

CHAPTER NO. 21

BRIDGES - FOUNDATION & SUB-STRUCTURE

Notes for Bridge Chapter 21 & 22:-

- 1 The rates are based on PPC cement.
- 2 The rates of aggregates, coarse sand, fine sand & bitumen include carriage of material for the first 5 km from quarry/source.
- 3 The rates of bitumen are based on Panipat Refinery Rates prevailing in July 2010 including all taxes & carriage for the first 5 km from Panipat. In estimate difference of rate may be provided as on date of estimation.
- 4 Quantities of cement given in the rate analysis are approximate for the purpose of estimation. Actual contents should be as per job mix formula and the payment may be adjusted for increase or decrease in cement content accordingly.
- 5 The source of material and samples are required to be approved by the Engineer before the start of work.
- 6 The contractor shall arrange to provide and maintain an adequately equipped field laboratory with well trained staff.
- 7 Charges for Water, needle vibrator have not been included for items as it is assumed that same would be considered under sundries charges.
- 8 The analysis of RCC have been worked out without steel reinforcement but includes formwork Steel Plates not less than 3 mm (Minimum)(including centering and staging).
- 9 The mixing of cement concrete has been considered both by using concrete mixer and batching plant (placed within 1 km). The rates can be adopted depending upon availability of equipment and as approved by Engineer-in-charge.
- 10 The rates of various types of bearings, expansion joints, prestressed concrete assosories, benotonite, G.I.wire, Metal beam crash barrier, concrete admixtures, H.T.strand etc have been taken in the various analyses as per prevailing rates in the market. During the preparation of the individual estimate of a particular work, these rates may be re-confirmed from the manufacturers.
- 11 The machinery rates have been incorporated as per MOSRT&H Standard Data Book (First Revision) for the 2001-02 after adding escalation 50% calculated on the basis of price index for all commodities.
- 12 The coarse and fine aggregate for cement concrete shall be as per IS:383.
- 13 In the case of open foundation, dewatering shall not be permitted from the time of placing of concrete upto 24 hours after placement.
- 14 The concrete mix used in bottom plug shall have a minimum cement content of 330 kg/cum and a slump of about 150mm to permit easy flow of concrete through tremie to fill-up all cavities.
- 15 In case of cement concrete piles, the minimum grade of concrete shall be M35.

- 16 The quantity of concrete which is required to be stripped off upto a minimum height of 600mm above the designed top level of the pile has been taken into account in the analysis.
- 17 Cost of HT steel has been taken for delivery at site. Hence carriage has not been considered.
- 18 The rates for 6 mm or any other thickness for mastic asphalt may be worked out on pro-rata basis.
- 19 Where tack coat is required to be provided before laying mastic asphalt, the same is required to be measured and paid separately.
- 20 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.
- 21 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.
- 22 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.
- 23 The installation of the expansion joints shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.
- 24 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.
- 25 The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.
- 26 The rates are without using admixture. Where admixture is required to be used following quantity can be provided for estimate purposes but payment will be made as per actual mix design.

Sr. No.	Grade of Concrete	Where the work is to be done by using Concrete Mixer	Where the work is to be done by using Batch Mixing Plant/RMC	Where the work is to be done by using Batch Mixing Plant & Pumping of Concrete/RMC
i	M-20	-	0.40%	1.00%
ii	M-25	-	0.40%	1.00%
iii	M-30	-	0.40%	1.00%
iv	M-35	0.40%	0.80%	1.00%
v	M-40	0.40%	0.80%	1.00%
vi	M-45	0.40%	0.80%	1.00%
vii	M-50	0.40%	0.80%	1.00%
viii	M-55	0.40%	0.80%	1.00%

- 27 For the execution of works involving the use of skilled labour, extra premium of 10% may be allowed for estimating purpose over and above the premium or abatement fixed for the area concerned. The contractor is to be paid only on the basis of rates of premium and abatement tendered by him on the basic Schedule of Rates i. e. not taking into consideration the 10 per cent applicable weightage in ceiling premium. For isolated works and works in villages, tenders for such works should be clearly invited on this bases. As regards classification of a work under this category, each case should be examined on merit.

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
21.1	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.					
	In soil					
A	Manual Means					
	a Depth upto 3 m	cum	63.15	63.15	69.47	69.47
	b Depth above 3 m & upto 6 m	cum	81.19	81.19	89.31	89.31
	c Depth above 6 m	cum	108.26	108.26	119.09	119.09
B	Mechanical Means					
	a Depth upto 3 m	cum	45.83	45.83	50.41	50.41
	b Depth above 3 m & upto 6 m	cum	52.38	52.38	57.62	57.62
	c Depth above 6m	cum	63.11	63.11	69.42	69.42
C	Ordinary Rock (not requiring blasting)					
	a Depth upto 3 m by manual	cum	90.21	90.21	99.23	99.23
	b Depth upto 3 m by Mechanical Means	cum	59.10	59.10	65.01	65.01
D	Hard Rock (requiring blasting)	cum	198.33	248.88	218.16	268.71
E	Hard Rock (blasting prohibited)	cum	324.55	324.55	357.01	357.01
F	Marshy Soil					
	(a) Depth upto 3 m by manual means	cum	298.88	298.88	328.77	328.77
	(b) Depth upto 3 m by Mechanical Means	cum	82.02	82.02	90.22	90.22
G	Back Filling in Marshy Foundation Pits	cum	242.60	242.60	266.86	266.86
21.2	Filling space around footing in rock with Plain cement concrete 1:3:6 nominal mix or in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.	cum	519.19	2425.06	571.11	2476.98
21.3	Sand Filling in Foundation Trenches as per Drawing & Technical Specification.	cum	53.75	321.18	59.13	326.56
21.4	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.	cum	519.19	2425.06	571.11	2476.98

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
21.5		Brick Masonry Work in Cement Mortar 1:3 in Foundation complete excluding Pointing and Plastering, as per Drawing and Technical Specifications.	cum	559.82	3090.43	615.80	3146.41
21.6		Stone Masonry Work in Cement Mortar 1:3 in Foundation					
	A	Square Rubble Coursed Rubble Masonry (first sort)	cum	808.68	2472.60	889.55	2500.08
	B	Random Rubble Masonry	cum	724.08	2421.00	796.49	2553.47
21.7		Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.					
	A	PCC Grade M15	cum	686.92	2861.65	755.61	2930.34
	B	PCC Grade M20	cum	705.42	3286.87	775.96	3357.41
	C	RCC Grade M20					
	(i)	Using Concrete Mixer	cum	706.64	3314.79	777.30	3385.45
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump.	cum	556.12	3164.27	611.73	3219.88
	D	PCC Grade M25					
	(i)	Using Concrete Mixer	cum	710.34	3612.30	781.37	3683.33
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump.	cum	560.19	3462.15	616.21	3518.17
	E	RCC Grade M25					
	(i)	Using Concrete Mixer	cum	711.73	3646.22	782.90	3717.39
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump.	cum	561.59	3496.08	617.75	3552.24
	F	PCC Grade M30					
	(i)	Using Concrete Mixer	cum	702.07	3639.00	772.28	3709.21
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	552.28	3489.21	607.51	3544.44
	G	RCC Grade M30					
		Using Concrete Mixer	cum	702.89	3660.70	773.18	3730.99
		With Batching Plant, Transit Mixer and Concrete Pump	cum	553.10	3510.91	608.41	3566.22
	H	RCC Grade M35					
	(i)	Using Concrete Mixer	cum	686.24	3731.46	754.86	3800.08
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump.	cum	537.16	3582.38	590.88	3636.10

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
21.8	Providing and Constructing Temporary Island 16 m diameter for Construction of Well Foundation for 8m dia. Well.						
	(i)	depth of water 1.0 m .	No	24103.36	41492.64	26513.70	43902.98
	(ii)	depth of water 4.0 m	No	79961.82	224278.42	87958.00	232274.60
21.9	Providing and constructing one span service road to reach island location from one pier location to another pier location.		m	1279.10	1990.14	1407.01	2118.05
21.10	Providing and Laying Cutting Edge of Mild Steel weighing 40 kg per metre for Well Foundation complete as per Drawing and Technical Specification.		t	7422.22	57786.64	8164.44	58528.86
21.11	Plain/Reinforced Cement Concrete, in Well Foundation complete as per Drawing and Technical Specification.						
	A	Well curb					
	(i)	RCC Grade M20					
		Using Concrete Mixer	cum	1271.86	3880.01	1399.04	4007.19
		With Batching Plant, Transit Mixer and Concrete Pump	cum	1098.18	3706.33	1208.00	3816.15
	(ii)	RCC Grade M25					
		Using Concrete Mixer	cum	1346.11	4280.60	1480.72	4415.21
		With Batching Plant, Transit Mixer and Concrete Pump	cum	1172.43	4106.92	1289.67	4224.16
	(iii)	RCC Grade M35					
		Using Concrete Mixer	cum	1371.31	4416.53	1508.44	4553.66
		With Batching Plant, Transit Mixer and Concrete Pump	cum	1197.63	4242.85	1317.39	4362.61
	B	Well steining					
	(i)	PCC Grade M20					
		Using Concrete Mixer	cum	915.56	3497.01	1007.12	3588.57
	(ii)	RCC Grade M20					
		Using Concrete Mixer	cum	918.59	3526.74	1010.45	3618.60
		With Batching Plant, Transit Mixer and Concrete Pump	cum	759.39	3367.54	835.33	3443.48
	(iii)	PCC Grade M25					
		Using Concrete Mixer	cum	952.02	3853.98	1047.22	3949.18
		With Batching Plant, Transit Mixer and Concrete Pump	cum	792.82	3694.78	872.10	3774.06
	(iv)	RCC Grade M25					
		Using Concrete Mixer	cum	955.74	3890.23	1051.31	3985.80
		With Batching Plant, Transit Mixer and Concrete Pump	cum	796.52	3731.01	876.17	3810.66
	(v)	PCC Grade M30					
		Using Concrete Mixer	cum	956.00	3892.93	1051.60	3988.53
		With Batching Plant, Transit Mixer and Concrete Pump	cum	796.80	3733.73	876.48	3813.41
	(vi)	RCC Grade M30					
		Using Concrete Mixer	cum	958.38	3916.19	1054.21	4012.02

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	With Batching Plant, Transit Mixer and Concrete Pump	cum	799.19	3757.00	879.11	3836.92
(vii)	RCC Grade M35					
	Using Concrete Mixer	cum	968.31	4013.53	1065.14	4110.36
	With Batching Plant, Transit Mixer and Concrete Pump	cum	809.12	3854.34	890.03	3935.25
(viii)	RCC M40 Grade					
	With Batching Plant, Transit Mixer and Concrete Pump	cum	821.05	3971.17	903.16	4053.28
C	Bottom Plug					
(i)	PCC Grade M20					
	Using Concrete Mixer	cum	912.02	3693.93	1003.22	3785.13
	With Batching Plant, Transit Mixer and Concrete Pump	cum	581.17	3372.31	639.29	3430.43
(ii)	PCC Grade M25					
	Using Concrete Mixer	cum	932.08	4066.56	1025.29	4159.77
	With Batching Plant, Transit Mixer and Concrete Pump	cum	601.22	3744.93	661.34	3805.05
(iii)	PCC Grade M30					
	Using Concrete Mixer	cum	934.27	4107.22	1027.70	4200.65
	With Batching Plant, Transit Mixer and Concrete Pump	cum	603.41	3785.58	663.75	3845.92
(iv)	PCC Grade M35					
	Using Concrete Mixer	cum	936.09	4141.08	1029.70	4234.69
	With Batching Plant, Transit Mixer and Concrete Pump	cum	605.23	3819.44	665.75	3879.96
D	Intermediate plug					
(i)	PCC Grade M20					
	Using Concrete Mixer	cum	740.27	3522.18	814.30	3596.21
	With Batching Plant, Transit Mixer and Concrete Pump	cum	420.68	3211.82	462.75	3253.89
(ii)	PCC Grade M25					
	Using Concrete Mixer	cum	740.27	3874.75	814.30	3948.78
	With Batching Plant, Transit Mixer and Concrete Pump	cum	420.68	3564.39	462.75	3606.46
(iii)	PCC Grade M30					
	Using Concrete Mixer	cum	148.74	3321.69	163.61	3336.56
	With Batching Plant, Transit Mixer and Concrete Pump	cum	420.68	3602.85	462.75	3644.92
E	Top plug					
(i)	PCC Grade M15	cum	565.34	2740.07	621.87	2796.60
(ii)	PCC Grade M20	cum	565.34	3146.79	621.87	3203.32
(iii)	Grade M25 PCC					
	Using Concrete Mixer	cum	565.34	3467.30	621.87	3523.83
	With Batching Plant, Transit Mixer and Concrete Pump	cum	420.61	3322.57	462.67	3364.63
(iv)	PCC Grade M30					
	Using Concrete Mixer	cum	565.34	3502.27	621.87	3558.80
	With Batching Plant, Transit Mixer and Concrete Pump	cum	420.61	3357.54	462.67	3399.60
F	Well cap					
(i)	RCC Grade M20					

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	Using Concrete Mixer	cum	706.64	3314.79	777.30	3385.45
	With Batching Plant, Transit Mixer and Concrete Pump	cum	556.12	3164.27	611.73	3219.88
	(ii) RCC Grade M25					
	With Batching Plant, Transit Mixer and Concrete Pump	cum	561.59	3496.08	617.75	3552.24
	(iii) RCC Grade M30					
	With Batching Plant, Transit Mixer and Concrete Pump	cum	553.10	3510.91	608.41	3566.22
	(iv) RCC Grade M35					
	With Batching Plant, Transit Mixer and Concrete Pump	cum	537.16	3582.38	590.88	3636.10
	(v) RCC M40 Grade					
	With Batching Plant, Transit Mixer and Concrete Pump	cum	540.74	3690.86	594.81	3744.93
21.12	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. The rate inclusive of dewatering					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	3467.28	3467.28	3814.01	3814.01
	(ii) Beyond 3m upto 10m depth	m	4994.52	4994.52	5493.97	5493.97
	(iii) 11 m depth	m	5244.25	5244.25	5768.67	5768.67
	12 m depth	m	5506.46	5506.46	6057.10	6057.10
	13 m depth	m	5781.78	5781.78	6359.96	6359.96
	14 m depth	m	6070.87	6070.87	6677.96	6677.96
	15 m depth	m	6374.41	6374.41	7011.86	7011.86
	16 m depth	m	6693.13	6693.13	7362.45	7362.45
	17 m depth	m	7027.79	7027.79	7730.57	7730.57
	18 m depth	m	7379.18	7379.18	8117.10	8117.10
	19 m depth	m	7748.14	7748.14	8522.96	8522.96
	20 m depth	m	8135.55	8135.55	8949.11	8949.11
	(iv) 21 m depth	m	10494.86	10494.86	11544.35	11544.35
	22 m depth	m	11281.98	11281.98	12410.17	12410.17
	23 m depth	m	12128.12	12128.12	13340.94	13340.94
	24 m depth	m	13037.74	13037.74	14341.51	14341.51
	25 m depth	m	14015.57	14015.57	15417.12	15417.12
	26 m depth	m	15066.73	15066.73	16573.40	16573.40
	27 m depth	m	16196.74	16196.74	17816.41	17816.41

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	28 m depth	m	17411.50	17411.50	19152.65	19152.65
	29 m depth	m	18717.36	18717.36	20589.10	20589.10
	30 m depth	m	20121.17	20121.17	22133.28	22133.28
(v)	31 m depth	m	22133.28	22133.28	24346.61	24346.61
	32 m depth	m	24346.61	24346.61	26781.26	26781.26
	33 m depth	m	26781.26	26781.26	29459.39	29459.39
	34 m depth	m	29459.39	29459.39	32405.33	32405.33
	35 m depth	m	32405.33	32405.33	35645.86	35645.86
	36 m depth	m	35645.86	35645.86	39210.44	39210.44
	37 m depth	m	39210.44	39210.44	43131.49	43131.49
	38 m depth	m	43131.49	43131.49	47444.64	47444.64
	39 m depth	m	47444.64	47444.64	52189.10	52189.10
	40 m depth	m	52189.10	52189.10	57408.01	57408.01
B	Clayey Soil					
(i)	Depth below bed level upto 3.0 m	m	5053.00	5053.00	5558.30	5558.30
(ii)	Beyond 3m upto 10m depth	m	11927.37	11927.37	13120.11	13120.11
(iii)	11 m depth	m	13149.93	13149.93	14464.92	14464.92
	12 m depth	m	13807.43	13807.43	15188.17	15188.17
	13 m depth	m	14497.80	14497.80	15947.58	15947.58
	14 m depth	m	15222.69	15222.69	16744.96	16744.96
	15 m depth	m	15983.82	15983.82	17582.21	17582.21
	16 m depth	m	16783.01	16783.01	18461.32	18461.32
	17 m depth	m	17622.16	17622.16	19384.39	19384.39
	18 m depth	m	18503.27	18503.27	20353.61	20353.61
	19 m depth	m	19428.43	19428.43	21371.29	21371.29
	20 m depth	m	20399.85	20399.85	22439.85	22439.85
(iv)	21 m depth	m	27412.30	27412.30	30153.56	30153.56
	22 m depth	m	29468.23	29468.23	32415.08	32415.08
	23 m depth	m	31678.34	31678.34	34846.20	34846.20
	24 m depth	m	34054.22	34054.22	37459.67	37459.67
	25 m depth	m	36608.29	36608.29	40269.14	40269.14
	26 m depth	m	39353.91	39353.91	43289.33	43289.33
	27 m depth	m	42305.45	42305.45	46536.03	46536.03
	28 m depth	m	45478.35	45478.35	50026.23	50026.23
	29 m depth	m	48889.22	48889.22	53778.20	53778.20
	30 m depth	m	52555.91	52555.91	57811.56	57811.56
(v)	31 m depth	m	55499.04	55499.04	61049.01	61049.01
	32 m depth	m	61048.95	61048.95	67153.91	67153.91
	33 m depth	m	67153.85	67153.85	73869.31	73869.31
	34 m depth	m	73869.24	73869.24	81256.22	81256.22
	35 m depth	m	81256.16	81256.16	89381.86	89381.86
	36 m depth	m	89381.78	89381.78	98320.05	98320.05

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	37 m depth	m	98319.95	98319.95	108152.05	108152.05
	38 m depth	m	108151.95	108151.95	118967.26	118967.26
	39 m depth	m	118967.14	118967.14	130863.99	130863.99
	40 m depth	m	130863.86	130863.86	143950.39	143950.39
	C Soft Rock (6m dia well)					
	Depth in Soft rock strata up to 3m	m	14616.29	14616.29	16077.92	16077.92
	D Hard Rock (6m dia well)					
	Depth in hard rock strata upto 3 m	m	13381.63	13976.02	14719.79	15314.18
21.13	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.The rate inclusive of dewatering.					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	5324.74	5324.74	5857.21	5857.21
	(ii) Beyond 3m upto 10m depth	m	7182.18	7182.18	7900.40	7900.40
	(iii) 11 m depth	m	7541.29	7541.29	8295.42	8295.42
	12 m depth	m	7918.35	7918.35	8710.19	8710.19
	13 m depth	m	8314.27	8314.27	9145.70	9145.70
	14 m depth	m	8729.98	8729.98	9602.99	9602.99
	15 m depth	m	9166.48	9166.48	10083.14	10083.14
	16 m depth	m	9624.80	9624.80	10587.30	10587.30
	17 m depth	m	10106.04	10106.04	11116.67	11116.67
	18 m depth	m	10611.34	10611.34	11672.50	11672.50
	19 m depth	m	11141.91	11141.91	12256.13	12256.13
	20 m depth	m	11699.01	11699.01	12868.94	12868.94
	(iv) 21 m depth	m	15091.73	15091.73	16600.93	16600.93
	22 m depth	m	16223.60	16223.60	17846.00	17846.00
	23 m depth	m	17440.38	17440.38	19184.46	19184.46
	24 m depth	m	18748.40	18748.40	20623.30	20623.30
	25 m depth	m	20154.54	20154.54	22170.05	22170.05
	26 m depth	m	21666.13	21666.13	23832.80	23832.80
	27 m depth	m	23291.09	23291.09	25620.26	25620.26
	28 m depth	m	25037.92	25037.92	27541.79	27541.79
	29 m depth	m	26915.76	26915.76	29607.42	29607.42
	30 m depth	m	28934.45	28934.45	31827.97	31827.97
	(v) 31 m depth	m	31827.89	31827.89	35010.77	35010.77
	32 m depth	m	35010.67	35010.67	38511.84	38511.84
	33 m depth	m	38511.74	38511.74	42363.02	42363.02
	34 m depth	m	42362.92	42362.92	46599.32	46599.32
	35 m depth	m	46599.20	46599.20	51259.26	51259.26
	36 m depth	m	51259.13	51259.13	56385.19	56385.19

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	37 m depth	m	56385.04	56385.04	62023.72	62023.72
	38 m depth	m	62023.54	62023.54	68226.08	68226.08
	39 m depth	m	68225.89	68225.89	75048.70	75048.70
	40 m depth	m	75048.48	75048.48	82553.57	82553.57
	B Clayey Soil					
	(i) Depth below bed level upto 3.0 m	m	7182.18	7182.18	7900.40	7900.40
	(ii) Beyond 3m upto 10m depth	m	12539.80	12539.80	13793.78	13793.78
	(iii) 11 m depth	m	13825.13	13825.13	15207.64	15207.64
	12 m depth	m	14516.39	14516.39	15968.02	15968.02
	13 m depth	m	15242.21	15242.21	16766.42	16766.42
	14 m depth	m	16004.32	16004.32	17604.74	17604.74
	15 m depth	m	16804.54	16804.54	18484.98	18484.98
	16 m depth	m	17644.77	17644.77	19409.23	19409.23
	17 m depth	m	18527.01	18527.01	20379.69	20379.69
	18 m depth	m	19453.36	19453.36	21398.67	21398.67
	19 m depth	m	20426.03	20426.03	22468.60	22468.60
	20 m depth	m	21447.33	21447.33	23592.03	23592.03
	(iv) 21 m depth	m	28819.85	28819.85	31701.80	31701.80
	22 m depth	m	30981.34	30981.34	34079.43	34079.43
	23 m depth	m	33304.94	33304.94	36635.39	36635.39
	24 m depth	m	35802.81	35802.81	39383.04	39383.04
	25 m depth	m	38488.01	38488.01	42336.78	42336.78
	26 m depth	m	41374.62	41374.62	45512.03	45512.03
	27 m depth	m	44477.72	44477.72	48925.43	48925.43
	28 m depth	m	47813.54	47813.54	52594.85	52594.85
	29 m depth	m	51399.55	51399.55	56539.46	56539.46
	30 m depth	m	55254.52	55254.52	60779.92	60779.92
	(v) 31 m depth	m	58348.77	58348.77	64183.59	64183.59
	32 m depth	m	64183.65	64183.65	70601.96	70601.96
	33 m depth	m	70602.02	70602.02	77662.16	77662.16
	34 m depth	m	77662.23	77662.23	85428.37	85428.37
	35 m depth	m	85428.45	85428.45	93971.20	93971.20
	36 m depth	m	93971.30	93971.30	103368.32	103368.32
	37 m depth	m	103368.44	103368.44	113705.16	113705.16
	38 m depth	m	113705.28	113705.28	125075.67	125075.67
	39 m depth	m	125075.80	125075.80	137583.24	137583.24
	40 m depth	m	137583.38	137583.38	151341.57	151341.57
	C Soft Rock (7m dia well)					
	Depth in Soft rock strata up to 3m	m	13377.12	13377.12	14714.83	14714.83
	D Hard Rock (7m dia well)					
	Depth in hard rock strata upto 3 m	m	14637.66	15665.34	16101.43	17129.11
21.14	Sinking of 8 m external diameter well (other than pneumatic					

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
	A	Sandy Soil					
	(i)	Depth below bed level upto 3.0 m	m	6521.75	6521.75	7173.93	7173.93
	(ii)	Beyond 3m upto 10m depth	m	8056.66	8056.66	8862.33	8862.33
	(iii)	11 m depth	m	8459.49	8459.49	9305.44	9305.44
		12 m depth	m	8882.46	8882.46	9770.71	9770.71
		13 m depth	m	9326.58	9326.58	10259.25	10259.25
		14 m depth	m	9792.91	9792.91	10772.21	10772.21
		15 m depth	m	10282.56	10282.56	11310.82	11310.82
		16 m depth	m	10796.69	10796.69	11876.36	11876.36
		17 m depth	m	11336.52	11336.52	12470.18	12470.18
		18 m depth	m	11903.35	11903.35	13093.69	13093.69
		19 m depth	m	12498.52	12498.52	13748.37	13748.37
		20 m depth	m	13123.45	13123.45	14435.79	14435.79
	(iv)	21 m depth	m	16929.25	16929.25	18622.16	18622.16
		22 m depth	m	18198.95	18198.95	20018.83	20018.83
		23 m depth	m	19563.86	19563.86	21520.25	21520.25
		24 m depth	m	21031.15	21031.15	23134.27	23134.27
		25 m depth	m	22608.49	22608.49	24869.34	24869.34
		26 m depth	m	24304.13	24304.13	26734.54	26734.54
		27 m depth	m	26126.94	26126.94	28739.63	28739.63
		28 m depth	m	28086.46	28086.46	30895.10	30895.10
		29 m depth	m	30192.94	30192.94	33212.23	33212.23
		30 m depth	m	32457.41	32457.41	35703.14	35703.14
	(v)	31 m depth	m	35703.14	35703.14	39273.46	39273.46
		32 m depth	m	39273.46	39273.46	43200.80	43200.80
		33 m depth	m	43200.80	43200.80	47520.89	47520.89
		34 m depth	m	47520.89	47520.89	52272.97	52272.97
		35 m depth	m	52272.97	52272.97	57500.27	57500.27
		36 m depth	m	57500.27	57500.27	63250.30	63250.30
		37 m depth	m	63250.30	63250.30	69575.33	69575.33
		38 m depth	m	69575.33	69575.33	76532.86	76532.86
		39 m depth	m	76532.86	76532.86	84186.14	84186.14
		40 m depth	m	84186.14	84186.14	92604.76	92604.76
	B	Clayey Soil					
	(i)	Depth below bed level upto 3.0 m	m	8817.22	8817.22	9698.94	9698.94
	(ii)	Beyond 3m upto 10m depth	m	13085.48	13085.48	14394.03	14394.03
	(iii)	11 m depth	m	14426.74	14426.74	15869.42	15869.42
		12 m depth	m	15148.08	15148.08	16662.89	16662.89
		13 m depth	m	15905.48	15905.48	17496.03	17496.03
		14 m depth	m	16700.75	16700.75	18370.83	18370.83
		15 m depth	m	17535.79	17535.79	19289.37	19289.37
		16 m depth	m	18412.58	18412.58	20253.84	20253.84
		17 m depth	m	19333.21	19333.21	21266.53	21266.53
		18 m depth	m	20299.87	20299.87	22329.86	22329.86
		19 m depth	m	21314.86	21314.86	23446.35	23446.35
		20 m depth	m	22380.60	22380.60	24618.67	24618.67
	(iv)	21 m depth	m	30073.93	30073.93	33081.34	33081.34
		22 m depth	m	32329.48	32329.48	35562.44	35562.44

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	23 m depth	m	34754.19	34754.19	38229.62	38229.62
	24 m depth	m	37360.74	37360.74	41096.84	41096.84
	25 m depth	m	40162.80	40162.80	44179.11	44179.11
	26 m depth	m	43175.01	43175.01	47492.54	47492.54
	27 m depth	m	46413.14	46413.14	51054.48	51054.48
	28 m depth	m	49894.12	49894.12	54883.56	54883.56
	29 m depth	m	53636.18	53636.18	58999.83	58999.83
	30 m depth	m	57658.89	57658.89	63424.82	63424.82
(v)	31 m depth	m	60887.79	60887.79	66976.61	66976.61
	32 m depth	m	66976.56	66976.56	73674.27	73674.27
	33 m depth	m	73674.22	73674.22	81041.69	81041.69
	34 m depth	m	81041.64	81041.64	89145.86	89145.86
	35 m depth	m	89145.81	89145.81	98060.45	98060.45
	36 m depth	m	98060.38	98060.38	107866.50	107866.50
	37 m depth	m	107866.42	107866.42	118653.14	118653.14
	38 m depth	m	118653.07	118653.07	130518.47	130518.47
	39 m depth	m	130518.37	130518.37	143570.31	143570.31
	40 m depth	m	143570.21	143570.21	157927.34	157927.34
	C Soft Rock (8m dia well)					
	Depth in Soft rock strata up to 3m	m	14541.66	14541.66	15995.83	15995.83
	D Hard Rock (8m dia well)					
	Depth in hard rock strata upto 3 m	m	14673.83	15829.27	16141.21	17296.65
21.15	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.The rate inclusive of dewatering					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	6571.04	6571.04	7228.14	7228.14
	(ii) Beyond 3m upto 10m depth	m	8815.68	8815.68	9697.25	9697.25
	(iii) 11 m depth	m	9256.46	9256.46	10182.11	10182.11
	12 m depth	m	9719.28	9719.28	10691.22	10691.22
	13 m depth	m	10205.24	10205.24	11225.78	11225.78
	14 m depth	m	10715.50	10715.50	11787.07	11787.07
	15 m depth	m	11251.28	11251.28	12376.42	12376.42
	16 m depth	m	11813.84	11813.84	12995.24	12995.24
	17 m depth	m	12404.53	12404.53	13645.00	13645.00
	18 m depth	m	13024.76	13024.76	14327.25	14327.25
	19 m depth	m	13676.00	13676.00	15043.61	15043.61
	20 m depth	m	14359.80	14359.80	15795.79	15795.79

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
	(iv)	21 m depth	m	18524.15	18524.15	20376.56	20376.56
		22 m depth	m	19913.46	19913.46	21904.81	21904.81
		23 m depth	m	21406.97	21406.97	23547.67	23547.67
		24 m depth	m	23012.50	23012.50	25313.75	25313.75
		25 m depth	m	24738.43	24738.43	27212.28	27212.28
		26 m depth	m	26593.81	26593.81	29253.20	29253.20
		27 m depth	m	28588.34	28588.34	31447.20	31447.20
		28 m depth	m	30732.47	30732.47	33805.74	33805.74
		29 m depth	m	33037.40	33037.40	36341.17	36341.17
		30 m depth	m	35515.21	35515.21	39066.76	39066.76
	(v)	31 m depth	m	39066.73	39066.73	42973.43	42973.43
		32 m depth	m	42973.40	42973.40	47270.77	47270.77
		33 m depth	m	47270.75	47270.75	51997.85	51997.85
		34 m depth	m	51997.82	51997.82	57197.63	57197.63
		35 m depth	m	57197.60	57197.60	62917.39	62917.39
		36 m depth	m	62917.37	62917.37	69209.14	69209.14
		37 m depth	m	69209.10	69209.10	76130.05	76130.05
		38 m depth	m	76130.02	76130.02	83743.06	83743.06
		39 m depth	m	83743.02	83743.02	92117.36	92117.36
		40 m depth	m	92117.33	92117.33	101329.10	101329.10
	B	Clayey Soil					
	(i)	Depth below bed level upto 3.0 m	m	9304.52	9304.52	10234.97	10234.97
	(ii)	Beyond 3m upto 10m depth	m	14072.18	15479.40	15479.40	15479.40
	(iii)	11 m depth	m	15514.58	15514.58	17066.04	17066.04
		12 m depth	m	16290.31	16290.31	17919.34	17919.34
		13 m depth	m	17104.83	17104.83	18815.31	18815.31
		14 m depth	m	17960.07	17960.07	19756.08	19756.08
		15 m depth	m	18858.07	18858.07	20743.88	20743.88
		16 m depth	m	19800.97	19800.97	21781.07	21781.07
		17 m depth	m	20791.02	20791.02	22870.12	22870.12
		18 m depth	m	21830.57	21830.57	24013.63	24013.63
		19 m depth	m	22922.10	22922.10	25214.31	25214.31
		20 m depth	m	24068.21	24068.21	26475.03	26475.03
	(iv)	21 m depth	m	32341.66	32341.66	35575.82	35575.82
		22 m depth	m	34767.27	34767.27	38243.99	38243.99
		23 m depth	m	37374.81	37374.81	41112.29	41112.29
		24 m depth	m	40177.92	40177.92	44195.71	44195.71
		25 m depth	m	43191.27	43191.27	47510.39	47510.39
		26 m depth	m	46430.61	46430.61	51073.67	51073.67
		27 m depth	m	49912.91	49912.91	54904.20	54904.20
		28 m depth	m	53656.38	53656.38	59022.01	59022.01
		29 m depth	m	57680.61	57680.61	63448.67	63448.67

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	30 m depth	m	62006.65	62006.65	68207.32	68207.32
	(v) 31 m depth	m	65479.03	65479.03	72026.93	72026.93
	32 m depth	m	72026.93	72026.93	79229.62	79229.62
	33 m depth	m	79229.62	79229.62	87152.58	87152.58
	34 m depth	m	87152.58	87152.58	95867.85	95867.85
	35 m depth	m	95867.85	95867.85	105454.63	105454.63
	36 m depth	m	105454.63	105454.63	116000.09	116000.09
	37 m depth	m	116000.09	116000.09	127600.12	127600.12
	38 m depth	m	127600.12	127600.12	140360.12	140360.12
	39 m depth	m	140360.12	140360.12	154396.13	154396.13
	40 m depth	m	154396.13	154396.13	169835.74	169835.74
	C Soft Rock (9m dia well)					
	Depth in Soft rock strata up to 3m	m	17229.70	17229.70	18952.67	18952.67
	D Hard Rock (9m dia well)					
	Depth in hard rock strata upto 3 m	m	17234.38	18678.68	18957.82	20402.12
21.16	Sinking of 10 m external diameter well (other than					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	7941.21	7941.21	8735.33	8735.33
	(ii) Beyond 3m upto 10m depth	m	9306.82	9306.82	10237.50	10237.50
	(iii) 11 m depth	m	9772.16	9772.16	10749.38	10749.38
	12 m depth	m	10260.77	10260.77	11286.85	11286.85
	13 m depth	m	10773.81	10773.81	11851.19	11851.19
	14 m depth	m	11312.50	11312.50	12443.75	12443.75
	15 m depth	m	11878.13	11878.13	13065.94	13065.94
	16 m depth	m	12472.04	12472.04	13719.24	13719.24
	17 m depth	m	13095.64	13095.64	14405.20	14405.20
	18 m depth	m	13750.42	13750.42	15125.46	15125.46
	19 m depth	m	14437.94	14437.94	15881.73	15881.73
	20 m depth	m	15159.84	15159.84	16675.82	16675.82
	(iv) 21 m depth	m	19556.20	19556.20	21511.81	21511.81
	22 m depth	m	21022.91	21022.91	23125.20	23125.20
	23 m depth	m	22599.62	22599.62	24859.60	24859.60
	24 m depth	m	24294.60	24294.60	26724.06	26724.06
	25 m depth	m	26116.69	26116.69	28728.36	28728.36
	26 m depth	m	28075.44	28075.44	30882.98	30882.98
	27 m depth	m	30181.10	30181.10	33199.21	33199.21
	28 m depth	m	32444.69	32444.69	35689.15	35689.15
	29 m depth	m	34878.04	34878.04	38365.84	38365.84
	30 m depth	m	37493.89	37493.89	41243.27	41243.27
	(v) 31 m depth	m	41243.28	41243.28	45367.60	45367.60

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	32 m depth	m	45367.61	45367.61	49904.35	49904.35
	33 m depth	m	49904.36	49904.36	54894.79	54894.79
	34 m depth	m	54894.80	54894.80	60384.28	60384.28
	35 m depth	m	60384.29	60384.29	66422.70	66422.70
	36 m depth	m	66422.71	66422.71	73064.98	73064.98
	37 m depth	m	73064.99	73064.99	80371.48	80371.48
	38 m depth	m	80371.49	80371.49	88408.62	88408.62
	39 m depth	m	88408.63	88408.63	97249.49	97249.49
	40 m depth	m	97249.50	97249.50	106974.43	106974.43
	B Clayey Soil					
	(i) Depth below bed level upto 3.0 m	m	10074.23	10074.23	11081.65	11081.65
	(ii) Beyond 3m upto 10m depth	m	13957.45	13957.45	15353.20	15353.20
	(iii) 11 m depth	m	15388.09	15388.09	16926.89	16926.89
	12 m depth	m	16157.49	16157.49	17773.23	17773.23
	13 m depth	m	16965.36	16965.36	18661.89	18661.89
	14 m depth	m	17813.63	17813.63	19594.98	19594.98
	15 m depth	m	18704.31	18704.31	20574.73	20574.73
	16 m depth	m	19639.53	19639.53	21603.47	21603.47
	17 m depth	m	20621.51	20621.51	22683.64	22683.64
	18 m depth	m	21652.59	21652.59	23817.82	23817.82
	19 m depth	m	22735.22	22735.22	25008.71	25008.71
	20 m depth	m	23871.98	23871.98	26259.15	26259.15
	(iv) 21 m depth	m	32077.97	32077.97	35285.72	35285.72
	22 m depth	m	34483.83	34483.83	37932.15	37932.15
	23 m depth	m	37070.10	37070.10	40777.07	40777.07
	24 m depth	m	39850.37	39850.37	43835.35	43835.35
	25 m depth	m	42839.14	42839.14	47123.00	47123.00
	26 m depth	m	46052.07	46052.07	50657.23	50657.23
	27 m depth	m	49505.98	49505.98	54456.52	54456.52
	28 m depth	m	53218.92	53218.92	58540.76	58540.76
	29 m depth	m	57210.34	57210.34	62931.32	62931.32
	30 m depth	m	61501.11	61501.11	67651.17	67651.17
	(v) 31 m depth	m	64945.18	64945.18	71439.65	71439.65
	32 m depth	m	71439.69	71439.69	78583.61	78583.61
	33 m depth	m	78583.67	78583.67	86441.96	86441.96
	34 m depth	m	86442.04	86442.04	95086.15	95086.15
	35 m depth	m	95086.24	95086.24	104594.76	104594.76
	36 m depth	m	104594.87	104594.87	115054.24	115054.24
	37 m depth	m	115054.36	115054.36	126559.67	126559.67
	38 m depth	m	126559.80	126559.80	139215.64	139215.64
	39 m depth	m	139215.77	139215.77	153137.20	153137.20

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	40 m depth	m	153137.36	153137.36	168450.92	168450.92
	C Soft Rock (10m dia well)					
	Depth in Soft rock strata up to 3m	m	18600.78	18600.78	20460.86	20460.86
	D Hard Rock (10m dia well)					
	Depth in hard rock strata upto 3 m	m	19612.16	21200.89	21573.38	23162.11
21.17	Sinking of 11 m external diameter well (other than					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	18452.10	18452.10	20297.31	20297.31
	(ii) Beyond 3m upto 10m depth	m	14089.28	14089.28	17343.42	17343.42
	(iii) 11 m depth	m	14793.74	14793.74	18210.59	18210.59
	12 m depth	m	15533.43	15533.43	19121.12	19121.12
	13 m depth	m	16310.10	16310.10	20077.18	20077.18
	14 m depth	m	17125.61	17125.61	21081.04	21081.04
	15 m depth	m	17981.89	17981.89	22135.09	22135.09
	16 m depth	m	18880.98	18880.98	23241.84	23241.84
	17 m depth	m	19825.03	19825.03	24403.93	24403.93
	18 m depth	m	20816.28	20816.28	25624.13	25624.13
	19 m depth	m	21857.09	21857.09	26905.34	26905.34
	20 m depth	m	22949.94	22949.94	28250.61	28250.61
	(iv) 21 m depth	m	29605.43	29605.43	36443.29	36443.29
	22 m depth	m	31825.84	31825.84	39176.54	39176.54
	23 m depth	m	34212.77	34212.77	42114.78	42114.78
	24 m depth	m	36778.73	36778.73	45273.38	45273.38
	25 m depth	m	39537.13	39537.13	48668.89	48668.89
	26 m depth	m	42502.42	42502.42	52319.06	52319.06
	27 m depth	m	45690.10	45690.10	56242.99	56242.99
	28 m depth	m	49116.85	49116.85	60461.22	60461.22
	29 m depth	m	52800.61	52800.61	64995.82	64995.82
	30 m depth	m	56760.66	56760.66	69870.50	69870.50
	(v) 31 m depth	m	62436.73	62436.73	76857.55	76857.55
	32 m depth	m	68680.40	68680.40	84543.31	84543.31
	33 m depth	m	75548.45	75548.45	92997.65	92997.65
	34 m depth	m	83103.29	83103.29	102297.41	102297.41
	35 m depth	m	91413.61	91413.61	112527.14	112527.14
	36 m depth	m	100554.97	100554.97	123779.86	123779.86
	37 m depth	m	110610.47	110610.47	136157.84	136157.84
	38 m depth	m	121671.52	121671.52	149773.63	149773.63
	39 m depth	m	133838.66	133838.66	164751.00	164751.00
	40 m depth	m	147222.53	147222.53	181226.10	181226.10
	B Clayey Soil					
	(i) Depth below bed level upto 3.0 m	m	16941.94	16941.94	18636.13	18636.13
	(ii) Beyond 3m upto 10m depth	m	28900.02	28900.02	31790.02	31790.02
	(iii) 11 m depth	m	31862.27	31862.27	35048.50	35048.50
	12 m depth	m	33455.38	33455.38	36800.93	36800.93
	13 m depth	m	35128.15	35128.15	38640.98	38640.98
	14 m depth	m	36884.56	36884.56	40573.03	40573.03
	15 m depth	m	38728.79	38728.79	42601.68	42601.68

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	16 m depth	m	40665.23	40665.23	44731.76	44731.76
	17 m depth	m	42698.49	42698.49	46968.35	46968.35
	18 m depth	m	44833.41	44833.41	49316.77	49316.77
	19 m depth	m	47075.08	47075.08	51782.61	51782.61
	20 m depth	m	49428.83	49428.83	54371.74	54371.74
	(iv) 21 m depth	m	66420.00	66420.00	73062.03	73062.03
	22 m depth	m	71401.50	71401.50	78541.68	78541.68
	23 m depth	m	76756.62	76756.62	84432.32	84432.32
	24 m depth	m	82513.36	82513.36	90764.73	90764.73
	25 m depth	m	88701.86	88701.86	97572.09	97572.09
	26 m depth	m	95354.50	95354.50	104890.00	104890.00
	27 m depth	m	102506.09	102506.09	112756.75	112756.75
	28 m depth	m	110194.05	110194.05	121213.50	121213.50
	29 m depth	m	118458.60	118458.60	130304.52	130304.52
	30 m depth	m	127342.99	127342.99	140077.35	140077.35
	(v) 31 m depth	m	134474.19	134474.19	147921.68	147921.68
	32 m depth	m	147921.62	147921.62	162713.86	162713.86
	33 m depth	m	162713.78	162713.78	178985.25	178985.25
	34 m depth	m	178985.15	178985.15	196883.77	196883.77
	35 m depth	m	196883.67	196883.67	216572.15	216572.15
	36 m depth	m	216572.03	216572.03	238229.38	238229.38
	37 m depth	m	238229.25	238229.25	262052.30	262052.30
	38 m depth	m	262052.16	262052.16	288257.53	288257.53
	39 m depth	m	288257.38	288257.38	317083.28	317083.28
	40 m depth	m	317083.12		348791.61	348791.61
	C Soft Rock (11m dia well)					
	Depth in Soft rock strata up to 3m	m	41387.72	41387.72	45526.49	45526.49
	D Hard Rock (11m dia well)					
	Depth in hard rock strata upto 3 m	m	44819.26	48285.58	49301.19	52767.51
21.18	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.The rate inclusive of dewatering.					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	37866.16	37866.16	41652.78	41652.78
	(ii) Beyond 3m upto 10m depth	m	42461.84	42461.84	46708.02	46708.02
	(iii) 11 m depth	m	44584.93	44584.93	49043.43	49043.43
	12 m depth	m	46814.18	46814.18	51495.60	51495.60
	13 m depth	m	49154.89	49154.89	54070.38	54070.38
	14 m depth	m	51612.63	51612.63	56773.90	56773.90

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	15 m depth	m	54193.26	54193.26	59612.60	59612.60
	16 m depth	m	56902.92	56902.92	62593.23	62593.23
	17 m depth	m	59748.07	59748.07	65722.89	65722.89
	18 m depth	m	62735.47	62735.47	69009.03	69009.03
	19 m depth	m	65872.24	65872.24	72459.48	72459.48
	20 m depth	m	69165.85	69165.85	76082.45	76082.45
(iv)	21 m depth	m	89223.95	89223.95	98146.36	98146.36
	22 m depth	m	95915.75	95915.75	105507.34	105507.34
	23 m depth	m	103109.42	103109.42	113420.39	113420.39
	24 m depth	m	110842.63	110842.63	121926.91	121926.91
	25 m depth	m	119155.82	119155.82	131071.43	131071.43
	26 m depth	m	128092.51	128092.51	140901.78	140901.78
	27 m depth	m	137699.45	137699.45	151469.41	151469.41
	28 m depth	m	148026.91	148026.91	162829.62	162829.62
	29 m depth	m	159128.93	159128.93	175041.84	175041.84
	30 m depth	m	171063.60	171063.60	188169.98	188169.98
(v)	31 m depth	m	188169.96	188169.96	206986.98	206986.98
	32 m depth	m	206986.96	206986.96	227685.68	227685.68
	33 m depth	m	227685.65	227685.65	250454.26	250454.26
	34 m depth	m	250454.21	250454.21	275499.68	275499.68
	35 m depth	m	275499.62	275499.62	303049.66	303049.66
	36 m depth	m	303049.58	303049.58	333354.62	333354.62
	37 m depth	m	333354.54	333354.54	366690.08	366690.08
	38 m depth	m	366690.00	366690.00	403359.10	403359.10
	39 m depth	m	403359.00	403359.00	443695.01	443695.01
	40 m depth	m	443694.90	443694.90	488064.50	488064.50
	B Clayey Soil					
(i)	Depth below bed level upto 3.0 m	m	41744.84	41744.84	45919.32	45919.32
(ii)	Beyond 3m upto 10m depth	m	71672.28	71672.28	78839.51	78839.51
(iii)	11 m depth	m	79018.68	79018.68	86920.55	86920.55
	12 m depth	m	82969.61	82969.61	91266.58	91266.58
	13 m depth	m	87118.09	87118.09	95829.91	95829.91
	14 m depth	m	91473.99	91473.99	100621.41	100621.41
	15 m depth	m	96047.69	96047.69	105652.48	105652.48
	16 m depth	m	100850.07	100850.07	110935.10	110935.10
	17 m depth	m	105892.57	105892.57	116481.86	116481.86
	18 m depth	m	111187.20	111187.20	122305.95	122305.95
	19 m depth	m	116746.56	116746.56	128421.25	128421.25
	20 m depth	m	122583.89	122583.89	134842.31	134842.31
(iv)	21 m depth	m	164722.10	164722.10	181194.35	181194.35
	22 m depth	m	177076.25	177076.25	194783.93	194783.93
	23 m depth	m	190356.97	190356.97	209392.72	209392.72
	24 m depth	m	204633.74	204633.74	225097.17	225097.17
	25 m depth	m	219981.28	219981.28	241979.47	241979.47
	26 m depth	m	236479.88	236479.88	260127.93	260127.93
	27 m depth	m	254215.87	254215.87	279637.52	279637.52
	28 m depth	m	273282.06	273282.06	300610.34	300610.34

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
	29 m depth	m	293778.22	293778.22	323156.12	323156.12
	30 m depth	m	315811.59	315811.59	347392.82	347392.82
	(v) 31 m depth	m	333497.04	333497.04	366846.81	366846.81
	32 m depth	m	366846.74	366846.74	403531.50	403531.50
	33 m depth	m	403531.42	403531.42	443884.64	443884.64
	34 m depth	m	443884.56	443884.56	488273.11	488273.11
	35 m depth	m	488273.01	488273.01	537100.41	537100.41
	36 m depth	m	537100.32	537100.32	590810.46	590810.46
	37 m depth	m	590810.35	590810.35	649891.50	649891.50
	38 m depth	m	649891.38	649891.38	714880.66	714880.66
	39 m depth	m	714880.52	714880.52	786368.72	786368.72
	40 m depth	m	786368.57	786368.57	865005.60	865005.60
	C Soft Rock (12m dia well)					
	Depth in Soft rock strata up to 3m	m	96700.56	96700.56	106370.62	106370.62
	D Hard Rock (12m dia well)					
	Depth in hard rock strata upto 3 m	m	106535.72	114623.80	117189.29	125277.37
21.19	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.The rate inclusive of dewatering (Well size 12 m x 6 m)					
	A Sandy Soil					
	(i) Depth below bed level upto 3.0 m	m	8543.15	8543.15	9397.47	9397.47
	(ii) Beyond 3m upto 10m depth	m	9217.47	9217.47	10139.22	10139.22
	(iii) 11 m depth	m	9678.34	9678.34	10646.18	10646.18
	12 m depth	m	10162.26	10162.26	11178.49	11178.49
	13 m depth	m	10670.37	10670.37	11737.41	11737.41
	14 m depth	m	11203.89	11203.89	12324.28	12324.28
	15 m depth	m	11764.08	11764.08	12940.49	12940.49
	16 m depth	m	12352.28	12352.28	13587.51	13587.51
	17 m depth	m	12969.89	12969.89	14266.89	14266.89
	18 m depth	m	13618.38	13618.38	14980.23	14980.23
	19 m depth	m	14299.30	14299.30	15729.24	15729.24
	20 m depth	m	15014.27	15014.27	16515.70	16515.70
	(iv) 21 m depth	m	19368.00	19368.00	21305.00	21305.00
	22 m depth	m	20821.00	20821.00	22903.00	22903.00
	23 m depth	m	22383.00	22383.00	24621.00	24621.00
	24 m depth	m	24061.00	24061.00	26467.00	26467.00
	25 m depth	m	25866.00	25866.00	28453.00	28453.00
	26 m depth	m	27806.00	27806.00	30586.00	30586.00
	27 m depth	m	29891.00	29891.00	32880.00	32880.00
	28 m depth	m	32133.00	32133.00	35346.00	35346.00
	29 m depth	m	34543.00	34543.00	37997.00	37997.00
	30 m depth	m	37134.00	37134.00	40847.00	40847.00

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
	(v)	31 m depth	m	40847.00	40847.00	44932.00	44932.00
		32 m depth	m	44932.00	44932.00	49425.00	49425.00
		33 m depth	m	49425.00	49425.00	54368.00	54368.00
		34 m depth	m	54368.00	54368.00	59804.00	59804.00
		35 m depth	m	59804.00	59804.00	65785.00	65785.00
		36 m depth	m	65785.00	65785.00	72363.00	72363.00
		37 m depth	m	72363.00	72363.00	79600.00	79600.00
		38 m depth	m	79600.00	79600.00	87560.00	87560.00
		39 m depth	m	87560.00	87560.00	96316.00	96316.00
		40 m depth	m	96316.00	96316.00	105947.00	105947.00
	B	Clayey Soil					
	(i)	Depth below bed level upto 3.0 m	m	10122.01	10122.01	11134.21	11134.21
	(ii)	Beyond 3m upto 10m depth	m	15507.98	15507.98	17058.78	17058.78
	(iii)	11 m depth	m	17098.00	17098.00	18807.00	18807.00
		12 m depth	m	17952.00	17952.00	19748.00	19748.00
		13 m depth	m	18850.00	18850.00	20735.00	20735.00
		14 m depth	m	19793.00	19793.00	21772.00	21772.00
		15 m depth	m	20782.00	20782.00	22860.00	22860.00
		16 m depth	m	21821.00	21821.00	24003.00	24003.00
		17 m depth	m	22912.00	22912.00	25204.00	25204.00
		18 m depth	m	24058.00	24058.00	26464.00	26464.00
		19 m depth	m	25261.00	25261.00	27787.00	27787.00
		20 m depth	m	26524.00	26524.00	29176.00	29176.00
	(iv)	21 m depth	m	35641.52	35641.52	39205.67	39205.67
		22 m depth	m	38314.64	38314.64	42146.09	42146.09
		23 m depth	m	41188.23	41188.23	45307.04	45307.04
		24 m depth	m	44277.35	44277.35	48705.07	48705.07
		25 m depth	m	47598.14	47598.14	52357.95	52357.95
		26 m depth	m	51168.00	51168.00	56284.79	56284.79
		27 m depth	m	55005.60	55005.60	60506.15	60506.15
		28 m depth	m	59131.02	59131.02	65044.10	65044.10
		29 m depth	m	63565.86	63565.86	69922.42	69922.42
		30 m depth	m	68333.30	68333.30	75166.60	75166.60
	(v)	31 m depth	m	72160.00	72160.00	79376.00	79376.00
		32 m depth	m	79376.00	79376.00	87314.00	87314.00
		33 m depth	m	87314.00	87314.00	96045.00	96045.00
		34 m depth	m	96045.00	96045.00	105649.00	105649.00
		35 m depth	m	105649.00	105649.00	116214.00	116214.00
		36 m depth	m	116214.00	116214.00	127836.00	127836.00
		37 m depth	m	127836.00	127836.00	140619.00	140619.00
		38 m depth	m	140619.00	140619.00	154681.00	154681.00
		39 m depth	m	154681.00	154681.00	170149.00	170149.00
		40 m depth	m	170149.00	170149.00	187164.00	187164.00
	C	Soft Rock					
		Depth in Soft rock strata up to 3m	m	22015.74	22015.74	24217.31	24217.31
	D	Hard Rock					
		Depth in hard rock strata upto 3 m	m	21831.63	23275.93	24014.79	25459.09

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
21.20	Sand Filling in Wells complete as per Drawing and Technical Specifications.	cum	53.75	321.18	59.13	326.56
21.21	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.	t	8802.49	53299.01	9682.74	54179.26
21.22	Bored cast-in-situ M35 grade RCC Pile having pile dia 1.0 m excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.	m	4814.99	7338.14	5296.49	7819.64
21.23	Bored cast-in-situ M35 grade RCC Pile having pile dia 1.2 m excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.	m	5551.35	9183.41	6106.48	9738.54
21.24	Pile Load Test on single Vertical Pile in accordance with IS:2911(Part-IV) (The rates are for estimate purpose only.)					
	a) Initial and routine load test	t		700.00		
	b) Lateral load test	t		5750.00		
21.25	Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification.					
	A RCC Grade M20					
	(i) Using Concrete Mixer	cum	836.26	3444.41	919.89	3528.04
	(ii) Using Batching Plant, Transit Mixer and Concrete Pump	cum	583.97	3192.12	642.37	3250.52
	B RCC Grade M25					
	(i) Using Concrete Mixer	cum	747.10	3681.59	821.81	3756.30
	(ii) Using Batching Plant, Transit Mixer and Concrete Pump	cum	598.82	3533.31	658.70	3593.19
	C RCC Grade M30					
	(i) Using Concrete Mixer	cum	748.16	3705.97	822.98	3780.79
	(ii) Using Batching Plant, Transit Mixer and Concrete Pump	cum	602.80	3624.78	663.08	3685.06
	D RCC Grade M35					
	(i) Using Concrete Mixer	cum	752.14	3797.36	827.35	3872.57

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
	(ii)	Using Batching Plant, Transit Mixer and Concrete Pump	cum	603.86	3649.08	664.25	3709.47
21.26		Levelling Course for Pile cap					
		Providing and laying of PCC M15 levelling course 100mm thick below the pile cap.	cum	569.13	2743.86	626.04	2800.77
21.27		Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications.	t	1677.83	49901.88	1845.61	50069.66
SUB STRUCTURE							
21.28		Brick masonry work in 1:3 in sub-structure complete excluding pointing and plastering, as per drawing and Technical Specifications.	cum	743.88	3274.50	818.27	3348.89
21.29		Pointing with cement mortar (1:3) on brick work in substructure as per Technical Specifications.	Sqm	43.10	53.00	47.41	57.31
21.30		Plastering with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications.	sqm	43.10	90.61	47.41	94.92
21.31		Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications.					
	A	Random Rubble Masonry	cum	896.25	2604.51	985.88	2694.14
	B	Coursed rubble masonry (first sort)	cum	1041.12	2705.04	1145.23	2809.15
	C	Ashlar masonry (first sort)	cum	1541.00	3309.38	1695.10	3463.48
21.32		Plain/ Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications					
	A	PCC Grade M15					
		Height upto 5m	cum	869.29	3044.02	956.22	3130.95
	B	PCC Grade M20					
		Height upto 5m	cum	915.56	3497.01	1007.12	3588.57
	C	PCC Grade M25					
		Height upto 5m					
	(i)	Using concrete Mixer	cum	952.02	3853.98	1047.22	3949.18

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump.	cum	792.82	3694.78	872.10	3774.06
		Height 5m to 10m					
	(i)	Using concrete Mixer	cum	1106.69	4008.65	1217.36	4119.32
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	941.71	3843.67	1035.88	3937.84
		Height above 10m					
	(i)	Using concrete Mixer	cum	1300.04	4202.00	1430.04	4332.00
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	1127.82	4029.78	1240.60	4142.56
	D	PCC Grade M30					
		Height upto 5m					
	(i)	Using concrete Mixer	cum	956.00	3892.93	1051.60	3988.53
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	796.80	3733.73	876.48	3813.41
		Height 5m to 10m					
	(i)	Using concrete Mixer	cum	1112.26	4049.19	1223.49	4160.42
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	947.28	3884.21	1042.01	3978.94
		Height above 10m					
	(i)	Using concrete Mixer	cum	1307.59	4244.52	1438.35	4375.28
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	1135.37	4072.30	1248.91	4185.84
	E	RCC Grade M20					
		Height upto 5m					
	(i)	Using concrete Mixer	cum	921.39	3529.54	1013.53	3621.68
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	759.40	3367.55	835.34	3443.49
		Height 5m to 10m					
	(i)	Using concrete Mixer	cum	1063.81	3671.96	1170.19	3778.34
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	894.91	3503.06	984.40	3592.55
		Height above 10m					
	(i)	Using concrete Mixer	cum	1241.84	3849.99	1366.02	3974.17
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	1064.31	3672.46	1170.74	3778.89
	F	RCC Grade M25					
		Height upto 5m					
	(i)	Using concrete Mixer	cum	955.72	3890.21	1051.29	3985.78
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	796.53	3731.02	876.18	3810.67
		Height 5m to 10m					
	(i)	Using concrete Mixer	cum	1096.26	4030.75	1205.89	4140.38

Sr. No.	Description		Unit	Plain		Sub-Mountainous	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	931.85	3866.34	1025.04	3959.53
		Height above 10m					
	(i)	Using concrete Mixer	cum	1307.07	4241.56	1437.78	4372.27
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	1134.85	4069.34	1248.34	4182.83
	G	RCC Grade M30					
		Height upto 5m					
	(i)	Using concrete Mixer	cum	958.37	3916.18	1054.21	4012.02
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	799.18	3756.99	879.10	3836.91
		Height 5m to 10m					
	(i)	Using concrete Mixer	cum	1080.22	4038.03	1188.24	4146.05
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	916.53	3874.34	1008.18	3965.99
		Height above 10m					
	(i)	Using concrete Mixer	cum	1253.15	4210.96	1378.47	4336.28
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	1083.10	4040.91	1191.41	4149.22
	H	RCC Grade M35					
		Height upto 5m					
	(i)	Using concrete Mixer	cum	968.32	4013.54	1065.15	4110.37
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	809.12	3854.34	890.03	3935.25
		Height 5m to 10m					
	(i)	Using concrete Mixer	cum	1065.03	4110.25	1171.53	4216.75
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	902.37	3947.59	992.61	4037.83
		Height above 10m					
	(i)	Using concrete Mixer	cum	1210.11	4255.33	1331.12	4376.34
	(ii)	With Batching Plant, Transit Mixer and Concrete Pump	cum	1042.23	4087.45	1146.45	4191.67
21.33		Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and Technical Specifications	t	1752.73	49976.78	1928.00	50152.05

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
21.34	Supplying, fitting and placing Mild steel reinforcement complete in sub-structure as per drawing and Technical Specification	t	1427.32	47603.27	1570.05	47746.00
21.35	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia PVC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing face. Complete as per drawing and Technical Specifications.	No	6.34	144.68	6.97	145.31
21.36	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification.					
	A Granular material	cum	155.63	539.83	171.19	555.39
	B Sandy material	cum	155.63	423.06	171.19	438.62
21.37	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.	cum	155.25	619.08	170.78	634.61
21.38	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.	Per tonne cap.	1.15	449.89	1.27	450.01

Sr. No.	Description	Unit	Plain		Sub-Mountainous	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
21.39	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.	Per tonne cap.	1.15	834.54	1.27	834.66
21.40	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.	Per tonne cap.	3.60	220.17	3.96	220.53
21.41	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.	cu cm	0.02	0.54	0.02	0.54
21.42	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.	Per tonne cap	1.51	142.28	1.66	142.43