @ 10 % on (a+b+c)				557.46

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
						6132.04
		Add 1% labour cess				61.32
		Rate per metre = (a+b+c+d)				6193.36
					say	<u>6193.00</u>
		Labour Rate				
		Labour				1037.40
		Overhead charges @ 10%				103.74
		Contractors Profit @10%				114.11
						1255.25
		Add 1% labour cess				12.55
		Cost for 1 m				1267.81
		Rate per m				1267.81
					say	<u>1268.00</u>
2.15 A		Beyond 3m upto 10m depth				
	(ii)	Rate of sinking @ 0.18 m/hour				
		a) Labour				
		Mate	day	0.27	210.00	56.70
		Sinker	day	1.75	210.00	367.50
		Sinking helper (semi-skilled)	day	4.00	210.00	840.00
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.50	916.00	5038.00
		Consumables in sinking @10 per cent of (b)				503.80
		c) Overhead charges @ 10 % on (a+b)				680.60
		d) Contractor's profit @ 10 % on (a+b+c)				748.66
						8235.26
		Add 1% labour cess				82.35
		Rate per metre = (a+b+c+d)				8317.61
					say	<u>8318.00</u>
		Labour Rate				
		Labour				702.35
		Overhead charges @ 10%				70.24
		Contractors Profit @10%				77.26
						849.84
		Add 1% labour cess				8.50
		Cost for 1 m				858.34
		Rate per m				858.34
					say	<u>858.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.15 A			Beyond 10m upto 20m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	11th m	5%	8733.00		
			12th m	5%	9170.00		
			13th m	5%	9629.00		
			14th m	5%	10110.00		
			15th m	5%	10616.00		
			16th m	5%	11147.00		
			17th m	5%	11704.00		
			18th m	5%	12289.00		
			19th m	5%	12903.00		
			20th m	5%	13548.00		
			Total Cost from 10m upto 20m		109849.00		
			<i>Avg Rate per metre</i>		<u>10985.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	901.00		
			12th m	5%	946.00		
			13th m	5%	993.00		
			14th m	5%	1043.00		
			15th m	5%	1095.00		
			16th m	5%	1150.00		
			17th m	5%	1208.00		
			18th m	5%	1268.00		
			19th m	5%	1331.00		
			20th m	5%	1398.00		
			Total Cost from 10m upto 20m		11333.00		
			<i>Avg Rate per metre</i>		<u>1133.00</u>		
2.15 A			Beyond 20m upto 30 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	21st m	7.5%	14564.00	17477.00	
			22nd m	7.5%	15656.00	18787.00	
			23rd m	7.5%	16830.00	20196.00	
			24th m	7.5%	18092.00	21710.00	
			25th m	7.5%	19449.00	23339.00	
			26th m	7.5%	20908.00	25090.00	
			27th m	7.5%	22476.00	26971.00	
			28th m	7.5%	24162.00	28994.00	
			29th m	7.5%	25974.00	31169.00	
			30th m	7.5%	27922.00	33506.00	
			Total Cost from 20m upto 30m		206033.00	247239.00	
			<i>Avg Rate per metre</i>		<u>20603.00</u>	<u>24724.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	1503.00	1804.00	
			22nd m	7.5%	1616.00	1939.00	
			23rd m	7.5%	1737.00	2084.00	
			24th m	7.5%	1867.00	2240.00	
			25th m	7.5%	2007.00	2408.00	
			26th m	7.5%	2158.00	2590.00	
			27th m	7.5%	2320.00	2784.00	
			28th m	7.5%	2494.00	2993.00	
			29th m	7.5%	2681.00	3217.00	
			30th m	7.5%	2882.00	3458.00	
			Total Cost from 20m upto 30m		21265.00	25517.00	
			<i>Avg Rate per metre</i>		<u>2127.00</u>	<u>2552.00</u>	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.15 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	30714.00	36857.00	
			32nd	10%	33785.00	40542.00	
			33rd m	10%	37164.00	44597.00	
			34th m	10%	40880.00	49056.00	
			35th m	10%	44968.00	53962.00	
			36th m	10%	49465.00	59358.00	
			37th m	10%	54412.00	65294.00	
			38th m	10%	59853.00	71824.00	
			39th m	10%	65838.00	79006.00	
			40th m	10%	72422.00	86906.00	
			Total Cost from 30m upto 40m		489501.00	587402.00	
			<i>Avg Rate per metre</i>		<u>48950.00</u>	<u>58740.00</u>	
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
			31st m	10%	3170.00	3804.00	
			32nd	10%	3487.00	4184.00	
			33rd m	10%	3836.00	4603.00	
			34th m	10%	4220.00	5064.00	
			35th m	10%	4642.00	5570.00	
			36th m	10%	5106.00	6127.00	
			37th m	10%	5617.00	6740.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			38th m	10%	6179.00	7415.00	
			39th m	10%	6797.00	8156.00	
			40th m	10%	7477.00	8972.00	
			Total Cost from 30m upto 40m		50531.00	60635.00	
			<i>Avg Rate per metre</i>		<u>5053.00</u>	<u>6064.00</u>	
2.15			Clayey Soil (9m dia. Well)				
		B	Unit = Running Meter.				
			Taking output = 1 cum				
			Depth below bed level upto 3.0 M				
		(i)	Rate of sinking 0.17 m / hour				
		a)	Labour				
			Mate	day	0.24	210.00	50.40
			Sinker (skilled)	day	2.25	210.00	472.50
			Sinking helper (semi-skilled)	day	3.75	210.00	787.50
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.75	916.00	5267.00
			Consumables in sinking @ 10 per cent of (b)				526.70
		c)	Overhead charges @ 10 % on (a+b)				710.41
		d)	Contractor's profit @ 10 % on (a+b+c)				781.45
							8595.96
			Add 1% labour cess				85.96
			Rate per metre = (a+b+c+d)				8681.92
						say	<u>8682.00</u>
			Labour Rate				
			Labour				1310.40
			Overhead charges @ 10%				131.04
			Contractors Profit @10%				144.14
							1585.58
			Add 1% labour cess				15.86
			Cost for 1 m				1601.44

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per m				1601.44
						say	<u>1601.00</u>
2.15 B			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking 0.15 m / hour				
		a)	Labour				
			Mate	day	0.34	210.00	71.40
			Sinker	day	2.50	210.00	525.00
			Sinking helper (semi-skilled)	day	5.00	210.00	1050.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.50	916.00	5954.00
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.75	465.00	1743.75
			Consumables in sinking @ 10 per cent of (b)				769.78
		c)	Overhead charges @ 10 % on (a+b)				1011.39
		d)	Contractor's profit @ 10 % on (a+b+c)				1112.53
							12237.85
			Add 1% labour cess				122.38
			Rate per metre = (a+b+c+d)				12360.23
						say	<u>12360.00</u>
			Labour Rate				
			Labour				1646.40
			Overhead charges @ 10%				164.64
			Contractors Profit @10%				181.10
							1992.14
			Add 1% labour cess				19.92
			Cost for 1 m				2012.07
			Rate per m				2012.07
						say	<u>2012.00</u>
2.15 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	12978.00	13627.00	
			12th m	5%	13627.00	14308.00	
			13th m	5%	14308.00	15023.00	
			14th m	5%	15023.00	15774.00	
			15th m	5%	15774.00	16563.00	
			16th m	5%	16563.00	17391.00	
			17th m	5%	17391.00	18261.00	
			18th m	5%	18261.00	19174.00	
			19th m	5%	19174.00	20133.00	
			20th m	5%	20133.00	21140.00	
			Total Cost from 10m upto 20m		163232.00	171394.00	
			<i>Avg Rate per metre</i>		<u>16323.00</u>	<u>17139.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	2113.00	2219.00	
			12th m	5%	2219.00	2330.00	
			13th m	5%	2330.00	2447.00	
			14th m	5%	2447.00	2569.00	
			15th m	5%	2569.00	2697.00	
			16th m	5%	2697.00	2832.00	
			17th m	5%	2832.00	2974.00	
			18th m	5%	2974.00	3123.00	
			19th m	5%	3123.00	3279.00	
			20th m	5%	3279.00	3443.00	
			Total Cost from 10m upto 20m		26583.00	27913.00	
			<i>Avg Rate per metre</i>		<u>2658.00</u>	<u>2791.00</u>	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.15 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering on the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	21643.00	27054.00	28407.00
			22nd m	7.5%	23266.00	29083.00	30537.00
			23rd m	7.5%	25011.00	31264.00	32827.00
			24th m	7.5%	26887.00	33609.00	35289.00
			25th m	7.5%	28904.00	36130.00	37937.00
			26th m	7.5%	31072.00	38840.00	40782.00
			27th m	7.5%	33402.00	41753.00	43841.00
			28th m	7.5%	35907.00	44884.00	47128.00
			29th m	7.5%	38600.00	48250.00	50663.00
			30th m	7.5%	41495.00	51869.00	54462.00
			Total Cost from 30m upto 40m		306187.00	382736.00	401873.00
			<i>Avg Rate per metre</i>		<u>30619.00</u>	<u>38274.00</u>	<u>40187.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	3525.00	4406.00	4626.00
			22nd m	7.5%	3789.00	4736.00	4973.00
			23rd m	7.5%	4073.00	5091.00	5346.00
			24th m	7.5%	4378.00	5473.00	5747.00
			25th m	7.5%	4706.00	5883.00	6177.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			26th m	7.5%	5059.00	6324.00	6640.00
			27th m	7.5%	5438.00	6798.00	7138.00
			28th m	7.5%	5846.00	7308.00	7673.00
			29th m	7.5%	6284.00	7855.00	8248.00
			30th m	7.5%	6755.00	8444.00	8866.00
			Total Cost from 30m upto 40m		49853.00	62318.00	65434.00
			<i>Avg Rate per metre</i>		<u>4985.00</u>	<u>6232.00</u>	<u>6543.00</u>
2.15 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	45645.00	54774.00	57513.00
			32nd	10%	50210.00	60252.00	63265.00
			33rd m	10%	55231.00	66277.00	69591.00
			34th m	10%	60754.00	72905.00	76550.00
			35th m	10%	66829.00	80195.00	84205.00
			36th m	10%	73512.00	88214.00	92625.00
			37th m	10%	80863.00	97036.00	101888.00
			38th m	10%	88949.00	106739.00	112076.00
			39th m	10%	97844.00	117413.00	123284.00
			40th m	10%	107628.00	129154.00	135612.00
			Total Cost from 30m upto 40m		727465.00	872959.00	916609.00
			<i>Avg Rate per metre</i>		<u>72747.00</u>	<u>87296.00</u>	<u>91661.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			31st m	10%	7431.00	8917.00	9363.00
			32nd	10%	8174.00	9809.00	10299.00
			33rd m	10%	8991.00	10789.00	11328.00
			34th m	10%	9890.00	11868.00	12461.00
			35th m	10%	10879.00	13055.00	13708.00
			36th m	10%	11967.00	14360.00	15078.00
			37th m	10%	13164.00	15797.00	16587.00
			38th m	10%	14480.00	17376.00	18245.00
			39th m	10%	15928.00	19114.00	20070.00
			40th m	10%	17521.00	21025.00	22076.00
			Total Cost from 30m upto 40m		118425.00	142110.00	149215.00
			Avg Rate per metre		<u>11843.00</u>	<u>14211.00</u>	<u>14922.00</u>
2.15			Soft Rock (9m dia well)				
		C	Unit = Running Meter.				
			Taking output = 1 m				
			Depth in soft rock strata up to 3m				
			Rate of sinking 0.15 m / hour				
			a) Labour				
			Mate	day	0.76	210.00	159.60
			Sinker (skilled)	day	4.00	210.00	840.00
			Sinking helper (semi-skilled)	day	14.00	210.00	2940.00
			Diver	day	1.20	274.17	329.00
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.50	916.00	5954.00
			Air compressor with pneumatic breakers	hour	4.00	465.00	1860.00
			Consumables in sinking @ 10 per cent of (b)				781.40
			Add for dewatering @ of 5 per cent of (a+b), if required				1286.40
			c) Overhead charges @ 10 % on (a+b)				1415.04
			d) Contractor's profit @ 10 % on (a+b+c)				1556.54
							17121.99
			Add 1% labour cess				171.22
			Rate per metre = (a+b+c+d)				17293.21

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>17293.00</u>
			Labour Rate				
			Labour				4268.60
			Overhead charges @ 10%				426.86
			Contractors Profit @10%				469.55
							5165.01
			Add 1% labour cess				51.65
			Cost for 1 m				5216.66
			Rate per m				5216.66
						say	<u>5217.00</u>
2.15			Hard Rock (9m dia well)				
		D	Unit = Running Meter				
			Taking output = 1 m				
			Depth in hard rock strata upto 3 m				
			Rate of sinking 0.15 m / hour				
			a) Material				
			Gelatine 80 per cent	Kg	10.00	98.00	980.00
			Electric Detonators	each	40.00	16.00	640.00
			b) Labour				
			Mate	day	1.17	210.00	245.70
			Driller	day	2.00	210.00	420.00
			Blaster	day	0.25	259.00	64.75
			Mazdoor	day	22.00	210.00	4620.00
			Mazdoor (Skilled)	day	4.00	210.00	840.00
			Diver	day	1.00	274.17	274.17
			c) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	7.00	916.00	6412.00
			Hire & running charges of compressor with pneumatic breaker/Jack hammer for drilling.	hour	2.50	465.00	1162.50
			Dewatering @ 5 per cent of cost of (b+c), if required.				701.96
			Consumables in sinking @ 10 per cent of cost of (b).				646.46
			d) Overhead charges @ 10 % on (a+b+c)				1700.75
			e) Contractor's profit @ 10 % on (a+b+c+d)				1870.83
							20579.12

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				205.79
			Rate per metre = (a+b+c+d+e)				20784.91
						say	<u>20785.00</u>
			Labour Rate				
			Labour				6464.62
			Overhead charges @ 10%				646.46
			Contractors Profit @10%				711.11
							7822.19
			Add 1% labour cess				78.22
			Cost for 1 m				7900.41
			Rate per m				7900.41
						say	<u>7900.00</u>
2.16	1200		Sinking of 10 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			<i>Unit = Running Meter</i>				
			<i>Taking output = 1 m</i>				
			Diameter of well - 10 m.				
			Sandy Soil				
		A	Depth below bed level upto 3.0 M				
		(i)	Rate of sinking 0.20 m / hour				
		a)	Labour				
			Mate	day	0.20	210.00	42.00
			Sinker (skilled)	day	1.50	210.00	315.00
			Sinking helper (semi-skilled)	day	3.50	210.00	735.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.00	916.00	4580.00
			Consumables in sinking @10 per cent of (b)				458.00
		c)	Overhead charges @ 10 % on (a+b)				613.00
		d)	Contractor's profit @ 10 % on (a+b+c)				674.30
							7417.30
			Add 1% labour cess				74.17

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per metre = (a+b+c+d)				7491.47
					say	<u>7491.00</u>
		Labour Rate				
		Labour				1092.00
		Overhead charges @ 10%				109.20
		Contractors Profit @10%				120.12
						1321.32
		Add 1% labour cess				13.21
		Cost for 1 m				1334.53
		Rate per m				1334.53
					say	<u>1335.00</u>
2.16 A		Beyond 3m upto 10m depth				
	(ii)	Rate of sinking 0.17 m / hour				
		a) Labour				
		Mate	day	0.31	210.00	65.10
		Sinker	day	2.00	210.00	420.00
		Sinking helper (semi-skilled)	day	4.25	210.00	892.50
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.75	916.00	5267.00
		Consumables in sinking @10 per cent of (b)				526.70
		c) Overhead charges @ 10 % on (a+b)				717.13
		d) Contractor's profit @ 10 % on (a+b+c)				788.84
						8677.27
		Add 1% labour cess				86.77
		Rate per metre = (a+b+c+d)				8764.05
					say	<u>8764.00</u>
		Labour Rate				
		Labour				1377.60
		Overhead charges @ 10%				137.76
		Contractors Profit @10%				151.54
						1666.90
		Add 1% labour cess				16.67
		Cost for 1 m				1683.56
		Rate per m				1683.56
					say	<u>1684.00</u>
2.16 A		Beyond 10m upto 20m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	11th m	5%	9202.00		
			12th m	5%	9662.00		
			13th m	5%	10145.00		
			14th m	5%	10652.00		
			15th m	5%	11185.00		
			16th m	5%	11744.00		
			17th m	5%	12331.00		
			18th m	5%	12948.00		
			19th m	5%	13595.00		
			20th m	5%	14275.00		
			Total Cost from 10m upto 20m		115739.00		
			<i>Avg Rate per metre</i>		<u>11574.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	1768.00		
			12th m	5%	1856.00		
			13th m	5%	1949.00		
			14th m	5%	2046.00		
			15th m	5%	2148.00		
			16th m	5%	2255.00		
			17th m	5%	2368.00		
			18th m	5%	2486.00		
			19th m	5%	2610.00		
			20th m	5%	2741.00		
			Total Cost from 10m upto 20m		22227.00		
			<i>Avg Rate per metre</i>		<u>2223.00</u>		
2.16 A			Beyond 20m upto 30 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	21st m	7.5%	15346.00	18415.00	
			22nd m	7.5%	16497.00	19796.00	
			23rd m	7.5%	17734.00	21281.00	
			24th m	7.5%	19064.00	22877.00	
			25th m	7.5%	20494.00	24593.00	
			26th m	7.5%	22031.00	26437.00	
			27th m	7.5%	23683.00	28420.00	
			28th m	7.5%	25459.00	30551.00	
			29th m	7.5%	27368.00	32842.00	
			30th m	7.5%	29421.00	35305.00	
			Total Cost from 20m upto 30m		217097.00	260517.00	
			<i>Avg Rate per metre</i>		<u>21710.00</u>	<u>26052.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	2947.00	3536.00	
			22nd m	7.5%	3168.00	3802.00	
			23rd m	7.5%	3406.00	4087.00	
			24th m	7.5%	3661.00	4393.00	
			25th m	7.5%	3936.00	4723.00	
			26th m	7.5%	4231.00	5077.00	
			27th m	7.5%	4548.00	5458.00	
			28th m	7.5%	4889.00	5867.00	
			29th m	7.5%	5256.00	6307.00	
			30th m	7.5%	5650.00	6780.00	
			Total Cost from 20m upto 30m		41692.00	50030.00	
			<i>Avg Rate per metre</i>		<u>4169.00</u>	<u>5003.00</u>	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.16 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	32363.00	38836.00	
			32nd	10%	35599.00	42719.00	
			33rd m	10%	39159.00	46991.00	
			34th m	10%	43075.00	51690.00	
			35th m	10%	47383.00	56860.00	
			36th m	10%	52121.00	62545.00	
			37th m	10%	57333.00	68800.00	
			38th m	10%	63066.00	75679.00	
			39th m	10%	69373.00	83248.00	
			40th m	10%	76310.00	91572.00	
			Total Cost from 30m upto 40m		515782.00	618940.00	
			<i>Avg Rate per metre</i>		<u>51578.00</u>	<u>61894.00</u>	
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
			31st m	10%	6215.00	7458.00	
			32nd	10%	6837.00	8204.00	
			33rd m	10%	7521.00	9025.00	
			34th m	10%	8273.00	9928.00	
			35th m	10%	9100.00	10920.00	
			36th m	10%	10010.00	12012.00	
			37th m	10%	11011.00	13213.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			38th m	10%	12112.00	14534.00	
			39th m	10%	13323.00	15988.00	
			40th m	10%	14655.00	17586.00	
			Total Cost from 30m upto 40m		99057.00	118868.00	
			<i>Avg Rate per metre</i>		<u>9906.00</u>	<u>11887.00</u>	
2.16			Clayey Soil (10m dia. Well)				
		B	Unit = Running Meter				
			Taking output = 1 cum				
			Depth below bed level upto 3.0 M				
		(i)	Rate of sinking 0.18m/hour.				
		a)	Labour				
			Mate	day	0.25	210.00	52.50
			Sinker (skilled)	day	2.50	210.00	525.00
			Sinking helper (semi-skilled)	day	5.50	210.00	1155.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Consumables in sinking @ 10 per cent of (b)				549.60
		c)	Overhead charges @ 10 % on (a+b)				777.81
		d)	Contractor's profit @ 10 % on (a+b+c)				855.59
							9411.50
			Add 1% labour cess				94.12
			Rate per metre = (a+b+c+d)				9505.62
						say	<u>9506.00</u>
			Labour Rate				
			Labour				1732.50
			Overhead charges @ 10%				173.25
			Contractors Profit @10%				190.58
							2096.33
			Add 1% labour cess				20.96
			Cost for 1 m				2117.29
			Rate per m				2117.29

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>2117.00</u>
2.16 B			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking 0.15m/hour.				
		a)	Labour				
			Mate	day	0.40	210.00	84.00
			Sinker	day	3.00	210.00	630.00
			Sinking helper (semi-skilled)	day	5.50	210.00	1155.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Air compressor with pneumatic chisel attachment for cutting hard clay	hour	4.00	465.00	1860.00
			Consumables in sinking @ 10 per cent of (b)				735.60
		c)	Overhead charges @ 10 % on (a+b)				996.06
		d)	Contractor's profit @ 10 % on (a+b+c)				1095.67
							12052.33
			Add 1% labour cess				120.52
			Rate per metre = (a+b+c+d)				12172.85
						say	<u>12173.00</u>
			Labour Rate				
			Labour				1869.00
			Overhead charges @ 10%				186.90
			Contractors Profit @10%				205.59
							2261.49
			Add 1% labour cess				22.61
			Cost for 1 m				2284.10
			Rate per m				2284.10
						say	<u>2284.00</u>
2.16 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	12781.00	13420.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			12th m	5%	13420.00	14091.00	
			13th m	5%	14091.00	14796.00	
			14th m	5%	14796.00	15536.00	
			15th m	5%	15536.00	16313.00	
			16th m	5%	16313.00	17129.00	
			17th m	5%	17129.00	17985.00	
			18th m	5%	17985.00	18884.00	
			19th m	5%	18884.00	19828.00	
			20th m	5%	19828.00	20819.00	
			Total Cost from 10m upto 20m		160763.00	168801.00	
			<i>Avg Rate per metre</i>		<u>16076.00</u>	<u>16880.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	2398.00	2518.00	
			12th m	5%	2518.00	2644.00	
			13th m	5%	2644.00	2776.00	
			14th m	5%	2776.00	2915.00	
			15th m	5%	2915.00	3061.00	
			16th m	5%	3061.00	3214.00	
			17th m	5%	3214.00	3375.00	
			18th m	5%	3375.00	3544.00	
			19th m	5%	3544.00	3721.00	
			20th m	5%	3721.00	3907.00	
			Total Cost from 10m upto 20m		30166.00	31675.00	
			<i>Avg Rate per metre</i>		<u>3017.00</u>	<u>3168.00</u>	
2.16 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		a	Add 5 per cent of cost for dewatering on the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	21315.00	26644.00	27976.00
			22nd m	7.5%	22914.00	28643.00	30075.00
			23rd m	7.5%	24633.00	30791.00	32331.00
			24th m	7.5%	26480.00	33100.00	34755.00
			25th m	7.5%	28466.00	35583.00	37362.00
			26th m	7.5%	30601.00	38251.00	40164.00
			27th m	7.5%	32896.00	41120.00	43176.00
			28th m	7.5%	35363.00	44204.00	46414.00
			29th m	7.5%	38015.00	47519.00	49895.00
			30th m	7.5%	40866.00	51083.00	53637.00
			Total Cost from 30m upto 40m		301549.00	376938.00	395785.00
			<i>Avg Rate per metre</i>		<u>30155.00</u>	<u>37694.00</u>	<u>39579.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	4000.00	5000.00	5250.00
			22nd m	7.5%	4300.00	5375.00	5644.00
			23rd m	7.5%	4623.00	5779.00	6068.00
			24th m	7.5%	4970.00	6213.00	6524.00
			25th m	7.5%	5343.00	6679.00	7013.00
			26th m	7.5%	5744.00	7180.00	7539.00
			27th m	7.5%	6175.00	7719.00	8105.00
			28th m	7.5%	6638.00	8298.00	8713.00
			29th m	7.5%	7136.00	8920.00	9366.00
			30th m	7.5%	7671.00	9589.00	10068.00
			Total Cost from 30m upto 40m		56600.00	70752.00	74290.00
			<i>Avg Rate per metre</i>		<u>5660.00</u>	<u>7075.00</u>	<u>7429.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.16 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	44953.00	53944.00	56641.00
			32nd	10%	49448.00	59338.00	62305.00
			33rd m	10%	54393.00	65272.00	68535.60
			34th m	10%	59832.00	71798.00	75387.90
			35th m	10%	65815.00	78978.00	82926.90
			36th m	10%	72397.00	86876.00	91219.80
			37th m	10%	79637.00	95564.00	100342.20
			38th m	10%	87601.00	105121.00	110377.05
			39th m	10%	96361.00	115633.00	121414.65
			40th m	10%	105997.00	127196.00	133555.80
			Total Cost from 30m upto 40m		716434.00	859720.00	902705.90
			<i>Avg Rate per metre</i>		<u>71643.00</u>	<u>85972.00</u>	<u>90271.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	8438.00	10126.00	10632.00
			32nd	10%	9282.00	11138.00	11695.00
			33rd m	10%	10210.00	12252.00	12864.60
			34th m	10%	11231.00	13477.00	14150.85

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			35th m	10%	12354.00	14825.00	15566.25
			36th m	10%	13589.00	16307.00	17122.35
			37th m	10%	14948.00	17938.00	18834.90
			38th m	10%	16443.00	19732.00	20718.60
			39th m	10%	18087.00	21704.00	22789.20
			40th m	10%	19896.00	23875.00	25068.75
			Total Cost from 30m upto 40m		134478.00	161374.00	169442.50
			<i>Avg Rate per metre</i>		<u>13448.00</u>	<u>16137.00</u>	<u>16944.00</u>
2.16			Soft Rock (10m dia well)				
		C	<i>Unit = Running Meter.</i>				
			<i>Taking output = 1 m</i>				
			Depth in soft rock strata upto 3m				
			Rate of sinking 0.14m/hour.				
			a) Labour				
			Mate	day	0.86	210.00	180.60
			Sinker (skilled)	day	4.00	210.00	840.00
			Sinking helper (semi-skilled)	day	16.00	210.00	3360.00
			Diver	day	1.40	274.17	383.84
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	7.00	916.00	6412.00
			Air compressor with pneumatic breakers	hour	4.25	465.00	1976.25
			Consumables in sinking @ 10 per cent of (b)				838.83
			Add for dewatering @ 5 per cent of cost, if required				461.35
			c) Overhead charges @ 10 % on (a+b)				1445.29
			d) Contractor's profit @ 10 % on (a+b+c)				1589.82
							17487.97
			Add 1% labour cess				174.88
			Rate per metre = (a+b+c+d)				17662.85
						say	<u>17663.00</u>
			Labour Rate				
			Labour				4764.44
			Overhead charges @ 10%				476.44

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Contractors Profit @10%				524.09
						5764.97
		Add 1% labour cess				57.65
		Cost for 1 m				5822.62
		Rate per m				5822.62
					say	<u>5823.00</u>
2.16		Hard Rock (10m dia well)				
	D	Unit = Running Meter.				
		Taking output = 1 m				
		Depth in hard rock strata upto 3 m				
		Rate of sinking 0.12 m/ hour.				
		a) Material				
		Gelatine 80 per cent	Kg	11.00	98.00	1078.00
		Electric Detonators	each.	44.00	16.00	704.00
		b) Labour				
		Mate	day	1.27	210.00	266.70
		Driller	day	2.00	210.00	420.00
		Blaster	day	0.25	259.00	64.75
		Mazdoor	day	24.00	210.00	5040.00
		Mazdoor (Skilled)	day	4.00	210.00	840.00
		c) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.50	916.00	7786.00
		Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill	hour	3.00	465.00	1395.00
		Dewatering @ 5 per cent of cost (c), if required.				459.05
		Consumables in sinking @ 10 per cent of cost of (b+c).				1627.15
		d) Overhead charges @ 10 % on (a+b+c)				1968.07
		e) Contractor's profit @ 10 % on (a+b+c+d)				2164.87
						23813.59
		Add 1% labour cess				238.14
		Rate per metre = (a+b+c+d+e)				24051.72
					say	<u>24052.00</u>
		Labour Rate				
		Labour				6631.45
		Overhead charges @ 10%				663.15

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Contractors Profit @10%				729.46
							8024.05
			Add 1% labour cess				80.24
			Cost for 1 m				8104.30
			Rate per m				8104.30
						say	<u>8104.00</u>
2.17	1200		Sinking of 11 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			<i>Unit = Running Meter</i>				
			<i>Taking output = 0.50 m</i>				
			Diameter of well - 11 m.				
			Sandy Soil				
		A	Depth from bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.15 m/hour				
		a)	Labour				
			Mate	day	0.21	210.00	44.10
			Sinker (skilled)	day	1.50	210.00	315.00
			Sinking helper (semi-skilled)	day	3.30	210.00	693.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Consumables in sinking @10 per cent of (b)				549.60
		d)	Overhead charges @ 10 % on (a+b+c)				709.77
		e)	Contractor's profit @ 10 % on (a+b+c+d)				780.75
							8588.22
			Add 1% labour cess				85.88
			Cost for 0.5m = a+b+c+d				8674.10
			Rate per metre = (a+b+c+d)/0.50				17348.20
						say	<u>17348.00</u>
			Labour Rate				
			Labour				1052.10

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Overhead charges @ 10%				105.21
			Contractors Profit @10%				115.73
							1273.04
			Add 1% labour cess				12.73
			Cost for 1 m				1285.77
			Rate per m				1285.77
						say	<u>1286.00</u>
2.17 A			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking @ 0.13 m/hour				
		a)	Labour				
			Mate	day	0.32	210.00	67.20
			Sinker	day	2.00	210.00	420.00
			Sinking helper (semi-skilled)	day	4.50	210.00	945.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.00	916.00	3664.00
			Consumables in sinking @10 per cent of (b)				366.40
		c)	Overhead charges @ 10 % on (a+b+c)				546.26
		d)	Contractor's profit @ 10 % on (a+b+c+d)				600.89
							6609.75
			Add 1% labour cess				66.10
			Cost for 0.5m = a+b+c+d				6675.84
			Rate per metre = (a+b+c+d)/0.50				13351.69
						say	<u>13352.00</u>
			Labour Rate				
			Labour				1432.20
			Overhead charges @ 10%				143.22
			Contractors Profit @10%				157.54
							1732.96
			Add 1% labour cess				17.33
			Cost for 1 m				1750.29
			Rate per m				1750.29
						say	<u>1750.00</u>
2.17 A			Beyond 10m upto 20m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		a	11th m	5%	14019.00		
			12th m	5%	14720.00		
			13th m	5%	15456.00		
			14th m	5%	16229.00		
			15th m	5%	17040.00		
			16th m	5%	17892.00		
			17th m	5%	18787.00		
			18th m	5%	19726.00		
			19th m	5%	20712.00		
			20th m	5%	21748.00		
			Total Cost from 10m upto 20m		176329.00		
			<i>Avg Rate per metre</i>		<u>17633.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	1838.00		
			12th m	5%	1930.00		
			13th m	5%	2027.00		
			14th m	5%	2128.00		
			15th m	5%	2234.00		
			16th m	5%	2346.00		
			17th m	5%	2463.00		
			18th m	5%	2586.00		
			19th m	5%	2715.00		
			20th m	5%	2851.00		
			Total Cost from 10m upto 20m		23118.00		
			<i>Avg Rate per metre</i>		<u>2312.00</u>		
2.17 A			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		b	21st m	7.5%	23379.00	28055.00	
			22nd m	7.5%	25132.00	30158.00	
			23rd m	7.5%	27017.00	32420.00	
			24th m	7.5%	29043.00	34852.00	
			25th m	7.5%	31221.00	37465.00	
			26th m	7.5%	33563.00	40276.00	
			27th m	7.5%	36080.00	43296.00	
			28th m	7.5%	38786.00	46543.00	
			29th m	7.5%	41695.00	50034.00	
			30th m	7.5%	44822.00	53786.00	
			Total Cost from 20m upto 30m		330738.00	396885.00	
			<i>Avg Rate per metre</i>		<u>33074.00</u>	<u>39689.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	3065.00	3678.00	
			22nd m	7.5%	3295.00	3954.00	
			23rd m	7.5%	3542.00	4250.00	
			24th m	7.5%	3808.00	4570.00	
			25th m	7.5%	4094.00	4913.00	
			26th m	7.5%	4401.00	5281.00	
			27th m	7.5%	4731.00	5677.00	
			28th m	7.5%	5086.00	6103.00	
			29th m	7.5%	5467.00	6560.00	
			30th m	7.5%	5877.00	7052.00	
			Total Cost from 20m upto 30m		43366.00	52038.00	
			<i>Avg Rate per metre</i>		<u>4337.00</u>	<u>5204.00</u>	
2.17 A			Beyond 30m upto 40 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	49304.00	59165.00	
			32nd	10%	54234.00	65081.00	
			33rd m	10%	59657.00	71588.00	
			34th m	10%	65623.00	78748.00	
			35th m	10%	72185.00	86622.00	
			36th m	10%	79404.00	95285.00	
			37th m	10%	87344.00	104813.00	
			38th m	10%	96078.00	115294.00	
			39th m	10%	105686.00	126823.00	
			40th m	10%	116255.00	139506.00	
			Total Cost from 30m upto 40m		785770.00	942925.00	
			<i>Avg Rate per metre</i>		<u>78577.00</u>	<u>94293.00</u>	
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
			31st m	10%	6465.00	7758.00	
			32nd	10%	7112.00	8534.00	
			33rd m	10%	7823.00	9388.00	
			34th m	10%	8605.00	10326.00	
			35th m	10%	9466.00	11359.00	
			36th m	10%	10413.00	12496.00	
			37th m	10%	11454.00	13745.00	
			38th m	10%	12599.00	15119.00	
			39th m	10%	13859.00	16631.00	
			40th m	10%	15245.00	18294.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Total Cost from 30m upto 40m		103041.00	123650.00	
			<i>Avg Rate per metre</i>		<u>10304.00</u>	<u>12365.00</u>	
2.17			Clayey Soil (11 m dia. Well)				
		B	Unit = Running Meter				
			Taking output = 0.50 meter				
			Depth from bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.10 m/hour				
		a)	Labour				
			Mate	day	0.26	210.00	54.60
			Sinker (skilled)	day	2.50	210.00	525.00
			Sinking helper (semi-skilled)	day	4.00	210.00	840.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.00	916.00	4580.00
			Consumables in sinking @ 10 per cent of (b)				458.00
		c)	Overhead charges @ 10 % on (a+b)				645.76
		d)	Contractor's profit @ 10 % on (a+b+c)				710.34
							7813.70
			Add 1% labour cess				78.14
			Cost for 0.5m = a+b+c+d				7891.83
			Rate per metre = (a+b+c+d)/0.50				15783.67
						say	<u>15784.00</u>
			Labour Rate				
			Labour				1419.60
			Overhead charges @ 10%				141.96
			Contractors Profit @10%				156.16
							1717.72
			Add 1% labour cess				17.18
			Cost for 1 m				1734.89
			Rate per m				1734.89
						say	<u>1735.00</u>
2.17 B			Beyond 3m upto 10m depth				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(ii)	Rate of sinking @ 0.08 m/hour				
		a)	Labour				
			Mate	day	0.43	210.00	90.30
			Sinker	day	3.50	210.00	735.00
			Sinking helper (semi-skilled)	day	5.75	210.00	1207.50
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Air compressor with pneumatic chisel attachment for cutting hard clay	hour	4.25	465.00	1976.25
			Consumables in sinking @ 10 per cent of (b)				747.23
		c)	Overhead charges @ 10 % on (a+b)				1025.23
		d)	Contractor's profit @ 10 % on (a+b+c)				1127.75
							12405.25
			Add 1% labour cess				124.05
			Cost for 0.5m = a+b+c+d				12529.31
			Rate per metre = (a+b+c+d)/0.50				25058.61
						say	<u>25059.00</u>
			Labour Rate				
			Labour				2032.80
			Overhead charges @ 10%				203.28
			Contractors Profit @10%				223.61
							2459.69
			Add 1% labour cess				24.60
			Cost for 1 m				2484.28
			Rate per m				2484.28
						say	<u>2484.00</u>
2.17 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	26312.00	27628.00	
			12th m	5%	27628.00	29009.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			13th m	5%	29009.00	30459.00	
			14th m	5%	30459.00	31982.00	
			15th m	5%	31982.00	33581.00	
			16th m	5%	33581.00	35260.00	
			17th m	5%	35260.00	37023.00	
			18th m	5%	37023.00	38874.00	
			19th m	5%	38874.00	40818.00	
			20th m	5%	40818.00	42859.00	
			Total Cost from 10m upto 20m		330946.00	347493.00	
			<i>Avg Rate per metre</i>		<u>33095.00</u>	<u>34749.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	2608.00	2738.00	
			12th m	5%	2738.00	2875.00	
			13th m	5%	2875.00	3019.00	
			14th m	5%	3019.00	3170.00	
			15th m	5%	3170.00	3329.00	
			16th m	5%	3329.00	3495.00	
			17th m	5%	3495.00	3670.00	
			18th m	5%	3670.00	3854.00	
			19th m	5%	3854.00	4047.00	
			20th m	5%	4047.00	4249.00	
			Total Cost from 10m upto 20m		32805.00	34445.00	
			<i>Avg Rate per metre</i>		<u>3281.00</u>	<u>3445.00</u>	
2.17 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering on the cost, if required				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	43879.00	54849.00	57591.00
			22nd m	7.5%	47170.00	58963.00	61911.00
			23rd m	7.5%	50708.00	63385.00	66554.00
			24th m	7.5%	54511.00	68139.00	71546.00
			25th m	7.5%	58599.00	73249.00	76911.00
			26th m	7.5%	62994.00	78743.00	82680.00
			27th m	7.5%	67719.00	84649.00	88881.00
			28th m	7.5%	72798.00	90998.00	95548.00
			29th m	7.5%	78258.00	97823.00	102714.00
			30th m	7.5%	84127.00	105159.00	110417.00
			Total Cost from 30m upto 40m		620763.00	775957.00	814755.00
			<i>Avg Rate per metre</i>		<u>62076.00</u>	<u>77596.00</u>	<u>81476.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	4351.00	5439.00	5711.00
			22nd m	7.5%	4677.00	5846.00	6138.00
			23rd m	7.5%	5028.00	6285.00	6599.00
			24th m	7.5%	5405.00	6756.00	7094.00
			25th m	7.5%	5810.00	7263.00	7626.00
			26th m	7.5%	6246.00	7808.00	8198.00
			27th m	7.5%	6714.00	8393.00	8813.00
			28th m	7.5%	7218.00	9023.00	9474.00
			29th m	7.5%	7759.00	9699.00	10184.00
			30th m	7.5%	8341.00	10426.00	10947.00
			Total Cost from 30m upto 40m		61549.00	76938.00	80785.00
			<i>Avg Rate per metre</i>		<u>6155.00</u>	<u>7694.00</u>	<u>8079.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.17 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	92540.00	111048.00	116600.00
			32nd	10%	101794.00	122153.00	128261.00
			33rd m	10%	111973.00	134368.00	141086.00
			34th m	10%	123170.00	147804.00	155194.00
			35th m	10%	135487.00	162584.00	170713.00
			36th m	10%	149036.00	178843.00	187785.00
			37th m	10%	163940.00	196728.00	206564.00
			38th m	10%	180334.00	216401.00	227221.00
			39th m	10%	198367.00	238040.00	249942.00
			40th m	10%	218204.00	261845.00	274937.00
			Total Cost from 30m upto 40m		1474845	1769814	1858303
			<i>Avg Rate per metre</i>		<u>147485</u>	<u>176981.00</u>	<u>185830.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	9175.00	11010.00	11561.00
			32nd	10%	10093.00	12112.00	12718.00
			33rd m	10%	11102.00	13322.00	13988.00
			34th m	10%	12212.00	14654.00	15387.00
			35th m	10%	13433.00	16120.00	16926.00
			36th m	10%	14776.00	17731.00	18618.00
			37th m	10%	16254.00	19505.00	20480.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			38th m	10%	17879.00	21455.00	22528.00
			39th m	10%	19667.00	23600.00	24780.00
			40th m	10%	21634.00	25961.00	27259.00
			Total Cost from 30m upto 40m		146225	175470	184245
			<i>Avg Rate per metre</i>		<u>14623.00</u>	<u>17547.00</u>	<u>18425.00</u>
2.17			Soft Rock (11m dia well)				
		C	Unit = Running Meter.				
			Taking output = 0.50 m				
			Depth in soft rock strata upto 3m				
			Rate of sinking @ 0.06 m/hour				
			a) Labour				
			Mate	day	0.95	210.00	199.50
			Sinker (skilled)	day	4.25	210.00	892.50
			Sinking helper (semi-skilled)	day	18.00	210.00	3780.00
			Diver	day	1.50	274.17	411.26
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.00	916.00	7328.00
			Air compressor with pneumatic breakers	hour	4.50	465.00	2092.50
			Consumables in sinking @ 10 per cent of (b)				942.05
			Add for dewatering @ 5 per cent of cost, if required				518.13
			c) Overhead charges @ 10 % on (a+b)				1616.39
			d) Contractor's profit @ 10 % on (a+b+c)				1778.03
							19558.36
			Add 1% labour cess				195.58
			Cost for 0.5m = a+b+c+d				19753.94
			Rate per metre = (a+b+c+d)/0.50				39507.88
						say	<u>39508.00</u>
			Labour Rate				
			Labour				5283.26
			Overhead charges @ 10%				528.33
			Contractors Profit @10%				581.16

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							6392.74
			Add 1% labour cess				63.93
			Cost for 1 m				6456.67
			Rate per m				6456.67
						say	<u>6457.00</u>
2.17			Hard Rock (11m dia well)				
		D	Unit = Running Meter.				
			Taking output = 0.50 m				
			Depth in hard rock upto 3 m				
			Rate of sinking @ 0.05 m/hour				
			a) Material				
			Gelatine 80 per cent	Kg	12.00	98.00	1176.00
			Electric Detonators	each.	48.00	16.00	768.00
			b) Labour				
			Mate	day	1.35	210.00	283.50
			Driller	day	2.00	210.00	420.00
			Blaster	day	0.25	259.00	64.75
			Mazdoor	day	26.00	210.00	5460.00
			Mazdoor (Skilled)	day	4.00	210.00	840.00
			c) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	10.00	916.00	9160.00
			Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill	hour	3.50	465.00	1627.50
			Dewatering @ 5 per cent of cost (c), if required.				539.38
			Consumables in sinking @ 10 per cent of cost of (b+c).				1785.58
			d) Overhead charges @ 10 % on (a+b+c)				2212.47
			e) Contractor's profit @ 10 % on (a+b+c+d)				2433.72
							26770.89
			Add 1% labour cess				267.71
			Cost for 0.5m = a+b+c+d				27038.60
			Rate per metre = (a+b+c+d)/0.50				54077.19
						say	<u>54077.00</u>
			Labour Rate				
			Labour				7068.25
			Overhead charges @ 10%				706.83

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Contractors Profit @10%				777.51
							8552.58
			Add 1% labour cess				85.53
			Cost for 1 m				8638.11
			Rate per m				8638.11
						say	<u>8638.00</u>
2.18	1200		Sinking of 12 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
			Unit = Running Meter				
			Taking output = 0.25 m				
			Diameter of well - 12 m.				
			Sandy Soil				
		A	I) Depth below bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.05 m/hour				
		a)	Labour				
			Mate	day	0.22	210.00	46.20
			Sinker (skilled)	day	1.75	210.00	367.50
			Sinking helper (semi-skilled)	day	4.00	210.00	840.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.00	916.00	5496.00
			Consumables in sinking @10 per cent of (b)				549.60
		c)	Overhead charges @ 10 % on (a+b)				729.93
		d)	Contractor's profit @ 10 % on (a+b+c)				802.92
							8832.15
			Add 1% labour cess				88.32
			Cost for 0.25m = a+b+c+d				8920.47
			Rate per metre = (a+b+c+d)/0.25				35681.90
						say	<u>35682.00</u>
			Labour Rate				
			Labour				1253.70

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Overhead charges @ 10%				125.37
			Contractors Profit @10%				137.91
							1516.98
			Add 1% labour cess				15.17
			Cost for 1 m				1532.15
			Rate per m				1532.15
						say	<u>1532.00</u>
2.18 A			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking @ 0.038 m/hour				
		a)	Labour				
			Mate	day	0.37	210.00	77.70
			Sinker	day	2.50	210.00	525.00
			Sinking helper (semi-skilled)	day	4.75	210.00	997.50
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.50	916.00	5954.00
			Consumables in sinking @10 per cent of (b)				595.40
		c)	Overhead charges @ 10 % on (a+b)				814.96
		d)	Contractor's profit @ 10 % on (a+b+c)				896.46
							9861.02
			Add 1% labour cess				98.61
			Cost for 0.25m = a+b+c+d				9959.63
			Rate per metre = (a+b+c+d)/0.25				39838.50
						say	<u>39839.00</u>
			Labour Rate				
			Labour				1600.20
			Overhead charges @ 10%				160.02
			Contractors Profit @10%				176.02
							1936.24
			Add 1% labour cess				19.36
			Cost for 1 m				1955.60
			Rate per m				1955.60
						say	<u>1956.00</u>
2.18 A			Beyond 10m upto 20m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		a	11th m	5%	41831.00		
			12th m	5%	43923.00		
			13th m	5%	46119.15		
			14th m	5%	48425.11		
			15th m	5%	50846.36		
			16th m	5%	53388.68		
			17th m	5%	56058.12		
			18th m	5%	58861.02		
			19th m	5%	61804.07		
			20th m	5%	64894.28		
			Total Cost from 10m upto 20m		526150.78		
			<i>Avg Rate per metre</i>		<u>52615.00</u>		
			Labour Rate				
			Beyond 10m upto 20m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	2054.00		
			12th m	5%	2157.00		
			13th m	5%	2264.85		
			14th m	5%	2378.09		
			15th m	5%	2497.00		
			16th m	5%	2621.85		
			17th m	5%	2752.94		
			18th m	5%	2890.59		
			19th m	5%	3035.12		
			20th m	5%	3186.87		
			Total Cost from 10m upto 20m		25838.30		
			<i>Avg Rate per metre</i>		<u>2584.00</u>		
2.18 A			Beyond 20m upto 30 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	21st m	7.5%	69761.00	83713.00	
			22nd m	7.5%	74993.00	89992.00	
			23rd m	7.5%	80617.00	96740.00	
			24th m	7.5%	86663.00	103996.00	
			25th m	7.5%	93163.00	111796.00	
			26th m	7.5%	100150.00	120180.00	
			27th m	7.5%	107661.00	129193.00	
			28th m	7.5%	115736.00	138883.00	
			29th m	7.5%	124416.00	149299.00	
			30th m	7.5%	133747.00	160496.00	
			Total Cost from 20m upto 30m		986907.00	1184288.00	
			<i>Avg Rate per metre</i>		<u>98691.00</u>	<u>118429.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	3426.00	4111.00	
			22nd m	7.5%	3683.00	4420.00	
			23rd m	7.5%	3959.00	4751.00	
			24th m	7.5%	4256.00	5107.00	
			25th m	7.5%	4575.00	5490.00	
			26th m	7.5%	4918.00	5902.00	
			27th m	7.5%	5287.00	6344.00	
			28th m	7.5%	5684.00	6821.00	
			29th m	7.5%	6110.00	7332.00	
			30th m	7.5%	6568.00	7882.00	
			Total Cost from 20m upto 30m		48466.00	58160.00	
			<i>Avg Rate per metre</i>		<u>4847.00</u>	<u>5816.00</u>	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.18 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	147122.00	176546.00	
			32nd	10%	161834.00	194201.00	
			33rd m	10%	178017.00	213620.00	
			34th m	10%	195819.00	234983.00	
			35th m	10%	215401.00	258481.00	
			36th m	10%	236941.00	284329.00	
			37th m	10%	260635.00	312762.00	
			38th m	10%	286699.00	344039.00	
			39th m	10%	315369.00	378443.00	
			40th m	10%	346906.00	416287.00	
			Total Cost from 30m upto 40m		2344743	2813691	
			Avg Rate per metre		<u>234474.00</u>	<u>281369.00</u>	
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
			31st m	10%	7225.00	8670.00	
			32nd	10%	7948.00	9538.00	
			33rd m	10%	8743.00	10492.00	
			34th m	10%	9617.00	11540.00	
			35th m	10%	10579.00	12695.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			36th m	10%	11637.00	13964.00	
			37th m	10%	12801.00	15361.00	
			38th m	10%	14081.00	16897.00	
			39th m	10%	15489.00	18587.00	
			40th m	10%	17038.00	20446.00	
			Total Cost from 30m upto 40m		115158	138190	
			Avg Rate per metre		<u>11516.00</u>	<u>13819.00</u>	
2.18			Clayey Soil (12 m dia. Well)				
		B	Unit = Running Meter.				
			Taking output = 0.25 meter.				
			Depth below bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.04 m/hour				
		a)	Labour				
			Mate	day	0.30	210.00	63.00
			Sinker (skilled)	day	3.00	210.00	630.00
			Sinking helper (semi-skilled)	day	4.50	210.00	945.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.25	916.00	5725.00
			Consumables in sinking @ 10 per cent of (b)				572.50
		c)	Overhead charges @ 10 % on (a+b)				793.55
		d)	Contractor's profit @ 10 % on (a+b+c)				872.91
							9601.96
			Add 1% labour cess				96.02
			Cost for 0.25m = a+b+c+d				9697.97
			Rate per metre = (a+b+c+d)/0.25				38791.90
						say	<u>38792.00</u>
			Labour Rate				
			Labour				1638.00
			Overhead charges @ 10%				163.80
			Contractors Profit @10%				180.18
							1981.98
			Add 1% labour cess				19.82
			Cost for 1 m				2001.80

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per m				2001.80
						say	<u>2002.00</u>
2.18 B			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking @ 0.03 m/hour				
		a)	Labour				
			Mate	day	0.48	210.00	100.80
			Sinker	day	3.75	210.00	787.50
			Sinking helper (semi-skilled)	day	6.00	210.00	1260.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.33	916.00	7630.28
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.50	465.00	2092.50
			Consumables in sinking @ 10 per cent of (b)				972.28
		c)	Overhead charges @ 10 % on (a+b)				1284.34
		d)	Contractor's profit @ 10 % on (a+b+c)				1412.77
							15540.46
			Add 1% labour cess				155.40
			Cost for 0.25m = a+b+c+d				15695.87
			Rate per metre = (a+b+c+d)/0.25				62783.47
						say	<u>62783.00</u>
			Labour Rate				
			Labour				2148.30
			Overhead charges @ 10%				214.83
			Contractors Profit @10%				236.31
							2599.44
			Add 1% labour cess				25.99
			Cost for 1 m				2625.44
			Rate per m				2625.44
						say	<u>2625.00</u>
2.18 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		b	11th m	5%	65923.00	69219.00	
			12th m	5%	69219.00	72680.00	
			13th m	5%	72680.00	76314.00	
			14th m	5%	76314.00	80130.00	
			15th m	5%	80130.00	84137.00	
			16th m	5%	84137.00	88344.00	
			17th m	5%	88344.00	92761.00	
			18th m	5%	92761.00	97399.00	
			19th m	5%	97399.00	102269.00	
			20th m	5%	102269.00	107382.00	
			Total Cost from 10m upto 20m		829176.00	870635.00	
			<i>Avg Rate per metre</i>		<u>82918.00</u>	<u>87064.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	2756.00	2894.00	
			12th m	5%	2894.00	3039.00	
			13th m	5%	3039.00	3191.00	
			14th m	5%	3191.00	3351.00	
			15th m	5%	3351.00	3519.00	
			16th m	5%	3519.00	3695.00	
			17th m	5%	3695.00	3880.00	
			18th m	5%	3880.00	4074.00	
			19th m	5%	4074.00	4278.00	
			20th m	5%	4278.00	4492.00	
			Total Cost from 10m upto 20m		34677.00	36413.00	
			<i>Avg Rate per metre</i>		<u>3468.00</u>	<u>3641.00</u>	
2.18 B			Beyond 20m upto 30 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering on the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	109939.00	137424.00	144295.00
			22nd m	7.5%	118184.00	147730.00	155117.00
			23rd m	7.5%	127048.00	158810.00	166751.00
			24th m	7.5%	136577.00	170721.00	179257.00
			25th m	7.5%	146820.00	183525.00	192701.00
			26th m	7.5%	157832.00	197290.00	207155.00
			27th m	7.5%	169669.00	212086.00	222690.00
			28th m	7.5%	182394.00	227993.00	239393.00
			29th m	7.5%	196074.00	245093.00	257348.00
			30th m	7.5%	210780.00	263475.00	276649.00
			Total Cost from 30m upto 40m		1555317	1944147	2041356
			<i>Avg Rate per metre</i>		<u>155532</u>	<u>194415.00</u>	<u>204136.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	4599.00	5749.00	6036.00
			22nd m	7.5%	4944.00	6180.00	6489.00
			23rd m	7.5%	5315.00	6644.00	6976.00
			24th m	7.5%	5714.00	7143.00	7500.00
			25th m	7.5%	6143.00	7679.00	8063.00
			26th m	7.5%	6604.00	8255.00	8668.00
			27th m	7.5%	7099.00	8874.00	9318.00
			28th m	7.5%	7631.00	9539.00	10016.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			29th m	7.5%	8203.00	10254.00	10767.00
			30th m	7.5%	8818.00	11023.00	11574.00
			Total Cost from 30m upto 40m		65070	81340	85407
			<i>Avg Rate per metre</i>		<u>6507.00</u>	<u>8134.00</u>	<u>8541.00</u>
2.18 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	231858.00	278230.00	292142.00
			32nd	10%	255044.00	306053.00	321356.00
			33rd m	10%	280548.00	336658.00	353491.00
			34th m	10%	308603.00	370324.00	388840.00
			35th m	10%	339463.00	407356.00	427724.00
			36th m	10%	373409.00	448091.00	470496.00
			37th m	10%	410750.00	492900.00	517545.00
			38th m	10%	451825.00	542190.00	569300.00
			39th m	10%	497008.00	596410.00	626231.00
			40th m	10%	546709.00	656051.00	688854.00
			Total Cost from 30m upto 40m		3695217	4434263	4655979
			<i>Avg Rate per metre</i>		<u>369522</u>	<u>443426.00</u>	<u>465598.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	9700.00	11640.00	12222.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			32nd	10%	10670.00	12804.00	13444.00
			33rd m	10%	11737.00	14084.00	14788.00
			34th m	10%	12911.00	15493.00	16268.00
			35th m	10%	14202.00	17042.00	17894.00
			36th m	10%	15622.00	18746.00	19683.00
			37th m	10%	17184.00	20621.00	21652.00
			38th m	10%	18902.00	22682.00	23816.00
			39th m	10%	20792.00	24950.00	26198.00
			40th m	10%	22871.00	27445.00	28817.00
			Total Cost from 30m upto 40m		154591	185507	194782
			<i>Avg Rate per metre</i>		<u>15459.00</u>	<u>18551.00</u>	<u>19478.00</u>
2.18			Soft Rock (12m dia well)				
		C	<i>Unit = Running Meter</i>				
			<i>Taking output = 0.25 m</i>				
			Depth in soft rock strata upto 3m				
			Rate of sinking @ 0.025 m/hour				
			a) Labour				
			Mate	day	1.06	210.00	222.60
			Sinker (skilled)	day	4.50	210.00	945.00
			Sinking helper (semi-skilled)	day	20.00	210.00	4200.00
			Diver	day	1.75	274.17	479.80
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	10.00	916.00	9160.00
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.75	465.00	2208.75
			Consumables in sinking @ 10 per cent of (b)				1136.88
			Add for dewatering @ 5 per cent, if required				625.28
			c) Overhead charges @ 10 % on (a+b)				1897.83
			d) Contractor's profit @ 10 % on (a+b+c)				2087.61
							22963.75
			Add 1% labour cess				229.64
			Cost for 0.25m = a+b+c+d				23193.39

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per metre = (a+b+c+d)/0.25				92773.54
					say	<u>92774.00</u>
		Labour Rate				
		Labour				5847.40
		Overhead charges @ 10%				584.74
		Contractors Profit @10%				643.21
						7075.35
		Add 1% labour cess				70.75
		Cost for 1 m				7146.10
		Rate per m				7146.10
					say	<u>7146.00</u>
2.18		Hard Rock (12m dia well)				
	D	Unit = Running Meter				
		Taking output = 0.25 m				
		Depth in hard rock strata upto 3 m				
	(i)	Rate of sinking @ 0.020 m/hour				
		a) Material				
		Gelatine 80 per cent	Kg	14.00	98.00	1372.00
		Electric detonator	each.	56.00	16.00	896.00
		b) Labour				
		Mate	day	1.44	210.00	302.40
		Driller	day	2.00	210.00	420.00
		Blaster	day	0.25	259.00	64.75
		Mazdoor	day	28.00	210.00	5880.00
		Mazdoor (Skilled)	day	4.50	210.00	945.00
		c) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	12.50	916.00	11450.00
		Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill	hour	4.00	465.00	1860.00
		Dewatering @ 5 per cent, if required.				665.50
		Consumables in sinking @ 10 per cent of (c).				1397.55
		d) Overhead charges @ 10 % on (a+b+c)				2525.32
		e) Contractor's profit @ 10 % on (a+b+c+d)				2777.85
						30556.37

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Add 1% labour cess				305.56
		Cost for 0.25m = a+b+c+d+e				30861.94
		Rate per metre = (a+b+c+d+e)/0.25				123447.74
					say	<u>123448.00</u>
		Labour Rate				
		Labour				7612.15
		Overhead charges @ 10%				761.22
		Contractors Profit @10%				837.34
						9210.70
		Add 1% labour cess				92.11
		Cost for 1 m				9302.81
		Rate per m				9302.81
					say	<u>9303.00</u>
2.19	1200	Sinking of Twin D Type well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
		<i>Unit = Running Meter</i>				
		<i>Taking output = 1 m</i>				
		Dimensions of well.				
		Overall length = 12 m				
		Overall width = 6 m				
		Sandy Soil				
	A	Depth from bed level upto 3.0 M				
	(i)	Rate of sinking @ 0.18 m/hour				
		a) Labour				
		Mate	day	0.20	210.00	42.00
		Sinker (skilled)	day	1.25	210.00	262.50
		Sinking helper (semi-skilled)	day	3.75	210.00	787.50
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.50	916.00	5038.00
		Consumables in sinking @10 per cent of (b)				503.80
		c) Overhead charges @ 10 % on (a+b)				663.38

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		d) Contractor's profit @ 10 % on (a+b+c)				729.72
						8026.90
		Add 1% labour cess				80.27
		Rate per metre = (a+b+c+d)				8107.17
					say	<u>8107.00</u>
		Labour Rate				
		Labour				1092.00
		Overhead charges @ 10%				109.20
		Contractors Profit @10%				120.12
						1321.32
		Add 1% labour cess				13.21
		Cost for 1 m				1334.53
		Rate per m				1334.53
					say	<u>1335.00</u>
2.19 A		Beyond 3m upto 10m depth				
	(ii)	Rate of sinking @ 0.17 m/hour				
		a) Labour				
		Mate	day	0.30	210.00	63.00
		Sinker	day	1.50	210.00	315.00
		Sinking helper (semi-skilled)	day	4.00	210.00	840.00
		b) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.88	916.00	5386.08
		Consumables in sinking @10 per cent of (b)				538.61
		c) Overhead charges @ 10 % on (a+b)				714.27
		d) Contractor's profit @ 10 % on (a+b+c)				785.70
						8642.65
		Add 1% labour cess				86.43
		Rate per metre = (a+b+c+d)				8729.08
					say	<u>8729.00</u>
		Labour Rate				
		Labour				1218.00
		Overhead charges @ 5%				60.90
		Contractors Profit @10%				127.89
						1406.79
		Add 1% labour cess				14.07
		Cost for 1 m				1420.86

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per m				1420.86
2.19 A			Cost from 10m upto 20m			say	<u>1421.00</u>
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	11th m	5%	9166.00		
			12th m	5%	9624.00		
			13th m	5%	10105.00		
			14th m	5%	10610.00		
			15th m	5%	11141.00		
			16th m	5%	11698.00		
			17th m	5%	12283.00		
			18th m	5%	12897.00		
			19th m	5%	13542.00		
			20th m	5%	14219.00		
			Total Cost from 10m upto 20m		115285.00		
			<i>Avg Rate per metre</i>		<u>11529.00</u>		
			Labour Rate				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			11th m	5%	1492.00		
			12th m	5%	1567.00		
			13th m	5%	1645.00		
			14th m	5%	1727.00		
			15th m	5%	1813.00		
			16th m	5%	1904.00		
			17th m	5%	1999.00		
			18th m	5%	2099.00		
			19th m	5%	2204.00		
			20th m	5%	2314.00		
			Total Cost from 10m upto 20m		18764.00		
			<i>Avg Rate per metre</i>		<u>1876.00</u>		
2.19 A			Beyond 20m upto 30 m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
		b	21st m	7.5%	15285.00	18342.00	
			22nd m	7.5%	16431.00	19717.00	
			23rd m	7.5%	17663.00	21196.00	
			24th m	7.5%	18988.00	22786.00	
			25th m	7.5%	20412.00	24494.00	
			26th m	7.5%	21943.00	26332.00	
			27th m	7.5%	23589.00	28307.00	
			28th m	7.5%	25358.00	30430.00	
			29th m	7.5%	27260.00	32712.00	
			30th m	7.5%	29305.00	35166.00	
			Total Cost from 20m upto 30m		216234.00	259482.00	
			<i>Avg Rate per metre</i>		<u>21623.00</u>	<u>25948.00</u>	
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge	
			21st m	7.5%	2488.00	2986.00	
			22nd m	7.5%	2675.00	3210.00	
			23rd m	7.5%	2876.00	3451.00	
			24th m	7.5%	3092.00	3710.00	
			25th m	7.5%	3324.00	3989.00	
			26th m	7.5%	3573.00	4288.00	
			27th m	7.5%	3841.00	4609.00	
			28th m	7.5%	4129.00	4955.00	
			29th m	7.5%	4439.00	5327.00	
			30th m	7.5%	4772.00	5726.00	
			Total Cost from 20m upto 30m		35209.00	42251.00	
			<i>Avg Rate per metre</i>		<u>3521.00</u>	<u>4225.00</u>	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.19 A			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
		b	31st m	10%	32236.00	38683.00	
			32nd	10%	35460.00	42552.00	
			33rd m	10%	39006.00	46807.00	
			34th m	10%	42907.00	51488.00	
			35th m	10%	47198.00	56638.00	
			36th m	10%	51918.00	62302.00	
			37th m	10%	57110.00	68532.00	
			38th m	10%	62821.00	75385.00	
			39th m	10%	69103.00	82924.00	
			40th m	10%	76013.00	91216.00	
			Total Cost from 30m upto 40m		513772.00	616527.00	
			<i>Avg Rate per metre</i>		<u>51377.00</u>	<u>61653.00</u>	
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge	
			31st m	10%	5249.00	6299.00	
			32nd	10%	5774.00	6929.00	
			33rd m	10%	6351.00	7621.00	
			34th m	10%	6986.00	8383.00	
			35th m	10%	7685.00	9222.00	
			36th m	10%	8454.00	10145.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			37th m	10%	9299.00	11159.00	
			38th m	10%	10229.00	12275.00	
			39th m	10%	11252.00	13502.00	
			40th m	10%	12377.00	14852.00	
			Total Cost from 30m upto 40m		83656.00	100387.00	
			<i>Avg Rate per metre</i>		<u>8366.00</u>	<u>10039.00</u>	
2.19			Clayey Soil (Twin D Type Well)				
		B	Unit = Running Meter				
			Taking output = 1 meter				
			Depth below bed level upto 3.0 M				
		(i)	Rate of sinking @ 0.16 m/hour				
		a)	Labour				
			Mate	day	0.26	210.00	54.60
			Sinker (skilled)	day	2.50	210.00	525.00
			Sinking helper (semi-skilled)	day	4.00	210.00	840.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.25	916.00	5725.00
			Consumables in sinking @ 10 per cent of (b)				572.50
		c)	Overhead charges @ 10 % on (a+b)				771.71
		d)	Contractor's profit @ 10 % on (a+b+c)				848.88
							9337.69
			Add 1% labour cess				93.38
			Rate per metre = (a+b+c+d)				9431.07
						say	<u>9431.00</u>
			Labour Rate				
			Labour				1419.60
			Overhead charges @ 10%				141.96
			Contractors Profit @10%				156.16
							1717.72
			Add 1% labour cess				17.18
			Cost for 1 m				1734.89
			Rate per m				1734.89

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>1735.00</u>
2.19 B			Beyond 3m upto 10m depth				
		(ii)	Rate of sinking @ 0.15 m/hour				
		a)	Labour				
			Mate	day	0.45	210.00	94.50
			Sinker	day	3.25	210.00	682.50
			Sinking helper (semi-skilled)	day	6.00	210.00	1260.00
		b)	Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.67	916.00	6109.72
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.50	465.00	2092.50
			Consumables in sinking @ 10 per cent of (b)				820.22
		c)	Overhead charges @ 10 % on (a+b)				1105.94
		d)	Contractor's profit @ 10 % on (a+b+c)				1216.54
							13381.92
			Add 1% labour cess				133.82
			Rate per metre = (a+b+c+d)				13515.74
						say	<u>13516.00</u>
			Labour Rate				
			Labour				2037.00
			Overhead charges @ 10%				203.70
			Contractors Profit @10%				224.07
							2464.77
			Add 1% labour cess				24.65
			Cost for 1 m				2489.42
			Rate per m				2489.42
						say	<u>2489.00</u>
2.19 B			Beyond 10 m upto 20 m				
		(iii)	Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
		b	11th m	5%	14192.00	14902.00	
			12th m	5%	14902.00	15647.00	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			13th m	5%	15647.00	16429.00	
			14th m	5%	16429.00	17250.00	
			15th m	5%	17250.00	18113.00	
			16th m	5%	18113.00	19019.00	
			17th m	5%	19019.00	19970.00	
			18th m	5%	19970.00	20969.00	
			19th m	5%	20969.00	22017.00	
			20th m	5%	22017.00	23118.00	
			Total Cost from 10m upto 20m		178508.00	187434.00	
			<i>Avg Rate per metre</i>		<u>17851.00</u>	<u>18743.00</u>	
			Labour Rate				
			Beyond 10 m upto 20 m				
			Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required	
			11th m	5%	2614.00	2745.00	
			12th m	5%	2745.00	2882.00	
			13th m	5%	2882.00	3026.00	
			14th m	5%	3026.00	3177.00	
			15th m	5%	3177.00	3336.00	
			16th m	5%	3336.00	3503.00	
			17th m	5%	3503.00	3678.00	
			18th m	5%	3678.00	3862.00	
			19th m	5%	3862.00	4055.00	
			20th m	5%	4055.00	4258.00	
			Total Cost from 10m upto 20m		32878.00	34522.00	
			<i>Avg Rate per metre</i>		<u>3288.00</u>	<u>3452.00</u>	
2.19 B			Beyond 20m upto 30 m				
		(iv)	Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		a	Add 5 per cent of cost for dewatering on the cost, if required				
		b	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
		c	21st m	7.5%	23668.00	29585.00	31064.00
			22nd m	7.5%	25443.00	31804.00	33394.00
			23rd m	7.5%	27351.00	34189.00	35898.00
			24th m	7.5%	29402.00	36753.00	38591.00
			25th m	7.5%	31607.00	39509.00	41484.00
			26th m	7.5%	33978.00	42473.00	44597.00
			27th m	7.5%	36526.00	45658.00	47941.00
			28th m	7.5%	39265.00	49081.00	51535.00
			29th m	7.5%	42210.00	52763.00	55401.00
			30th m	7.5%	45376.00	56720.00	59556.00
			Total Cost from 30m upto 40m		334826.00	418535.00	439461.00
			<i>Avg Rate per metre</i>		<u>33483.00</u>	<u>41854.00</u>	<u>43946.00</u>
			Labour Rate				
			Beyond 20m upto 30 m				
			Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering on the cost, if required				
			Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if required
			21st m	7.5%	4359.00	5449.00	5721.00
			22nd m	7.5%	4686.00	5858.00	6151.00
			23rd m	7.5%	5037.00	6296.00	6611.00
			24th m	7.5%	5415.00	6769.00	7107.00
			25th m	7.5%	5821.00	7276.00	7640.00
			26th m	7.5%	6258.00	7823.00	8214.00
			27th m	7.5%	6727.00	8409.00	8829.00
			28th m	7.5%	7232.00	9040.00	9492.00
			29th m	7.5%	7774.00	9718.00	10204.00
			30th m	7.5%	8357.00	10446.00	10968.00
			Total Cost from 30m upto 40m		61666.00	77084.00	80937.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			<i>Avg Rate per metre</i>		<u>6167.00</u>	<u>7708.00</u>	<u>8094.00</u>
2.19 B			Beyond 30m upto 40 m				
		(v)	Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
		a	Add 5 per cent of cost for dewatering, if required				
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
		c	31st m	10%	49914.00	59897.00	62892.00
			32nd	10%	54905.00	65886.00	69180.00
			33rd m	10%	60396.00	72475.00	76099.00
			34th m	10%	66436.00	79723.00	83709.00
			35th m	10%	73080.00	87696.00	92081.00
			36th m	10%	80388.00	96466.00	101289.00
			37th m	10%	88427.00	106112.00	111418.00
			38th m	10%	97270.00	116724.00	122560.00
			39th m	10%	106997.00	128396.00	134816.00
			40th m	10%	117697.00	141236.00	148298.00
			Total Cost from 30m upto 40m		795510.00	954611.00	1002342.00
			<i>Avg Rate per metre</i>		<u>79551.00</u>	<u>95461.00</u>	<u>100234.00</u>
			Labour Rate				
			Beyond 30m upto 40 m				
			Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				
			Add 5 per cent of cost for dewatering, if required				
			Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
			31st m	10%	9193.00	11032.00	11584.00
			32nd	10%	10112.00	12134.00	12741.00
			33rd m	10%	11123.00	13348.00	14015.00
			34th m	10%	12235.00	14682.00	15416.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			35th m	10%	13459.00	16151.00	16959.00
			36th m	10%	14805.00	17766.00	18654.00
			37th m	10%	16286.00	19543.00	20520.00
			38th m	10%	17915.00	21498.00	22573.00
			39th m	10%	19707.00	23648.00	24830.00
			40th m	10%	21678.00	26014.00	27315.00
			Total Cost from 30m upto 40m		146513.00	175816.00	184607.00
			Avg Rate per metre		<u>14651.00</u>	<u>17582.00</u>	<u>18461.00</u>
2.19			Soft Rock (Twin D Type Well)				
		C	Unit = Running Meter				
			Taking output = 1 m				
			Depth in soft rock strata upto 3m				
			Rate of sinking @ 0.12 m/hour				
			a) Labour				
			Mate	day	0.86	210.00	180.60
			Sinker (skilled)	day	4.50	210.00	945.00
			Sinking helper (semi-skilled)	day	15.00	210.00	3150.00
			Diver	day	1.50	274.17	411.26
			b) Machinery				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.33	916.00	7630.28
			Air compressor with pneumatic breakers	hour	6.00	465.00	2790.00
			Consumables in sinking @ 10 per cent of (b)				1042.03
			Add for dewatering @ 5 per cent, if required				573.12
			c) Overhead charges @ 10 % on (a+b)				1672.23
			d) Contractor's profit @ 10 % on (a+b+c)				1839.45
							20233.96
			Add 1% labour cess				202.34
			Rate per metre = (a+b+c+d)				20436.30
						say	<u>20436.00</u>
			Labour Rate				
			Labour				4686.86
			Overhead charges @ 10%				468.69

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Contractors Profit @10%				515.55
						5671.09
		Add 1% labour cess				56.71
		Cost for 1 m				5727.81
		Rate per m				5727.81
					say	<u>5728.00</u>
2.19		Hard Rock (Twin D Type Well)				
	D	Unit = Running Meter				
		Taking output = 1 m				
		Depth in hard rock strata upto 3 m				
		Rate of sinking @ 0.10 m/hour				
		a) Material				
		Geletine80 per cent	Kg	10.00	98.00	980.00
		Electric detonators	each.	40.00	16.00	640.00
		b) Labour				
		Mate	day	1.34	210.00	281.40
		Driller	day	2.00	210.00	420.00
		Blaster	day	0.25	259.00	64.75
		Mazdoor	day	25.00	210.00	5250.00
		Mazdoor (Skilled)	day	4.25	210.00	892.50
		c) Machinery				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	10.00	916.00	9160.00
		Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill	hour	3.00	465.00	1395.00
		Dewatering @ 5 per cent of cost of (b+c), if required.				873.18
		Consumables in sinking @ 10 per cent of (b).				1142.82
		d) Overhead charges @ 10 % on (a+b+c)				2109.97
		e) Contractor's profit @ 10 % on (a+b+c+d)				2320.96
						25530.58
		Add 1% labour cess				255.31
		Rate per metre = (a+b+c+d+e)				25785.88
					say	<u>25786.00</u>
		Labour Rate				
		Labour				6908.65
		Overhead charges @ 10%				690.87

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Contractors Profit @10%				759.95
						8359.47
		Add 1% labour cess				83.59
		Cost for 1 m				8443.06
		Rate per m				8443.06
					say	<u>8443.00</u>
2.20	1200	Pneumatic sinking of wells with equipment of approved design, drawing and specifications worked by competent and trained personnel and comprising of compression and decompression chambers, reducers, two air locks separately for men and plant & materials, arrangement for supply of fresh air to working chambers, check valves, exhaust valves, shafts made from steel plates of riveted construction not less than 6 mm thick to withstand an air pressure of 0.50 MPa, controlled blasting of hard rock where required, staircases and 1 m wide landing platforms with railing, arrangement for compression and decompression, electric lighting of 50 V maximum, proper rooms for rest and medical examinations and compliance with safety precautions as per IS:4138, all as per clause 1207.6 of MoRTH Specifications.				
		<i>Unit - 1 cum</i>				
		<i>Taking output = 5 cum</i>				
		a) Material				
		M35 grade RCC corbel provided for supporting of equipment (Dimensions as per ground conditions). Rate may be adopted vide Item 12.8 (H)	Cum	8.00	7830.00	62640.00
		HYSD bar reinforcement in corbel	tonne	0.48	56871.00	27298.08
		Blasting material				
		Gelatine 80 per cent	Kg	1.50	98.00	147.00
		Electric detonators	each	6.00	16.00	96.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			b) Labour				
			Medical Officer	day	0.50	2000.00	1000.00
			Para medical personnel	day	1.00	750.00	750.00
			Mate	day	1.86	210.00	390.60
			Driller	day	1.00	210.00	210.00
			Blaster	day	0.50	259.00	129.50
			Mazdoor (for cutting, blasting, cleaning, removal of Material etc.)	day	30.00	210.00	6300.00
			Mazdoor (Skilled) (for fixation and removal of adopter for air lock, carrying out mechanical and electrical operations and repairs and other skilled jobs.)	day	10.00	210.00	2100.00
			Diver	day	4.00	274.17	1096.68
			c) Machinery				
			(i) Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	6.00	10000.00	60000.00
			Induction and deinduction	L.S			100000.00
			Erection at site and commissioning	L.S			150000.00
			Usage of plant and equipment for pneumatic method of well sinking	hour	6.00	6162.00	36972.00
			Air compressor 250 cfm, 2 nos.	hour	2 x 6	465.00	5580.00
			Hire and running charges of crane of 15 tonne capacity	hour	6.00	800.00	4800.00
			Motorised barge of 20 tonne capacity	hour	6.00	545.00	3270.00
			Boat to carry atleast 20 persons	hour	6.00	545.00	3270.00
			Electric generating set 33 KVA	hour	6.00	725.00	4350.00
			Tipper 10 tonne capacity	hour	6.00	513.00	3078.00
			d) Overhead charges @ 10 % on (a+b+c)				41083.79
			e) Contractor's profit @ 10 % on (a+b+c+d)				45192.16
							559753.81
			Add 1% labour cess				5597.54

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cost for 5 cum = a+b+c+d+e (see notes below)				565351.35
			Rate per cum = (a+b+c+d+e)/5			say	<u>113070.00</u>
			1.The cost of induction, deinduction and erection of equipment shall be divided by the total quantity of pneumatic sinking for all the wells of a particular bridge to arrive at the per cum rate on account of this item.				
		Note	2.Cost of pneumatic sinking per cum of individual wells will be added to the cost indicated at (1) above to arrive at the final rate of pneumatic sinking per cum.				
			3.The cost of induction and deinduction will depend upon the distance involved for shifting of equipment which may be assessed in individual cases as per actual ground conditions at the time of making of cost estimates.				
			4.In case pneumatic sinking is involved on a dry bed, the provision of barge and boat may be omitted.				
			5.The necessity and dimensions of the corbel will be as per actual ground conditions.				
			6.Small equipments like welding sets, pumps, vibrators, pneumatic tools, portable lamps, fire extinguishers, hose pipes etc., have not been included as the same are covered as items of minor T&P under overhead charges.				
			7.Depth of sinking shall be restricted to 30 m.				
			Labour Rate				
			Labour				11976.78
			Overhead charges @ 10%				1197.68
			Contractors Profit @10%				1317.45
							14491.90
			Add 1% labour cess				144.92

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Cost for 1 m				14636.82
		Rate per m				14636.82
					say	<u>2927.00</u>
2.21	1207	Sand Filling in Wells complete as per Drawing and Technical Specifications. <i>Unit = 1 cum</i> <i>Taking output = 1 cum</i>				
		a) Material				
		Sand (assuming 20 per cent voids)	cum	1.20	1111.00	1333.20
		b) Labour				
		Mate	day	0.01	210.00	2.10
		Mazdoor	day	0.30	210.00	63.00
		c) Overhead charges @ 10 % on (a+b)				139.83
		d) Contractor's profit @ 10 % on (a+b+c)				153.81
						1691.94
		Add 1% labour cess				16.92
		Rate per cum (a+b+c+d)				1708.86
					say	<u>1709.00</u>
		Labour Rate				
		Labour				65.10
		Overhead charges @ 5%				3.26
		Contractors Profit @10%				6.84
						75.19
		Add 1% labour cess				0.75
		Cost for 1 m				75.94
		Rate per m				75.94
					say	<u>76.00</u>
2.22	1200 & 1900	Providing Steel Liner 10 mm thick for Curbs and 6 mm thick for Steining of Wells including Fabricating and Setting out as per Detailed Drawing. <i>Unit = 1 MT</i> <i>Taking output = 1 MT</i>				
		a) Material				
		i) Structural steel including 5 per cent wastage	tonne	1.05	50100.00	52605.00
		b) Labour				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Mate	day	1.24	210.00	260.40
		Fitter	day	6.00	259.00	1554.00
		Blacksmith	day	5.00	222.00	1110.00
		Welder	day	5.00	315.00	1575.00
		Mazdoor	day	10.00	210.00	2100.00
		Electrodes, cutting gas and other consumables @ 5 per cent on cost a (a) above.				2630.25
		c) Overhead charges @ 10 % on (a+b)				6183.47
		d) Contractor's profit @ 10 % on (a+b+c)				6801.81
						74819.93
		Add 1% labour cess				748.20
		Rate for per MT (a+b+c+d)				75568.13
					say	<u>75568.00</u>
		Labour Rate				
		Labour				6599.40
		Overhead charges @ 10%				659.94
		Contractors Profit @10%				725.93
						7985.27
		Add 1% labour cess				79.85
		Cost for 1 m				8065.13
		Rate per m				8065.13
					say	<u>8065.00</u>
2.23	1100 & 1700	Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.				
		Pile diameter-750 mm				
		Unit = meter				
		Taking output = 15 m				
		a) Materials				
		PCC Grade M35	cum	6.62	7838.00	51887.56
		Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV)				
		Concrete to be cast with a tremie pipe 200mm dia.				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		b) Machinery(for boring and construction)				
		Hire and running charges of hydraulic piling rig with power unit and complete accessories including shifting from one bore location to another.	hour	6.00	6525.00	39150.00
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.50	916.00	458.00
		Hire and running charges of Bentonite pump	hour	6.00	Rate included in pilling rig	
		Loader I cum bucket capacity.	hour	0.30	1281.00	384.30
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.30	513.00	153.90
		Bentonite	kg	300.00	219.00	65700.00
		c) Labour				
		Mate/Supervisor	day	0.14	210.00	29.40
		Mazdoor	day	3.50	210.00	735.00
		d) Overhead charges @ 10 % on (b+c)				10661.06
		e) Contractor's profit @ 10 % on (b+c+d)				11727.17
						180886.39
		Add 1% labour cess				1808.86
		Cost for 15 m = a+b+c+d+d+e				182695.25
		Rate per metre (a+b+c+d+e)/15				12179.68
					say	<u>12180.00</u>
		Labour Rate				
		Labour				983.75
		Overhead charges @ 10%				98.38
		Contractors Profit @10%				108.21
						1190.34
		Add 1% labour cess				11.90
		Cost for 15 m				1202.24
		Rate per m				80.15
					say	<u>80.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.24	1100,1600 & 1700		Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.				
			Pile diameter-1000 mm				
			Unit = meter				
			Taking output = 10 m				
			a) Materials				
			PCC Grade M35	cum	7.85	7838.00	61528.30
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV)				
			Concrete to be cast with a tremie pipe 200mm dia.				
			b) Machinery(for boring and construction)				
			Hire and running charges of hydraulic piling rig with power unit and complete accessories including shifting from one bore location to another.	hour	6.00	6525.00	39150.00
			Hire and running charges of light crane for lowering reinforcement cage	hour	0.50	916.00	458.00
			Hire and running charges of Bentonite pump	hour	6.00	Rate included in piling rig	
			Loader I cum bucket capacity.	hour	0.40	1281.00	512.40
			Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.40	513.00	205.20
			Bentonite	kg	350.00	219.00	76650.00
			c) Labour				
			Mate/Supervisor	day	0.16	210.00	33.60
			Mazdoor	day	4.00	210.00	840.00
			d) Overhead charges @ 10 % on (b+c)				11784.92
			e) Contractor's profit @ 10 % on (b+c+d)				12963.41
							204125.83
			Add 1% labour cess				2041.26
			Cost for 10 m = a+b+c+d+d+e				206167.09

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per metre (a+b+c+d+e)/10				20616.71
					say	<u>20617.00</u>
		Labour Rate				
		Labour				1133.70
		Overhead charges @ 10%				113.37
		Contractors Profit @10%				124.71
						1371.78
		Add 1% labour cess				13.72
		Cost for 10 m				1385.49
		Rate per m				138.55
					say	<u>139.00</u>
2.25	1100 & 1700	Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.				
		Pile diameter-1200 mm				
		Unit = meter				
		Taking output = 9 m				
		a) Materials				
		PCC Grade M35	cum	10.17	7838.00	79712.46
		Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV)				
		Concrete to be cast with a tremie pipe 200mm dia.				
		b) Machinery(for boring and construction)				
		Hire and running charges of hydraulic piling rig with power unit and complete accessories including shifting from one bore location to another.	hour	6.00	6525.00	39150.00
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.50	916.00	458.00
		Hire and running charges of Bentonite pump	hour	6.00	Rate included in pilling rig	
		Loader I cum bucket capacity.	hour	0.50	1281.00	640.50

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.50	513.00	256.50
			Bentonite	kg	385.00	219.00	84315.00
		c)	Labour				
			Mate/Supervisor	day	0.18	210.00	37.80
			Mazdoor	day	4.50	210.00	945.00
		d)	Overhead charges @ 10 % on (b+c)				12580.28
		e)	Contractor's profit @ 10 % on (b+c+d)				13838.31
							231933.85
			Add 1% labour cess				2319.34
			Cost for 9 m = a+b+c+d+e				234253.19
			Rate per metre (a+b+c+d+e)/9				26028.13
						say	<u>26028.00</u>
			Labour Rate				
			Labour				1319.77
			Overhead charges @ 10%				131.98
			Contractors Profit @10%				145.17
							1596.92
			Add 1% labour cess				15.97
			Cost for 9 m				1612.89
			Rate per m				179.21
						say	<u>179.00</u>
2.26	1100 & 1700		Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification				
			Pile diameter - 750 mm				
			Unit = Running meter				
			Taking output = 40 metre				
		a)	Materials				
			PCC Grade M35	cum	17.66	7838.00	138419.08
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV)				
		b)	Materials Pile shoes				
		i)	C.I. shoes for the pile	Kg	160.00	100.00	16000.00
		ii)	M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.00	90.00	6300.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			iii) Steel helmet and cushion block on top of casing head during driving	Kg	50.00	105.00	5250.00
			c) Machinery				
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories..	hour	6.00	5126.00	30756.00
			Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	hour	0.50	484.00	242.00
			d) Labour				
			Mate/Supervisor	day	0.12	210.00	25.20
			Mazdoor	day	3.00	210.00	630.00
			e) Overhead charges @ 10 % on (b+c+d)				5920.32
			f) Contractor's profit @ 10 % on (b+c+d+e)				6512.35
							210054.95
			Add 1% labour cess				2100.55
			Cost for 40 m = a+b+c+d+e				212155.50
			Rate per metre (a+b+c+d+e)/40				5303.89
						say	<u>5304.00</u>
			1.The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
		Note	2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.				
			Labour Rate				
			Labour				1240.35
			Overhead charges @ 10%				124.04
			Contractors Profit @10%				136.44

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							1500.82
			Add 1% labour cess				15.01
			Cost for 140m				1515.83
			Rate per m				37.90
						say	<u>38.00</u>
2.27	1100 & 1700		Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification				
			Pile diameter - 1000 mm				
			Unit = Running meter				
			Taking output = 30 metre				
			a) Materials				
			PCC Grade M35	cum	23.55	7838.00	184584.90
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV)				
			b) Materials Pile shoes				
			i) C.I. shoes for the pile	Kg	160.00	100.00	16000.00
			ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.00	90.00	6300.00
			iii) Steel helmet and cushion block on top of casing head during driving	Kg	50.00	105.00	5250.00
			c) Machinery				
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.00	5126.00	30756.00
			Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	hour	0.50	484.00	242.00
			Hire and running charges for light crane for lowering reinforcement cage.	hour	0.50	916.00	458.00
			d) Labour				
			Mate/Supervisor	day	0.16	210.00	33.60
			Mazdoor	day	4.00	210.00	840.00
			e) Overhead charges @ 10 % on (b+c+d)				5987.96

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		f) Contractor's profit @ 10 % on (b+c+d+e)				6586.76
						257039.22
		Add 1% labour cess				2570.39
		Cost for 30 m = a+b+c+d+e				259609.61
		Rate per metre (a+b+c+d+e)/30				8653.65
					say	<u>8654.00</u>
		1.The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
	Note	2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.				
		Labour Rate				
		Labour				1653.89
		Overhead charges @ 10%				165.39
		Contractors Profit @10%				181.93
		Cost for 30 m				2001.21
		Rate per m				66.71
					say	<u>67.00</u>
2.28	1100 & 1700	Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification				
		Pile diameter - 1200 mm				
		Unit = Running meter				
		Taking output = 20 metre				
		a) Materials				
		PCC Grade M35	cum	22.61	7838.00	177217.18
		Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV)				
		b) Materials Pile shoes				
		i) C.I. shoes for the pile	Kg	160.00	100.00	16000.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.00	90.00	6300.00
			iii) Steel helmet on top of casing head during driving	Kg	50.00	105.00	5250.00
			c) Machinery				
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.00	5126.00	30756.00
			Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	hour	0.50	484.00	242.00
			d) Labour				
			Mate/Supervisor	day	0.18	210.00	37.80
			Mazdoor	day	4.50	210.00	945.00
			e) Overhead charges @ 10 % on (b+c+d)				5953.08
			f) Contractor's profit @ 10 % on (b+c+d+e)				6548.39
							249249.45
			Add 1% labour cess				2492.49
			Cost for 20 m = a+b+c+d+e				251741.94
			Rate per metre (a+b+c+d+e)/20				12587.10
						say	<u>12587.00</u>
			1.The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
		Note	2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.				
			Labour Rate				
			Labour				1731.95
			Overhead charges @ 10%				173.20

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Contractors Profit @10%				190.51
						2095.66
		Add 1% labour cess				20.96
		Cost for 20 m				2116.62
		Rate per m				70.55
					say	<u>71.00</u>
2.29	1100 & 1700	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and Technical Specification				
		Pile Diameter = 500 mm				
		Unit = Running Meter				
		Taking output = 60 m				
		a) Materials				
		RCC Grade M35	cum	11.78	7502.00	88373.56
		Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(F) (IV)				
		b) Material Pile shoes				
		a) C.I Shoes	Kg	240.00	100.00	24000.00
		b) M.S. shoes	Kg	105.00	145.00	15225.00
		c) Steel helmet and cushion block on top of pile head during driving.	Kg	30.00	105.00	3150.00
		c) Machinery				
		Crane 20 t capacity	hour	6.00	870.00	5220.00
		Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.00	2175.00	13050.00
		d) Labour				
		Mate/Supervisor	day	0.12	210.00	25.20
		Mazdoor	day	3.00	210.00	630.00
		Add 1 per cent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.				1496.74
		e) Overhead charges @ 10 % on (b+c+d)				6279.69
		f) Contractor's profit @ 10 % on (b+c+d+e)				6907.66

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							164357.85
			Add 1% labour cess				1643.58
			Cost for 60 m = a+b+c+d+e+f				166001.43
			Rate per metre (a+b+c+d+e+f)/60				2766.69
						say	<u>2767.00</u>
			The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
			Labour Rate				
			Labour				1044.82
			Overhead charges @ 10%				104.48
			Contractors Profit @10%				114.93
							1264.23
			Add 1% labour cess				12.64
			Cost for 60 m				1276.87
			Rate per m				21.28
						say	<u>21.00</u>
2.30	1100 & 1700	Note	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and Technical Specification				
			Pile Diameter = 750 mm				
			Unit = Running Meter				
			Taking output = 50 m				
			a) Materials				
			RCC Grade M35	cum	22.08	7502.00	165644.16
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(F) (IV)				
			b) Material Pile shoes				
			a) C.I. shoes	Kg	160.00	100.00	16000.00
			b) M.S. shoes	Kg	70.00	145.00	10150.00
			c) Steel helmet and cushion block on top of pile head during driving.	Kg	40.00	105.00	4200.00
			c) Machinery				
			Crane 40 T capacity	hour	6.00	890.00	5340.00
			Vibrating Pile driving hammer complete with power unit and	hour	6.00	2175.00	13050.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Labour				
			Mate/Supervisor	day	0.16	210.00	33.60
			Mazdoor	day	4.00	210.00	840.00
			Add 1 per cent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.				2152.58
			e) Overhead charges @ 10 % on (b+c+d)				5176.62
			f) Contractor's profit @ 10 % on (b+c+d+e)				5694.28
							228281.23
			Add 1% labour cess				2282.81
			Cost for 50 m = a+b+c+d+e+f				230564.05
			Rate per metre (a+b+c+d+e+f)/50				4611.28
						say	<u>4611.00</u>
			The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
			Labour Rate				
			Labour				1603.90
			Overhead charges @ 10%				160.39
			Contractors Profit @10%				176.43
							1940.72
			Add 1% labour cess				19.41
			Cost for 50 m				1960.13
			Rate per m				39.20
						say	<u>39.00</u>
2.31	1100 & 1700	Note	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and Technical Specification				
			Pile Diameter = 1000 mm				
			Unit = Running Meter				
			Taking output = 40 m				
			a) Materials				
			RCC Grade M35	cum	31.40	7502.00	235562.80

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(F) (IV)				
			b) Material Pile shoes				
			a) C.I. shoes for the pile	Kg	160.00	100.00	16000.00
			b) M.S. shoes @ 35 Kg per pile of 15 m	Kg	70.00	145.00	10150.00
			c) Steel helmet and cushion block on top of pile head during driving.	Kg	50.00	105.00	5250.00
			c) Machinery				
			Crane 50 t capacity.	hour	6.00	1520.00	9120.00
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.00	2175.00	13050.00
			d) Labour				
			Mate/Supervisor	day	0.20	210.00	42.00
			Mazdoor	day	5.00	210.00	1050.00
			Add 1 per cent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.				2902.25
			e) Overhead charges @ 10 % on (b+c+d)				5756.42
			f) Contractor's profit @ 10 % on (b+c+d+e)				6332.07
							305215.54
			Add 1% labour cess				3052.16
			Cost for 40 m = a+b+c+d+e+f				308267.70
			Rate per metre (a+b+c+d+e+f)/40				7706.69
						say	<u>7707.00</u>
			The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
			Labour Rate				
			Labour				2130.56
			Overhead charges @ 10%				213.06
			Contractors Profit @10%				234.36
							2577.98
			Add 1% labour cess				25.78

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cost for 40 m				2603.76
			Rate per m				65.09
						say	<u>65.00</u>
2.32	1100&1700	Note	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification				
			Size of pile - 300 mm x 300 mm				
			Unit = Running Meter				
			Taking output = 60 m				
			a) Materials				
			RCC Grade M-35				
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(F) (IV)	cum	5.40	7502.00	40510.80
			b) Material Pile shoes				
			a) C I shoes	kg	240.00	100.00	24000.00
			b) M. S shoes	kg	105.00	145.00	15225.00
			c) Steel helmet and cushion block on top of pile head during driving.	Kg	30.00	105.00	3150.00
			c) Machinery				
			Crane 10 tonne capacity	hour	6.00	484.00	2904.00
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.00	2175.00	13050.00
			d) Labour				
			Mate/Supervisor	day	0.12	210.00	25.20
			Mazdoor	day	3.00	210.00	630.00
			Add 1 per cent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.				994.95
			e) Overhead charges @ 10 % on (b+c+d)				5997.92
			f) Contractor's profit @ 10 % on (b+c+d+e)				6597.71
							113085.57
			Add 1% labour cess				1130.86
			Cost for 60 m = a+b+c+d+e+f				114216.43

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per metre (a+b+c+d+e+f)/60				1903.61
						say	<u>1904.00</u>
			The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
			Labour Rate				
			Labour				1693.76
			Overhead charges @ 10%				169.38
			Contractors Profit @10%				186.31
							2049.45
			Add 1% labour cess				20.49
			Cost for 60 m				2069.94
			Rate per m				34.50
						say	<u>35.00</u>
2.33	1100 & 1700	Note	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and Technical Specification				
			Size of pile - 500 mm x 500 mm				
			Unit = Running Meter				
			Taking output = 50 m				
			a) Materials				
			RCC Grade M-35				
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(F) (IV)	cum	12.50	7502.00	93775.00
			b) Material Pile shoes				
			a) C I shoes	kg	160.00	100.00	16000.00
			b) M. S shoes	kg	70.00	145.00	10150.00
			c) Steel helmet and cushion block on top of pile head during driving.	Kg	30.00	105.00	3150.00
			c) Machinery				
			Crane 20 tonne capacity	hour	6.00	870.00	5220.00
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.00	2175.00	13050.00
			d) Labour				
			Mate/Supervisor	day	0.16	210.00	33.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mazdoor	day	4.00	210.00	840.00
			Add 1 per cent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.				1422.19
			e) Overhead charges @ 10 % on (b+c+d)				4986.58
			f) Contractor's profit @ 10 % on (b+c+d+e)				5485.24
							154112.60
			Add 1% labour cess				1541.13
			Cost for 50 m = a+b+c+d+e+f				155653.73
			Rate per metre (a+b+c+d+e+f)/50				3113.07
						say	<u>3113.00</u>
			The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
			Labour Rate				
			Labour				1912.16
			Overhead charges @ 5%				95.61
			Contractors Profit @10%				200.78
							2208.54
			Add 1% labour cess				22.09
			Cost for 50 m				2230.63
			Rate per m				44.61
						say	<u>45.00</u>
2.34	1100 & 1700	Note	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and Technical Specification				
			Size of pile - 750 mm x 750 mm				
			Unit = Running Meter				
			Taking output = 40 m				
			a) Materials				
			RCC Grade M-35				
			Rate for concrete may be adopted same as for bottom plug vide item no. 13.11(F) (IV)	cum	22.50	7502.00	168795.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		b) Material				
		Pile shoes				
		a) C I shoes	kg	160.00	100.00	16000.00
		b) M. S shoes	kg	70.00	145.00	10150.00
		c) Steel helmet and cushion block on top of pile head during driving.	Kg	30.00	105.00	3150.00
		c) Machinery				
		Crane 20 tonne capacity	hour	6.00	870.00	5220.00
		Vibrating Pile driving hammer complete with power unit and	hour	6.00	2175.00	13050.00
		d) Labour				
		Mate/Supervisor	day	0.18	210.00	37.80
		Mazdoor	day	4.50	210.00	945.00
		Add 1 per cent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.				2173.48
		e) Overhead charges @ 10 % on (b+c+d)				5072.63
		f) Contractor's profit @ 10 % on (b+c+d+e)				5579.89
						230173.80
		Add 1% labour cess				2301.74
		Cost for 40 m = a+b+c+d+e+f				232475.53
		Rate per metre (a+b+c+d+e+f)/40				5811.89
					say	<u>5812.00</u>
		The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.				
		Labour Rate				
		Labour				2021.36
		Overhead charges @ 10%				202.14
		Contractors Profit @10%				222.35
						2445.85
		Add 1% labour cess				24.46
		Cost for 40 m				2470.30
		Rate per m				61.76
					say	<u>62.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
2.35	1100, 1900	Note	Driven Vertical Steel Piles complete as per Drawing and & Technical Specification				
			Section of the pile - H Section steel column 400 x 250 mm (ISHB Series)				
			Unit = Running Meter				
			Taking output = 70 m				
			a) Materials				
			Structural steel including 5 per cent wastage @ 82.20 kg/m	tonnes	6.04	50100.00	302604.00
			b) Machinery				
			Crane 10 T capacity	hour	6.00	484.00	2904.00
			Vibrating Pile driving hammer complete with power unit and other accessories.	hour	6.00	2175.00	13050.00
			c) Labour				
			Mate/Supervisor	day	0.12	210.00	25.20
			Mazdoor	day	3.00	210.00	630.00
			Add 0.5 per cent of (a+b+c) for providing steel helmet on top of pile head during driving, stacking of piles at site, providing anti-corrosion treatment and other imponderables during installation.				1596.07
			d) Overhead charges @ 10 % on (a+b+c)				32080.93
			e) Contractor's profit @ 10 % on (a+b+c+d)				35289.02
							388179.21
			Add 1% labour cess				3881.79
			Cost for 70 m = a+b+c+d+e				392061.00
			Rate per metre (a+b+c+d+e)/70				5600.87
						say	<u>5601.00</u>
			Labour Rate				
			Labour				2251.27
			Overhead charges @ 10%				225.13
			Contractors Profit @10%				247.64
							2724.03
			Add 1% labour cess				27.24
			Cost for 70 m				2751.27

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Rate per m				39.30
					say	<u>39.00</u>
2.36	1100 & 1900	Driven Vertical Steel Piles complete as per Drawing and & Technical Specification				
		Section of the pile - H Section steel column 450 x 250 mm (ISHB Series)				
		Unit = Running Meter				
		Taking output = 60 m				
		a) Materials				
		Structural steel including 5 per cent wastage @92.50 kg/m	tonnes	5.83	50100.00	292083.00
		b) Machinery				
		Crane 10 T capacity	hour	6.00	484.00	2904.00
		Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.00	2175.00	13050.00
		c) Labour				
		Mate/Supervisor	day	0.14	210.00	29.40
		Mazdoor	day	3.50	210.00	735.00
		Add 0.5 per cent of (a+b+c) for providing steel helmet and cushion block on top of pile head during driving, stacking of piles at site, providing anti-corrosive treatment and other imponderables during installation.				1544.01
		d) Overhead charges @ 10 % on (a+b+c)				31034.54
		e) Contractor's profit @ 10 % on (a+b+c+d)				34137.99
						375517.94
		Add 1% labour cess				3755.18
		Cost for 60 m = a+b+c+d+e				379273.12
		Rate per metre (a+b+c+d+e)/60				6321.22
					say	<u>6321.00</u>
		Labour Rate				
		Labour				2308.41
		Overhead charges @10%				230.84
		Contractors Profit @10%				253.92
						2793.17

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				27.93
			Cost for 60 m				2821.10
			Rate per m				47.02
						say	<u>47.00</u>
2.37	1100		Pile Load Test on single Vertical Pile in accordance with IS:2911(Part-IV)				
			<i>Unit = 1 MT</i>				
			<i>Taking output = 1 MT</i>				
			a) Initial and routine load test	tonne	1.00	500.00	300.00
			b) Lateral load test	tonne	1.00	7200.00	5000.00
			Although, this item is incidental to work and is not required to be included in BOQ of contract, the same is required to be added in the estimate to assess cost of work.				
2.38	1100, 1500 & 1700	Note	Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification				
			RCC Grade M20				
		A	<i>Unit = cum</i>				
			<i>Taking output = 15 cum</i>				
			Using Concrete Mixer				
		(i)	a) Material				
			Cement	tonne	5.12	7688.00	39362.56
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	259.00	388.50
			Mazdoor for concreting	day	20.00	210.00	4200.00
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator (capacity 33 KVA)	hour	6.00	725.00	4350.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3019.39
			d) Overhead charges @ 10 % on (a+b+c)				7850.42
			e) Contractor's profit @ 10 % on (a+b+c+d)				8635.46
							94990.08
			Add 1% labour cess				949.90
			Cost for 15 cum = a+b+c+d+e				95939.99
			Rate per metre (a+b+c+d+e)/15				6396.00
						say	<u>6396.00</u>
			Labour Rate				
			Labour				4987.50
			Overhead charges @ 10%				498.75
			Contractors Profit @10%				548.63
							6034.88
			Add 1% labour cess				60.35
			Cost for 15cum				6095.22
			Rate per 1cum				406.35
						say	<u>406.00</u>
2.38A			Using Batching Plant, Transit Mixer and Concrete Pump				
		(ii)	a) Material				
			Cement	tonne	5.12	7688.00	39362.56
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.16	210.00	33.60
			Mason	day	0.38	259.00	98.42
			Mazdoor for concreting	day	2.50	210.00	525.00
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	0.75	13798.00	10348.50
			Generator 100 KVA	hour	0.75	1125.00	843.75
			Loader (capacity 1 cum)	hour	0.75	1281.00	960.75
			Transit Mixer (capacity 4.0 cu.m)				
			Lead upto 1 Km	hour	2.00	1601.00	3202.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	37.5L	0.00	0.00
			Concrete Pump	hour	0.75	1565.00	1173.75
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3257.72
			d) Overhead charges @ 10 % on (a+b+c)				8470.08
			e) Contractor's profit @ 10 % on (a+b+c+d)				9317.09
							102487.97
			Add 1% labour cess				1024.88
			Cost for 15 cum = a+b+c+d+e				103512.85
			Rate per metre (a+b+c+d+e)/15				6900.86
						say	<u>6901.00</u>
			The value of a, b and c may be taken as applicable i.e. either using concrete mixer or batching plant.				
			Labour Rate				
			Labour				867.02
			Overhead charges @ 10%				86.70
			Contractors Profit @10%				95.37
							1049.09
			Add 1% labour cess				10.49
			Cost for 15cum				1059.59
			Rate per 1cum				70.64
						say	<u>71.00</u>
2.38		Note	RCC Grade M25				
		B	Unit = cum				
			Taking output = 15 cum				
			Using Concrete Mixer				
		(i)	a) Material				
			Cement	tonne	5.99	7688.00	46051.12
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	259.00	388.50
			Mazdoor for concreting	day	20.00	210.00	4200.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
		c)	Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator (capacity 33 KVA)	hour	6.00	725.00	4350.00
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3286.93
		d)	Overhead charges @ 10 % on (a+b+c)				8546.03
		e)	Contractor's profit @ 10 % on (a+b+c+d)				9400.63
							103406.97
			Add 1% labour cess				1034.07
			Cost for 15 cum = a+b+c+d+e				104441.04
			Rate per metre (a+b+c+d+e)/15				6962.74
						say	<u>6963.00</u>
			Labour Rate				
			Labour				4987.50
			Overhead charges @ 10%				498.75
			Contractors Profit @10%				548.63
							6034.88
			Add 1% labour cess				60.35
			Cost for 15cum				6095.22
			Rate per 1cum				406.35
						say	<u>406.00</u>
2.38B			Using Batching Plant, Transit Mixer and Concrete Pump				
		(ii)	a) Material				
			Cement	tonne	5.99	7688.00	46051.12
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.16	210.00	33.60
			Mason	day	0.38	259.00	98.42
			Mazdoor for concreting	day	2.50	210.00	525.00
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	0.75	13798.00	10348.50
			Generator 125 KVA	hour	0.75	1125.00	843.75
			Loader (capacity 1 cum)	hour	0.75	1281.00	960.75
			Transit Mixer (capacity 4.0 cu.m)				
			Lead upto 1 Km	hour	2.00	1601.00	3202.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	37.5L	0.00	0.00
			Concrete Pump	hour	0.75	1565.00	1173.75
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3525.27
			d) Overhead charges @ 10 % on (a+b+c)				9165.69
			e) Contractor's profit @ 10 % on (a+b+c+d)				10082.26
							110904.86
			Add 1% labour cess				1109.05
			Cost for 15 cum = a+b+c+d+e				112013.90
			Rate per metre (a+b+c+d+e)/15				7467.59
						say	<u>7468.00</u>
			The value of a, b and c may be taken as applicable i.e. either using concrete mixer or batching plant.				
			Labour Rate				
			Labour				867.02
			Overhead charges @ 10%				86.70
			Contractors Profit @10%				95.37
							1049.09
			Add 1% labour cess				10.49
			Cost for 15cum				1059.59
			Rate per 1cum				70.64
						say	<u>71.00</u>
2.38		Note	RCC Grade M30				
		C	Unit = cum				
			Taking output = 15 cum				
			Using Concrete Mixer				
		(i)	a) Material				
			Cement	tonne	6.10	7688.00	46896.80

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	259.00	388.50
			Mazdoor for concreting	day	20.00	210.00	4200.00
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator (capacity 33 KVA)	hour	6.00	725.00	4350.00
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3320.76
			d) Overhead charges @ 10 % on (a+b+c)				8633.98
			e) Contractor's profit @ 10 % on (a+b+c+d)				9497.38
							104471.17
			Add 1% labour cess				1044.71
			Cost for 15 cum = a+b+c+d+e				105515.88
			Rate per metre (a+b+c+d+e)/15				7034.39
						say	<u>7034.00</u>
			Labour Rate				
			Labour				4987.50
			Overhead charges @ 10%				498.75
			Contractors Profit @10%				548.63
							6034.88
			Add 1% labour cess				60.35
			Cost for 15cum				6034.88
			Rate per 1cum				402.33
						say	<u>402.00</u>
'2.38C			Using Batching Plant, Transit Mixer and Concrete Pump				
		(ii)	a) Material				
			Cement	tonne	6.10	7688.00	46896.80
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		10 mm Aggregate	cum	5.40	1281.00	6917.40
		b) Labour				
		Mate	day	0.16	210.00	33.60
		Mason	day	0.38	259.00	98.42
		Mazdoor for concreting	day	2.50	210.00	525.00
		Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
		c) Machinery				
		Batching Plant @ 20 cum/hour	hour	0.75	13798.00	10348.50
		Generator 100 KVA	hour	0.75	1125.00	843.75
		Loader (capacity 1 cum)	hour	0.75	1281.00	960.75
		Transit Mixer (capacity 4.0 cu.m)				
		Lead upto 1 Km	hour	2.00	1601.00	3202.00
		Lead beyond 1 Km, L - lead in Kilometer	tonne.km	37.5L	0.00	0.00
		Concrete Pump	hour	0.75	1565.00	1173.75
		Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3559.09
		d) Overhead charges @ 10 % on (a+b+c)				9253.64
		e) Contractor's profit @ 10 % on (a+b+c+d)				10179.01
						111969.06
		Add 1% labour cess				1119.69
		Cost for 15 cum = a+b+c+d+e				113088.75
		Rate per metre (a+b+c+d+e)/15				7539.25
					say	<u>7539.00</u>
		The value of a, b and c may be taken as applicable i.e. either using concrete mixer or batching plant.				
		Labour Rate				
		Labour				867.02
		Overhead charges @ 10%				86.70
		Contractors Profit @10%				95.37
						1049.09
		Add 1% labour cess				10.49
		Cost for 15cum				1059.59
		Rate per 1cum				70.64

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>71.00</u>
2.38		Note	RCC Grade M35				
		D	Unit = cum				
			Taking output = 15 cum				
			Using Concrete Mixer				
		(i)	a) Material				
			Cement	tonne	6.33	7688.00	48665.04
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	259.00	388.50
			Mazdoor	day	20.00	210.00	4200.00
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator (capacity 33 KVA)	hour	6.00	725.00	4350.00
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3391.49
			d) Overhead charges @ 10 % on (a+b+c)				8817.88
			e) Contractor's profit @ 10 % on (a+b+c+d)				9699.67
							106696.33
			Add 1% labour cess				1066.96
			Cost for 15 cum = a+b+c+d+e				107763.29
			Rate per metre (a+b+c+d+e)/15				7184.22
						say	<u>7184.00</u>
			Labour Rate				
			Labour				4987.50
			Overhead charges @ 10%				498.75
			Contractors Profit @10%				548.63
							6034.88
			Add 1% labour cess				60.35
			Cost for 15cum				6095.22
			Rate per 1cum				406.35

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>406.00</u>
'2.38D			Using Batching Plant, Transit Mixer and Concrete Pump				
		(ii)	a) Material				
			Cement	tonne	6.33	7688.00	48665.04
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.16	210.00	33.60
			Mason	day	0.38	259.00	98.42
			Mazdoor for concreting	day	2.50	210.00	525.00
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.00	210.00	210.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	0.75	13798.00	10348.50
			Generator 125 KVA	hour	0.75	1125.00	843.75
			Loader (capacity 1 cum)	hour	0.75	1281.00	960.75
			Transit Mixer (capacity 4.0 cu.m)				
			Lead upto 1 Km	hour	2.00	1601.00	3202.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	37.5L	0.00	0.00
			Concrete Pump	hour	0.75	1565.00	1173.75
			Formwork @ 4 per cent on cost of concrete i.e. cost of a) Material, b) Labour and c) Machinery				3629.82
			d) Overhead charges @ 10 % on (a+b+c)				9437.54
			e) Contractor's profit @ 10 % on (a+b+c+d)				10381.29
							114194.21
			Add 1% labour cess				1141.94
			Cost for 15 cum = a+b+c+d+e				115336.15
			Rate per metre (a+b+c+d+e)/15				7689.08
						say	<u>7689.00</u>
			Labour Rate				
			Labour				867.02
			Overhead charges @ 10%				86.70
			Contractors Profit @10%				95.37
							1049.09

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Add 1% labour cess				10.49
		Cost for 15cum				1059.59
		Rate per 1cum				70.64
					say	<u>71.00</u>
2.39	1100&1700	Levelling Course for Pile cap				
		Providing and laying of PCC M15 levelling course 100mm thick below the pile cap.				
		Unit = cum				
		Taking output = 15 cum				
		a) Material				
		Cement	tonne	4.13	7688.00	31751.44
		Coarse sand	cum	6.75	1101.00	7431.75
		40 mm aggregate	cum	8.10	1069.00	8658.90
		20 mm Aggregate	cum	4.05	1276.00	5167.80
		10 mm Aggregate	cum	1.35	1281.00	1729.35
		b) Labour				
		Mate	day	0.86	210.00	180.60
		Mason	day	1.50	259.00	388.50
		Mazdoor	day	20.00	210.00	4200.00
		c) Machinery				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
		Generator 33 KVA	hour	6.00	725.00	4350.00
		d) Overhead charges @ 10 % on (a+b+c)				6595.83
		e) Contractor's profit @ 10 % on (a+b+c+d)				7255.42
						79809.59
		Add 1% labour cess				798.10
		Cost for 15 cum = a+b+c+d+e				80607.69
		Rate per metre (a+b+c+d+e)/15				5373.85
					say	<u>5374.00</u>
		Labour Rate				
		Labour				4769.10
		Overhead charges @ 10%				476.91
		Contractors Profit @10%				524.60
						5770.61
		Add 1% labour cess				57.71
		Cost for 15cum				5828.32
		Rate per 1cum				388.55

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>389.00</u>
2.40	1600		Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications.				
			Unit = 1 MT				
			Taking output = 1 MT				
			a) Material				
			HYSD bars including 5 per cent overlaps and wastage	tonne	1.05	56871.00	59714.55
			Binding wire	Kg	6.00	83.00	498.00
			b) Labour for cutting, bending, shifting to site, tying and placing in position				
			Mate	day	0.40	210.00	84.00
			Blacksmith	day	2.00	315.00	630.00
			Mazdoor	day	6.00	210.00	1260.00
			c) Overhead charges @ 10 % on (a+b)				6218.66
			d) Contractor's profit @ 10 % on (a+b+c)				6840.52
							75245.73
			Add 1% labour cess				752.46
			Rate for per MT (a+b+c+d)				75998.18
						say	<u>75998.00</u>
			Labour Rate				
			Labour				1974.00
			Overhead charges @ 10%				197.40
			Contractors Profit @10%				217.14
							2388.54
			Add 1% labour cess				23.89
			Cost for 1MT				2412.43
			Rate per MT				2412.43
						say	<u>2412.00</u>
2.41	1600		Supplying, fitting and placing un-coated Mild steel reinforcement complete in foundation as per drawing and technical specification				
			Unit = 1 MT				
			Taking output = 1 MT				
			a) Material				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			MS bars including 5 per cent overlaps and wastage	tonne	1.05	52548.00	55175.40
			Binding wire	Kg	6.00	83.00	498.00
			b) Labour for straightening, cutting, bending, shifting to site, tying and placing in position				
			Mate	day	0.43	210.00	90.30
			Blacksmith	day	2.25	315.00	708.75
			Mazdoor	day	6.50	210.00	1365.00
			c) Overhead charges @ 10 % on (a+b)				5783.75
			d) Contractor's profit @ 10 % on (a+b+c)				6362.12
							69983.31
			Add 1% labour cess				699.83
			Rate for per MT (a+b+c+d)				70683.15
						say	<u>70683.00</u>
			Labour Rate				
			Labour				2164.05
			Overhead charges @ 10%				216.41
			Contractors Profit @10%				238.05
							2618.50
			Add 1% labour cess				26.19
			Cost for 1MT				2644.69
			Rate per MT				2644.69
						say	<u>2645.00</u>

Chapter-3:

Substructure

Preamble:

1. Although, Substructure are generally constructed in cement concrete, the rate analysis for brick and stone masonry in CM 1:3 have also been included which can be adopted if permitted by design.
2. The cost of formwork will vary with the height of the substructure. Provision has accordingly been made.
3. As the higher grade of concrete is costlier, the provision made for formwork on percentage basis has been suitably adjusted to make it comparable with other grades.
4. Bridge bearings being commercial items produced by specialized firms with imported technology and parts, the rates for the same are required to be ascertained from the market for the approved design and technical specifications.
5. Filter media and backfilling behind abutments are required to be provided as per guidelines given in IRC: 78-2000.
6. Weep holes shall be provided as per Clause 2706 of MORT & H Specification.
7. In case of roller-cum rocker bearings, only full circular rollers are to be provided.
8. All bearings shall be set truly level so as to have full and even seating.
9. For elastomeric bearings, the concrete surface shall be leveled such that the variation is not more than 1.5 mm from a straight edge placed in any direction across the area.
10. The bearing should be procured only from those manufacturers who have been pre-qualified by the Ministry of Road Transport and Highways.
11. The bottom of girders resting on the bearing shall be plane and truly horizontal.
12. For spans in grade, the bearing shall be placed horizontal by using sole plates for suitably designed RCC pedestals.

CHAPTER-3
SUB-STRUCTURE

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
3.1	1300 & 2200	Brick masonry work in 1:3 in sub-structure complete excluding pointing and plastering, as per drawing and Technical Specifications				
		Unit = cum				
		Taking output = 1 cum				
		a) Material				
		Bricks 1st class	each	500.00	9.00	4500.00
		Cement mortar 1:3 (Rate as in Item 12.6 A sub-analysis)	cum	0.24	5274.00	1265.76
		b) Labour				
		Mate	day	0.06	210.00	12.60
		Mason	day	0.80	315.00	252.00
		Mazdoor	day	0.80	210.00	168.00
		Add for scaffolding @ 5 per cent of cost of material and labour				309.92
		c) Overhead charges @ 10 % on (a+b)				650.83
		d) Contractor's profit @ 10 % on (a+b+c)				715.91
		Rate per cum (a+b+c+d)				7875.02
						15750.03
		Add 1% labour cess				157.50
						15907.53
					say	15908.00
		Labour Rate				
		Labour				630.00
		Add for scaffolding @ 5 per cent of cost labour				31.50
		c) Overhead charges @ 10 % on (a+b)				66.15
		d) Contractor's profit @ 10 % on (a+b+c)				72.77
						800.42
		Add 1% labour cess				8.00
		Cost for 1 cum				808.42
		Rate per cum				808.42
					say	808.00
3.2	1300 & 2200	Pointing with cement mortar (1:3) on brick work in substructure as per Technical Specifications				
		Unit = 10 sqm				
		Taking output = 10 sqm				
		a) Material				
		Cement mortar 1:3 (Rate as in Item 12.6)	cum	0.03	5274.00	158.22
		b) Labour				
		Mate	day	0.04	210.00	8.40
		Mason	day	0.50	315.00	157.50
		Mazdoor	day	0.50	210.00	105.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		c) Overhead charges @ 10 % on (a+b)				42.91
		d) Contractor's profit @ 10 % on (a+b+c)				47.20
						519.24
		Add 1% labour cess				5.19
		Rate per 10 sqm (a+b+c+d)				524.43
					say	<u>524.00</u>
	Note	Scaffolding is already included in item 13.1				
		Labour Rate				1974.00
		Labour				270.90
		Overhead charges @ 10%				27.09
		Contractors Profit @10%				29.80
						2301.79
		Add 1% labour cess				23.02
		Cost for 10 Sqm				2324.81
		Rate perSqm				232.48
					say	<u>232.00</u>
3.3	1300 & 2200	Plastering with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications				
		Unit = 10 sqm				
		Taking output = 10 sqm				
		a) Material				
		Cement mortar 1:3 (Rate as in Item 12.6)	cum	0.144	5274.00	759.46
		b) Labour				
		Mate	day	0.04	210.00	8.40
		Mason	day	0.50	315.00	157.50
		Mazdoor	day	0.50	210.00	105.00
		c) Overhead charges @ 10 % on (a+b)				103.04
		d) Contractor's profit @ 10 % on (a+b+c)				113.34
						1246.73
		Add 1% labour cess				12.47
		Rate per 10 sqm (a+b+c+d)				1259.20
					say	<u>1259.00</u>
	Note	1.Scaffolding is already included in item no. 13.1				
		2.The number of masons and Mazdoors already catered in the cement mortar have been taken into account while providing these categories in brick masonry, pointing and plastering.				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Labour Rate				1974.00
			Labour				168.60
			Overhead charges @ 10%				16.86
			Contractors Profit @10%				18.546
							2178.01
			Add 1% labour cess				21.78
			Cost for 10 Sqm				2199.79
			Rate perSqm				219.98
						say	<u>220.00</u>
3.4	1400 & 2200		Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications				
		A	Random Rubble Masonry (coursed/uncoursed)				
			Unit = cum				
			Taking output = 1 cum				
			a) Material				
			Stone	cum	1.00	1170.00	1170.00
			Through and bond stone	No	7.00	30.00	210.00
			(7no.x0.24mx0.24mx0.39m = 0.16 cu.m)				
			Cement mortar 1:3 (Rate as in Item 12.6)	cum	0.33	5274.00	1740.42
			b) Labour				
			Mate	day	0.10	210.00	21.00
			Mason	day	1.20	315.00	378.00
			Mazdoor	day	1.20	210.00	252.00
			Add for scaffolding @ 5 per cent of cost of a) Material and b) Labour				188.57
			c) Overhead charges @ 10 % on (a+b)				396.00
			d) Contractor's profit @ 10 % on (a+b+c)				435.60
							4791.59
			Add 1% labour cess				47.92
			Rate per cum (a+b+c+d)				4839.51
						say	<u>4840.00</u>
			Labour Rate				
			Labour				651.00
			Add for scaffolding @ 5 per cent of cost labour				32.55
			c) Overhead charges @ 10 % on (a+b)				68.36
			d) Contractor's profit @ 10 % on (a+b+c)				75.19
							827.10
			Add 1% labour cess				8.27
			Cost for 1 cum				835.37
			Rate per cum				835.37

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>835.00</u>
3.4		B	Coursed rubble masonry (first sort)				
			Unit = cum				
			Taking output = 1 cum				
			a) Material				
			Stone	cum	1.10	1170.00	1287.00
			Through and bond stone	each	7.00	30.00	210.00
			(7no.x0.24mx0.24mx0.39m = 0.16 cu.m)				
			Cement mortar 1:3 (Rate as in Item 12.6)	cum	0.30	5274.00	1582.20
			b) Labour				
			Mate	day	0.12	210.00	25.20
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	1.50	210.00	315.00
			Add for scaffolding @ 5 per cent of cost of material and labour				194.60
			c) Overhead charges @ 10 % on (a+b)				408.65
			d) Contractor's profit @ 10 % on (a+b+c)				449.51
							1367.76
			Add 1% labour cess				13.68
			Rate per cum (a+b+c+d)				4944.66
						say	<u>4945.00</u>
3.4		C	Ashlar masonry (first sort)				
			Plain ashlar				
			Unit = cum				
			Taking output = 1 cum				
			a) Material				
			Stone	cum	1.11	1368.00	1518.48
			Through and bond stone	each	7.00	30.00	210.00
			(7no.x0.24mx0.24mx0.39m = 0.16 cu.m)				
			Cement mortar 1:3 (Rate as in Item 12.6)	cum	0.33	5274.00	1740.42
			b) Labour for masonry work				
			Mate	day	0.20	210.00	42.00
			Mason	day	2.50	315.00	787.50
			Mazdoor	day	2.50	210.00	525.00
			Add for scaffolding @ 5 per cent of cost of a) Material and b) Labour				241.17
			c) Overhead charges @ 10 % on (a+b)				506.46
			d) Contractor's profit @ 10 % on (a+b+c)				557.10
							6128.13
			Add 1% labour cess				61.28

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per cum (a+b+c+d)				6189.41
						say	<u>6189.00</u>
	Note		The labour already considered in the cement mortar have been taken into account while providing these categories in the stone masonry works.				
3.5	1500, 1700 & 2200		Plain/Reinforced cement concrete in sub structure complete as per drawing and Technical Specifications				
			Unit = cum				
			Taking output = 1 cum				
		A	PCC Grade M15				
		(p)	Height upto 5m				
			Same as Item 12.8 (A) upto 5 m height, except for formwork which shall be 10 per cent instead of 4 per cent of cost of material, labour and machinery.				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (A)				4347.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		434.70
			e) Overhead charges @ 10 % on (a+b+c+d)				478.17
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				525.99
							5785.86
			Add 1% labour cess				57.86
			Rate perm (a+b+c+d+e+f)				5843.72
						say	<u>5844.00</u>
			Labour Rate				
			Labour				2750.50
			Overhead charges @ 10%				275.05
			Contractors Profit @10%				302.56
							3328.11
			Add 1% labour cess				33.28
			Cost for 15cum				3361.39
			Rate per cum				<u>224.09</u>
						say	<u>224.00</u>
3.5		B	PCC Grade M20				
		(p)	Height upto 5m				
			Same as Item 12.8 (B) upto 5 m height, except for formwork which shall be 10 per cent instead of 4 per cent of cost of material, labour and machinery.				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (B)				4969.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		496.90
			e) Overhead charges @ 10 % on (a+b+c+d)				546.59
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				601.25
							6613.74
			Add 1% labour cess				66.14
			Rate perm (a+b+c+d+e+f)				6679.88
						say	<u>6680.00</u>
3.5		C	PCC Grade M25				
		(p)	Height upto 5m				
			Same as Item 12.8 (D) upto 5 m height with the only change that the provision of form work shall be 10 per cent instead of 3.75 per cent of cost of material, labour and machinery.				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case I				5394.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		539.40
			e) Overhead charges @ 10 % on (a+b+c+d)				593.34
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				652.67
							7179.41
			Add 1% labour cess				
			Rate perm (a+b+c+d+e+f)				7179.41
						say	<u>7179.00</u>
3.5 C (p)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case II				5772.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		577.20
			e) Overhead charges @ 10 % on (a+b+c+d)				634.92

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				698.41
							7682.53
			Add 1% labour cess				76.83
			Rate perm (a+b+c+d+e+f)				7759.36
						say	<u>7759.00</u>
3.5 C		(q)	Height 5m to 10m				
			Same as Item 12.8 (D) with the following changes: (i) Add 2 per cent of cost of material, Labour and machinery excluding form work to cater for extra lift. (ii) The provision of form work shall be 12 per cent instead of 3.75 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case I				5394.00
			d) formwork				
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.00		647.28
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.00		107.88
			e) Overhead charges @ 10 % on (a+b+c+d)				614.92
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				676.41
							7440.48
			Add 1% labour cess				74.40
			Rate perm (a+b+c+d+e+f)				7514.89
						say	<u>7515.00</u>
3.5 C (q)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case II				5772.00
			d) formwork				
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.00		692.64
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.00		115.44
			e) Overhead charges @ 10 % on (a+b+c+d)				658.01
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				723.81
							7961.90

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				79.62
			Rate perm (a+b+c+d+e+f)				8041.52
						say	<u>8042.00</u>
3.5 C	(r)		Height above 10m				
			Same as Item 12.8 (D) with the following changes: (i) Add 4 per cent of cost of material, labour and machinery excluding form work to cater for extra lift. (ii) The provision of form work shall be 15 per cent instead of 3.75 per cent of cost of material, labour and machinery.				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case I				5394.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		809.10
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		215.76
			e) Overhead charges @ 10 % on (a+b+c+d)				641.89
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				706.07
							7766.82
			Add 1% labour cess				77.67
			Rate perm (a+b+c+d+e+f)				7844.49
						say	<u>7844.00</u>
						say	<u>7844.00</u>
3.5 C (r)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case II				5772.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		865.80
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		230.88
			e) Overhead charges @ 10 % on (a+b+c+d)				686.87
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				755.55
							8311.10
			Add 1% labour cess				83.11
			Rate perm (a+b+c+d+e+f)				8394.21

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>8394.00</u>
3.5		D (p)	PCC Grade M30 Height upto 5m				
			Same as Item 12.8 (F) upto 5 m height with the only change that the provision of form work shall be 10 per cent instead of 3.50 per cent of cost of material, labour and machinery.				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (F) Case I				5440.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		544.00
			e) Overhead charges @ 10 % on (a+b+c+d)				598.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				658.24
							7240.64
			Add 1% labour cess				72.41
			Rate perm (a+b+c+d+e+f)				7313.05
						say	<u>7313.00</u>
3.5 D (p)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (F) Case II				5814.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		581.40
			e) Overhead charges @ 10 % on (a+b+c+d)				639.54
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				703.49
							7738.43
			Add 1% labour cess				77.38
			Rate perm (a+b+c+d+e+f)				7815.82
						say	<u>7816.00</u>
3.5 D		(q)	Height 5m to 10m				
			Same as Item 12.8 (F) with the following changes: (i) Add 2 per cent of cost of material, Labour and machinery excluding form work to cater for extra lift. (ii) The provision of form work shall be 12 per cent instead of 3.50 per cent of cost of material, labour and machinery.				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (F) Case I				5440.00
			d) formwork				
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.00		652.80
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.00		108.80
			e) Overhead charges @ 10 % on (a+b+c+d)				620.16
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				682.18
							7503.94
			Add 1% labour cess				75.04
			Rate perm (a+b+c+d+e+f)				7578.98
						say	<u>7579.00</u>
3.5 D (q)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (F) Case II				5814.00
			d) formwork				
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.00		697.68
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.00		116.28
			e) Overhead charges @ 10 % on (a+b+c+d)				662.80
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				729.08
							8019.83
			Add 1% labour cess				80.20
			Rate perm (a+b+c+d+e+f)				8100.03
						say	<u>8100.00</u>
3.5 D		(r)	Height above 10m				
			Same as Item 12.8 (F) with the following changes: (i) Add 4 per cent of cost of material, labour and machinery excluding form work to cater for extra lift. (ii) The provision of form work shall be 15 per cent instead of 3.50 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (F) Case I				5440.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		816.00
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		217.60
			e) Overhead charges @ 10 % on (a+b+c+d)				647.36
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				712.10
							7833.06
			Add 1% labour cess				78.33
			Rate perm (a+b+c+d+e+f)				7911.39
						say	<u>7911.00</u>
3.5 D (r)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (F) Case II				5814.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		872.10
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		232.56
			e) Overhead charges @ 10 % on (a+b+c+d)				691.87
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				761.05
							8371.58
			Add 1% labour cess				83.72
			Rate perm (a+b+c+d+e+f)				8455.29
						say	<u>8455.00</u>
3.5		E	RCC Grade M20				
		(p)	Height upto 5m				
			Same as Item 12.8 (C) upto 5 m height, except for formwork which shall be 10 per cent instead of 4 per cent of cost of material, labour and machinery.				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I				5070.00
			d) formwork				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		507.00
			e) Overhead charges @ 10 % on (a+b+c+d)				557.70
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				613.47
							6748.17
			Add 1% labour cess				67.48
			Rate perm (a+b+c+d+e+f)				6815.65
						say	<u>6816.00</u>
3.5 E (p)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case II				5445.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		544.50
			e) Overhead charges @ 10 % on (a+b+c+d)				598.95
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				658.85
							7247.30
			Add 1% labour cess				72.47
			Rate perm (a+b+c+d+e+f)				7319.77
						say	<u>7320.00</u>
3.5 E		(q)	Height 5m to 10m				
			For height, upto 10m, add 2 per cent of cost as above excluding formwork. For cost of formwork add 12 per cent of cost of material, labour and machinery instead of 4 per cent .				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I				5070.00
			d) formwork				
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.00		608.40
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.00		101.40
			e) Overhead charges @ 10 % on (a+b+c+d)				577.98
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				635.78
							6993.56

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				69.94
			Rate perm (a+b+c+d+e+f)				7063.49
						say	<u>7063.00</u>
3.5 E (q)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case II				5445.00
			d) formwork				
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.00		653.40
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.00		108.90
			e) Overhead charges @ 10 % on (a+b+c+d)				620.73
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				682.80
							7510.83
			Add 1% labour cess				75.11
			Rate perm (a+b+c+d+e+f)				7585.94
						say	<u>7586.00</u>
3.5 E		(r)	Height above 10m				
			Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of cost of material, labour and machinery excluding form work to cater for extra lift. (ii) The provision of form work shall be 15 per cent instead of 4 per cent of cost of material, labour and machinery.				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I				5070.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		760.50
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		202.80
			e) Overhead charges @ 10 % on (a+b+c+d)				603.33
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				663.66
							7300.29
			Add 1% labour cess				73.00
			Rate perm (a+b+c+d+e+f)				7373.30
						say	<u>7373.00</u>
3.5 E (r)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case II				5445.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		816.75
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		217.80
			e) Overhead charges @ 10 % on (a+b+c+d)				647.96
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				712.75
							7840.26
			Add 1% labour cess				78.40
			Rate perm (a+b+c+d+e+f)				7918.66
						say	<u>7919.00</u>
3.5		F	RCC Grade M25				
		(p)	Height upto 5m				
			Same as Item 12.8 (E) upto 5m height, excluding formwork. For cost of formwork, add 10 per cent of cost of material, labour and machinery instead of 3.75 per cent .				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case I				5501.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		550.10
			e) Overhead charges @ 10 % on (a+b+c+d)				605.11
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				665.62
							7321.83
			Add 1% labour cess				73.22
			Rate perm (a+b+c+d+e+f)				7395.05
						say	<u>7395.00</u>
3.5 F (p)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case II				6127.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		612.70

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			e) Overhead charges @ 10 % on (a+b+c+d)				673.97
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				741.37
							8155.04
			Add 1% labour cess				81.55
			Rate perm (a+b+c+d+e+f)				8236.59
						say	<u>8237.00</u>
3.5 F		(q)	Height 5m to 10m				
			For height, upto 10m, add 1.8 per cent of cost as above excluding formwork. For cost of formwork add 11.8 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case I				5501.00
			d) formwork				
			Add 11.8 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.80		649.12
			Add 1.8 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.80		99.02
			e) Overhead charges @ 10 % on (a+b+c+d)				624.91
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				687.40
							7561.45
			Add 1% labour cess				75.61
			Rate perm (a+b+c+d+e+f)				7637.07
						say	<u>7637.00</u>
3.5 F (q)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case II				6127.00
			d) formwork				
			Add 11.8 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.80		722.99
			Add 1.8 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.80		110.29
			e) Overhead charges @ 10 % on (a+b+c+d)				696.03
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				765.63
							8421.93
			Add 1% labour cess				84.22

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate perm (a+b+c+d+e+f)				8506.15
						say	<u>8506.00</u>
3.5 F		(r)	Height above 10m				
			For height, above 10m, add 4 per cent of cost as above excluding formwork. For cost of formwork add 15 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case I				5501.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		825.15
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		220.04
			e) Overhead charges @ 10 % on (a+b+c+d)				654.62
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				720.08
							7920.89
			Add 1% labour cess				79.21
			Rate perm (a+b+c+d+e+f)				8000.10
						say	<u>8000.00</u>
3.5 F (r)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case II				6127.00
			d) formwork				
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.00		919.05
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.00		245.08
			e) Overhead charges @ 10 % on (a+b+c+d)				729.11
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				802.02
							8822.27
			Add 1% labour cess				88.22
			Rate perm (a+b+c+d+e+f)				8910.49
						say	<u>8910.00</u>
3.5		G	RCC Grade M30				
		(p)	Height upto 5m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Same as Item 12.8 (G) upto 5m height, excluding formwork. For cost of formwork, add 10 per cent of cost of material, labour and machinery instead of 3.5 per cent .				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case I				5526.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		552.60
			e) Overhead charges @ 10 % on (a+b+c+d)				607.86
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				668.65
							7355.11
			Add 1% labour cess				73.55
			Rate perm (a+b+c+d+e+f)				7428.66
						say	<u>7429.00</u>
3.5 G (p)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case II				5902.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		590.20
			e) Overhead charges @ 10 % on (a+b+c+d)				649.22
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				714.14
							7855.56
			Add 1% labour cess				78.56
			Rate perm (a+b+c+d+e+f)				7934.12
						say	<u>7934.00</u>
3.5 G		(q)	Height 5m to 10m				
			For height, upto 10m, add 1.6 per cent of cost as above excluding formwork. For cost of formwork add 11.5 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case I				5526.00
			d) formwork				
			Add 11.5 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.50		635.49

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1.6 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.60		88.42
			e) Overhead charges @ 10 % on (a+b+c+d)				624.99
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				687.49
							7562.39
			Add 1% labour cess				75.62
			Rate perm (a+b+c+d+e+f)				7638.01
						say	<u>7638.00</u>
3.5 G (q)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case II				5902.00
			d) formwork				
			Add 11.5 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.50		678.73
			Add 1.6 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.60		94.43
			e) Overhead charges @ 10 % on (a+b+c+d)				667.52
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				734.27
							8076.95
			Add 1% labour cess				80.77
			Rate perm (a+b+c+d+e+f)				8157.72
						say	<u>8158.00</u>
3.5 G		(r)	Height above 10m				
			For height, above 10m, add 3.5 per cent of cost as above excluding formwork. For cost of formwork add 14 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case I				5526.00
			d) formwork				
			Add 14 per cent of cost of material, labour and machinery (a+b+c) for Formwork		14.00		773.64
			Add 3.5 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.50		193.41
			e) Overhead charges @ 10 % on (a+b+c+d)				649.31
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				714.24

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							7856.59
			Add 1% labour cess				78.57
			Rate perm (a+b+c+d+e+f)				7935.16
						say	<u>7935.00</u>
3.5 G (r)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case II				5902.00
			d) formwork				
			Add 14 per cent of cost of material, labour and machinery (a+b+c) for Formwork		14.00		826.28
			Add 3.5 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.50		206.57
			e) Overhead charges @ 10 % on (a+b+c+d)				693.49
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				762.83
							8391.17
			Add 1% labour cess				83.91
			Rate perm (a+b+c+d+e+f)				8475.08
						say	<u>8475.00</u>
3.5		H	RCC Grade M35				
		(p)	Height upto 5m				
			Same as Item 12.8 (H) upto 5m height, excluding formwork. For cost of formwork, add 10 per cent of cost of material, labour and machinery instead of 3 per cent .				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case I				5644.00
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		564.40
			e) Overhead charges @ 10 % on (a+b+c+d)				620.84
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				682.92
							7512.16
			Add 1% labour cess				75.12
			Rate perm (a+b+c+d+e+f)				7587.29
						say	<u>7587.00</u>
3.5 H (p)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case II				6283.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) formwork				
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.00		628.30
			e) Overhead charges @ 10 % on (a+b+c+d)				691.13
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				760.24
							8362.67
			Add 1% labour cess				83.63
			Rate perm (a+b+c+d+e+f)				8446.30
						say	<u>8446.00</u>
3.5 H		(q)	Height 5m to 10m				
			For height, upto 10m, add 1.4 per cent of cost as above excluding formwork. For cost of formwork add 11 per cent of cost of material, labour and machinery .				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case I				5644.00
			d) formwork				
			Add 11 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.00		620.84
			Add 1.4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.40		79.02
			e) Overhead charges @ 10 % on (a+b+c+d)				634.39
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				697.82
							7676.07
			Add 1% labour cess				76.76
			Rate perm (a+b+c+d+e+f)				7752.83
						say	<u>7753.00</u>
3.5 H (q)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case II				6283.00
			d) formwork				
			Add 11 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.00		691.13
			Add 1.4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.40		87.96
			e) Overhead charges @ 10 % on (a+b+c+d)				706.21
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				776.83
							8545.13

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				85.45
			Rate perm (a+b+c+d+e+f)				8630.58
						say	<u>8631.00</u>
3.5 H		(r)	Height above 10m				
			For height, above 10m, add 3 per cent of cost as above excluding formwork. For cost of formwork add 13 per cent of cost of material, labour and machinery				
		Case I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case I				5644.00
			d) formwork				
			Add 13 per cent of cost of material, labour and machinery (a+b+c) for Formwork		13.00		733.72
			Add 3 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.00		169.32
			e) Overhead charges @ 10 % on (a+b+c+d)				654.70
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				720.17
							7921.92
			Add 1% labour cess				79.22
			Rate perm (a+b+c+d+e+f)				8001.14
						say	<u>8001.00</u>
3.5 H (r)		Case II	With Batching Plant, Transit Mixer and Concrete Pump				
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case II				6283.00
			d) formwork				
			Add 13 per cent of cost of material, labour and machinery (a+b+c) for Formwork		13.00		816.79
			Add 3 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.00		188.49
			e) Overhead charges @ 10 % on (a+b+c+d)				728.83
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				801.71
							8818.82
			Add 1% labour cess				88.19
			Rate perm (a+b+c+d+e+f)				8907.01
						say	<u>8907.00</u>
	Note		The basic components of this analysis are the same as those of items 13.8 (A to H). The only changes are as under:				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		a) Ramps/Stairs: Extra expenditure on structures which are more than 5 m high @ 2 per cent of cost for height upto 10 m and 4 per cent for heights above 10 m will be involved for approaching the work spot by providing higher ramp/stair case for use by the working parties.				
		b) The above mentioned percentages have been suitably modified for different categories as cost for various categories varies, whereas effort for access for same height will be similar. As the cost of richer concrete is comparatively more, the percentage to be added has been reduced to maintain the same cost for extra efforts.				
3.6	Section 1600 & 2200	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and Technical Specifications				
		Output: MT				
		Taking output = 1 MT				
		a) Material				
		HYSD bars including 5 per cent overlaps and wastage	tonne	1.05	56871.00	59714.55
		Binding wire	kg	6.00	83.00	498.00
		b) Labour for cutting, bending, shifting to site, tying and placing in position				
		Mate	day	0.34	210.00	71.40
		Blacksmith	day	2.00	315.00	630.00
		Mazdoor	day	6.50	210.00	1365.00
		c) Overhead charges @ 10 % on (a+b)				6227.90
		d) Contractor's profit @ 10 % on (a+b+c)				6850.68
						75357.53
		Add 1% labour cess				753.58
		Rate for per MT (a+b+c+d)				76111.10
					say	<u>76111.00</u>
		Labour f:-				2066.40
		c) Overhead charges @ 10 % on (a+b)				206.64
		d) Contractor's profit @ 10 % on (a+b+c)				227.30
						2500.34
		Add 1% labour cess				25.00
		Rate for per MT (a+b+c+d)				2525.35
					say	<u>2525.00</u>

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
3.7	1600 & 2200	Supplying, fitting and placing Mild steel reinforcement complete in sub-structure as per drawing and Technical Specification				
		Unit = MT				
		Taking output = 1 MT				
		a) Material				
		MS bars including 5 per cent overlaps and wastage	tonne	1.05	52548.00	55175.40
		Binding wire	kg	6.00	83.00	498.00
		b) Labour for straightening, cutting, bending, shifting to site, tying and placing in position				
		Mate	day	0.28	210.00	58.80
		Blacksmith	day	1.50	315.00	472.50
		Mazdoor	day	5.50	210.00	1155.00
		c) Overhead charges @ 10 % on (a+b)				5735.97
		d) Contractor's profit @ 10 % on (a+b+c)				6309.57
						69405.24
		Add 1% labour cess				694.05
		Rate for per MT (a+b+c+d)				70099.29
					say	<u>70099.00</u>
3.8	2706 & 2200	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing face. Complete as per drawing and Technical Specifications				
		Unit = Nos.				
		Taking output = 30 Nos.				
		a) Material				
		AC pipe 100 mm dia. (including wastage @ 5 per cent)	metre	31.50	650.00	20475.00
		Average length of weep hole is taken as one metre for the purpose of estimating.				
		MS clamp	each.	30.00	150.00	4500.00
		collar for AC pipe (average) taking 10% of above pipe rate	each.	10.00	65.00	650.00
		Cement mortar 1:3 (Rate as in Item 12.6)	cum	0.05	5274.00	263.70
		b) Labour				
		Mate	day	0.03	210.00	6.30
		Mason	day	0.50	315.00	157.50
		Mazdoor	day	0.25	210.00	52.50

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			c) Overhead charges @ 10 % on (a+b)				2610.50
			d) Contractor's profit @ 10 % on (a+b+c)				2871.55
							31587.05
			Add 1% labour cess				315.87
			Cost for 30 m = a+b+c+d				31902.92
			Rate per m (a+b+c+d)/30				1063.43
						say	<u>1063.00</u>
	Note		1. In case of stone masonry, the size of the weep hole shall be 150 mm x 80 mm or circular with 150 mm diameter.				
			2. For structure in stone masonry, the weep holes shall be deemed to be included in the item of stone masonry work and shall not be paid separately.				
3.9	710.1.4.of IRC:78 & 2200		Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification				
			Unit = cum				
			Taking output = 10 cum				
		A	Granular material				
			a) Labour				
			Mate	day	0.28	210.00	58.80
			Mazdoor	day	7.00	210.00	1470.00
			b) Material				
			Granular material	cum	12.00	376.00	4512.00
			c) Machinery				
			Plate compactor/power rammer	hour	2.50	79.75	199.38
			Water Tanker	hour	0.05	500.00	25.00
			d) Overhead charges @ 10 % on (a+b+c)				626.52
			e) Contractor's profit @ 10 % on (a+b+c+d)				689.17
							7580.86
			Add 1% labour cess				75.81
			Cost for 10 cum of granular backfill = a+b+c+d+e				7656.67
			Rate per cum = (a+b+c+d+e)/10				765.67
						say	<u>766.00</u>
3.9		B	Sandy material				
			a) Labour				
			Mate	day	0.28	210.00	58.80
			Mazdoor for filling, watering, ramming etc.	day	7.00	210.00	1470.00
			b) Material				
			Sand	cum	12.00	1111.00	13332.00
			c) Machinery				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Plate compactor/power rammer	hour	2.50	79.75	199.38
		Water Tanker	hour	0.06	500.00	30.00
		d) Overhead charges @ 10 % on (a+b+c)				1509.02
		e) Contractor's profit @ 10 % on (a+b+c+d)				1659.92
						18259.11
		Add 1% labour cess				182.59
		Cost for 10 cum of sandy backfill = a+b+c+d+e				18441.70
		Rate per cum = (a+b+c+d+e)/10				1844.17
					say	<u>1844.00</u>
3.10	710.1.4.of IRC:78 and 2200	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.				
		Unit = cum				
		Taking output = 10 cum.				
		a) Labour				
		Mate	day	0.32	210.00	67.20
		Mazdoor for filling, watering, ramming etc.	day	7.00	210.00	1470.00
		Mazdoor (Skilled)	day	1.00	210.00	210.00
		b) Material				
		Filter media of stone aggregate conforming to clause 2504.2.2. of MoRTH specifications.	cum	12.00	751.00	9012.00
		c) Machinery				
		Water Tanker of 6 KL capacity	hour	0.06	500.00	30.00
		d) Overhead charges @ 10 % on (a+b+c)				1078.92
		e) Contractor's profit @ 10 % on (a+b+c+d)				1186.81
						13054.93
		Add 1% labour cess				130.55
		cost for 10 cum of Fiter Media = a+b+c+d+e				13185.48
		Rate per cum = (a+b+c+d+e)/10				1318.55
					say	<u>1319.00</u>

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
3.11	2000, 1000 & 2200	Supplying, fitting and fixing in position true to line and level cast steel rocker bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.				
		Unit: one tonne capacity				
		Considering a 250 tonne capacity bearing for this analysis				
		a) Labour				
		Mate	day	0.06	210.00	12.60
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		Mazdoor	day	1.00	210.00	210.00
		b) Material				
		Cast steel rocker bearing assembly of 250 tonne design load capacity duly painted complete with all its components as per drawing and specifications	each.	1.00	73472.00	73472.00
		Add 1 per cent of cost of bearing assembly for foundation anchorage bolts, lifting arrangements, grease and other consumables.				734.72
		c) Overhead charges @ 10 % on (a+b)				7453.43
		d) Contractor's profit @ 10 % on (a+b+c)				8198.78
						90186.53
		Add 1% labour cess				901.87
		cost for 250 tonnes capacity bearing = a+b+c+d				91088.39
		Rate per tonne capacity = (a+b+c+d)/250				364.35
					say	<u>364.00</u>
3.12	2000 , 1000 & 2200	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.				
		Unit: one tonne capacity				
		Considering a 250 tonne capacity bearing for this analysis				
		a) Labour				
		Mate	day	0.06	210.00	12.60
		Mazdoor	day	1.00	210.00	210.00
		Mazdoor (Skilled)	day	0.50	210.00	105.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		b) Material				
		Forged steel roller bearing of 250 tonne design load capacity duly painted complete with all its components as per drawing and specifications	each.	1.00	111803.00	111803.00
		Add 1 per cent of cost of bearing assembly for foundation anchorage bolts, lifting arrangements, grease and other consumables.				1118.03
		c) Overhead charges @ 10 % on (a+b)				11324.86
		d) Contractor's profit @ 10 % on (a+b+c)				12457.35
						137030.84
		Add 1% labour cess				1370.31
		cost for 250 tonnes capacity bearing = a+b+c+d				138401.15
		Rate per tonne capacity = (a+b+c+d)/250				553.60
					say	<u>554.00</u>
3.13	2000 & 2200	Supplying, fitting and fixing in position true to line and level sliding plate bearing with PTFE surface sliding on stainless steel complete including all accessories as per drawing and Technical Specifications and BS: 5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of MoRTH Specifications.				
		Unit: one tonne capacity				
		Considering a 80 tonne capacity bearing for this analysis				
		a) Labour				
		Mate	day	0.06	210.00	12.60
		Mazdoor	day	1.00	210.00	210.00
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		b) Material				
		PTFE sliding plate bearing assembly of 80 tonnes design load capacity duly painted complete with all its components as per drawing and Technical Specifications	each.	1.00	184472.00	184472.00
		Add 1 per cent for foundation anchorage bolts and consumables.				1844.72
		c) Overhead charges @ 10 % on (a+b)				18664.43
		d) Contractor's profit @ 10 % on (a+b+c)				20530.88
						225839.63
		Add 1% labour cess				2258.40

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		cost for 80 tonnes capacity bearing = a+b+c+d				228098.02
		Rate per tonne capacity = (a+b+c+d)/80				2851.23
					say	<u>2851.00</u>
3.14	2000 & 2200	Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.				
		Unit: one cubic centimetre				
		Considering an elastomeric bearing of size 500 x 400 x 96 mm for this analysis.				
		Overall volume - 19200 cu.cm				
		Volume of 6 nos. 488 x 388 x 4 mm size reinforcing steel plates = 4545 cu.cm.				
		Hence volume of elastometer = 14655 cu.cm.				
		a) Labour				
		Mate	day	0.06	210.00	12.60
		Mazdoor	day	1.00	210.00	210.00
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		b) Material				
		Elastomeric bearing assembly consisting of 7 layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation, complete with all components as per drawing and Technical Specifications.	each.	1.00	91928.00	91928.00
		Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables.				919.28
		c) Overhead charges @ 10 % on (a+b)				9317.49
		d) Contractor's profit @ 10 % on (a+b+c)				10249.24
						112741.60
		Add 1% labour cess				1127.42
		cost for 19200cc of elastomeric bearing = a+b+c+d				113869.02
		Rate per cc of elastomeric bearing = (a+b+c+d)/19200				5.93
					say	<u>6.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
3.15	2000 & 2200		Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and Technical Specifications.				
			Unit: one tonne capacity				
			Considering the sliding bearing of 80 tonnes design capacity for this analysis.				
			a) Labour				
			Mate	day	0.04	210.00	8.40
			Mazdoor	day	0.75	210.00	157.50
			Mazdoor (Skilled)	day	0.35	210.00	73.50
			b) Material				
			Supply of sliding plate bearing of 80 tonne design capacity complete as per drawings and Technical Specifications.	each.	1.00	56446.00	56446.00
			Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables.				564.46
			c) Overhead charges @ 10 % on (a+b)				5724.99
			d) Contractor's profit @ 10 % on (a+b+c)				6297.48
							69272.33
			Add 1% labour cess				692.72
			cost for 80 tonnes of capacity bearing = a+b+c+d				69965.05
							874.56
						say	<u>875.00</u>
3.16	2000 & 2200		Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel/fabricated structural steel, metal and elastomer elements to be as per IRC: 83 part-I & II respectively and other parts conforming to BS: 5400, section 9.1 & 9.2 and clause 2006 of MoRTH Specifications complete as per drawing and approved Technical Specifications.				
			Unit: one tonne capacity			387.20	
			Considering a Pot bearing assembly of 250 tonne capacity for this analysis.				
			a) Labour				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mate	day	0.08	210.00	16.80
			Mazdoor	day	1.50	210.00	315.00
			Mazdoor (Skilled)	day	0.50	210.00	105.00
			b) Material				
			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 as per clause 2006 and complete as per drawings and Technical Specifications.	each.	1.00	185583.00	185583.00
			Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables.				1855.83
			c) Overhead charges @ 10 % on (a+b)				18787.56
			d) Contractor's profit @ 10 % on (a+b+c)				20666.32
							227329.51
			Add 1% labour cess				2273.30
			cost for 250 tonnes capacity bearing = a+b+c+d				229602.81
			Rate per tonne capacity = (a+b+c+d)/250				918.41
						say	<u>918.00</u>

Chapter-4:

Superstructure

Preamble:

1. The rate for the wearing coat has been analysed as under:
 - a) Cement concrete wearing coat.
 - b) Asphaltic concrete wearing coat.
 - c) Bitumen mastic wearing coat.

The item may be selected as per approved design. In case the thickness of wearing coat is different from that analysed, the rate for the desired thickness may be worked out on pro-rata basis

2. The rate analysis has been done both for RCC railing and M.S.R railing, which can be adopted as per approved design.
3. The length of drainage spout has been provided in such a way that it is connected to the drainage system on the ground in case of Flyovers and there is no splashing of water on the structure in case of bridges
4. The rate for anti-corrosive treatment is required to be ascertained from firm specialized in this concern Circular No. RW /NH-34041/44/91 S&R dated 21-03-2000 of Ministry of Road Transport and Highways may be referred for further details
5. Expansion joints involving movements exceeding 40 mm are specialized ready made items commercially produced by reputed firm with imported technology and parts The rates for such joints are required to be ascertained from the firm specialized by the Ministry.
6. The rate analysis for pre-cast and pre-tensioned girders has also been included.
7. The rate analysis for prestressed cement concrete of M -60 grade also been included which can be adopted for bridges with innovative design / construction.
8. M.O.R.T & H letter No. RW /NH-34059/1/96 S&R dated 1.1.2000 and subsequent corrigendum dated 25.1.2001 may be referred for detailed specifications and provisions for various types of expansion joints
9. Supply of new type of expansion joints may be obtained on the basis of competitive bidding from amongst the suppliers pre-qualified by the Ministry of Road Transport and Highways Further, a warranty of 10 years of trouble free performance may be insisted from the suppliers
10. For bridge, having wide deck/span length of more than 120 m or/and involving complex movements/ rotations in different directions/ planes provision of special type of modular expansion joints such as swivel joints are required for which specialized in this field may be consulted. Such cases will require prior approval of Ministry.

CHAPTER-4
SUPER-STRUCTURE

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.1	1500 & 1600 1700		Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and Technical Specification				
		A	RCC Grade M20				
		Case I	Using Concrete Mixer				
			Unit = 1 cum				
			Taking output = 15 cum				
		a)	Material				
			Cement	tonne	5.12	7688.00	39362.56
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
		b)	Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
		c)	Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		75351.00		
			For formwork and staging add the following:				
4.1A		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
Case I		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				75351.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		15070.20
			e) Overhead charges @ 10 % on (a+b+c+d)				9042.12
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				9946.33
							109409.65
			Add 1% labour cess				1094.10
			Cost for 15 cum = a+b+c+d+e+f				110503.75
			Rate per cum = (a+b+c+d+e+f)/15				7366.92
						say	<u>7367.00</u>
4.1A		(q)	Height 5m to 10m				
Case I		(i)					
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				75351.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		18837.75
			e) Overhead charges @ 10 % on (a+b+c+d)				9418.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				10360.76
							113968.39
			Add 1% labour cess				1139.68
			Cost for 15 cum = a+b+c+d+e+f				115108.07
			Rate per cum = (a+b+c+d+e+f)/15				7673.87
						say	<u>7674.00</u>
4.1A Case I (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				75351.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		22605.30
			e) Overhead charges @ 10 % on (a+b+c+d)				9795.63
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				10775.19
							118527.12
			Add 1% labour cess				1185.27
			Cost for 15 cum = a+b+c+d+e+f				119712.39
			Rate per cum = (a+b+c+d+e+f)/15				7980.83
						say	<u>7981.00</u>
4.1A Case I		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				75351.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		18837.75
			e) Overhead charges @ 10 % on (a+b+c+d)				9418.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				10360.76
							113968.39
			Add 1% labour cess				1139.68
			Cost for 15 cum = a+b+c+d+e+f				115108.07
			Rate per cum = (a+b+c+d+e+f)/15				7673.87
						say	<u>7674.00</u>
4.1A Case I (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				75351.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		22605.30
			e) Overhead charges @ 10 % on (a+b+c+d)				9795.63
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				10775.19
							118527.12
			Add 1% labour cess				1185.27
			Cost for 15 cum = a+b+c+d+e+f				119712.39
			Rate per cum = (a+b+c+d+e+f)/15				7980.83
						say	<u>7981.00</u>
4.1A Case I (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				75351.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		26372.85
			e) Overhead charges @ 10 % on (a+b+c+d)				10172.39
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11189.62
							123085.86
			Add 1% labour cess				1230.86
			Cost for 15 cum = a+b+c+d+e+f				124316.72
			Rate per cum = (a+b+c+d+e+f)/15				8287.78
						say	<u>8288.00</u>
4.1A		Case II	Using Batching Plant, Transit Mixer and Concrete Pump Unit = cum Taking output = 120 cum				
			a) Material				
			Cement	tonne	40.92	7688.00	314592.96
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		647602.00		
			For formwork and staging add the following:				
4.1A Case II		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				647602.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		129520.40
			e) Overhead charges @ 10 % on (a+b+c+d)				77712.24
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				85483.46
							940318.10
			Add 1% labour cess				9403.18
			Cost for 120 cum = a+b+c+d+e+f				949721.29
			Rate per cum = (a+b+c+d+e+f)/120				7914.34
						say	<u>7914.00</u>
4.1A Case II (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				647602.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		161900.50
			e) Overhead charges @ 10 % on (a+b+c+d)				80950.25
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				89045.28
							979498.03
			Add 1% labour cess				9794.98
			Cost for 120 cum = a+b+c+d+e+f				989293.01
			Rate per cum = (a+b+c+d+e+f)/120				8244.11
						say	<u>8244.00</u>
4.1A Case II (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				647602.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		194280.60
			e) Overhead charges @ 10 % on (a+b+c+d)				84188.26
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				92607.09

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							1018677.95
			Add 1% labour cess				10186.78
			Cost for 120 cum = a+b+c+d+e+f				1028864.73
			Rate per cum = (a+b+c+d+e+f)/120				8573.87
						say	<u>8574.00</u>
4.1A Case II		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				647602.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		161900.50
			e) Overhead charges @ 10 % on (a+b+c+d)				80950.25
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				89045.28
							979498.03
			Add 1% labour cess				9794.98
			Cost for 120 cum = a+b+c+d+e+f				989293.01
			Rate per cum = (a+b+c+d+e+f)/120				8244.11
						say	<u>8244.00</u>
4.1A Case II (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				647602.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		194280.60
			e) Overhead charges @ 10 % on (a+b+c+d)				84188.26
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				92607.09
							1018677.95
			Add 1% labour cess				10186.78
			Cost for 120 cum = a+b+c+d+e+f				1028864.73
			Rate per cum = (a+b+c+d+e+f)/120				8573.87
						say	<u>8574.00</u>
4.1A Case II (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				647602.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		226660.70
			e) Overhead charges @ 10 % on (a+b+c+d)				87426.27
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				96168.90
							1057857.87

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Add 1% labour cess				10578.58
			Cost for 120 cum = a+b+c+d+e+f				1068436.45
			Rate per cum = (a+b+c+d+e+f)/120				8903.64
						say	<u>8904.00</u>
4.1		B	RCC Grade M25				
		Case I	Using Concrete Mixer				
			Unit = 1 cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	5.99	7688.00	46051.12
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.86	210.00	180.60
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		82039.00		
			For formwork and staging add the following:				
4.1B		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
Case I		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				82039.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		16407.80
			e) Overhead charges @ 10 % on (a+b+c+d)				9844.68
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				10829.15
							119120.63
			Add 1% labour cess				1191.21
			Cost for 15 cum = a+b+c+d+e+f				120311.83
			Rate per cum = (a+b+c+d+e+f)/15				8020.79
						say	<u>8021.00</u>
4.1B		(q)	Height 5m to 10m				
Case I		(i)					
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				82039.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		20509.75
			e) Overhead charges @ 10 % on (a+b+c+d)				10254.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11280.36
							124083.99
			Add 1% labour cess				1240.84
			Cost for 15 cum = a+b+c+d+e+f				125324.83
			Rate per cum = (a+b+c+d+e+f)/15				8354.99
						say	<u>8355.00</u>
4.1B Case I (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				82039.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		24611.70
			e) Overhead charges @ 10 % on (a+b+c+d)				10665.07
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11731.58
							129047.35
			Add 1% labour cess				1290.47
			Cost for 15 cum = a+b+c+d+e+f				130337.82
			Rate per cum = (a+b+c+d+e+f)/15				8689.19
						say	<u>8689.00</u>
4.1B Case I		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				82039.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		20509.75
			e) Overhead charges @ 10 % on (a+b+c+d)				10254.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11280.36
							124083.99
			Add 1% labour cess				1240.84
			Cost for 15 cum = a+b+c+d+e+f				125324.83
			Rate per cum = (a+b+c+d+e+f)/15				8354.99
						say	<u>8355.00</u>
4.1B Case I (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				82039.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		24611.70
			e) Overhead charges @ 10 % on (a+b+c+d)				10665.07
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11731.58
							129047.35
			Add 1% labour cess				1290.47
			Cost for 15 cum = a+b+c+d+e+f				130337.82
			Rate per cum = (a+b+c+d+e+f)/15				8689.19
						say	<u>8689.00</u>
4.1B Case I (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				82039.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		28713.65
			e) Overhead charges @ 10 % on (a+b+c+d)				11075.27
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12182.79
							134010.71
			Add 1% labour cess				1340.11
			Cost for 15 cum = a+b+c+d+e+f				135350.81
			Rate per cum = (a+b+c+d+e+f)/15				9023.39
						say	<u>9023.00</u>
4.1B		Case II	Using Batching Plant, Transit Mixer and Concrete Pump Unit = cum Taking output = 120 cum				
			a) Material				
			Cement	tonne	47.95	7688.00	368639.60
			Coarse sand	cum	54.20	1101.00	59674.20
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.84	210.00	176.40
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	18.00	210.00	3780.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		701869.00		
			For formwork and staging add the following:				
4.1B Case II		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				701869.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		140373.80
			e) Overhead charges @ 10 % on (a+b+c+d)				84224.28
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				92646.71
							1019113.79
			Add 1% labour cess				10191.14
			Cost for 120 cum = a+b+c+d+e+f				1029304.93
			Rate per cum = (a+b+c+d+e+f)/120				8577.54
						say	<u>8578.00</u>
4.1B Case II (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				701869.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		175467.25
			e) Overhead charges @ 10 % on (a+b+c+d)				87733.63
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				96506.99
							1061576.86
			Add 1% labour cess				10615.77
			Cost for 120 cum = a+b+c+d+e+f				1072192.63
			Rate per cum = (a+b+c+d+e+f)/120				8934.94
						say	<u>8935.00</u>
4.1B Case II (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				701869.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		210560.70
			e) Overhead charges @ 10 % on (a+b+c+d)				91242.97

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				100367.27
							1104039.94
			Add 1% labour cess				11040.40
			Cost for 120 cum = a+b+c+d+e+f				1115080.34
			Rate per cum = (a+b+c+d+e+f)/120				9292.34
						say	<u>9292.00</u>
4.1B Case II		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				701869.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		175467.25
			e) Overhead charges @ 10 % on (a+b+c+d)				87733.63
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				96506.99
							1061576.86
			Add 1% labour cess				10615.77
			Cost for 120 cum = a+b+c+d+e+f				1072192.63
			Rate per cum = (a+b+c+d+e+f)/120				8934.94
						say	<u>8935.00</u>
4.1B Case II (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				701869.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		210560.70
			e) Overhead charges @ 10 % on (a+b+c+d)				91242.97
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				100367.27
							1104039.94
			Add 1% labour cess				11040.40
			Cost for 120 cum = a+b+c+d+e+f				1115080.34
			Rate per cum = (a+b+c+d+e+f)/120				9292.34
						say	<u>9292.00</u>
4.1B Case II (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				701869.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		245654.15
			e) Overhead charges @ 10 % on (a+b+c+d)				94752.32

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				104227.55
							1146503.01
			Add 1% labour cess				11465.03
			Cost for 120 cum = a+b+c+d+e+f				1157968.04
			Rate per cum = (a+b+c+d+e+f)/120				9649.73
						say	<u>9650.00</u>
4.1		C	RCC Grade M 30				
		Case I	Using Concrete Mixer				
			Unit = 1 cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	6.10	7688.00	46896.80
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	21.00	210.00	4410.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		83104.00		
			For formwork and staging add the following:				
4.1C		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
Case I		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				83104.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		16620.80
			e) Overhead charges @ 10 % on (a+b+c+d)				9972.48
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				10969.73
							120667.01
			Add 1% labour cess				1206.67
			Cost for 15 cum = a+b+c+d+e+f				121873.68
			Rate per cum = (a+b+c+d+e+f)/15				8124.91
						say	<u>8125.00</u>
4.1C		(q)	Height 5m to 10m				
Case I		(i)					

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				83104.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		20776.00
			e) Overhead charges @ 10 % on (a+b+c+d)				10388.00
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11426.80
							125694.80
			Add 1% labour cess				1256.95
			Cost for 15 cum = a+b+c+d+e+f				126951.75
			Rate per cum = (a+b+c+d+e+f)/15				8463.45
						say	<u>8463.00</u>
4.1C Case I (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				83104.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		24931.20
			e) Overhead charges @ 10 % on (a+b+c+d)				10803.52
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11883.87
							130722.59
			Add 1% labour cess				1307.23
			Cost for 15 cum = a+b+c+d+e+f				132029.82
			Rate per cum = (a+b+c+d+e+f)/15				8801.99
						say	<u>8802.00</u>
4.1C Case I		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				83104.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		20776.00
			e) Overhead charges @ 10 % on (a+b+c+d)				10388.00
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11426.80
							125694.80
			Add 1% labour cess				1256.95
			Cost for 15 cum = a+b+c+d+e+f				126951.75
			Rate per cum = (a+b+c+d+e+f)/15				8463.45
						say	<u>8463.00</u>
4.1C Case I (ii)		(q)	Height 5m to 10m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				83104.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		24931.20
			e) Overhead charges @ 10 % on (a+b+c+d)				10803.52
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11883.87
							130722.59
			Add 1% labour cess				1307.23
			Cost for 15 cum = a+b+c+d+e+f				132029.82
			Rate per cum = (a+b+c+d+e+f)/15				8801.99
						say	<u>8802.00</u>
4.1C Case I (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				83104.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		29086.40
			e) Overhead charges @ 10 % on (a+b+c+d)				11219.04
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12340.94
							135750.38
			Add 1% labour cess				1357.50
			Cost for 15 cum = a+b+c+d+e+f				137107.89
			Rate per cum = (a+b+c+d+e+f)/15				9140.53
						say	<u>9141.00</u>
4.1C		Case II	Using Batching Plant, Transit Mixer and Concrete Pump.				
			Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	48.79	7688.00	375097.52
			Coarse sand	cum	54.60	1101.00	60114.60
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.88	210.00	184.80
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	19.00	210.00	3990.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		708985.00		
			For formwork and staging add the following:				
4.1C Case II		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				708985.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		141797.00
			e) Overhead charges @ 10 % on (a+b+c+d)				85078.20
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				93586.02
							1029446.22
			Add 1% labour cess				10294.46
			Cost for 120 cum = a+b+c+d+e+f				1039740.68
			Rate per cum = (a+b+c+d+e+f)/120				8664.51
						say	<u>8665.00</u>
4.1C Case II (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				708985.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		177246.25
			e) Overhead charges @ 10 % on (a+b+c+d)				88623.13
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				97485.44
							1072339.81
			Add 1% labour cess				10723.40
			Cost for 120 cum = a+b+c+d+e+f				1083063.21
			Rate per cum = (a+b+c+d+e+f)/120				9025.53
						say	<u>9026.00</u>
4.1C Case II (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				708985.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		212695.50

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			e) Overhead charges @ 10 % on (a+b+c+d)				92168.05
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				101384.86
							1115233.41
			Add 1% labour cess				11152.33
			Cost for 120 cum = a+b+c+d+e+f				1126385.74
			Rate per cum = (a+b+c+d+e+f)/120				9386.55
						say	<u>9387.00</u>
4.1C Case II		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				708985.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		177246.25
			e) Overhead charges @ 10 % on (a+b+c+d)				88623.13
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				97485.44
							1072339.81
			Add 1% labour cess				10723.40
			Cost for 120 cum = a+b+c+d+e+f				1083063.21
			Rate per cum = (a+b+c+d+e+f)/120				9025.53
						say	<u>9026.00</u>
4.1C Case II (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				708985.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		212695.50
			e) Overhead charges @ 10 % on (a+b+c+d)				92168.05
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				101384.86
							1115233.41
			Add 1% labour cess				11152.33
			Cost for 120 cum = a+b+c+d+e+f				1126385.74
			Rate per cum = (a+b+c+d+e+f)/120				9386.55
						say	<u>9387.00</u>
4.1C Case II (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				708985.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		248144.75

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			e) Overhead charges @ 10 % on (a+b+c+d)				95712.98
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				105284.27
							1158127.00
			Add 1% labour cess				11581.27
			Cost for 120 cum = a+b+c+d+e+f				1169708.27
			Rate per cum = (a+b+c+d+e+f)/120				9747.57
						say	<u>9748.00</u>
4.1		D	RCC/PSC Grade M35				
		Case I	Using Concrete Mixer.				
			Unit = 1 cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	6.33	7688.00	48665.04
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			b) Labour				
			Mate	day	0.90	210.00	189.00
			Mason	day	1.50	315.00	472.50
			Mazdoor	day	21.00	210.00	4410.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		84872.00		
			For formwork and staging add the following:				
4.1D		(i)	For solid slab super-structure, 18-28 per cent of (a+b+c)				
Case I		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 18 per cent of (a+b+c)		18.00		15276.96
			e) Overhead charges @ 10 % on (a+b+c+d)				10014.90
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11016.39
							121180.24
			Add 1% labour cess				1211.80
			Cost for 15 cum = a+b+c+d+e+f				122392.04
			Rate per cum = (a+b+c+d+e+f)/15				8159.47
						say	<u>8159.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.1D Case I (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 23 per cent of (a+b+c)		23.00		19520.56
			e) Overhead charges @ 10 % on (a+b+c+d)				10439.26
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11483.18
							126315.00
			Add 1% labour cess				1263.15
			Cost for 15 cum = a+b+c+d+e+f				127578.15
			Rate per cum = (a+b+c+d+e+f)/15				8505.21
						say	<u>8505.00</u>
4.1D Case I (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 28 per cent of (a+b+c)		28.00		23764.16
			e) Overhead charges @ 10 % on (a+b+c+d)				10863.62
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11949.98
							131449.75
			Add 1% labour cess				1314.50
			Cost for 15 cum = a+b+c+d+e+f				132764.25
			Rate per cum = (a+b+c+d+e+f)/15				8850.95
						say	<u>8851.00</u>
4.1D Case I		(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 23 per cent of (a+b+c)		23.00		19520.56
			e) Overhead charges @ 10 % on (a+b+c+d)				10439.26
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11483.18
							126315.00
			Add 1% labour cess				1263.15
			Cost for 15 cum = a+b+c+d+e+f				127578.15
			Rate per cum = (a+b+c+d+e+f)/15				8505.21
						say	<u>8505.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.1D Case I (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 28 per cent of (a+b+c)		28.00		23764.16
			e) Overhead charges @ 10 % on (a+b+c+d)				10863.62
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11949.98
							131449.75
			Add 1% labour cess				1314.50
			Cost for 15 cum = a+b+c+d+e+f				132764.25
			Rate per cum = (a+b+c+d+e+f)/15				8850.95
						say	<u>8851.00</u>
4.1D Case I (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 33 per cent of (a+b+c)		33.00		28007.76
			e) Overhead charges @ 10 % on (a+b+c+d)				11287.98
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12416.77
							136584.51
			Add 1% labour cess				1365.85
			Cost for 15 cum = a+b+c+d+e+f				137950.35
			Rate per cum = (a+b+c+d+e+f)/15				9196.69
						say	<u>9197.00</u>
4.1D Case I		(iii)	For box girder and balanced cantilever, 38-58 per cent of cost of concrete.				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 38 per cent of (a+b+c)		38.00		32251.36
			e) Overhead charges @ 10 % on (a+b+c+d)				11712.34
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12883.57
							141719.27
			Add 1% labour cess				1417.19
			Cost for 15 cum = a+b+c+d+e+f				143136.46
			Rate per cum = (a+b+c+d+e+f)/15				9542.43
						say	<u>9542.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.1D Case I (iii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 48 per cent of (a+b+c)		48.00		40738.56
			e) Overhead charges @ 10 % on (a+b+c+d)				12561.06
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				13817.16
							151988.78
			Add 1% labour cess				1519.89
			Cost for 15 cum = a+b+c+d+e+f				153508.67
			Rate per cum = (a+b+c+d+e+f)/15				10233.91
						say	<u>10234.00</u>
4.1D Case I (iii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				84872.00
			d) Formwork and staging 58 per cent of (a+b+c)		58.00		49225.76
			e) Overhead charges @ 10 % on (a+b+c+d)				13409.78
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				14750.75
							162258.29
			Add 1% labour cess				1622.58
			Cost for 15 cum = a+b+c+d+e+f				163880.87
			Rate per cum = (a+b+c+d+e+f)/15				10925.39
						say	<u>10925.00</u>
		Case II	Using Batching Plant, Transit Mixer and Concrete Pump				
			Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	50.64	7688.00	389320.32
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			b) Labour				
			Mate	day	0.88	210.00	184.80
			Mason	day	3.00	315.00	945.00
			Mazdoor	day	19.00	210.00	3990.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		722548.00		
			For formwork and staging add the following:				
4.1D Case II		(i)	For solid slab super-structure, 18-28 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00
		d)	Formwork and staging 18 per cent of (a+b+c)		18.00		130058.64
		e)	Overhead charges @ 10 % on (a+b+c+d)				85260.66
		f)	Contractor's profit @ 10 % on (a+b+c+d+e)				93786.73
							1031654.03
			Add 1% labour cess				10316.54
			Cost for 120 cum = a+b+c+d+e+f				1041970.57
			Rate per cum = (a+b+c+d+e+f)/120				8683.09
						say	<u>8683.00</u>
4.1D Case II (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00
		d)	Formwork and staging 23 per cent of (a+b+c)		23.00		166186.04
		e)	Overhead charges @ 10 % on (a+b+c+d)				88873.40
		f)	Contractor's profit @ 10 % on (a+b+c+d+e)				97760.74
							1075368.19
			Add 1% labour cess				10753.68
			Cost for 120 cum = a+b+c+d+e+f				1086121.87
			Rate per cum = (a+b+c+d+e+f)/120				9051.02
						say	<u>9051.00</u>
4.1D Case II (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 28 per cent of (a+b+c)		28.00		202313.44
			e) Overhead charges @ 10 % on (a+b+c+d)				92486.14
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				101734.76
							1119082.34
			Add 1% labour cess				11190.82
			Cost for 120 cum = a+b+c+d+e+f				1130273.17
			Rate per cum = (a+b+c+d+e+f)/120				9418.94
						say	<u>9419.00</u>
4.1D Case II		(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00
			d) Formwork and staging 23 per cent of (a+b+c)		23.00		166186.04
			e) Overhead charges @ 10 % on (a+b+c+d)				88873.40
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				97760.74
							1075368.19
			Add 1% labour cess				10753.68
			Cost for 120 cum = a+b+c+d+e+f				1086121.87
			Rate per cum = (a+b+c+d+e+f)/120				9051.02
						say	<u>9051.00</u>
4.1D Case II (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00
			d) Formwork and staging 28 per cent of (a+b+c)		28.00		202313.44
			e) Overhead charges @ 10 % on (a+b+c+d)				92486.14
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				101734.76
							1119082.34
			Add 1% labour cess				11190.82
			Cost for 120 cum = a+b+c+d+e+f				1130273.17
			Rate per cum = (a+b+c+d+e+f)/120				9418.94
						say	<u>9419.00</u>
4.1D Case II (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 33 per cent of (a+b+c)		33.00		238440.84
			e) Overhead charges @ 10 % on (a+b+c+d)				96098.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				105708.77
							1162796.50
			Add 1% labour cess				11627.96
			Cost for 120 cum = a+b+c+d+e+f				1174424.46
			Rate per cum = (a+b+c+d+e+f)/120				9786.87
						say	<u>9787.00</u>
4.1D Case II		(iii)	For box girder and balanced cantilever, 38-58 per cent of cost of concrete.				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00
			d) Formwork and staging 38 per cent of (a+b+c)		38.00		274568.24
			e) Overhead charges @ 10 % on (a+b+c+d)				99711.62
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				109682.79
							1206510.65
			Add 1% labour cess				12065.11
			Cost for 120 cum = a+b+c+d+e+f				1218575.76
			Rate per cum = (a+b+c+d+e+f)/120				10154.80
						say	<u>10155.00</u>
4.1D Case II (iii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00
			d) Formwork and staging 48 per cent of (a+b+c)		48.00		346823.04
			e) Overhead charges @ 10 % on (a+b+c+d)				106937.10
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				117630.81
							1293938.96
			Add 1% labour cess				12939.39
			Cost for 120 cum = a+b+c+d+e+f				1306878.35
			Rate per cum = (a+b+c+d+e+f)/120				10890.65
						say	<u>10891.00</u>
4.1D Case II (iii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				722548.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 58 per cent of (a+b+c)		58.00		419077.84
			e) Overhead charges @ 10 % on (a+b+c+d)				114162.58
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				125578.84
							1381367.27
			Add 1% labour cess				13813.67
			Cost for 120 cum = a+b+c+d+e+f				1395180.94
			Rate per cum = (a+b+c+d+e+f)/120				11626.51
						say	<u>11627.00</u>
4.1		E	PSC Grade M-40				
		Case 1	Using concrete mixer.				
			Unit = 1 cum				
			Taking output = 15 cum				
			a) Material				
			Cement	tonne	6.45	7688.00	49587.60
			Coarse sand	cum	6.75	1101.00	7431.75
			20 mm Aggregate	cum	8.10	1276.00	10335.60
			10 mm Aggregate	cum	5.40	1281.00	6917.40
			Admixture @ 0.4 per cent of cement	kg	25.80	156.00	4024.80
			b) Labour				
			Mate	day	0.96	210.00	201.60
			Mason	day	2.00	315.00	630.00
			Mazdoor	day	22.00	210.00	4620.00
			c) Machinery				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	350.00	2100.00
			Generator 33 KVA	hour	6.00	725.00	4350.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		90199.00		
			For formwork and staging add the following:				
4.1E		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
Case I		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90199.00
			d) Formwork and staging 20 per cent of (a+b+c)		20.00		18039.80
			e) Overhead charges @ 10 % on (a+b+c+d)				10823.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				11906.27
							130968.95
			Add 1% labour cess				1309.69
			Cost for 15 cum = a+b+c+d+e+f				132278.64

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per cum = (a+b+c+d+e+f)/15				8818.58
						say	<u>8819.00</u>
4.1E Case I (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90199.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		22549.75
			e) Overhead charges @ 10 % on (a+b+c+d)				11274.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12402.36
							136425.99
			Add 1% labour cess				1364.26
			Cost for 15 cum = a+b+c+d+e+f				137790.25
			Rate per cum = (a+b+c+d+e+f)/15				9186.02
						say	<u>9186.00</u>
4.1E Case I (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90199.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		27059.70
			e) Overhead charges @ 10 % on (a+b+c+d)				11725.87
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12898.46
							141883.03
			Add 1% labour cess				1418.83
			Cost for 15 cum = a+b+c+d+e+f				143301.86
			Rate per cum = (a+b+c+d+e+f)/15				9553.46
						say	<u>9553.00</u>
4.1E Case I		(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90199.00
			d) Formwork and staging 25 per cent of (a+b+c)		25.00		22549.75
			e) Overhead charges @ 10 % on (a+b+c+d)				11274.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12402.36
							136425.99
			Add 1% labour cess				1364.26
			Cost for 15 cum = a+b+c+d+e+f				137790.25
			Rate per cum = (a+b+c+d+e+f)/15				9186.02

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>9186.00</u>
4.1E Case I (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90199.00
			d) Formwork and staging 30 per cent of (a+b+c)		30.00		27059.70
			e) Overhead charges @ 10 % on (a+b+c+d)				11725.87
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				12898.46
							141883.03
			Add 1% labour cess				1418.83
			Cost for 15 cum = a+b+c+d+e+f				143301.86
			Rate per cum = (a+b+c+d+e+f)/15				9553.46
						say	<u>9553.00</u>
4.1E Case I (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90199.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		31569.65
			e) Overhead charges @ 10 % on (a+b+c+d)				12176.87
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				13394.55
							147340.07
			Add 1% labour cess				1473.40
			Cost for 15 cum = a+b+c+d+e+f				148813.47
			Rate per cum = (a+b+c+d+e+f)/15				9920.90
						say	<u>9921.00</u>
4.1E		Case II	Using Batching Plant, Transit Mixer and Concrete Pump				
			Unit = cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	51.60	7688.00	396700.80
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture @ 0.4 per cent of cement	kg	206.40	156.00	32198.40
			b) Labour				
			Mate	day	0.94	210.00	197.40
			Mason	day	3.50	315.00	1102.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		762507.00		
			For formwork and staging add the following:				
4.1E Case		(i)	For solid/voided slab super-structure, 18-28 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 18 per cent of (a+b+c)		18.00		137251.26
			e) Overhead charges @ 10 % on (a+b+c+d)				89975.83
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				98973.41
							1088707.49
			Add 1% labour cess				10887.07
			Cost for 120 cum = a+b+c+d+e+f				1099594.57
			Rate per cum = (a+b+c+d+e+f)/120				9163.29
						say	<u>9163.00</u>
4.1E Case II (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 23 per cent of (a+b+c)		23.00		175376.61
			e) Overhead charges @ 10 % on (a+b+c+d)				93788.36
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				103167.20
							1134839.17
			Add 1% labour cess				11348.39
			Cost for 120 cum = a+b+c+d+e+f				1146187.56
			Rate per cum = (a+b+c+d+e+f)/120				9551.56
						say	<u>9552.00</u>
4.1E Case II (i)		(r)	Height above 10m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 28 per cent of (a+b+c)		28.00		213501.96
			e) Overhead charges @ 10 % on (a+b+c+d)				97600.90
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				107360.99
							1180970.84
			Add 1% labour cess				11809.71
			Cost for 120 cum = a+b+c+d+e+f				1192780.55
			Rate per cum = (a+b+c+d+e+f)/120				9939.84
						say	<u>9940.00</u>
4.1E Case II		(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 23 per cent of (a+b+c)		23.00		175376.61
			e) Overhead charges @ 10 % on (a+b+c+d)				93788.36
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				103167.20
							1134839.17
			Add 1% labour cess				11348.39
			Cost for 120 cum = a+b+c+d+e+f				1146187.56
			Rate per cum = (a+b+c+d+e+f)/120				9551.56
						say	<u>9552.00</u>
4.1E Case II (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 28 per cent of (a+b+c)		28.00		213501.96
			e) Overhead charges @ 10 % on (a+b+c+d)				97600.90
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				107360.99
							1180970.84
			Add 1% labour cess				11809.71
			Cost for 120 cum = a+b+c+d+e+f				1192780.55
			Rate per cum = (a+b+c+d+e+f)/120				9939.84
						say	<u>9940.00</u>
4.1E Case II (ii)		(r)	Height above 10m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 33 per cent of (a+b+c)		33.00		251627.31
			e) Overhead charges @ 10 % on (a+b+c+d)				101413.43
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				111554.77
							1227102.52
			Add 1% labour cess				12271.03
			Cost for 120 cum = a+b+c+d+e+f				1239373.54
			Rate per cum = (a+b+c+d+e+f)/120				10328.11
						say	<u>10328.00</u>
4.1E Case II		(iii)	For cast-in-situ box girder, segment construction and balanced cantilever, 38-58 per cent of cost of concrete.				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 38 per cent of (a+b+c)		38.00		289752.66
			e) Overhead charges @ 10 % on (a+b+c+d)				105225.97
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				115748.56
							1273234.19
			Add 1% labour cess				12732.34
			Cost for 120 cum = a+b+c+d+e+f				1285966.53
			Rate per cum = (a+b+c+d+e+f)/120				10716.39
						say	<u>10716.00</u>
4.1E Case II (iii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 48 per cent of (a+b+c)		48.00		366003.36
			e) Overhead charges @ 10 % on (a+b+c+d)				112851.04
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				124136.14
							1365497.54
			Add 1% labour cess				13654.98
			Cost for 120 cum = a+b+c+d+e+f				1379152.51
			Rate per cum = (a+b+c+d+e+f)/120				11492.94
						say	<u>11493.00</u>
4.1E Case II (iii)		(r)	Height above 10m				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				762507.00
			d) Formwork and staging 58 per cent of (a+b+c)		58.00		442254.06
			e) Overhead charges @ 10 % on (a+b+c+d)				120476.11
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				132523.72
							1457760.88
			Add 1% labour cess				14577.61
			Cost for 120 cum = a+b+c+d+e+f				1472338.49
			Rate per cum = (a+b+c+d+e+f)/120				12269.49
						say	<u>12269.00</u>
4.1F		F	PSC Grade M-45				
			Unit = 1 cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	55.80	7688.00	428990.40
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture @ 0.4 per cent of cement	kg	223.20	156.00	34819.20
			b) Labour				
			Mate	day	0.94	210.00	197.40
			Mason	day	3.50	315.00	1102.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		797417.00		
			For formwork and staging add the following:				
4.1F		(l)	For solid slab/voided slab super-structure, 16-26 per cent of cost of concrete (a+b+c)				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 16 per cent of (a+b+c)		16.00		127586.72
			e) Overhead charges @ 10 % on (a+b+c+d)				92500.37
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				101750.41
							1119254.50
			Add 1% labour cess				11192.55
			Cost for 120 cum = a+b+c+d+e+f				1130447.05
			Rate per cum = (a+b+c+d+e+f)/120				9420.39
						say	<u>9420.00</u>
4.1F (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 21 per cent of (a+b+c)		21.00		167457.57
			e) Overhead charges @ 10 % on (a+b+c+d)				96487.46
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				106136.20
							1167498.23
			Add 1% labour cess				11674.98
			Cost for 120 cum = a+b+c+d+e+f				1179173.21
			Rate per cum = (a+b+c+d+e+f)/120				9826.44
						say	<u>9826.00</u>
4.1F (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 26 per cent of (a+b+c)		26.00		207328.42
			e) Overhead charges @ 10 % on (a+b+c+d)				100474.54
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				110522.00
							1215741.96
			Add 1% labour cess				12157.42
			Cost for 120 cum = a+b+c+d+e+f				1227899.38
			Rate per cum = (a+b+c+d+e+f)/120				10232.49
						say	<u>10232.00</u>
4.1F		(ii)	For T-beam & slab including launching of precast girders by launching truss upto 40 m span, 21-31 per cent of cost of concrete.				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			d) Formwork and staging 21 per cent of (a+b+c)		21.00		167457.57
			e) Overhead charges @ 10 % on (a+b+c+d)				96487.46
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				106136.20
							1167498.23
			Add 1% labour cess				11674.98
			Cost for 120 cum = a+b+c+d+e+f				1179173.21
			Rate per cum = (a+b+c+d+e+f)/120				9826.44
						say	<u>9826.00</u>
4.1F (ii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 26 per cent of (a+b+c)		26.00		207328.42
			e) Overhead charges @ 10 % on (a+b+c+d)				100474.54
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				110522.00
							1215741.96
			Add 1% labour cess				12157.42
			Cost for 120 cum = a+b+c+d+e+f				1227899.38
			Rate per cum = (a+b+c+d+e+f)/120				10232.49
						say	<u>10232.00</u>
4.1F (ii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 31 per cent of (a+b+c)		31.00		247199.27
			e) Overhead charges @ 10 % on (a+b+c+d)				104461.63
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				114907.79
							1263985.69
			Add 1% labour cess				12639.86
			Cost for 120 cum = a+b+c+d+e+f				1276625.54
			Rate per cum = (a+b+c+d+e+f)/120				10638.55
						say	<u>10639.00</u>
4.1F		(iii)	For cast-in-situ box girder, segmental construction and balanced cantilever, 36-56 per cent of cost of concrete.				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 36 per cent of (a+b+c)		36.00		287070.12

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			e) Overhead charges @ 10 % on (a+b+c+d)				108448.71
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				119293.58
							1312229.42
			Add 1% labour cess				13122.29
			Cost for 120 cum = a+b+c+d+e+f				1325351.71
			Rate per cum = (a+b+c+d+e+f)/120				11044.60
						say	<u>11045.00</u>
4.1F (iii)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 46 per cent of (a+b+c)		46.00		366811.82
			e) Overhead charges @ 10 % on (a+b+c+d)				116422.88
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				128065.17
							1408716.87
			Add 1% labour cess				14087.17
			Cost for 120 cum = a+b+c+d+e+f				1422804.04
			Rate per cum = (a+b+c+d+e+f)/120				11856.70
						say	<u>11857.00</u>
4.1F (iii)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				797417.00
			d) Formwork and staging 56 per cent of (a+b+c)		56.00		446553.52
			e) Overhead charges @ 10 % on (a+b+c+d)				124397.05
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				136836.76
							1505204.33
			Add 1% labour cess				15052.04
			Cost for 120 cum = a+b+c+d+e+f				1520256.37
			Rate per cum = (a+b+c+d+e+f)/120				12668.80
						say	<u>12669.00</u>
4.1		G	PSC Grade M-50				
			Unit = 1 cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	58.80	7688.00	452054.40
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture @ 0.4 per cent of cement	kg	235.20	156.00	36691.20

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			b) Labour				
			Mate	day	0.94	210.00	197.40
			Mason	day	3.50	315.00	1102.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		822353.00		
			For formwork and staging add the following:				
4.1G		(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				822353.00
		d)	Formwork and staging 35 per cent of (a+b+c)		35.00		287823.55
		e)	Overhead charges @ 10 % on (a+b+c+d)				111017.66
		f)	Contractor's profit @ 10 % on (a+b+c+d+e)				122119.42
							1343313.63
			Add 1% labour cess				13433.14
			Cost for 120 cum = a+b+c+d+e+f				1356746.76
			Rate per cum = (a+b+c+d+e+f)/120				11306.22
						say	<u>11306.00</u>
4.1G (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				822353.00
		d)	Formwork and staging 45 per cent of (a+b+c)		45.00		370058.85
		e)	Overhead charges @ 10 % on (a+b+c+d)				119241.19
		f)	Contractor's profit @ 10 % on (a+b+c+d+e)				131165.30
							1442818.34
			Add 1% labour cess				14428.18

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cost for 120 cum = a+b+c+d+e+f				1457246.52
			Rate per cum = (a+b+c+d+e+f)/120				12143.72
						say	<u>12144.00</u>
4.1G (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				822353.00
			d) Formwork and staging 55 per cent of (a+b+c)		55.00		452294.15
			e) Overhead charges @ 10 % on (a+b+c+d)				127464.72
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				140211.19
							1542323.05
			Add 1% labour cess				15423.23
			Cost for 120 cum = a+b+c+d+e+f				1557746.28
			Rate per cum = (a+b+c+d+e+f)/120				12981.22
						say	<u>12981.00</u>
4.1		H	PSC Grade M- 55				
			Unit = 1 cum				
			Taking output = 120 cum				
			a) Material				
			Cement	tonne	63.50	7688.00	488188.00
			Coarse sand	cum	54.00	1101.00	59454.00
			20 mm Aggregate	cum	64.80	1276.00	82684.80
			10 mm Aggregate	cum	43.20	1281.00	55339.20
			Admixture @ 0.4 per cent of cement	kg	254.00	156.00	39624.00
			b) Labour				
			Mate	day	0.94	210.00	197.40
			Mason	day	3.50	315.00	1102.50
			Mazdoor	day	20.00	210.00	4200.00
			c) Machinery				
			Batching Plant @ 20 cum/hour	hour	6.00	13798.00	82788.00
			Generator 100 KVA	hour	6.00	1125.00	6750.00
			Loader	hour	6.00	1281.00	7686.00
			Transit Mixer (capacity 4.0 cu.m)				
			Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1601.00	24015.00
			Lead beyond 1 Km, L - lead in Kilometer	tonne.km	300L	0.00	0.00
			Concrete Pump	hour	6.00	1565.00	9390.00
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		861419.00		
			For formwork and staging add the following:				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.1H		(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete				
		(p)	Height upto 5m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				861419.00
			d) Formwork and staging 35 per cent of (a+b+c)		35.00		301496.65
			e) Overhead charges @ 10 % on (a+b+c+d)				116291.57
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				127920.72
							1407127.94
			Add 1% labour cess				14071.28
			Cost for 120 cum = a+b+c+d+e+f				1421199.22
			Rate per cum = (a+b+c+d+e+f)/120				11843.33
						say	<u>11843.00</u>
4.1H (i)		(q)	Height 5m to 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				861419.00
			d) Formwork and staging 45 per cent of (a+b+c)		45.00		387638.55
			e) Overhead charges @ 10 % on (a+b+c+d)				124905.76
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				137396.33
							1511359.64
			Add 1% labour cess				15113.60
			Cost for 120 cum = a+b+c+d+e+f				1526473.23
			Rate per cum = (a+b+c+d+e+f)/120				12720.61
						say	<u>12721.00</u>
4.1H (i)		(r)	Height above 10m				
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				861419.00
			d) Formwork and staging 55 per cent of (a+b+c)		55.00		473780.45
			e) Overhead charges @ 10 % on (a+b+c+d)				133519.95
			f) Contractor's profit @ 10 % on (a+b+c+d+e)				146871.94
							1615591.33
			Add 1% labour cess				16155.91
			Cost for 120 cum = a+b+c+d+e+f				1631747.25
			Rate per cum = (a+b+c+d+e+f)/120				13597.89
						say	<u>13598.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	1.Where ever concrete is carried out using batching plant, transit mixer, concrete pump, admixers conforming IS: 9103 @ 0.4 per cent of weight of cement may be added for achieving desired slump of concrete.				
			2. Cement provided for various components of the super structure is for estimating purpose only. Actual quantity of cement will be as per approved mix design. Similarly, the provision for coarse and fine aggregates is for estimating purpose and the exact quantity shall be as per the mix design.				
			3. The items like needle and surface vibrators are part of minor T & P which is already covered under the overhead charges. As such these items have not been added separately in the rate analysis.				
4.2	1600		Supplying, fitting and placing HYSD bar reinforcement in super-structure complete as per drawing and technical specifications				
			Unit = 1 MT				
			Taking output = 1 MT				
			a) Material				
			HYSD bars including 5 per cent for laps and wastage	tonne	1.05	56871.00	59714.55
			Binding wire	Kg	8.00	83.00	664.00
			b) Labour for cutting, bending, tying and placing in position				
			Mate	day	0.44	210.00	92.40
			Blacksmith	day	3.00	315.00	945.00
			Mazdoor	day	8.00	210.00	1680.00
			Basic Cost of Labour & Material (a+b)		63096.00		
			c) Overhead charges @ 10 % on (a+b)				6309.60
			d) Contractor's profit @ 10 % on (a+b+c)				6940.55
							76346.10
			Add 1% labour cess				763.46
			Rate per MT = a+b+c+d				77109.56
						say	<u>77110.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.3	1800		High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications				
			Unit = 1 MT				
			Taking output = 0.377 MT				
			Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)				
			a) Material				
			H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking	tonne	0.39	138583.00	53354.46
			Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m.	metre	42.00	245.00	10290.00
			Tube anchorage set complete with bearing plate, permanent wedges etc	each	2.00	481.00	962.00
			Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg)	tonne	0.125	7688.00	961.00
			Add 0.50 per cent cost of material for Spacers, Insulation tape and miscellaneous items				3278.37
			b) Labour				
			i) For making and fixing cables, anchorages				
			Mate	day	0.16	210.00	33.60
			Blacksmith	day	1.00	315.00	315.00
			Mazdoor	day	3.00	210.00	630.00
			ii) For prestressing				
			Mate/Supervisor	day	0.05	210.00	10.50
			Prestressing operator / Fitter	day	0.25	259.00	64.75
			Mazdoor	day	1.00	210.00	210.00
			iii) For grouting				
			Mate/Supervisor	day	0.05	210.00	10.50
			Mason	day	0.25	315.00	78.75
			Mazdoor	day	1.00	210.00	210.00
			c) Machinery				
			Stressing jack with pump	hour	2.50	175.00	437.50
			Grouting pump with agitator	hour	1.00	680.00	680.00
			Generator 33 KVA.	hour	3.50	725.00	2537.50
			d) Overhead charges @ 10 % on (a+b+c)				521.81
			e) Contractor's profit @ 10 % on (a+b+c+d)				573.99

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							75159.73
			Add 1% labour cess				751.60
			Cost for 0.377 MT (a+b+c+d+e)				75911.33
			Rate per MT = (a+b+c+d+e)/0.377				201356.30
						say	<u>201356.00</u>
		Note	Cost of HT steel has been taken for delivery at site. Hence carriage has not been considered.				
4.4	2702		Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and Technical Specifications				
			Unit = 1 cum				
			Taking output = 1 cum				
			a) Material				
			Cement concrete M30 Grade Refer relevant item of concrete in Item 14.1 excluding formwork	cum	1.00	5908.00	5908.00
			HYSD bar reinforcement Rate as per item No 14.2(Excluding OH & CP)	tonne	0.075	63096.00	4732.20
			b) Labour				
			Mazdoor for cleaning deck slab concrete surface.	day	0.15	210.00	31.50
			c) Overhead charges @ 10 % on (a+b)				1067.17
			d) Contractor's profit @ 10 % on (a+b+c)				1173.89
							12912.76
			Add 1% labour cess				129.13
			Rate per cum (a+b+c+d)				13041.88
						say	<u>13042.00</u>
4.5	515 & 2702		Mastic Asphalt				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Providing and laying 12 mm thick mastic asphalt wearing course on top of deck slab excluding prime coat with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 515.				
			Unit = sqm				
			Taking output = 72.46 sqm (2 tonnes)(0.869 cum) assuming a density of 2.3 tonnes/cum.				
			a) Labour				
			Mate	day	0.49	210.00	102.90
			Mazdoor	day	11.00	210.00	2310.00
			Mazdoor (Skilled)	day	1.25	210.00	262.50
			b) Machinery				
			Mechanical broom @ 1250 sqm per hour	hour	0.06	334.00	20.04
			Air compressor 250 cfm	hour	0.06	465.00	27.90
			Mastic cooker 1 tonne capacity	hour	6.00	109.00	654.00
			Bitumen boiler 1500 litres capacity	hour	6.00	1408.00	8448.00
			Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.00	581.00	581.00
			c) Material				
			Base mastic (without coarse aggregates) = 60 per cent				
			Coarse aggregate(3.35mm to 9.5 mm size) = 40 per cent .				
			Proportion of material required for mastic asphalt with coarse aggregates (based on mix design done by CRRI for a specific case)				
			i) Bitumen 80/100 or 60/70 or 30/40 @ 10.2 per cent by weight of mix. $2 \times 10.2/100 = 0.204$	tonne	0.204	50100.00	10220.40

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			ii) Crusher stone dust @ 31.9 per cent by weight of mix = 2 x $31.9/100 = 0.638$ tonnes = $0.638/1.625 = 0.39$	cum	0.39	410.00	159.90
			iii) Lime stone dust filler with calcium carbonate content not less than 80 per cent by weight @ 17.92 per cent by weight of mix = 2 x $17.92/100 = 0.36$	tonne	0.36	7715.00	2777.40
			iv) Coarse aggregates 9.5 mm to 3.35 mm size @ 40 per cent by weight of mix = 2 x $40/100 = 0.8$ MT = $0.8/1.456 = 0.55$	cum	0.55	1281.00	704.55
			v) Pre-coated stone chips of 9.5 mm nominal size for skid resistance = $72.46 \times 0.005/10 = 0.036$	cum	0.036	1100.00	39.60
			vi) Bitumen for coating of chips @ 2 per cent by weight = $0.036 \times 1.456 \times 2/100 = 0.001048$ MT = 1.05kg	kg	1.05	50.10	52.61
			d) Overhead charges @ 10 % on (a+b+c)				2636.08
			e) Contractor's profit @ 10 % on (a+b+c+d)				2899.69
							31896.56
			Add 1% labour cess				318.97
			Cost for 72.46 sqm = a+b+c+d+e				32215.53
			Rate per sqm = (a+b+c+d+e)/72.46				444.60
						say	<u>445.00</u>
		Note	1.The rates for 6 mm or any other thickness may be worked out on pro-rata basis.				
			2. Where tack coat is required to be provided before laying mastic asphalt, the same is required to be measured and paid separately.				
			3.The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design.				
			4.This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.				
			5.The quantity of bitumen works out 17 per cent of the mastic asphalt blocks without aggregates and falls within the standards laid down by MoRTH Specifications.				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.6	2703, 1500, 1600 & 1700		Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.				
			Unit = 1 RM				
			Taking output = 2 x 24 m span = 48 m				
			a) Material				
			Cement concrete M30 Grade Refer relevant item of concrete in Item 14.1(C) by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c)	cum	4.09	5908.00	24175.54
			No. of vertical posts = $(12 + 2)2 = 28$ Nos., External area of vertical post $0.25 \times 0.275 = 0.069$ sqm, Concrete in Vertical posts = $0.069 \times 28 = 1.932$ cum, Hand rail in 3 tiers = $3 \times 24 = 72$ m, External area = $0.170 \times 0.175 = 0.03$ sqm, Concrete in hand rails = $0.03 \times 72 = 2.16$ cum, Total Concrete = $1.932 + 2.16 = 4.092$ cum. (Refer MoRTH SD / 202).				
			Add 5 per cent of above cost for form work for casting in casting yard.				1208.78
			HYSD bar reinforcement Rate as per item No 14.2(Excluding OH & CP)	tonne	0.87	63096.00	54578.04
			Refer MoRTH SD / 202.				
			Add 5 per cent of (a) for handling and fixing of precast panels in position				3998.12
			b) Overhead charges @ 10 % on (a)				8396.05
			c) Contractor's profit @ 10 % on (a+b)				9235.65
							101592.17
			Add 1% labour cess				1015.92
			Rate for 48 m (a+b+c)				102608.09
			Rate per metre (a+b+c)/48				2137.67
						say	<u>2138.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	1.Quantities of material have been adopted from standard plans of MoRTH vide drawing no. SD/202.				
			2.48 m length is the total linear length adding both sides of 24 m span.				
4.7	2703, 1500, 1600 & 1700		Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.				
			Unit = 1 RM				
			Taking output = 2 x 24 m span = 48 m.				
			a) Material				
			Cement concrete M30 Grade Refer relevant item of concrete in Item 14.1(C) by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c)	cum	4.092	5908.00	24175.54
			No. of vertical posts = $(12 + 2)2 = 28$ Nos., External area of vertical post $0.25 \times 0.275 = 0.069$ sqm, Concrete in vehicle posts = $0.069 \times 28 = 1.932$ cum, Hand rail in 3 tiers = $3 \times 24 = 72$ m, External area = $0.170 \times 0.175 = 0.03$ sqm, Concrete in hand rails = $0.03 \times 72 = 2.16$ cum, Total Concrete = $1.932 + 2.16 = 4.092$ cum. (Refer MoRTH SD / 202).				
			Add 12 per cent of above cost for form work.				2901.06
			HYSD bar reinforcement Rate as per item No 14.2(Excluding OH & CP)	tonne	0.87	63096.00	54578.04
			refer MoRTH SD / 202.				
			b) Overhead charges @ 10 % on (a)				8165.46
			c) Contractor's profit @ 10 % on (a+b)				8982.01
							98802.11
			Add 1% labour cess				988.02
			Rate for 48 m (a+b+c)				99790.14
			Rate per metre (a+b+c)/48				2078.96

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	2079.00
		Note	1. Quantities of material have been adopted from standard plans of MoRTH vide drawing no. SD/202.				
			2. 48 m length is the total linear length adding both sides of 24 m span.				
4.8	2703.2 & 1900		Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification				
			Unit = 1 RM				
			Taking output = 2 x 50 m span = 100 m				
		a)	Material:				
			1) ISMC 100 = $2.806 \times 1.05 = 2.946$ MT	tonne	2.95	50100.00	147594.60
			2) MS Flat = $0.964 \times 1.05 = 1.012$ MT	tonne	1.01	50100.00	50701.20
			3) MS bars = $0.17 \times 1.05 = 0.180$ MT	tonne	0.18	50100.00	9018.00
			4) MS bolts, nuts and washers	tonne	0.15	85900.00	12885.00
			Add @ 5 per cent of cost of material for painting one shop coat with red oxide primer and three coats of synthetic enamel paint and consumables to safeguard against weathering and corrosion.				11009.94
			Add for cost of concrete for fixing vertical posts in the performed recess @ 1 per cent of cost of material.				2201.99
			Add for electricity charges, welding and drilling equipment, electrodes and other consumables @ 1 per cent of cost of material.				2201.99
		b)	Labour				
			Mate	day	2.80	210.00	588.00
			Mazdoor (Skilled)	day	30.00	210.00	6300.00
			Mazdoor	day	40.00	210.00	8400.00
		c)	Overhead charges @ 10 % on (a+b)				25090.07
		d)	Contractor's profit @ 10 % on (a+b+c)				27599.08
							303589.87
			Add 1% labour cess				3035.90
			Cost for 100 m steel railing = a+b+c+d				306625.77
			Rate per metre (a+b+c+d)/100				3066.26

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
						say	<u>3066.00</u>
4.9	2705		Drainage Spouts complete as per drawing and Technical specification				
			Unit = 1 No.				
			Taking output = 1 No.				
			a) Material				
			Corrosion resistant Structural steel including 5 per cent wastage	Kg	4.00	115.00	460.00
			GI pipe 100mm dia	metre	6.00	650.00	3900.00
			GI bolt 10 mm Dia	each	6.00	5.00	30.00
			Galvanised MS flat clamp	each	2.00	150.00	300.00
			b) Labour				
			For fabrication				
			Mate	day	0.02	210.00	4.20
			Skilled (Blacksmith, welder etc.)	day	0.02	315.00	6.30
			Mazdoor	day	0.02	210.00	4.20
			For fixing in position				
			Mate	day	0.01	210.00	2.10
			Mason	day	0.01	315.00	3.15
			Mazdoor	day	0.20	210.00	42.00
			Add @ 5 per cent of cost of material and labour for electrodes, cutting gas, sealant, anti-corrosive bituminous paint, mild steel grating etc.				237.60
			c) Overhead charges @ 10 % on (a+b)				498.95
			d) Contractor's profit @ 10 % on (a+b+c)				548.85
							6037.35
			Add 1% labour cess				60.37
			Rate per metre (a+b+c+d)				6097.73
						say	<u>6098.00</u>
		Note	1. In case of viaducts in urban areas, the drainage spouts should be connected with suitably located pipelines to discharge the surface run-off to drains provided at ground level.				
			2. In case of bridges, sufficient length of G.I Pipe shall be provided to ensure that there is no splashing of water from the drainage spout on the structure.				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.10	2700		PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification				
			Unit = 1 cum				
			Taking output = 1 cum				
			Material				
			Concrete, Rate as per item No. 12.8 (A) excluding formworks	cum	1.00	5260.00	5260.00
			Rate per cum			say	<u>5260.00</u>
4.11	1500,1600,1700 & 2704		Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification				
			Unit = 1 cum				
			Taking output = 1 cum				
			a) Material				
			Cement concrete M30 Grade Refer relevant item of concrete in item 12.8(G) by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c) (Excluding OH & CP)	cum	1.00	5902.00	5902.00
			(Refer relevant item of concrete in item No. 13.8 (G) except that formwork may be added at the rate of 2 per cent of cost against 3.5 per cent provided in the foundation concrete.				118.04
			HYSD bar reinforcement Rate as per item No 14.2 (Excluding OH & CP)	tonne	0.05	63096.00	3154.80
			b) Overhead charges @ 10 % on (a)				917.48
			c) Contractor's profit @ 10 % on (a+b)				1009.23
							11101.56
			Add 1% labour cess				111.02
			Rate per cum (a+b+c)				11212.57
						say	<u>11213.00</u>
		Note	The grade of reinforced cement concrete may be adopted as M30 for severe conditions and M25 for moderate conditions.				
4.12	1600		Providing anti-corrosive treatment to HYSD reinforcement with Fusion Bonded Epoxy Coating (FBEC)				
			Unit = 1 MT				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Taking output = 1 MT				
			To be taken as per the prevailing market rates.				
		Note	Contractors generally do not have expertise for this item . The job is therefore, got done from specialised firms who have the expertise in the field of construction chemicals. The prevailing rate in the market is required to be ascertained from the market and added in the cost estimate. Detailed guidelines in this regard have been issued by MoRTH vide their circular no. RW/NH-34041/44/91-S&R dated 21.3.2000.				
4.13	1800 & 2300		Precast - pretensioned Girders				
			Providing, precasting, transportation and placing in position precast pretensioned concrete girders as per drawing and technical specifications				
			Unit = 1 cum				
			Taking output = 1 cum				
			Grade of concrete - M40				
			a) Material				
			Cement	tonne	0.47	7688.00	3613.36
			Coarse sand	cum	0.45	1101.00	495.45
			20 mm Aggregate	cum	0.54	1276.00	689.04
			10 mm Aggregate	cum	0.36	1281.00	461.16
			Admixture @ 0.4 per cent of cement	Kg	1.88	156.00	293.28
			HYSD steel .	tonne	0.10	56871.00	5687.10
			HT strand with 5 per cent as wastage and extra length for anchoring	tonne	0.06	138583.00	8314.98
			LDO for steam curing	Litre	37.00	59.00	2183.00
			Add consumables such as binding wire, foam, packing tape, shuttering oil, HDPE pipe for unbonding of strand, bolt & nuts etc @ 1 per cent of material cost				217.37
			b) Labour				
			(i) Cutting, bending, making reinforcement cage, placing in position, binding etc. complete				
			Taking quantity of steel 100 Kg/cum of concrete including laps and wastage				
			Mate	day	0.06	210.00	12.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mazdoor (Skilled)	day	0.35	210.00	73.50
			Mazdoor	day	1.40	210.00	294.00
			(ii) Cable cutting and threading in position including binding by insulation tape with HDPE pipes etc., prestressing and cutting of extra length of HT strand after de-stressing.				
			Taking quantity of HT strand 60 Kg/cum				
			Mate	day	0.02	210.00	4.20
			Mazdoor (Skilled)	day	0.14	210.00	29.40
			Mazdoor	day	0.50	210.00	105.00
			(iii) Erection and dismantling of shuttering				
			Taking shuttering area 10 sqm/cum of concrete				
			Mate	day	0.12	210.00	25.20
			Mazdoor (Skilled)	day	1.00	210.00	210.00
			Mazdoor	day	2.00	210.00	420.00
			(iv) Concreting by Batching plant and stationary concrete pump				
			Mate	day	0.03	210.00	6.30
			Mazdoor (Skilled)	day	0.05	210.00	10.50
			Mazdoor	day	0.60	210.00	126.00
			(v) Steam curing and manual curing				
			Mate	day	0.01	210.00	2.10
			Mazdoor	day	0.35	210.00	73.50
			(vi) Handling of precast girder, stacking in stockyard and again loading in trailer				
			Mate	day	0.01	210.00	2.10
			Mazdoor	day	0.25	210.00	52.50
			(vii) Placement of girders in position over pier caps including placement of sand jacks, channel, levelling etc.				
			Mate	day	0.01	210.00	2.10
			Mazdoor (Skilled)	day	0.06	210.00	12.60
			Mazdoor	day	0.24	210.00	50.40
			c) Machinery				
			i) At casting yard				
			Generator 100 KVA	hour	0.05	1125.00	56.25
			Batching Plant @ 20 cum/hour	hour	0.05	13798.00	689.90
			Transit Mixer 4 cum capacity	hour	0.10	1601.00	160.10
			Concrete Pump stationary	hour	0.05	1565.00	78.25
			Crane 35 tonne capacity	hour	0.10	916.00	91.60

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Trallor 30 tonne capacity	hour	0.10	2224.00	222.40
			Loader	hour	0.05	1281.00	64.05
			ii) For transportation and placement at site				
			Crane 35 tonne capacity	hour	0.15	916.00	137.40
			Trailer 30 tonne capacity for transporting to site.	tonne.km	2.5xL	7.25	18.13
			(L - Lead in Kilometer)				
			Trallor 30 tonne capacity during placement.	hour	0.15	2224.00	333.60
			Cost of formwork, steam curing arrangement, pretensioning arrangement etc @ 5 per cent of cost material, labour and machinery				1241.46
			d) Overhead charges @ 10 % on (a+b+c)				2655.99
			e) Contractor's profit @ 10 % on (a+b+c+d)				2921.59
							32137.46
			Add 1% labour cess				321.37
			Rate per cum = (a+b+c+d+e)				32137.46
						say	<u>32137.00</u>
4.14	1700 & 1800		Providing and fixing Helical pipes in voided concrete slabs				
			Unit = 1 RM				
			Taking output = 1 RM				
			a) Material				
			Helical pipes 600mm diameter	metre	1.00	6927.00	6927.00
			Tie rods 20mm diameter	each	1.00	100.00	100.00
			Consumables for sealing joints etc.@ 5 per cent of cost of material				351.35
			b) Labour				
			Mate	day	0.01	210.00	2.10
			Fitter	day	0.05	259.00	12.95
			Mazdoor	day	0.20	210.00	42.00
			c) Overhead charges @ 10 % on (a+b)				743.54
			d) Contractor's profit @ 10 % on (a+b+c)				817.89
							8996.83
			Add 1% labour cess				89.97
			Rate per cum (a+b+c+d)				9086.80
						say	<u>9087.00</u>
4.15	800		Crash Barriers				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			The rate analysis for rigid crash barrier in reinforced cement concrete, semi-rigid crash barrier with metal beam and flexible crash barrier with wire ropes have been made and included in chapter-8 on Traffic and Transportation.				
4.16	800		Painting on concrete surface				
			Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.				
			Unit = sqm				
			Taking output = 10 sqm				
			a) Labour				
			Mate	day	0.01	210.00	2.10
			Painter	day	0.25	259.00	64.75
			Mazdoor (Skilled)	day	0.25	210.00	52.50
			b) Material				
			Water based paint of approved quality for cement concrete surface	Litres	5.00	400.00	2000.00
			c) Overhead charges @ 10 % on (a+b)				211.94
			d) Contractor's profit @ 10 % on (a+b+c)				233.13
							2564.41
			Add 1% labour cess				25.64
			Cost for 10 sqm (a+b+c+d)				2590.06
			Rate per sqm (a+b+c+d)/10				259.01
						say	<u>259.00</u>
4.17	2604		Burried Joint				
			Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised weldable structural steel plate as per IS: 2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm c/c along the centre line of the plate, all as specified in clause 2604.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mate	day	0.02	210.00	4.20
			Mazdoor	day	0.40	210.00	84.00
			Mazdoor (Skilled)	day	0.20	210.00	42.00
			b) Material				
			Galvanised M.S plate 200 mm wide, 12 mm thick @ 94.20 kg/sqm including 5 per cent wastage	kg	237.50	78.00	18525.00
			Add 1 per cent of cost of steel plate cutting, welding consumables and galvanised nails.				185.25
			c) Overhead charges @ 10 % on (a+b)				1884.05
			d) Contractor's profit @ 10 % on (a+b+c)				2072.45
							22796.94
			Add 1% labour cess				227.97
			Cost for 12 m = (a+b+c+d)				23024.91
			Rate per m = (a+b+c+d)/12				1918.74
						say	<u>1919.00</u>
		Note	Guidelines laid down vide the MoRTH circular No. RW/NH-34059/1/96-S&R dated 30.11.2000 and subsequent corrigendum dated 25.01.2001 may be referred for expansion joints.				
4.18	2605		Filler joint				
		(i)	Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & Technical Specification.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Cutting, bending, carrying & fixing etc.				
			Mate	day	0.04	210.00	8.40
			Mazdoor	day	0.50	210.00	105.00
			Mazdoor (Skilled)	day	0.50	210.00	105.00
			b) Material				
			Copper plate - 12m long x 250 mm wide	kg	55.00	834.00	45870.00
			Area = 12 x 0.25 = 3 sqm				
			Weight = 3 x 0.002 x 8900 = 53.4 kg				
			Wastage @ 2.5 per cent = 1.33 kg/54.73 kg say = 55 kg.				
			c) Overhead charges @ 10 % on (a+b)				4608.84
			d) Contractor's profit @ 10 % on (a+b+c)				5069.72

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							55758.56
			Add 1% labour cess				557.59
			Cost for 12 m = (a+b+c+d)				56316.15
			Rate per m = (a+b+c+d)/12				4693.01
						say	<u>4693.00</u>
4.18		(ii)	Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			For carrying, placing & fixing.				
			Mate	day	0.008	210.00	1.68
			Mazdoor	day	0.10	210.00	21.00
			Mazdoor (Skilled)	day	0.10	210.00	21.00
			b) Material				
			20 mm thick compressible fibre board 12 m long x 25 cm deep.	sqm	3.00	405.00	1215.00
			Area = 12 x 0.25 = 3 sqm				
			c) Overhead charges @ 10 % on (a+b)				125.87
			d) Contractor's profit @ 10 % on (a+b+c)				138.45
							1523.00
			Add 1% labour cess				15.23
			Cost for 12 m = (a+b+c+d)				1538.23
			Rate per m = (a+b+c+d)/12				128.19
						say	<u>128.00</u>
4.18		(iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m to cater for a horizontal movement upto 20 mm, covered with sealant complete as per drawing and technical specifications.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.01	210.00	2.10
			Mazdoor	day	0.20	210.00	42.00
			Mazdoor (Skilled)	day	0.10	210.00	21.00
			b) Material				
			Premoulded joint filler 12 m long, 20 mm thick and 300 mm deep.	sqm	3.60	1807.00	6505.20

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			c) Overhead charges @ 10 % on (a+b)				657.03
			d) Contractor's profit @ 10 % on (a+b+c)				722.73
							7950.06
			Add 1% labour cess				79.50
			Cost for 12 m = (a+b+c+d)				8029.56
			Rate per m = (a+b+c+d)/12				669.13
						say	<u>669.00</u>
4.18		(iv)	Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 per cent bitumen by weight				
			Unit = Running meter				
			Taking output = 12 m				
			12m long x 100 mm wide x 10mm deep recess				
			a) Labour				
			Mate	day	0.02	210.00	4.20
			Mazdoor	day	0.50	210.00	105.00
			Mazdoor (Skilled)	day	0.10	210.00	21.00
			b) Material				
			Sand	cum	0.012	1101.00	13.21
			Volume 12 x 0.1 x 0.01 = 0.012 cum				
			Weight 0.012 x 1400 = 16.8kg				
			Bitumen	t	0.001	50100.00	50.10
			16.8 x 0.06 = 1 kg				
			c) Overhead charges @ 10 % on (a+b)				19.35
			d) Contractor's profit @ 10 % on (a+b+c)				21.29
							234.15
			Add 1% labour cess				2.34
			Cost for 12 m = (a+b+c+d)				236.49
			Rate per m = (a+b+c+d)/12				19.71
						say	<u>20.00</u>
		Note	For arriving at the final rate of filler joints per m				
			length and per cm depth of joint filling compound,				
			the rates at Sl. No. i), ii), iii) & iv) shall be added				
4.19	2600		Asphaltic Plug joint				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Providing and laying of asphaltic plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of weldable structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/backer rod, all as per approved drawings and specifications.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.052	210.00	10.92
			Mazdoor	day	1.00	210.00	210.00
			Mazdoor (Skilled)	day	0.30	210.00	63.00
			b) Material				
			Crushed stone aggregate 12.5 mm nominal size	cum	0.75	925.00	693.75
			Polymer modified bitumen	kg	77.50	60.00	4650.00
		2.4	Galvanised structural steel plate 200 mm wide, 6 mm thick, 12 m long (2.4 sqm) @ 47.10 kg/sqm including 5 per cent wastage	kg	113.00	103.00	11639.00
			Add 1 per cent for welding and foam caulking/backer rod and other incidentals.				172.67
			c) Machinery				
			Mastic cooker 1 tonne capacity	hour	1.00	109.00	109.00
			Smooth 3-wheeled steel roller 8-10 capacity	hour	0.50	1319.00	659.50
			d) Overhead charges @ 10 % on (a+b+c)				1820.78
			e) Contractor's profit @ 10 % on (a+b+c+d)				2002.86
							22031.48
			Add 1% labour cess				220.31
			Cost for 12 m asphalt plug joint = (a+b+c+d+e)				22251.80
			Rate per m = (a+b+c+d+e)/12				1854.32
						say	<u>1854.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	The nominal size of aggregates shall be 12.5 mm for depth of joint upto 75 mm and 20 mm for joints of depth more than 75 mm.				
4.20	2606		Elastomeric Slab Steel Expansion Joint				
			Providing and laying of an elastomeric slab steel expansion joint, catering to right or skew (less than 20 deg., moderately curved with maximum horizontal movement upto 50 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation and clause 2606 of MoRTH specifications for road & bridge works.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.06	210.00	12.60
			Mazdoor	day	1.00	210.00	210.00
			Mazdoor (Skilled)	day	0.50	210.00	105.00
			b) Material				
			Supply of 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), complete as per approved drawings and standard specification conforming to clause 2606 of MoRTH Specification	metre	12.00	8306.00	99672.00
			Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals.				4983.60
			c) Overhead charges @ 10 % on (a+b)				10498.32
			d) Contractor's profit @ 10 % on (a+b+c)				11548.15
							127029.67
			Add 1% labour cess				1270.30
			Cost for 12 m = (a+b+c+d)				128299.97
			Rate per m = (a+b+c+d)/12				10691.66
						say	<u>10692.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
4.21	2600		Compression Seal Joint				
			Providing and laying of compression seal joint consisting of steel armoured nosing at two edges of the joint gap suitably anchored to the deck concrete and a preformed chloroprene elastomer or closed cell foam joint sealer compressed and fixed into the joint gap with special adhesive binder to cater for a horizontal movement upto 40 mm and vertical movement of 3 mm.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.036	210.00	7.56
			Mazdoor	day	0.60	210.00	126.00
			Mazdoor (Skilled)	day	0.30	210.00	63.00
			b) Material				
			1. Galvanised angle sections 100mm x 100mm of 12mm thickness weldable structural steel as per IS: 2062, 2 nos. of 12 m length each @ 17.7 kg/m and 5 per cent wastage.	kg	446.00	103.00	45938.00
			Add 5 per cent of cost of above for structural steel for anchorage, welding and other incidentals.				2306.73
			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	12.00	19244.00	230928.00
			Add 1 per cent of cost of sealing element for lubricant-cum-adhesive and other consumables.				2309.28
			c) Overhead charges @ 10 % on (a+b)				28167.86
			d) Contractor's profit @ 10 % on (a+b+c)				30984.64
							340831.07
			Add 1% labour cess				3408.31
			Cost for 12 m = (a+b+c+d)				344239.38
			Rate per m = (a+b+c+d)/12				28686.61
						say	<u>28687.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
		Note	1. The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.				
			2. The concreting for joining the expansion joint assembly with the deck has not been included in this analysis as the same is catered in the quantities of RCC deck.				
			3. The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.				
4.22	2607		Strip Seal Expansion Joint				
			Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.05	210.00	10.50
			Mazdoor	day	1.00	210.00	210.00
			Mazdoor (Skilled)	day	0.25	210.00	52.50
			b) Material				
			Supply of complete assembly of strip seal expansion joint comprising of edge beams, anchorage, strip seal element and complete accessories as per approved specifications and drawings.	metre	12.00	21876.00	262512.00
			Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals.				13139.25
			c) Overhead charges @ 10 % on (a+b)				27592.43
			d) Contractor's profit @ 10 % on (a+b+c)				30351.67
							333868.34
			Add 1% labour cess				3338.68

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Cost for 12 m = (a+b+c+d)				337207.03
			Rate per m = (a+b+c+d)/12				28100.59
						say	<u>28101.00</u>
		Note	1. The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.				
			2. The concreting for joining the expansion joint assembly with the deck has not been included in this analysis as the same is catered in the quantities of RCC deck.				
4.23	2600		Modular Strip / Box Seal Joint				
			Providing and laying of a modular strip Box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.056	210.00	11.76
			Mazdoor	day	1.00	210.00	210.00
			Mazdoor (Skilled)	day	0.40	210.00	84.00
			b) Material				
			Supply of a modular strip/box seal joint 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	12.00	21876.00	262512.00
			c) Overhead charges @ 10 % on (a+b)				26281.78
			d) Contractor's profit @ 10 % on (a+b+c)				28909.95
							318009.49
			Add 1% labour cess				3180.09
			Cost for 12 m Modular strip/box seal joint = (a+b+c+d)				321189.58

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Rate per m = (a+b+c+d)/12				26765.80
						say	<u>26766.00</u>
		Note	1. The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.				
			2. The concreting for joining the expansion joint assembly with the deck has not been included in this analysis as the same is catered in the quantities of RCC deck.				
			3. The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.				
4.24	2600		Modular Strip / Box Seal Joint				
			Providing and laying of a modular strip box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.				
			Unit = Running meter				
			Taking output = 12 m				
			a) Labour				
			Mate	day	0.07	210.00	14.70
			Mazdoor	day	1.25	210.00	262.50
			Mazdoor (Skilled)	day	0.50	210.00	105.00
			b) Material				
			Supply of a modular 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	12.00	24967.00	299604.00
			c) Overhead charges @ 10 % on (a+b)				29998.62
			d) Contractor's profit @ 10 % on (a+b+c)				32998.48

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							362983.30
			Add 1% labour cess				3629.83
			Cost for 12 m Modular strip/box seal joint = (a+b+c+d)				366613.14
			Rate per m = (a+b+c+d)/12				30551.09
						say	<u>30551.00</u>
		Note	1. The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.				
			2. The concreting for joining the expansion joint assembly with the deck has not been included in this analysis as the same is catered in the quantities of RCC deck.				
			3. The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.				

Chapter-5:

River Training and Protection works

Preamble:

1. Three types of apron on river beds as under have been catered:
 - a) Boulder apron laid dry.
 - d) Boulder apron laid in wire crates
 - e) Apron laid in cement concrete blocks M -15.
2. A toe wall for toe protection of pitching can be either in dry rubble masonry (uncoursed) or in nominal mix cement concrete M -15. Depending upon the design, the rates may be adopted under respective clauses
3. Flooring has been proposed in dry rubble stone rubble stone laid in C.M . 1:3 and with cement concrete blocks M -15.
4. Curtain walls proposed are of following two types
 - a) Course rubble stone masonry (1st sort) in CM 1:3
 - b) Cement concrete M -15 grade.
5. The rate analysis for gabion structures comprising of stone boulders laid in wire crates have been included. Such structures are suited as retaining structures and for erosion control in river training works especially for situations where some settlement of foundation is anticipated. These structures can adjust in minor settlements being flexible structures without losing their functional requirement.

CHAPTER - 5
RIVER TRAINING AND PROTECTION WORKS

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
5.1	2503		Providing and laying boulders apron on river bed for protection against scour with stone boulders weighing not less than 40 kg each complete as per drawing and Technical specification.				
		A	Boulder Laid Dry Without Wire Crates.				
			Unit = cum				
			Taking output = 1 cum				
		a)	Material				
			Stone	cum	1.00	760.00	760.00
			Stone Spalls	cum	0.20	1170.00	234.00
		b)	Labour				
			Mate	day	0.04	210.00	8.40
			Mason	day	0.35	315.00	110.25
			Mazdoor *	day	0.75	210.00	157.50
		c)	Overhead charges @ 10 % on (a+b)				127.02
		d)	Contractor's profit @ 10 % on (a+b+c)				139.72
							1536.88
			Add 1% labour cess				15.37
			Rate per cum = (a+b+c+d)				1552.25
						say	1552.00
		*	Including excavation for trimming for preparation of bed.				
		Note	Nominal excavation required for preparation of bed has been taken into account while making provision for labour.				
5.2	2503		Boulder Apron Laid in Wire Crates				
			Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 40 kg each.				
			Unit = cum				
			Taking output = 3 mx1.5mx1.25m = 5.63 cum				
		a)	Material				
			4mm GI wire crates woven in mesh size of 100 mm x 100 mm.	sqm	22.00	189.00	4158.00
			Stone	cum	5.63	760.00	4278.80
			Stone Spalls	cum	1.13	1170.00	1322.10
		b)	Labour				
			Mate	day	0.18	210.00	37.80
			Mazdoor (Skilled)	day	1.50	210.00	315.00
			Mazdoor	day	*3.00	210.00	630.0

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			c) Overhead charges @ 10 % on (a+b)				1074.2
			d) Contractor's profit @ 10 % on (a+b+c)				1181.59
							12997.46
			Add 1% labour cess				129.97
			Cost for 5.63 cum = a+b+c+d				13127.43
			Rate per cum = (a+b+c+d)/5.63				2331.69
						say	2332.00
		*	Including excavation for trimming for preparation of bed.				
		Note	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.				
5.3	2503		Cement Concrete Blocks (size 0.5 x 0.5 x 0.5 m)				
			Providing and laying of apron with cement concrete blocks of size 0.5x0.5x0.5 m cast in-situ and made with nominal mix of M-15 grade cement concrete with a minimum cement content of 250 kg/cum as per IRC: 21-2000.				
			Unit = cum				
			Taking out put = 1 cum				
			Concrete Grade M15 Rate as per item No. 12.8 (A) including OH & CP	cum	1.00	5470.00	5470.00
			Add 2 per cent of cost to account for excavation for preparation of bed, nominal surface reinforcement and filling of granular material in recesses between blocks.				109.40
			Rate per cum				5579.40
						say	5579.00
5.4	2504		Providing and laying Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications				
		A	Stone/Boulder				
			Unit = cum				
			Taking output = 1 cum				
		a)	Material				
			Stone weighing not less than 40kg	cum	1.00	760.00	760.00
			Stone spalls of minimum 25 mm size	cum	0.20	1170.00	234.00
		b)	Labour				
			Mate	day	0.04	210.00	8.40
			Mason	day	0.35	315.00	110.25

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Mazdoor	day	0.75	210.00	157.50
			c) Overhead charges @ 10 % on (a+b)				127.02
			d) Contractor's profit @ 10 % on (a+b+c)				139.72
							1536.88
			Add 1% labour cess				15.37
			Rate per cum = (a+b+c+d)				1552.25
						say	<u>1552.00</u>
5.4		B	Cement Concrete Blocks of size 0.3x0.3 x0.3 m cast in cement concrete of Grade M15				
			Unit = cum				
			Taking output = 1 cum				
			Concrete Grade M15 Rate as per item No. 12.8 (A)	cum	1.00	5470.00	5470.00
			Add 2 per cent of cost to account for nominal surface reinforcement and filling of granular material in recesses between blocks.				109.40
			Rate per cum				5579.40
						say	<u>5579.00</u>
5.5	2504		Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification				
			Unit = cum				
			Taking output = 1 cum				
			a) Material				
			Graded stone aggregate of required size	cum	1.20	751.00	901.20
			b) Labour				
			Mate	day	0.05	210.00	10.50
			Mazdoor (Skilled)	day	0.25	210.00	52.50
			Mazdoor *	day	1.00	210.00	210.00
			c) Overhead charges @ 10 % on (a+b)				117.42
			d) Contractor's profit @ 10 % on (a+b+c)				129.16
							1420.78
			Add 1% labour cess				14.21
			Rate per cum = (a+b+c+d)				1434.99
						say	<u>1435.00</u>
			Includes Mazdoor required for trimming of slope to proper profile and preparation of bed.				
5.6	700 & 2504		Geotextile Filter				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Laying of a geotextile filter between pitching and embankment slopes on which pitching is laid to prevent escape of the embankment material through the voids of the stone pitching/cement concrete blocks as well as to allow free movement of water without creating any uplift head on the pitching.				
			Unit = sqm				
			Taking output = 10 sqm.				
			a) Labour				
			Mate	day	0.02	210.00	4.20
			Mazdoor	day	0.30	210.00	63.00
			Mazdoor (Skilled)	day	0.10	210.00	21.00
			b) Material				
			Permeable synthetic geotextile including 5 per cent for overlap and wastage	sqm	11.00	189.00	2079.00
			c) Overhead charges @ 10 % on (a+b)				216.72
			d) Contractor's profit @ 10 % on (a+b+c)				238.39
							2622.31
			Add 1% labour cess				26.22
			Cost for 10 sqm = a+b+c+d				2648.54
			Rate per sqm = (a+b+c+d)/10				264.85
						say	<u>265.00</u>
5.7	2504.4		Toe protection				
			A toe wall for toe protection can either be in dry rubble masonry in case of dry rubble pitching or pitching with stones in wire crates or it can be in PCC M15 nominal mix if cement concert block have been used for pitching . Rates for toe wall can be adopted from respective clauses depending upon approved design. The rate for excavation for foundation, dry rubble masonry and PCC M15 have been analysed and given in respective chapters.				
5.8	2505		Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concert bedding.				
		A	Rubble stone laid in cement mortar 1:3				
			Unit = cum				
			Taking output = 1 cum				
			a) Cement mortor 1:3 (Rate as in Item 12.6 sub-analysis) excluding OH & CP	cum	0.33	5274.00	1740.42

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			b) Add for cement concrete bedding (M15 Nominal mix) vide Item 12.8 (A) excluding OH & CP. Quantity shall be adopted as per design (Assume Rubble stone Flooring thickness 300mm and cement concrete bedding thickness 100mm)	cum	0.33	4347.00	1434.51
			Add 1 per cent of cost to account for excavation for preparation of bed.				31.75
			c) Material				
			Stone	cum	1.00	760.00	760.00
			Stone Spalls	cum	0.20	1170.00	234.00
			d) Labour				
			Mate	day	0.08	210.00	16.80
			Mason	day	0.50	315.00	157.50
			Mazdoor (for laying stones, filling of quarry spalls)	day	1.50	210.00	315.00
			e) Overhead charges @ 10 % on (a+c+d)				322.37
			f) Contractor's profit @ 10 % on (a+c+d+e)				354.61
							5366.96
			Add 1% labour cess				53.67
			Rate per cum = (a+b+c+d+e+f)				5420.63
						say	<u>5421.00</u>
		*	Includes cement mortar for laying and filling of joints.				
5.8		B	Cement Concrete blocks Grade M15				
			Concrete Grade M15 block. (Rate as per item No. 12.8 (A) including OH & CP.	cum	1.00	5470.00	5470.00
			Add for cement concrete bedding (M15 Nominal mix) vide Item 12.8 (A) including OH & CP. Quantity shall be adopted as per design (Assume Cement Concrete blocks thickness 300mm and cement concrete bedding thickness 100mm)	cum	0.33	5470.00	1805.10
			Add 1 per cent of cost to account for excavation for preparation of bed.				72.75
			Rate per cum				7347.85
						say	<u>7348.00</u>
5.9	2506		Dry Rubble Flooring				
			Construction of dry rubble flooring at cross drainage works for relatively less important works.				
			Unit = cum				
			Taking output = 1 cum				
			a) Material				
			Stone	cum	1.00	760.00	760.00

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Stone Spalls	cum	0.20	1170.00	234.00
		b)	Labour				
			Mate	day	0.10	210.00	21.00
			Mason	day	0.50	315.00	157.50
			mazdoor	day	1.50	210.00	315.00
			Add 1 per cent of (b) for trimming and preparation of base.				4.94
		c)	Overhead charges @ 10 % on (a+b)				149.24
		d)	Contractor's profit @ 10 % on (a+b+c)				164.17
							1805.85
			Add 1% labour cess				18.06
			Rate per cum = (a+b+c+d)				1823.90
						say	1824.00
5.10	2507.2		Curtain wall complete as per drawing and Technical specification				
		A	Stone masonry in cement mortar (1:3)				
			Coursed rubble masonry (1st sort)	cum	1.00	5052.00	5052.00
			Rate same as per item No. 12.7 (A) including OH & CP				
			Rate per cum			say	5052.00
			or				
5.10		B	Cement concrete Grade M15				
			Concrete Grade M15 Rate as per item No. 12.8 (A) including OH & CP	cum	1.00	5470.00	5470.00
			Rate per cum			say	5470.00
		Note	Other items like excavation for foundation, filling behind wall, filter media, weep holes etc. shall be added separately as per approved design.				
5.11	2507.2		Flexible Apron :Construction of flexible apron 1 m thick comprising of loose stone boulders weighing not less than 40 kg beyond curtain wall.				
			Unit = cum				
			Taking Output = 1 cum				
		a)	Material				
			Stone	cum	1.00	760.00	760.00
			Stone Spalls	cum	0.20	1170.00	234.00
		b)	Labour				
			Mate	day	0.05	210.00	10.50
			Mason	day	0.25	315.00	78.75
			Mazdoor	day	1.00	210.00	210.00
			Add 1 per cent of cost of (a+b) for trimming and preparation of bed.				12.93
		c)	Overhead charges @ 10 % on (a+b)				130.62
		d)	Contractor's profit @ 10 % on (a+b+c)				143.68

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
							1580.48
			Add 1% labour cess				15.80
			Rate per cum = (a+b+c+d)				1596.29
						say	<u>1596.00</u>
5.12	2503.3		Gabian Structure for Retaining Earth				
			Providing and construction of a gabian structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire.				
			Unit = cum				
			Taking output = 7 x 3 x 0.6 = 12.60 cum				
			a) Labour				
			Mate	day	0.28	210.00	58.80
			Mazdoor	day	5.00	210.00	1050.00
			Mazdoor (Skilled)	day	2.00	210.00	420.00
			b) Material				
			Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	61.00	189.00	11529.00
			Stone boulders with least dimension of 200 mm	cum	12.60	760.00	9576.00
			Stone spalls of minimum size 25 mm	cum	2.52	1170.00	2948.40
			c) Overhead charges @ 10 % on (a+b)				2558.22
			d) Contractor's profit @ 10 % on (a+b+c)				2814.04
							30954.46
			Add 1% labour cess				309.54
			Cost for 12.60 cum (a+b+c+d)				31264.01
			Rate per cum (a+b+c+d)/12.60				2481.27
						say	<u>2481.00</u>
		Note	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.				
5.13	2503.3		Gabian Structure for Erosion Control, River Training Works and Protection works				

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
			Providing and constructing gabian structures for erosion control, river training works and protection works with wire crates of size 2 m x 1 m x 0.3 m each divided into 1m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire.				
			Unit = cum				
			Taking output = 2 x 1 x 0.3 x 10 Nos. = 6.00 cum				
			a) Labour				
			Mate	day	0.14	210.00	29.40
			Mazdoor	day	2.50	210.00	525.00
			Mazdoor (Skilled)	day	1.00	210.00	210.00
			b) Material				
			Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.	sqm	65.00	189.00	12285.00
			Stone boulders with least dimension of 200 mm	cum	6.00	760.00	4560.00
			Stone spalls of minimum size 25 mm	cum	1.20	1170.00	1404.00
			c) Overhead charges @ 10 % on (a+b)				1901.34
			d) Contractor's profit @ 10 % on (a+b+c)				2091.47
							23006.21
			Add 1% labour cess				230.06
			Cost for 6.00 cum (a+b+c+d)				23236.28
			Rate per cum (a+b+c+d) / 6.00				3872.71
						say	<u>3873.00</u>
		Note	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.				

Chapter-6:

Repair and Rehabilitation

Preamble:

1. Removal of cement concrete wearing coat and asphaltic wearing coat has been proposed with pneumatic breakers
2. The rate for external pre-stressing has been analysed for three different spans of 25, 50 and 100 m.
3. Sealing of cracks has been proposed with cement grout, cement mortar (1 : 1) grout and epoxy grout by injecting with grout pump through nipples
4. Bonding of new concrete with old concrete is proposed with epoxy resin.
5. The repair and replacement of following structures has been included:
 - A) Bridge bearings
 - B) Expansion Joints
 - C) Concrete railing
 - D) Mild steel railing
 - E) Crash barrier.

CHAPTER - 6
REPAIR AND REHABILITATION

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
6.1	2809	Removal of existing cement concrete wearing coat including its disposal complete as per Technical Specification without causing any detrimental effect to any part of the bridge structure and removal of dismantled material with all lifts and lead upto 1000 m				
		Unit = Sq m (Thickness 75 mm)				
		Taking output = 10 sqm				
		a) Labour				
		Mate	day	0.06	210.00	12.60
		Mazdoor	day	1.00	210.00	210.00
		b) Machinery				
		Air Compressor 250 cfm with pneumatic breaker/jack hammer along with accessories.	hour	1.00	465.00	465.00
		Tractor-trolley.	hour	0.50	581.00	290.50
		c) Overhead charges @ 10 % on (a+b)				97.81
		d) Contractor's profit @ 10 % on (a+b+c)				107.59
						1183.50
		Add 1% labour cess				11.84
		Cost for 10 sqm = (a+d+c+d)				1183.50
		Rate per sqm = (a+b+c+d)/10				118.35
					say	118.00
6.2	2809	Removal of existing asphaltic wearing coat comprising of 50 mm thick asphaltic concert laid over 12 mm thick mastic asphalt including disposal with all lift and lead upto 1000 m.				
		Unit = Sq m				
		Taking output = 10 sqm				
		a) Labour				
		Mate	day	0.03	210.00	6.30
		Mazdoor	day	0.75	210.00	157.50
		b) Machinery				
		Air Compressor 250 cfm with pneumatic breaker.	hour	0.75	465.00	348.75
		Tractor-trolley.	hour	0.40	581.00	232.40
		c) Overhead charges @ 10 % on (a+b)				74.50
		d) Contractor's profit @ 10 % on (a+b+c)				81.94
						901.39
		Add 1% labour cess				9.01
		Cost for 10 sqm = (a+d+c+d)				910.40
		Rate per sqm = (a+b+c+d)/10				91.04
					say	91.00
6.3	2807	Guniting concrete surface with cement mortar applied with compressor after cleaning surface and spraying with epoxy complete as per Technical Specification				
		Unit = Sq m				
		Taking output = 1 sqm				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Assuming thickness 25 mm				
		a) Material				
		Cement	kg	16.00	7.69	123.01
		Graded sand	cum	0.04	1101.00	44.04
		Wire mesh 50mm x 50mm size of 3mm wire	kg	2.00	134.00	268.00
		Epoxy	kg	0.67	213.00	142.71
		Accelerator compound for guniting @ 4 per cent of weight of cement	kg	0.64	156.00	99.84
		Add 2 per cent of cost of material for miscellaneous consumables like nozzles, wire brush, cotton waste etc.				13.55
		b) Labour				
		Mate	day	0.01	210.00	2.10
		Mason	day	0.04	315.00	12.60
		Mazdoor	day	0.14	210.00	29.40
		c) Machinery				
		Compressor with guniting equipment along with accessories	hour	0.10	320.00	32.00
		d) Overhead charges @ 10 % on (a+b+c)				76.72
		e) Contractor's profit @ 10 % on (a+b+c+d)				84.40
						928.37
		Add 1% labour cess				9.28
		Rate per sqm = (a+b+c+d+e)				937.66
					say	938.00
6.4	2800	Providing and inserting nipples with approved fixing compound after drilling holes for grouting as per Technical Specifications including subsequent cutting/removal and sealing of the hole as necessary of nipples after completion of grouting with Cement/Epoxy				
		Unit = Number				
		Taking output = 1 No.				
		a) Material				
		Nipples	each	1.00	155.00	155.00
		Cement, fixing compound and consumables @ 15 per cent of cost of nipple				23.25
		b) Labour				
		Mate	day	0.01	210.00	2.10
		Mazdoor (Skilled) labour for drilling	day	0.08	210.00	16.80
		Mazdoor (Skilled) labour for fixing nipple and sealing inlets	day	0.08	210.00	16.80
		Mazdoor for cutting and removing of nipples	day	0.04	210.00	8.40
		Add 10 per cent of labour cost for drilling holes etc				4.41
		c) Overhead charges @ 10 % on (a+b)				22.68
		d) Contractor's profit @ 10 % on (a+b+c)				24.94
						274.38
		Add 1% labour cess				2.74
		Rate per No. = (a+b+c+d)				277.12

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
					say	<u>277.00</u>
6.5	2806	Sealing of cracks/porous concrete by injection process through nipples/Grouting complete as per Technical Specification.				
	A	Cement Grout				
		Unit = kg				
		Taking output = 1 kg				
	a)	Material				
		Cement including 10 per cent wastage	kg	1.10	7.69	8.46
		Admixtures (anti shrinkage compound) @ 20 per cent of cost of cement				1.69
	b)	Labour				
		Mate	day	0.08	210.00	16.80
		Mazdoor (Skilled)	day	0.10	210.00	21.00
		Mazdoor	day	0.10	210.00	21.00
	c)	Machinery				
		Grout pump with agitator and accessories	hour	0.10	680.00	68.00
	d)	Overhead charges @ 10 % on (a+b+c)				13.69
	e)	Contractor's profit @ 10 % on (a+b+c+d)				15.06
						165.71
		Add 1% labour cess				1.66
		Rate per kg = (a+b+c+d+e)				167.36
					say	<u>167.00</u>
	B	Cement Mortar (1:1) Grouting				
		Unit = kg				
		Taking output = 1 kg				
	a)	Material				
		Cement including 10 per cent wastage	kg	0.55	7.69	4.23
		Sand including 10 per cent wastage	kg	0.55	0.73	0.40
		Admixtures (anti shrinkage compound) @ 20 per cent of cost of cement				0.85
	b)	Labour				
		Mate	day	0.08	210.00	16.80
		Mazdoor (Skilled)	day	0.10	210.00	21.00
		Mazdoor	day	0.10	210.00	21.00
	c)	Machinery				
		Grout pump with agitator and accessories	hour	0.10	680.00	68.00
	d)	Overhead charges @ 10 % on (a+b+c)				13.23
	e)	Contractor's profit @ 10 % on (a+b+c+d)				14.55
						160.06
		Add 1% labour cess				1.60
		Rate per kg = (a+b+c+d+e)				161.66
					say	<u>162.00</u>

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs
6.6	2800		Patching of damaged concrete surface with polymer concrete and curing compounds, initiator and promoter, available in present formulations, to be applied as per instructions of manufacturer and as approved by the Engineer.				
			Unit = sqm				
			Taking output = 10 sqm for an average thickness of 25mm.				
			a) Labour				
			Mate	day	0.06	210.00	12.60
			Mazdoor (Skilled)	day	0.75	210.00	157.50
			Mazdoor	day	0.75	210.00	157.50
			b) Material				
			Pre-packed polymer concrete based on epoxy system complete with curing compound, initiator and promoter including 5 per cent wastage.	kg	315.00	17.00	5355.00
			c) Machinery				
			Grout pump with agitator and accessories	hour	2.00	680.00	1360.00
			d) Overhead charges @ 10 % on (a+b+c)				704.26
			e) Contractor's profit @ 10 % on (a+b+c+d)				774.69
							8521.55
			Add 1% labour cess				85.22
			Cost for 10 sqm = a+b+c+d+e				8606.76
			Rate per sqm = (a+b+c+d+e)/10				860.68
						say	861.00
		Note	This item is a proprietary item available in market as pre-packed polymer concrete and is required to be applied as per instructions of the manufacturer.				
6.7	2803		Sealing of crack / porous concrete with Epoxy Grout by injection through nipples complete as per clause 2803.1.				
			Unit = kg				
			Taking output = 1 kg				
			a) Material				
			Epoxy including 10 per cent wastage	kg	1.10	213.00	234.30
			b) Labour				
			Mate	day	0.08	210.00	16.80
			Mazdoor (Skilled)	day	0.10	210.00	21.00
			Mazdoor	day	0.10	210.00	21.00
			c) Machinery				
			Epoxy Injection gun	hour	0.10	435.00	43.50
			d) Overhead charges @ 10 % on (a+b+c)				33.66
			e) Contractor's profit @ 10 % on (a+b+c+d)				37.03
							407.29
			Add 1% labour cess				4.07
			Rate per kg = (a+b+c+d+e)				411.36
						say	411.00
6.8	2804		Applying epoxy mortar over leached, honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical Specification				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Unit = sqm				
		Taking output = 10 sqm				
		Assume average 10mm thickness of epoxy mortar				
		a) Material				
		Epoxy resin-hardener mix for prime coat	kg	2.50	1784.00	4460.00
		Epoxy mortar	kg	2.20	2738.00	6023.60
		Epoxy resin -hardener mix for seal coat.	kg	2.00	1784.00	3568.00
		Add 3 per cent cost of material for other consumables like acetone etc and to cover wastage.				421.55
		b) Labour				
		Mate	day	0.04	210.00	8.40
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		Mazdoor	day	0.50	210.00	105.00
		c) Overhead charges @ 10 % on (a+b)				1469.15
		d) Contractor's profit @ 10 % on (a+b+c)				1616.07
						17776.77
		Add 1% labour cess				177.77
		Cost for 10 sqm = a+b+c+d				17954.54
		Rate per sqm = (a+b+c+d)/10				1795.45
					say	<u>1795.00</u>
6.9	2807	Removal of defective concrete, cleaning the surface thoroughly, applying the shotcrete mixture mechanically with compressed air under pressure, comprising of cement, sand, coarse aggregates, water and quick setting compound in the proportion as per clause 2807.1., sand and coarse aggregates conforming to IS: 383 and table 1 of IS: 9012 respectively, water cement ratio ranging from 0.35 to 0.50, density of gunite not less than 2000 kg/cum, strength not less than 25 Mpa and workmanship conforming to clause 2807.6.				
		unit: sqm				
		Taking output = 10 sqm, 40 mm average thickness.				
		a) Labour				
		Mate	day	0.04	210.00	8.40
		Mazdoor	day	0.50	210.00	105.00
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		b) Machinery				
		Air compressor 250 cfm	hour	1.00	465.00	465.00
		Shotcreteing equipment	hour	1.00	320.00	320.00
		water tanker 6 KL capacity	hour	0.02	500.00	10.00
		c) Material				
		Cement	kg	120.00	7.69	922.56
		Sand	cum	0.15	1101.00	165.15
		Coarse aggregate of size 4.75mm	cum	0.15	883.00	132.45
		Quick setting compound	kg	2.50	106.00	265.00
		Water	KL	0.10	102.00	10.20

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		d) Overhead charges @ 10 % on (a+b+c)				250.88
		e) Contractor's profit @ 10 % on (a+b+c+d)				275.96
						3035.60
		Add 1% labour cess				30.36
		Cost for 10 sqm = a+b+c+d+e				3065.96
		Rate per sqm = (a+b+c+d+e)/10				306.60
					say	307.00
6.10	2800	Applying pre-packed cement based polymer mortar of strength 45 Mpa at 28 days for replacement of spalled concrete				
		Unit = sqm				
		Taking output = 10 sqm				
		Assumed thickness - 10 mm				
		a) Material				
		Acrylic polymer bonding coat	Litre	1.40	289.00	404.60
		pre-packed cement based polymer mortar of strength 45 Mpa at 28 days	kg	12.00	17.00	204.00
		Add 3 per cent of (a) above for wastage.				18.26
		b) Labour				
		Mate	day	0.04	210.00	8.40
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		Mazdoor	day	0.50	210.00	105.00
		c) Overhead charges @ 10 % on (a+b)				84.53
		d) Contractor's profit @ 10 % on (a+b+c)				92.98
						1022.76
		Add 1% labour cess				10.23
		Cost for 10 sqm = a+b+c+d				1032.99
		Rate per sqm = (a+b+c+d)/10				103.30
					say	103.00
6.11	2805	Epoxy bonding of new concrete to old concrete				
		Unit = sqm				
		Taking output = 10 sqm				
		a) Material				
		Epoxy resin with pot life not less than 60-90 minutes and satisfying testing as per clause 2803.9	kg	8.00	1784.00	14272.00
		Add 3 per cent of (a) above for wastage.				428.16
		b) Labour				
		Mate	day	0.04	210.00	8.40
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		Mazdoor	day	0.50	210.00	105.00
		c) Overhead charges @ 10 % on (a+b)				1491.86
		d) Contractor's profit @ 10 % on (a+b+c)				1641.04
						18051.46
		Add 1% labour cess				180.51
		Cost for 10 sqm = a+b+c+d				18231.97
		Rate per sqm = (a+b+c+d)/10				1823.20
					say	1823.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
6.12	2810	Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification				
		Span assumed: 25 m				
		No. of cables: 4 no.				
		No. of anchorages : 8 no.				
		Unit = MT				
		Taking output = 1 MT				
		Assume 12.7mm dia. Strand in 12T13 system. Weight- 9.42 kg/m of cable.				
		a) Material				
		HTS strand including 5 per cent wastage and extra length for jacking	tonne	1.05	138583	145512.15
		HDPE pipes 75mm dia including 5 per cent wastage	metre	112.00	218.00	24416.00
		Cement for grouting	kg	400.00	7.69	3075.20
		Tube anchorage set complete with bearing plate, permanent wedges etc	each	8.00	481.00	3848.00
		Epoxy	kg	6.00	213.00	1278.00
		MS plates for deviator (where deviator blocks are not provided)	tonne	2.10	50100.0	105210.00
		Add 20 per cent cost of material for other materials like lead sheet, sleeves, deviator fixtures etc.				56667.87
		b) Labour				
		i) For making holes in the structure .				
		Mate	day	0.24	210.00	50.40
		Mazdoor Semi-skilled)	day	3.00	210.00	630.00
		Mazdoor	day	3.00	210.00	630.00
		ii) For making and fixing anchorages for cables and placement of cables .				
		Mate	day	0.44	210.00	92.40
		Blacksmith	day	3.00	315.00	945.00
		Mazdoor	day	8.00	210.00	1680.00
		iii) For prestressing				
		Mate/Supervisor	day	0.13	210.00	27.30
		Fitter	day	0.70	259.00	181.30
		Mazdoor	day	2.65	210.00	556.50
		iv) For grouting				
		Mate/Supervisor	day	0.13	210.00	27.30
		Mason	day	0.70	315.00	220.50
		Mazdoor	day	2.65	210.00	556.50
		c) Machinery				
		Stressing jack with pump	hour	4.00	175.00	700.00
		Grouting pump with agitator	hour	1.35	680.00	918.00
		d) Overhead charges @ 10 % on (a+b+c)				34722.24
		e) Contractor's profit @ 10 % on (a+b+c+d)				38194.47
						420139.13

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Add 1% labour cess				4201.39
		Rate per MT = (a+b+c+d+e)				424340.52
					say	424341.00
6.13	2810	Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification				
		Span assumed: 50 m				
		No. of cables: 4 no.				
		No. of anchorages : 8 no.				
		Unit = MT				
		Taking output = 3.10 MT				
		Assume 12.7mm dia. Strand in 19T13 system. Weight- 14.73 kg/m of cable.				
		a) Material				
		HTS strand including 5 per cent wastage and extra length for jacking	tonne	3.10	138583.00	429607.30
		HDPE pipes 90mm dia including 5 per cent wastage	metre	224.00	264.00	59136.00
		Cement for grouting	tonne	1.01	7688.00	7764.88
		Tube anchorage set complete with bearing plate, permanent wedges etc	each	8.00	481.00	3848.00
		Epoxy	kg	10.00	213.00	2130.00
		MS plates for deviator (where deviator blocks are not provided)	tonne	7.00	50100.00	350700.00
		Add 20 per cent cost of material for other materials like lead sheet, sleeves, deviator fixtures etc.				170637.24
		b) Labour				
		i) For making holes in the structure .				
		Mate	day	0.08	210.00	16.80
		Mazdoor Semi-skilled)	day	8.00	210.00	1680.00
		Mazdoor	day	8.00	210.00	1680.00
		ii) For making and fixing anchorages for cables and placement of cables .				
		Mate	day	1.28	210.00	268.80
		Blacksmith	day	7.00	315.00	2205.00
		Mazdoor	day	25.00	210.00	5250.00
		iii) For prestressing				
		Mate/Supervisor	day	0.20	210.00	42.00
		Fitter	day	1.00	259.00	259.00
		Mazdoor	day	4.00	210.00	840.00
		iv) For grouting				
		Mate/Supervisor	day	0.26	210.00	54.60
		Mason	day	1.50	315.00	472.50
		Mazdoor	day	5.00	210.00	1050.00
		c) Machinery				
		Stressing jack with pump	hour	7.00	175.00	1225.00
		Grouting pump with agitator	hour	3.00	680.00	2040.00
		d) Overhead charges @ 10 % on (a+b+c)				104090.71

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		e) Contractor's profit @ 10 % on (a+b+c+d)				114499.78
						1259497.61
		Add 1% labour cess				12594.98
		Cost for 3.10 MT = a+b+c+d+e				1272092.59
		Rate per MT = (a+b+c+d+e)/3.10				410352.45
					say	410352.00
6.14	2810	Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification Span assumed: 100 m No. of cables: 6 no. No. of anchorages : 12 no. Unit = MT Taking output = 9.28 MT Assume 12.7mm dia. Strand in 19T13 system. Weight- 14.73 kg/m of cable.				
		a) Material				
		HTS strand including 5 per cent wastage and extra length for jacking	tonne	9.28	138583.00	1286050.24
		HDPE pipes 90 mm dia including 5 per cent wastage	metre	672.00	264.00	177408.00
		Cement for grouting	tonne	3.04	7688.00	23371.52
		Tube anchorage set complete with bearing plate, permanent wedges etc	each	12.00	481.00	5772.00
		Epoxy	kg	14.00	213.00	2982.00
		MS plates for deviator (where deviator blocks are not provided)	tonne	20.00	50100.00	1002000.00
		Add 20 per cent cost of material for other materials like lead sheet, sleeves, deviator fixtures etc.				499516.75
		b) Labour				
		i) For making holes in the structure .				
		Mate	day	1.72	210.00	361.20
		Mazdoor Semi-skilled)	day	18.00	210.00	3780.00
		Mazdoor	day	25.00	210.00	5250.00
		ii) For making and fixing anchorages for cables and placement of cables .				
		Mate	day	4.00	210.00	840.00
		Blacksmith	day	20.00	315.00	6300.00
		Mazdoor	day	80.00	210.00	16800.00
		iii) For prestressing				
		Mate/Supervisor	day	0.30	210.00	63.00
		Fitter	day	1.50	259.00	388.50
		Mazdoor	day	6.00	210.00	1260.00
		iv) For grouting				
		Mate/Supervisor	day	1.00	210.00	210.00
		Mason	day	5.00	315.00	1575.00
		Mazdoor	day	20.00	210.00	4200.00
		c) Machinery				
		Stressing jack with pump	hour	10.00	175.00	1750.00

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Grouting pump with agitator	hour	10.00	680.00	6800.00
		d) Overhead charges @ 10 % on (a+b+c)				304667.82
		e) Contractor's profit @ 10 % on (a+b+c+d)				335134.60
						3686480.64
		Add 1% labour cess				36864.81
		Cost for 9.28 MT = a+b+c+d+e				3723345.44
		Rate per MT = (a+b+c+d+e)/9.28				379933.21
					say	<u>379933.00</u>
6.15	2808	Replacement of Bearings complete as per Technical Specification				
		Unit = No				
		Taking output = 3 No.				
		Lifting of superstructure span by jacking up from below i.e. by placing the jacks on pier/abutment caps for span length of 30m.				
		a) Lifting of span				
		i) Hire charges for jack of 40 tonne lifting capacity.	Day	3.00	290.00	870.00
		Mate	day	0.64	210.00	134.40
		Mazdoor (Skilled)	day	4.00	210.00	840.00
		Mazdoor	day	12.00	210.00	2520.00
		v) Wooden packing	cum	0.15	40000.00	6000.00
		b) Replacement of bearing				
		Cost of bearing.	each	3.00	73472.00	220416.00
		c) Overhead charges @ 10 % on (a+b)				23078.04
		d) Contractor's profit @ 10 % on (a+b+c)				25385.84
						279244.28
		Add 1% labour cess				2792.44
		Cost of repair of 3 bearings = a+b+c+d				282036.73
		Rate of repair per bearing = (a+b+c+d)/3				94012.24
					say	<u>94012.00</u>
	Note	The work entails replacement of all the bearings on one side of the span.				
6.16	2808	Rectification of Bearings as per Technical Specifications				
		Unit = 1 No				
		Taking output = 3 No.				
		a) Lifting of superstructure span by jacking up from below i.e. by placing the jacks on pier/abutment caps for span length of 30m.				
		i) Hire charges for jack of 40 tonne lifting capacity.	each	3.00	290.00	870.00
		ii) Mate	day	0.64	210.00	134.40
		iii) Mazdoor (Skilled)	day	4.00	210.00	840.00
		iv) Mazdoor	day	12.00	210.00	2520.00
		v) Wooden packing	cum	0.15	40000.00	6000.00
		b) Cost of parts to be replaced for 3 bearings.	each	3.00	20000.00	60000.00
		c) Overhead charges @ 10 % on (a+b)				7036.44
		d) Contractor's profit @ 10 % on (a+b+c)				7740.08
						85140.92

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Add 1% labour cess				851.41
		Cost of repair of 3 bearings = a+b+c+d				85992.33
		Rate of repair per bearing = (a+b+c+d)/3				28664.11
					say	<u>28664.00</u>
	Note	The rectification of 3 bearings included in this analysis are on the same side of the span.				
6.17		Replacement of Expansion Joints complete as per drawings				
		Unit -1 RM				
		Taking output = 12 RM				
		a) Material				
		Epoxy for bonding new concrete to old concrete @ 0.8 kg/sqm	kg	9.60	213.00	2044.80
		M-30 grade cement concrete excluding OH & CP (Rate as per items 14.1 C (i))	cum	3.60	7090.00	25524.00
		b) Labour				
		Removal of old expansion joint including breaking of concrete, cutting of lugs and shifting of broken material etc.				
		Mate	day	0.26	210.00	54.60
		Mazdoor	day	6.00	210.00	1260.00
		Mazdoor (Skilled)	day	0.50	210.00	105.00
		c) Overhead charges @ 10 % on (a+b)				2898.84
		d) Contractor's profit @ 10 % on (a+b+c)				3188.72
						35075.96
		Add 1% labour cess				350.76
		Cost for replacement of 12 RM = a+b+c+d				35426.72
		Rate per RM = (a+b+c+d)/12				2952.23
					say	<u>2952.00</u>
	Note	The rate for the installation of new expansion joints may be taken from the chapter on superstructure. Broken concrete will have to be replaced which has been included in this analysis.				
6.18		Dismantling of Damaged Concrete Railing.				
		Unit = RM				
		Taking output = 10 RM				
		a) Labour				
		Labour for dismantling old railing and disposal of dismantled material.				
		Mate	day	0.20	210.00	42.00
		Mazdoor	day	5.00	210.00	1050.00
		b) Machinery				
		Tractor-trolley for disposal of dismantled material	hour	1.00	581.00	581.00
		c) Overhead charges @ 10 % on (a+b)				167.30
		d) Contractor's profit @ 10 % on (a+b+c)				184.03
						2024.33
		Add 1% labour cess				20.24
		Cost for 10 m = a+b+c+d				2044.57
		Rate per metre = (a+b+c+d)/10				204.46

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
					say	<u>204.00</u>
	Note	The rate for the provision of new railing may be adopted from the chapter on superstructure.				
6.19		Dismantling of Crash Barrier.				
		Unit = RM				
		Taking output = 10 M				
	a) Labour					
		Labour for dismantling old railing and disposal of dismantled material.				
		Mate	day	0.40	210.00	84.00
		Mazdoor	day	10.00	210.00	2100.00
	b) Machinery					
		Tractor-trolley for disposal of dismantled material	hour	1.00	581.00	581.00
	c) Overhead charges @ 10 % on (a+b)					276.50
	d) Contractor's profit @ 10 % on (a+b+c)					304.15
						3345.65
		Add 1% labour cess				33.46
		Cost for 10 m = a+b+c+d				3379.11
		Rate per metre = (a+b+c+d)/10				337.91
					say	<u>338.00</u>
	Note	The rate for the construction of new crash barrier may be adopted from chapter 8 on Traffic and Transportation.				
6.20		Dismantling of Damaged Mild Steel Railing				
		Unit = RM				
		Taking output = 10 M				
	a) Labour					
		Labour for dismantling old railing and disposal of dismantled material.				
		Mate	day	0.16	210.00	33.60
		Mazdoor	day	4.00	210.00	840.00
	b) Machinery					
		Tractor-trolley for disposal of dismantled material	hour	1.00	581.00	581.00
	c) Overhead charges @ 10 % on (a+b)					145.46
	d) Contractor's profit @ 10 % on (a+b+c)					160.01
						1760.07
		Add 1% labour cess				17.60
		Cost for 10 m = a+b+c+d				1777.67
		Rate per metre = (a+b+c+d)/10				177.77
					say	<u>178.00</u>
6.21		Repair of Crash Barrier				
		Repair of concrete crash barrier with cement concert of M-30 grade by cutting and trimming the damaged portion to a regular shape, cleaning the area to be repaired thoroughly, applying cement concert after erection of proper form work.				
		Unit = Running meter.				
		Taking output = 10 M.				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		It is assumed that damage is to the extent of 10 per cent of the volume of concrete .This will require 0.30 cum of concrete.				
		a) Manpower*				
		Mate	day	0.04	210.00	8.40
		Mazdoor	day	1.00	210.00	210.00
		* For dismantling and trimming the surface to a regular shape and removal of damaged material.				
		b) Material				
		M-30 grade cement concrete excluding OH & CP (Rate as per items 14.1 C (i))	cum	0.30	7090.00	2127.00
		This may be priced based on the rate given the chapter of superstructure.				
		c) Overhead charges @ 10 % on (a)				21.84
		d) Contractor's profit @ 10 % on (a+c)				24.02
						2391.26
		Add 1% labour cess				23.91
		Cost for 10 m = a+b+c+d				2415.18
		Rate per m = (a+b+c+d)/10				241.52
					say	<u>242.00</u>
6.22		Repair of RCC Railing				
		Carrying out repair of RCC M30 railing to bring it to the original shape.				
		Unit = Running meter.				
		Taking output = 10 M.				
		It is assumed that damage is to the extent of 10 per cent .				
		a) Material				
		M-30 grade cement concrete excluding OH & CP (Rate as per items 14.1 C (i))	cum	0.10	7090.00	709.00
		HYSD bar reinforcement Rate as per item No 14.2(Excluding OH & CP)	tonne	0.01	63096.00	820.25
		b) Labour*				
		Mate	day	0.016	210.00	3.36
		mazdoor	day	0.20	210.00	42.00
		* For dismantling and trimming the surface to a regular shape and removal of damaged material.				
		c) Overhead charges @ 10 % on (b)				4.54
		d) Contractor's profit @ 10 % on (b+c)				4.99
						1584.13
		Add 1% labour cess				15.84
		Cost for 10 m = a+b+c+d				1599.97
		Rate per m = (a+b+c+d)/10				160.00
					say	<u>160.00</u>
6.23		Repair of Steel Railing				
		Repair of steel railing to bring it to the original shape				
		It is assumed that the damage to the steel railing is to the extent of 10 per cent .				
		Unit = Running meter.				
		Taking output = 10 M.				
		a) Material				

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs
		Mild steel ISMC series	kg	29.00	50.10	1452.90
		Flat iron	kg	10.00	50.10	501.00
		MS Bolt and nuts	kg	1.00	8590.00	8590.00
		Add 5 per cent of cost of material for painting.				527.20
		b) Labour				
		Mate	day	0.016	210.00	3.36
		Mazdoor (Skilled)	day	0.20	210.00	42.00
		Mazdoor	day	0.20	210.00	42.00
		c) Overhead charges @ 10 % on (a+b)				1115.85
		d) Contractor's profit @ 10 % on (a+b+c)				1227.43
						13501.73
		Add 1% labour cess				135.02
		Cost of repair for 10m = a+b+c+d				13636.75
		Cost of meter = (a+b+c+d)/10				1363.67
					say	1364.00
6.24		Extra for providing and mixing polyester trinagular synthetic fibres in specified ratio 6-18mm length, melting point 240-260 degree centigrade and having specifiv gravity of 1.33-1.40 as per IS-456 ammendment August 2007 & IRC 44-2008 @ 125 gramme/50kg of cement bag in all types of CC, RCC, plastering and flooring work etc.				
		Unit = Per Tonne.				
		Detail of cost for 1 bag of cement 50kg weight.				
		a) Material				
		Polyester trinagular synthetic fibres	kg	0.13	427.00	53.38
		Carriage & labour for mixing.	L.S.			8.00
						61.38
		b) Overhead charges @ 10 % on (a)				6.14
		d) Contractor's profit @ 10 % on (a+b)				6.75
						74.26
		Add 1% labour cess				0.74
		Cost of mixing fibre in 1 bag (50kg) of cement.				75.01
		Cost of mixing the fibre per tonne of cement.meter = (a+b+c+d)/10				1500.13
					say	1500.00