PUBLIC WORKS DEPARTMENT ARUNACHAL PRADESH



2023 ANALYSIS OF RATES

FOR ROAD AND BRIDGE WORKS

ZERO LEAD BASED (EXCLUDING CARRIAGE COST)

PUBLISHED UNDER THE AUTHORITY OF THE CHIEF ENGINEER (CSQ) P.W.D., ARUNACHAL PRADESH, ITANAGAR

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(A) Usage Rates of Plant and Machinery								
Code	Description of Machine	Activity	Output of Machine	Output	Unit	Rate		
P&M-001	Air Compressor	General Purpose	capacity in cfm	170/250	hour	658.00		
P&M-002	Batching and Mixing Plant (a) 30 cum capacity	Concrete Mixing	cum/hour	20	hour	3,200.00		
P&M-003	Batching and Mixing Plant (b) 15 - 20 cum capacity	Concrete Mixing	cum/hour	13	hour	3,154.00		
P&M-004	Bitumen Pressure Distributor	Applying bitumen tack coat	sqm/hour	1750	hour	1,509.00		
P&M-005	Bitumen Boiler oil fired	Bitumen Spraying	capacity in litre	1500	hour	348.00		
P&M-006	Concrete Paver Finisher with 40 HP Motor	Paving of concrete surface	cum / hour	20	hour	3,690.00		
P&M-007	Concrete Pump of 45 & 30 cum capacity	Pumping of concrete	cum / hour	33 / 22	hour	2,726.00		
P&M-008	Concrete Bucket	For Pouring concrete	capacity in cum	1	hour	22.00		
P&M-009	Concrete Mixer (a) 0.4/0.28 cum	Concrete Mixing	cum/hour	2.5	hour	291.00		
P&M-010	Concrete Mixer (b) 1 cum	Concrete Mixing	cum/hour	7.5	hour	306.00		
P&M-011	Crane (a) 80 tonnes	Lifting Purpose			hour	1,665.00		
P&M-012	Cranes b) 35 tonnes	Lifting Purpose			hour	1,166.00		
P&M-013	Cranes c) 3 tonnes	Lifting Purpose			hour	490.00		
P&M-014	Dozer D - 80 - A 12	Spreading /Cutting / Clearing	cum/hour	300/ 150/250	hour	5,045.00		
P&M-015	Dozer D - 50 - A 15	Spreading /Cutting / Clearing	cum/hour	200/ 120/150	hour	3,398.00		
P&M-016	Emulsion Pressure Distributor	Applying emulsion tack coat	sqm/hour	1750	hour	1,160.00		
P&M-017	Front End loader 1 cum bucket capacity	Soil loading / Aggregate loading	cum/hour	60 /25	hour	1,838.00		

P&M-018	Generator (a) 125 KVA	Genration of electric Energy	KVA	100	hour	1,135.00
P&M-019	Generator(b) 63 KVA	Genration of electric Energy	KVA	50	hour	883.00
P&M-020	GSB Plant 50 cum	Producing GSB	cum/hour	40	hour	1,511.00
P&M-021	Hotmix Plant - 120 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	40	hour	32,730.00
P&M-022	Hotmix Plant - 100 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	30	hour	25,480.00
P&M-023	Hotmix Plant - 60 to 90 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	25	hour	20,099.00
P&M-024	Hotmix Plant - 40 to 60 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	17	hour	15,405.00
P&M-025	Hydraulic Chip Spreader	Surface Dressing	sqm/hour	1500	hour	3,640.00
P&M-026	Hydraulic Excavator of 1 cum bucket	Soil Ordinary/Soil Marshy / Soil Unsuitable	cum/hour	60 /60 /60	hour	2,044.00
P&M-027	Integrated Stone Crusher 100THP	Crushing of Spalls	TPH	100	hour	11,408.00
P&M-028	Integrated Stone Crusher 200 HP	Crushing of Spalls	TPH	200	hour	22,887.00
P&M-029	Kerb Casting Machine	Kerb Making	Rm/hour	80	hour	407.00
P&M-030	Mastic Cooker	Mastic Wearing coat	capacity in tonne	1	hour	135.00
P&M-031	Mechanical Broom Hydraulic	Surface Cleaning	sqm/hour	1250	hour	473.00
P&M-032	Motor Grader 3.35 mtr blade	Clearing /Spreading /GSB /WBM	cum/hour	200/200/5	hour	3,247.00
P&M-033	Mobile slurry seal equipment	Mixing and laying slurry seal	sqm/hour	2700	hour	1,328.00
P&M-034	Paver Finisher Hydrostatic with sensor control 100 TPH	Paving of DBM/ BM/SDC/ Premix	cum/hour	40	hour	3,847.00
P&M-035	Paver Finisher Mechanical 100 TPH	Paving of WMM /Paving of DLC	cum/hour	40/30	hour	1,386.00
P&M-036	Piling Rig with Bantonite Pump	0.75 m dia to 1.2 m dia Boring attachment	Rm/hour	2 to 3	hour	10,129.00
P&M-037	Pneumatic Road Roller	Rolling of Asphalt Surface	cum/hour	25	hour	1,708.00
P&M-038	Pneumatic Sinking Plant	Pneumatic Sinking of wells	cum/hour	1.5 to 2.00	hour	5,508.00

P&M-039	Pot Hole Repair Machine	Repair of potholes	cum/hour	4	hour	1,207.00
P&M-040	Prestressing Jack with Pump & access	Stressing of steel wires/stands			hour	170.00
P&M-041	Ripper	Scarifying	cum/hour	60	hour	88.00
P&M-042	Rotavator	Scarifying	cum/hour	25	hour	57.00
P&M-043	Road marking machine	Road marking	Sqm/hour	100	hour	128.00
P&M-044	Smooth Wheeled Roller 8 tonne	Soil Compaction /BM Compaction	cum/hour	70/25	hour	783.00
P&M-045	Tandem Road Roller	Rolling of Aspalt Surface	cum/hour	30	hour	1,641.00
P&M-046	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	km	87.00
P&M-047	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	tonne.km	87.00
P&M-048	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	hour	916.00
P&M-049	Transit Mixer 4.0/4.5 cum	Transportation of Concrete Mix to site	cum/hour	4.5	hour	1,265.00
P&M-050	Transit Mixer 4/4.5 cum	Transportation of Concrete Mix to site	cum/hour	4.5	tonne.km	80.00
P&M-051	Transit Mixer 3.0 cum	Transportation of Concrete Mix to site	cum/hour	3	hour	1,174.00
P&M-052	Transit Mixer 3.0 cum	Transportation of Concrete Mix to site	cum/hour	3	tonne.km	79.00
P&M-053	Tractor	Pulling	capacity in HP	50	hour	530.00
P&M-054	Tractor with Rotevator	Rate of Tractor + Rotevator			hour	494.00
P&M-055	Tractor with Ripper	Rate of Tractor 6+ Ripper			hour	511.00
P&M-056	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	km	106.00
P&M-057	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	hour	778.00
P&M-058	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	tonne.km	18.00
P&M-059	Three wheel 80-100 kN Statis Roller	Earth or soil / GSB / WBM	cum/hour	100/60/60	hour	969.00
P&M-060	Water Tanker	Water Transport	capacity in KL	6	hour	724.00
P&M-061	Water Tanker	Water Transport	capacity in KL	6	km	77.00
P&M-062	Wet Mix Plant 60 TPH	Wet Mix	cum/hour	25	hour	1,731.00
P&M-062 (A)	Vibratory roller 8 to 10 tonne	Intermediate rolling.	cum/hour	3.9	hour	856.00

Code	Description of Machine	Unit	Rate
P&M-063	Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	723.00
P&M-064	Batch type cold mixing plant 100-120 TPH capacity producing an average output of 75 tonne per hour	hour	23,790.00
P&M-065	Belt conveyor system	hour	2,233.00
P&M-066	Boat to carry atleast 20 persons	hour	2,278.00
P&M-067	Cement concrete batch mix plant @ 20 cum per hour (effective output)	hour	3,770.00
P&M-068	Cement concrete batch mix plant @ 75 cum per hour	hour	5,170.00
P&M-069	Cold milling machine @ 20 cum per hour	hour	input
P&M-070	Crane 5 tonne capacity	hour	827.00
P&M-071	Crane 10 tonne capacity	hour	838.00
P&M-072	Crane 15 tonne capacity	hour	902.00
P&M-073	Crane 20 tonne capacity	hour	1,452.00
P&M-074	Crane 40 T capacity	hour	1,447.00
P&M-075	Crane with grab 0.75 cum capacity	hour	1,040.00
P&M-076	Compressor with guniting equipment along with accessories	hour	896.00
P&M-077	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	449.00
P&M-078	Epoxy Injection gun	hour	3,723.00
P&M-079	Generator 33 KVA	hour	506.00
P&M-080	Generator 100 KVA	hour	938.00
P&M-081	Generator 250 KVA	hour	1,154.00

P&M-082	Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	input
	and accessories for priediffalle frietrod of well sillking.		
P&M-083	Joint Cutting Machine with 2-3 blades (for rigid pavement)	hour	143.00
P&M-084	Jack for Lifting 40 tonne lifting capacity.	day	input
P&M-085	Piling rig Including double acting pile driving hammer (Hydraulic rig)	hrs	7,335.00
P&M-086	Plate compactor	hour	382.00
P&M-087	Snow blower equipment 140 HP @ 600 cum per hour	hour	input
P&M-088	Texturing machine (for rigid pavement)	hour	301.00
P&M-089	Truck Trailor 30 tonne capacity	hour	input
P&M-090	Truck Trailor 30 tonne capacity	t.km	input
P&M-091	Tunnel Boring machine	hour	input
P&M-092	Vibrating Pile driving hammer complete with power unit and accessories.	hour	input
P&M-093	Wet Mix Plant 100 TPH	hour	2,240.00
P&M-094	Wet Mix Plant 75 TPH	hour	1,794.00
P&M-095	Hot mix Plant -120 TPH capacity	hour	16,471.00
P&M-096	Hot mix Plant -100 TPH capacity	hour	13,681.00
P&M-097	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	10,712.00
P&M-098	Backhoe-loader	hour	2,200.00

	(B) Labour				
Code	Description of Labour	Unit	Rate		
L-01	Blacksmith (IInd class)	day	551.00		
L-02	Blacksmith (Ist class)/ Welder/ Plumber/ Electrician	day	593.00		
L-03	Blaster (Stone cutter)	day	551.00		
L-04	Carpenter I Class	day	593.00		
L-05	Chiseller (Head Mazdoor)	day	551.00		
L-06	Driller (Jumper)	day	551.00		
L-07	Diver	day	869.00		
L-08	Fitter	day	593.00		
L-09	Mali	day	551.00		
L-10	Mason (IInd class)	day	551.00		
L-11	Mason (Ist class)	day	593.00		
L-12	Mate / Supervisor	day	551.00		
L-13	Mazdoor	day	424.00		
L-14	Mazdoor/Dresser (Semi Skilled)	day	424.00		
L-15	Mazdoor/Beldar/Dresser/Sinker (Skilled)	day	508.00		
L-16	Medical Officer	day	1,490.00		
L-17	Operator(grouting)	day	593.00		
L-18	Painter I class	day	593.00		
L-19	Para medical personnel	day	869.00		
L-20	Beldar	day	424.00		
L-21	Coolie	day	424.00		
L-21	Bhisti	day	424.00		

	(C) Materials		
Code	Description	Unit	Rate
M-001	Stone Boulder of size 150 mm and below at Cruser Plant	cum	956.00
M-002	Supply of quarried stone 150 - 200 mm size for Hand Broken at site	cum	923.00
M-003	Boulder with minimum size of 300 mm for Pitching at Site	cum	893.00
M-004	Coarse sand at Mixing Plant	cum	650.00
M-005	Coarse sand at Site	cum	650.00
M-006	Fine sand at Site	cum	650.00
M-007	Moorum at Site	cum	350.00
M-008	Gravel/Quarry spall at Site	Cum	300.00
M-009	Granular Material or hard murrum for GSB works at Site	Cum	500.00
M-010	Granular Material or hard murrum for GSB works at Mixing Plant	Cum	450.00
M-011	Fly ash conforming to IS: 3812 (Part II & I) atHMP Plant / Batching Plant / Crushing Plant	Cum	input
M-012	Filter media/Filter Material as per Table 300-3 (MoRT&H Specification)	Cum	1,450.00

Code	Description	Unit	Rate at Plant (HMP/Bat ching)	Rate at Site
M-013	Close graded Granular sub-base Material 53 mm to 9.5 mm	cum	900.00	900.00
M-014	Close graded Granular sub-base Material 37.5 mm to 9.5 mm	cum	880.00	880.00
M-015	Close graded Granular sub-base Material 26.5 mm to 9.5 mm	cum	850.00	850.00
M-016	Close graded Granular sub-base Material 9.5 mm to 4.75 mm	cum	800.00	800.00
M-017	Close graded Granular sub-base Material 9.5 mm to 2.36 mm	cum	780.00	780.00
M-018	Close graded Granular sub-base Material 4.75mm to 2.36 mm	cum	750.00	750.00
M-019	Close graded Granular sub-base Material 4.75mm to 75 micron mm	cum	720.00	720.00
M-020	Close graded Granular sub-base Material 2.36 mm	cum	700.00	700.00
M-021	Stone crusher dust finer than 3mm with not more than 10% passing 0.075 sieve.	cum	700.00	700.00
M-022	Coarse graded Granular sub-base Material 2.36 mm & below	cum	700.00	700.00
M-023	Coarse graded Granular sub-base Material 4.75mm to 75 micron mm	cum	720.00	720.00
M-024	Coarse graded Granular sub-base Material 4.75 mm to 2.36 mm	cum	780.00	780.00
M-025	Coarse graded Granular sub-base Material 9.5 mm to 4.75 mm	cum	800.00	800.00
M-026	Coarse graded Granular sub-base Material 26.5 mm to 4.75 mm	cum	850.00	850.00
M-027	Coarse graded Granular sub-base Material 26.5 mm to 9.5 mm	cum	850.00	850.00
M-028	Coarse graded Granular sub-base Material 37.5 mm to 9.5 mm	cum	880.00	880.00
M-029	Coarse graded Granular sub-base Material 53 mm to 26 .5mm	cum	900.00	900.00
M-030	Aggregates below 5.6 mm	cum	1,300.00	1,300.00
M-031	Aggregates 22.4 mm to 2.36 mm	cum	1,020.00	1,020.00
M-032	Aggregates 22.4 mm to 5.6 mm	cum	1,590.00	1,590.00
M-033	Aggregates 45 mm to 2.8 mm	cum	790.00	790.00
M-034	Aggregates 45 mm to 22.4 mm	cum	1,010.00	1,010.00
M-035	Aggregates 53 mm to 2.8 mm	cum	850.00	850.00
M-036	Aggregates 53 mm to 22.4 mm	cum	1,010.00	1,010.00
M-037	Aggregates 63 mm to 2.8 mm	cum	820.00	820.00
M-038	Aggregates 63 mm to 45 mm	cum	980.00	980.00

Aggregates 90 mm to 45 mm	cum	950.00	950.00
Aggregates 10 mm to 5 mm	cum	1,550.00	1,550.00
Aggregates 11.2 mm to 0.09 mm	cum	1,500.00	1,500.00
Aggregates 13.2 mm to 0.09 mm	cum	1,200.00	1,200.00
Aggregates 13.2 mm to 5.6 mm	cum	1,600.00	1,600.00
Aggregates 13.2 mm to 10 mm	cum	1,580.00	1,580.00
Aggregates 20 mm to 10 mm	cum	1,850.00	1,850.00
Aggregates 25 mm to 10 mm	cum	1,860.00	1,860.00
Aggregates 19 mm to 6 mm	cum	1,600.00	1,600.00
Aggregates 37.5 mm to 19 mm	cum	1,900.00	1,900.00
Aggregates 37.5 mm to 25 mm	cum	1,910.00	1,910.00
Aggregates 6 mm nominal size	cum	1,300.00	1,300.00
Aggregates 10 mm nominal size	cum	1,800.00	1,800.00
Aggregates 13.2/12.5 mm nominal size	cum	1,820.00	1,820.00
Aggregates 20 mm nominal size	cum	1,900.00	1,900.00
Aggregates 25 mm nominal size	cum	1,920.00	1,920.00
Aggregates 40 mm nominal size	cum	1,900.00	1,900.00
	Aggregates 10 mm to 5 mm Aggregates 11.2 mm to 0.09 mm Aggregates 13.2 mm to 0.09 mm Aggregates 13.2 mm to 5.6 mm Aggregates 13.2 mm to 10 mm Aggregates 20 mm to 10 mm Aggregates 25 mm to 10 mm Aggregates 19 mm to 6 mm Aggregates 37.5 mm to 19 mm Aggregates 37.5 mm to 25 mm Aggregates 10 mm nominal size Aggregates 13.2/12.5 mm nominal size Aggregates 20 mm nominal size Aggregates 20 mm nominal size	Aggregates 10 mm to 5 mm cum Aggregates 11.2 mm to 0.09 mm cum Aggregates 13.2 mm to 0.09 mm cum Aggregates 13.2 mm to 5.6 mm cum Aggregates 13.2 mm to 10 mm cum Aggregates 20 mm to 10 mm cum Aggregates 25 mm to 10 mm cum Aggregates 37.5 mm to 9 mm cum Aggregates 37.5 mm to 19 mm cum Aggregates 37.5 mm to 25 mm cum Aggregates 10 mm nominal size cum Aggregates 13.2/12.5 mm nominal size cum Aggregates 20 mm nominal size cum Aggregates 20 mm nominal size cum Aggregates 20 mm nominal size cum Aggregates 25 mm nominal size cum Aggregates 25 mm nominal size cum	Aggregates 10 mm to 5 mm cum 1,550.00 Aggregates 11.2 mm to 0.09 mm cum 1,500.00 Aggregates 13.2 mm to 0.09 mm cum 1,200.00 Aggregates 13.2 mm to 5.6 mm cum 1,600.00 Aggregates 13.2 mm to 10 mm cum 1,580.00 Aggregates 20 mm to 10 mm cum 1,850.00 Aggregates 25 mm to 10 mm cum 1,600.00 Aggregates 19 mm to 6 mm cum 1,600.00 Aggregates 37.5 mm to 19 mm cum 1,900.00 Aggregates 6 mm nominal size cum 1,300.00 Aggregates 10 mm nominal size cum 1,800.00 Aggregates 20 mm nominal size cum 1,820.00 Aggregates 20 mm nominal size cum 1,900.00 Aggregates 25 mm nominal size cum 1,900.00

Code	Description	Unit	Rate
M-056	AC pipe 100 mm dia	metre	43.00
M-057	Acrylic polymer bonding coat	litre	371.00
M-058	Alluminium Paint	litre	355.00
M-059	Aluminium alloy plate 2mm Thick	sqm	input
M-060	Aluminium alloy/galvanised steel	tonne	63,142.00
M-061	Aluminium sheeting fixed with encapsulated lens type reflective sheeting including 2% towards lettering, cost of angle iron, cost of drilling holes, nuts, bolts etc.and signs as applicable	sqm	170.00
M-062	Aluminium studs 100 x 100 mm fitted with lense reflectors	nos	567.00
M-063	G. I Barbed wire	kg	102.00
M-064	Bearing (Cost of parts)	nos	input
M-065	Bearing (Cast steel rocker bearing assembly of 250 tonne)	nos	3,44,046.00
M-066	Bearing (Elastomeric bearing assembly consisting of 7 internal layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)	nos	16,514.00
M-067	Bearing (Forged steel roller bearing of 250 tonne	nos	3,02,759.00
M-068	Bearing (Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against stainless steel mating together with cast steel assemblies/ fabricated structural steel assemblies duly painted with all components	nos	68,782.00
M-069	Bearing (PTFE sliding plate bearing assembly of 80 tonnes)	nos	2,06,437.00
M-070	Bearing (Supply of sliding plate bearing of 80 tonne)	nos	16,514.00
M-071	Bentonite	kg	14.00
M-072	Binding wire	kg	105.00
M-073	Bitumen (Cationic Emulsion)	tonne	55,000.00
M-074	Bitumen (60-70 grade)	tonne	58,973.00
M-075	Bitumen (80-100 grade)	tonne	57,924.00
M-076	Bitumen (Cutback)	tonne	63,348.00
M-077	Bitumen (emulsion)	tonne	55,000.00
M-078	Bitumen (modified graded)	tonne	58,000.00
M-078 (A)	Bitumen grade PMB - 40	tonne	37,030.00
M-078 (B)	Modified Bitumen Refinary produced CRMB - 60	tonne	35,116.00
M-079	Brick	each	12.00
M-080	C.I.shoes for the pile	kg	66.00

M-081	Cement	tonne	9,100.00
M-082	Cold twisted bars (HYSD Bars)	tonne	67,000.00
M-083	Coller for joints 300 mm dia	nos	143.00
M-084	Compressible Fibre Board(20mm thick)	sqm	798.00
M-085	Connectors/ Staples	each	63.00
M-086	Copper Plate(12m long x 250mmwide)	kg	850.00
M-087	Corrosion resistant Structural steel	tonne	71,000.00
M-088	Corrugated sheet, 3 mm thick, "Thrie" beam section railing	kg	71.00
M-089	Credit for excavated rock found suitable for use	cum	270.00
M-090	Curing compound	liter	59.00
M-091	Delineators from ISI certified firm as per the standard drawing given in IRC - 79	each	input
M-092	Earth Cost or compensation for earth taken from private land	cum	-
M-093	Elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II),	metre	11,591.00
M-094	Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	100 nos	1,159.00
M-095	Epoxy compound with accessories for preparing epoxy mortar	kg	257.00
M-096	Epoxy mortar	kg	input
M-097	Epoxy primer	kg	281.00
M-098	Epoxy resin-hardner mix for prime coat	kg	169.00
M-099	Flag of red color cloth 600 x 600 mm	each	69.00
M-100	Flowering Plants	each	50.00
M-101	Galvanised MS flat clamp	nos	38.00
M-102	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	191.00
M-103	Galvanised structural steel plate 200 mm wide, 6 mm thick, 24 m long	kg	228.00
M-104	Gelatin 80%	kg	166.00
M-105	Geo grids	sqm	input
M-106	Geomembrane	sqm	input
M-107	Geonets	sqm	input
M-108	Geotextile	sqm	54.00
M-109	Geotextile filter fabric	sqm	input
M-110	GI bolt 10 mm Dia	nos	44.60

M-111	Grouting pump with agitator	hour	193.00
M-112	Grass (Doob)	kg	18.00
M-113	Grass (Fine)	kg	18.00
M-114	HDPE pipes 75mm dia	metre	70.00
M-115	HDPE pipes 90mm dia	metre	input
M-116	Hedge plants	each	13.00
M-117	Helical pipes 600mm diameter	metre	1,352.00
M-118	Hot applied thermoplastic compound	litre	209.00
M-119	HTS strand	tonne	74,697.00
M-120	Joint Sealant Compound	kg	340.00
M-121	Jute netting, open weave, 2.5 cm square opening for seeding and Mulching	sqm	15.00
M-122	LDO for steam curing	litre	46.00
M-123	M.S. Clamps	nos	81.00
M-124	M.S. Clamps	kg	257.00
M-125	M.S.shoes @ 35 Kg per pile of 15 m	kg	58.00
M-126	Tor Steel bars	tonne	67,000.00
M-127	Modular strip/box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm assembly comprising of edge beams, central beam,2 modules chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	2,44,696.00
M-128	Modular strip/box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm box/box seal joint assembly containing 3 modules/cells and comprising of edge beams, two central beams, chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	2,70,454.00
M-129	Nipples 12mm	nos	32.00
M-130	Nuts and bolts	kg	120.00
M-131	Paint	litre	450.00
M-132	Pavement Marking Paint	litre	450.00
M-133	Paving Fabric	sqm	input
M-134	Perforated geosynthetic pipe 150 mm dia	metre	input
M-135	Perforated pipe of cement concrete, internal dia 100 mm	metre	150.00
M-136	Pesticide	kg	361.00
M-137	Pipes 200 mm dia, 2.5 m long for drainage	metre	input

M-138	Plastic sheath, 1.25 mm thick for dowel bars	sqm	2.00
M-139	Plastic tubes 50 cm dia, 1.2 m high	nos	input
M-140	Polymer braids	metre	input
M-141	Pre moulded Joint filler,25 mm thick for expansion joint.	sqm	950.00
M-142	Pre-coated stone chips of 13.2 mm nominal size	cum	2,107.00
M-143	Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness.	metre	5,151.00
M-144	Pre-moulded asphalt filler board	sqm	71.00
M-145	Pre-packed cement based polymer concrete of strength 45 Mpa at 28 days	kg	39.00
M-146	Primer (Best Quality)	kg	207.50
M-147	Quick setting compound	kg	59.00
M-148	Random Rubble Stone	cum	605.00
M-149	RCC Pipe NP 2 heavy duty non presure pipe 1000 mm dia	metre	1,800.00
M-150	RCC Pipe NP 2 heavy duty non presure pipe 1200 mm dia	metre	2,210.00
M-151	RCC Pipe NP 2 heavy duty non presure pipe 300 mm dia	metre	490.00
M-152	Reflectorising glass beads	kg	243.00
M-153	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Copper Strips)	metre	input
M-154	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Galvanised carbon steel strips)	metre	input
M-155	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Glass reinforced polymer/fibre reinforced polymer/ polymeric strips)	metre	input
M-156	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Stainless steel strips)	metre	input
M-157	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. Aluminium strips)	metre	381.00
M-158	Rivets	each	1.00
M-159	Sand bags (Cost of sand and Empty cement bag)	nos	11.00
M-160	Sapling 2 m high 25 mm dia	each	103.00
M-161	Scrap tyres of size 900 x 20	nos	150.00
M-162	Seeds	kg	354.00
M-163	Selected earth	cum	212.00
M-164	Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	32.00
M-165	Sheathing duct	metre	116.00
M-166	Shrubs	each	25.00
M-167	Sludge / Farm yard manure @ 0.18 cum per 100 sqm at site of work for turfing	cum	141.00
M-168	Sodium vapour lamp	each	2,125.00

M-169	Square Rubble Coursed Stone	cum	605.00
M-170	Steel circular hollow pole of standard specification for street lighting to mount light at 5 m height above deck level	each	6,500.00
M-171	Steel circular hollow pole of standard specification for street lighting to mount light at 9 m height above road level	each	10,625.00
M-172	Steel drum 300 mm dia 1.2 m high/empty bitumen drum	nos	71.00
M-173	Steel helmet and cushion block on top of pile head during driving.	kg	212.00
M-174	Steel pipe 25 mm external dia as per IS:1239	metre	150.00
M-175	Steel pipe 50 mm external dia as per IS:1239	metre	280.00
M-176	Steel wire rope 20 mm	kg	450.00
M-177	Steel wire rope 40 mm	kg	823.00
M-178	Strip seal expansion join	metre	14,167.00
M-179	Structural Steel	tonne	50,728.00
M-180	Super plastisizer admixture IS marked as per 9103-1999	kg	64.00
M-181	Synthetic Geogrids as per clause 3102.8 and approved design and specifications.	sqm	input
M-182	Through and bond stone	each	15.00
M-183	Tie rods 20mm diameter	nos	289.00
M-184	Tiles size 300 x 300 mm and 25 mm thick	each	input
M-185	Timber	cum	28,685.00
M-186	Traffic cones with 150 mm reflective sleeve	nos	1,545.00
M-187	Tube anchorage set complete with bearing plate, permanent wedges etc	nos	4,894.00
M-188	Unstaked lime	tonne	15,000.00
M-189	Water	KL	71.00
M-190	Water based cement paint	litre	140.00
M-191	Welded steel wire fabric	kg	69.00
M-192	Wire mesh 50mm x 50mm size of 3mm wire	kg	170.00
M-193	Wooden ballies 2" Dia for bracing	each	45.00
M-194	Wooden ballies 8" Dia and 9 m long	each	580.00
M-195	Wooden packing	cum	16,977.00
M-196	Wooden staff for fastening of flag 25 mm dia, one m long	each	71.00
M-197	Coldmix Binder	tonne	66,861.00
M-198	Paving Asphalt VG-30 of approved quality	tonne	41,549.00

M-199	Waste plastic additive	tonne	42,000.00				
M-200	Dry hydrated lime (factory made)	quintal	300.00				
M-201	Mirror polish granite 0.5 Sq.m Granite of any colour, 18 mm thick	sqm	1,739.00				
M-202	M-202 Granite stone slab 30mm thick sqm						
M-203	I-203 Interlocking C.C. paver block, (60 mm thick, M-30) sqm						
M-204	-204 Matt finished vitrified tile 100x100 x16mm sqm						
M-205	-205 Vitrified tile 300x300 x9.8mm sqm						
M-206	Tactile tile 300x300 9.8mm	sqm	1,050.00				
M-207	Coloured inter locking C.C. paver Block	sqm	472.50				
M-208	Interlocking C.C. paver block (80 mm thick, M-30)	sqm	470.00				
M-209	Sundries		2.75				
M-210	Hire and running charges of mech mixer		2.75				
	Lead from Mixing Plant to working site		0				
	Lead for E/W borow area to site		3				
	Lead for fly ash from source to site		50				
Description							
	GST for Road Works 18 % (as a Multiplying factor)		0.2016				
	Overheads for Road Works		10 %				
	Contractors profit for Road Works		10 %				
	Cess for Road Works		1%				
	Overheads for Bridge Works		20 %				
	Overheads for Bridge Works (Rehabilitation)		10 %				
	Contractors profit for Bridge Works		10 %				
Items	Summary of Rates calculated and used for analysis of rates of	Unit	Rate				
No.	other items						
Item 8.3	Printing new letter and figures of any shade (ii) English Roman (As per Analysis Directly Used Items)	per cm height per letter	1.10				
Item 8.8	Painting Two Coats on New Concrete Surfaces (DO)	sqm	162.00				
Item 8.9	Painting angle iron post two coats (DO)	sqm	141.00				

Item 12.6 (B)	Cement mortor 1:2 (Excluding OH & CP) (DO)	cum	7,105.00
Item 12.6 (A)	Cement mortor 1:3 (Excluding OH & CP) (DO)	cum	5,727.00
Item 12.6 (D)	Cement mortor 1:6 (Excluding OH & CP) (DO)	cum	3,823.00
Item 12.7 (A)	Course Rubble masonary in cement mortor 1:3 (including OH & CP) (DO)	cum	6,751.00
Item 12.7 (Addl) B)	Random Rubble masonary in cement mortor 1:6 (including OH & CP) (DO)	cum	5,605.00
Item 12.8 (A)	PCC Grade M15 including OH & CP for Open Foundation by Mixer (DO)	cum	9,371.00
Item 12.8 (A)	PCC Grade M15 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	5,625.00
Item 12.8 (B) PCC	PCC Grade M20 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,090.00
Item 12.8 (C) Case I	RCC Grade M20 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO-	cum	6,103.00
Item 12.8 (C) RCC	RCC Grade M20 including OH & CP for Open Foundation by Batching Plant (DO)	cum	9,665.00
Item 12.8 (C) Case II	RCC Grade M20 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	5,802.00
Item 12.8 (D)	PCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,594.00
Item 12.8 (D)	PCC Grade M25 including OH & CP for Open Foundation by Batching Plant (DO)	cum	10,465.00
Item 12.8 (D)	PCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,297.00
Item 12.8 (E)	RCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,612.00
Item 12.8 (E)	RCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,415.00
Item 12.8 (F) Case I	PCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,649.00
Item 12.8 (F) Case II	PCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,346.00
Item 12.8 (G)	RCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,643.00

Item 12.8 (G)	RCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,343.00
Item 12.8 (H)	RCC Grade M35 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,782.00
Item 12.8 (H)	RCC Grade M35 including OH & CP for Open Foundation by Batching Plant (DO)	cum	6,788.00
Item 12.8 (H)	RCC Grade M35 excluding OH & CP for Open Foundation by Batching Plant (DO)	cum	10,874.00
Item 12.8 (H)	RCC Grade M35 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,591.00
Item 12.11 (C) i	PCC Grade M20 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,604.00
Item 12.11 (C) i	PCC Grade M20 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,089.00
Item 12.11 (C) ii	PCC Grade M25 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,884.00
Item 12.11 (C) ii	PCC Grade M25 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,366.00
Item 12.11 (C) iii	PCC Grade M30 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	6,938.00
Item 12.11 (C) iii	PCC Grade M30 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,423.00
Item 12.11 (C) iv	PCC Grade M35 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer (DO)	cum	7,066.00
Item 12.11 (C) iv	PCC Grade M35 including OH & CP for Well Foundation (Bottom Plug) by Batching Plant (DO)	cum	10,965.00
Item 12.11 (C) iv	PCC Grade M35 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant (DO)	cum	6,548.00
Item 12.11 (F) iv	PCC Grade M35 including OH & CP for Well Foundation (Well Cap) by Batching Plant (DO)	cum	10,696.00
Item No. 3.13	Excavation for Structures (Manual Means) (DO)	cum	524.00
Item No. 3.13	Excavation for Structures (Mechenical Meanse) (DO)	cum	78.00
Item 14.1(A)	RCC Grade M20 for super-structure including OH & CP by Batching Plant (DO)	cum	11,044.00
Item 14.1(B)	RCC Grade M20 for super-structure including OH & CP by Batching Plant (DO)	cum	12,071.00

	,		
Item 14.1(E)	RCC Grade M20 for super-structure including OH & CP by Batching Plant (DO)	cum	12,835.88
Item 14.1(C)	RCC Grade M30 for super-structure including formwork and excluding OH & CP by Batching Plant (DO)	cum	7,619.00
Item 14.1(C)	RCC Grade M30 for super-structure excluding formwork and excluding OH & CP by Batching Plant (DO)	cum	6,349.00
Item 14.2 A	Supplying ,fitting and placing HYSD bar reinforcement in super- structure exncluding OH & CP (DO)	tonne	76,604.00
Item 13.6	Supplying, fitting and placing HYSD including OH & CP for sub- structure (DO)	tonne	1,20,323.00
Item 5.17	Fog Seal (DO)	sqm	68.00
Item 5.21 Case-I	Crack Prevention courses. Case-I Stress Absorbing Membrane (SAM) crack width less than 6 mm (DO)	sqm	102.00
Item 5.21 Case-II	Crack Prevention courses. Case-II Stress Absorbing Membrane (SAM) with crack width 6 mm to 9 mm (DO)	sqm	124.00
Item 5.21 Case-IV	Crack Prevention courses. Case-III Stress Absorbing Membrane (SAM) crack width above 9 mm and cracked area above 50 % (DO)	sqm	166.00
Item 5.21 Case-IV	Crack Prevention courses. Case-IV Bitumen Impregnated Geotextile (DO)	sqm	183.00
Item 5.15 Case-I	Slurry Seal Case-I 5 mm thickness (DO)	sqm	111.00
Item 5.15 Case-II	Slurry Seal Case-II 3 mm thickness (DO)	sqm	77.00
Item 5.15 Case-III	Slurry Seal Case III 1.5 mm thickness (DO)	sqm	47.00
Item 5.9 Case-I	Surface Dressing Case-I 19 mm nominal chipping size (DO)	sqm	156.00
Item 5.9 Case-II	Surface Dressing Case-II 13 mm nominal size chipping (DO)	sqm	124.00

A. Roads Works

Basic Notes for Preparation of Schedule of Rates

The basic approach for the preparation of schedule of rates for Road Works is indicated as under:

Description of items

 The description of items is given briefly and linked with the relevant clause of the MoRT&H Specifications for Road and Bridge Works, which may be referred for detailed description, provisions and interpretation.

2. Mechanical Means

Due to mechanization of construction work, rate for various items have been derived using mechanical means. However, manual means have also been provided for certain cases, where areas may be inaccessible for machines or quantum of work may not be large enough to justify deployment of the machines.

3. Overhead Charges

3.1 10 percent overhead charges has been considered in the schedule of rates

- Site accomodation, setting up plant, access road, water supply, electricity and general site arrangements.
- (ii) Office furniture, equipment and communications.
- (iii) Expenditure on
 - a) Corporate office of contractor
 - b) Site Supervision
 - c) Documentation and "as built" drawings
- (iv) Mobilisation/de-mobilisation of resources.
- (v) Labour camps with minimum amenities and transportation to work sites.
- (vi) Light vehicles for site supervision including administrative and managerial requirements
- (vii) Laboratory equipment and quality control including field and laboratory testing
- (viii) Minor T&P and survey instruments and setting out works, including verification of line, dimensions, trial pits and bore holes, where required
- (ix) Watch and ward
- (x) Traffic management during construction
- (xi) Expenditure on safeguarding environment
- (xii) Sundries
- (xiii) Financing Expenditure
- (xiv) Work Insurance/compensation

4. Contractor Profit

10 percent of cost of works. Contractor profit is also added on overhead charges.

5. Basic Inputs

Other than the Basic given in the standard data book of MoRT&H the ratefor plants & equipments, material and labour are as per the prevailing market rates from the near by authorised dealers/quarry etc. excluding all Taxes/charges on Zero lead basis.

6. Plants and Equipments

- 6.1 A dozer is proposed for excavation where cutting and filling for the roadway is within 100 m. For longer leads, a combination of hydraulic excavator and tipper is proposed.
- 6.2 Keeping in view the job and managerial factors and the age factor of machines, the output of plant and equipment is taken approximately 70 percent of the rated capacity given by manufacture under ideal conditions.
- 6.3 It has been assumed that a water tanker would make one trip per hour on an average. Water charges have not been included for items where the requirement is very nominal. It is assumed that the same would be covered under sundries.
- 6.4 Output of plant/equipment is considered for the compacted quantities.
- 6.5 The usage charges for machines include ownership charges, cost of repair and maintenance including replacement of tyres and running and operating charges which includes crew, fuel and lubricants.

7. Materials

- 7.1 Quantities of materials considered in the rate are approximate for the purpose of estimating and include normal wastages. Actual consumption would have to be based on mix design.
- 7.2 Arunachal Pradesh has typical and hard terrain having different altitude, wherein maximum construction material are brought from Assam and utilised in different station located in state. Hence, to maintain the uniformity in rates, it is decided to prepare the APSR-2023 without considering any lead on materials and aggregate. The transportation cost shall be included in the estimate as per distance from the source of procurement of material/aggregate. The following sources has been adopted in the schedule 2023.
 - (i) Bitumen product Near by Authorised Dealer
 - (ii) All steel items/Cement :- Tezpur/Banderdewa/North Lakhimpur/Silapathar/Dibrughar /Tinsukia
 - (iii) Bricks :- Kiln in Assam nearest to site of work
 - (iv) Aggregate :- At quarry nearby site of work.
 - (v) Other items: Avarage market rates fixed for all district headquarter of state.
 - (vi) R.C.C. Hume Pipes :- Naharlagun/Likabali or nearby source in Assam.
- 7.3 The alternative proposal for crushing own aggregate by installing crusher is compared with procurement of crushed aggregates from the market and proposal found economical is to be adopted.
- 7.4 The specifications of materials shall be governed by section 1000 of MoRT&H Specifications for Road and Bridge Works.

8. Labour

- 8.1 The avarage market rate has been adopted which are workable in the state
- 8.2 One mate has been provided for 25 labours

9. Carriage of Materials

- 9.1 The unit for vehicle for carriage has been taken as under:
 - a) In hours where lead is variable. The loading and unloading for such cases have been provided separetely.
 - b) In tonne km where lead is variable. The loading and unloading for such cases have been provided separately.

- c) Ziro lead has been considered for the stone aggregate in order to work out the actual rates of aggregates by adding the transportation cost up to the site of work.
- d) In case of Hot Mix Plant Zero lead has been considered. The lead may be considered as per actual location of plant.
- 9.2 Where the quantity of material to be transported is small such as dismantled materials and the same are required to be loaded manually, provision of tractor-trolley has been made instead of tipper.

10. General:

- 10.1 The clause numbers refer to MoRT&H Specifications for Road and Bridges Works.
- 10.2 Assumptions made have been indicated in respective chapter in the form of notes, where required.
- 10.3 Sundries to cater for unforeseen contingency and miscelleneous items have been added in the overhead charges.
- 10.4 Arrangement for traffic during construction shall be as per Clause 112 of MoRT&H Specifications for Road and Bridge Works.
- 10.5 Contractor will make his own arrangements for borrowing earth. However, compensation for earth taken from private land has been included in the rate for construction of embankment with borrowed earth.

10.6 Credit for Dismantled Material

- Credit for dismantled materials has not been included in this schedule of rates. The dismantled materials should be examined and a realistic assessment made for such materials, which can be utilised for works and to be reflected in the estimate.
- 10.7 The source of material and samples are required to be approved by the Engineer before start of any work.
- 10.8 The rates of items include cost of testing dismantled materials.
- 10.9 The use of surface by construction vehicles shall be governed by Clause 119 of MoRT&H Specifications.
- 10.10 The contractor shall arrange to provide and maintain adequate equipment field laboratory as per Clause 121.
- 10.11 Quality Control of works shall be governed by Section 900 of MoRT&H Specifications.
- 10.12 The various activities of works shall also be documented by photographs and vedio cassettes as per Clauses 125 & 126 of MoRT&H Specifications.
- 10.13 The classification of soil shall be as per Clause 301.2 of MoRT&H Specifications.
- 10.14 The earth excavated from foundations has been considered to be backfilled and balance utilised locally for road work except in the case of marshy soil.
- 10.15 The rate for removal of unsuitable soil does not provide for replacement by suitable soil which will have to be paid separately.
- 10.16 Items for hilly terrain have been analysed separately.
- 10.17 The hire charge rates for machinery and equipment are taken from the Standard Data Book and prevailing market rate.
- 10.18 10 per cent extra cement has been provided for concreting under water, where required.
- 10.19 Grade of cement may be adopted as per mix design.

- 10.20 Quantities of cement in various grades of cement concrete have been taken as per IRC:21-2000 and IRC:18-2000.
- 10.21 The coarse and fine aggregates shall conform to IS:383.
- 10.22 For pricing of RCC slab culverts, the items given in respective chapters in bridge section may be reffered.
- 10.23 Some of major steel producing firms have evolved thermo-mechanically treated steel which has enhanced strength, better corrosion resistance, ductility, weld ability and high temparature thermal resistance. Enquiries from these are made on technical specifications and use of such products considered in works based on performance in works where these have already been used.
- 10.24 In case it is decided to include the following items and their maintenance in the BOQ, the scope and specifications should be worked out and defined in a detailed manner in the tender document to avoid any dispute during execution.
 - (i) Site office and furniture for Engineer and his staff.
 - (ii) Site residential accomodation for Engineer and other supervisory staff.
 - (iii) Providing and maintaining vehicle for the Engineer.

GENERAL Notes - Bridge Works

The basic approach for the preparation of schedule of rates for Bridge works in indicated as under:

1. Description of items

The description of items is given briefly and linked with relevant clause of MoRT&H's Specifications for Road and Bridge Works, which may be referred for detailed description, provisions and interpretation.

2. Overhead Charges

The rates include over head charges considering the following elements -

2.1 20 percent overhead charges has been considered in the schedule of rates for :-

- Site accomodation, setting up plant, access road, water supply, electricity and general site arrangements.
- (ii) Office furniture, equipment and communications.
- (iii) Expenditure on
 - a) Corporate office of contractor
 - b) Site Supervision
 - c) Documentation and "as built" drawings
- (iv) Mobilisation/de-mobilisation of resources.
- (v) Labour camps with minimum amenities and transportation to work sites.
- (vi) Light vehicles for site supervision including administrative and managerial requirements
- (vii) Laboratory equipment and quality control including field and laboratory testing
- (viii) Minor T&P and survey instruments and setting out works, including verification of line, dimensions, trial pits and bore holes, where required
- (ix) Watch and ward
- (x) Traffic management during construction
- (xi) Expenditure on safeguarding environment
- (xii) Sundries
- (xiii) Financing Expenditure
- (xiv) Work Insurance/compensation

3 Contractor Profit

10 percent of cost of works. Contractor profit is also added on overhead charges.

4 Basic Inputs

Basic inputs are only given in the standard data book. The rates for material and labour are as per the prevailing market/govt. rates.

5 Plants and Equipments

The usage/hire charges of machinery/equipment have been worked out based upon present cost of equipments, repairs, POL and Operational charges.

6. Materials

- 6.1 Quantities of materials considered in the rate are approximate for the purpose of estimating and include normal wastages. Actual consumption would have to be based on mix design.
- 6.2 Arunachal Pradesh has typical and hard terrain having varying altitude, wherein maximum construction materials are brought from Assam and utilised in different station located in state. Hence, to maintain the uniformity in rates, it is decided to prepare the APSR-2023 without considering any lead on materials and aggregate. The transportation cost shall be included in the estimate as per distance from the source of procurement of material/aggregate. The following sources has been adopted in the schedule.
 - (i) Bitumen product Near by authorised Dealer.
 - (ii) All steel items/Cement :- Tezpur/Banderdewa/North Lakhimpur/ /Dibrughar /Tinsukia
 - (iii) Bricks :- Kiln in Assam nearest to site of work
 - (iv) Aggregate :- At quarry nearby site of work.
 - (v) Other items :- Avarage market rates fixed for all district headquarter of state.
 - (vi) R.C.C. Hume Pipes: Naharlagun/Likabali or nearby source in Assam.
- 6.3 The alternative proposal for crushing own aggregate by installing crusher is compared with procurement of crushed aggregates from the market and proposal found economical is to be adopted.
- 6.4 The specifications of materials shall be governed by section 1000 of MoRT&H Specifications for Road and Bridge Works.

7. Labour

- 7.1 The avarage market rate has been adopted which are workable in the state
- 7.2 One mate has been provided for 25 labours

8. Carriage of Materials

- 8.1 The unit for vehicle for carriage has been taken as under :
 - a) In hours where lead is variable. The loading and unloading for such cases have been provided separetely.
 - b) In tonne km where lead is variable. The loading and unloading for such cases have been provided separately.

c) Ziro lead has been considered for the stone aggregate in order to work out the actual rates of aggregates by adding the transportation cost up to the site of work.

9 General:

- 9.1 The clause numbers refer to MoRT&H Specifications for Road and Bridges Works.
- 9.2 Assumptions made have been indicated in respective chapter in the form of notes, where required.
- 9.3 Sundries to cater for unforeseen contingency and miscelleneous items have been added in the overhead charges.
- 9.4 Arrangement for traffic during construction shall be as per Clause 112 of MoRT&H Specifications for Road and Bridge Works.
- 9.5 Contractor will make his own arrangements for borrowing earth. However, compensation for earth taken from private land has been included in the rate for construction of embankment with borrowed earth.

9.6 Credit for Dismantled Material

Credit for dismantled materials has not been included in this schedule of rates. The dismantled materials should be examined and a realistic assessment made for such materials, which can be utilised for works and to be reflected in the estimate.

- 9.7 The source of material and samples are required to be approved by the Engineer before start of any work.
- 9.8 The rates of items include cost of testing dismantled materials.
- 9.9 The contractor shall arrange to provide and maintain adequate equipment field laboratory as per Clause 121.
- 9.10 Quality Control of works shall be governed by Section 900 of MoRT&H Specifications.
- 9.11 The various activities of works shall also be documented by photographs and vedio cassettes as per Clauses 125 & 126 of MoRT&H Specifications.
- 9.12 The classification of soil shall be as per Clause 301.2 of MoRT&H Specifications.
- 9.13 The earth excavated from foundations has been considered to be backfilled and balance utilised locally for road work except in the case of marshy soil.
- 9.14 The rate for removal of unsuitable soil does not provide for replacement by suitable soil which will have to be paid separately.
- 9.15 The hire charge rates for machinery and equipment are taken from the Standard Data Book and prevailing market rate.
- 9.16 10 per cent extra cement has been provided for concreting under water, where required.
- 9.17 Grade of cement may be adopted as per mix design.
- 9.18 Quantities of cement in various grades of cement concrete have been taken as per IRC:21-2000 and IRC:18-2000.
- 9.19 The coarse and fine aggregates shall conform to IS:383.

- 9.20 Some of major steel producing firms have evolved thermo-mechanically treated steel which has enhanced strength, better corrosion resistance, ductility, weld ability and high temparature thermal resistance. Enquiries from these are made on technical specifications and use of such products considered in works based on performance in works where these have already been used.
- 9.21 In case it is decided to include the following items and their maintenance in the BOQ, the scope and specifications should be worked out and defined in a detailed manner in the tender document to avoid any dispute during execution.
 - (i) Site office and furniture for Engineer and his staff.
 - (ii) Site residential accomodation for Engineer and other supervisory staff.
- (iiI) Providing and maintaining vehicle for the Engineer.

10. Guide Bund

- 10.1 The item for the guide bund are excavation, embankment and protection works.
- 10.2 In case bridge construction works are to be done on wide and deep water channels in major rivers provision of floating barracges etc. for taking the construction material and equipments inside water shall be made separately.
- 10.3 The item for singking of wells cover diameters from 6 m to 12 and Twin D Type and size 12 m x 6 m. For other shapes like rectangular or any other size, the rates of sinking may be worked out on pro-rata basis.
- 10.4 The lift for casting of concrete in well steining may be 2 to 2.5 m restricting the free fall of concrete to 1.5 m and concreting layer to 450 mm.

11 Foundation

The Corrosion resistant treated Steel Driven Pile item has to be used only after getting the proper design approved by the authorities as per the specific need at the site.

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
1.1	, opec.	Loading and unloading of stone boo	ılder /	stone aggi	egates / s	and / kanker /	
		moorum. Placing tipper at loading point, loading w trip, excluding time for haulage and return		t end loader	dumping, t	urning for return	
		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	916.00	302.28	P&M-048
		Front end-loader 1 cum bucket capacity @ 25 cum/hour	hour	0.330	1838.00	606.54	P&M-017
		b) GST (multiplying factor 0.2016) on (a c) Overheads @ 10 % on (a+b))			183.22 109.20	
		d) Contractors profit @ 10 % on (a+b+c))			120.12	
		e) Cess @1% on (a+b+c+d)				13.21	
		Cost for 5.5 cum = (a+b+c+d+e)				1334.57	
		Rate per cum = (a+b+c+d+e)/ 5.5				242.65	
	Note	Unloading will be by tipping.			say	243.00	
1.4		Cost of Haulage Excluding Loading and	d Unloa	ading			
		Haulage of materials by tipper excluding co	ost of lo	ading, unload	ding and stad	cking.	
		Unit: t.km					
1.4(I)	Case I	Taking output 10 tonnes load and lead 10 km = 100 t.km Surfaced Road					
()		Speed with load :25 km / hour. Speed while Returning empty : 35 km /					
		hour. a) Machinery.					
		i) Tipper 10 tonne capacity Time taken for onward haulage with load	hour	0.400	916.00	366.40	P&M-048
		Time taken for empty return trip.	hour	0.290	916.00	265.64	P&M-048
		b) GST (multiplying factor 0.2016) on (a)			127.42	
		c) Overheads @ 10 % on (a+b)	,			75.95	
		d) Contractors profit @ 10 % on (a+b+c))			83.54	
		e) Cess @1% on (a+b+c+d)				9.19	
		cost for 100 t km = $a+b+c+d+e$				928.14	
		Rate per t.km = $(a+b+c+d+e)/100$			say	9.28 9.30	
1.4(II)	Case II	Unsurfaced Gravelled Road				3.30	
		Speed with load : 20 km / hour					
		Speed for empty return trip: 30 km / hour					
		a)Machinery Tipper 10 toppes capacity					
		Tipper 10 tonnes capacity Time taken for onward hanlage with load Time taken for organization trips	hour	0.500	916.00	458.00	P&M-048 P&M-048
		Time taken for empty return trip	hour	0.330	916.00	302.28	1 ~1VI-040

		DIRECTLY (JSED I	TEMS			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref
	орес.	b) GST (multiplying factor 0.2016) on (a))			153.27	
		c) Overheads @ 10 % on (a+b)				91.36	
		d) Contractors profit @ 10 % on (a+b+c)				100.49	
		e) Cess @1% on (a+b+c+d)				11.05	
		Cost for 100 t .km = $a+b+c+d+e$				1116.45	
		Rate per t.Km = $(a+b+c+d+e)/100$				11.16	
1 4/111	Case III	Katcha Track and Track in river bed / na	ıllah h	ad and choo	say	11.20	
, , (, , ,	0400		illali b	su anu choe	beu.		
		Speed with load : 10 km / hour Speed while returning empty : 15 km / hour					
		a) Machinery I) Tipper 10 tonnes capacity					
		Time taken for onward haulage	hour	1.000	916.00	916.00	P&M-04
		Time taken for empty return trip	hour	0.670	916.00	613.72	P&M-04
		b) GST (multiplying factor 0.2016) on (a))			308.39	
		c) Overheads @ 10 % on (a+b)				183.81	
		d) Contractors profit @ 10 % on (a+b+c)				202.19	
		e) Cess @1% on (a+b+c+d)				22.24	
		Cost for 100 t.km = $a+b+c+d+e$				2246.35	
		Rate per t.Km = $(a+b+c+d+e)/100$				22.46	
1.5		Hand Broken Stone Aggregates 63 mm			say	22.50	
		Unit: cum Taking output = 1 cum a) Labour					. 40
		Mate	day	0.060	551.00	33.06	L-12
		Mazdoor	day	1.500	424.00	636.00	L-13
		b) Material Supply of quarried stone 150 - 200 mm size	cum	1.100	923.00	1015.30	M-002
		c) GST (multiplying factor 0.2016) on (a-	⊦b)			339.57	
		d) Overheads @ 10% on (a+b+c)	,			202.39	
		e) Contractors profit @10% on (a+b+c+c	i)			222.63	
		f) Cess @1% on (a+b+c+d+e)				24.49	
		Rate per cum = a+b+c+d+e+f				2473.44	
					say	2473.00	
1.6		Crushing of stone aggregates 13.2 mm	nomin	al size.			
		Crushing of stone boulders of 150 mm stonnes per hour capacity comprising o conveyor and vibrating screens to obtain stones.	f prim	ary and sec	ondary crus	hing units, belt	
		Unit : cum Taking Output = 600 cum at crusher location.					
		a) Labour Mate	dov	0.760	551.00	/10 7C	L-12
		Mazdoor Skilled	day	0.760 2.000	551.00 424.00	418.76 848.00	L-12
		Mazdoor Skilled Mazdoor including breaking of any oversize boulder.	day day	17.000	424.00	7208.00	L-14 L-13
		b) Material		000 000	050.00	704000 00	M 001

956.00

764800.00 M-001

Stone Boulder of size 150 mm and below cum 800.000

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		c) Machinery Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	22887.00	137322.00	P&M-028
		Front end loader 1 cum bucket capacity	Hour	20.000	1838.00	36760.00	P&M-017
		Tipper 5.5 cum capacity	Hour	20.000	916.00	18320.00	P&M-048
		d) GST (multiplying factor 0.2016) on (a	a+b+c)			194680.43	
		e) Overheads @ 10 % on (a+b+c+d)				116035.72	
		f) Contractors profit @ 10 % on (a+b+c	:+d+e)			127639.29	
		g) Cess @1% on (a+b+c+d+e+f)				14040.32	
		Cost for 600 cum = a+b+c+d+e+f+g				1418072.52	
		Rate per cum = $(a+b+c+d+e+f+g)*0.95/6$	600			2245.28	
					say	2245.00	

- Note 1. 800 cum of stone boulders are needed to get 600 cum of stone chips of size 13.2 mm.
 - 2. 95% of above cost will be attributed to the production of 600 cum of stone chips of 13.2 mm size and balance 5% to the production of stone dust which comes out as a byproduct.
 - 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.

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Taking Output = 670 cum at crusher

location. a) Labour					
Mate	day	0.760	551.00	418.76	L-12
Mazdoor Skilled	day	2.000	424.00	848.00	L-14
Mazdoor including breaking of any size boulder.	day	17.000	424.00	7208.00	L-13
b) Material					
Stone Boulder of size 150 mm and below	cum	800.000	956.00	764800.00	M-001
c) Machinery Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	22887.00	137322.00	P&M-028
Front end loader 1 cum bucket capacity	Hour	20.000	1838.00	36760.00	P&M-017
Tipper 5.5 cum capacity	Hour	20.000	916.00	18320.00	P&M-048
d) GST (multiplying factor 0.2016) on (a	ı+b+c)			194680.43	
e) Overheads @ 10 % on (a+b+c+d)				116035.72	
f) Contractors profit @ 10 % on (a+b+c-	+d+e)			127639.29	
g) Cess @1% on (a+b+c+d+e+f)				14040.32	
Cost for 670 cum = a+b+c+d+e+f+g				1418072.52	
Rate per cum = (a+b+c+d+e+f+g)*0.90/6	70			1904.87	
			say	1905.00	

Note 1. 800 cum of stone boulders are needed to get 600 cum of stone chips of size 20 and 40 mm.

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH						Input ref.
	Spec.						

- 2. 90% of above cost will be attributed to the production of 670 cum of stone aggregates of 20mm size and balance 10% 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.

	_	_		
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rocation.					
a) Labour					
Mate	day	0.760	551.00	418.76	L-12
Mazdoor Skilled	day	2.000	424.00	848.00	L-14
Mazdoor	day	17.000	424.00	7208.00	L-13
b) Material					
Stone Boulder of size 150 mm and below	cum	800.000	956.00	764800.00	M-001
c) Machinery					
Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	22887.00	137322.00	P&M-028
Front end loader 1 cum bucket capacity	Hour	20.000	1838.00	36760.00	P&M-017
Tipper 5.5 cum capacity	Hour	20.000	916.00	18320.00	P&M-048
d) GST (multiplying factor 0.2016) on (a	ı+b+c)			194680.43	
e) Overheads @ 10 % on (a+b+c+d)				116035.72	
f) Contractors profit @ 10 % on (a+b+c-			127639.29		
g) Cess @1% on (a+b+c+d+e+f)			14040.32		
Cost for 750 cum = $(a+b+c+d+e+f+g)x0.8$			1205361.64		
Rate per cum = $(a+b+c+d+e+f+g)x0.85/7$			1607.15		
			say	1607.00	

- 1. 800 cum of stone boulders are needed to get 600 cum of stone chips of size 13.2 mm.
- 2. 85% of above cost will be attributed to the production of 750 cum of stone aggregates of 40mm size and balance 15% 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.

510 5.9 **Surface Dressing**

Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminous binder laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller

Unit = sam

Taking output = 9000 sqm

Case -1:-19 mm nominal chipping size

a) Labour					
Mate	day	0.440	551.00	242.44	L-12
Mazdoor	day	9.000	424.00	3816.00	L-13
Mazdoor skilled	day	2.000	508.00	1016.00	L-15
b) Machinery					
Mechanical broom @ 1250 sqm per hour	hour	7.200	473.00	3405.60	P&M-031

		5(2012)					
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	T CPCC.	Air compressor 250 cfm	hour	7.200	658.00	4737.60	P&M-001
		Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	3640.00	21840.00	P&M-025
		Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip spreader	hour	6.000	916.00	5496.00	P&M-048
		Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
		Bitumen pressure distributor	hour	6.000	1509.00	9054.00	P&M-004
		Smooth wheeled roller 8-10 tonne weight	hour	6.000	783.00	4698.00	P&M-044
		c) Material					
		Bitumen@ 1.20 kg per sqm	tonne	10.800	58973.00	636908.40	M-074
		Crushed stone chipping,19 mm nominal size @ 0.015 cum per sqm	cum	135.000	1900.00	256500.00	M-053
		d) GST (multiplying factor 0.2016) on (a	+b+c)			193282.40	
		e) Overheads @ 10 % on (a+b+c+d)	,			115202.44	
		f) Contractors profit @ 10 % on (a+b+c+	-d+e)			126722.69	
		g) Cess @1% on (a+b+c+d+e+f)	· · /			13939.50	
		Cost for 9000 sqm= a+b+c+d+e+f+g				1407889.07	
		Rate per sqm = $(a+b+c+d+e+f+g)/9000$				156.43	
		Nate per squi = (a·b·c·u·e·i·g)/3000			say	156.00	
		Case - II13 mm nominal size chipping			ou,	<u>100,00</u>	
		a) Labour					
		Mate	day	0.440	551.00	242.44	L-12
		Mazdoor	day	9.000	424.00	3816.00	L-13
		Mazdoor skilled	day	2.000	508.00	1016.00	L-15
		b) Machinery			000.00		
		Mechanical broom @ 1250 sqm per hour	hour	7.200	473.00	3405.60	P&M-031
		Air compressor 250 cfm	hour	7.200	658.00	4737.60	P&M-001
		Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	3640.00	21840.00	P&M-025
		Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip spreader	hour	6.000	916.00	5496.00	P&M-048
		Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
		Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	P&M-004
		Vibratory roller 8-10 tonne weight	hour	6.000	969.00	5814.00	P&M-059
		c) Material					
		Bitumen@ 1.00 kg per sqm	tonne	9.000	58973.00	530757.00	M-074
		Crushed stone chipping,13 mm nominal size @ 0.01 cum per sqm	cum	90.000	1820.00	163800.00	M-052
		d) GST (multiplying factor 0.2016) on (a	+b+c)			153418.94	
		e) Overheads @ 10 % on (a+b+c+d)				91442.56	
		f) Contractors profit @ 10 % on (a+b+c+	-d+e)			100586.81	
		g) Cess @1% on (a+b+c+d+e+f)	,			11064.55	
		Cost for 9000 sqm= a+b+c+d+e+f+g				1117519.50	
		Rate per sqm = $(a+b+c+d+e+f+g)/9000$				124.17	
	N	4.14.1			say	<u>124.00</u>	

Note 1.Where the proposed aggregate fails to pass the stripping test, an approved adhesion agent may be added to the binder as per clause 510.2.4. Alternatively, chips may be pre-coated as per clause 510.2.5

Sr No	Ref. to	DIRECTLY I	Unit		Rate in Rs	Cost in Rs	Remarks/			
SrNo	MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Input ref.			
		2.Input for the second coat, where require	ed, will	be the same						
	540	as per the lst coat mentioned above								
.15	516	Slurry Seal Providing andlaying slurry seal consisting of a mixture of fine aggregates, portland cement								
		filler, bituminous emulsion and water or mixing of slurry seal in a suitable mobile riding surface	n a roa	d surface in	cluding clea	ning of surface,				
	Case I	5 mm thickness								
		Unit = sam								
		Taking output = 16000 sqm (80 cum)								
		Taking density of 2.2 tonnes per cum, weight of mix = 264 tonnes								
		weight of mix = 176 tonnes								
		a) Labour								
		Mate	day	0.240	551.00	132.24	L-12			
		Mazdoor	day	6.000	424.00	2544.00	L-13			
		b) Machinery								
		Mechanical broom	hour	6.000	473.00	2838.00	P&M-031			
		Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001			
		Mobile slurry seal equipment	hour	6.000	1328.00	7968.00	P&M-033			
		Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017			
		Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler.	hour	6.000	916.00	5496.00	P&M-048			
		Pneumatic tyred roller with individual wheel load not exceeding 1.5 tonnes	hour	6.000	1708.00	10248.00	P&M-037			
		Water tanker6 KL capacity	hour	2.000	724.00	1448.00	P&M-060			
		c) Material								
		Residual Binder @ 11 % of mix 80 x 2.2 x 0.11	tonne	19.360	55000.00	1064800.00	M-077			
		Fine aggregate 4.75 mm and below 87 % of total mix,80 x 2.2 x 0.87 = 153.12 tonnes. Taking density1.5,= 153.12/1.5 = 102.08 cum	cum	102.080	650.00	66352.00	M-005			
		Filler @ 2 % of total mix = 80 x 2.2 x 0.02	tonne	3.520	15000.00	52800.00	M-188			
		Cost of water	KL	12.000	71.00	852.00	M-189			
		d) GST (multiplying factor 0.2016) on (a e) Overheads @ 10 % on (a+b+c+d)				248059.57 123045.42				
		f) Contractors profit @ 10 % on (a+b+c-	+d+e)			160155.92				
		g) Cess @1% on (a+b+c+d+e+f)				17617.15				
		Cost for 16000 sqm= a+b+c+d+e+f+g				1779332.30				
		Rate per sqm = $(a+b+c+d+e+f+g)/16000$				111.21				
	Case II	3 mm thickness			say	<u>111.00</u>				
		Unit = sqm Taking output = 20000 sqm (60 cum)								
		a) Labour								
		Mate	day	0.200	551.00	110.20	L-12			
		Mazdoor	day	5.000	424.00	2120.00	L-13			
		b) Machinery		6.000	473.00		P&M-031			

hour

hour

hour

6.000

6.000

6.000

473.00

658.00

1328.00

Mechanical broom

Air compressor 250 cfm

Mobile slurry seal equipment

2838.00 P&M-031

3948.00 P&M-001

7968.00 P&M-033

		DIRECTET					
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	T Open.	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
		Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler	hour	6.000	916.00	5496.00	P&M-048
		Water tanker6 KL capacity	hour	2.000	724.00	1448.00	P&M-060
		c) Material Residual Binder @ 13 % of mix = 60 x 2.2 x 0.13	tonne	17.160	55000.00	943800.00	M-077
		Fine aggregate 3 mm and below 85 % of total mix, 60x 2.2 x 0.85 = 112.2 tonnes. Taking density 1.5,	cum	74.800	650.00	48620.00	M-005
		Filler @ 2 % of total mix =60x 2.2 x 0.02	tonne	2.640	15000.00	39600.00	M-188
		Cost of water	KL	12.000	71.00	852.00	M-189
		d) GST (multiplying factor 0.2016) on (a e) Overheads @ 10 % on (a+b+c+d) f) Contractors profit @ 10 % on (a+b+c g) Cess @1% on (a+b+c+d+e+f)	+b+c)	.=		215274.17 106782.82 138988.52 15288.74	
		Cost for 30000 sqm= a+b+c+d+e+f+g				1544162.45	
		Rate per sqm = $(a+b+c+d+e+f+g)/20000$				77.21	
	Case III	1.5 mm thickness			say	<u>77.00</u>	
		Unit = sqm					
		Taking output = 24000 sqm (36 cum)					
		a) Labour					
		Mate	day	0.200	551.00	110.20	L-12
		Mazdoor	day	5.000	424.00	2120.00	L-13
		b) Machinery					
		Mechanical broom	hour	6.000	473.00	2838.00	P&M-031
		Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
		Mobile slurry seal equipment	hour	6.000	1328.00	7968.00	P&M-033 P&M-017
		Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	FXIVI-U17
		Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler.	hour	6.000	916.00	5496.00	P&M-048
		Water tanker6 KL capacity	hour	2.000	724.00	1448.00	P&M-060
		c) Material Residual Binder @ 16 % of mix, 36 x 2.2 x 0.16	tonne	12.670	55000.00	696850.00	M-077
		Fine aggregate 2.36 mm and below,82 % of total mix,36x 2.2 x 0.82 = 64.94 tonnes. Taking density 1.5	cum	43.300	700.00	30310.00	M-022
		Filler @ 2 % of total mix = 36x 2.2 x 0.02	tonne	1.580	15000.00	23700.00	M-188
		Cost of water	KL	12.000	71.00	852.00	M-189
		d) GST (multiplying factor 0.2016) or	n (a+b+c	;)		158592.31	
		e) Overheads @ 10 % on (a+b+c+d)				78666.82	
		f) Contractors profit @ 10 % on (a+b	+c+d+e))		102392.73	
		g) Cess @1% on (a+b+c+d+e+f)				11263.20	
		Cost for 24000 sqm= a+b+c+d+e+f+g				1137583.26	
		Rate per sqm = $(a+b+c+d+e+f+g)/24000$			say	47.40 47.00	
	Note	1.Tack coat, if required to be provided, be	efore lay	ing slurry	Juy	47.00	

Note 1.Tack coat, if required to be provided, before laying slurry seal may be measured and paid separately

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
5.17	518	Fog Spray					
		Providing and applying low viscosity biture wide or incipient fretting or disintegration i Unit = sqm					l
		Taking output = 10500 sqm a) Labour					
		Mate	day	0.120	551.00	66.12	L-12
		Mazdoor	day	3.000	424.00	1272.00	L-13
		b) Machinery Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031
		Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
		Bitumen emulsion pressure distributor @	tonne	6.000	1509.00	9054.00	P&M-004
		1750 sqm per hour c) Material	torine	0.000	1000.00	3004.00	
		Bitumenemulsion @ 0.75 kg per sqm	tonne	7.880	55000.00	433400.00	M-077
		d) GST (multiplying factor 0.2016) or	n (a+b+	c)		90836.55	
		e) Overheads @ 10 % on (a+b+c+d)				45057.81	
		f) Contractors profit @ 10 % on (a+b	0+c+d+6))		58647.25	
		g) Cess @1% on (a+b+c+d+e+f)				6451.20	
		Cost for 10500 sqm= a+b+c+d+e+f+g				651570.93	
		Rate per sqm = $(a+b+c+d+e+f+g)/10500$			001/	62.05 62.00	
		1.In case it is decided by the engineer to blind the fog spray, the following may be added			say	<u>02.00</u>	
		a) Labour					
		Mate	day	0.160	551.00	88.16	L-12
		Mazdoor for precoating of grit	day	4.000	424.00	1696.00	L-13
		c) Material					
		Crushed stone grit 3 mm size @ 3.75 kg per sqm	cum	26.250	780.00	20475.00	M-024
		Bitumenemulsion for precoating grit @ 2 % of grit,39.38 x 0.02	tonne	0.790	55000.00	43450.00	M-077
						65709.16 6.26	
E 24	522	Creek Breventier Course			say	<u>6.00</u>	
5.21		Crack Prevention Courses	ماد بیناماد	h laga than (
	Case - I	Stress Absorbing Membrane (SAM) cra					
		Providing and laying of a stress absorbir crack width below 6 mm after cleaning of complying with clause 521, sprayed at the crushed stone aggregates @ 0.11 cum pethe surface for uniform spread of aggregates. **Unit = sqm**	with a n ne rate d er 10 sq	nechanical br of 9 kg per 10 m with hydra	room, using) sqm and sp ulic chip spre	modified binder preading 5.6 mm eader, sweeping	I I
		Taking output = 10500 sqm					
		a) Labour					
		Mate	day	0.240	551.00	132.24	L-12 L-13
		Mazdoor b) Machinery	day	6.000	424.00	2544.00	L-13
		Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031

hour

hour

6.000

6.000

658.00

1509.00

Air compressor 250 cfm

per hour

Bitumen pressure distributor @ 1750 sqm

3948.00 P&M-001

9054.00 P&M-004

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Hyd	raulic Chip spreader	hour	6.000	3640.00	21840.00	P&M-025
		Smo	ooth wheeled road roller 8-10 tonne	hour	6.000	783.00	4698.00	P&M-044
		c) Mod	Material dified binder	tonne	9.450	58000.00	548100.00	M-078
		Crus	shed stone aggregates 5.6 mm size	cum	105.000	1300.00	136500.00	M-050
		d) e)	GST (multiplying factor 0.2016) o Overheads @ 10 % on (a+b+c+d)	n (a+b+	c)		147098.29 87675.25	
		f)	Contractors profit @ 10 % on (a+	b+c+d+e	e)		96442.78	
		g)	Cess @1% on (a+b+c+d+e+f)				10608.71	
		Cos	t for 10500 sqm= a+b+c+d+e+f+g				1071479.27	
		Rate	e per sqm = (a+b+c+d+e+f+g)/10500)			102.05	
						say	<u>102.00</u>	

Case - Stress Absorbing Membrane (SAM) with crack width 6 mm to 9 mm

Providing and laying of a stress absorbing membrane over a cracked road surface, with crack width 6 to 9 mm after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 11 kg per 10 sqm and spreading 11.2 mm crushed stone aggregates @ 0.12 cum per 10 sqm, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.

Unit = sqm

Taking output = 10500 sqm

a) Labour					
Mate	day	0.240	551.00	132.24	L-12
Mazdoor	day	6.000	424.00	2544.00	L-13
b) Machinery					
Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031
Air compressor 250 cfem capacity	hour	6.000	658.00	3948.00	P&M-001
					P&M-004
Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	Paw-uu4
Hydraulic Chip spreader	hour	6.000	3640.00	21840.00	P&M-025
Smooth wheeled road roller 8-10 tonne	hour	6.000	783.00	4698.00	P&M-044
c) Material					
Modified binder	tonne	11.550	58000.00	669900.00	M-078
Crushed stone chipping 11.2 mm size	cum	105.000	1800.00	189000.00	M-051
d) GST (multiplying factor 0.2016) on	(a+b+c)			182237.17	
e) Overheads @ 10 % on (a+b+c+d)				90395.42	
f) Contractors profit @ 10 % on (a+b-	+c+d+e)			117658.68	
g) Cess @1% on (a+b+c+d+e+f)				12942.46	
Cost for 10500 sqm= a+b+c+d+e+f+g				1307187.97	
Rate per sqm = (a+b+c+d+e+f+g)/10500				124.49	
			say	<u>124.00</u>	

$^{\text{Case III}}$ Stress Absorbing Membrane (SAM) crack width above 9 mm and cracked area above 50 %

Providing and laying a single coatn of a stress absorbing membrane over a cracked road surface, with crack width above 9 mm and cracked area above 50 % after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 15 kg per 10 sqm and spreading 11.2 mm crushed stone aggregates @ 0.12 cum per 10 sqm, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.

Unit = sqm

	DIRECTLY USED ITEMS								
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.		
		Taking output = 10500 sqm	'				•		
		a) Labour							
		Mate	day	0.240	551.00	132.24	L-12		
		Mazdoor	day	6.000	424.00	2544.00	L-13		
		Mazdoor skilled	day	2.000	508.00	1016.00	L-15		
		b) Machinery							
		Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031		
		Air compressor 250 cfem capacity	hour	6.000	658.00	3948.00	P&M-001		
		Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	P&M-004		
		Hydraulic Chip spreader	hour	6.000	3640.00	21840.00	P&M-025		
		Smooth wheeled road roller 8-10 tonne	hour	6.000	783.00	4698.00	P&M-044		
		c) Material							
		Modified binder	tonne	15.750	58000.00	913500.00	M-078		
		Crushed stone aggregates 11.2 mm size	cum	126.000	1800.00	226800.00	M-051		
		d) GST (multiplying factor 0.2016) or	ո (a+b+c)		239172.24			
		e) Overheads @ 10 % on (a+b+c+d)				142554.25			
		f) Contractors profit @ 10 % on (a+b	+c+d+e)			156809.67			
		g) Cess @1% on (a+b+c+d+e+f)				17249.06			
		Cost for 10500 sqm= a+b+c+d+e+f+g				1742155.46			
		Rate per sqm = $(a+b+c+d+e+f+g)/10500$				165.92			
	Case IV	Case - IV : Bitumen Impregnated Geote	xtile		say	<u>166.00</u>			
		. •		eotevtile le	ver after als	aning the road			
	Providing and laying a bitumen impregnated geotextile layer after cleaning the road surface, geotextile conforming to requirements of clause 704.3, laid over a tack coat with								

Providing and laying a bitumen impregnated geotextile layer after cleaning the road surface, geotextile conforming to requirements of clause 704.3, laid over a tack coat with 1.05 kg per sqm of paving grade bitumen 80 - 100 penetration and constructed to the requirement of clause 704.4.5

Unit = sqm Taking output = 3500 sqm a) Labour					
Mate	day	0.560	551.00	308.56	L-12
Mazdoor	day	12.000	424.00	5088.00	L-13
Mazdoor skilled	day	2.000	508.00	1016.00	L-15
b) Machinery					
Mechanical broom @ 1250 sqm per hour	hour	2.800	473.00	1324.40	P&M-031
Air compressor 250 cfem capacity	hour	2.800	658.00	1842.40	P&M-001
Bitumen pressure distributor @ 1750 sqm per hour	tonne	2.000	1509.00	3018.00	P&M-004
Pneumatic roller	hour	2.000	1708.00	3416.00	P&M-037
c) Material					
Paving grade bitumen of 80 - 100 penetration @ 1.05 kg per sqm	tonne	3.680	57924.00	213160.32	M-075
Geotextile including 10 % for overlaps	sqm	3850.000	54.00	207900.00	M-108
d) GST (multiplying factor 0.2016) or	ı (a+b+c)		88114.05	
e) Overheads @ 10 % on (a+b+c+d)				52518.77	
f) Contractors profit @ 10 % on (a+b	+c+d+e)		57770.65	
g) Cess @1% on (a+b+c+d+e+f)				6354.77	
Cost for 10500 sqm= a+b+c+d+e+f+g				641831.92	
Rate per sqm = $(a+b+c+d+e+f+g)/3500$				183.38	
			say	<u>183.00</u>	

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	NOTE	As bitumen overlay construction shallfollo placement on the same day, an output of been considered for the analysis which w 500 m, of 7 m widecarriagway. This ca overlaid by a bitumenious course in a day	3500 s ill cove	sqm only has er a length of			
8.3	801	Printing new letter and figures of any sh	nade				
		Printing new letter and figures of any shad approved colour to give an even shade	de with	synthetic ena	amel paint bl	ack or any other	-
		 ii) English and Roman Hyphens and the like not to be measured and paid for Detail for 100 letters of 16 cm height. Unit = per cm height per letter a) Labour Mate 	day	0.07	551.00	38.57	
		Painter Ist class	day	1.25	593.00	741.25	
		Mazdoor	day	0.50	424.00	212.00	
		b) Material					
		Paint	Litre	0.50	450.00	225.00	
		c) GST (multiplying factor 0.2016) on	(a+b)			245.31	
		d) Overheads @ 10 % on (a+b+c)				146.21	
		e) Contractors profit @ 10 % on (a+b+	-c+d)			160.83	
		f) Cess @1% on (a+b+c+d+e)				17.69	
		Cost for 1600 cm = $a+b+c+d+e+f$				1786.86	
		Rate per cm height per letter = (a+b+c+	d+e+f)	/1600		1.12	
8.8	803	Painting Two Coats on New Concrete S		_	<u>say</u>	<u>1.10</u>	
		Painting two coats after filling the surface of plastered concrete surfaces Unit = sqm Taking output = 40 sqm a) Labour	·				
		Mate	day	0.12	551.00	66.12	
		Painter	day	2.00	593.00	1186.00	
		Mazdoor b) Material	day	1.00	424.00	424.00	
		Paint conforming to requirement of clause 803.3.	Litre	6.00	450.00	2700.00	
		Add for scaffolding @ 1% of labour cost where required				27.00	
		c) GST (multiplying factor 0.2016) on	(a+b)			887.67	
		d) Overheads @ 10 % on (a+b+c)e) Contractors profit @ 10 % on (a+b	TCT4/			529.08 581.99	
		f) Cess @1% on (a+b+c+d+e)	·c·u)			64.02	
		Cost for 40 sqm = $a+b+c+d+e+f$				6465.88	
		Rate per sqm = $(a+b+c+d+e+f)/40$				161.65	
					<u>say</u>	<u>162.00</u>	
8.9	803	Painting on Steel Surfaces Providing and applying two coats of ready	mix na	int of approve	d brand on s	teel surface	
		after through cleaning of surface to give an			a brana on o	ioor surrass	
		Unit = sqm Taking output = 10 sqm					
		a) Labour Mate	dov	0.03	551.00	16 F2	
		Painter	day day	0.03 0.45	551.00 593.00	16.53 266.85	
		Mazdoor	day	0.45	424.00	106.00	
		b) Material	,	- -			

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
JI NO	MoRTH	Description	""	Quantity	Nate III No	COSt III RS	Input ref.
	Spec.				4-0.00		
		Paint ready mixed approved brand.	Litre	1.25	450.00	562.50	
		Add @ 1% on cost of material for scaffolding				5.63	
		c) GST (multiplying factor 0.2016) on (a+b)			193.03	
		d) Overheads @ 10 % on (a+b+c)				115.05	
		e) Contractors profit @ 10 % on (a+b+c+d)			126.56	
		f) Cess @1% on (a+b+c+d+e)				13.92	
		Cost for 10 sqm = $a+b+c+d+e+f$				1406.07	
		Rate per sqm = $(a+b+c+d+e+f)/10$				140.61	
		Trate per squit = (a·b·c·a·c·i)/10			<u>say</u>	<u>141.00</u>	
12.6	Sub- analysis (A)	Cement mortar1:3 (1cement :3 sand)		<u>54,</u>	<u>711100</u>	
	()	Unit = 1 cum					
		Taking output = 1 cum					
		a) Materials					
		Cement	MT	0.51	9100.00	4641.00	
		Sand	cum	1.05	650.00	682.50	
		b) Labour					
		Mate	day	0.04	551.00	22.04	
		Mazdoor	day	0.90	424.00	381.60	
	Sub- analysis	Total Material and Labour = (a+b) Cement mortar1:2 (1cement :2 sand)			5727.00	
	(B)	Unit = 1 cum Taking output = 1 cum					
		a) Materials					
		Cement	MT	0.67	9100.00	6097.00	
		Sand	cum	0.93	650.00	604.50	
		b) Labour					
		Mate	day	0.04	551.00	22.04	
		Mazdoor	day	0.90	424.00	381.60	
		Total Material and Labour = (a+b)				7105.00	
	Sub- analysis (D)	Cement mortar1:6 (1cement :6 sand)				
	(5)	Unit = 1 cum					
		Taking output = 1 cum a) Materials					
		Cement	MT	0.29	9100.00	2639.00	
		Sand	cum	1.20	650.00	780.00	
		b) Labour					
		Mate	day	0.04	551.00	22.04	
		Mazdoor	day	0.90	424.00	381.60	
		Total Material and Labour = (a+b)				3823.00	
12.7	1400	Stone masonry work in cement mor Technical Specification	tar 1:3 in fo	oundation co	omplete as d	rawing and	
	(A)	Unit = cum Taking output = 5 cum Square Rubble Coursed Rub Masonry (first sort) a) Material	bble				
		Stone	cum	5.50	605.00	3327.50	M-169
		Through and bond stone	each	35.00	15.00	525.00	M-182
		(35no.x0.24mx0.24mx0.39m = 0.79 cu					
		Cement mortar 1:3 (Rate as in Item 12 A sub-analysis)	•	1.50	5727.00	8590.50	Item 12.6 (A)
		b) Labour					
		Mate	day	0.66	551.00	363.66	L-12
			00				

Cr No	Dof to	1	Decembion	l lmi4	Ougatitus	Boto in Bo	Coat in Bo	Remark
Sr No	Ref. to		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Input re
	Spec.							
		Mas		day	7.50	593.00	4447.50	L-11
		Maz	door	day	9.00	424.00	3816.00	L-13
		c)	GST (multiplying factor 0.2016) on	ı (a+b)			4247.74	
		d)	Overhead charges @ 20 % on (a+b	o+c)			5063.58	
		e)	Contractors profit @ 10 % on (a+b	+c+d)			3038.15	
		f)	Cess @1% on (a+b+c+d+e)	•			334.20	
		,	t for 5 cum = a+b+c+d+e+f				33753.83	
		_	e per cum (a+b+c+d+e+f)/5				6750.77	
			. ,			say	6751.00	
	1405.3	B) R	landom Rubble Masonry			_		
		(co	ursed/uncoursed)					
			t = cum					
		Tak	ing output = 5 cum					
		a) M	laterial					
		Stor	ne	cum	5.50	605.00	3327.50	
		Thro	ough and bond stone	Nos	35.00	15.00	525.00	
		(35n	os.x0.24mx0.24mx0.39m = 0.79					
		cu.n	າ)					
		Cen	nent mortar 1:3 (Rate as in item 12.6	cum	1.55	5727.00	8876.85	
		A)						
		b) L	abour					
		Mate	е	day	0.62	551.00	341.62	
		Mas	on	day	6.00	593.00	3558.00	
		Maz	door	day	9.00	424.00	3816.00	
		c)	GST (multiplying factor 0.2016) on	,			4121.71	
		d)	Overheads @ 20 % on (a+b+c)	(= =)			4913.34	
		,	Contractors profit @ 10 % on (a+b+	(امــــــــــــــــــــــــــــــــــــ			2948.00	
		-		C+u)				
		f)	Cess @1% on (a+b+c+d+e)				324.28	
			t for 5 cum = $a+b+c+d+e+f$				32752.30	
		Rate	e per cum (a+b+c+d+e+f)/5				6550.46	
	@	The	labour already considered in cement			say	<u>6550.00</u>	
	©		tar has been taken into account while					
			osing labour for masonry works.					
		FF						
12.7	1400	Stor	ne masonry work in cement mortar	1 · G in f	oundation o	amplete ac d	Irowing and	
(Add)			hnical Specification	1.0	oundation c	ompiete as c	irawing and	
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			t = cum					
			ing output = 5 cum					
	1405.3							
	1400.5	-	Random Rubble Masonry					
			ursed/uncoursed)					
			t = cum					
			ing output = 5 cum					
		•	laterial					
		Stor		cum	5.50	605.00	3327.50	
			ough and bond stone	Nos	35.00	15.00	525.00	
		(35n	$\cos x = 0.79 \text{ cu.m}$)				
		Cem	ent mortar 1:3 (Rate as in item 13.6 D)	cum	1.55	3823.00	5925.65	
		b) L	abour					
		Mate	е	day	0.62	551.00	341.62	
		Mas	on	day	6.00	593.00	3558.00	
		Maz	door	day	9.00	424.00	3816.00	
		c)	GST (multiplying factor 0.2016) on	•			3526.74	
		d)	Overheads @ 20 % on (a+b+c)	,			4204.10	
		e)	Contractors profit @ 10 % on (a+b+	·c+d/			2522.46	
			Cess @1% on (a+b+c+d+e)	J . uj			277.47	
		f)	Cess (L) 1/9 OII (STDTCTQTE)				Z11.41	

		BIREGIEI	USLD				
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remark Input re
	opec.	Cost for 5 cum = a+b+c+d+e+f	Į	l		28024.54	1
		Rate per cum (a+b+c+d+e+f)/5				5604.91	
		. ,			say	<u>5605.00</u>	
	@	The labour already considered in cement			_		
		mortar has been taken into account while					
		proposing labour for masonry works.					
12.8	1500, 1700 & 2100	Plain/Reinforced cement concrete in o technical specifications	pen fou	undation con	iplete as pei	drawing and	
	Α	PCC Grade M15					
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Cement	МТ	4.13	9100.00	37583.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	8.10	1900.00	15390.00	
		20 mm Aggregate	cum	4.05	1900.00	7695.00	
		10 mm Aggregate		1.35	1800.00	2430.00	
			cum	1.35	1600.00	2430.00	
		b) Labour Mate	dov	0.06	551.00	472.06	
			day	0.86		473.86	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery		0.00	004.00	4740.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 63 KVA	hour	6.00	883.00	5298.00	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		5,625.00			
		d) Formwork @ 4% on cost of concrete i.e.cost of material, labour and machinery				3374.91	
		e) GST (multiplying factor 0.2016) or	n (a+b+	c+d)		17689.95	
		f) Overheads @ 20 % on (a+b+c+d+e	-	,		21087.54	
		,	•	ν τ ε)		12652.53	
			TCTUTE	; ⊤1 <i>)</i>			
		h) Cess @1% on (a+b+c+d+e+f+g)				1391.78	
		Cost for 15 cum = $a+b+c+d+e+f+g+h$				140569.57	
		Rate per cum (a+b+c+d+e+f+g+h)/15				9371.30	
					say	<u>9371.00</u>	
	Note	Nedle Vibrator is an item of minor T 8 included in overhead charges. Hence analysis of cement concrete works.					
12.8	В	PCC Grade M20					
		Unit : cum					
		Taking output = 15 cum					
		a) Material					
		Cement	МТ	5.16	9100.00	46956.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	5.40	1900.00	10260.00	
				5.40	1900.00	10260.00	
		20 mm Aggregate	cum	2.70	1800.00	4860.00	
		10 mm Aggregate	cum	2.10	1000.00	4000.00	
		b) Labour	٠٠٠ لم	0.00	EE4 00	470.00	
		Mate	day	0.86	551.00	473.86	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery			00 / 00	4-10.55	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	

		DINLOTL	OOLD	LINO			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref
	Spec.	Generator 33 KVA	hour	6.00	506.00	3036.00	1
		Per Cum Basic Cost of Labour,		6,090.00			
		Material & Mechinery (a+b+c)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
12.8	С	RCC Grade M20					
		Unit = cum					
	Case I	Using concrete mixer					
		Taking output = 15 cum					
		a) Material					
		Cement	MT	5.21	9100.00	47411.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		20 mm Aggregate	cum	8.10	1900.00	15390.00	
		10 mm Aggregate	cum	5.40	1800.00	9720.00	
		b) Labour					
		Mate	day	0.86	551.00	473.86	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		6,103.00			
	Case II	With Batching Plant, Transit Mixer and	d				
		Conrete Pump					
		Unit: cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	41.66	9100.00	379106.00	
		Coarse Sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		b) Labour					
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery	,				
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead	hour	15.00		18975.00	
		upto 1 km.	11001	10.00	1200.00	10070.00	
		Lead beyond 1 km, L-lead in km	T-km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6	2726.00	16356.00	
		Per Cum Basic Cost of Labour,		5,802.00			
		Material & Mechinery (a+b+c)		0,002.00			
		d) Formwork @ 4% on cost of concrete	е			27845.87	
		i.e.cost of material, labour and					
		machinery e) GST (multiplying factor 0.2016) or	(a+b+c-	Fd)		145956.93	
			-	. u _j		173989.93	
		f) Overheads @ 20 % on (a+b+c+d+e	-	-e/			
		g) Contractors profit @ 10 % on (a+b)+C+a+e+	rī)		104393.96	
		h) Cess @1% on (a+b+c+d+e+f+g)				11483.34	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$	400			1159816.87	
		Rate per cum = $(a+b+c+d+e+f+g+h)/$	120			9665.14	
42.0	D	PCC Grado M25			say	<u>9665.00</u>	
12.8	D	PCC Grade M25					

Unit = cum

Case | Using concrete Mixer

Sr No Ref.	to Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks
MoR	тн .	"	Quantity	rate iii res	oost iii ks	Input ref.
Spe	c. Taking output = 15 cum					
	a) Material					
	Cement	MT	5.99	9100.00	54509.00	
	Coarse sand	cum	6.75	650.00	4387.50	
	40 mm Aggregate	cum	5.40	1900.00	10260.00	
	20 mm Aggregate	cum	5.40	1900.00	10260.00	
	10 mm Aggregate	cum	2.70	1800.00	4860.00	
	b) Labour		•			
	Mate	day	0.86	551.00	473.86	
	Mason	day	1.50	593.00	889.50	
	Mazdoor	day	20.00	424.00	8480.00	
	c) Machinery	,				
	Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
	Generator 33 KVA	hour	6.00	506.00	3036.00	
	Per Cum Basic Cost of Labour,		6,594.00			
	Material & Mechinery (a+b+c)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Case	^{e∥} With Batching Plant, Transit Mixer a	nd				
	Conrete Pump					
	Unit : cum					
	Taking Output = 120 cum					
	a) Material		47.05	0400.00	100015.00	
	Cement	MT	47.95	9100.00	436345.00	
	Coarse sand	cum	54.00	650.00	35100.00	
	40 mm Aggregate	cum	43.20	1900.00	82080.00	
	20 mm Aggregate	cum	43.20	1900.00	82080.00	
	10 mm Aggregate	cum	21.60	1800.00	38880.00	
	b) Labour	1	0.04	554.00	400.04	
	Mate	day	0.84	551.00	462.84	
	Mason	day	3.00	593.00	1779.00	
	Mazdoor	day	18.00	424.00	7632.00	
	c) Machinery	hour	6.00	2200.00	19200.00	
	Batching Plant @ 20 cum/hour Generator 100 KVA	hour	6.00	3200.00		
		hour hour	6.00 6.00	938.00 1838.00	5628.00 11028.00	
	Loader 1 cum capacity Transit Mixer 4 cum capacity for lead		15.00	1265.00	18975.00	
	upto 1 km.	hour	15.00	1205.00	10975.00	
	Transit Mixer 4 cum capacity lead	T-Km	300L	80.00	0.00	L= 0
	Concrete Pump	hour	6	2726.00	16356.00	
	Per Cum Basic Cost of Labour,		6,297.00			
	Material & Mechinery (a+b+c)		-,			
	d) Formwork @ 3.75% of cost	of			28332.97	
	concrete i.e.cost of material, labor	our				
	and machinery					
	e) GST (multiplying factor 0.2016) o	•	-d)		158029.97	
	f) Overheads @ 20 % on (a+b+c+d	•	_		188381.76	
	g) Contractors profit @ 10 % on (a-	+b+c+d+e+	·f)		113029.05	
	h) Cess @1% on (a+b+c+d+e+f+g)				12433.20	
	Cost for 120 cum = a+b+c+d+e+f+g+h	V420			1255752.79	
	Rate per cum = (a+b+c+d+e+f+g+h)	1/120		691/	10464.61 <u>10465.00</u>	
12.8 E	RCC Grade M25			say	10403.00	
	Unit = cum					
Cas	Using concrete Mixer					
	Taking output = 15 cum					
	a) Material	N 4-T	0.05	0400.00	FF0FF 00	
	Cement	мт -2	6.05	9100.00	55055.00	
	4	-/				

	T						1
Sr No		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	MoRTH Spec.					1	mpat rel.
	_ Spec.	Coarse sand	cum	6.75	650.00	4387.50	
		20 mm Aggregate	cum	8.10	1900.00	15390.00	
		10 mm Aggregate	cum	5.40	1800.00	9720.00	
		b) Labour	Juili	5.40	1000.00	37 20.00	
		Mate	day	0.86	551.00	473.86	
		Mason	day day	1.50	593.00	889.50	
		Mazdoor	•				
			day	20.00	424.00	8480.00	
		c) Machinery	ho:	6.00	204.00	1746.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00 506.00	1746.00	
		Generator 33 KVA	hour	6.00 6.612.00	บบ.ฮบธ	3036.00	
		Per Cum Basic Cost of Labour,		6,612.00			
	C	Material & Mechinery (a+b+c)					
	∪ase II	With Batching Plant, Transit Mixer and					
		Conrete Pump					
		Unit : cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	48.38	9100.00	440258.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
				43.20 193.52			
		Admixer	Kg	193.52	64.00	12385.28	
		b) Labour					
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity 1 cum	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead	hour	15.00	1265.00	18975.00	
		upto 1 km.	noul	15.00	1200.00	10975.00	
		•	T 1/	2001	00.00	0.00	L= 0
		Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	ı - rXII)	300L	80.00	0.00	·
		,	L		0700 05	40050	
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Per Cum Basic Cost of Labour,		6,415.00			
		Material & Mechinery (a+b+c)					
12.8	F	PCC Grade M30					
		Unit = cum					
	Case I	Using Concrete Mixer					
		Taking output = 15 cum					
		a) Material					
		Cement	МТ	6.08	9100.00	55328.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	5.40	1900.00	10260.00	
		20 mm Aggregate	cum	5.40	1900.00	10260.00	
		10 mm Aggregate	cum	2.70	1800.00	4860.00	
		b) Labour					
		Mate	day	0.86	551.00	473.86	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery	y	_5.50	00	3.30.00	
			ho	6.00	204.00	4740.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	
		Per Cum Basic Cost of Labour,		6,649.00			
		Material & Mechinery (a+b+c)					
	Case II	Using Batching Plant, Transit Mixer					
		and Conrete Pump					
		Unit : cum					

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Unit : cum

C 11	Dof 1:		11-29	0	Dete in Di	Contin D	Doma-l (
Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
L	Spec.						
		Taking Output = 120 cum					-
		a) Material					
		Cement	MT	48.60	9100.00	442260.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		40 mm Aggregate	cum	43.20	1900.00	82080.00	
		20 mm Aggregate	cum	43.20	1900.00	82080.00	
		10 mm Aggregate	cum	21.60	1800.00	38880.00	
		b) Labour					
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	
		Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Per Cum Basic Cost of Labour,		6,346.00			
	_	Material & Mechinery (a+b+c)					
12.8	G	RCC Grade M30					
	Case I	Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Cement	MT	6.10	9100.00	55510.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		20 mm Aggregate	cum	8.10	1900.00	15390.00	
		10 mm Aggregate	cum	5.40	1800.00	9720.00	
		b) Labour					
		Mate	day	0.86	551.00	473.86	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery	,				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	
		Per Cum Basic Cost of Labour,		6,643.00	555.00	2200.00	
	Case	Material & Mechinery (a+b+c)		0,040.00			
	Case II	Using Batching Plant, Transit Mixer and Conrete Pump Unit = cum					
		Taking output = 120 cum a) Material					
		Cement	МТ	48.80	9100.00	444080.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		b) Labour	Juin	40.20	1000.00		
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery	auy	10.00	127.00	7002.00	
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		-		3.00	223.00		

		DIRECTE	JOLD II	LINO			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref
	горсс.	Transit Mixer 4 cum capacity for lead	hour	15.00	1265.00	18975.00	1
		upto 1 km.					
		Transit Mixer 4 cum capacity lead beyond	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Per Cum Basic Cost of Labour,		6,343.00			
40.0		Material & Mechinery (a+b+c)					
12.8	H	RCC Grade M35					
	Case I	Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material Cement	МТ	6.33	9100.00	E7602.00	
		Coarse sand	cum	6.75	650.00	57603.00 4387.50	
		20 mm Aggregate	cum	8.10	1900.00	15390.00	
		10 mm Aggregate	cum	5.40	1800.00	9720.00	
		b) Labour	ouiii	0.40	1000.00	0720.00	
		Mate	day	0.86	551.00	473.86	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery	•				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	
		Per Cum Basic Cost of Labour,		6,782.00			
		Material & Mechinery (a+b+c)					
	Case II	Using Batching Plant, Transit Mixer					
		and Conrete Pump					
		Unit ; cum					
		Taking Output = 120 cum a) Material					
		Cement	MT	50.64	9100.00	460824.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		Admixer	Kg	202.56	64.00	12963.84	
		b) Labour Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery	,				
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	
		Transit Mixer 4 cum capacity lead	T-Km	300L	80.00	0.00	L= 0
		beyond1 Km, L - lead in Kilometer		0002	00.00	0.00	
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Per Cum Basic Cost of Labour,		6,591.00			
		Material & Mechinery (a+b+c)		,			
		d) Formwork @ 3% on cost of concrete				23724.86	
		i.e.cost of material, labour and machinery					
		e) GST (multiplying factor 0.2016) on (a	+b+c+d	l)		164213.99	
		f) Overheads @ 20 % on (a+b+c+d+e)				195753.51	
		g) Contractors profit @ 10 % on (a+b+c-	+d+e+f)			117452.10	
		h) Cess @1% on (a+b+c+d+e+f+g)	/			12919.73	
		Cost for 120 cum = a+b+c+d+e+f+g+h				1304892.87	
		Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			10874.11	
		, (1 1 1 2 2 2 3 1)			say	<u>10874.00</u>	

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Sr No	Ref. to MoRTH Spec.		Unit	Quantity	Rate in Rs	Cost in Rs	Remark Input re
	Note:	Rate per cum (a+b+c+d)/120 Excluding GST, OH,CP & Cess Where ever concrete is carried out us transit mixer, concrete pump, admixers @	0.4%	of weight of		<u>6788.00</u>	
12.11	1200, 1500 & 1700	cement may be added for achieving concrete. Plain/Reinforced cement concrete, in we technical specification		-		drawing and	
	С	Bottom Plug Concrete to be placed using tremie pipe					
	Case I	Using Concrete Mixer					
	(i)	PCC Grade M20					
	()	Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Cement	MT	5.55	9100.00	50505.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	5.40	1900.00	10260.00	
		20 mm Aggregate	cum	5.40	1900.00	10260.00	
		10 mm Aggregate	cum	2.70	1800.00	4860.00	
		Admixer	Kg	18.60	64.00	1190.40	
		b) Labour					
		Mate	day	0.90	551.00	495.90	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	
		Light Crane 3 tonnes capacity for handling tremie pipe	hour	6.00	490.00	2940.00	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		6604.00			
	Note	10% extra cement may be added where under water concreting is involved.					
	Case II	Using Batching Plant, Transit Mixer and Crane/concrete pump					
		Unit; cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	44.40	9100.00	404040.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80 43.20	1900.00	123120.00 77760.00	
		10 mm Aggregate Admixer	cum Kg	148.80	1800.00 64.00	9523.20	
		b) Labour	Νg	140.00	04.00	9323.20	
		Mate	day	0.88	551.00	484.88	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery	,				
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead	hour	15.00	1265.00	18975.00	
		upto 1 km. Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	

		DIRECTL					
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remark Input re
	- Open	Per Cum Basic Cost of Labour,		6089.00			1
		Material & Mechinery (a+b+c)					
	(ii)	PCC Grade M25					
	Case I	Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum a) Material					
		Cement	MT	5.99	9100.00	54509.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	5.40	1900.00	10260.00	
		20 mm Aggregate	cum	5.40	1900.00	10260.00	
		10 mm Aggregate	cum	2.70	1800.00	4860.00	
		Admixer	Kg	21.60	64.00	1382.40	
		b) Labour					
		Mate	day	0.90	551.00	495.90	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	
		Light Crane of 3 tonnes capacity for handling tremie pipe	hour	6.00	490.00	2940.00	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		6884.00			
	Case II	Using Batching Plant, Transit Mixer					
		and Crane/concrete pump					
		Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	47.88	9100.00	435708.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		Admixer	Kg	172.80	64.00	11059.20	
		b) Labour					
		Mate	day	0.88	551.00	484.88	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery		0.00	0000 00	40000.00	
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity Transit Mixer 4 cum capacity for lead	hour hour	6.00 15.00	1838.00 1265.00	11028.00 18975.00	
		upto 1 km.	Houl	15.00	1205.00	16975.00	
		Transit Mixer 4 cum capacity, lead	T-Km	300L	80.00	0.00	L= 0
		beyond 1 Km, L - lead in Kilometer	h	0.00	0700.00	40050.00	
		Concrete Pump Per Cum Basic Cost of Labour,	hour	6.00 6366.00	2726.00	16356.00	
		Material & Mechinery (a+b+c)		0300.00			
	(iii)	PCC Grade M30					
	Case I	Using Concrete Mixer					
		Unit = 1 cum					
		Taking output = 15 cum a) Material					
		Cement	MT	6.08	9100.00	55328.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	5.40	1900.00	10260.00	
		20 mm Aggregate	cum	5.40	1900.00	10260.00	

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks
	MoRTH Spec.						Input ref.
	Spec.	10 mm Aggregate	cum	2.70	1800.00	4860.00	
		Admixer	Kg	21.60	64.00	1382.40	
		b) Labour	•				
		Mate	day	0.90	551.00	495.90	
		Mason	day	1.50	593.00	889.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery				4=40.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA Light Crane of 3 tonnes capacity for	hour hour	6.00 6.00	506.00 490.00	3036.00 2940.00	
		handling tremie pipe	Houi	0.00	490.00	2340.00	
		Per Cum Basic Cost of Labour,		6938.00			
		Material & Mechinery (a+b+c)					
	Case II	Using Batching Plant, Transit Mixer					
		and Crane/concrete pump					
		Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	48.64	9100.00	442624.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		Admixer	Kg	172.80	64.00	11059.20	
		b) Labour					
		Mate	day	0.88	551.00	484.88	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery		0.00	0000 00	10000 00	
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Per Cum Basic Cost of Labour,	noai	6423.00	2120.00	10000.00	
		Material & Mechinery (a+b+c)					
	(iv)	PCC Grade M35					
	Case I	Using Concrete Mixer					
		Unit = 1 cum					
		Taking output = 15 cum					
		a) Material					
		Cement	MT	6.29	9100.00	57239.00	
		Coarse sand	cum	6.75	650.00	4387.50	
		40 mm Aggregate	cum	5.40	1900.00	10260.00	
		20 mm Aggregate	cum	5.40	1900.00	10260.00	
		10 mm Aggregate	cum	2.70	1800.00	4860.00	
		Admixer	Kg	21.60	64.00	1382.40	
		b) Labour	برمام	0.00	EE4 00	405.00	
		Mate	day	0.90	551.00 503.00	495.90 880.50	
		Mason Mazdoor	day	1.50	593.00	889.50 8480.00	
			day	20.00	424.00	8480.00	
		c) Machinery Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	201.00	1746 00	
		Generator 33 KVA	hour hour	6.00 6.00	291.00 506.00	1746.00 3036.00	
		Light Crane of 3 tonnes capacity for	hour	6.00	490.00	2940.00	
		handling tremie pipe	HOUI	0.00	+30.00	∠ 34 0.00	
		Per Cum Basic Cost of Labour,		7066.00			
		Material & Mechinery (a+b+c)					
		/10					

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remark Input re
	Case II	Using Batching Plant, Transit Mixer	-				1
		and Crane/concrete pump					
		Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	50.28	9100.00	457548.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		Admixer	Kg	172.80	64.00	11059.20	
		b) Labour					
		Mate	day	0.88	551.00	484.88	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader 1 cum capacity	hour	6.00	1838.00	11028.00	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		6548.00			
		Add 5% of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreteing with tremie pipe	; 			35724.15	
		d) GST (multiplying factor 0.2016) on (a+b+c)			165593.08	
		e) Overheads @ 20 % on (a+b+c+d)	u · b · 0,			197397.46	
						118438.48	
		f) Contractors profit @ 10 % on (a+b+c	тите)				
		g) Cess @1% on (a+b+c+d+e+f)				13028.23	
		Cost for 120 cum = $a+b+c+d+e+f+g$				1315851.48	
		Rate per cum = $(a+b+c+d+e+f+g)/120$				10965.43	
	F	Well and			Say	<u>10965.00</u>	
	iv)	Well cap					
	,	RCC Grade M35					
	Case II	Using Batching Plant, Transit Mixer and Conrete Pump					
		Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	50.64	9100.00	460824.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		b) Labour					
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery	•				
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00		5628.00	
		Loader(capacity 1 cum)	hour	6.00	1838.00	11028.00	
		Transit Mixer (capacity 4.0 cu.m)	Houl	0.00	1030.00	1 1020.00	

		DIRECTLY	OOLD .				
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref.
		Transit Mixer 4 cum capacity for lead	hour	15.00	1265.00	18975.00	·!
		upto 1 km.	T-Km	300L	80.00	0.00	L= 0
		Lead beyond 1 Km, L - lead in Kilometer		6.00	2726.00	0.00	
		Concrete Pump Formwork @ 3% of (a+b+c)	hour	0.00	2720.00	16356.00 23335.95	
		d) GST (multiplying factor 0.2016) on	(a+b+c)	1		161522.08	
		e) Overheads @ 20 % on (a+b+c+d)	(arbic)	,		192544.57	
		f) Contractors profit @ 10 % on (a+b-	+c+d+e)	1		115526.74	
		g) Cess @1% on (a+b+c+d+e+f)	,			12707.94	
		Cost for 120 cum = $a+b+c+d+e+f+g$				1283502.12	
		Rate per cum = $(a+b+c+d+e+f+g)/120$				10695.85	
					Say	<u>10696.00</u>	
	Note	Where ever concrete is carried out us transit mixer, concrete pump, admixers (cement may be added for achieving concrete.	0.4%	of weight of			
3.13	304	Excavation for Structures					
		Earth work in excavation of foundation specification, including setting out, construent and other deleterious matter, dressing of to the extent required and utilising the remarks.	uction o	of shoring and add bottom, ba	bracing, rer	, noval of stumps	;
		I) Ordinary soil					
		Unit = cum					
		Taking output = 10 cum					
	Α	Manual Means					
		(i) Depth upto 3 m					
		a) Labour					
		Mate	day	0.320	551.00	176.32	L-12
		Mazdoor	day	8.000	424.00	3392.00	L-13
		b) GST (multiplying factor 0.2016) on	(a)			719.37	
		c) Overheads @ 10 % on (a+b)				428.77	
		d) Contractors profit @ 10 % on (a+b-	tc)			471.65	
		e) Cess @1% on (a+b+c+d)				51.88	
		Cost for 10 cum = a+b+c+d+e				5239.99	
		Rate per cum = $(a+b+c+d+e)/10$				524.00	
	Note	Cost of dewatering may be added where r of labour cost Assessment for dewatering per site conditions			say	<u>524.00</u>	
	В	Mechanical Means					
		(i) Depth upto 3 m					
		Unit = cum					
		Taking output = 300 cum					
		a) Labour					
		Mate	day	0.32	551	176.32	
		Mazdoor	day	8.00	424	3392.00	
		b) Machinery	L	0.00	0044	40004.00	
		Hydraulic excavator 1.0 cum bucket capacc) GST (multiplying factor 0.2016) on		6.00	2044	12264.00 3191.80	
		d) Overheads @ 10 % on (a+b+c)	(a+D)			1902.41	
		e) Contractors profit @ 10 % on (a+b+c)	+c+d)			2092.65	
		f) Cess @1% on (a+b+c+d+e)	u _j			230.19	
		Cost for 300 cum = a+b+c+d+e+f				23249.37	
		Pote per sum = (a+b+a+d+a+f)/200				202 4 9.51	

77.50

Rate per cum = (a+b+c+d+e+f)/300

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
·	, -,		1	1	say	<u>78.00</u>	
	Note	Cost of dewatering upto 5% of (a+b) m required. Assessment for dewatering shall site conditions	-				
13.6	Section 1600 & 2200	Supplying, fitting and placing HYSD b per drawing and technical specification		orcement in	sub-structu	re complete as	
		Output: MT					
		Taking output = 1 MT					
		a) Material					
		HYSD bars including 5% overlaps and	MT	1.05	67000.00	70350.00	
		wastage Binding wire	kg	6.00	105.00	630.00	
		b) Labour for cutting, bending, shifting	-	0.00	105.00	030.00	
		to site, tying and placing in position	,				
		Mate	day	0.34	551.00	187.34	
		Blacksmith	day	2.00	593.00	1186.00	
		Mazdoor	day	6.50	424.00	2756.00	
		c) GST (multiplying factor 0.2016) or	າ (a+b)			15142.04	
		d) Overheads @ 20 % on (a+b+c)				18050.28	
		e) Contractors profit @ 10 % on (a+b	+c+d)			10830.17	
		f) Cess @1% on (a+b+c+d+e)				1191.32	
		Rate for per MT (a+b+c+d+e+f)				120323.15	
					say	120323.00	
	A Case II	RCC Grade M20 Using Batching Plant, Transit Mixe and Concrete Pump Unit = cum	r				
		Taking output = 120 cum					
		a) Material Cement	МТ	40.92	9100.00	372372.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		b) Labour	Cuiii	43.20	1000.00	77700.00	
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery	day	10.00	727.00	7002.00	
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00		5628.00	
		Loader	hour	6.00	1838.00	11028.00	
		Transit Mixer (capacity 4.0 cu.m)					
		Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1265.00	18975.00	
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum		689413.00			
	(i)	For solid slab super-structure, 20-30% of (a+b+c)	, 0				
	(p)	Height upto 5m					
	•	Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum	k			689413.00	

		DIRECTLY	USEDI	I I EIVIS			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input re
		d) Formwork and staging 20 % of	:		<u>'</u>	137882.60	
		(a+b+c)	/ h			400700 70	
		e) GST (multiplying factor 0.2016) on	•	+a)		166782.79	
		f) Overheads @ 20 % on (a+b+c+d+e)		. 0		198815.68	
		g) Contractors profit @ 10 % on (a+b+	-c+a+e	+1)		119289.41	
		h) Cess @1% on (a+b+c+d+e+f+g)				13121.83	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$				1325305.31	
		Rate per cum (a+b+c+d+e+f+g+h)/120				11044.21	
	В	DOO Orede MOS			say	<u>11044.00</u>	
		RCC Grade M25 Using Batching Plant, Transit Mixer and Concrete Pump					
		Unit = cum					
		Taking output = 120 cum					
		a) Material		47.05	0400.00	400045.00	
		Cement	MT	47.95	9100.00	436345.00	
		Coarse sand 20 mm Aggregate	cum	54.20 64.80	650.00 1900.00	35230.00 123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		b) Labour	ouiii	40.20	1000.00	77700.00	
		Mate	day	0.84	551.00	462.84	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	18.00	424.00	7632.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00		19200.00	
		Generator 100 KVA	hour	6.00		5628.00	
		Loader	hour	6.00	1838.00	11028.00	
		Transit Mixer (capacity 4.0 cu.m)					
		Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1265.00	18975.00	
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum		753516.00			
		For formwork and staging add the following:					
	(i)	For solid slab super-structure, 20-30% of (a+b+c)					
	(p)	Height upto 5m					
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum				753516.00	
		d) Formwork and staging 20 % of (a+b+c)				150703.20	
		e) GST (multiplying factor 0.2016) on	(a+b+c	+d)		182290.59	
		f) Overheads @ 20 % on (a+b+c+d+e)		•		217301.96	
		g) Contractors profit @ 10 % on (a+b+	-c+d+e	+f)		130381.18	
		h) Cess @1% on (a+b+c+d+e+f+g)				14341.93	
		Cost for 120 cum= a+b+c+d+e+f+g+h				1448534.86	
		Rate per cum (a+b+c+d+e+f+g+h)/120				12071.12	
					say	<u>12071.00</u>	
	C Case II	RCC Grade M 30 Using Batching Plant, Transit Mixer and Concrete Pump. Unit = cum					
		Taking output = 120 cum a) Material			0.400 ==		
		Cement	MT	48.79	9100.00	443989.00	

		5	OOLD I				
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	т орос.	Coarse sand	cum	54.60	650.00	35490.00	1
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		b) Labour					
		Mate	day	0.88	551.00	484.88	
		Mason	day	3.00	593.00	1779.00	
		Mazdoor	day	19.00	424.00	8056.00	
		c) Machinery	h a	6.00	2200.00	10200.00	
		Batching Plant @ 20 cum/hour Generator 100 KVA	hour hour	6.00 6.00	3200.00 938.00	19200.00 5628.00	
		Loader	hour	6.00	1838.00	11028.00	
		Transit Mixer (capacity 4.0 cu.m)	noai	0.00	1000.00	11020.00	
		Transit Mixer 4 cum capacity lead upto 1	hour	15.00	1265.00	18975.00	
		Km					
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Basic Cost of Labour, Material &		761866.00			
		Mechinery (a+b+c) for 120 cum					
		For formwork and staging add the following:					
	(i)	For solid slab super-structure, 20-30%	,				
		of (a+b+c)					
	(p)	Height upto 5m Basic Cost of Labour, Material &	1			761866.00	
		Mechinery (a+b+c) for 120 cum					
		d) Formwork and staging 20 % of (a+b+c)				152373.20	
		e) GST (multiplying factor 0.2016) on	(a+b+c	+d)		184310.62	
		f) Overheads @ 20 % on (a+b+c+d+e	-	,		219709.96	
		g) Contractors profit @ 10 % on (a+b-		+f)		131825.98	
		h) Cess @1% on (a+b+c+d+e+f+g)		•		14500.86	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$				1464586.62	
		Rate per cum (a+b+c+d+e+f+g+h)/120				12204.89	
					say	<u>12205.00</u>	
		Rate per cum (a+b+c+d)/120 (including GST, OH, CP & Cess)	<u>7619.00</u>				
		Rate per cum (a+b+c+d)/120 (excluding	<u>6349.00</u>				
	E	GST, OH, CP & Cess) PSC Grade M-40					
		Using concret mixer.					
		Unit = 1 cum					
		Taking output = 15 cum					
		a) Material					
		Cement	МТ	6.45	9100.00	58695.00	
		Coarse sand		6.75	650.00	4387.50	
			cum				
		20 mm Aggregate	cum	8.10	1900.00	15390.00	
		10 mm Aggregate	cum	5.40	1800.00	9720.00	
		Admixture @ 0.4% of cement	kg	25.80	64.00	1651.20	
		b) Labour					
		Mate	day	0.96	551.00	528.96	
		Mason	day	2.00	593.00	1186.00	
		Mazdoor	day	22.00	424.00	9328.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	291.00	1746.00	
		Generator 33 KVA	hour	6.00	506.00	3036.00	

r No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remark Input re
	у орес.	Basic Cost of Labour, Material &		105669.00			
		Mechinery (a+b+c) for 15 cum					
	Case II	Using Batching Plant, Transit Mixer and Concrete Pump Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	51.60	9100.00	469560.00	
		Coarse sand	cum	54.00	650.00	35100.00	
		20 mm Aggregate	cum	64.80	1900.00	123120.00	
		10 mm Aggregate	cum	43.20	1800.00	77760.00	
		Admixture @ 0.4% of cement	kg	206.40	64.00	13209.60	
		Admixer	Kg	216.00	64.00	13824.00	
		b) Labour	. 19	2.0.00	01.00	1002 1.00	
		Mate	day	0.94	551.00	517.94	
		Mason	day	3.50	593.00	2075.50	
		Mazdoor	day	20.00	424.00	8480.00	
		c) Machinery	,				
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	
		Generator 100 KVA	hour	6.00	938.00	5628.00	
		Loader	hour	6.00	1838.00	11028.00	
		Transit Mixer (capacity 4.0 cu.m)					
		Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1265.00	18975.00	
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	80.00	0.00	L= 0
		Concrete Pump	hour	6.00	2726.00	16356.00	
		Basic Cost of Labour, Material &		814835.00			
		Mechinery (a+b+c) for 120 cum					
		For formwork and staging add the					
	(i)	following: For solid slab super-structure, 18-28%					
	(-)	of (a+b+c)	•				
	(p)	Height upto 5m					
		Basic Cost of Labour, Material &	١			814835.00	
		Mechinery (a+b+c) for 120 cum					
		d) Formwork and staging 18 % of				146670.30	
		(a+b+c)				100000 17	
		e) GST (multiplying factor 0.2016) on		+d)		193839.47	
		f) Overheads @ 20 % on (a+b+c+d+e		_		231068.95	
		g) Contractors profit @ 10 % on (a+b-	+c+d+e+	⊦f)		138641.37	
		h) Cess @1% on (a+b+c+d+e+f+g)				15250.55	
		Cost for 120 cum= a+b+c+d+e+f				1540305.64	
		Rate per cum (a+b+c+d+e+f)/120				12835.88	
	Note	1.Where ever concrete is carried out using	hatahina	plant transit	say	<u>12836.00</u>	
	Note	mixer, concrete pump, admixers conforming	-	•			
		weight of cement may be added for achieve concrete.		_			
		2. Cement provided for various components	of the su	uper structure			
		is for estimating purpose only. Actual quantit					
		per approved mix design. Similarly, the pro					
		fine aggregates is for estimating purpose a shall be as per the mix design.	na the e	exact quantity			
		Shall 55 do por the mix design.					
		3. The items like needle and surface vibrators P which is already covered under the overhethese items have not been added seperately it	ead char	ges. As such			
		. ,		•			

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remar Input r
14.2	1600	A) Supplying ,fitting and placing H complete as per drawing and technical :			ement in	super-structure	ı
		Unit = 1 MT	ороо	104110110			
		Taking output = 1 MT					
		a) Material					
		HYSD bars including 5% for laps and wast	MT	1.05	67000.00	70350.00	
		Binding wire	Kg	8.00	105.00	840.00	
		b) Labour for cutting, bending, tying and					
		placing in position				0.40.44	
		Mate	day	0.44	551.00	242.44	
		Blacksmith Mazdoor	day day	3.00 8.00	593.00 424.00	1779.00 3392.00	
		Per Cum Basic Cost of Labour,	uay	76604.00	424.00	3392.00	
		Material & Mechinery (a+b+c)		7 0004.00			
8.9	803	Painting on Steel Surfaces with alumini	um pa	int			
		Providing and applying two coats of ready mix aluminium paint of approved brand on steel surface through cleaning of surface to give an even shade					
		Unit = sqm					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.03	551.00	16.53	L-12
		Painter	day	0.45	593.00	266.85	L-18
		Mazdoor	day	0.25	424.00	106.00	L-13
		b) Material					
		Paint ready mixed approved brand	Litre	1.25	180.00	225.00	
		Add @ 1% on cost of material for				2.25	
		scaffolding					
		c) GST (multiplying factor 0.2016) on ((a+b)			124.31	
		d) Overheads @ 10 % on (a+b+c)				74.09	
		e) Contractors profit @ 10 % on (a+b+	c+d)			81.50	
		f) Cess @1% on (a+b+c+d+e)				8.97	
		Cost for 10 sqm = a+b+c+d+e+f				905.50	
		Rate per sqm (a+b+c+d+e+f)/10				90.55	

<u>91.00</u>

say

CHAPTER - 1

CARRIAGE OF MATERIALS

Preamble:

- 1 The rate analysis of loading and unloading of various items include stacking.
- The rate analysis for loading and unloading has been given both by manual and mechanical means. Means of loading/unloading appropriate to the work and site is to be adopted.
- The rate analysis for haulage of materials has been made in terms of tonne-kilometre (t.km) for ease of adoption depending upon the lead in km and load in tonnes.
- The cost of carriage will vary depending upon the riding surface of the road. Provision has accordingly been made considering surfaced roads, unsurfaced gravel roads and katcha tracks.
- Analysis for carriage of materials is exclusive of the loading, unloading and stacking and this has to be added as applicable.
- 6 Carriage of materials if done by boats shall be paid at the same rates as given for carriage of materials by road.
- Analysis and the rates for the Carriage of materials on Hill roads has been made available for judicious application according to site locations.

Sr No	Ref. to			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH Spec.								Input ref.
1.1	эрес.		Load	ling and Unloading of Stone Boulder/ S	toneag	gregates/:	L Sand/Kank	ier/	
				rum.	·				
				ing tipper at loading point, loading with from		oader, dum	nping, turnir	ng for	
				n trip, excluding time for haulage and retu	rn trip				
				= cum ng output = 5.5 cum					
				e required for					
			i)	Positioning of tipper at loading point		1 Min			
				Loading by front end loader 1 cum		13 Min			
				bucket capacity @ 25 cum per hour					
				Manoeuvring, reversing, dumping and turning for return		2 Min			
			iv)	Waiting time, unforeseen contingencies etc		4 Min			
				Extra Total		13 Min 33.000			
			a)	Machinery					D0M 040
				er 5.5 tonnes capacity	hour	0.330	916.00	302.28	P&M-048 P&M-017
				t end-loader 1 cum bucket capacity @ 25 /hour	hour	0.330	1838.00	606.54	P&IVI-U17
			b)	GST (multiplying factor 0.2016) on (a)				183.22	
			c)	Overhead charges @ 10 % on (a+b)				109.20	
			d)	Contractor's profit @ 10 % on (a+b+c)				120.12	
			e)	Cess @ 1% on (a+b+c+d)				13.21	
			Cost	for 5.5 cum = a+b+c+d+e				1334.57	
				per cum = (a+b+c+d+e)/ 5.5				242.65	
		Not	Unlo	pading will be by tipping.			say	<u>243.00</u>	
1.2			Load	ding and Unloading of Boulders by Man	ual Mea	ans			
				= cum					
				ng output = 5.5 cum Labour					
			Mate		day	0.110	551.00	60.61	L-12
			Maz	door for loading and unloading	day	0.750	424.00	318.00	L-13
			b)	Machinery					D014.040
				er 5.5 tonne capacity	hour	0.750	916.00	687.00 214.83	P&M-048
			c)	GST (multiplying factor 0.2016) on (a-	ru)				
			d)	Overhead charges @ 10 % on (a+b+c) Contractor's profit @ 10 % on (a+b+c+	٨,			128.04 140.85	
			e)	. • •	u)			15.49	
			f)	Cess @ 1 % on (a+b+c+d+e)					
			-	for5.5 cum = a+b+c+d+e+f per cum = (a+b+c+d+e+f)/5.5				1564.82 284.51	
		Not		ading will be by tipping.			say	285.00	
1.3		-		ding and Unloading of Cement or Steel	by Man	ual Means	_	king.	
			Unit	= tonne					
			<i>Taki</i> a)	ng output = 10 tonnes Labour					
			Mate		day	0.080	551.00	44.08	L-12
				door for loading and unloading	day	2.000	424.00	848.00	L-13
			b)	Machinery	hour	2 000	778.00	1556.00	P&M-057
			c)	k 10 tonne capacity GST (multiplying factor 0.2016) on (a-	hour •b)	2.000	118.00	1556.00 493.53	, WIN-001
			d)	Overhead charges @ 10 % on (a+b+c)	~,			294.16	
			e)	Contractor's profit @ 10 % on (a+b+c+	·d)			323.58	
			-,		,				

			CARRIAGE OF MATER	RIALS				
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Ь—	f) Cess @ 1 % on (a+b+c+d+e)		l .	l	35.59	
			Cost for10 tonnes = a+b+c+d+e+f				3594.94	
			Rate per tonnes = (a+b+c+d+e+f)/10				359.49	
			•			say	<u>359.00</u>	
1.4			Cost of Haulage Excluding Loading and Unl	oading				
			Haulage of materials by tipper excluding cost of	f loadin	g, unloadiı	ng and stac	king.	
			Unit = t.km					
			Taking output 10 tonnes load and lead 10					
		(i)	km = 100 t.km Surfaced Road					
		(1)	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	916.00	366.40	P&M-048
			Time taken for empty return trip.	hour	0.290	916.00	265.64	P&M-048
			b) GST (multiplying factor 0.2016) on (a)				127.42	
			c) Overhead charges @ 10 % on (a+b)				75.95	
			d) Contractor's profit @ 10 % on (a+b+c)				83.54	
			e) Cess @ 1 % on (a+b+c+d)				9.19	
			cost for 100 t km = a+b+c+d+e				928.14	
			Rate per t.km = (a+b+c+d+e)/100				9.28	
_		,				say	<u>9.30</u>	
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		<u></u>			D014.010
			Time taken for onward haulage with load	hour	0.500	916.00	458.00	P&M-048
			Time taken for empty return trip	hour	0.330	916.00	302.28	P&M-048
			b) GST (multiplying factor 0.2016) on (a)				153.27	
			c) Overhead charges @ 10 % on (a+b)				91.36	
			d) Contractor's profit @ 10 % on (a+b+c)				100.49 11.05	
			e) Cess @ 1 % on (a+b+c+d) Cost for 100 t .km = a+b+c+d+e				1116.45	
			Rate per t.Km =(a+b+c+d+e)/100			say	11.16 11.20	
4.4		/::: ·	Katcha Track and Track in Bires Bad Mallate	Bv4	nd Char 5	•	11.20	
1.4		(111)	Katcha Track and Track in River Bed/Nallah	⊔eu ar	ia ciloe E	æu.		
			Speed with load :10 km / hour					
			Speed while returning empty:15 km / hour					
			a) Machinery					
			Tipper 10 tonnes capacity	he::=	4.000	046.00	046.00	P&M-048
			Time taken for empty return trip	hour	1.000 0.670	916.00 916.00	916.00 613.72	P&M-048
			Time taken for empty return trip	hour	0.070	9 IO.UU		U+U
			b) GST (multiplying factor 0.2016) on (a)c) Overhead charges @ 10 % on (a+b)				308.39	
							183.81	
			d) Contractor's profit @ 10 % on (a+b+c)				202.19	
			e) Cess @ 1 % on (a+b+c+d)				22.24	
			Cost for 100 t .km = $a+b+c+d+e$				2246.35	
			Rate per t.Km = (a+b+c+d+e)/100				22.46	
						say	<u>22.50</u>	

			CARRIAGE OF MATER	KIALS				
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			FOR HILL ROADS					
1.5			Loading and Unloading of Stone Boulder / S /Moorum / Lime / Shingle / Earth / Excavated					
			Placing tipper at loading point, loading with fror return trip, excluding time for haulage and retur		oader, dur	nping, turnir	ng for	
			Unit = cum					
			Taking output = 3.5 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		8	Min		
			iii) Manoeuvring, reversing, dumping and turning for return		2	Min		
			iv) Waiting time, unforeseen contingencies etc		4	Min		
			v) Extra Total			Min Min		
			a) Machinery					5014.040
			Tipper 5.5 tonnes capacity	hour	0.210	916.00	192.36	P&M-048 P&M-017
			Front end-loader 1 cum bucket capacity @ 25 cum/hour	hour	0.210	1838.00	385.98	Paw-U17
			b) GST (multiplying factor 0.2016)on (a)				116.59	
			c) Overhead charges @ 10 % on (a+b)				69.49	
			d) Contractor's profit @ 10 % on (a+b+c)				76.44	
			e) Cess @ 1 % on (a+b+c+d)				8.41	
			Cost for 3.5 cum = a+b+c+d+e				849.27 242.65	
		Not	Rate per cum = (a+b+c+d+e)/ 3.5 Unloading will be by tipping.			say	242.00 243.00	
1.6			Loading and Unloading of Stone Boulder / S Kanker/Moorum / Lime / Shingle / Earth / Ex Manual Means for hill roads. Unit = cum Taking output = 3.5 cum				ones by	
			a) Labour Mate	day	0.070	551.00	38.57	L-12
			Mazdoor for loading and unloading	day	0.480	424.00	203.52	L-13
			b) Machinery	,	000			
			Tipper 5.5 tonne capacity	hour	0.480	916.00	439.68	P&M-048
			c) GST (multiplying factor 0.2016) on (a+	b)			137.44	
			d) Overhead charges @ 10 % on				81.92	
			e) Contractor's profit @ 10 % on (a+b+c+	d)			90.11	
			f) Cess @ 1 % on (a+b+c+d+e)				9.91	
			Cost for 3.5 cum = a+b+c+d+e+f				1001.15	
			Rate per cum = $(a+b+c+d+e+f)/3.5$				286.04	
		Not	Unloading will be by tipping.			say	<u>286.00</u>	
1.7			Loading and Unloading of Cement / Steel / Stee					
			Unit = tonne					
			Taking output = 7 tonnes					
			a) Labour					
			Mate	day	0.060	551.00	33.06	L-12
			Mazdoor for loading and unloading	day	1.400	424.00	593.60	L-13
			b) Machinery Truck 10 tonne capacity	hour	1.400	778.00	1089.20	P&M-057

011	Def (ı —	1	CARRIAGE OF MATE		0	Data 1: D	041-5	Dame 1.1
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			(c)	GST (multiplying factor 0.2016) on (a+	b)			345.92	
			d)	Overhead charges @ 10 % on	,			206.18	
			e)	Contractor's profit @ 10 % on (a+b+c+	d)			226.80	
			f)	Cess @ 1 % on (a+b+c+d+e)	ω,			24.95	
			•	for10 tonnes = a+b+c+d+e+f				2519.71	
			-	per tonnes = (a+b+c+d+e+f)/7				359.96	
			ivate	per tornies – (a.b.c.u.e.i)//			say	360.00	
1.8			Cost	of Haulage Excluding Loading and Un	loading	on hill ro	_	000.00	
			Haul	age of materials by tipper excluding cost o	of loadin	a. unloadii	ng and stac	kina.	
				= t.km		J ,		9.	
				ng output 7 tonnes load and lead 10					
				= 70 t.km					
		(i)		aced Road					
		(')		ed with load : 25 km / hour.					
				ed while Returning empty :35 km / hour.					
			-	Machinery.					
			•	er 10 tonne capacity					
				taken for onward haulage with load	hour	0.400	916.00	366.40	P&M-048
				taken for empty return trip.	hour	0.290	916.00	265.64	P&M-048
			b)	GST (multiplying factor 0.2016)on (a)	noui	0.200	010.00	127.42	
			c)	Overhead charges @ 10 % on (a+b)				75.95	
			,						
			d)	Contractor's profit @ 10 % on (a+b+c)				83.54	
			e)	Cess @ 1 % on (a+b+c+d)				9.19	
				for 100 t km = a+b+c+d+e				928.14	
			Rate	per t.km = (a+b+c+d+e)/70			001/	13.26	
1.8		/ii\	Hnei	urfaced Graveled Road			say	<u>13.30</u>	
1.0		(11)		ed with load: 20 km / hour					
				ed for empty return trip :30 km / hour					
			-	Machinery					
				er 10 tonnes capacity					
				taken for onward haulage with load	hour	0.500	916.00	458.00	P&M-048
				taken for empty return trip	hour	0.330	916.00	302.28	P&M-048
			b)	GST (multiplying factor 0.2016) on (a)				153.27	
			c)	Overhead charges @ 10 % on (a+b)				91.36	
			d)	Contractor's profit @ 10 % on (a+b+c)				100.49	
			e)	Cess @ 1 % on (a+b+c+d)				11.05	
			,	for 100 t .km = a+b+c+d+e				1116.45	
				per t.Km = (a+b+c+d+e)/70				15.95	
			rtato	por (a * b * c * a * o), * c			say	16.00	
1.8		(iii)	Katc	ha Track and Track in River Bed/Nallah	Bed ar	nd Choe E			
		` ,		ed with load :10 km / hour					
			Spee	ed while returning empty:15 km / hour					
			a)	Machinery					
			•	er 10 tonnes capacity					
				taken for onward haulage	hour	1.000	916.00	916.00	P&M-048
			Time	taken for empty return trip	hour	0.670	916.00	613.72	P&M-048
			b)	GST (multiplying factor 0.2016) on (a)				308.39	
			c)	Overhead charges @ 10 % on (a+b)				183.81	
			d)	Contractor's profit @ 10 % on (a+b+c)				202.19	
			e)	Cess @ 1 % on (a+b+c+d)				22.24	
				for 100 t .km = $a+b+c+d+e$				2246.35	
			Rate	per t.Km = (a+b+c+d+e)/70				32.09	
				•			say	<u>32.10</u>	

Sr No	Ref. to MoRTH		Description		Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.								input rei.
1.9			Cost of Haulage of Bitumen Excludin	g Loadi	ing and	Unloadir	ng on hill r	oads.	
			Haulage of materials by truck excluding stacking.	ing cos	t of loa	ding, unlo	oading and	ļ	
			Unit = t.km						
			Taking output 5 tonnes load and le km = 50 t.km	ad 10					
		(i)	Surfaced Road Speed with load: 25 km / hour. Speed while Returning empty: 35 km / h	nour.					
			a) Machinery.						
			Tipper 10 tonne capacity	4	L	0.400	770.00	244.00	P&M-057
			Time taken for onward haulage with loa Time taken for empty return trip.	a	hour hour	0.400 0.290	778.00 778.00	311.20 225.62	P&M-057
			b) GST (multiplying factor 0.2016)	on (a)	noui	0.200	770.00	108.22	
			c) Overhead charges @ 10 % on (a					64.50	
			d) Contractor's profit @ 10 % on (a	•				70.95	
			e) Cess @ 1 % on (a+b+c+d)					7.80	
			cost for 100 t km = a+b+c+d+e					788.29	
			Rate per t.km = $(a+b+c+d+e)/50$					15.77	
		/ii\	Unsurfaced Graveled Road				say	<u>15.80</u>	
		(11)	Speed with load: 20 km / hour						
			Speed for empty return trip :30 km / hou	ır					
			a) Machinery	41					
			Tipper 10 tonnes capacity						
			Time taken for onward haulage with loa	d	hour	0.500	778.00	389.00	P&M-057
			Time taken for empty return trip	_	hour	0.330	778.00	256.74	P&M-057
			b) GST (multiplying factor 0.2016)	on (a)				130.18	
			c) Overhead charges @ 10 % on (a					77.59	
			d) Contractor's profit @ 10 % on (a					85.35	
			e) Cess @ 1 % on (a+b+c+d)					9.39	
			Cost for 100 t .km = a+b+c					948.25	
			Rate per t.Km = $(a+b+c)/50$					18.97	
		/:::\	Katcha Track and Track in River Bed	/Nallah	Dad an	d Chao B	say	<u>19.00</u>	
		(111)	Speed with load :10 km / hour	/i v aliali	Deu an	u Cilde b	eu.		
			Speed while returning empty:15 km / ho	our					
			a) Machinery						
			Tipper 10 tonnes capacity Time taken for onward haulage		hour	1.000	778.00	778.00	P&M-057
			Time taken for empty return trip		hour	0.670	778.00	521.26	P&M-057
			b) GST (multiplying factor 0.2016)	on (a)				261.93	
			c) Overhead charges @ 10 % on (a	a+b)				156.12	
			d) Contractor's profit @ 10 % on (a	a+b+c)				171.73	
			e) Cess @ 1 % on (a+b+c+d)					18.89	
			Cost for 100 t .km = a+b+c					1907.93	
			Rate per t.Km = (a+b+c)/50					38.16	
							say	<u>38.20</u>	

Chapter - 2

SITE CLEARANCE

Preamble:

- 1 Unless otherwise stated, the rates include sorting and disposal of unserviceable material and stacking of serviceable material with all lifts and upto a lead of 1000 m.
- The rates include Tools & Plants (T&P) and scaffolding required for items of dismantling.
- Carriage of dismantled materials, bushes, branches of tree, etc. has been catered with a tractor-trolley of 3 tonnes capacity with manual loading and unloading @ 2 trips per hour within a lead of 1000 m. This will be economical for such works as compared with a tipper.
- The dismantling of structures has been catered both by manual and mechanical means. The Engineer can use his discretion depending upon quantum of work and particular site conditions.
- Rate analysis for removing of stumps and roots has also been provided separately.
- Dismantling of Hume pipes has been catered manually as pipes can be easily rolled by men to a suitable stacking place within the right-of-way.
- For dismantling of structures, which remain submerged in water, the cost may be enhanced by 50 per cent. If site conditions warrant lowering of water level to facilitate dismantling, the cost may be enhanced by additional 25 per cent.
- Dismantling of utilities, like, water supply lines, electric and telephone lines is required to be done under the supervision of concerned departments with prior information to the user public.
- In certain items of dismantling, like, pipe culverts, utilities, etc. excavation in earth and dismantling of masonary works is not included in this analysis for which suitable notes have been inserted in respective Chapters. These items are required to be priced separately based on actual quantities at site and nature of work.
- The dismantled materials should be examined and a realistic assessment and provision should be made after due process for the salvage value for such materials, which can be utilized for works or auctioned.
- In case where lead for disposal is more than 1000 m, extra cost of carriage is required to be added based on tonne-kilometerage as per Chapter 1.
- 12 All minor Tools & Plants (T&P) items required for dismantling have been considered to have been included in overhead charges.

2.1 201 Cutting of Trees, including cutting of Trunks, Branches and Removal Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 metres and earth filling in the depression/pit. Unit = Each County C								
Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 metres and earth filling in the depression/by: Unit = Each (i) Girth from 300 mm to 600 mm a) Labour Mate Mazdoors for cutting trees including cutting, day 0.600 424.00 254.40 L-13	2.1 201		Cutting of Tropp including cutting of Trun	ko Bro	achee and	Domoval		
stacking of serviceable material with all lifts and up to a lead of 1000 metres and earth filling in the depression/pit. Unit = Each							stumpa roota	
### Contractor's profit @ 10 % on (a+b+c+d) Contractor's profit @ 10 % on (a+b+c+d) Contractor's profit go fees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means			stacking of serviceable material with all lifts				•	
(i) Girth from 300 mm to 600 mm a) Labour Mate Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres lead by manual means. b) Machinery Tractor-trolley hour 0.100 530.00 530.00 PAM-053 C) GST (multiphying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate for each tree = a+b+c+d+e+f Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley Tractor-trolley C) GST (multiphying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) F) Cess @ 1% on (a+b+c+d+e) F) Machinery F) Cess @ 1% on (a+b+c+d+e) F) Machinery F) Cess @ 1% on (a+b+c+d+e) F) Machinery F) Figure 1 F) F								
Mate		(i)						
Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres lead by manual means. b) Machinery		.,						
refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres lead by manual means. b) Machinery Tractor-trolley hour 0.100 530.00 53.00 PAM-053 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) 42.09 f) Cess @ 1% on (a+b+c+d+e) 467.59 Rate for each tree = a+b+c+d+e+f 548.00 2.1 (ii) Girth from 600 mm to 900 mm a) Labour Mate day 0.040 551.00 22.04 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres bad by manual means b) Machinery Tractor-trolley hour 0.300 530.00 159.00 PAM-053 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate for each tree = a+b+c+d+e+f 826.23 Say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.2 (iiii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.2 (iiii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Assay 826.00 2.2 (iiii) Girth from 900 mm to 1800 mm b) Machinery Tractor-trolley hour 0.400 530.00 212.00 PAM-053 C) GST (multiplying factor 0.2016) on (a+b) C) GST (multiplying factor 0.2016) on (a+b) C) GST (multiplying factor 0.2016) on (a+b) C) Contractor's profit @ 10 % on (a+b+c+d) C) Contractor's				day		551.00		
Stacking of serviceable materials within 1000 metres lead by manual means. b) Machinery Tractor-trolley hour 0.100 530.00 53.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 64.19 d) Overhead charges @ 10 % on (a+b+c+d) 42.09 f) Cess @ 1% on (a+b+c+d+e) 467.59 A68.00 Cess @ 1% on (a+b+c+d+e) 468.00 A68.00 A68.				day	0.600	424.00	254.40	L-13
b) Machinery Tractor-trolley hour 0.100 530.00 530.00 P8M-053 c) GST (multiplying factor 0.2016) on (a+b) 64.19 d) Overhead charges @ 10 % on (a+b+c+d) 42.09 f) Cess @ 1% on (a+b+c+d+e) 46.5 Rate for each tree = a+b+c+d+e+f 468.00 2.1 (ii) Girth from 600 mm to 900 mm a) Labour Mate day 0.040 551.00 22.04 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley hour 0.300 530.00 159.00 P8M-053 c) GST (multiplying factor 0.2016) on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 826.23 Rate for each tree = a+b+c+d+e+f 826.23 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Rate for each tree = a+b+c+d+e+f 826.23 Say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P8M-053 c) GST (multiplying factor 0.2016) on (a+b) 132.67 c) GST (multiplying factor 0.2016) on (a+b) 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P8M-053 c) GST (multiplying factor 0.2016) on (a+b) 2.22.58 d) Overhead charges @ 10 % on (a+b+c+d) 132.67 c) GST (multiplying factor 0.2016) on (a+b) 2.22.58 d) Overhead charges @ 10 % on (a+b+c+d) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 132.67								
b) Machinery hour 0.100 530.00 53.00 P&M-053								
Compact Comp								
d) Overhead charges @ 10 % on (a+b+c)			•	hour	0.100	530.00	53.00	P&M-053
e) Contractor's profit @ 10 % on (a+b+c+d)			c) GST (multiplying factor 0.2016) on (a	+b)			64.19	
f) Cess @ 1% on (a+b+c+d+e) Rate for each tree = a+b+c+d+e+f Rate for each tree = a+b+c+d+e+f Rate for each tree = a+b+c+d+e+f A67.59 \$ay 468.00 2.1 (ii) Girth from 600 mm to 900 mm a) Labour Mate Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley hour C) GST (multiplying factor 0.2016) on (a+b) C) GST (multiplying factor 0.2016) on (a+b+c) C) Contractor's profit @ 10 % on (a+b+c+d) Rate for each tree = a+b+c+d+e+f Rate for each tree = a+b+c+d+e+f Aday Abour Mate Aday Aday Aday Aday Aday Aday Aday Aday			d) Overhead charges @ 10 % on (a+b+c)			38.26	
Rate for each tree = a+b+c+d+e+f			e) Contractor's profit @ 10 % on (a+b+c	+d)			42.09	
2.1 (ii) Girth from 600 mm to 900 mm a) Labour Mate day 0.040 551.00 22.04 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley hour 0.300 530.00 159.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c+d) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 826.23 Rate for each tree = a+b+c+d+e+f 826.20 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c+d) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			f) Cess @ 1% on (a+b+c+d+e)				4.63	
2.1 (ii) Girth from 600 mm to 900 mm a) Labour Mate day 0.040 551.00 22.04 L-12 Mazdoors for cutting trees including cutting, day 0.900 424.00 381.60 L-13 refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley hour 0.300 530.00 159.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c+d) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 826.23 Rate for each tree = a+b+c+d+e+f 826.23 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c+d) 145.93			Rate for each tree = a+b+c+d+e+f					
a) Labour Mate Mate Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley Contractor's profit @ 10 % on (a+b+c) Mate Ma	0.4	/:: \	O'-44 form 000 mm to 000 mm			say	<u>468.00</u>	
Mate Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley hour 0.300 530.00 159.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 826.23 Rate for each tree = a+b+c+d+e+f 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) c) GST (multiplying factor 0.2016) on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d)	2.1	(11)						
Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means b) Machinery Tractor-trolley hour 0.300 530.00 159.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c+d) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 8.18 Rate for each tree = a+b+c+d+e+f 826.23 say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			-,	dav	0.040	551.00	22.04	L-12
Stacking of serviceable materials within 1000 metres lead by manual means b) Machinery hour 0.300 530.00 159.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 8.18 Rate for each tree = a+b+c+d+e+f 826.23 826.00			Mazdoors for cutting trees including cutting,			424.00		L-13
b) Machinery Tractor-trolley hour 0.300 530.00 159.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c+d) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 8.18 Rate for each tree = a+b+c+d+e+f 826.23 say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93								
b) Machinery			•					
Tractor-trolley								
c) GST (multiplying factor 0.2016) on (a+b) 113.43 d) Overhead charges @ 10 % on (a+b+c) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 8.18 Rate for each tree = a+b+c+d+e+f 826.23 say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			,	hour	0.300	530.00	159 00	P&M-053
d) Overhead charges @ 10 % on (a+b+c) 67.61 e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 8.18 Rate for each tree = a+b+c+d+e+f 826.23 say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c+d) 145.93			•		0.000	000.00		
e) Contractor's profit @ 10 % on (a+b+c+d) 74.37 f) Cess @ 1% on (a+b+c+d+e) 8.18 Rate for each tree = a+b+c+d+e+f 826.23 say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93				-				
f) Cess @ 1% on (a+b+c+d+e) Rate for each tree = a+b+c+d+e+f 826.23 say 826.00 2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)			, , ,	-				
Rate for each tree = a+b+c+d+e+f			, , ,	,				
2.1 (iii) Girth from 900 mm to 1800 mm a) Labour Mate Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			, ,				826.23	
a) Labour Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93						say	<u>826.00</u>	
Mate day 0.080 551.00 44.08 L-12 Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93	2.1	(iii)	Girth from 900 mm to 1800 mm					
Mazdoors for cutting trees including cutting, day 2.000 424.00 848.00 L-13 refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			•		0.000	554.00	44.00	I 12
refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93								
stacking of serviceable materials within 1000 metres b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93				day	2.000	121.00	040.00	
b) Machinery Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93								
Tractor-trolley hour 0.400 530.00 212.00 P&M-053 c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93								
c) GST (multiplying factor 0.2016) on (a+b) 222.58 d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			,	hour	0.400	530.00	212.00	P&M-053
d) Overhead charges @ 10 % on (a+b+c) 132.67 e) Contractor's profit @ 10 % on (a+b+c+d) 145.93					0.400	330.00		
e) Contractor's profit @ 10 % on (a+b+c+d) 145.93			, , , , ,	-				
			,	-				
, , , , , , , , , , , , , , , , , , , ,				- -,				
Rate for each tree = a+b+c+d+e+f 1621.31			, , ,					
say <u>1621.00</u>						say		
2.2 201 Clearing Grass and Removal of Rubbish	2.2 201		=			•	_	
Clearing grass and removal of rubbish up to a distance of 50 metres outside the periphery of the area.				distand	e of 50 me	tres outside	the periphery	
By Manual Means			By Manual Means					

Unit = Hectare

Taking output = 1 Hectare

		SITE CLEARA	WITCE				
Sr No Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
-		a) Labour					
		Mate	day	2.000	551.00	1102.00	L-12
		Mazdoor	day	50.000	424.00	21200.00	L-13
		b) GST (multiplying factor 0.2016) on (a				4496.08	
		c) Overhead charges @ 10 % on (a+b)	•			2679.81	
		d) Contractor's profit @ 10 % on (a+b+c)			2947.79	
		e) Cess @ 1% on (a+b+c+d)				324.26	
		Rate per Hectare = a+b+c+d+e				32749.94	
					say	<u>32750.00</u>	
2.3 201		Classian and Crubbian Bood Land					
2.3 201		Clearing and Grubbing Road Land including	uproofi	na ronk w	ogototion g	raca buahaa	
		Clearing and grubbing road land including shrubs, saplings and trees girth up to 300 mr disposal of unserviceable materials and state auctioned, up to a lead of 1000 metres included not exceeding 150 mm in thickness.	n, remo	val of stum serviceab	ips of trees le material	cut earlier and to be used or	
		Unit = Hectare					
		Taking output = 1 Hectare					
	(i)	By Manual Means:-					
		-					
	^	In area of light jungle					
		a) Labour Mate	day	6.000	EE1 00	2206.00	L-12
			day		551.00	3306.00	L-12 L-13
		Mazdoor	day	150.000	424.00	63600.00	L-10
		b) Machinery	ha	4 000	E20.00	E20.00	P&M-053
		Tractor-trolley	hour	1.000	530.00	530.00	Faivi-055
		c) GST (multiplying factor 0.2016) on (a	ı+b)			13595.10	
		d) Overhead charges @ 10 % on (a+b+c)			8103.11	
		e) Contractor's profit @ 10 % on (a+b+c				8913.42	
			٠.,			980.48	
		, ,					
		Rate for each tree = a+b+c+d+e+f				99028.11	
	_				say	<u>99028.00</u>	
2.3 (i)	В	In area of thorny jungle					
		a) Labour					
		Mate	day	8.000	551.00	4408.00	L-12
		Mazdoor	day	200.000	424.00	84800.00	L-13
		b) Machinery					
		Tractor-trolley	hour	2.000	530.00	1060.00	P&M-053
		c) GST (multiplying factor 0.2016) on (a	+b)			18198.03	
		d) Overhead charges @ 10 % on (a+b+c	-			10846.60	
			•				
		e) Contractor's profit @ 10 % on (a+b+c	+a)			11931.26	
		f) Cess @ 1 % on (a+b+c+d+e)				1312.44	
		Rate for each tree = a+b+c+d+e+f				132556.33	
					say	<u>132556.00</u>	
2.3	(ii)	By Mechanical Means					
	Α	In area of light jungle					
		a) Labour					
		Mate	day	0.160	551.00	88.16	L-12
		Mazdoor	day		424.00	1696.00	L-13
		b) Machinery				1220.00	
		Dozer 80 HP with attachment for removal of	hour	10.000	5045.00	50450.00	P&M-014
		trees & stumps		4.000	F00.00	E00.00	D9 M 050
		Tractor-trolley	hour	1.000	530.00	530.00	P&M-053
		c) GST (multiplying factor 0.2016) on (a	ı+b)			10637.25	
		d) Overhead charges @ 10 % on (a+b+c)			6340.14	
		e) Contractor's profit @ 10 % on (a+b+c	-			6974.16	
		f) Cess @ 1 % on (a+b+c+d+e)	- ,			767.16	
		i) Dess w i /0 oii (arbreture)				101.10	

			SITE CLEAR	ANCE						
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.		
			Rate for each tree = a+b+c+d+e+f				77482.87			
		_				say	<u>77483.00</u>			
2.3		В	In area of thorny jungle							
(ii)			a) Labour							
			Mate	day	0.240	551.00	132.24	L-12		
			Mazdoor	day	6.000	424.00	2544.00	L-13		
			b) Machinery		40.000	5045.00	00540.00	D0M 044		
			Dozer 80 HP with attachment for removal of	hour	12.000	5045.00	60540.00	P&M-014		
			trees & stumps Tractor-trolley	hour	1.500	530.00	795.00	P&M-053		
			•		1.500	550.00				
			c) GST (multiplying factor 0.2016) on (a				12904.67			
			d) Overhead charges @ 10 % on (a+b+c	-			7691.59			
			e) Contractor's profit @ 10 % on (a+b+c	:+d)			8460.75			
			f) Cess @ 1 % on (a+b+c+d+e)				930.68			
			Rate for each tree = a+b+c+d+e+f				93998.93			
						say	<u>93999.00</u>			
2.4	202		Dismantling of Structures Dismantling of existing structures like culverts							
		comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres								
			Unit = cum							
		/:\	Taking output = 1.25 cum							
		(I) 	Lime /Cement Concrete							
			By Manual Means Lime Concrete, cement concrete grade M·							
		^	10 and below							
			a) Labour							
			Mate	day	0.040	551.00	22.04	L-12		
			Mazdoor for dismantling and loading	day	1.000	424.00	424.00	L-13		
			b) Machinery	•						
			Tractor-trolley	hour	0.270	530.00	143.10	P&M-053		
			c) GST (multiplying factor 0.2016) on (a	a+b)			118.77			
			d) Overhead charges @ 10 % on (a+b+c	:)			70.79			
			e) Contractor's profit @ 10 % on (a+b+c	;+d)			77.87			
			f) Cess @ 1 % on (a+b+c+d+e)	,			8.57			
			Cost for 1.25 cum = a+b+c+d+e+f				865.14			
			Rate per cum = (a+b+c+d+e+f)/ 1.25				692.11			
			(4 4 5 4 5 7)			say	692.00			
2.4 (i)		В	Cement Concrete Grade M-15 & M-20			•				
			a) Labour							
			Mate	day	0.050	551.00	27.55	L-12		
			Mazdoor for dismantling and loading	day	1.250	424.00	530.00	L-13		
			b) Machinery							
			Tractor-trolley	hour	0.270	530.00	143.10	P&M-053		
			c) GST (multiplying factor 0.2016) on (a	a+b)			141.25			
			d) Overhead charges @ 10 % on (a+b+c	;)			84.19			
			e) Contractor's profit @ 10 % on (a+b+c	:+d)			92.61			
			f) Cess @ 1 % on (a+b+c+d+e)				10.19			
			Cost for 1.25 cum = a+b+c+d+e+f				1028.89			
			Rate per cum = (a+b+c+d+e+f)/ 1.25				823.11			
			•			say	<u>823.00</u>			
2.4 (i)		С	Prestressed / Reinforced cement concrete	grade I	√ 1-20 & abo	ove	_			
			a) Labour							
			Mate	day	0.150	551.00	82.65	L-12		

Sr No	Ref. to		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH Spec.		·					Input ref.
			Blacksmith	day	0.250	593.00	148.25	L-02
			Mazdoor for dismantling, loading and	day	3.500	424.00	1484.00	L-13
			unloading					
			b) Machinery		0.070	500.00	440.40	P&M-053
			Tractor-trolley	hour	0.270	530.00	143.10	Palvi-USS
			c) GST (multiplying factor 0.2016) on (a	-			374.57	
			d) Overhead charges @ 10 % on (a+b+c	-			223.26	
			e) Contractor's profit @ 10 % on (a+b+c	:+d)			245.58	
			f) Cess @ 1% on (a+b+c+d+e)				27.01	
			Cost for 1.25 cum = a+b+c+d+e+f				2728.42	
			Rate per cum = (a+b+c+d+e+f)/ 1.25				2182.74	
0.4			De Markaniaal Manua fanitama Na 200/ b	١٥ / ٥١		say	<u>2183.00</u>	
2.4		II .	- ,)& (C)				
		А	Cement Concrete Grade M-15 & M-20					
			a) Labour Mate	day	0.020	551.00	11.02	L-12
			Mazdoor for loading and unloading	day		424.00	106.00	L-13
			Mazdoor with Pneumatic breaker	day		424.00	106.00	L-14
			b) Machinery	•				
			Air Compressor 250 cfm with 2 leads of	hour	0.670	658.00	440.86	P&M-001
			pneumatic breaker @ 1.5 cum per hour					D0M 050
			Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
			c) GST (multiplying factor 0.2016) on (a	-			162.69	
			d) Overhead charges @ 10 % on (a+b+c	-			96.97	
			e) Contractor's profit @ 10 % on (a+b+c	:+d)			106.66	
			f) Cess @ 1% on (a+b+c+d+e)				11.73	
			Cost for 1.25 cum = a+b+c+d+e+f				1185.03	
			Rate per cum = (a+b+c+d+e+f)/ 1.25				948.02	
						say	<u>948.00</u>	
2.4 II		В	Prestressed / reinforced cement concrete	grade M	I-20 & abo	ve		
			a) Labour					
			Mate	day		551.00	27.55	L-12
			Mazdoor with Pneumatic breaker Blacksmith	day day		424.00 593.00	279.84 148.25	L-14 L-02
			Mazdoor for loading and unloading	day		424.00	106.00	L-13
			b) Machinery	aay	0.200	12 1.00	100.00	
			Air Compressor 250 cfm with 2 leads of	hour	1.000	658.00	658.00	P&M-001
			pneumatic breaker @ 1.00 cum per hour					
			Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
			c) GST (multiplying factor 0.2016) on (a	a+b)			274.73	
			d) Overhead charges @ 10 % on (a+b+c	:)			163.75	
			e) Contractor's profit @ 10 % on (a+b+c	:+d)			180.12	
			f) Cess @ 1% on (a+b+c+d+e)				19.81	
			Cost for 1.25 cum = a+b+c+d+e+f				2001.15	
			Rate per cum = $(a+b+c+d+e+f)/1.25$				1600.92	
						say	<u>1601.00</u>	
2.4		(ii)	Dismantling Brick / Tile work					
		Α	In lime mortar					
			a) Labour					
			Mate	day	0.020	551.00	11.02	L-12
			Mazdoor for dismantling, loading and	day	0.500	424.00	212.00	L-13
			unloading b) Machinery					
			Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
			c) GST (multiplying factor 0.2016) on (a		_		73.81	
			o, con (manipiying factor 0.2010) off (70.01	

Sr No Ref. to	Π	Description Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
MoRTH Spec.		Безсприон	Jiiit	Quantity	Nute III No	OOST III NS	Input ref.
		d) Overhead charges @ 10 % on (a+b+	c)			43.99	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			48.39	
		f) Cess @ 1% on (a+b+c+d+e)				5.32	
		Cost for 1.25 cum = a+b+c+d+e+f				537.63	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				430.10	
					say	<u>430.00</u>	
2.4 (ii)	В	In cement mortar					
		a) Labour					
		Mate	day	0.030	551.00	16.53	L-12 L-13
		Mazdoor for dismantling, loading and unloading	day	0.750	424.00	318.00	L-10
		b) Machinery					
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
		c) GST (multiplying factor 0.2016) on	(a+b)			96.29	
		d) Overhead charges @ 10 % on (a+b+	c)			57.39	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			63.13	
		f) Cess @ 1% on (a+b+c+d+e)				6.94	
		Cost for 1.25 cum = a+b+c+d+e+f				701.38	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				561.10	
					say	<u>561.00</u>	
2.4 (ii)	С	In mud mortar					
		a) Labour		0.000	554.00	44.00	1 10
		Mazdoor for diamontling and loading	day	0.020 0.400	551.00 424.00	11.02 169.60	L-12 L-13
		Mazdoor for dismantling and loading b) Machinery	day	0.400	424.00	109.00	2 10
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
		c) GST (multiplying factor 0.2016) on	(a+b)			65.26	
		d) Overhead charges @ 10 % on (a+b+				38.90	
		e) Contractor's profit @ 10 % on (a+b+	-			42.79	
		f) Cess @ 1% on (a+b+c+d+e)	,			4.71	
		Cost for 1.25 cum = a+b+c+d+e+f				475.38	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				380.30	
		. ,			say	<u>380.00</u>	
2.4 (ii)	D	Dry brick pitching or brick soling					
		a) Labour					
		Mate	day	0.014	551.00	7.71	L-12
		Mazdoor for Dismantling, loading and unloading	day	0.350	424.00	148.40	L-13
		b) Machinery					
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
		c) GST (multiplying factor 0.2016) on	(a+b)			60.32	
		d) Overhead charges @ 10 % on (a+b+				35.95	
		e) Contractor's profit @ 10 % on (a+b+	-			39.55	
		f) Cess @ 1% on (a+b+c+d+e)	,			4.35	
		Cost for 1.25 cum = a+b+c+d+e+f				439.38	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				351.50	
					say	<u>352.00</u>	
2.4		Dismantling Stone Masonry					
	А	Rubble stone masonry in lime mortar					
		a) Labour Mate	day	0.024	551.00	13.22	L-12
		Mazdoor for dismantling, loading and	day	0.600	424.00	254.40	L-13
		unloading.					
		b) Machinery					
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053

Sr No Ref. to	_	SITE CLEARAN		0	D-4- 1 1	0	D
Sr No Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		c) GST (multiplying factor 0.2016) on (a+	b)			82.80	
		d) Overhead charges @ 10 % on (a+b+c)				49.35	
		e) Contractor's profit @ 10 % on (a+b+c+c	d)			54.29	
		f) Cess @ 1% on (a+b+c+d+e)				5.97	
		Cost for 1.25 cum = $a+b+c+d+e+f$				603.13	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				482.50	
		. ,			say	<u>483.00</u>	
2.4 (iii)	В	Rubble stone masonry in cement mortar.					
		a) Labour					
		Mate	day	0.030	551.00	16.53	L-12
		Mazdoor for dismantling, loading and	day	0.750	424.00	318.00	L-13
		unloading.					
		b) Machinery	hour	0.270	E20.00	142 10	P&M-053
		Tractor-trolley		0.270	530.00	143.10 96.29	1 WIVI-000
		c) GST (multiplying factor 0.2016) on (a+	0)				
		d) Overhead charges @ 10 % on (a+b+c)				57.39	
		e) Contractor's profit @ 10 % on (a+b+c+c	1)			63.13	
		f) Cess @ 1% on (a+b+c+d+e)				6.94	
		Cost for 1.25 cum = a+b+c+d+e+f				701.38	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				561.10	
2.4 (:::)	C	Dubble Stone Masonwill moud monter			say	<u>561.00</u>	
2.4 (iii)	С	Rubble Stone Masonry in mud mortar.					
		a) Labour Mate	dov	0.020	551.00	11.02	L-12
		Mazdoor for dismantling, loading and	day day		424.00	212.00	L-12
		unloading.	uay	0.500	424.00	212.00	
		b) Machinery					
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
		c) GST (multiplying factor 0.2016) on (a+	b)			73.81	
		d) Overhead charges @ 10 % on (a+b+c)	-			43.99	
		e) Contractor's profit @ 10 % on (a+b+c+c	d)			48.39	
		f) Cess @ 1% on (a+b+c+d+e)	•			5.32	
		Cost for 1.25 cum = $a+b+c+d+e+f$				537.63	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				430.10	
		. ,			say	430.00	
2.4 (iii)	D	Dry rubble masonry					
		a) Labour					
		Mate	day	0.018	551.00	9.92	L-12
		Mazdoor for dismantling, loading and	day	0.450	424.00	190.80	L-13
		unloading. b) Machinery					
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053
		c) GST (multiplying factor 0.2016) on (a+		0.270	000.00	69.31	
		d) Overhead charges @ 10 % on (a+b+c)	5)			41.31	
		· · · · · · · · · · · · · · · · ·	1/			45.44	
		e) Contractor's profit @ 10 % on (a+b+c+c	1)				
		f) Cess @ 1% on (a+b+c+d+e)				5.00	
		Cost for 1.25 cum = a+b+c+d+e+f				504.88	
		Rate per cum = (a+b+c+d+e+f)/ 1.25			COV	403.90 404.00	
2.4 (iii)	E	Dismantling stone pitching/ dry stone spalls			say	<u>404.00</u>	
(III <i>)</i>	_		•				
		a) Labour Mate	day	0.020	551.00	11.02	L-12
		Mazdoor for dismantling, loading and	day		424.00	169.60	L-13
		unloading.		2.700			
		b) Machinery					
		Tractor-trolley	hour	0.270	530.00	143.10	P&M-053

Sr No	Ref. to			Description	OHE GELAN	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH Spec.									Input ref.
			c)	GST (multiplying fact	or 0.2016) on (∟—— a+b)			65.26	
			d)	Overhead charges @		-			38.90	
				Contractor's profit @					42.79	
			f)	Cess @ 1% on (a+b+c	-	,			4.71	
			•	for 1.25 cum = a+b+c+d	•				475.38	
			-	per cum = (a+b+c+d+e					380.30	
				. `	,			say	380.00	
2.4 (iii)		F	dism	antling boulders laid i antled materials. Labour	n wire crates	includin	g opening	of crates	and stacking	
			Mate			day	0.020	551.00	11.02	L-12
			Mazd unloa b)	oor for dismantling, load ding Machinery	ling and	day	0.500	424.00	212.00	L-13
			,	or-trolley		hour	0.270	530.00	143.10	P&M-053
			c)	GST (multiplying fact	or 0.2016) on (a+b)			73.81	
			-	Overhead charges @		-			43.99	
				Contractor's profit @	-	-			48.39	
			-	Cess @ 1% on (a+b+c	+d+e)	ŕ			5.32	
			Cost	for 1.25 cum = a+b+c+d	+e+f				537.63	
			Rate	per cum = (a+b+c+d+e	+f)/ 1.25				430.10	
								say	<u>430.00</u>	
2.4			above a) I Mate Carpe Mazd unloa b) Tracte c) d) e) f) Cost	oor for dismantling, load ding. Machinery or-trolley GST (multiplying fact Overhead charges @ Contractor's profit @ Cess @ 1% on (a+b+c for 1.25 cum = a+b+c+d	or 0.2016) on (10 % on (a+b+c 10 % on (a+b+c +d+e) +e+f	day day day hour a+b) c)	0.060 0.500 1.000	551.00 593.00 424.00 530.00	33.06 296.50 424.00 143.10 180.77 107.74 118.52 13.04 1316.73	L-12 L-04 L-13 P&M-053
			Rate	per cum = (a+b+c+d+e	+f)/ 1.25				1053.38	
								say	<u>1053.00</u>	
2.4			cuttir Unit : Takin Inclu	Work in all types of song of rivet. = tonne ng output = 1 tonne ding dismembering Labour	ections upto a	height o	f 5 m abo	ve plinth le	vel excluding	
			Mate			day	0.140	551.00	77.14	L-12
			Black		ling and	day	1.000	593.00	593.00	L-02 L-13
			unloa Add 2	oor for dismantling, load ding 2.5 per cent of cost of g, ropes, pulleys etc. Machinery	· ·	day	2.500	424.00	1060.00 43.25	L-13
			Tracto	or-trolley		hour	0.170	530.00	90.10	P&M-053
			c)	GST (multiplying fact	or 0.2016) on (a+b)			375.68	
			d)	Overhead charges @	10 % on (a+b+c	c)			223.92	

a u Instr	_	SITE CLEARAN			- · - '	<u> </u>	1 1
Sr No Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		e) Contractor's profit @ 10 % on (a+b+c+	d)			246.31	
		f) Cess @ 1% on (a+b+c+d+e)	•			27.09	
		Rate per tonne = a+b+c+d+e+f				2736.49	
		rate per terme a brovarer			say	2736.00	
2.4 (v)	В	Excluding dismembering.			,	 -	
		a) Labour		0.000	554.00	404.00	L-12
		Mate Mazdoor for diamontling, loading and	day		551.00 424.00	121.22	L-12 L-13
		Mazdoor for dismantling, loading and unloading	day	2.000	424.00	848.00	L-10
		Blacksmith	day	0.500	593.00	296.50	L-02
		Add 2.5 per cent of cost of labour for gas	day	0.000	000.00	31.64	
		cutting, ropes, pulleys etc.					
		b) Machinery					
		Tractor-trolley	hour	0.170	530.00	90.10	P&M-053
		c) GST (multiplying factor 0.2016) on (a+	b)			279.71	
		d) Overhead charges @ 10 % on (a+b+c)				166.72	
		e) Contractor's profit @ 10 % on (a+b+c+	d)			183.39	
		f) Cess @ 1% on (a+b+c+d+e)	,			20.17	
		Rate per tonne = a+b+c+d+e+f				2037.45	
		Nate per tollile - a bic a e i			say	2037.43	
2.4 (v)	С	Extra over item No(v) A and(v) B for cuttir	na rive	ite	Suy	2007.00	
(,		Unit = each	.9				
		Taking output = 10 rivets a) Labour					
		Mate	day	0.010	551.00	5.51	L-12
		Blacksmith	day		593.00	77.09	L-02
		Mazdoor	day	0.130	424.00	55.12	L-13
		b) GST (multiplying factor 0.2016) on (a)				27.76	
		c) Overhead charges @ 10 % on (a+b)				16.55	
		d) Contractor's profit @ 10 % on (a+b+c)				18.20	
		e) Cess @ 1% on (a+b+c+d)				2.00	
		Cost for 10 rivets = a+b+c+d+e				202.23	
		Rate for each rivet = (a+b+c+d+e)/10				20.22	
		,			say	<u>20.00</u>	
2.4	(vi)	Scraping of Bricks Dismantled from Brick W	ork in	cluding S	tacking.		
		Unit = numbers					
		Taking output = 1000 numbers					
	Α	In lime/Cement mortar					
		a) Labour					
		Mate	day	0.140	551.00	77.14	L-12 L-13
		Mazdoor b) CST (multiplying factor 0.2046) on (c)	day	3.500	424.00	1484.00 314.73	L-13
		b) GST (multiplying factor 0.2016) on (a)					
		c) Overhead charges @ 10 % on (a+b)				187.59	
		d) Contractor's profit @ 10 % on (a+b+c)				206.35	
		e) Cess @ 1% on (a+b+c+d)				22.70	
		Rate per1000 Nos = a+b+c+d+e				2292.51	
0.4(1.)	_	La secondario de la constanta			say	<u>2293.00</u>	
2.4 (iv)	В	In mud mortar					
		a) Labour	لم	0.050	EE4 00	07.55	L-12
		Mate Mazdoor	day day	0.050 1.250	551.00 424.00	27.55 530.00	L-12 L-13
		b) GST (multiplying factor 0.2016) on (a)	uay	1.200	424.00	112.40	0
		c) Overhead charges @ 10 % on (a+b)				67.00	
		d) Contractor's profit @ 10 % on (a+b+c)				73.70	
						8.11	
		e)				818.76	
		וימנים אבו ויטיט וויטים – מדטדנדעדפ			621/	819.00	
					say	<u>019.00</u>	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
2.4	<u> </u>	(vii)	Scraping of Stone from Dismantled Stone M	/lasonr	'y	l		
			Unit = cum					
			Taking output = 1 cum					
		Α	In cement and lime mortar a) Labour					
			a) Labour Mate	day	0.060	551.00	33.06	L-12
			Mazdoor	day		424.00	593.60	L-13
			b) GST (multiplying factor 0.2016) on (a)			126.33	
			c) Overhead charges @ 10 % on (a+b)				75.30	
			d) Contractor's profit @ 10 % on (a+b+c)				82.83	
			e) Cess @ 1% on (a+b+c+d)				9.11	
			Rate per cum = a+b+c+d+e				920.23	
0.4.6	•••	_	L. M. alamandan			say	<u>920.00</u>	
2.4 (v	11)	В	In Mud mortar					
			a) Labour Mate	dov	0.010	551.00	E E1	L-12
			Mazdoor	day day		424.00	5.51 127.20	L-13
			b) GST (multiplying factor 0.2016) on (a	•	0.000		26.75	
			c) Overhead charges @ 10 % on (a+b)				15.95	
			d) Contractor's profit @ 10 % on (a+b+c)				17.54	
			e) Cess @ 1% on (a+b+c+d)				1.93	
			Rate per cum = a+b+c+d+e				194.88	
						say	<u>195.00</u>	
2.4		(viii)	Scarping Plaster in Lime or Cement Mortar	from E	Brick/ Stor	ne Masonry		
			Unit = sqm					
			Taking output = 100 sqm					
			a) Labour		0.400	EE4 00	00.40	L-12
			Mate Mazdoor for scarping and loading	day day		551.00 424.00	88.16 1696.00	L-12 L-13
			b) Machinery	uay	4.000	424.00	1090.00	2.0
			Tractor-trolley	hour	0.320	530.00	169.60	P&M-053
			c) GST (multiplying factor 0.2016) on (a	+b)			393.88	
			d) Overhead charges @ 10 % on (a+b+c)	•			234.76	
			e) Contractor's profit @ 10 % on (a+b+c+	-d)			258.24	
			f) Cess @ 1% on (a+b+c+d+e)	•			28.41	
			Cost for 100 sqm = a+b+c+d+e+f				2869.05	
			Rate per sqm = $(a+b+c+d+e+f)/100$				28.69	
						say	<u>29.00</u>	
2.4		(ix)	Removing all type of Hume Pipes and Simulating Forthwesk and Dispositions of Marian		-	a lead of	1000 metres	i
			including Earthwork and Dismantling of Ma <i>Unit</i> = metre	Sonry	WOIKS.			
			Taking output = 1 metre					
		Α	Up to 600 mm dia					
			a) Labour					
			Mate	day		551.00	11.02	L-12
			Mazdoor	day	0.520	424.00	220.48	L-13
			b) GST (multiplying factor 0.2016) on (a))			46.67	
			c) Overhead charges @ 10 % on (a+b)				27.82	
			d) Contractor's profit @ 10 % on (a+b+c)				30.60	
			e) Cess @ 1% on (a+b+c+d)				3.37	
			Rate per meter = a+b+c+d+e				339.96	
2.4 (ix	c)	В	Above 600 mm to 900 mm dia			say	<u>340.00</u>	
4.→ (1)	~)							
			a) Labour Mate	day	0.030	551.00	16.53	L-12
					2.300	3000	. 0.00	

			SITE CLEARA	INCE				
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Mazdoor	day	0.700	424.00	296.80	L-13
			b) GST (multiplying factor 0.2016) on (a	1)			63.17	
			c) Overhead charges @ 10 % on (a+b)				37.65	
			d) Contractor's profit @ 10 % on (a+b+c)			41.42	
			e) Cess @ 1% on (a+b+c+d)				4.56	
			Rate per meter = a+b+c+d+e				460.13	
						say	<u>460.00</u>	
2.4 (i)	x)	С	Above 900 mm					
			a) Labour		0.050	FF4 00	07.55	L-12
			Mate Mazdoor	day day		551.00 424.00	27.55 508.80	L-12 L-13
			b) GST (multiplying factor 0.2016) on (a		1.200	424.00	108.13	2.10
			c) Overhead charges @ 10 % on (a+b)	',			64.45	
			d) Contractor's profit @ 10 % on (a+b+c	`			70.89	
				,			7.80	
			, , ,				787.62	
			Rate per meter = a+b+c+d+e			say	788.00	
		Not	1. The excavation of earth, dismantling of stor	ne maso	nrv work	Suy	700.00	
		е	in head walls and protection works is not inclube measured and paid separately.					
2.5	202		Credit for retrieved stone from masonry wo as per actual availability. Dismantling of Flexible Pavements	rk may l	be taken			
2.5	202		_	cal of a	licmontlad	matarials u	n to a load of	:
			Dismantling of flexible pavements and dispo 1000 metres, stacking serviceable and unserv				p to a lead of	
			Unit = cum	locable	materiale	ooparatory		
			Taking output = 1 cum					
		ı	By Manual Means					
		Α	Bituminous courses					
			a) Labour					
			Mate	day		551.00	33.06	L-12
			Mazdoor for dismantling, loading and	day	1.500	424.00	636.00	L-13
			unloading b) Machinery					
			Tractor-trolley	hour	0.380	530.00	201.40	P&M-053
			c) GST (multiplying factor 0.2016) on (a	+h)			175.48	
			d) Overhead charges @ 10 % on (a+b+c	•			104.59	
							115.05	
			e) Contractor's profit @ 10 % on (a+b+c f) Cess @ 1% on (a+b+c+d+e)	·uj			12.66	
			, , , , ,				1278.24	
			Rate per cum = a+b+c+d+e+f			say	1278.00	
2.5 I		В	Granular courses			Say	1210.00	
			a) Labour					
			Mate	day	0.040	551.00	22.04	L-12
			Mazdoor for dismantling, loading and unloading.	day		424.00	424.00	L-13
			b) Machinery Tractor-trolley	hour	0.330	530.00	174.90	P&M-053
			c) GST (multiplying factor 0.2016) on (a	+b)			125.18	
			d) Overhead charges @ 10 % on (a+b+c	•			74.61	
			e) Contractor's profit @ 10 % on (a+b+c				82.07	
			f) Cess @ 1% on (a+b+c+d+e)	- ,			9.03	
			Rate per cum = a+b+c+d+f			say	911.83 <u>912.00</u>	

		SITE CLEARANCE							
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
2.5		ll l	By I	Mechanical Means					
		Α	Bitu	minous course					
			- /	Labour	1	0.040	FF4 00	5.54	1 10
			Mate		day	0.010	551.00	5.51	L-12 L-13
			Mazo b)	Machinery	day	0.300	424.00	127.20	L-13
			,	tor-trolley	hour	0.380	530.00	201.40	P&M-053
				n tractor with ripper @ 60 cum per hour	hour	0.020	511.00	10.22	P&M-055
						0.020	311.00		
			c)	GST (multiplying factor 0.2016) on (69.42	
			d)	Overhead charges @ 10 % on (a+b+c				41.38	
			e)	Contractor's profit @ 10 % on (a+b+c	c+d)			45.51	
			f)	Cess @ 1% on (a+b+c+d+e)				4.95	
			Rate	per cum = a+b+c+d+f				505.59	
0.0	202		Dia.		-4		say	<u>506.00</u>	
2.6	202			nantling of Cement Concrete Pavement nantling of cement concrete pavement be					
			breal locat servi	king to pieces not exceeding 0.02 cur ions and disposal of dismantled mater ceable and unserviceable materials sep = cum	n in volu rials up	ıme and s	stock piling	at designated	
				ng output = 1 cum					
			,	Labour					
			Mate		day	0.030	551.00	16.53	L-12
				i skilled mazdoor for operating	day	0.500	424.00	212.00	L-14
			•	matic tools doors as helpers including loading and	day	0.500	424.00	212.00	L-13
				ading	day	0.000	121.00	212.00	
			b)	Machinery					
				ompressor 250 cfm with two leads for matic cutters/ hammers @ 1 cum per	hour	1.000	658.00	658.00	P&M-001
			hour						
			Trac	tor-trolley	hour	0.400	530.00	212.00	P&M-053
			Joint	Cutting Machine with 2-3 blades	hour	1.000	143.00	143.00	P&M-083
			c)	GST (multiplying factor 0.2016) on (a+b)			293.03	
			d)	Overhead charges @ 10 % on (a+b+c	c)			174.66	
			e)	Contractor's profit @ 10 % on (a+b+c	c+d)			192.12	
			f)	Cess @ 1% on (a+b+c+d+e)				21.13	
			Rate	per cum = a+b+c+d+f				2134.47	
							say	<u>2134.00</u>	
2.7	202		case dism mach	above analysis is for removal of comp full depth repair work is required antling, provision of a concrete cu nine may be added for 0.25 hours. nantling of Guard Rails	to be d	lone after			
			Dismand mate Unit Takin	nantling guard rails by manual means an up to a lead of 1000 metres, stacking rials separately. = running metre ng output = 1 metre Labour	-				
			Mate		day	0.010	551.00	5.51	L-12
			Mazo	door including loading and unloading	day	0.150	424.00	63.60	L-13
			b)	Machinery					
			Trac	tor-trolley	hour	0.050	530.00	26.50	P&M-053
			c)	GST (multiplying factor 0.2016) on (-			19.27	
			d)	Overhead charges @ 10 % on (a+b+c	c)			11.49	

		SITE CLEAR	KANCE				
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		e) Contractor's profit @ 10 % on (a+b+	·c+d)			12.64	-
		f) Cess @ 1% on (a+b+c+d+e)				1.39	
		Rate per metre = a+b+c+d+e+f				140.40	
					say	<u>140.00</u>	
2.8	202	Dismantling of Kerb Stone					
		Dismantling kerb stone by manual means ar	nd dispos	al of disma	intled mater	al with all lifts	
		and up to a lead of 1000 metre					
		Unit = running metre					
		Taking output = 10 metre a) Labour					
		Mate	day	0.010	551.00	5.51	L-12
		Mazdoor including loading and unloading	day		424.00	63.60	L-13
		b) Machinery	,				
		Tractor-trolley	hour	0.200	530.00	106.00	P&M-053
		c) GST (multiplying factor 0.2016) on		0.200	330.00	35.30	
			-			21.04	
			•				
		e) Contractor's profit @ 10 % on (a+b+	·c+a)			23.15	
		f) Cess @ 1% on (a+b+c+d+e)				2.55	
		Cost for 10 m = $a+b+c+d+e+f$				257.15	
		Rate per metre = (a+b+c+d+e+f)/10				25.72	
2.0	202	Diamonthing of Kork Stone Channel			say	<u>26.00</u>	
2.9	202	Dismantling of Kerb Stone Channel					
		Dismantling kerb stone channel by manua	i means	and dispos	sai of disma	intied material	
		with all lifts and up to a lead of 1000 metre					
		Unit = running metre Taking output = 10 metre					
		a) Labour					
		Mate	day	0.015	551.00	8.27	L-12
		Mazdoor including loading and unloading	day		424.00	95.40	L-13
		b) Machinery	,				
		Tractor-trolley	hour	0.300	530.00	159.00	P&M-053
		c) GST (multiplying factor 0.2016) on		0.000	000.00	52.95	
						31.56	
		,	-			34.72	
		e) Contractor's profit @ 10 % on (a+b+	·c+a)				
		f) Cess @ 1% on (a+b+c+d+e)				3.82	
		Cost for 10 m = $a+b+c+d+e+f$				385.72	
		Rate per metre = (a+b+c+d+e+f)/10				38.57	
2 40	202	Dismantling of Kilometre Stone			say	<u>39.00</u>	
2.10	202	•		, .			
		Dismantling of kilometre stone including					
		dismantled material with all lifts and lead up	1000 m	i and back	filling of pit.		
		Unit = Each					
	Α	Taking output = one KM stone 5th KM stone					
	^	Quantity of cement concrete = 0.392 cum					
		a) Labour Mate	day	0.130	551.00	71.63	L-12
		Mazdoor	day		424.00	318.00	L-13
		b) Machinery	day	0.700	124.00	313.30	
		Tractor-trolley	hour	0.150	530.00	79.50	P&M-053
		c) GST (multiplying factor 0.2016) on				94.58	
		d) Overhead charges @ 10 % on (a+b+				56.37	
		e) Contractor's profit @ 10 % on (a+b+	-			62.01	
		· · · · · · · · · · · · · · · · · · ·	o+u)			6.82	
		f) Cess @ 1% on (a+b+c+d+e)	_				
		Rate for one 5th KM stone =	•			688.91	
					say	<u>689.00</u>	

		SITE CLEAR	ANCE				
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	В	Ordinary KM Stone			1		
		Quantity of cement concrete = 0.269 cum					
		a) Labour					
		Mate	day		551.00	11.02	L-12 L-13
		Mazdoor b) Machinery	day	0.500	424.00	212.00	L-13
		Tractor-trolley	hour	0.100	530.00	53.00	P&M-053
		c) GST (multiplying factor 0.2016) on	(a+b)			55.65	
		d) Overhead charges @ 10 % on (a+b+				33.17	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			36.48	
		f) Cess @ 1% on (a+b+c+d+e)				4.01	
		Rate for one ordinary KM stone =	:			405.33	
	_				say	<u>405.00</u>	
	С	Hectometre Stone					
		Quantity of cement concrete = 0.048 cum					
		a) Labour Mate	day	0.004	551.00	2.20	L-12
		Mazdoor	day	0.100	424.00	42.40	L-13
		b) Machinery	,				
		Tractor-trolley	hour	0.020	530.00	10.60	P&M-053
		c) GST (multiplying factor 0.2016) on	(a+b)			11.13	
		d) Overhead charges @ 10 % on (a+b+	c)			6.63	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			7.30	
		f) Cess @ 1% on (a+b+c+d+e)				0.80	
		Rate for one Hectometre stone = a+b+c+d+e+f	I			81.06	
2.11	202	Dismantling of Fencing			say	<u>81.00</u>	
		Dismantling of barbed wire fencing/ wire concrete, back filling of pit by manual mea with all lifts and up to a lead of 1000 unserviceable material separately.	ıns includ	ding dispos	sal of disma	ıntled material	
		Unit = running metre					
		Taking output = 30 metres					
		a) Labour Mate	dov	0.450	EE1 00	92.65	L-12
			day	0.150	551.00	82.65	L-13
		Mazdoor including loading and unloading	day	3.000	424.00	1272.00	
		Blacksmith	day	0.750	593.00	444.75	L-02
		b) Machinery					
		Tractor-trolley	hour	0.150	530.00	79.50	P&M-053
		c) GST (multiplying factor 0.2016) on				378.79	
		d) Overhead charges @ 10 % on (a+b+	-			225.77	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			248.35	
		f) Cess @ 1% on (a+b+c+d+e)				27.32	
		Cost for 30 metres = a+b+c+d+e+f				2759.13	
		Rate per metre = (a+b+c+d+e+f)/30				91.97	
2.12	202	Dismantling of CI Water Pipe Line			say	<u>92.00</u>	

Dismantling of CI water pipe line 600 mm dia including disposal with all lifts and lead upto 1000 metres and stacking of serviceable material and unserviceable material separately under supervision of concerned department

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Uni	t = running metre					
		Tak	ing output = 10 metres					
		a)	Labour					
		Mat	e	day	0.090	551.00	49.59	L-12
		Maz	zdoor	day	2.000	424.00	848.00	L-13
		Plur	mber	day	0.250	593.00	148.25	L-02
		b)	Machinery					
		Tru	ck 10 tonne capacity	hour	0.250	778.00	194.50	P&M-057
		Ligh	nt Crane 3 tonne capacity	hour	0.500	490.00	245.00	P&M-013
		c)	GST (multiplying factor 0.2016) on (a+b)			299.44	
		d)	Overhead charges @ 10 % on (a+b+c	c)			178.48	
		e)	Contractor's profit @ 10 % on (a+b+c	c+d)			196.33	
		f)	Cess @ 1% on (a+b+c+d+e)				21.60	
		Cos	t for 10 metres = a+b+c+d+e+f				2181.19	
		Rat	e per metre = (a+b+c+d+e+f)/10				218.12	
						say	<u>218.00</u>	

 $\ensuremath{\text{Not}}$ The rate analysis does not include any excavation in earth or

2.13 202 Removal of Cement Concrete Pipe of Sewer Gutter

Removal of cement concrete pipe of sewer gutter 1500 mm dia under the supervision of concerned department including disposal with all lifts and up to a lead of 1000 metres and stacking of serviceable and unserviceable material separately but excluding earth excavation and dismantling of masonry works.

Unit = running metre

Taking output = 10 metres

a) Labour

,					
Mate	day	0.100	551.00	55.10	L-12
Mazdoor	day	2.500	424.00	1060.00	L-13
b) Machinery					
Crane 5 tonne capacity	hour	0.300	827.00	248.10	P&M-070
Truck flat body 10 tonne	hour	1.000	778.00	778.00	P&M-057
c) GST (multiplying factor 0.2016)) on (a+b)			431.67	
d) Overhead charges @ 10 % on (a	a+b+c)			257.29	
e) Contractor's profit @ 10 % on (a	a+b+c+d)			283.02	
f) Cess @ 1% on (a+b+c+d+e)				31.13	
Cost for 10 metres = a+b+c+d+e+f				3144.31	
Rate per metre = (a+b+c+d+e+f)/10				314.43	
			sav	314 00	

Not The rate analysis does not include any

2.14 202 Removal of Telephone / Electric Poles and Lines

Removal of telephone / Electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and up to a lead of 1000 metres and stacking the serviceable and unserviceable material separately

dismantling of masonry works which are to be measured and paid separately.

e excavation in earth or dismantling of masonry works which are to be measured and paid separately.

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Unit	t = each					•
		Tak	ing output = 30 Nos					
		a)	Labour					
		Mate	е	day	0.480	551.00	264.48	L-12
		Maz	door	day	10.000	424.00	4240.00	L-13
		Elec	trician/Lineman	day	2.000	593.00	1186.00	L-02
		b)	Machinery					
		Trac	ctor-trolley	hour	1.500	530.00	795.00	P&M-053
		c)	GST (multiplying factor 0.2016) on	(a+b)			1307.47	
		d)	Overhead charges @ 10 % on (a+b+	c)			779.30	
		e)	Contractor's profit @ 10 % on (a+b+	c+d)			857.23	
		f)	Cess @ 1% on (a+b+c+d+e)				94.29	
		Cos	t for 30 poles = a+b+c+d				9523.77	
		Rate	e per pole = (a+b+c+d)/30				317.46	
						say	<u>317.00</u>	

Chapter - 3

EARTHWORK, EROSION CONTROL AND DRAINAGE

Preamble:

- 1 The rates have been analysed using mechanical means. Manual means for certain items have also been provided which can be used for areas inaccessible to machines and also for small jobs.
- 2 In the rate analyses of earthwork, compacted volume of earth has been considered.
- 3 Cutting of earth by dozer has been proposed where the cut earth can be utilized for filling for embankment within a lead upto 100 m.
- Where lead for transporting of earth is more than 100 m, excavator and tipper have been provided.
- The rate caters for disposal of unsuitable soil only upto a distance of 1 km. The cost of transportation beyond the initial lead of 1 km will be paid separately based on tonne-kilometerage.
- The replacement of unsuitable soil by suitable soil shall be provided separately in the estimate. The rate analysis for removal of unsuitable soil does not provide for replacement by suitable soil.
- 7 In cases where embankment is constructed with earth taken from roadway, the cost of depositing the earth at the site of embankment is already included in the disposal of excavated earth and, therefore, the input of dozer for spreading earth can be deleted.
- 8 For narrow and restricted areas, plate compactor has been proposed for compaction to achieve the desired density.
- 9 In case excavated rock is found suitable for incorporation in works, suitable credit for the available rock shall be given.
- 10 For excavation of structures refer to Chapter 11 dealing with items of Foundation.
- 11 The possibility of using the blasted rock fragments for backfilling behind structures or backfilling of foundation pits or filling in medians/separators or use in service road shall be examined before proposing disposal of excavated rock.
- 12 For inhabited areas, controlled blasting with limited charges of explosives has been provided. This involves smaller drill holes and additional requirement of electric detonators. Provision has been made accordingly.
- 13 Any work involved for crossing of water courses for irrigation purpose, etc. will be priced under respective items, like, excavation, grubbing, clearing, etc. for which rate analysis have separately been made.
- 14 Earth excavated from drains can be used in roadway berms. Hence carriage for disposal of same is not provided.
- 15 In case of rock fill embankment, it is assumed that material is available at site from rock cutting.

Sr No	Ref. to MoRTH/D	Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/	
	SR Spec.	·					input ret.	ı

3.1 301 Excavation in Soil by Manual Means.

Excavation for roadway in soil using manual means including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto 1000 metres.

Unit = cum

Taking output = 120 cum

a)	Labour					
•	Mate	day	1.800	551.00	991.80	L-12
	Mazdoor	day	45.000	424.00	19080.00	L-13
b)	Machinery					
	Truck 5.5 cum capacity	hour	10.000	778.00	7780.00	P&M-057
c)	GST (multiplying factor 0.2016) o	n (a+b)			5614.92	
d)	Overhead charges @ 10 % on (a+	b+c)			3346.67	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			3681.34	
f)	Cess @ 1% on (a+b+c+d+e)				404.95	
Co	st of 120 cum = a+b+c+d+e+f				40899.68	
Ra	te per cum = (a+b+c+d+e+f)/120				340.83	
				sav	341.00	

Note In case there is a situation where the cross-section is of cut and fill and cut earth is required to be used in embankment in the immediate vicinity, the item of carriage in the truck shall be omitted.

3.2 301 Excavation in Ordinary Rock by Manual Means

Excavation in ordinary rock using manual means including loading in a truck and carrying of excavated material to embankment site with in all lifts and leads upto 1000 metres

Unit = cum

Taking output = 120 cum

a)	Labour					
	Mate	day	2.800	551.00	1542.80	L-12
	Mazdoor	day	70.000	424.00	29680.00	L-13
b)	Machinery					
	Truck 5.5 cum capacity	hour	10.000	778.00	7780.00	P&M-057
c)	GST (multiplying factor 0.2016) or	n (a+b)			7862.96	
d)	Overhead charges @ 10 % on (a+b	o+c)			4686.58	
e)	Contractor's profit @ 10 % on (a+b	o+c+d)			5155.23	
f)	Cess @ 1% on (a+b+c+d+e)				567.08	
Cos	st of 120 cum = a+b+c+d+e+f				57274.65	
Rat	te per cum = (a+b+c+d+e+f)/120				477.29	
				sav	477 00	

Note In case there is a situation where the cross-section is of cut and fill and cut earth is required to be used in embankment in the immediate vicinity, the item of carriage in the truck shall be omitted.

3.3 Secavation in Soil with Dozer with lead upto 100 metres

Excavation for road way in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.

Unit = cum

Taking output = 180 cum

a)	Labour					
•	Mate	day	0.080	551.00	44.08	L-12
	Mazdoor	day	2.000	424.00	848.00	L-13
b)	Machinery					
	Dozer, 80 HP @ 30 cum per hour	hour	6.000	5045.00	30270.00	P&M-014
c)	GST (multiplying factor 0.2016) on	(a+b)			6282.28	

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

			·		D DRAINA			_
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
		d)	Overhead charges @ 10 % on (a+b+c)			3744.44	
		e)	Contractor's profit @ 10 % on (a+b+c	+d)			4118.88	
		f)	Cess @ 1% on (a+b+c+d+e)				453.08	
		Cos	st for 180 cum = a+b+c+d+e+f				45760.76	
		Rat	te per cum = (a+b+c+d+e+f)/180				254.23	
	301	_				say	<u>254.00</u>	
3.4	301		cavation in Ordinary Rock with Dozer w		=		r	
		and lead of li	cavation for roadway in ordinary rock by I pushing the cut earth to site of embankmd 50 metres), trimming bottom and side sines, grades and cross sections.	ent upto	a distance	of 100 metre	es (average	
			it = cum king output = 108 cum					
		a)	Labour					
			Mate	day	0.120	551.00	66.12	L-12
			Mazdoor	day	3.000	424.00	1272.00	L-13
		b)	Machinery	hour	6.000	5045.00	30270.00	P&M-014
		c)	Dozer, 80 HP @ 20 cum per hour GST (multiplying factor 0.2016) on (a		0.000	3043.00	6372.20	
		c) d)	Overhead charges @ 10 % on (a+b+c				3798.03	
		e)	Contractor's profit @ 10 % on (a+b+c	•			4177.84	
		f)	Cess @ 1% on (a+b+c+d+e)	· u,			459.56	
		,	st for 108 cum = a+b+c+d+e+f				46415.75	
		_	te per cum = (a+b+c+d+e+f)/108				429.78	
						say	<u>430.00</u>	
		trim cro	cavation for roadway in hard rock (requiring nming of bottom and side slopes in accord ss sections, loading and disposal of cut tres	ance with	n requireme	ents of lines,	grades and	
		Un	it = cum					
			king Output = 180 cum					
		a)	Labour					
			Mate	day	0.220	551.00	121.22	
			Mazdoor Driller	day	3.000	424.00		L-12
			I)riller		2.000		1272.00	L-13
		b)		day		551.00 551.00	1102.00	L-13 L-06
		~,	Blaster	day	0.250	551.00 551.00		L-13
							1102.00	L-13 L-06
			Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack	day	0.250	551.00	1102.00 137.75	L-13 L-06 L-03
			Blaster Machinery Dozer, 80 HP @ 30 cum per hour	day	0.2506.000	551.00 5045.00	1102.00 137.75 30270.00	L-13 L-06 L-03 P&M-014
		c)	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity	hour hour	0.2506.0006.000	551.00 5045.00 658.00	1102.00 137.75 30270.00 3948.00	L-13 L-06 L-03 P&M-014 P&M-001
		c)	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity Materials	hour hour hour	0.250 6.000 6.000 6.000 11.250	551.00 5045.00 658.00 1838.00 916.00	1102.00 137.75 30270.00 3948.00 11028.00 10305.00	L-13 L-06 L-03 P&M-014 P&M-001
		c)	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity Materials Gelatin 80 per cent Electric Detonators @ 1 detonator for 2	hour hour	0.250 6.000 6.000 6.000	551.00 5045.00 658.00 1838.00	1102.00 137.75 30270.00 3948.00 11028.00	L-13 L-06 L-03 P&M-014 P&M-001 P&M-017
		c)	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity Materials Gelatin 80 per cent	hour hour hour hour	0.250 6.000 6.000 6.000 11.250 63.000	551.00 5045.00 658.00 1838.00 916.00 166.00 11.59	1102.00 137.75 30270.00 3948.00 11028.00 10305.00 10458.00	L-13 L-06 L-03 P&M-014 P&M-001 P&M-017 P&M-048 M-104 M-094
		c) d)	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity Materials Gelatin 80 per cent Electric Detonators @ 1 detonator for 2 gelatin sticks of 125 gms each Credit for excavated rock found suitable	hour hour hour hour kg each	0.250 6.000 6.000 11.250 63.000 252.000	551.00 5045.00 658.00 1838.00 916.00 166.00 11.59	1102.00 137.75 30270.00 3948.00 11028.00 10305.00 10458.00 2920.68	L-13 L-06 L-03 P&M-014 P&M-001 P&M-017 P&M-048 M-104 M-094 /100
		·	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity Materials Gelatin 80 per cent Electric Detonators @ 1 detonator for 2 gelatin sticks of 125 gms each Credit for excavated rock found suitable for use @ 50 per cent quantity blasted	hour hour hour kg each cum	0.250 6.000 6.000 11.250 63.000 252.000	551.00 5045.00 658.00 1838.00 916.00 166.00 11.59	1102.00 137.75 30270.00 3948.00 11028.00 10305.00 10458.00 2920.68 (24300.00)	L-13 L-06 L-03 P&M-014 P&M-001 P&M-017 P&M-048 M-104 M-094 /100
		d)	Blaster Machinery Dozer, 80 HP @ 30 cum per hour Air compressor, 250 cfm with 2 jack hammer Front end loader 1 cum bucket capacity Tipper10 tonne capacity Materials Gelatin 80 per cent Electric Detonators @ 1 detonator for 2 gelatin sticks of 125 gms each Credit for excavated rock found suitable for use @ 50 per cent quantity blasted GST (multiplying factor 0.2016) on (a	hour hour hour kg each cum	0.250 6.000 6.000 11.250 63.000 252.000	551.00 5045.00 658.00 1838.00 916.00 166.00 11.59	1102.00 137.75 30270.00 3948.00 11028.00 10305.00 10458.00 2920.68 (24300.00)	L-13 L-06 L-03 P&M-014 P&M-001 P&M-048 M-104 M-094 /100

			EARTH WORK, ERUSION CONTI	ROL AN	D DRAINA	GE		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
			Cost for 180 cum = a+b+c+d+e+f+g				69404.04	
			Rate per cum = $(a+b+c+d+e+f+g)/180$				385.58	
						say	<u>386.00</u>	
		Note	1. The quality and availability of rock shall be checked credit.	cked befo	ore affording			

2. In case some rock is issued to the contractor at site, the item of carriage shall be reduced/restricted to that extent.

3.6 301 Excavation in Soil using Hydraulic Excavator CK 90 and Tippers with Disposal upto 1000 metres.

Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m

Unit = cum

Taking output = 360 cum

I al	ning output - 300 cum					
a)	Labour					
	Mate	day	0.080	551.00	44.08	L-12
	Mazdoor	day	2.000	424.00	848.00	L-13
b)	Machinery					
	Hydraulic excavator 0.9 cum bucket capacity @ 60 cum per hour	hour	6.000	2044.00	12264.00	P&M-026
	Tipper 5.5 cum capacity, 4 trips per	hour	16.000	916.00	14656.00	P&M-048
	hour.					
c)	GST (multiplying factor 0.2016) on (a+b)			5606.92	
d)	Overhead charges @ 10 % on (a+b+c	c)			3341.90	
e)	Contractor's profit @ 10 % on (a+b+c	c+d)			3676.09	
f)	Cess @ 1% on (a+b+c+d+e)				404.37	
Co	st for 360 cum = a+b+c+d+e+f				40841.36	
Ra	te per cum = (a+b+c+d+e+f)/360				113.45	
				621/	113 00	

3.7 Secaration in Ordinary Rock using Hydraulic Excavator CK-90 and Tippers with Disposal upto 1000 metres.

Excavation for roadway in ordinary rock with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, transporting to embankment site within all lifts and lead upto 1000 m, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.

Unit = cum

Taking output = 240 cum

a)	Labour					
	Mate	day	0.080	551.00	44.08	L-12
	Mazdoor	day	2.000	424.00	848.00	L-13
b)	Machinery					
	Hydraulic Excavator 0.90 cum bucket capacity @ 36 cum per hour	hour	6.000	2044.00	12264.00	P&M-026
	Tipper 5.5 cum capacity, 4 trips per hour.	hour	11.000	916.00	10076.00	P&M-048
c)	GST (multiplying factor 0.2016) on (a	a+b)			4683.59	
d)	Overhead charges @ 10 % on (a+b+c	;)			2791.57	
e)	Contractor's profit @ 10 % on (a+b+c	:+d)			3070.72	
f)	Cess @ 1% on (a+b+c+d+e)				337.78	
Co	st for 240 cum = a+b+c+d+e+f				34115.74	
Ra	te per cum = (a+b+c+d+e+f)/240				142.15	
				sav	142.00	

			EARTH WORK, EROSION CONTI	KUL AN	UKAINA	JE		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.8	301		Excavation in Hard Rock (blasting prohibit	ed)			-	
			Excavation for roadway in hard rock (blasting	•	,		ers including	
			breaking rock, loading in tippers and disposa					
			trimming bottom and side slopes in accordar	nce with	requireme	nts of lines,	grades and	
			cross sections.					
		Α	Mechanised					
			Unit = cum					
			Taking output = 36 cum					
			a) Labour					1.40
			Mate	day	0.400	551.00	220.40	L-12
			Mazdoor for trimming slopes including	day	10.000	424.00	4240.00	L-13
			mannul loading in truck b) Machinery					
			Hydraulic excavator with rock breaker	hour	6.000	2044.00	12264.00	P&M-026
			attachment @ 6 cum per hour	Hour	0.000	2011.00	12204.00	
			Tipper 5.5 cum capacity, 1 trip per hour.	hour	6.500	916.00	5954.00	P&M-048
			Credit for excavated rock found suitable	cum	18.000	(270.00)	(4860.00)	M-089
			for use @ 50 per cent of excavated			(=: ::::)	(1000100)	
			quantity					
			c) GST (multiplying factor 0.2016) on (a	+b)			3592.19	
			d) Overhead charges @ 10 % on (a+b+c)			2141.06	
			e) Contractor's profit @ 10 % on (a+b+c	+d)			2355.17	
			f) Cess @ 1% on (a+b+c+d+e)	•			259.07	
			Cost for 36 cum = a+b+c+d+e+f				26165.89	
			Rate per cum = (a+b+c+d+e+f)/36				726.83	
			• •			say	<u>727.00</u>	
		Note	1. The quality and availability of rock shall be checked credit.	cked befo	ore affording	_		
			2. In case some rock is issued to the contracto carriage shall be restricted/reduced to that extent.		the item of			
			3.Being small quantity, manual loading will be eco	onomical	in this case			
		В	and has been provided accordingly.					
3.8		-	Manual Method					
			Unit = cum Taking output = 16 cum					
			a) Labour					
			Mate	day	1.640	551.00	903.64	L-12
			Mazdoor including loading in truck	day	16.000	424.00	6784.00	L-13
			Chiseller	day	24.000	551.00	13224.00	L-05
			Blacksmith	day	1.000	593.00	593.00	L-02
			b) Machinery					
			Tipper 5.5 cum capacity, 1 trip per hour.	hour	2.900	916.00	2656.40	P&M-048
			Credit for excavated rock found suitable for use @ 50 per cent of excavated	cum	8.000	(270.00)	(2160.00)	M-089
			c) GST (multiplying factor 0.2016) on (a	+b)			4435.41	
			d) Overhead charges @ 10 % on (a+b+c	•			2643.65	
			e) Contractor's profit @ 10 % on (a+b+c	∓u)			2908.01	
			f) Cess @ 1% on (a+b+c+d+e)				319.88	
			Cost for 16 cum = a+b+c+d+e+f				32307.99	
			Rate per cum = (a+b+c+d+e+f)/16				2019.25	
		Note	Credit is considered for 50 per cent of qual	ntity of w	ıork	say	<u>2019.00</u>	
			•	•				
			2. Loading for disposal will be done man	iuaily, b	eing small			

- Loading for disposal will be done manually, being small quantity.
- 3. In case some rock is issued to contractor at site, the item of carriage shall be omitted to the extent of quantity issued to the contractor.

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

	1	_	EARTH WORK, EROSION CONT	TOL AN	DIVAINA	<u> </u>	ı	1
Sr No	Ref. to MoRTH/E SR Spec		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.9	301	•	Excavation in Hard Rock (controlled blast	ing) wit	h disposal	upto 1000 i	netres	•
			Excavation for roadway in hard rock with conbreaking, trimming of bottom and side slopes grades and cross sections, loading and disposation of the section o	in accor	dance with	requiremen	ts of lines,	
			Unit = cum					
			Taking output = 180 cum					
			a) Labour					
			Mate	day		551.00	121.22	L-12
			Mazdoor	day		424.00	1272.00	L-13
			Driller	day		551.00	1102.00	L-06 L-03
			Blaster	day	0.500	551.00	275.50	L-03
			b) Machinery	harr	6.000	E04E 00	20270.00	P&M-014
			Dozer 80 HP @ 30 cum per hour	hour		5045.00	30270.00	
			Air compressor, 250 cfm with 2 jack hammers	hour		658.00	3948.00	P&M-001
			Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
			Tipper 5.5 cum capacity, 4 trips per hour.	hour	8.200	916.00	7511.20	P&M-048
			c) Materials					
			Gelatin 80 per cent Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	kg each	63.000 1008.000	166.00 11.59	10458.00 11682.72	M-104 M-094 /100
			Credit for excavated rock found suitable for use @ 50 per cent quantity blasted	cum	90.000	(270.00)	(24300.00)	M-089
			Add 5 per cent of cost of a+b+c towards muffling arrangements to guard against any rock fly off during blasting				3883.43	
			d) GST (multiplying factor 0.2016) on (a+b+c)			11542.02	
			e) Overhead charges @ 10 % on (a+b+c	-			6879.41	
			f) Contractor's profit @ 10 % on (a+b+c				7567.35	
			g) Cess @ 1% on (a+b+c+d+e+f)	,			832.41	
			Cost for 180 cum = a+b+c+d+e+f+g				84073.26	
			Rate per cum = $(a+b+c+d+e+f+q)/180$				467.07	
			Trate per cum = (u·b·c·u·c·r·g)/100			say	467.00	
		Note	1. Credit is considered for 50 per cent of q	uantity o	of blastered	_	101100	
			rock, if found suitable for construction	, ,				
			2. In case some rock is issued to the contract	ctor at si	te, the item			
			of carriage shall be reduced to that extent.					
3.10	301		Excavation in Marshy Soil					
			Excavation for roadway in marshy soil with hy including cutting and loading in tippers and di metres, trimming of bottom and side slopes in grades and cross sections.	isposal w	ith in all lift	s and lead u	pto 1000	
			Unit = cum					
			Taking output = 300 cum					
			a) Labour					
			Mate	day		551.00	44.08	L-12
			Mazdoor	day	2.000	424.00	848.00	L-13
			b) Machinery			0011 = 1	4000: 50	D0 14 000
			Hydraulic excavator 0.90 cum bucket capacity @ 50 cum per hour	hour		2044.00	12264.00	P&M-026
			Tipper 5.5 cum capacity, 4 trips per hour.	hour	13.640	916.00	12494.24	P&M-048
			c) GST (multiplying factor 0.2016) on (a	a+b)			5171.10	

3082.14

Overhead charges @ 10 % on (a+b+c)

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

	1	1	EARTH WORK, EROSION CON	I ROL AN	DUKAINA	GE I	Ι	1
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
			e) Contractor's profit @ 10 % on (a+b-	+c+d)			3390.36	
			f) Cess @ 1% on (a+b+c+d+e)				372.94	
			Cost for 300 cum = a+b+c+d+e+f				37666.86	
			Rate per cum = (a+b+c+d+e+f)/300				125.56	
						say	<u>126.00</u>	
3.11	301		Removal of Unserviceable Soil with Disp	-				
			Removal of unserviceable soil including exometres lead but excluding replacement by sper clause 305.					
			Unit = cum Taking autout = 260 aug					
			<i>Taking output = 360 cum</i> a) Labour					
			Mate	day	0.080	551.00	44.08	L-12
			Mazdoor	day	2.000	424.00	848.00	L-13
			b) Machinery	,				
			Excavator 0.90 cum bucket capacity @ 60 cum per hour	hour	6.000	2044.00	12264.00	P&M-026
			Tipper 5.5 cum capacity, 4 trips per hour.	hour	16.360	916.00	14985.76	P&M-048
			c) GST (multiplying factor 0.2016) on	(a+b)			5673.39	
			d) Overhead charges @ 10 % on (a+b-	⊦c)			3381.52	
			e) Contractor's profit @ 10 % on (a+b-	+c+d)			3719.68	
			f) Cess @ 1% on (a+b+c+d+e)				409.16	
			Cost for 360 cum = a+b+c+d+e+f				41325.59	
			Rate per cum = (a+b+c+d+e+f)/360				114.79	
		Note	This item does not include replacement suitable soil. Replacement, where require and paid separately under clause 305.		_			
3.12	303		Presplitting of Rock Excavation Slopes					
			Carrying out excavation in hard rock to achicontrolled use of explosives and blasting acholes, collection of the excavated rock by a loader and disposing of the material with all clause No. 303 Unit = sqm Taking output = 400 sqm(120 curconsidering 300mm average depth of	cessories 80 HP doz lifts and le	in properly zer, loading	aligned and in tipper by	spaced drill a front end	
			excavation over the existing rock face)					
			a) Labour		0.00-	EE (0.5	000.05	1.40
			Mardoor	day		551.00	330.60	L-12 L-13
			Mazdoor b) Machinery	day	15.000	424.00	6360.00	L-13
			 Machinery Air compressor 250 cfm with 2 leads @ 20 cum per hour) hour	6.000	658.00	3948.00	P&M-001
			Dozer, 80 HP	hour	6.000	5045.00	30270.00	P&M-014
			Front end loader 1 cum bucket capacity		6.000	1838.00	11028.00	P&M-017
			c) Materials	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2.200	223.00	3.00	
			Gelatin 80 per cent	kg	42.000	166.00	6972.00	M-104
			Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	each		11.59	7788.48	M-094 /100
			d) GST (multiplying factor 0.2016) on	(a+b+c)			13446.13	
			e) Overhead charges @ 10 % on (a+b-	. ,			8014.32	
			f) Contractor's profit @ 10 % on (a+b+	•			8815.75	
			g) Cess @ 1% on (a+b+c+d+e+f)	,			969.73	
			g, 5000 @ 1,0011 (a.b.0.a.c.)				07042.04	

97943.01

Cost for 400 sqm = a+b+c+d+e+f+g

EARTH WORK, EROSION CONTROL AND DRAINAGE								
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
	•	•	Rate per sqm = (a+b+c+d+e+f+g)/400	•	•	•	244.86	•
		Note			_44	say	<u>245.00</u>	
		Note	In case blasted rock is used to the contract for constructed work, the cost of carriage s					
			that extent.	silali DC	reduced to			
3.13	304		Excavation for Structures					
			Earth work in excavation of foundation of stru	ctures a	s per drawir	ng and techr	nical	
			specification, including setting out, constructi					
			stumps and other deleterious matter, dressin					
			excavation earth to the extent required and u work.	uusing in	e remaining	earth iocail	y for road	
		(i)	Ordinary soil					
			Unit = cum					
			Taking output = 10 cum					
		Α	Manual Means (Depth upto 3 m)					
			a) Labour Mate	dov	0.220	EE1 00	176 20	L-12
			Mazdoor Mazdoor	day day		551.00 424.00	176.32 3392.00	L-13
			b) GST (multiplying factor 0.2016) on (a	_	0.000	121.00	719.37	
			c) Overhead charges @ 10 % on (a+b)	•			428.77	
			d) Contractor's profit @ 10 % on (a+b+c	:)			471.65	
			e) Cess @ 1% on (a+b+c+d)	•			51.88	
			Cost for 10 cum = a+b+c+d+e				5239.99	
			Rate per cum = $(a+b+c+d+e)/10$				524.00	
		Note	O-4-f-d	.:	- 40	say	<u>524.00</u>	
		Note	Cost of dewatering may be added where requeet of labour cost Assessment for dewatering					
			as per site conditions	ig onan i	oo maac			
3.13 (i	i)	В	Mechanical Means (Depth upto 3 m)					
			Unit = cum					
			Taking output = 300 cum					
			a) Labour	4	0.000	FF4 00	470.00	L-12
			Mate Mazdoor	day day		551.00 424.00	176.32 3392.00	L-12
			b) Machinery	day	0.000	424.00	0002.00	
			Hydraulic excavator 1.0 cum bucket	hour	6.000	2044.00	12264.00	P&M-026
			capacity					
			c) GST (multiplying factor 0.2016) on (a				3191.80	
			d) Overhead charges @ 10 % on (a+b+c	-			1902.41	
			e) Contractor's profit @ 10 % on (a+b+c	;+a)			2092.65	
			f) Cess @ 1% on (a+b+c+d+e) Cost for 300 cum = a+b+c+d+e+f				230.19 23249.37	
			Rate per cum = $(a+b+c+d+e+f)/300$				77.50	
			Trails per sum (u.s. s. a. a. a. 1), see			say	<u>78.00</u>	
		Note	Cost of dewatering upto 5 per cent of (a+b		be added,			
			where required. Assessment for dewatering	shall b	e made as			
3.13		(ii)	per site conditions Ordinary Rock (not requiring blasting)					
3.13		A						
			Unit = cum					
			Taking output = 10 cum					
			a) Labour		_			
			Mate	day		551.00	220.40	L-12 L-13
			Mazdoor b) GST (multiplying factor 0 2016) on (a	day N	10.000	424.00	4240.00 899.22	L-13
			b) GST (multiplying factor 0.2016) on (a	')			899.22 535.06	

535.96

Overhead charges @ 10 % on (a+b)

c)

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

		_	EARTH WORK, EROSION CONT	RUL AN	DURAINA	GE		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
	•	•	d) Contractor's profit @ 10 % on (a+b+c	;)		•	589.56	•
			e) Cess @ 1% on (a+b+c+d)				64.85	
			Cost for 10 cum = a+b+c+d+e				6549.99	
			Rate per cum = (a+b+c+d+e)/10				655.00	
						say	<u>655.00</u>	
		Note	Cost of dewatering upto 10 per cent of la added, where required. Assessment for d					
2 42 /:	::\	В	made as per site conditions					
3.13 (i	11)	-	Mechanical Means					
			Unit = cum					
			Taking output = 216 cum					
			a) Labour Mate	day	0.240	551.00	132.24	L-12
			Mazdoor	day	6.000	424.00	2544.00	L-13
			b) Machinery	day	0.000	424.00	2044.00	
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.000	2044.00	12264.00	P&M-026
			c) GST (multiplying factor 0.2016) on (a	a+b)			3011.95	
			d) Overhead charges @ 10 % on (a+b+c	;)			1795.22	
			e) Contractor's profit @ 10 % on (a+b+c	;+d)			1974.74	
			f) Cess @ 1% on (a+b+c+d+e)	,			217.22	
			Cost for 216 cum = a+b+c+d+e+f				21939.37	
			Rate per cum = (a+b+c+d+e+f)/216				101.57	
			(, , , , ,			say	102.00	
		Note	1.Cost of dewatering upto 5 per cent of (a+b) where required Assessment for dewatering si site conditions.2.In case of rock, foundation beyond3 m is not approximately approximately	hall be m	ade as per			
3.13		(iii)	not included. Hard Rock (requiring blasting)					
0		Α	Manual Means					
			Unit = cum					
			Taking output = 10 cum					
			a) Labour					
			,	dov	0.520	EE1 00	202.02	L-12
			i) Mate	day	0.530	551.00	292.03	L-06
			ii) Driller	day	0.840	551.00	462.84	L-03
			iii) Blaster	day	0.400	551.00	220.40	L-13
			iv) Mazdoor	day	12.000	424.00	5088.00	L-13
			b) Machinery					D011 004
			Air Compressor 250 cfm with 2 jack hammer @ 15 cum per hour	hour	0.667	658.00	438.89	P&M-001
			c) Material	ka	3.500	166.00	591.00	M-104
			Blasting Material Detonator electric	kg each	14.000	166.00 11.59	581.00 162.26	M-094
					14.000	11.08		/100
			d) GST (multiplying factor 0.2016) on (a	•			1460.68	
			e) Overhead charges @ 10 % on (a+b+c-	-			870.61	
			f) Contractor's profit @ 10 % on (a+b+c	+d+e)			957.67	
			g) Cess @ 1% on (a+b+c+d+e+f)				105.34	
			Cost for 10 cum = a+b+c+d+e+f+g				10639.72	
			Rate per cum = $(a+b+c+d+e+f+g)/10$				1063.97	
						say	<u>1064.00</u>	
		Note	Cost of dewatering @ 10 per cent of labour	cost may	be added,			

nte Cost of dewatering @ 10 per cent of labour cost may be added, where required Assessment for dewatering shall be made as per site conditions.

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

			EARTH WORK, EROSION CONT		ם בולתווזת	<u> </u>		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.13		(iv)	Hard Rock (blasting prohibited)			•		
			Unit = cum					
			Taking output = 10 cum					
		Α	Mechanical Means					
			a) Labour Mate	day	0.200	551.00	110.20	L-12
			Mazdoor	day	5.000	424.00	2120.00	L-13
			b) Machinery	,	0.000			
			Air Compressor 250 cfm with 2 leads of pneumatic breaker @ 1 cum per hour	hour	10.000	658.00	6580.00	P&M-001
			c) GST (multiplying factor 0.2016) on (a	a+b)			1776.14	
			d) Overhead charges @ 10 % on (a+b+c	-			1058.63	
			e) Contractor's profit @ 10 % on (a+b+c	-			1164.50	
			f) Cess @ 1% on (a+b+c+d+e)	, · u,			128.09	
			Cost for 10 cum = a+b+c+d+e+f				12937.56	
			Rate per cum = $(a+b+c+d+e+f)/10$				1293.76	
			(2 2 2 2 .), 15			say	1294.00	
		Note	1. Cost of dewatering upto 5 per cent of (a- where required Assessment for dewatering siste conditions.			·		
			2.In case of rock, foundation beyond 3 m is not included.	not dug	and hence			
3.13		(v)	Marshy soil					
			Unit = cum					
			Taking output = 10 cum					
		Α	Manual means (upto 3 m depth)					
			a) Labour Mate/Supervisor	day	0.400	551.00	220.40	L-12
			Mazdoor	day	10.000	424.00	4240.00	L-13
			b) Machinery	,	10.000		12 10100	
			Tractor-trolley	hour	2.670	530.00	1415.10	P&M-053
			c) Material					
			Selected earth for refilling	cum	5.000	212.00	1060.00	M-163
			d) GST (multiplying factor 0.2016) on (a	+b+c)			1398.20	
			e) Overhead charges @ 10 % on (a+b+c	+d)			833.37	
			f) Contractor's profit @ 10 % on (a+b+c	+d+e)			916.71	
			g) Cess @ 1% on (a+b+c+d+e+f)				100.84	
			Cost for 10 cum = $a+b+c+d+e+f+g$				10184.62	
			Rate per cum = (a+b+c+d+e+f+g)/ 10				1018.46	
		Note	4.0.4.6.1			say	<u>1018.00</u>	
		Note	 Cost of dewatering @ 30 per cent of (where required Assessment for dewatering si site conditions. 					
			2. Shoring & strutting 20 per cent of (a), who added	ere requir	red may be			
			3. It is assumed that Marshy Soil will be depth only. For deeper excavation below analysis in item (i) to (iv) for ordinary soil					
3.13 (v	/)	В	Mechanical Means					
,	•		a) Labour					
			i) Mate	day	0.080	551.00	44.08	L-12
			ii) Mazdoor for dressing sides, bottom	day	2.000	424.00	848.00	L-13
			and backfilling					
			b) Machinery		0.470	0044.00	0.47.40	DSM 036
			Hydraulic excavator 1.0 cum bucket capacity @ 60 cum per hour	hour	0.170	2044.00	347.48	P&M-026

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

	1	1	_	EARTH WORK, EROSION CONT	KOL AN	DUKAINA	GE I	I	1
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
				Tipper 5.5 cum capacity, 4 trips per	hour	0.450	916.00	412.20	P&M-048
			۵۱	hour. Material					
			c)	Selected earth for refilling	cum	5.000	212.00	1060.00	M-163
			d)	GST (multiplying factor 0.2016) on (a		0.000	212.00	546.69	
			e)	Overhead charges @ 10 % on (a+b+c	-			325.85	
			f)	Contractor's profit @ 10 % on (a+b+c				358.43	
			g)	Cess @ 1% on (a+b+c+d+e+f)	 0,			39.43	
			•	st for 10 cum = a+b+c+d+e+f+g				3982.16	
				te per cum = (a+b+c+d+e+f+g)/10				398.22	
				(a b c a a c a g , 10			eav	398.00	
		Note		Cost of dewatering @ 20 per cent of (a- ere required	⊦b) may	be added,	say	<u>398.00</u>	
				Shoring & strutting @ 10 per cent of (a+ y be added	-b), whe	re required			
			dep	It is assumed that Marshy Soil will be a oth only. For deeper excavation below					
	205.4.2			alysis in item (i) to (iv) for ordinary soil					
3.14	305.4.3			arifying Existing Granular Surface to a I	•	-			
			sca	arifying the existing granular road surface t rified material within all lifts and leads upto			and disposa	al of	
				it = sqm					
				king output = 100 sqm Labour					
			a)	Mate	day	0.200	551.00	110.20	L-12
				Mazdoor including loading and	day		424.00	2120.00	L-13
				unloading	,				
			b)	Machinery					
				Tractor-trolley	hour	1.670	530.00	885.10	P&M-053
			c)	GST (multiplying factor 0.2016) on (a	-			628.04	
			d)	Overhead charges @ 10 % on (a+b+c	-			374.33	
			e)	Contractor's profit @ 10 % on (a+b+c	c+d)			411.77	
			f)	Cess @ 1% on (a+b+c+d+e)				45.29	
				st for 100 sqm = a+b+c+d+e+f				4574.73	
			Rat	te per sqm = (a+b+c+d+e+f)/100				45.75	
		Note	In i	case material is to be reused at site,	transnor	tation cost	say	<u>46.00</u>	
				ered above for disposal shall be deleted.	папорог	tation cost			
3.15	305.4.3			arifying Existing Bituminous Surface to	a donth	of 50 mm	hy Machani	ical Maane	
3.13			Ju	arrying Existing Bituminous Surface to	a deptii	01 30 111111	by Wechain	icai Micaiis	
			Sca	arifying the existing bituminous road surf	ace to a	depth of	50 mm and	disposal of	:
				rified material with in all lifts and lead upto				·	
			Uni	it = sqm					
				king output = 100 sqm					
			a)	Labour	4	0.040	FF4 00	E E4	L-12
				Marte	day		551.00	5.51	L-12
			b)	Mazdoor Machinery	day	0.250	424.00	106.00	= :*
			~,	Tractor with ripper attachment @ 60	hour	0.080	511.00	40.88	P&M-055
				cum per hour		3.000	200	.5.50	
				Front end loader 1 cum bucket capacity	hour	0.200	1838.00	367.60	P&M-017
				@ 25 cum per hour Tipper 5.5 cum capacity, 4 trips per	hour	0.230	916.00	210.68	P&M-048
			٥,	hour. GST (multiplying factor 0 2016) on (a	λ ± b \			1/17 20	
			c)	GST (multiplying factor 0.2016) on (a	-			147.30	
			d)	Overhead charges @ 10 % on (a+b+c)			87.80	

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks Input ref.
	OK Opec.		e) Contractor's profit @ 10 % on (a+b-	 +c+d)			96.58	
			Cess @ 1% on (a+b+c+d+e)	,			10.62	
			Cost for 100 sgm = a+b+c+d+e+f				1072.97	
			Rate per sqm = (a+b+c+d+e+f)/100				10.73	
			(u·b·o·u·o·)/100			say	<u>11.00</u>	
3.16	305		Construction of Embankment with Mate	rial obtain	ed from B	•	<u> </u>	
		1	Construction of embankment with approve ifts and leads, transporting to site, spreading meet requirement of table 300-2. Unit = cum	d material	obtained f	rom borrow		
			Taking output = 100 cum					
		•	a) Labour					. 40
			Mate	day	0.040	551.00	22.04	L-12
			Mazdoor	day	1.000	424.00	424.00	L-13
		l	o) Machinery					D 0 M 0 0
			Hydraulic Excavator1 cum bucket	hour	1.670	2044.00	3413.48	P&M-026
			capacity @ 60 cum per hour		400 - 1	40.00	0040.00	Load =3
			Tipper 10 tonne capacity	tonne.	160 x L	18.00	8640.00	Lead =3 km &
				km				P&M-058
			Add 10 per cent of cost of carriage to				864.00	
			cover cost of loading and unloading Dozer 80 HP for spreading @ 200 cum	hour	0.500	5045.00	2522.50	P&M-01
			per hour	er hour	1.000	3247.00	3247.00	P&M-03
			Motor grader for grading @ 100 cum poly					P&M-06
			Water tanker6 KL capacity	hour	4.000	724.00	2896.00	
			Three wheel 80-100 kN Statis Roller	hour	1.000	969.00	969.00	P&M-05
		(c) Material					
			Cost of water	KL	24.000	71.00	1704.00	M-189
			Compensation for earth taken from private land	cum	100.000	0.00	0.00	M-092
		(d) GST (multiplying factor 0.2016) on	(a+b+c)			4979.93	
		(e) Overhead charges @ 10 % on (a+b+	c+d)			2968.20	
			Contractor's profit @ 10 % on (a+b+	-			3265.02	
			, , ,	0.4.0,			359.15	
			g) Cess @ 1% on (a+b+c+d+e+f)					
			Cost for 100 cum = a+b+c+d+e+f+g				36274.32	
			Rate per cum = (a+b+c+d+e+f+g)/100				362.74	
		Note				say	<u>363.00</u>	
		; ;	Compensation for earth will vary from planave to be assessed realistically as posituation. In case earth is available compensation for earth will not be required to be clearly stated in the cost estimated.	er particul from G ired. The	ar ground ovt. land,			
3.17	305		Construction of Embankment with Mater	ial Denosi	ted from R	Roadway Cı	ıttina	
			Construction of embankment with approve	-		=	_	,
		(cutting and excavation from drain and compacted to meet requirement of table 30	foundation				
			·	∪- <u>∠</u> .				
			Unit = cum					
			Taking output = 100 cum					
			A Labour					
			a) Labour		0.000	EE4 00	44.00	1 42
			Mate	day	0.020	551.00	11.02	L-12
		;	Mate Mazdoor	day day	0.020 0.500	551.00 424.00	11.02 212.00	L-12 L-13
		;	Mate	day				

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EARTH WORK, EROSION CONTROL AND DRAINAGE

	EARTH WORK, EROSION CONTINUE AND BIRAINAGE							
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
			Motor grader for grading @ 100 cum per	hour	1.000	3247.00	3247.00	P&M-032
			hour					
			Water tanker6 KL capacity	hour	4.000	724.00	2896.00	P&M-060
			Three wheel 80-100 kN Statis Roller	hour	1.000	969.00	969.00	P&M-059
		c)	Material					
			Cost of water	KL	24.000	71.00	1704.00	M-189
		d)	GST (multiplying factor 0.2016) on (a-	+b+c)			2330.80	
	e) Overhead charges @ 10 % on (a+b+c+d)						1389.23	
		f)	Contractor's profit @ 10 % on (a+b+c+	d+e)			1528.16	
		g)	Cess @ 1% on (a+b+c+d+e+f)				168.10	
		Ra	ate for 100 cum = a+b+c+d+e+f+g				16977.81	
		Ra	ate per cum = (a+b+c+d+e+f+g)/100				169.78	
			-			say	<u>170.00</u>	
		Note In	case the earth cutting is done by dozer an	d pushe	d for filling			
		in	the embankment, the input of dozer	in the	e cost of			
	embankment shall be deleted as the same is already provided in							
		the	e cost of excavation. However, if the ea	rth is c	lumped by			
		tip	pers from roadway cutting, the input of doz	er for s	preading is			
		re	quired to be provided.					

3.18 305 Construction of Subgrade and Earthen Shoulders

Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2

Unit = cum

Taking output = 100 cum

a)	Labour					
	Mate	day	0.040	551.00	22.04	L-12
	Mazdoor	day	1.000	424.00	424.00	L-13
b)	Machinery					
	Hydraulic excavator1 cum bucket capacity @ 60 cum per hour	hour	1.670	2044.00	3413.48	P&M-026
	Tipper 10 tonne capacity	tonne.k m	175xL	18.00	9450.00	Lead =3 km & P&M-058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				945.00	
	Dozer 80 HP for spreading @ 200 cum per hour	hour	0.500	5045.00	2522.50	P&M-014
	Motor grader for grading @ 50 cum per hour	hour	2.000	3247.00	6494.00	P&M-032
	Water tanker with 6 km lead	hour	4.000	724.00	2896.00	P&M-060
	Three wheel 80-100 kN Statis Roller	hour	1.250	969.00	1211.25	P&M-059
c)	Material					
•	Cost of water	KL	24.000	71.00	1704.00	M-189
	Compensation for earth taken from private land	cum	100.000	0.00	0.00	M-092
d)	GST (multiplying factor 0.2016) on (a	+b+c)			5862.99	
e)	Overhead charges @ 10 % on (a+b+c+	+d)			3494.53	
f)	Contractor's profit @ 10 % on (a+b+c-	+d+e)			3843.98	
g)	Cess @ 1% on (a+b+c+d+e+f)				422.84	
Cos	st for 100 cum = a+b+c+d+e+f+g				42706.61	
Rat	te per cum = (a+b+c+d+e+f+g)/100				427.07	
				say	<u>427.00</u>	

3.19 305.3.4 Compacting Original Ground

 $^{\text{Case}\cdot}_{\quad \ \ \, }$ Compacting original ground supporting sub-grade

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
	1	<u> </u>	oosening of the ground upto a level of	f 500 mm be	elow the su	ıb-grade lev	vel, watered,	,
		g	raded and compacted in layers to m					
		С	onstruction.					
		_	Init = cum					
			aking output = 600 cum					
		а) Labour Mate	day	0.120	551.00	66.12	L-12
			Mazdoor	day	3.000	424.00	1272.00	L-13
		b) Machinery	day	0.000	121.00	1272.00	
			Tractor with ripper attachment	hour	9.000	511.00	4599.00	P&M-055
			Motor grader for grading	hour	6.000	3247.00	19482.00	P&M-032
			Water tanker 6 KL capacity	hour	4.000	724.00	2896.00	P&M-060
			Three wheel 80-100 kN Statis Roller	hour	7.500	969.00	7267.50	P&M-059
		С) Material	121	04.000	74.00	4704.00	M-189
		لم	Cost of water	KL	24.000	71.00	1704.00 7516.98	IVI-109
		d	, , , , , ,	-				
		e	,	-			4480.36	
		f)	. •	υ+C+Q+ e)			4928.40	
		g	, , ,				542.12	
			cost for 600 cum = a+b+c+d+e+f+g				54754.48	
		K	ate per cum = (a+b+c+d+e+f+g)/600			601/	91.26 91.00	
3.19		Case-	Compacting original ground supporti	na ombankn	nont	say	91.00	
			Init = cum aking output = 600 cum) Labour					
		a	Mate	day	0.080	551.00	44.08	L-12
			Mazdoor	day		424.00	848.00	L-13
		b						
			Tractor with ripper attachment	hour		511.00	3066.00	P&M-055
			Three wheel 80-100 kN Statis Roller			969.00	7267.50	P&M-059 P&M-060
		С		hour	4.000	724.00	2896.00	F&IVI-000
			Cost of water	KL	24.000	71.00	1704.00	M-189
		d	, , , , , ,	-			3190.44	
		е	,	-			1901.60	
		f)	. • •	b+c+d+e)			2091.76	
		g) Cess @ 1% on (a+b+c+d+e+f)				230.09	
		C	cost for 600 cum = (a+b+c+d+e+f+g)				23239.47	
		R	late per sqm = (a+b+c+d+e+f+g)/600				38.73	
						say	<u>39.00</u>	
3.20	305		tripping and Storing Top Soil					
		е	tripping, storing of top soil by road mbankment slopes, cut slopes and mbankment material is not conducive to	other areas	in localitie			
			<mark>Init = cum</mark> aking output = 10 cum					
		а) Labour					
			Mate	day	0.200	551.00	110.20	L-12
			Mazdoor	day	5.000	424.00	2120.00	L-13
		b	•					
			Dozer 80 HP @ 100 cum per hour	hour	0.100	5045.00	504.50	P&M-014

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	EARTH WORK, EROSION CONTR	ROL ANI	D DRAINA	GE		
Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks Input ref
· · · · · · · · · · · · · · · · · · ·	c) GST (multiplying factor 0.2016) on (a	+b)			551.32	
	d) Overhead charges @ 10 % on (a+b+c))			328.60	
	e) Contractor's profit @ 10 % on (a+b+c-	+d)			361.46	
	f) Cess @ 1% on (a+b+c+d+e)				39.76	
	Cost for 10 cum = $(a+b+c+d+e+f)$				4015.84	
	Rate per cum = $(a+b+c+d+e+f)/10$				401.58	
3.21	Stripping, Storing and Re-laying Top Soil fo	rom Bor	row Areas	say in Agricult	<u>402.00</u> ure Fields.	
	Stripping of top soil from borrow areas locate place, spreading and re-laying after taking the agricultural field, finishing it to the required lever the second second second second second second second second second sec	ne borro	w earth to	maintain fe	rtility of the	
	Unit = cum					
	Taking output = 300 cum					
	a) Labour					
	Mate	day	0.080	551.00	44.08	L-12
	Mazdoor	day	2.000	424.00	848.00	L-13
	b) Machinery	,				
	Dozer, 80 HP	hour	6.000	5045.00	30270.00	P&M-01
	c) GST (multiplying factor 0.2016) on (a		0.000	0010.00	6282.28	
	d) Overhead charges @ 10 % on (a+b+c)	•			3744.44	
	, , ,					
	e) Contractor's profit @ 10 % on (a+b+c-	ra)			4118.88	
	f) Cess @ 1% on (a+b+c+d+e)				453.08	
	Cost for 300 cum = (a+b+c+d+e+f)				45760.76	
	Rate per cum = $(a+b+c+d+e+f)/300$				152.54	
22 307	Turfing with Sods			say	<u>153.00</u>	
	Furnishing and laying of the live sods of per slope, verges or other locations shown on the including preparation of ground, fetching of so <i>Unit</i> = sqm	ne drawi	ng or as d			
	Taking output = 100 sqm					
	a) Labour					
	Mate	day	0.120	551.00	66.12	L-12
	Mazdoor for preparation of ground and fetching of sods	day	3.000	424.00	1272.00	L-13
	 b) Machinery Water tanker including watering for 3 months 	hour	2.000	724.00	1448.00	P&M-060
	Tractor-trolley c) Material	hour	1.000	530.00	530.00	P&M-05
	Farm yard manure @ 0.18 cum per 100 sqm at site of work	cum	0.180	141.00	25.38	M-167
	Cost of water	KL	12.000	71.00	852.00	M-189
	c) GST (multiplying factor 0.2016) on (a-				845.41	
	e) Overhead charges @ 10 % on (a+b+c+	-			503.89	
		-				
	f) Contractor's profit @ 10 % on (a+b+c+	·u+e)			554.28	
	g) Cess @ 1% on (a+b+c+d+e+f)				60.97	
	Cost for 100 sqm = a+b+c+d+e+f+g Rate per 100 sqm = (a+b+c+d+e+f+g)/100			sav	6158.05 61.58 62.00	

61.58 <u>62.00</u>

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.23	308	Seeding and Mulching		ı	ı	ı	1
		Preparation of seed bed on previously fertilizer, mulching material, applying bits sqm and laying and fixing jute netting, in 308.	uminous em	ulsion at th	e rate of 0.	23 litres per	
		Unit = sqm					
		Taking output = 240 sqm					
		a) Labour Mate	day	0.400	551.00	220.40	L-12
		Mazdoor	day		424.00	4240.00	L-13
		b) Machinery	,				
		Water tanker 6 KL capacity including watering for 3 months	hour	14.000	724.00	10136.00	P&M-060
		Tractor-trolley	hour	2.400	530.00	1272.00	P&M-053
		c) Material		0.000	054.00	4074 40	M 400
		Seeds	kg		354.00	1274.40	M-162 M-167
		Sludge/Farm yard manure @ 0.18 cu per 100 sqm			141.00	60.63	
		Bitumen Emulsion	litre		55.00	3036.00	M-077
		Jute netting, open weave, 2.5 cm squopening			15.00	3960.00	M-121
		Cost of water for 3 months	KL	84.000	71.00	5964.00	M-189
		d) GST (multiplying factor 0.2016) o	n (a+b+c)			6080.95	
		e) Overhead charges @ 10 % on (a+l	b+c+d)			3624.44	
		f) Contractor's profit @ 10 % on (a+	b+c+d+e)			3986.88	
		g) Cess @ 1% on (a+b+c+d+e+f)				438.56	
		Cost for 240 sqm = $a+b+c+d+e+f+g$				44294.26	
		Rate per sqm = (a+b+c+d+e+f+g)/240			say	184.56 185.00	
3.24	309	Surface Drains in Soil Construction of unlined surface drains of specified lines, grades, levels and dimense Excavated material to be used in emban 25 metres)	sions to the	requirement	area 0.40 s t of clause 3	qm in soil to 301 and 309.	
		Unit = metre					
		Taking output = 10 metres					
		A Mechanical means					
		a) Labour		0.040	FF4 00	F F4	L-12
		Marte	day		551.00	5.51	L-13
		Mazdoor for dressing of bed and side drain b) Machinery	e of day	0.250	424.00	106.00	2-10
		Hydraulic Excavator 0.3 cum bucket capacity @ 30 metres per hour	hour	0.330	2044.00	674.52	P&M-026
		c) GST (multiplying factor 0.2016) o	n (a+b)			158.46	
		d) Overhead charges @ 10 % on (a+				94.45	
		e) Contractor's profit @ 10 % on (a+	-			103.89	
		f) Cess @ 1% on (a+b+c+d+e)				11.43	
		Cost for 10 metres = a+b+c+d+e+f				1154.26	
		Rate per metre = (a+b+c+d+e+f)/10				115.43	
3.24		B Manual Means			say	<u>115.00</u>	
J.24		a) Labour					
		Mate	day	0.080	551.00	44.08	L-12
		Mazdoor	day		424.00	848.00	L-13

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			EARTH WORK, EROSION CONTI	ROL AN	D DRAINA	GE		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
		•	b) GST (multiplying factor 0.2016) on (a)		•	•	179.84	•
			c) Overhead charges @ 10 % on (a+b)				107.19	
			d) Contractor's profit @ 10 % on (a+b+c)			117.91	
			e) Cess @ 1% on (a+b+c+d)				12.97	
Cost for 10 metres = $a+b+c+d+e$ 1309.99								
			Rate per metre = (a+b+c+d+e)/10				131.00	
						say	<u>131.00</u>	
3.25	309		Where lining of drain is provided, quantity s based on approved design and drawing and cement concrete of approved grade or stone the case may be. Surface Drains in Ordinary Rock	d priced	on rate of			
			Construction of unlined surface drain of avera rock to specified lines, grades, levels and dir requirement of clause 301 to 309. Excavated	ensions	as per app	roved desig	n and to the	

Unit = metre

Taking output = 10 metres

^A Mechanical Means

			a) Labour					
			Mate	day	0.020	551.00	11.02	L-12
			Mazdoor for dressing of bed and side of	day	0.500	424.00	212.00	L-13
			drain					
			b) Machinery					
			Hydraulic Excavator 0.3 cum bucket	hour	0.670	2044.00	1369.48	P&M-026
			capacity @ 15 metres per hour					
			c) GST (multiplying factor 0.2016) on (a+	b)			321.05	
			d) Overhead charges @ 10 % on (a+b+c)				191.36	
			e) Contractor's profit @ 10 % on (a+b+c+	·d)			210.49	
			f) Cess @ 1% on (a+b+c+d+e)				23.15	
			Cost for 10 metres = a+b+c+d+e+f				2338.55	
			Rate per metre = (a+b+c+d+e+f)/10				233.86	
			, ,			say	234.00	
3.25		В	Manual Means			•		
			a) Labour					
			Mate	day	0.120	551.00	66.12	L-12
			Mazdoor	day	3.000	424.00	1272.00	L-13
			b) GST (multiplying factor 0.2016) on (a)				269.76	
			c) Overhead charges @ 10 % on (a+b)				160.79	
			d) Contractor's profit @ 10 % on (a+b+c)				176.87	
			e) Cess @ 1% on (a+b+c+d)				19.46	
			Cost for 10 metres = a+b+c+d+e				1965.00	
			Rate per metre = (a+b+c+d+e)/10				196.50	
			,			say	197.00	
3.26	309		Surface Drains in Hard Rock			•		
			Data was seated searched contributions					

Rate per metre may be worked out based on quantity of hard rock as per design.

For rate of hard rock cutting, refer relevant item in this chapter

3.27 309 **Sub-Surface Drains with Perforated Pipe**

Construction of subsurface drain with perforated pipe of 100 mm internal diameter of metal/ asbestos cement/ cement concrete/PVC, closely jointed, perforations ranging from 3 mm to 6 mm depending upon size of material surrounding the pipe, with 150 mm bedding below the pipe and 300 mm cushion above the pipe, cross section of excavation 450 x 550 mm. Excavated material to be utilised in roadway at site.

Unit = metre

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

			EARTH WORK, EROSION CONTR	KOL AN	D DRAINA	GE	T	
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
	-		Taking output = 10 metres	-		-	-	
			a) Labour					
			Mate	day	0.040	551.00	22.04	L-12 L-13
			Mazdoor for excavation and back filling	day	2.000	424.00	848.00	L-10
			b) Material Perforated pipe of cement concrete,	metre	10.000	150.00	1500.00	M-135
			internal dia 100 mm	metre	10.000	130.00	1500.00	
			Crushed stone as per table 300-3	cum	2.400	1450.00	3480.00	M-012
			c) GST (multiplying factor 0.2016) on (a-	⊦b)			1179.37	
			d) Overhead charges @ 10 % on (a+b+c))			702.94	
			e) Contractor's profit @ 10 % on (a+b+c-	+d)			773.24	
			f) Cess @ 1% on (a+b+c+d+e)	•			85.06	
			Cost for 10 metres = a+b+c+d+e+f				8590.65	
			Rate per metre = $(a+b+c+d+e+f)/10$				859.07	
			. ,			say	<u>859.00</u>	
		Note	Type of pipe may be modified depending upor	n provisio	on in			
			design.					
3.28	309		Aggregate Sub-Surface Drains					
			Construction of aggregate sub surface dra				aggregates	
			conforming to table 300-4, excavated material	to be ut	ilised in roa	adway.		
			Unit = metre					
			Taking output = 10 metres a) Labour					
			Mate	day	0.020	551.00	11.02	L-12
			Mazdoor for excavation and back filling	day	1.500	424.00	636.00	L-13
			with aggregates	,				
			b) Material					
			Crushed stone as per table 300-3	cum	1.350	1450.00	1957.50	M-012
			c) GST (multiplying factor 0.2016) on (a-	⊦b)			525.07	
			d) Overhead charges @ 10 % on (a+b+c)				312.96	
			e) Contractor's profit @ 10 % on (a+b+c-	+d)			344.26	
			f) Cess @ 1% on (a+b+c+d+e)				37.87	
			Cost for 10 metres = a+b+c+d+e+f				3824.68	
			Rate per metre = (a+b+c+d+e+f)/10				382.47	
2 20	309		Underground Drein at Edge of Devemont			say	<u>382.00</u>	
3.29	000		Underground Drain at Edge of Pavement Construction of an underground drain 1 m x	1 m (inc	ida dimane	ione) lined v	with RCC-20	
			cm thick and covered with RCC slab10 cm in				VIII1 1100-20	
			Unit = Running metre					
			Taking output = one metre					
			a) Earthwork in soil	cum	1.500	78.00	117.00	Item No.
			b) RCC work M-20	cum	0.500	9665.00	4832.50	3.13 Item 12.8
			Data and a section of the body of the control of th	OD 00	>		10.10.50	(C) RCC
			Rate per metre = (a+b) (Including GST,OH,O	SP &Ces	SS)	001/	4949.50	
			Rates for these items may be taken from chapters on earth work and substructures			say	<u>4950.00</u>	
			respectively.					
3.30	310		Preparation and Surface Treatment of Form	nation.				
			Preparation and surface treatment of formation		novina mu	d and slurry.	watering to	
			the extent needed to maintain the desired moi	•	•	•		
			grade, profile and rolling with 8-10 tonne smo	oth whe	eled roller,	complete as	s per clause	
			310.					
			Unit = sqm					
			Taking output = 3500sqm					
			a) Labour					
			Mate	day	0.280	551.00	154.28	L-12 L-13
			Mazdoor	day	6.000	424.00	2544.00	L-13

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EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
			Mazdoor skilled	day	1.000	508.00	508.00	L-15
		b)	Machinery					
			Smooth 3 wheeled steel roller 8-10 tonnes	hour	3.000	783.00	2349.00	P&M-044
			Water tanker 6 KL, one trip per hour	hour	3.000	724.00	2172.00	P&M-060
		c)	Material					
			Cost of water	KL	18.000	71.00	1278.00	M-189
		d)	GST (multiplying factor 0.2016) on (a	a+b+c)			1815.46	
		e)	Overhead charges @ 10 % on (a+b+c	:+d)			1082.07	
		f)	Contractor's profit @ 10 % on (a+b+	c+d+e)			1190.28	
		g)	Cess @ 1% on (a+b+c+d+e+f)				130.93	
		Cos	st for 3500 sqm = a+b+c+d+e+f+g				13224.02	
		Rat	te per sqm = (a+b+c+d+e+f+g)/3500				3.78	
						say	<u>4.00</u>	

3.31 313 Construction of Rock fill Embankment

Construction of rock fill embankment with broken hard rock fragments of size not exceeding 300 mm laid in layers not exceeding 500 mm thick including filling of surface voids with stone spalls, blinding top layer with granular material, rolled with vibratory road roller, all complete as per clause 313.

Unit = cum

Taking output = 100 cum

a)	Labour					
-	Mate	day	0.040	551.00	22.04	L-12
	Mazdoor	day	1.500	424.00	636.00	L-13
b)	Machinery					
	Dozer 80 HP for spreading @ 200 cum per hour	hour	0.500	5045.00	2522.50	P&M-014
	Three wheel 80-100 kN Statis Roller	hour	1.000	969.00	969.00	P&M-059
	Water tanker 6 KL, one trip per hour	hour	2.000	724.00	1448.00	P&M-060
c)	Material					
	Cost of water	KL	12.000	71.00	852.00	M-189
d)	GST (multiplying factor 0.2016) on (a	+b+c)			1300.23	
e)	Overhead charges @ 10 % on (a+b+c	+d)			774.98	
f)	Contractor's profit @ 10 % on (a+b+c	+d+e)			852.48	
g)	Cess @ 1% on (a+b+c+d+e+f)				93.77	
Cos	st for 100 cum = a+b+c+d+e+f+g				9471.00	
Rat	e per cum = (a+b+c+d+e+f+g)/100				94.71	
				say	<u>95.00</u>	

Note It is assumed that rock is available locally at site from roadway cutting. In case, portion of the rock requires breaking to acceptable size of 300 mm, breaking charges will have to be added.

EARTH WORK ON HILL ROAD

3.32 ³⁰¹ (i) Excavation in Hill Area in Soil by Mechanical Means (Dipositing of excavated earth with all lifts and lead upto 1000 m

Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres.

Unit = cum

Taking output = 260 cum

a)	Labour					
	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor for trimming slopes and helping in excavation etc.	day	6.000	424.00	2544.00	L-13
b)	Machinery					
	Dozer D-50 @ 43.28 cum per hour	hour	6.000	3398.00	20388.00	P&M-014
	Front end loader	hour	6.000	1838.00	11028.00	P&M-017

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

			EARTH WORK, EROSION CONTI	TOL AN	DUKAINA	GE 		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
			Tipper 5.5cum capacity, 4 trips per hour.	hour	12.000	916.00	10992.00	P&M-048
			c) GST (multiplying factor 0.2016) on (a-	+b)			9088.98	
			d) Overhead charges @ 10 % on (a+b+c				5417.32	
			e) Contractor's profit @ 10 % on (a+b+c				5959.05	
			f) Cess @ 1% on (a+b+c+d+e)	/			655.50	
			Cost for 260 cum = a+b+c+d+e+f				66205.09	
			Rate per cum = (a+b+c+d+e+f)/260				254.63	
			,			say	<u>255.00</u>	
		(ii)	Depositing of excavated earth on the barre	n valley	side.	_		
			Excavation in soil in hilly area by mechanica side slopes and disposing of excavated earth Unit = cum		-	•	trimming of	:
			Taking output = 260 cum					
			a) Labour					
			Mate	day	0.240	551.00	132.24	L-12
			Mazdoor for trimming slopes and helping	day	6.000	424.00	2544.00	L-13
			in excavation etc. b) Machinery					
			Dozer D-50 @ 43.28 cum per hour	hour	6.000	3398.00	20388.00	P&M-014
			c) GST (multiplying factor 0.2016) on (a-	+b)			4649.75	
			d) Overhead charges @ 10 % on (a+b+c				2771.40	
			e) Contractor's profit @ 10 % on (a+b+c				3048.54	
			f) Cess @ 1% on (a+b+c+d+e)	,			335.34	
			Cost for 260 cum = a+b+c+d+e+f				33869.27	
			Rate per cum = (a+b+c+d+e+f)/260				130.27	
			. ,			say	<u>130.00</u>	
3.33	301	(i)	Excavation in Hilly Area in Ordinary Roo	-			t Requiring	
			Blasting (Disposal of cut material with all I		-	-		
			Excavation in hilly area in ordinary rock no including cutting and trimming of slopes and upto 1000 metres.					
			Unit = cum					
			Taking output = 170 cum					
			a) Labour					
			Mate	day	0.320	551.00	176.32	L-12
			Mazdoor	day	8.000	424.00	3392.00	L-13
			b) Machinery	,				
			Dozer D-50 @ 28.32 cum per hour	hour	6.000	3398.00	20388.00	P&M-014
			Front end loader	hour	7.000	1838.00	12866.00	P&M-017
			Tipper 5.5cum capacity, 4 trips per hour.	hour	7.000	916.00	6412.00	P&M-048
			c) GST (multiplying factor 0.2016) on (a-	+b)			8716.04	
			d) Overhead charges @ 10 % on (a+b+c	-			5195.04	
			e) Contractor's profit @ 10 % on (a+b+c				5714.54	
			f) Cess @ 1% on (a+b+c+d+e)	•			628.60	
			Cost for 170 cum = a+b+c+d+e+f				63488.54	
			Rate per cum = $(a+b+c+d+e+f)/170$				373.46	
		(ii)	Disposal of excavated earth on the barren	vallev s	ide.	say	<u>373.00</u>	

Excavation in hilly area in ordinary rock not requiring blasting by mechanical means including cutting and trimming of slopes and disposal of excavated earth on the barren valley side.

Unit = cum

Taking output = 170 cum

CHAPTER - 3 EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks Input ref.
		a)	Labour			•		•
			Mate	day	0.320	551.00	176.32	L-12
			Mazdoor	day	8.000	424.00	3392.00	L-13
		b)	Machinery					
			Dozer D-50 @ 28.32 cum per hour	hour	6.000	3398.00	20388.00	P&M-014
		c)	GST (multiplying factor 0.2016) on	(a+b)			4829.59	
		d)	Overhead charges @ 10 % on (a+b-	+c)			2878.59	
		e)	Contractor's profit @ 10 % on (a+b-	+c+d)			3166.45	
		f)	Cess @ 1% on (a+b+c+d+e)				348.31	
		Co	st for 170 cum = a+b+c+d+e+f				35179.26	
		Ra	te per cum = (a+b+c+d+e+f)/170				206.94	
			,			say	207.00	

301 (i) Excavation in Hilly Areas in Hard Rock Requiring Blasting (Disposal of cut material 3.34 with all lift and lead upto 1000 m).

Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 metres.

Unit = cum

Taking output = 170 cum

	· .					
a)	Labour					
	Mate	day	0.490	551.00	269.99	L-12
	Mazdoor	day	10.000	424.00	4240.00	L-13
	Driller	day	2.000	551.00	1102.00	L-06
	Blaster	day	0.250	551.00	137.75	L-03
b)	Machinery					
	Dozer D-50 @ 28.32 cum per hour	hour	6.000	3398.00	20388.00	P&M-014
	Air compressor 250 cfm with two jack hammer @ 20 cum per hour	hour	5.000	658.00	3290.00	P&M-001
	Front end loader	hour	7.000	1838.00	12866.00	P&M-017
	Tipper 5.5cum capacity, 4 trips per hour.	hour	7.000	916.00	6412.00	P&M-048
c)	Materials					
	Gelatine 80 per cent	kg	35.000	166.00	5810.00	M-104
	Electric Detonators @ 1 Detonator for 2 Gelatine sticks of 125 gms each	each	140.000	11.59	1622.60	M-094 /100
d)	GST (multiplying factor 0.2016) on (a-	+b+c)			11317.49	
e)	Overhead charges @ 10 % on (a+b+c+	⊦d)			6745.58	
f)	Contractor's profit @ 10 % on (a+b+c-	+d+e)			7420.14	
g)	Cess @ 1% on (a+b+c+d+e+f)				816.22	
Cos	st for 170 cum = a+b+c+d+e+f+g				82437.77	
	te per cum = (a+b+c+d+e+f+g)/170				484.93	
				say	<u>485.00</u>	

(ii) Disposal of excavated earth on the barren valley side.

Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of excavated earth on the barren valley side.

Unit = cum

Tal	king output = 170 cum					
a)	Labour					
	Mate	day	0.490	551.00	269.99	L-12
	Mazdoor	day	10.000	424.00	4240.00	L-13
	Driller	day	2.000	551.00	1102.00	L-06
	Blaster	day	0.250	551.00	137.75	L-03
b)	Machinery					
•	Dozer D-50 @ 28.32 cum per hour	hour	6.000	3398.00	20388.00	P&M-014

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

			EARTH WORK, EROSION CONTR	ROL AN	D DRAINA	GE		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
	•		Air compressor 250 cfm with two jack hammer @ 20 cum per hour	hour	5.000	658.00	3290.00	P&M-001
			c) Materials	ka	25.000	166.00	E910.00	M-104
			Gelatine 80 per cent Electric Detonators @ 1 Detonator for 2 Gelatine sticks of 125 gms each	kg each	35.000 140.000	166.00 11.59	5810.00 1622.60	M-094 /100
			d) GST (multiplying factor 0.2016) on (a-	+b+c)			7431.04	
			e) Overhead charges @ 10 % on (a+b+c+	d)			4429.14	
			f) Contractor's profit @ 10 % on (a+b+c+	·d+e)			4872.05	
			g) Cess @ 1% on (a+b+c+d+e+f)				535.93	
			Cost for 170 cum = $a+b+c+d+e+f+g$				54128.50	
			Rate per cum = $(a+b+c+d+e+f+g)/170$			say	318.40 <u>318.00</u>	
3.35	1600 & 300	(i)	Excavation in Hilly Areas in Soil by Manual	Means				
		(A)	Excavation in soil in Hilly Area by Manual Me slopes and disposing of excavated earth with per drawing and Technical Specification Claus Unit = Cum	a lift up	oto 1.5 m a			
			Taking output = 120 cum.					
			a) Labour					
			Mate	day	2.400	551.00	1322.40	L-12 L-13
			Mazdoor (Unskilled) b) GST (multiplying factor 0.2016) on (a)	day	60.000	424.00	25440.00 5395.30	L-13
			c) Overhead charges @ 10 % on (a+b)				3215.77	
			d) Contractor's profit @ 10 % on (a+b+c))			3537.35	
			e) Cess @ 1% on (a+b+c+d)	•			389.11	
			Cost for 120 cum = $a+b+c+d+e$				39299.93	
			Rate per cum = $(a+b+c+d+e)/120$				327.50	
		(B)	Deduct for quantum of earthwork of all types without involving any lead and lift.	disposal	directly by	say throwing in	328.00 to the valley	
			Ordinary and Hard Soil/Hard Shale, Soil conta	ining sh	ingle or sm	all size boul	ders.	
			Unit = Cum					
			Taking output = 1 cum.					
			a) Labour					
			Mazdoor (Unskilled)	day	0.200	424.00	84.80	L-13
			b) GST (multiplying factor 0.2016) on (a)				17.10	
			c) Overhead charges @ 10 % on (a+b)				10.19	
			d) Contractor's profit @ 10 % on (a+b+c))			11.21	
			e) Cess @ 1% on (a+b+c+d)				1.23	
			Cost for 1 cum = a+b+c+d+e				124.53	
			Rate per cum = $(a+b+c+d+e)/1$			say	124.53 <u>125.00</u>	
		(ii)	Excavation in Hilly Area in Ordinary Rock b	y Manu	al Means	Juy	120.00	
		(A)	Excavation in Ordinary Rock using Manual carrying of excavated material to embankmen m as per Clause 1603.2. Unit = Cum	Means	including			
			Taking output = 120 cum.					
			a) Labour	da.	E 000	EE4 00	2000.20	L-12
			Mate Mazdoor (Unskilled)	day day	5.280 132.000	551.00 424.00	2909.28 55968.00	L-12 L-13
			b) GST (multiplying factor 0.2016) on (a)	•	102.000	727.00	11869.66	
			c) Overhead charges @ 10 % on (a+b)				7074.69	

CHAPTER - 3
EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
	•		d)	Contractor's profit @ 10 % on (a+b+c)			7782.16	•
			e)	Cess @ 1% on (a+b+c+d)				856.04	
			Cos	st for 120 cum = a+b+c+d+e				86459.83	
			Rat	e per cum = (a+b+c+d+e)/120				720.50	
							say	<u>721.00</u>	
		(B)	with Ord <i>Uni</i>	duct for quantum of earthwork of all types nout involving any lead and lift. inary and Hard Rock t = Cum ting output = 1 cum. Labour	uisposa	ii directiy by	throwing in	to the valley	
			,	Mazdoor (Unskilled)	day	0.320	424.00	135.68	L-13
			b)	GST (multiplying factor 0.2016) on (a)				27.35	
			c)	Overhead charges @ 10 % on (a+b)				16.30	
			d)	Contractor's profit @ 10 % on (a+b+c)			17.93	
			e)	Cess @ 1% on (a+b+c+d)				1.97	
			Cos	st for 1 cum = a+b+c+d+e				199.23	
			Rat	e per cum = (a+b+c+d+e)/1				199.23	
							say	<u>199.00</u>	

Chapter - 4

SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS

Preamble:

- 1 Quantities of materials provided are approximate and are meant for the purpose of estimating only. Actual quantities shall be as per mix design.
- 2 For construction of sub-base, two alternatives as under have been provided.
 - a. Mix in place method
 - b. Plant mix method
- 3 Construction of shoulders: Earthen, Hard and Paved shoulders have been considered, the rates applicable are for subgrade, sub-base and different layers of pavement respectively.
- 4 In the case of improvement of subgrade with lime stabilization, soil is assumed to be available at the site and has not been provided for. Only lime has been catered. In the case of lime stabilization of sub-base, soil has been provided to form the sub-base.
- While providing for the rate of materials, detailed local enquires should be made and prevailing market rates ascertained from concerned suppliers in the area keeping in view the location of crushing plants and lead involved.
- The quantities considered in the output are the compacted quantities. The quantities of aggregates provided in the rate analysis under the head material are the uncompacted quantities.

CHAPTER - 4
SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS

SI. Morth Description Unit Quantity Rate in Rs Cost in Rs Rema	_	MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
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4.1 401 Granular Sub-Base with Close Graded Material (Table:- 400-1)

A Plant Mix Method

Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401

Unit = cum

4.1A

(i)

Taking output = 225 cum (450 tonne)

- \	Labarra					
a)	Labour Mate	dov	0.400	551.00	220.40	I -12
	Mazdoor skilled	day day	2.000	508.00	1016.00	L-15
	Mazdoor	day	8.000	424.00	3392.00	L-13
b)		,				
·	Wet mix plant @ 75 tonne capacity per hour	hour	6.000	1794.00	10764.00	P&M-093
	Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
	Water tanker 6 KL capacity 5 km lead with one trip per hour	hour	4.500	724.00	3258.00	P&M-060
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M 058
	Add 10 per cent of cost of carriage to cover loading and unloading				0.00	
	Motor Grader 110 HP	hour	6.000	3247.00	19482.00	P&M-032
	Vibratory roller 8-10 t	hour	6.000	969.00	5814.00	P&M-059
c)	Material					
Clo	se graded Granular sub-base)				
Ма	terial as per table 400-1					
Fo	r Grading-I Material					
	53 mm to 9.5 mm @ 50 per cent	cum	144.000	900.00	129600.00	M-013
	9.5 mm to 2.36 mm @ 20 per cent (graded)	cum	57.000	780.00	44460.00	M-017
	2.36 mm below @ 30 per cent	cum	86.400	700.00	60480.00	M-020
	Cost of water	KL	27.000	71.00	1917.00	M-189
	OR					
Fo	r Grading-II Material					M 045
	26.5 mm to 9.5 mm @ 35 per cent	cum	100.800	850.00	85680.00	M-015
	9.5 mm to 2.36 mm @ 25 per cent (graded)	cum	72.000	780.00	56160.00	M-017
	2.36 mm below @ 40 per cent	cum	115.200	700.00	80640.00	M-020
	Cost of water	KL	27.000	71.00	1917.00	M-189
_	OR					
FO	r Grading-III Material 9.5 mm to 4.75 mm @ 35 per cent	cum	100.800	800.00	80640.00	M-016
	4.75 mm to 2.36 mm @ 12.5 per	cum	36.000	750.00	27000.00	M-018
	2.36 mm below @ 52.5 per cent		151.200	700.00	105840.00	M-020
	Cost of water	cum KL	27.000	71.00		M-189
Ra	te per cum for grading-l Material	KL	27.000	71.00	1917.00	
d)	GST (multiplying factor 0.2016) of	on (a+b+c	c)		60125.47	
e)	Overhead charges @ 10 % on (a+	-	•		35836.69	
f)	Contractor's profit @ 10 % on (a+	-))		39420.36	
g)	Cess @ 1% on (a+b+c+d+e+f)				4336.24	
	st for 225 cum = a+b+c+d+e+f+g				437960.16	
Ra	te per cum = (a+b+c+d+e+f+g)/225				1946.49	
				say	<u>1946.00</u>	

CHAPTER - 4 SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS

			SUB-BASES, BASES (NON- BITUM	INOUS)	AND SHOUL	DERS		_
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
4.1A		(ii)	Rate per cum for grading-II Material	. / 1	- \		F7004.47	
			d) GST (multiplying factor 0.2016) o		·c)		57694.17	
			e) Overhead charges @ 10 % on (a+	-	•		34387.56	
			f) Contractor's profit @ 10 % on (a+	p+c+a+	e)		37826.31	
			g) Cess @ 1% on (a+b+c+d+e+f)				4160.89	
			Cost for 225 cum = a+b+c+d+e+f+g				420250.33	
			Rate per cum = (a+b+c+d+e+f+g)/225			say	1867.78 1868.00	
4.1A		(iii)	Rate per cum for grading-III Material			Say	1000.00	
		` '	d) GST (multiplying factor 0.2016) of	n (a+b+	·c)		55879.77	
			e) Overhead charges @ 10 % on (a+	•	-,		33306.12	
			f) Contractor's profit @ 10 % on (a+	-	e)		36636.73	
			g) Cess @ 1% on (a+b+c+d+e+f)		-,		4030.04	
			Cost for 225 cum = $a+b+c+d+e+f+g$				407034.06	
			Rate per cum = $(a+b+c+d+e+f+g)/225$				1809.04	
						say	<u>1809.00</u>	
4.4			Any one of the grading for material may be adopted as per design					
4.1		В	By Mix in Place Method					
			Construction of granular sub-base by p uniform layers with motor grader on pre- with rotavator at OMC, and compacting density, complete as per clause 401	pared si	ırface, mixir	ng by mix in	place method	l
			Unit = cum					
			Taking output = 300 cum					
			a) Labour					
			Mate	day	0.480	551.00	264.48	
			Mazdoor skilled	day	2.000	508.00	1016.00	
			Mazdoor unskilled b) Machinery	day	10.000	424.00	4240.00	L-13
			Motor Grader 110 HP @ 50 cum	hour	6.000	3247.00	19482.00	P&M-032
			Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	
			Tractor - Rotavator	hour	12.000	494.00	5928.00	P&M-054
			Water tanker 6 KL capacity	hour	3.000	724.00	2172.00	P&M-060
			c) Material					
			Close graded Granular sub-base Material as per table 400-1 For Grading-I Material					
			53 mm to 9.5 mm @ 50 per cent	cum	192.000	900.00	172800.00	M-013
			9.5 mm to 2.36 mm @ 20 per cent	cum	76.000	780.00	59280.00	M-017
			2.36 mm below @ 30 per cent	cum	115.200	700.00	80640.00	M-020
			Cost of water	KL	18.000	71.00	1278.00	M-189
			OR					
			For Grading-II Material					
			26.5 mm to 9.5 mm @ 35 per cent	cum	134.400	850.00	114240.00	
			9.5 mm to 2.36 mm @ 25 per cent	cum	96.000	780.00	74880.00	
			2.36 mm below @ 40 per cent	cum	153.600	700.00	107520.00	
			Cost of water	KL	18.000	71.00	1278.00	M-189
			OR For Grading-III Material					
			9.5 mm to 4.75 mm @ 35 per cent	cum	134.400	800.00	107520.00	M-016
			4.75 mm to 2.36 mm @ 12.5 per	cum	48.000	750.00	36000.00	
			2.36 mm below @ 52.5 per cent	cum	201.600	700.00	141120.00	
			Cost of water	KL	18.000	71.00	1278.00	
				_		- -		
4.1B		(i)	Rate per cum for grading-I Material					
			d) GST (multiplying factor 0.2016) of	n (a+b+	·c)		71147.56	

d) GST (multiplying factor 0.2016) on (a+b+c)

CHAPTER - 4
SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS

	Det :		SUB-BASES, BASES (NON- BITUN	IINOUS)	AND SHOUL	DERS		
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			e) Overhead charges @ 10 % on (a+	·b+c+d)	<u></u>		42406.20	
			f) Contractor's profit @ 10 % on (a-	-b+c+d+	e)		46646.82	
			g) Cess @ 1% on (a+b+c+d+e+f)				5131.15	
			Cost for 300 cum = $a+b+c+d+e+f+g$				518246.21	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1727.49	
		<i></i>				say	<u>1727.00</u>	
4.1B		(ii)	Rate per cum for grading-II Material					
			d) GST (multiplying factor 0.2016)	•	-c)		67905.83	
			e) Overhead charges @ 10 % on (a+	·b+c+d)			40474.03	
			f) Contractor's profit @ 10 % on (a-	-b+c+d+	e)		44521.43	
			g) Cess @ 1% on (a+b+c+d+e+f)				4897.36	
			Cost for 300 cum = $a+b+c+d+e+f+g$				494633.13	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1648.78	
4 4 D		/iii\	Date now ours for grading III Material			say	<u>1649.00</u>	
4.1B		(iii)	Rate per cum for grading-III Material		- >		05400.00	
			d) GST (multiplying factor 0.2016)	-	-c)		65486.63	
			e) Overhead charges @ 10 % on (a+	-			39032.11	
			f) Contractor's profit @ 10 % on (a-	+b+c+d+	e)		42935.32	
			g) Cess @ 1% on (a+b+c+d+e+f)				4722.89	
			Cost for 300 cum = $a+b+c+d+e+f+g$				477011.43	
			Rate per cum = $(a+b+c+d+e+f+g)/300$			2014	1590.04	
		Note	Any one of the grading for material may	,		say	<u>1590.00</u>	
		11010	be adopted as per design	′				
4.2	401		Granular Sub-Base with Coarse Grade	d Mater	ial (Table:-	400- 2)		
			with rotavator at OMC, and compactin density, complete as per clause 401. Unit = cum	g with v	ibratory roll	er to achiev	e the desired	I
			Taking output = 300 cum a) Labour					
			Mate	day	0.400	551.00	220.40	L-12
			Mazdoor skilled	day		508.00	1016.00	
			Mazdoor	day		424.00	3392.00	
			b) Machinery					
			Mortar Grader 110 HP @ 50 cum per hour	hour	6.000	3247.00	19482.00	
			Three wheel 80-100 kN Static Roller		6.000	969.00	5814.00	P&M-059
			Water tanker 6 KL capacity	hour	3.000	724.00	2172.00	P&M-060
			c) Material For coarse graded Granular sub-base Materials per table 400-2)				
			For grading-I Material					
			53 mm to 26.5 mm @ 35 per cent	cum	134.400	900.00	120960.00	M-029
					172.800	850.00	146880.00	M-026
			26.5 mm to 4.75 mm @ 45 per cent	cum				
			2.36 mm below @ 20 per cent (Coarse Sand)	cum	76.800	700.00	53760.00	
			Cost of water	KL	18.000	71.00	1278.00	M-189
			OR					
			For Grading-II Material					
			26.5 mm to 4.75 mm @ 75 per cent	cum	288.000	850.00	244800.00	M-026
			2.36 mm below @ 25 per cent	cum	96.000	700.00	67200.00	M-022
			Cost of water	KL	18.000	71.00	1278.00	M-189
			OR					

CHAPTER - 4 SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS

SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			For Grading-III Material					
			9.5 mm to 4.75 mm @ 66 per cent	cum	255.000	800.00	204000.00	M-025
			2.36 mm below @ 34 per cent	cum	129.000	700.00	90300.00	M-022
			Cost of water	KL	18.000	71.00	1278.00	M-189
4.2		(i)	Rate per cum for grading-I Material				74500.04	
			d) GST (multiplying factor 0.2016) o	•	·c)		71562.84	
			e) Overhead charges @ 10 % on (a+l				42653.72	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	e)		46919.10	
			g) Cess @ 1% on (a+b+c+d+e+f)				5161.10	
			Cost for 300 cum = $a+b+c+d+e+f+g$				521271.16	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1737.57	
4.2		/::\	Date was a sum for avading II Material			say	<u>1738.00</u>	
4.2		(ii)	Rate per cum for grading-II Material	n /albi	-0)		69627.48	
			d) GST (multiplying factor 0.2016) o	•	·C)		41500.19	
			e) Overhead charges @ 10 % on (a+l	,	۵١			
			f) Contractor's profit @ 10 % on (a+	D+C+a+	e)		45650.21	
			g) Cess @ 1% on (a+b+c+d+e+f)				5021.52	
			Cost for 300 cum = $a+b+c+d+e+f+g$				507173.80 1690.58	
			Rate per cum = $(a+b+c+d+e+f+g)/300$			say	1690.56 1691.00	
4.2		(iii)	Rate per cum for grading-III Material			Say	1031.00	
		` '	d) GST (multiplying factor 0.2016) o	n (a+b+	·c)		66059.16	
			e) Overhead charges @ 10 % on (a+l	•	-,		39373.36	
			f) Contractor's profit @ 10 % on (a+	•	e)		43310.69	
			g) Cess @ 1% on (a+b+c+d+e+f)		~,		4764.18	
			Cost for 300 cum = a+b+c+d+e+f+g				481181.79	
			Rate per cum = (a+b+c+d+e+f+g)/300				1603.94	
			(a a c a c r g), occ			say	<u>1604.00</u>	
		Note	Any one of the grading for material may be adopted as per design					

be adopted as per design

4.3 402 Lime Stabilisation for Improving Sub-grade

Laying and spreading available soil in the sub-grade on a prepared surface, pulverising, mixing the spread soil in place with rotavator with 3 per cent slaked lime having minimum content of 70 per cent of CaO, grading with motor grader and compacting with the road roller at OMC to the desired density to form a layer of improved sub grade

Unit = cum

Taking output = 300 cum (525 tonne)

A By Mechanical Means

a)	Labour					
	Mate	day	0.360	551.00	198.36	L-12
	Skilled mazdoor for alignment and geometrics	day	1.000	508.00	508.00	L-15
	Mazdoor for spraying lime	day	8.000	424.00	3392.00	L-13
b)	Machinery					
	Tractor with ripper and rotavator attachments @ 60 cum per hour for ripping and 25 cum per hour for mixing	hour	12.000	511.00	6132.00	P&M-055
	Motor Grader 110 HP @ 50 cum per hour	hour	6.000	3247.00	19482.00	P&M-032
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	969.00	3779.10	P&M-059
	Water tanker 6 KL capacity	hour	12.000	724.00	8688.00	P&M-060
c)	Material					
	Lime at site	tonne	15.750	15000.00	236250.00	M-188
	Cost of water	KL	72.000	71.00	5112.00	M-189
d)	GST (multiplying factor 0.2016) o	n (a+b+	-c)		57161.96	

CHAPTER - 4

	CHAPTER - 4								
			SUB-BASES, BASES (NON- BITU	<u>MINOUS)</u>	AND SHOUL	DERS			
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.	
			e) Overhead charges @ 10 % on (a	·	34070.34				
			f) Contractor's profit @ 10 % on (a	+b+c+d+	·е)		37477.38		
			g) Cess @ 1% on (a+b+c+d+e+f)				4122.51		
			Cost for 300 cum = $a+b+c+d+e+f+g$		416373.65				
			Rate per cum = $(a+b+c+d+e+f+g)/300$		1387.91				
			-	say	<u>1388.00</u>				
		14010	as other machines for spreading and	but the same has to be available at site for 6 hours er machines for spreading and mixing will take 6 The usage rates of roller have been multiplied with a					
4.3	3 By Manual Means								
			Unit = cum						
			Taking output = 150 cum (263 tonnes)					
			a) Labour						
			Mate	day	1.440	551.00	793.44	L-12	
			Mazdoor skilled	day	1.000	508.00	508.00	L-15	
			Mazdoor	day	35.000	424.00	14840.00	L-13	
	b) Machinery								
	Three wheel 80-100 kN Static Roller hour 2.500 969.00						2422.50	P&M-059	
	Water tanker 6 KL capacity hour 6.000 724.00						4344.00	P&M-060	
	c) Material								
						15000.00	120000.00	M-188 M-189	
						2556.00	IVI-103		
	d) GST (multiplying factor 0.2016) on (a+b+c)						29325.53		
	e) Overhead charges @ 10 % on (a+b+c+d)						17478.95		

4.4 402 Lime Treated Soil for Sub-Base

f)

Providing, laying and spreading soil on a prepared sub grade, pulverising, mixing the spread soil in place with rotavator with 3 per cent slaked lime with minimum content of 70 per cent of CaO, grading with motor grader and compacting with the road roller at OMC to achieve at least 98 per cent of the max dry density to form a layer of sub base.

19226.84 2114.95

213610.21

say

1424.07 1424.00

Unit = cum

Taking output = 300 cum (525 tonnes)

Contractor's profit @ 10 % on (a+b+c+d+e)

Cess @ 1% on (a+b+c+d+e+f) Cost for 150 cum= a+b+c+d+e+f+g

Rate per cum =(a+b+c+d+e+f+g)/150

a)	Labour					
	Mate	day	0.480	551.00	264.48	L-12
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15
	Mazdoor	day	10.000	424.00	4240.00	L-13
b)	Machinery	•				
	Excavator 1.00 cum bucket capacity	hour	6.000	2044.00	12264.00	P&M-026
	Tipper for carriage of soil	tonne. km	525 x L	18.00	28350.00	Lead =3 km & P&M- 058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				2835.00	
	Motor Grader 110 HP @ 50 cum per hour	hour	6.000	3247.00	19482.00	P&M-032
	Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
	Tractor with Rotavator and blade @ 25 cum per hour	hour	12.000	494.00	5928.00	P&M-054
	Water tanker 6 KL capacity	hour	12.000	724.00	8688.00	P&M-060

CHAPTER - 4
SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS

31. I	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	-	c)	Material					-
			Lime at site	tonne	15.750	15000.00	236250.00	M-188
			Cost of water	KL	72.000	71.00	5112.00	M-189
		d)	GST (multiplying factor 0.2016) of	on (a+b+	·c)		66577.09	
		e)	Overhead charges @ 10 % on (a+	b+c+d)			39682.06	
		f)	Contractor's profit @ 10 % on (a+	·b+c+d+	e)		43650.26	
		g)	Cess @ 1% on (a+b+c+d+e+f)				4801.53	
		Cos	st for 300 cum = a+b+c+d+e+f+g				484954.42	
		Rat	te per cum= (a+b+c+d+e+f+g)/300				1616.51	
						say	<u>1617.00</u>	

4.5 403 Cement Treated Soil Sub Base/ Base

Providing, laying and spreading soil on a prepared sub grade, pulverising, adding the designed quantity of cement to the spread soil, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.

Unit = cum

Taking output = 300 cum (525 tonnes)

For 4 per cent quantity of cement by weight of soil

ignt of soil					
Labour					
Mate	day	0.480	551.00	264.48	L-12
Mazdoor skilled	day	2.000	508.00	1016.00	L-15
Mazdoor	day	10.000	424.00	4240.00	L-13
Machinery					
Excavator 1.00 cum bucket capacity	hour	6.000	2044.00	12264.00	P&M-026
Tipper for carriage of soil	tonne.km	525 x L	18.00	28350.00	Lead =3 km & P&M-
Add 10 per cent of cost of carriage to cover cost of loading and				2835.00	
<u> </u>	hour	6,000	2247.00	10492.00	P&M-032
					P&M-059
					P&M-054
25 cum per hour	nour	12.000	494.00	5928.00	Fam-054
Water tanker 6 KL capacity	hour	12.000	724.00	8688.00	P&M-060
Material					
Cement at site (@ 4 per cent of 525 tonne)	tonne	21.000	9100.00	191100.00	M-081
Cost of water	KL	72.000	71.00	5112.00	M-189
GST (multiplying factor 0.2016) o	n (a+b+c	:)		57474.85	
Overhead charges @ 10 % on (a+	b+c+d)			34256.83	
Contractor's profit @ 10 % on (a+	b+c+d+e)		37682.52	
· · · · · · · · · · · · · · · · · · ·				4145.08	
• ,				418652.76	
3				1395.51	
(1396.00	
	Labour Mate Mazdoor skilled Mazdoor Machinery Excavator 1.00 cum bucket capacity Tipper for carriage of soil Add 10 per cent of cost of carriage to cover cost of loading and unloading 10.75 Three wheel 80-100 kN Static Roller Tractor with Rotavator and blade @ 25 cum per hour Water tanker 6 KL capacity Material Cement at site (@ 4 per cent of 525 tonne) Cost of water GST (multiplying factor 0.2016) of Overhead charges @ 10 % on (a+	Labour Mate day Mazdoor skilled day Mazdoor day Machinery Excavator 1.00 cum bucket capacity hour Tipper for carriage of soil tonne.km Add 10 per cent of cost of carriage to cover cost of loading and unloading 10.75 hour Three wheel 80-100 kN Static Roller hour Tractor with Rotavator and blade hour 25 cum per hour Water tanker 6 KL capacity hour Material Cement at site (@ 4 per cent of 525 tonne tonne) Cost of water KL GST (multiplying factor 0.2016) on (a+b+c+d) Contractor's profit @ 10 % on (a+b+c+d+e Cess @ 1% on (a+b+c+d+e+f) st for 300 cum = a+b+c+d+e+f	Labour Mate day 0.480 Mazdoor skilled day 2.000 Mazdoor day 10.000 Machinery Excavator 1.00 cum bucket capacity hour 6.000 Tipper for carriage of soil tonne.km 525 x L Add 10 per cent of cost of carriage to cover cost of loading and unloading 10.75 hour 6.000 Three wheel 80-100 kN Static Roller hour 6.000 Tractor with Rotavator and blade hour 12.000 25 cum per hour water tanker 6 KL capacity hour 12.000 Material Cement at site (@ 4 per cent of 525 tonne 21.000 tonne) Cost of water KL 72.000 GST (multiplying factor 0.2016) on (a+b+c) Overhead charges @ 10 % on (a+b+c+d+e) Cess @ 1% on (a+b+c+d+e+f) st for 300 cum = a+b+c+d+e+f+g	Labour Mate day 0.480 551.00 Mazdoor skilled day 2.000 508.00 Mazdoor day 10.000 424.00 Machinery Excavator 1.00 cum bucket capacity hour 6.000 2044.00 Tipper for carriage of soil tonne.km 525 x L 18.00 Add 10 per cent of cost of carriage to cover cost of loading and unloading hour 6.000 3247.00 Three wheel 80-100 kN Static Roller hour 6.000 969.00 Tractor with Rotavator and blade @ hour 12.000 494.00 25 cum per hour Water tanker 6 KL capacity hour 12.000 724.00 Material Cement at site (@ 4 per cent of 525 tonne 21.000 9100.00 Cost of water KL 72.000 71.00 GST (multiplying factor 0.2016) on (a+b+c) Overhead charges @ 10 % on (a+b+c+d+e) Cess @ 1% on (a+b+c+d+e+f) st for 300 cum = a+b+c+d+e+f+g	Labour Mate day 0.480 551.00 264.48 Mazdoor skilled day 2.000 508.00 1016.00 Mazdoor day 10.000 424.00 4240.00 Machinery Excavator 1.00 cum bucket capacity hour 6.000 2044.00 12264.00 Tipper for carriage of soil tonne.km 525 x L 18.00 28350.00 Add 10 per cent of cost of carriage to cover cost of loading and unloading 10.75 hour 6.000 3247.00 19482.00 Three wheel 80-100 kN Static Roller hour 6.000 969.00 5814.00 Tractor with Rotavator and blade @ hour 12.000 494.00 5928.00 25 cum per hour Water tanker 6 KL capacity hour 12.000 724.00 8688.00 Material Cement at site (@ 4 per cent of 525 tonne 21.000 9100.00 191100.00 Cost of water KL 72.000 71.00 5112.00 GST (multiplying factor 0.2016) on (a+b+c) 57474.85

4.8 404.3.2 Inverted Choke

Construction of inverted choke by providing, laying, spreading and compacting screening B type/ coarse sand of specified grade in uniform layer on a prepared surface with motor grader and compacting with power roller etc

Unit = cum

Taking output = 600 cum

ı aı	king output = 600 cum					
a)	Labour					
	Mate	day	0.920	551.00	506.92	L-12
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15
	Mazdoor	day	21.000	424.00	8904.00	L-13
b)	Machinery	_				
•	Motor Grader 110 HP	hour	6 000	3247 00	19482 00	P&M-032

			CHAPTER - 4 SUB-BASES, BASES (NON- BITUMI	NOUS)	VND SHOIII	NEDS		
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	,		Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
			Water tanker 6 KL capacity c) Material	hour	18.000	724.00	13032.00	P&M-060
			Screening type 'B' or coarse sand	cum	720.000	650.00	468000.00	M-004
			Cost of water	KL	108.000	71.00	7668.00	M-189
			d) GST (multiplying factor 0.2016) or	n (a+b+	c)		105723.66	
			d) Overhead charges @ 10 % on (a+b	o+c)			63014.66	
			e) Contractor's profit @ 10 % on (a+k)+c+d)			69316.12	
			f) Cess @ 1% on (a+b+c+d+e)	,			7624.77	
			Cost for 600 cum = a+b+c+d+e				770102.13	
			Rate per cum = (a+b+c+d+e)/600				1283.50	
			(say	1284.00	
4.9	404		Water Bound Macadam					
			Providing, laying, spreading and compacti bound macadam specification including s rolling with 3 wheeled steel/ vibratory roll camber, applying and brooming requisite the interstices of coarse aggregate, wateri	spreadin er 8-10 type of	g in uniforn tonnes in s screening/	n thickness, I tages to prop binding Mate	nand packing, per grade and erials to fill up	, I
		Α	By Manual Means					
			Unit = cum					
Taking output = 360 cum								
			a) Labour					
			Mate	day	10.080	551.00	5554.08	L-12
			Mazdoor skilled	day	2.000	508.00	1016.00	L-15 L-13
Mazdoor day 250.000 424.00				106000.00	L-13			
			b) Machinery Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
			or	Houl	0.000	303.00	3014.00	
			UI					

71808.11

78988.92

8688.78 877566.87

> 2437.69 **2438.00**

say

OR

Cess @ 1% on (a+b+c+d+e+f)

Cost for 360 cum = a+b+c+d+e+f+gRate per cum = (a+b+c+d+e+f+g)/360

Overhead charges @ 10 % on (a+b+c+d)

Contractor's profit @ 10 % on (a+b+c+d+e)

e)

f)

	1 = -	ı	SUB-BASES, BASES (NON- BITUM	INOUS) /	AND SHOUL	DERS		1	
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.	
4.9A	(i)	(b)	Using Scrining Type-A (13.2mm agg.)						
			d) GST (multiplying factor 0.2016) o	n (a+b+	c)		150552.48		
			e) Overhead charges @ 10 % on (a+l	b+c+d)			89734.06		
			f) Contractor's profit @ 10 % on (a+	b+c+d+e))		98707.46		
			g) Cess @ 1% on (a+b+c+d+e+f)				10857.82		
			Cost for 360 cum = a+b+c+d+e+f+g	•					
			Rate per cum = (a+b+c+d+e+f+g)/360				3046.22		
4.9A		(ii)	Grading-II			say	<u>3046.00</u>		
			a) Aggregate						
			Grading-II 63 mm to 45 mm /Grading-III 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	980.00	426888.00	M-038	
			b) Stone Screening						
			Type A 13.2 mm for grading-II@ 0.12 cum per 10 sqm OR	cum	57.600	1820.00	104832.00	M-052	
			Crushable type such as Moorum or Gravel for grading II &III @ 0.22 cum per 10 sqm	cum	105.590	350.00	36956.50	M-007	
			Type B11.2 mm for grading-III @ 0.18 cum per 10 sqm c) Binding material	cum	86.400	1800.00	155520.00	M-051	
			Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	350.00	10080.00	M-007	
			Cost of water	KL	144.000	71.00	10224.00	M-189	
4.9A	(ii)	(a)	Using Scrining Crushable type such a	s Mooru	m or Grave	el			
			d) GST (multiplying factor 0.2016) o	n (a+b+	c)		122941.44		
			e) Overhead charges @ 10 % on (a+l	b+c+d)			73277.00		
			f) Contractor's profit @ 10 % on (a+	b+c+d+e	e)		80604.70		
			g) Cess @ 1% on (a+b+c+d+e+f)				8866.52		
			Cost for 360 cum = a+b+c+d+e+f+g				895518.24		
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2487.55		
			· · · · · · · · · · · · · · · · · · ·			say	<u>2488.00</u>		
			OR						
4.9A	(ii)	(b)	0 0 71 (007						
			d) GST (multiplying factor 0.2016) o	-	C)		138657.27		
			e) Overhead charges @ 10 % on (a+l	-			82644.14		
			f) Contractor's profit @ 10 % on (a+	b+c+d+e))		90908.55		
			g) Cess @ 1% on (a+b+c+d+e+f)				9999.94		
			Cost for 360 cum = $a+b+c+d+e+f+g$				1009993.98		
			Rate per cum = (a+b+c+d+e+f+g)/360				2805.54		
4.9A	(ii)	(c)	Using Scrining Type-B (11.2mm agg.)			say	<u>2806.00</u>		
			d) GST (multiplying factor 0.2016) o	n (a+b+	c)		148875.97		
			e) Overhead charges @ 10 % on (a+1	-	,		88734.81		
			f) Contractor's profit @ 10 % on (a+	-	e)		97608.29		
			g) Cess @ 1% on (a+b+c+d+e+f)	'	,		10736.91		
			Cost for 360 cum = a+b+c+d+e+f+g				1084428.06		
Rate per cum = (a+b+c+d+e+f+g)/360					3012.30				
						say	<u>3012.00</u>		

SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.	
4.9A	орсс.	(iii)	c)Grading-III						
		` '	Aggregate						
			Grading-III 53 mm to 22.4 mm@	cum	435.600	1010.00	439956.00	M-036	
			0.91 cum per 10 sqm for compacted thickness of 75 mm	0.91 cum per 10 sqm for compacted thickness of 75 mm					
			Stone Screening Type B 11.2 mm for grading-III @ 0.18 cum per 10 sqm OR	cum	86.400	1800.00	155520.00	M-051	
			Crushable type such as Moorum or Gravel for grading II &III @ 0.22 cum per 10 sqm	cum	105.590	350.00	36956.50	M-007	
			Binding material						
			Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	350.00	10080.00	M-007	
			Cost of water	KL	144.000	71.00	10224.00	M-189	
4.9A (iii)	(a)	Using Scrining Crushable type such as	s Moor	um or Grave	el			
			d) GST (multiplying factor 0.2016) o	n (a+b-	tc)		125575.95		
			e) Overhead charges @ 10 % on (a+b	o+c+d)			74847.25		
			f) Contractor's profit @ 10 % on (a+l	b+c+d+	-e)		82331.98		
			g) Cess @ 1% on (a+b+c+d+e+f)				9000.98		
			Cost for 360 cum = a+b+c+d+e+f+g				914652.74		
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2540.70		
			OR			say	<u>2541.00</u>		
4.9A (iii)	(b)	Using Scrining Type-B (11.2mm agg.)						
	,	(- /	d) GST (multiplying factor 0.2016) o	n (a+h-	+c)		151510.48		
			e) Overhead charges @ 10 % on (a+l	-	. 0,		90305.06		
			f) Contractor's profit @ 10 % on (a+1	-	-۵۱		99335.56		
			g) Cess @ 1% on (a+b+c+d+e+f)	J.C.u.	C)		10926.91		
			Cost for 360 cum = a+b+c+d+e+f+g				1103618.09		
			Rate per cum = $(a+b+c+d+e+f+g)/360$				3065.61		
						say	<u>3066.00</u>		
			(Anyone of the aggregate grading, screening and binding material may be						
4.0		В	used as per design)						
4.9		ь	By Mechanical Means: Unit = cum						
			Taking output = 360 cum						
			a) Labour						
			Mate	day		551.00	374.68		
			Mazdoor skilled Mazdoor	day day		508.00 424.00	1016.00 6360.00		
			b) Machinery	uay	13.000	424.00	0300.00		
			Motor grader 110 HP @ 50cum/hr. for spreading	hour	7.200	3247.00	23378.40	P&M-032	
			Three wheel 80-100 kN Static Roller or	hour	6.000	969.00	5814.00	P&M-059	
			Smooth 3 wheeled steel roller @ 30cum/hr.	hour					
		,,,	water tanker 6 KL capacity c) Material (Refer table 400 - 7, 8 & 9	hour	24.000	724.00	17376.00	P&M-060	
4.9B		(i)	Grading-I						
			Aggregate						

	1 = 4 :		SUB-BASES, BASES (NON- BITUM	NOUS) /	AND SHOUL	DEKO		1
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Grading-I 90 mm to 45 mm@ 1.21cum per 10 sqm for compacted thickness of 100 mm Stone Screening	cum	435.600	950.00	413820.00	M-039
			Type A 13.2 mm for grading-l @ 0.27 cum per 10 sqm OR	cum	97.200	1820.00	176904.00	M-052
			Crushable type such as Moorum or Gravel for grading-l @ 0.30 cum per 10 sqm Binding material	cum	108.000	350.00	37800.00	M-007
			Binding Material @ 0.08cum per 10 sqm for grading I material	cum	28.800	350.00	10080.00	
4.9B (/i\	(2)	Cost of water	KL Moori	144.000	71.00	10224.00	M-189
4.90 ((1)	(a)	Using Scrining Crushable type such as			∄ I	404050 40	
			d) GST (multiplying factor 0.2016) o	-	·c)		104058.48	
			e) Overhead charges @ 10 % on (a+l	-	٥)		62022.16 68224.37	
			f) Contractor's profit @ 10 % on (a+1	0+6+0+	e)		7504.68	
			g) Cess @ 1% on (a+b+c+d+e+f) Cost for 360 cum = a+b+c+d+e+f+g				757972.77	
			Rate per cum = (a+b+c+d+e+f+g)/360				2105.48	
			(a a c a c : g), ccc			say	2105.00	
			OR			•		
4.9B ((i)	(b)	Using Scrining Type-A (13.2mm agg.)					
			d) GST (multiplying factor 0.2016) o	n (a+b+	·c)		134133.97	
			e) Overhead charges @ 10 % on (a+l	o+c+d)			79948.11	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	e)		87942.92	
			g) Cess @ 1% on (a+b+c+d+e+f)				9669.97	
			Cost for 360 cum = $a+b+c+d+e+f+g$				977042.05	
			Rate per cum = (a+b+c+d+e+f+g)/360			say	2714.01 2714.00	
4.9B		(ii)	c) Grading-II			Suy	2114.00	
			Aggregate					
			Grading-II 63 mm to 45 mm /Grading-III 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted thickness of 75 mm Stone Screening	cum	435.600	980.00	426888.00	M-038
			Type A 13.2 mm for grading-II@ 0.12 cum per 10 sqm OR	cum	57.600	1820.00	104832.00	M-052
			Crushable type such as Moorum or Gravel for grading II &III @ 0.22 cum per 10 sqm OR	cum	105.590	350.00	36956.50	M-007
			Type B11.2 mm for grading-III @ 0.18 cum per 10 sqm Binding material	cum	86.400	1800.00	155520.00	M-051
			Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	350.00	10080.00	M-007
			Cost of water	KL	144.000	71.00	10224.00	M-189
4.9B ((ii)	(a)	Using Scrining Crushable type such as	s Mooru	ım or Grave	el		
			d) GST (multiplying factor 0.2016) o	n (a+b+	·c)		106522.94	
			e) Overhead charges @ 10 % on (a+l	o+c+d)			63491.05	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	e)		69840.16	
			g) Cess @ 1% on (a+b+c+d+e+f)				7682.42	
			Cost for 360 cum = a+b+c+d+e+f+g				775924.15	

			SUB-BASES, BASES (NON- BITUMI	NOUS)	AND SHOUL	DERS		
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Rate per cum = (a+b+c+d+e+f+g)/360				2155.34	•
						say	<u>2155.00</u>	
			OR					
4.9B ((ii)	(b)	Using Scrining Type-A (13.2mm agg.)					
			d) GST (multiplying factor 0.2016) o	n (a+b-	⊦c)		122238.76	
			e) Overhead charges @ 10 % on (a+b	o+c+d)			72858.18	
			f) Contractor's profit @ 10 % on (a+l	b+c+d+	-e)		80144.00	
			g) Cess @ 1% on (a+b+c+d+e+f)				8812.09	
			Cost for 360 cum = a+b+c+d+e+f+g				890396.11	
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2473.32	
						say	2473.00	
4.9B ((ii)	(c)	Using Scrining Type-B (11.2mm agg.)			•		
			d) GST (multiplying factor 0.2016) o	n (a+b-	+c)		132457.47	
			e) Overhead charges @ 10 % on (a+h	-	-,		78948.86	
			f) Contractor's profit @ 10 % on (a+l	-	·e)		86843.74	
			g) Cess @ 1% on (a+b+c+d+e+f)		-,		9552.81	
			Cost for 360 cum = $a+b+c+d+e+f+g$				964833.96	
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2680.09	
			(a a c a c g)			say	2680.00	
4.9B		(iii)	c)Grading-III			ouy	2000.00	
			Aggregate					
			Grading-III 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted	cum	435.600	1010.00	439956.00	M-036
			thickness of 75 mm					
			Stone Screening Type B11.2 mm for grading-III @	cum	86.400	1800.00	155520.00	M-051
			0.18 cum per 10 sqm	-	001.00		.00020.00	
			OR					
			Crushable type such as Moorum or	cum	105.590	350.00	36956.50	M-007
			Gravel for grading II &III @ 0.22 cum per 10 sqm					
			Binding material					
			Binding Material @ 0.06cum per 10	cum	28.800	350.00	10080.00	M-007
			sqm for grading II material					
			Cost of water	KL	144.000	71.00	10224.00	M-189
4.9B (iii)	(a)	Using Scrining Crushable type such as	s Moor	um or Grave	el		
			d) GST (multiplying factor 0.2016) or	า (a+b+	c)		109157.44	
			e) Overhead charges @ 10 % on (a+b	o+c+d)			65061.30	
			f) Contractor's profit @ 10 % on (a+l	b+c+d+	·e)		71567.43	
			g) Cess @ 1% on (a+b+c+d+e+f)				7872.42	
			Cost for 360 cum = a+b+c+d+e+f+g				795114.17	
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2208.65	
						say	2209.00	
			OR			,		
4.9B ((iii)	(b)	Using Scrining Type-B (11.2mm agg.)					
			d) GST (multiplying factor 0.2016) or	า (a+b+	c)		135091.97	
			e) Overhead charges @ 10 % on (a+h)+c+d	-		80519.11	
			f) Contractor's profit @ 10 % on (a+l		·е)		88571.02	
			g) Cess @ 1% on (a+b+c+d+e+f)		•		9742.81	
			Cost for 360 cum = $a+b+c+d+e+f+g$				984023.99	
			Rate per cum = (a+b+c+d+e+f+g)/360				2733.40	
			(a.p.o.a.o.1.g/000			say	2733.00	
						say	<u> 21 33.00</u>	

ſ	SI.	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	i Costin Rs	Remarks/
	No	Spec.	Description	0,,,,,	Quantity	Nate iii No	Oost III 113	Input ref.

Note As three wheeled smooth rollers are also very commonly used, the same has been provided as an alternative.

4.10 405 Crushed Cement Concrete Sub-base / Base

Breaking and crushing of material obtained by breaking damaged cement concrete slabs to size range not exceeding 75 mm as specified in table 400.7 transporting the aggregates obtained from breaking of cement concrete slabs at a lead of L km., laying and compacting the same as sub base/ base course, constructed as WBM to clause 404 except the use of screening or binding Material.

 ni	٠	_	_	,,	m

Tak	ing output =360 cum					
a)	Labour					
	Mate	day	4.160	551.00	2292.16	L-12
	Mazdoor skilled	day	2.000	508.00	1016.00	
	Mazdoor for crushing broken cement concrete pavement/slabs into aggregate	day	102.000	424.00	43248.00	L-13
o)	Machinery					
	Motor Grader,110 HP @ 50 cum/hr.	hour	6.000	3247.00	19482.00	P&M-032
	Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
	or	h	10.000			
	Smooth 3 wheeled steel roller @ 30cum/hr.	hour	12.000			
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	720 x L	18.00	0.00	Lead =0 km & P&N 058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				0.00	
	Water tanker 6 KL capacity with 5 km lead @ 1 trip per hour	hour	12.000	724.00	8688.00	P&M-060
c)	Material					
con and	erial available from dismantled crete slab after crushing / breaking only carriage is required to be vided					
	Cost of water	KL	72.000	71.00	5112.00	M-189
d)	GST (multiplying factor 0.2016) or	า (a+b+c	:)		19490.72	
e)	Overhead charges @ 10 % on (a+l	b+c+d)			11617.09	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e))		12778.80	
g)	Cess @ 1% on (a+b+c+d+e+f)				1405.67	
Cos	t for 360 cum = a+b+c+d+e+f+g				141972.44	
Rat	e per cum = (a+b+c+d+e+f+g)/360				394.37	
				say	<u>394.00</u>	

Note 1. It is assumed that dismantling of concrete slab/pavement has been considered separately. Hence same is not added in this analysis. Only labour for crushing the dismantled slab into aggregate has been added. Carriage from stock pile to work site has been provided with a lead of L km.

- 2. In case of breaking of slabs is done locally without involvement of transportation, the provision of tipper, front end loader and loading/unloading charges may be deleted.
- 3. As three wheeled smooth steel rollers are commonly in use, the same has been provided as an alternative.

CHAPTER - 4
SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS

SI. No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
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4.11 405.2 Penetration Coat Over Top Layer of Crushed Cement Concrete Base

Spraying of bitumen over cleaned dry surface of crushed cement concrete base at the rate of 25 kg per 10 sqm by a bitumen pressure distributor, spreading of key aggregates at the rate of 0.13 cum per 10 sqm by a mechanical gritter and rolling the surface as per clause 506.3.8

Unit = sqm

Taking output = 7500 sqm

ı aı	ang output - 1500 sqiii					
a)	Labour					
	Mate	day	0.560	551.00	308.56	L-12
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15
	Mazdoor	day	12.000	424.00	5088.00	L-13
b)	Machinery					
	Mechanical broom hydraulic @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031
	Hydraulic self propelled chips spreader	hour	6.000	3640.00	21840.00	P&M-025
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	hour	6.000	916.00	5496.00	P&M-048
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	969.00	3779.10	P&M-059
	Bitumen pressure distributor @ 1750 sqm per hour	hour	4.280	1509.00	6458.52	P&M-004
c)	Material					
	Crushed stone aggregate 11.2 mm size	cum	97.500	1800.00	175500.00	M-051
	Bitumen (80-100 grade)	tonne	0.250	57924.00	14481.00	M-074
d)	GST (multiplying factor 0.2016) or	า (a+b+	c)		49963.17	
e)	Overhead charges @ 10 % on (a+l	b+c+d)			29779.64	
f)	Contractor's profit @ 10 % on (a+	b+c+d+	e)		32757.60	
g)	Cess @ 1% on (a+b+c+d+e+f)				3603.34	
	st for 7500 sqm = a+b+c+d+e+f+g				363936.93	
Ra	te per sqm = (a+b+c+d+e+f+g)/7500				48.52	
				say	<u>49.00</u>	

Note Though vibratory roller is required only for 3 hours as per norms, the same is required to be available at site for 6 hours to match with other machines. The usage rates of vibratory roller may be multiplied with a factor of 0.65.

4.12 406 Wet Mix Macadam

Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.

Unit = cum

Taking output = 225 cum (495 tonnes)

Labour					
Mate	day	0.480	551.00	264.48	L-12
Mazdoor skilled	day	2.000	508.00	1016.00	L-15
Mazdoor	day	10.000	424.00	4240.00	L-13
Machinery	-				
Wet mix plant of 75 tonne hourly	hour	9.000	1794.00	16146.00	P&M-094
capacity					
Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
Front end loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
Paver finisher	hour	6.000	1386.00	8316.00	P&M-035
Three wheel 80-100 kN Static Roller	hour	6x0.65	969.00	3779.10	P&M-059
	Mazdoor skilled Mazdoor Machinery Wet mix plant of 75 tonne hourly capacity Electric generator 125 KVA Front end loader 1 cum capacity Paver finisher	Mate day Mazdoor skilled day Mazdoor day Machinery Wet mix plant of 75 tonne hourly capacity Electric generator 125 KVA hour Front end loader 1 cum capacity hour Paver finisher hour	Mate day 0.480 Mazdoor skilled day 2.000 Mazdoor day 10.000 Machinery Wet mix plant of 75 tonne hourly hour 9.000 capacity Electric generator 125 KVA hour 6.000 Front end loader 1 cum capacity hour 6.000 Paver finisher hour 6.000	Mate day 0.480 551.00 Mazdoor skilled day 2.000 508.00 Mazdoor day 10.000 424.00 Machinery Wet mix plant of 75 tonne hourly capacity hour 9.000 1794.00 capacity Electric generator 125 KVA hour 6.000 1135.00 Front end loader 1 cum capacity hour 6.000 1838.00 Paver finisher hour 6.000 1386.00	Mate day 0.480 551.00 264.48 Mazdoor skilled day 2.000 508.00 1016.00 Mazdoor day 10.000 424.00 4240.00 Machinery Wet mix plant of 75 tonne hourly capacity hour 9.000 1794.00 16146.00 capacity Electric generator 125 KVA hour 6.000 1135.00 6810.00 Front end loader 1 cum capacity hour 6.000 1838.00 11028.00 Paver finisher hour 6.000 1386.00 8316.00

or

			30D-DAGES, DAGES (NON- DITOM	11000,7	TITE CITECE	DLING		
SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Smooth 3 wheeled steel roller @ 8-	hour	12.000			
			10 tonnes.					
			Water tanker 6 KL capacity	hour	3.000	724.00	2172.00	P&M-060
			Tipper	tonne.	495 x L	18.00	0.00	Lead =0 km & P&M-
				km				058
			Add 10 per cent of cost of carriage				0.00	
			to cover cost of loading and					
			unloading					
		(c) Material (Table 400-11)					
			45 mm to 22.4 mm@ 30 per cent	cum	89.100	1010.00	89991.00	M-034
			22.4 mm to 2.36 mm @ 40 per cent	cum	118.800	1020.00	121176.00	M-031
			2.36 mm to 75 micron@ 30 per cent	cum	89.100	700.00	62370.00	M-022
			Cost of water	KL	18.000	71.00	1278.00	M-189
		d	d) GST (multiplying factor 0.2016) or	n (a+b+c	c)		66243.05	
		е	e) Overhead charges @ 10 % on (a+	b+c+d)			39482.96	
		f) Contractor's profit @ 10 % on (a+	b+c+d+	e)		43431.26	
		9	g) Cess @ 1% on (a+b+c+d+e+f)				4777.44	
		C	Cost for 225 cum = a+b+c+d+e+f+g				482521.29	
		F	Rate per cum = (a+b+c+d+e+f+g)/225				2144.54	
						say	<u>2145.00</u>	

- Note 1. Though vibratory roller is required only for 3 hours as per norms, the same is required to be available at site for 6 hours to match with other machines. The usage rates of vibratory roller may be multiplied with a factor of 0.65
 - 2. As three wheeled smooth steel rollers are commonly in use, the same has been provided as an alternative which can be used if the thickness of individual layer does not exceed 100 mm..

4.13 407 Construction of Median and Island with Soil Taken from Roadway Cutting

Construction of Median and Island above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread, graded and compacted as per clause 407

Unit = cum

Taking output =21 cum

a)	Labour					
	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor	day	6.000	424.00	2544.00	L-13
b)	Machinery					
	Water tanker 6 KL with 5 km lead and 1 trip per hour	hour	1.000	724.00	724.00	P&M-060
	Plate compactor @ 3.5 cum per hour	hour	6.000	382.00	2292.00	P&M-086
c)	Material					
•	Cost of water	KL	6.000	71.00	426.00	M-189
d)	GST (multiplying factor 0.2016) of	on (a+b+c)			1233.44	
e)	Overhead charges @ 10 % on (a-	+b+c+d)			735.17	
f)	Contractor's profit @ 10 % on (a-	+b+c+d+e)			808.69	
g)	Cess @ 1% on (a+b+c+d+e+f)				88.96	
Cos	st for 21 cum = a+b+c+d+e+f+g		8984.50			
Rat	e per cum = $(a+b+c+d+e+f+g)/21$				427.83	
	-			sav	428.00	

SI. No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	i Costin Rs	Remarks/ Input ref.	I
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Note This analysis provides for median and island with earthen top. In case the surface is required to be turfed or planted with shrubs, the same is required to be provided separately as per analysis given in the chapter on horticulture. In case granular fill is required to be paved, quantities of paving are required to be calculated as per approved design and paid separately.

4.14 407 Construction of Median and Island with Soil Taken from Borrow Areas

Construction of median and Island above road level with approved material brought from borrow pits, spread, sloped and compacted as per clause 407

Unit = cum

Taking output = 21 cum

a)	Labour					
	Mate	day	0.160	551.00	88.16	L-12
	Mazdoor	day	4.000	424.00	1696.00	L-13
b)	Machinery					
	Water tanker with 5 km lead	hour	1.000	724.00	724.00	P&M-060
	Plate Compactor @ 3.5 cum per hour	hour	6.000	382.00	2292.00	P&M-086
	Hydraulic Excavator1.0 cum bucket capacity @60 cum per hour	hour	0.500	2044.00	1022.00	P&M-026
	Tipper 10 tonne capacity	tonne. km	52.5 x L	18.00	2835.00	Lead =3 km & P&M- 058
	Add 10 per cent of cost of transportation to cover cost of loading and unloading c) Material				283.50	
	Cost of water	KL	6.000	71.00	426.00	M-189
d)	GST (multiplying factor 0.2016) o	n (a+b+c))		1888.32	
e)	Overhead charges @ 10 % on (a+	b+c+d)			1125.50	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e)		1238.05	
g)	Cess @ 1% on (a+b+c+d+e+f)				136.19	
Cos	st for 21 cum = a+b+c+d+e+f+g				13754.72	
Rat	te per cum = (a+b+c+d+e+f+g)/ 21				654.99	
	-			say	<u>655.00</u>	

Note This analysis provides for median and island with earthen top. In case the surface is required to be turfed or planted with shrubs, the same is required to be provided separately as per analysis given in the chapter on horticulture. In case surface finish is of hard type, the same may be provided separately as per approved desian.

4.15 **Construction of Shoulders**

A. Earthen Shoulders

The rate as applicable for sub-grade construction may be adopted.

B. Hard Shoulders

Rate as applicable for sub-base and or base may be adopted as per approved design.

C. Paved shoulders

The rate may be adopted as applicable for different layers of pavement depending upon approved design of paved shoulders.

4.17 410 **Crusher Run Macadam Base**

Providing crushed stone aggregate, depositing on a prepared surface by hauling vehicles, spreading and mixing with a motor grader, watering and compacting with a vibratory roller to clause 410 to form a layer of sub-base/Base

				SUB-BASES, BASES (NON- BITUMI	NOUS)	AND SHOUL	DERS		
SI. No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.		Un	nit = cum					1
			Ta	king output = 360 cum					
		Α	Ву	Mix in Place Method					
			a)	Labour					
			aj			0.400	554.00	004.40	1.42
				Made	day	0.480	551.00	264.48	
				Mazdoor skilled	day	2.000	508.00	1016.00	
			h۱	Machinem	day	10.000	424.00	4240.00	L-10
			b)	Machinery Tractor attached with rotavator @ 25	hour	12.000	494.00	5928.00	P&M-054
				cum per hour	Houl	12.000	494.00	3920.00	
				Motor grader 110 HP	hour	6.000	3247.00	19482.00	P&M-032
				Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
				Water tanker 6 KL capacity	hour	6.000	724.00	4344.00	P&M-060
					noui	0.000	724.00	4044.00	
			c)	Material					
			·	gregate at site					
			i) F	For 53 mm maximum size					
				63 mm to 45 mm @ 33 per cent	cum	157.460	980.00	154310.80	M-038
				22.5 mm to 5.6 mm@ 32 per cent	cum	151.060	1590.00	240185.40	
				Below 5.6 mm @ 35 per cent	cum	166.680	1300.00	216684.00	M-030
				Cost of water	KL	36.000	71.00	2556.00	M-189
				Or					
			ii)	For 45 mm maximum size					
				45 mm to 22.5 mm@ 5 per cent	cum	24.120	1010.00	24361.20	
				22.4 mm to 5.6 mm@ 50 per cent	cum	237.600	1590.00	377784.00	
				Below 5.6 mm@ 45 per cent	cum	213.480	1300.00	277524.00	
				Cost of water	KL	36.000	71.00	2556.00	M-189
4.17A	١.	(i)	Fo	r 53 mm maximum size					
			d)	GST (multiplying factor 0.2016) or	-	C)		132012.66	
			e)	Overhead charges @ 10 % on (a+h				78683.73	
			f)	Contractor's profit @ 10 % on (a+l	o+c+d+	e)		86552.11	
			g)	Cess @ 1% on (a+b+c+d+e+f)				9520.73	
				st for 360.0cum = a+b+c+d+e+f+g				961593.91 2671.09	
			Пα	te per cum = (a+b+c+d+e+f+g)/360 or			say	<u>2671.09</u>	
4.17A		(ii)	Fo	r 45 mm maximum size			ouy	207 7700	
			d)	GST (multiplying factor 0.2016) or	n (a+b+	c)		145820.04	
			e)	Overhead charges @ 10 % on (a+h	•	-,		86913.37	
			f)	Contractor's profit @ 10 % on (a+l		e)		95604.71	
			g)	Cess @ 1% on (a+b+c+d+e+f)		-,		10516.52	
			•	st for 360.0cum = a+b+c+d+e+f+g				1062168.32	
				te per cum = (a+b+c+d+e+f+g)/360				2950.47	
				3,			001/	2050.00	
		Note	An	y one of the aggregate grading may be	adopte	d	say	<u>2950.00</u>	
4 47		В			аморто	-			
4.17			Βу	Mixing Plant :					
				it = cum					
			Ta	king output = 225 cum (450 tonnes)					
				Labarra					
			a)	Labour	د دهام	0.000	EE4.00	454.00	I -12
				Mate	day	0.280	551.00	154.28	
				Mazdoor skilled	day	1.000	508.00	508.00	L-15

Lace		SUB-BASES, BASES (NON- BITUM	/INOUS)	AND SHOUL	DERS		1
SI. Ref. to MoRTH No Spec.	ı	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Mazdoor	day	6.000	424.00	2544.00	L-13
		b) Machinery					
		Wet mix plant @ 75 tonne per hour	hour	6.000	1794.00	10764.00	P&M-094
		Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
		Front end loader 1 cum bucket	hour	6.000	1838.00	11028.00	P&M-017
		capacity		0.000	0047.00	40.400.00	D8 M 020
		Motor grader 110 HP	hour	6.000	3247.00	19482.00	
		Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
		Water tanker 6 KL capacity	hour	3.000	724.00	2172.00	P&M-060
		Tipper 10 tonne capacity	tonne.km	450 x L	18.00	0.00	km & P&M-
		Add 10 per cent of cost of carriage to cover cost of loading and unloading c) Material				0.00	058
		Aggregate at site					
		i) For 53 mm maximum size					
		63 mm to 45 mm @ 33 per cent	cum	98.400	980.00	96432.00	M-038
		<u> </u>	cum				
		22.5 mm to 5.6 mm@ 32 per cent	cum	94.410 104.180	1590.00 1300.00	150111.90 135434.00	
		Below 5.6 mm @ 35 per cent Or	cum	104.160	1300.00	133434.00	
		ii) For 45 mm maximum size					
		45 mm to 22.5 mm@ 5 per cent	cum	15.060	1010.00	15210.60	M-034
		22.4 mm to 5.6 mm@ 50 per cent	cum	148.500	1590.00	236115.00	M-032
		Below 5.6 mm@ 45 per cent	cum	133.430	1300.00	173459.00	
		Cost of water	KL	18.000	71.00	1278.00	M-189
4.17 B	(i)	For 53 mm maximum size					
		d) GST (multiplying factor 0.2016) of	on (a+b+	c)		88956.84	
		e) Overhead charges @ 10 % on (a-				53021.10	
		f) Contractor's profit @ 10 % on (a-	+b+c+d+	·e)		58323.21	
		g) Cess @ 1% on (a+b+c+d+e+f)				6415.55	
		Cost for 225cum = a+b+c+d+e+f+g				647970.88	
		Rate per cum = (a+b+c+d+e+f+g)/225				2879.87	
4.17 B	(ii)	For 45 mm maximum size			say	<u>2880.00</u>	
4.17 5	(,		n (atht	۵)		97844.32	
		 d) GST (multiplying factor 0.2016) c e) Overhead charges @ 10 % on (a- 		C)		58318.32	
		f) Contractor's profit @ 10 % on (a-	-			64150.15	
		g) Cess @ 1% on (a+b+c+d+e+f)				7056.52	
		Cost for 360.0cum = $a+b+c+d+e+f+g$				712708.19	
		Rate per cum = (a+b+c+d+e+f+g)/360				1979.74	
		Rate per cam = (a·b·c·a·c·1·g),500			say	1980.00	
4.18		Preparation of sub grade			,	<u> </u>	
	(A)	Preparation of sub grade by excavating of to camber and consolidating with road disposal of surplus earth, lead upto 50 m	roller, r				
		Unit = Sq.m.					
		Taking output = 100 Sq.m.					
		a) Labour					
		Mate	day	1.800	551.00	991.80	
		Mazdoor	day	18.000	424.00	7632.00	L-13

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SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Mazdoor for consolidation of sub-	day	0.270	424.00	114.48	L-13
			Mazdoor for watch & ward	day	0.054	424.00	22.90	L-13
		b) Machinery					
			Three wheel 80-100 kN Static Roller	hour	0.430	969.00	416.67	M-189
		c	e) GST (multiplying factor 0.2016) on	ı (a+b)			1850.25	
		d	l) Overhead charges @ 10 % on (a+l	o+c)			1102.81	
		е	e) Contractor's profit @ 10 % on (a+b	o+c+d)			1213.09	
		f) Cess @ 1% on (a+b+c+d+e)				133.44	
		C	Cost for 100 Sq.m. = a+b+c+d+e+f				13477.44	
		F	Rate per Sq.m. = (a+b+c+d+e+f)/ 100				134.77	
						say	<u>135.00</u>	

(B) Consolidation of sub-grade with road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and rerolling the sub grade.

Unit = Sq.m.

Taking output = 100 Sq.m.

a)	Labour				
	Mazdoor for watch & ward	day	0.054	424.00	22.90 L-13
b)	Machinery				
	Three wheel 80-100 kN Static Roller	hour	0.430	969.00	416.67 M-189
c)	GST (multiplying factor 0.2016) on	(a+b)			88.62
d)	Overhead charges @ 10 % on (a+b)+c)			52.82
e)	Contractor's profit @ 10 % on (a+b	+c+d)			58.10
f)	Cess @ 1% on (a+b+c+d+e)				6.39
Cos	st for 100 Sq.m. = a+b+c+d+e+f				645.50
Rat	e per Sq.m. = (a+b+c+d+e+f)/ 100				6.46
				say	<u>6.46</u>

Chapter - 5

BASES AND SURFACE COURSES (BITUMINOUS)

Preamble:

- 1 Various alternatives for machines and materials have been provided. The one that suits a particular situation and design may be adopted.
- 2 The outputs considered for construction equipment are for compacted quantities of relevant items and not for loose quantities.
- 3 In case of prime coat and tack coat, average quantities of binder indicated in specifications have been taken.
- 4 Tack coat and prime coat, wherever provided, are required to be measured and paid separately.
- 5 Cleaning of surface is a part of the item of prime coat and tack coat. As such cleaning of surface has not been provided for bituminous courses as the same is already catered in prime/tack coat. However, for those cases where such coats are not required to be done, cleaning of surface shall be included and paid.
- Rolling of bituminous courses is required to be done as per Clause 501.6 of MORD Specifications. Provision in the analysis has been made accordingly. It has been observed during actual practice at work sites, that the availability of road roller is generally inadequate. As compaction is the key to good construction, this point is being specifically highlighted to ensure that adequate number of road rollers as per provision in the rate analysis are deployed at site.
- 7 Spreading of bituminous materials shall be done by mechanical means except in areas where a mechanical paver cannot have access.
- 8 Hot Mazdoor is the one who work for Bitumen heating/spreading or spreading of hot bituminous mix. He will be paid the same wages. However, he will be provided safety kits containing normally gumboots, hand gloves, dark goggles, barnol, country soap, coconut oil, tarring outfits, etc. For this purpose, additional 0.5 per cent sundries have been provided in the analysis of rates in addition to the normal sundries covered by overheads.
- 9 Where the proposed aggregates fail to pass the stripping value test, an approved adhesion agent shall be added to the binder as per Clause 507.2.4 with the approval of the Engineer and cost of the adhesion agent shall be added under the subhead of materials.
- The Factor for usage of rollers has been taken as 0.65 in case of Bituminous Macadam only.

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

	SI. No	Ref. to MoRTH/ DSR	Description	Unit	Quantity	Rate in Rs	Remarks / Input
-		Spec.					ref.

5.1 502 Prime Coat

Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.

Unit = sqm

Taking output = 3500 sqm

	• ,					
a)	Labour					
	Mate	day	0.080	551.00	44.08	L-12
	Mazdoor	day	2.000	424.00	848.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm	hour	2.800	473.00	1324.40	P&M-031
	per hour					
	Air compressor 250 cfm	hour	2.800	658.00	1842.40	P&M-001
	Bitumen pressure distributor @	hour	2.000	1509.00	3018.00	P&M-004
	1750 sqm per hour					
	Water tanker 6 KL capacity @ 1	hour	1.000	724.00	724.00	P&M-060
	trip per hour					
c)	Material					
	Bitumen emulsion @ 0.6 kg per	tonne	2.100	55000.00	115500.00	M-077
	sqm					
	Cost of water	KL	6.000	71.00	426.00	M-189
d)	GST (multiplying factor 0.2016)) on (a+b+c	:)		24943.34	
e)	Overhead charges @ 10 % on (a+b+c+d)			14867.02	
f)	Contractor's profit @ 10 % on (a+b+c+d+e))		16353.72	
g)	Cess @ 1% on (a+b+c+d+e+f)	•	,		1798.91	
•	st for $3500 \text{ sqm} = a+b+c+d+e+f+g$				181689.87	
	te per sqm = (a+b+c+d+e+f+g)/350	00			51.91	
·\u	(a.b.c.a.c.1.g)/000	,,		691/	<u>52.00</u>	
				say	<u>32.00</u>	

Note Bitumen primer has been provided @ 0.60 kg per sqm as per clause 502.8. Payment shall be made with adjustment, plus or minus, for the variation between this quantity and the actual quantity approved by the Engineer after the preliminary trials referred to in clause No. 502.4.3.

5.2 503 Tack Coat

Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.

Unit = sqm

Taking output = 3500 sqm

, a,	ing output occosqui					
a)	Labour					
	Mate	day	0.080	551.00	44.08	L-12
	Mazdoor	day	2.000	424.00	848.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm per hour	hour	2.800	473.00	1324.40	P&M-031
	Air compressor 250 cfm	hour	2.800	658.00	1842.40	P&M-001
	Emulsion pressure distributor @ 1750 sqm per hour	hour	2.000	1509.00	3018.00	P&M-004
c)	Material					
	Bitumen emulsion @ 0.2 kg per	tonne	0.700	55000.00	38500.00	M-077
	sqm					
d)	GST (multiplying factor 0.2016)) on (a+b+c)			9188.30	
e)	Overhead charges @ 10 % on (a+b+c+d)			5476.52	
f)	Contractor's profit @ 10 % on ((a+b+c+d+e)			6024.17	
g)	Cess @ 1% on (a+b+c+d+e+f)				662.66	
Cos	st for $3500 \text{ sqm} = a+b+c+d+e+f+g$				66928.53	
Rat	e per sqm = (a+b+c+d+e+f+g)/350	00			19.12	
	-			say	<u>19.00</u>	

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

ſ		Ref. to						Remarks
-	SI. No	MoRTH/ DSR	Description	Unit	Quantity	Rate in Rs	Cost in Rs	/ Input
-		Spec.						ref.

Note 1. Bitumen emulsion has been provided @ 0.20 kg per sqm as per clause 503.8. Payment shall be made with adjustment, plus or minus, for the variation between this quantity and actual quantity approved by the Engineer after preliminary trials referred to in clause No. 503.4.3

2. An output of 3500 sqm has been considered in case of prime coat and tack coat which can be covered by bituminous courses on the same day.

5.3 504 Bituminous Macadam

Providing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction

Unit = cum

Taking output = 205 cum (450 tonnes)

a)	Labour Mate Mazdoor working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day day	0.840 16.000	551.00 424.00	462.84 6784.00	
	Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
b)	Machinery Batch mix HMP 100-120 TPH @ 75 tonne per hour actual output	hour	6.000	32730.00	196380.00	P&M-021
	Mechanical broom hydraulic @ 1250 sqm per hour	hour	2.200	473.00	1040.60	P&M-031
	Air compressor 250 cfm Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour hour	2.200 6.000	658.00 3847.00	1447.60 23082.00	P&M-001 P&M-034
	Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	1 10 per cent of cost of carriage to er cost of loading and unloading				0.00	
	Smooth wheeled roller 8-10 tonnes for initial break down	hour	6.00x0.65*	783.00	3053.70	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	969.00	3779.10	P&M-059
-1	Finish rolling with 6-8 tonnes smooth wheeled tandem roller. Material	hour	6.00x0.65*	1641.00	6399.90	P&M-045
c) wei	i) Bitumen@ 3.3 per cent of mix ght of mix = 205 x 2.2 = 450 tonne	tonne	14.850	57924.00	860171.40	M-074

ii) Aggregate

Total weight of mix = 450 tonnes Weight of bitumen = 14.85 tonnes Weight of aggregate = 450 -14.85 = 435.15 tonnes Taking density of aggregate = 1.5 ton/cum

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Volume of aggregate = 290.1 cum					
			*Grading I (40 mm nominal size)					
			37.5 - 25 mm 15 per cent	cum	43.510	1910.00	83104.10	M-049
			25 - 10 mm 45 per cent	cum	130.550	1860.00	242823.00	M-046
			10 - 5 mm 25 per cent	cum	72.530	1550.00	112421.50	
			5 mm and below15 per cent	cum	43.510	1300.00	56563.00	M-030
			or					
			GradingII(19 mm nominal size)	oum	116.040	1860.00	215834.40	M-046
			25 - 10 mm 40 per cent	cum				
			10 - 5 mm 40 per cent	cum	116.040	1550.00	179862.00	
			5 mm and below 20 per cent	cum	58.020	1300.00	75426.00	M-030
			* Any one of the alternative may b adopted as per approved design	е				
		(i)	for Grading I (40 mm nominal size)				
			d) GST (multiplying factor 0.201	6) on (a+b)+c)		326189.76	
			e) Overhead charges @ 10 % on	(a+b+c+c	I)		194419.45	
			f) Contractor's profit @ 10 % on	(a+b+c+c	d+e)		213861.40	
			g) Cess @ 1% on (a+b+c+d+e+f)				23524.75	
			Cost for 205 cum = $a+b+c+d+e+f+g$				2376000.10	
			Rate per cum = $(a+b+c+d+e+f+g)/205$ (For Gradin	ng I)		11590.24	
						say	11590.00	
		(ii)	for GradingII(19 mm nominal size)					
			d) GST (multiplying factor 0.201	6) on (a+b)+c)		321393.85	
			e) Overhead charges @ 10 % on	(a+b+c+c	I)		191560.94	
			f) Contractor's profit @ 10 % on	(a+b+c+c	d+e)		210717.03	
			g) Cess @ 1% on (a+b+c+d+e+f)	•	•		23178.87	
			Cost for 205 cum = $a+b+c+d+e+f+g$				2341066.23	
			Rate per cum = $(a+b+c+d+e+f+g)/205$ (For Gradir	ng-II)		11419.84	
					_	say	<u>11420.00</u>	

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have been multiplied by a factor of 0.65.

2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

- Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 4. In case BM is laid over freshly laid tack coat, provision of Mechanical broom and 2 mazdoors for the same shall be deleted as the same has been included in the cost of tack coat.

5.4 505 Bituminous Penetration Macadam

Construction of penetration macadam over prepared Base by providing a layer of compacted crushed coarse aggregate using chips spreader with alternate applications of bituminous binder and key aggregates and rolling with a smooth wheeled steel roller 8-10 tonne capacity to achieve the desired degree of compaction

A 50 mm thick

Unit = sqm

Taking output = 4500 sqm (225 cum)

a) Labour

Mate day 0.320 551.00 176.32 L-12

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BASES AND SURFACE COURSES (BITUMINOUS)

SI. No M	Ref. to loRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
	•		Mazdoor including for brooming	day	6.000	424.00	2544.00	L-13
		L١	of key aggregates Mazdoor skilled	day	2.000	508.00	1016.00	L-15
		b)	Machinery Hydraulic self propelled chip spreader both for aggregates and key aggregates@ 1500 sqm per hour for 4500 x 2 sqm = 9000 sqm	hour	6.000	3640.00	21840.00	P&M-025
			Bitumen pressure distributor for @ 1750 sqm per hour	hour	2.570	1509.00	3878.13	P&M-004
			Tipper 5.5 cum capacity for carriage of aggregates from stockpile to chip spreader	hour	10.000	916.00	9160.00	P&M-048
			Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
			Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
		c)	Material					
			Bitumen@ 5 kg per sqm	tonne	22.500	57924.00	1303290.00	
			Crushed stone coarse aggregate passing 45 mm and retained on 2.8 mm sieve @ 0.06 cum per sqm	cum	270.000	790.00	213300.00	M-033
			Key aggregates passing 22.4 mm and retained on 2.8 mm sieve @ 0.015 cum per sqm	cum	67.500	1020.00	68850.00	M-031
			GST (multiplying factor 0.2016) Overhead charges @ 10 % on (Contractor's profit @ 10 % on (Cess @ 1% on (a+b+c+d+e+f) st for 4500 sqm = a+b+c+d+e+f+g te per sqm = (a+b+c+d+e+f+g)/450	a+b+c+d a+b+c+d	l)		330804.72 197170.12 216887.13 23857.58 2409616.00 535.47	
		end	opers will be needed to match the capacity loader.	of chip spr	reader and front	say	<u>535.00</u>	
5.4	В	Un	mm thick it = sqm king output = 4500 sqm (337.5 cur	n compa	acted)			
		a)	Labour		.0.00//			
		u,	Mate	day	0.400	551.00	220.40	L-12
			Mazdoor including for brooming of key aggregates	day	8.000	424.00	3392.00	L-13
		b)	Mazdoor skilled Machinery	day	2.000	508.00	1016.00	L-15
			Hydraulic self propelled chip spreader both for aggregates and key aggregates@ 1500 sqm per hour for 4500 x 2 sqm	hour	6.000	3640.00	21840.00	P&M-025
			Bitumen pressure distributor for@ 1750 sqm per hour	hour	2.570	1509.00	3878.13	P&M-004
			Tipper 5.5 cum capacity for carriage of aggregates from stockpile to chip spreader	hour	10.000	916.00	9160.00	P&M-048
			Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059

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BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
		c) Material					
		Bitumen@ 6.8 kg per sqm	tonne	30.600	57924.00	1772474.40	M-074
		Crushed stone coarse aggregate (loose passing 63 mm and retained on 2.8 mm sieve @ 0.09 cum per sqm	cum	405.000	820.00	332100.00	M-037
		Key aggregates passing 26.5 mm and retained on 2.8 mm sieve @ 0.018 cum per sqm	cum	81.000	850.00	68850.00	M-026
		d) GST (multiplying factor 0.2016	6) on (a+	b+c)		449522.22	
		e) Overhead charges @ 10 % on	(a+b+c+	d)		267929.52	
		f) Contractor's profit @ 10 % on	(a+b+c+	d+e)		294722.47	
		g) Cess @ 1% on (a+b+c+d+e+f)				32419.47	
		Cost for $4500 \text{ sqm} = a+b+c+d+e+f+g$				3274366.61	
		Rate per sqm = (a+b+c+d+e+f+g)/45	00			727.64	
					say	<u>728.00</u>	

Note 2 tippers and 2 rollers will be needed to match the capacity of chip spreader and front end loader.

5.5 506 Built-up-Spray Grout

Providing, laying and rolling of built-up-spray grout layer over prepared base consisting of a two layer composite construction of compacted crushed coarse aggregates using motor grader for aggregates. key stone chips spreader may be used with application of bituminous binder after each layer, and with key aggregates placed on top of the second layer to serve as a Base conforming to the line, grades and cross-section specified, the compacted layer thickness being 75 mm

Unit = sqm

Taking output = 3000 sqm (225 cum)

a)	Labour					
	Mate	day	0.400	551.00	220.40	L-12
	Mazdoor including for brooming	day	8.000	424.00	3392.00	L-13
	of key aggregates					
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15
b)	Machinery					
	Hydraulic self propelled chip	hour	6.000	3640.00	21840.00	P&M-025
	spreader both for aggregates and					
	key aggregates@ 1500 sqm per hour for 3000 x 3 sqm					
	Bitumen pressure distributor for	hour	3.430	1509.00	5175.87	P&M-004
	3000 x 2 sqm @ 1750 sqm per					
	hour					
	Tipper 5.5 cum capacity	hour	10.000	916.00	9160.00	P&M-048
	Three wheel 80-100 kN Static	hour	6.000	969.00	5814.00	P&M-059
	Roller					
	Front end loader 1 cum bucket	hour	6.000	1838.00	11028.00	P&M-017
c)	capacity Material					
C)	Bitumen30 kg per 10 sqm @ 15	tonne	9.000	57924.00	521316.00	M-074
	kg per 10 sqm for each layer		0.000	0.0200	02.0.0.0	
	Crushed stone coarse aggregate	cum	300.000	850.00	255000.00	M-035
	passing 53 mm and retained on					
	2.8 mm sieve @ 0.5 cum per 10					
	sqm for each layer					
	Key aggregates passing 22.4 mm	cum	39.000	1020.00	39780.00	M-031
	and retained on 2.8 mm sieve @					
	0.13 cum per 10 sqm					

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SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		d)	GST (multiplying factor 0.2016)	on (a+	b+c)		176146.44	
		e)	Overhead charges @ 10 % on (a+b+c+	d)		104988.87	
		f)	Contractor's profit @ 10 % on (a+b+c+	d+e)		115487.76	
		g)	Cess @ 1% on (a+b+c+d+e+f)				12703.65	
		Cost	t for 3000 sqm = a+b+c+d+e+f+g				1283068.99	
		Rate	e per sqm = (a+b+c+d+e+f+g)/300	0			427.69	
						say	<u>428.00</u>	

Note 2 tippers will be needed to match the capacity of hydraulic chip spreader and front end loader.

5.6 507 Dense Bituminous Macadam

Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.

Unit = cum

Taking output = 195 cum (450 tonnes)

a)	Labour					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor working with HMP,	day	16.000	424.00	6784.00	L-13
	mechanical broom, paver, roller,					
	asphalt cutter and assistance for					
	setting out lines, levels and layout					
	of construction					
	Skilled mazdoor for checking line	day	5.000	508.00	2540.00	L-15
	& levels					
b)	Machinery					D011000
	Batch mix HMP @ 75 tonne per hour	hour	6.000	20099.00	120594.00	P&M-022
	Paver finisher hydrostatic with	hour	6.000	3847.00	23082.00	P&M-034
	sensor control @ 75 cum per					
	Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	Front end loader 1 cum bucket	hour	6.000	1838.00	11028.00	P&M-017
	capacity					
	Tipper 10 tonne capacity	tonne.	450 x L	18.00	0.00	Lead =0
		km				km &
					2.22	P&M-058
	110 per cent of cost of carriage to				0.00	
cov	er cost of loading and unloading					
	smooth wheeled roller 8-10	hour	6.00x0.65*	783.00	3053.70	P&M-044
	tonnes for initial break down					
	rolling.					
	Three wheel 80-100 kN Static	hour	6.00x0.65*	969.00	3779.10	P&M-059
	Roller					
	Finish rolling with 6-8 tonnes	hour	6.00x0.65*	1641.00	6399.90	P&M-045
	smooth wheeled tandem roller.					
c)	Materials					
	Bitumen @ 4.25 per cent of	tonne	19.130	57924.00	1108086.12	M-074
	weight of mix					
	Aggregate					

Total weight of mix = 450 tonnes
Weight of bitumen = 19.13 tonnes
Weight of aggregate = 450 -19.13 =
430.87 tonnes
Taking density of aggregate = 1.5
ton/cum
Volume of aggregate = 287.25 cum

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SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Grading - I40 mm (Nominal Size)				•	
			37.5 - 25 mm 22 per cent	cum	63.190	1910.00	120692.90	M-049
			25 - 10 mm 13 per cent	cum	37.340	1860.00	69452.40	M-046
			10 -4.75 mm 19 per cent	cum	54.580	1550.00	84599.00	M-040
			4.75 mm and below 44 per cent	cum	126.390	1300.00	164307.00	M-030
			Filler @ 2 per cent of weight of aggregates.	tonne	8.620	15000.00	129300.00	M-188
			or					
			Grading - II19 mm (Nominal Size)					
			25 - 10 mm 30 per cent	cum	86.160	1860.00	160257.60	M-046
			10 - 5 mm 28 per cent	cum	80.430	1550.00	124666.50	M-040
			5 mm and below 40 per cent	cum	114.900	1300.00	149370.00	M-030
			Filler @ 2 per cent of weight of aggregates.	tonne	8.620	15000.00	129300.00	M-188
			* Any one of the alternative may be adopted as per approved design	•				
		(i)	For Grading-I (40 mm nominal size)				
			d) GST (multiplying factor 0.2016	6) on (a+b)+c)		375194.73	
			e) Overhead charges @ 10 % on	(a+b+c+d	1)		223627.97	
			f) Contractor's profit @ 10 % on	•	•		245990.77	
			g) Cess @ 1% on (a+b+c+d+e+f)	,	-,		27058.98	
			Cost for 205 cum = $a+b+c+d+e+f+q$				2732957.41	
			Rate per cum = $(a+b+c+d+e+f+g)/19$	5 (For Gr	ading I)		14015.17	
			(a a c a c : g)	. (g .,	631/	14015.00	
		(ii)	For Grading-II (19 mm nominal size)		say	<u>14015.00</u>	
			d) GST (multiplying factor 0.2016	6) on (a+b)+c)		374235.68	
			e) Overhead charges @ 10 % on	(a+b+c+d	I)		223056.34	
			f) Contractor's profit @ 10 % on	•	•		245361.98	
			g) Cess @ 1% on (a+b+c+d+e+f)	,	,		26989.82	
			Cost for 205 cum = $a+b+c+d+e+f+g$				2725971.58	
			Rate per cum = $(a+b+c+d+e+f+g)/195$ (I	or Gradin	ıg-II)		13979.34	

Note *1. Although the roller are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have been multiplied by a factor of 0.65.

- 2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
- Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 4. In case DBM is laid over freshly laid tack coat, provision of mechanical broom and 2 mazdoors shall be deleted as the same has been included in the cost of tack coat.
- 5. The individual density for each size of aggregates to be used for construction I.e. 37.5-25 mm, 25-10 mm etc. should be found in the laboratory and accordingly the quantities should be ammended for use in field. The average density of 1.5 tonne/cum is only a reference density in this Data Book.
- 6. The individual percentage of aggregates should be calculated from the total weight of dry aggregates i.e.. excluding the weight of bitumen. The weight of filler will also be 2 per cent by weight of dry aggregates.

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

1	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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5.7 Semi-Dense Bituminous Concrete

Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 508 complete in all respects

Unit = cum

Taking output = 195 cum (450 tonnes)

Tal	king output = 195 cum (450 tonne	s)				
a)	Labour					
-	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor working with HMP,	day	16.000	424.00	6784.00	L-13
	mechanical broom, paver, roller,					
	asphalt cutter and assistance for					
	setting out lines, levels and layout					
	of construction Skilled mazdoor for checking line	day	5.000	508.00	2540.00	L-15
	& levels	uay	5.000	506.00	2540.00	L-10
b)	Machinery					
~,	Batch mix HMP @ 75 tonne per	hour	6.000	20099.00	120594.00	P&M-022
	hour					
	Paver finisher hydrostatic with	hour	6.000	3847.00	23082.00	P&M-034
	sensor control @ 75 cum per					
	hour		0.000	4454.65	2001.55	D014.00 <i>1</i>
	Generator 250 KVA	hour	6.000	1154.00	6924.00	
	Front end loader 1 cum bucket	hour	6.000	1838.00	11028.00	P&M-017
	capacity Tipper 10 tonne capacity	tonne.	450 x L	18.00	0.00	Lead =0
	ripper to torine capacity	km	430 X L	10.00	0.00	km &
		Kill				P&M-058
	Add 10 per cent of cost of				0.00	
	carriage to cover cost of loading					
	and unloading	la accord	C 00×0 CE*	702.00	2052.70	P&M-044
	Smooth wheeled roller 8-10 tonnes for initial break down	hour	6.00x0.65*	783.00	3053.70	r aivi-044
	rolling.					
	Three wheel 80-100 kN Static	hour	6.00x0.65*	969.00	3779.10	P&M-059
	Roller					
	Finish rolling with 6-8 tonnes	hour	6.00x0.65*	1641.00	6399.90	P&M-045
	smooth wheeled tandem roller					
c)	Material					
* G	rading I: 13 mm (Nominal Size)					
	i) Bitumen@ 4.5 per cent of	tonne	20.250	57924.00	1172961.00	M-074
	weight of mix					
	Aggregate					
	al weight of mix = 450 tonnes					
	eight of bitumen = 20.25 tonnes					
	eight of aggregate = 450-20.25 = 0.75 tonnes					
	king density of aggregate = 1.5					
	/cum					
	ume of aggregate = 286.5 cum					
	13.2 - 10 mm20 per cent	cum	57.300	1580.00	90534.00	M-044
	10 - 5 mm 38 per cent	cum	108.870	1550.00	168748.50	M-040
	5 mm and below 40 per cent	cum	114.600	1300.00	148980.00	
	•					
	Filler @ 2 per cent of weight of	tonne	8.620	15000.00	129300.00	IVI-188
	aggregates.					

or

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input
31. NO	DSR Spec.		·	Ullit	Quantity	Rate III RS	Cost III Ks	ref.
			Grading II: 10 mm (Nominal Size)					
			Bitumen@5 per cent of weight	tonne	22.500	57924.00	1303290.00	M-074
			of mix					
			weight of mix = 450 tonne Aggregate					
				al weight of mix = 450 tonnes				
			Weight of bitumen = 22.5 tonnes					
			Weight of aggregate = 450 -22.50 =					
			427.50 tonnes					
			Taking density of aggregate = 1.5 ton/cum					
			Volume of aggregate = 285 cum					
			9.5 - 4.75 mm@ 57 per cent	cum	162.450	1550.00	251797.50	M-040
			4.75 and below@ 41 per cent	cum	116.850	1300.00	151905.00	
			Filler @ 2 per cent of weight of aggregates.	tonne	8.620	15000.00	129300.00	M-188
			*Any one of the alternative may be					
			adopted as per approved design					
		(i)	for Grading -I (13 mm nominal size)					
			d) GST (multiplying factor 0.2016)	on (a+	b+c)		382066.48	
			e) Overhead charges @ 10 % on (a		227723.75			
			f) Contractor's profit @ 10 % on (a	a+b+c+	d+e)		250496.13	
			g) Cess @ 1% on (a+b+c+d+e+f)				27549.95	
			Cost for 205 cum = $a+b+c+d+e+f+g$ Rate per cum = $(a+b+c+d+e+f+g)/195$	(For G	rading I)		2783007.35 14271.83	
			Rate per cam = (a·b·c·a·c·n·g)/130	(1 01 0	rading i	say	<u>14272.00</u>	
5.7		(ii)	for Grading-II(10 mm nominal size)			_		
			d) GST (multiplying factor 0.2016)	-	-		407421.51	
			e) Overhead charges @ 10 % on (a		-		242836.16	
			f) Contractor's profit @ 10 % on (a g) Cess @ 1% on (a+b+c+d+e+f)	aTDTCT	u re)		267119.77 29383.17	
			Cost for 205 cum = a+b+c+d+e				2967700.65	
			Rate per cum = (a+b+c+d+e)/195 (For	Gradir	ng-II)		15218.98	
						say	<u>15219.00</u>	
		Note	*1. Although the rollers are required on	-	•			
			norms of output, but the same have to for six hours as the hot mix plant and					
			hours for mixing and paving the ou					
			considered in this analysis. To cater f		•			
			these rollers, their usage rates have I	been m	ultiplied by a			
			factor of 0.65 2.Quantity of Bitumen has been taken	for anal	lvsis nurnose			
			The actual quantity will depend upon job					
			3. Labour for traffic control, watch a miscellaneous duties at site including included in administrative everteads of the					
			included in administrative overheads of the 4. In case SDBC is laid over freshly laid					
			broom and 2 mazdoor shall be deleted a included in the cost of tack coat.		, .			
			5. The quantity of Bitumen to be adjusted a	ıs per jo	b mix formula.			
5.8	509		Bituminous Concrete					

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects

Unit = cum

Taking output = 191 cum (450 tonnes)

Tal	king output = 191 cum (450 tonne	s)				
a)	Labour Mate Mazdoor working with HMP,	day day	0.840 16.000	551.00 424.00	462.84 6784.00	
	mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction					
	Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
b)	Machinery Batch mix HMP @ 75 tonne per hour	hour	6.000	20099.00	120594.00	P&M-022
	Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3847.00	23082.00	P&M-034
	Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	d 10 per cent of cost of carriage to ver cost of loading and unloading				0.00	
	Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	783.00	3053.70	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	969.00	3779.10	P&M-059
	Finish rolling with 6-8 tonnes smooth wheeled tandem roller.	hour	6.00x0.65*	1641.00	6399.90	P&M-045
c)	Material i) Bitumen@ 5 per cent of weight of mix	tonne	22.500	57924.00	1303290.00	M-074
ii) A	Aggregate					
	al weight of mix = 450 tonnes					
	eight of bitumen = 22.5 tonnes eight of aggregate = 450 -22.50 =					
	7.50 tonnes					
Tal	king density of aggregate = 1.5					
	n/cum					
	ume of aggregate = 285 cum ading - I-19 mm (Nominal Size)					
•	20 - 10 mm 35 per cent	cum	99.750	1850.00	184537.50	M-045
	10 - 5 mm 23 per cent	cum	65.550	1550.00	101602.50	
	5 mm and below 40 per cent	cum	114.000	1300.00	148200.00	
	Filler @ 2 per cent of weight of aggregates.	tonne	8.620	15000.00	129300.00	M-188
~ :-	Or					
Gra	ading - II-13 mm (Nominal Size)		05.500	4500.00	405000 00	M 044
	13.2 - 10 mm30 per cent	cum	85.500	1580.00	135090.00	M-044

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

			BASES AND SURFACE	COURSE	S (BITOMINOUS	5)		
SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remari / Input ref.
-			10 - 5 mm 25 per cent	cum	71.250	1550.00	110437.50	M-040
			5 mm and below43 per cent	cum	122.550	1300.00	159315.00	M-030
			Filler @ 2 per cent of weight of aggregates.	tonne	8.620	15000.00	129300.00	M-188
			*Any one of the alternative may be					
			adopted as per approved design					
		(i)	for Grading-I (13 mm nominal size)				
			d) GST (multiplying factor 0.2016) on (a+k	o+c)		413598.03	
			e) Overhead charges @ 10 % on (a+b+c+c	d)		246517.56	
			f) Contractor's profit @ 10 % on	(a+b+c+c	d+e)		271169.31	
			g) Cess @ 1% on (a+b+c+d+e+f)				29828.62	
			Cost for 205 cum = a+b+c+d+e+f+g				3012691.06	
			Rate per cum = $(a+b+c+d+e+f+g)/191$ (F	or Gradii	ng I)		15773.25	
						say	<u>15773.00</u>	
5.8		(ii)	for Grading-II(10 mm nominal size)					
			d) GST (multiplying factor 0.2016) on (a+k	o+c)		407651.34	
			e) Overhead charges @ 10 % on ((a+b+c+c	d)		242973.14	
			f) Contractor's profit @ 10 % on	(a+b+c+	d+e)		267270.45	
			g) Cess @ 1% on (a+b+c+d+e+f)				28044.22	
			Cost for 205 cum = a+b+c+d+e+f+g				2968019.19	

15539.37 **15539.00**

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have been multiplied by a factor of 0.65

Rate per cum = (a+b+c+d+e+f+g)/191 (For Grading-II)

2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

- 3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 4. In case BC is laid over freshly laid tack coat, provision of mechanical broom and 2 mazdoors shall be deleted as the same has been included in the cost of tack coat.
- 5. The individual density for each size of aggregates to be used for construction i.e. 37.5-25 mm, 25-10 mm etc. should be found in the laboratory and accordingly the quantities should be ammended for use in field. The average density of 1.5 tonne/cum is only a reference density in this Data Book.
- 6. The individual percentage of aggregates should be calculated from the total weight of dry aggregates i.e.. excluding the weight of bitumen. The weight of filler will also be 2 per cent by weight of dry aggregates.

5.9 510 Surface Dressing

Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminous binder laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller

Unit = sqm

Taking output = 9000 sqm

Case :-19 mm nominal chipping size

-1

a) Labour

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BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
				Mate	day	0.440	551.00	242.44	L-12
				Mazdoor	day	9.000	424.00	3816.00	L-13
				Mazdoor skilled	day	2.000	508.00	1016.00	L-15
			b)	Machinery					
				Mechanical broom @ 1250 sqm	hour	7.200	473.00	3405.60	P&M-031
				per hour Air compressor 250 cfm	hour	7.200	658.00	4737.60	P&M-001
				Hydraulic self propelled chip	hour	6.000	3640.00	21840.00	P&M-025
				spreader @ 1500 sqm per hour Tipper 10 tonne capacity for	hour	6.000	916.00	5496.00	P&M-048
				carriage of stone chips from stockpile on road side to chip spreader					
				Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
				Bitumen pressure distributor	hour	6.000	1509.00	9054.00	P&M-004
				Smooth wheeled roller 8-10 tonne	hour	6.000	783.00		P&M-044
			- \	weight					
			c)	Material Bitumen@ 1.20 kg per sqm	tonno	10.800	57924.00	625570.20	M-074
				Crushed stone chipping,19 mm	tonne	135.000	1900.00	625579.20 256500.00	
				nominal size @ 0.015 cum per	Cum	133.000	1900.00	230300.00	555
			d)	Sqm GST (multiplying factor 0.2016)	on (a+l	h+c)		190998.43	
			e)	Overhead charges @ 10 % on (•	•		113841.13	
			f)	Contractor's profit @ 10 % on (-		125225.24	
			•	•	атытст	u+e)			
			g)	Cess @ 1% on (a+b+c+d+e+f)				13772.35	
				st for 9000 sqm = a+b+c+d+e+f+g				1391249.99 154.58	
			Ka	te per sqm = (a+b+c+d+e+f+g)/900	10		say	155.00	
5.9		Case	13	mm nominal size chipping			Suy	<u>100.00</u>	
		- 11	a)	Labour					
			,	Mate	day	0.440	551.00	242.44	L-12
				Mazdoor	day	9.000	424.00	3816.00	L-13
				Mazdoor skilled	day	2.000	508.00	1016.00	L-15
			b)	Machinery Mechanical broom @ 1250 sqm	hour	7.200	473.00	3405.60	P&M-031
				per hour					
				Air compressor 250 cfm	hour	7.200	658.00	4737.60	
				Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	3640.00	21840.00	
				Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip	hour	6.000	916.00	5496.00	P&M-048
				spreader Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
				Bitumen pressure distributor @	hour	6.000	1509.00	9054.00	P&M-004
				1750 sqm per hour Three wheel 80-100 kN Static Roller	hour	6.000	969.00	5814.00	P&M-059
			c)	Material	torre	0.000	E7004.00	E04040 00	M_074
				Bitumen@ 1.00 kg per sqm	tonne	9.000	57924.00	521316.00	
				Crushed stone chipping,13 mm nominal size @ 0.01 cum per	cum	90.000	1820.00	163800.00	IVI-UJZ
			d)	GST (multiplying factor 0.2016)	-	-		151515.63	
			e)	Overhead charges @ 10 % on (a	a+b+c+	d)		90308.13	
			•	·					

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BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			f) Contractor's profit @ 10 % on (a	a+b+c+	d+e)		99338.94	
	g) Cess @ 1% on (a+b+c+d+e+f)					10927.28		
			Cost for 9000 sqm = a+b+c+d+e+f+g				1103655.62	
	Rate per sqm = $(a+b+c+d+e+f+g)/9000$					122.63		
						sav	123.00	

Note 1.Where the proposed aggregate fails to pass the stripping test, an approved adhesion agent may be added to the binder as per clause 510.2.4. Alternatively, chips may be pre-coated as per clause 510.2.5

2.Input for the second coat, where required, will be the same as per the lst coat mentioned above

5.10 511 Open - Graded Premix Surfacing

Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or cut-back or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades.

Unit = sqm

Taking output = 10250 sqm (205 cum)

(i) Case - I: Mechanical method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour.

ies	s than 75 tonnes/nour.					
a)	Labour					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor working with HMP, road sweeper, paver and roller	day	16.000	424.00	6784.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	i) Batch type HMP 75 tonne per hour	hour	6.000	20099.00	120594.00	P&M-023
	ii) Electric Generator Set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	iii) Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	iv) Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	d 10 per cent of cost of carriage to er cost of loading and unloading				0.00	i am ooo
	v) Paver finisher hydrostatic with sensor attachment	hour	6.000	3847.00	23082.00	P&M-034
	iv) Smooth wheeled /tandem roller 8-10 tonnes weight	hour	6.000	1641.00	9846.00	P&M-045
c)	Material					
	Bitumen@ 14.60 kg per 10 sqm	tonne	14.970	57924.00	867122.28	M-074
	Crushed stone chipping,13.2 mm to 5.6 mm @ 0.27 cum per 10 sqm	cum	276.750	1600.00	442800.00	M-043
d)	GST (multiplying factor 0.2016)	on (a+b+	-c)		300622.52	
e)	Overhead charges @ 10 % on (a+b+c+d)	·		179180.56	
f)	Contractor's profit @ 10 % on (197098.62	
g)	Cess @ 1% on (a+b+c+d+e+f)				21680.85	
Cos	st for 10250 sqm = a+b+c+d+e				2189765.67	
	te per sqm = (a+b+c+d+e)/10250				213.64	
				say	<u>214.00</u>	

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BASES AND SURFACE COURSES (BITUMINOUS)

Γ		Ref. to						Remarks
- 14	SI. No	MoRTH/	Description	Unit	Quantity	Rate in Rs	Cost in Rs	/ Input
١,	31. INO	DSR	Description	Oilit	Quantity	Nate III NS		
		Spec.						ref.

Note If a premix sand seal coat of 'B' type is proposed, the same is required to be provided over the open graded premix carpet immediately on the same day. As the same HMP and other machines will be used for laying of premix sand seal coat, out of 6 effective working hours, 4.00 hours may be utilised for laying of premix carpet and balance 2.00 hours for the seal coat. The rate for the premix sand seal coat under clause 513 (case II) has been worked out accordingly by utilising the HMP for 2.00 hours for the purpose of seal coat. In case type 'A' seal coat is proposed, HMP can be worked for six hours for the premix carpet as type 'A' seal coat does not require the use of HMP.

5.10 (ii) Case - II: Open-Graded Premix Surfacing using cationic Bitumen Emulsion

Unit = sqm

Taking output = 900 sqm (24.3 cum)

a)	Labour							
	Mate	day	0.800	551.00	440.80	L-12		
	Mazdoor	day	18.000	424.00	7632.00	L-13		
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15		
b)	Machinery							
	Concrete mixer 0.4/0.28 cum capacity	hour	6.000	291.00	1746.00	P&M-009		
	Smooth wheeled steel roller 8-10 tonne	hour	6.000	783.00	4698.00	P&M-044		
c)	Material							
	Cationic Bitumen Emulsion @	tonne	1.940	55000.00	106700.00	M-073		
	21.50 kg per 10 sqm							
	Crushed stone aggregates 13.2	cum	24.300	1600.00	38880.00	M-043		
	mm to 5.6 mm @ 0.27 cum per							
	10 sqm							
d)	GST (multiplying factor 0.2016)	on (a+b+	C)		32480.34			
e)	Overhead charges @ 10 % on (a+b+c+d)			19359.31			
f)	Contractor's profit @ 10 % on (a+b+c+d+	·e)		21295.25			
g)	y) Cess @ 1% on (a+b+c+d+e+f) 2342							
Cos	st for 900 sqm = a+b+c+d+e+f+g				236590.18			
Rat	te per sqm = (a+b+c+d+e+f+g)/900)			262.88			
				say	<u> 263.00</u>			

5.11 512 Close Graded Premix Surfacing/Mixed Seal Surfacing

case I Mechanical means using HMP of appropriate capacity not less than 75 tonnes/hour.

Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.09 mm (Type-a) or 13.2 mm to 0.09 mm (Type-b) aggregates using penetration grade bitumen to the required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a Smooth wheeled roller 8-10 tonne capacity, and finishing to required level and grade.

Unit = sqm

Taking output = 10250 sqm (205 cum)

a)	Labour					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor working with HMP, road sweeper, paver and roller	day	16.000	424.00	6784.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	i) HMP of appropicate capacity.	hour	6.000	32730.00	196380.00	P&M-021
	ii) Electric Generator Set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081

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BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			iii) Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
			iv) Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
			I 10 per cent of cost of carriage to er cost of loading and unloading				0.00	
			v) Paver finisher hydrostatic with sensor attachment	hour	6.000	3847.00	23082.00	P&M-034
			iv) Smooth wheeled8-10 tonnes weight	hour	6.000	783.00	4698.00	P&M-044
		c)	Material					
		Тур	oe - A					
			* Bitumen@ 22 kg per 10 sqm	tonne	22.500	57924.00	1303290.00	M-074
			Stone crushed aggregates 11.2 mm to 0.09 @ 0.27 cum per 10 sqm	cum	276.750	1500.00	415125.00	M-041
			or					
		Тур	e - B					
			Bitumen @ 19 kg per 10 sqm	tonne	19.480	57924.00	1128359.52	M-074
			Stone crushed aggregates 13.2 mm to 0.09 mm @ 0.27 cum per 10 sgm	cum	276.750	1200.00	332100.00	M-042
		d)	GST (multiplying factor 0.2016)	on (a+b	+c)		397215.27	
		e)	Overhead charges @ 10 % on (•	•		236752.91	
		f)	Contractor's profit @ 10 % on (•		260428.20	
		g)	Cess @ 1% on (a+b+c+d+e+f)		,		28642.47	
		•	st for 10250 sqm = a+b+c+d+e+f+g				2893352.69	
			e per sqm =(a+b+c+d+e+f+g)/102	50			282.28	
						say	<u>282.00</u>	
		* Ar	ny one of the alternative may be add	pted				
5.12	513	Sea	I Coat					

5.12 513 Seal Coat

Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A and B seal coats

Unit = sqm

Taking output = 10250 sqm (92.25 cum)

applied @ 0.09 cum per 10 sqm

(i) Case - I: Type A

	, po					
a)	Labour					
	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor	day	6.000	424.00	2544.00	L-13
b)	Machinery					
	Hydraulic self propelled chip spreader	hour	6.000	3640.00	21840.00	P&M-025
	Tipper 5.5 cum capacity	hour	6.000	916.00	5496.00	P&M-048
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	P&M-004
	Smooth wheeled roller 8 -10 tonne weight	hour	6.000	783.00	4698.00	P&M-044
c)	Material					
	Bitumen@ 9.80 kg per 10 sqm	tonne	10.050	57924.00	582136.20	M-074
	Crushed stone chipping of 6.7 mm size defined as 100 per cent passing 11.2 mm sieve and retained on 2.36 mm sieve	cum	92.250	1300.00	119925.00	M-050

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
-		d)	GST (multiplying factor 0.2016)	on (a+l	o+c)	•	152581.65	
		e)	Overhead charges @ 10 % on (a+b+c+	d)		90943.51	
		f)	Contractor's profit @ 10 % on (a+b+c+	d+e)		100037.86	
		g)	Cess @ 1% on (a+b+c+d+e+f)				11004.16	
		Cos	t for 10250 sqm = a+b+c+d+e+f+g				1111420.62	
		Rate	e per sqm = (a+b+c+d+e+f+g)/102	250			108.43	
			is mustipled immediately sy			say	<u>108.00</u>	

Note Since seal coat is provided immediately over the bituminous layers, mechanical broom for clearing has not been catered.

5.12 (ii) Case - II: Type B

Providing and laying of premix sand seal coat with HMP of appropriate capacity not less than 75 tonnes/ hours using crushed stone chipping 6.7 mm size and penetration bitumen of suitable grade.

Unit = sqm

Taking output = 7858 sqm (47.16 cum)

a)	Labour					
	Mate	day	0.160	551.00	88.16	
	Mazdoor	day	4.000	424.00	1696.00	L-13
b)	Machinery	la a con-	0.000	00000 00	40400.00	P&M-023
	HMP of 75 tonnes/hour.	hour	2.000	20099.00	40198.00	Faivi-U23
	Electric Generator Set 250 KVA	hour	2.000	1154.00	2308.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	2.000	1838.00	3676.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	104 x 'L'	18.00	0.00	Lead =0 km & P&M-058
	d 10 per cent of cost of carriage to ver cost of loading and unloading				0.00	
	Paver finisher hydrostatic with sensor attachment	hour	2.000	3847.00	7694.00	P&M-034
	Smooth wheeled 8-10 tonnes capacity	hour	2.000	783.00	1566.00	P&M-044
c)	Material					
	Bitumen@ 6.80 kg per 10 sqm	tonne	5.340	57924.00	309314.16	
	Crushed stone chipping of 6.7 mm size defined as passing 11.2 mm sieve and retained on 2.36 mm sieve applied @ 0.06 cum per 10 sqm	cum	47.160	1300.00	61308.00	M-050
d)	GST (multiplying factor 0.2016)	on (a+b·	+c)		86254.22	
e)	Overhead charges @ 10 % on (a+b+c+d)		51410.25	
f)	Contractor's profit @ 10 % on ((a+b+c+d	+e)		56551.28	
g)	Cess @ 1% on (a+b+c+d+e+f)				6220.64	
Co	st for 7858 sqm = a+b+c+d+e+f+g				628284.71	
Ra	te per sqm = (a+b+c+d+e+f+g)/78	58			79.95	
				say	<u>80.00</u>	

Note Since seal coat is required to be provided over the premix carpet on the same day, out of the 6 working hours of the HMP, 4.00 hours are proposed to be utilised for the premix carpet and the balance 2.00 hours for the seal coat. Hence 2.00 hours have been considered for this case. This may be linked to rate analysis worked out under clause 511.

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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5.14 515 Mastic Asphalt

Providing and laying 25 mm thick mastic asphalt wearing course 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 finegrained hard stone chipping of 13.2 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 is not less than 1000C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 515.

Unit = sqm

Taking output = 35.00 sqm (0.87 cum) assuming a density of 2.3 tonnes/cum.-2 tonnes

a)	Labour					
	Mate	day	0.440	551.00	242.44	L-12
	Mazdoor	day	10.000	424.00	4240.00	L-13
	Mazdoor skilled	day	1.000	508.00	508.00	L-15
b)	Machinery					
	Mechanical broom @ 1250 sqm per hour	hour	0.060	473.00	28.38	P&M-031
	Air compressor 250 cfm	hour	0.060	658.00	39.48	P&M-001
	Mastic cooker 1 tonne capacity	hour	6.000	135.00	810.00	P&M-030
	Bitumen boiler 1500 litres	hour	6.000	348.00	2088.00	P&M-005
	Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	530.00	530.00	P&M-053
Coa mm Pro mas agg	regates) = 60 per cent arse aggregate (6.3mm to 13.2) = 40 per cent . portion of material required for					
	I) Bitumen 85/25 or 30/40 @ 10.2 per cent by weight of mix. 2 x 10.2/100 = 0.204	tonne	0.200	57924.00	11584.80	M-074
	ii) Fine aggregate passing 2.36mm and retained on 0.075mm sieve @ 31.9 per cent by weight of mix = 2 x 31.9/100 = 0.638 tonnes = 0.638/1.625 = 0.39	cum	0.390	700.00	273.00	M-021
	iii) Lime stone dust filler with calcium 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	0.360	15000.00	5400.00	M-188
	iv) Coarse aggregates 6.3 mm to 13.2 mm @ 40 per cent by	cum	0.550	1600.00	880.00	M-043

cum

0.020

2107.00

42.14 M-142

weight of mix = $2 \times 40/100 = 0.8$

v) Pre-coated stone chips of 13.2

MT = 0.8/1.456 = 0.55

0.018

mm nominal size for skid resistance = 35 x 0.005/10 =

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SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		vi) Bitumen for coating of chips @ 2 per cent by weight = 0.018 x 1.456 x 2/100 = 0.0005 MT = 0.5kg	kg	0.500	58.00	29.00	M-074
		d) GST (multiplying factor 0.2016)	on (a+b	o+c)		5381.76	
		e) Overhead charges @ 10 % on (a+b+c+c	d)		3207.70	
		f) Contractor's profit @ 10 % on (a+b+c+	d+e)		3528.47	
		g) Cess @ 1% on (a+b+c+d+e+f)				388.13	
		Cost for $35.00 \text{ sqm} = a+b+c+d+e+f+g$				39201.30	
		Rate per sqm = $(a+b+c+d+e+f+g)/35$				1120.04	
					sav	1120.00	

Note 1.The rates for 50 mm & 40 mm thick layers may be worked out on prorata 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 for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.

5.15 516 Slurry Seal

Providing and laying slurry seal consisting of a mixture of fine aggregates, portland cement filler, bituminous emulsion and water on a road surface including cleaning of surface, mixing of slurry seal in a suitable mobile plant, laying and compacting to provide even riding surface

(i) 5 mm thickness

Unit = sqm

Taking output = 16000 sqm (80 cum)

Taking density of 2.2 tonnes per cum

weight of mix = 176 tonnes

a)	Labour					
	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor	day	6.000	424.00	2544.00	L-13
b)	Machinery					
	Mechanical broom	hour	6.000	473.00	2838.00	P&M-031
	Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
	Mobile slurry seal equipment	hour	6.000	1328.00	7968.00	P&M-033
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler.	hour	6.000	916.00	5496.00	P&M-048
	Pneumatic tyred roller with individual wheel load not exceeding 1.5 tonnes	hour	6.000	1708.00	10248.00	P&M-037
۵۱	Water tanker6 KL capacity Material	hour	2.000	724.00	1448.00	P&M-060
c)	Residual Binder @ 11 per cent of mix 80 x 2.2 x 0.11	tonne	19.360	55000.00	1064800.00	M-077
	Fine aggregate 4.75 mm and below 87 per cent of total mix,80 x 2.2 x 0.87 = 153.12 tonnes. Taking density1.5, = 153.12/1.5 = 102.08 cum	cum	102.080	1300.00	132704.00	M-030
	Filler @ 2 per cent of total mix = 80 x 2.2 x 0.02	tonne	3.520	15000.00	52800.00	M-188

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SI. No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			d) e) f) g)	Cost of water GST (multiplying factor 0.2016) Overhead charges @ 10 % on (Contractor's profit @ 10 % on (Cess @ 1% on (a+b+c+d+e+f) st for 16000 sqm = a+b+c+d+e	a+b+c+c	I)	71.00	852.00 261436.14 155824.24 171406.66 18854.73 1904328.01	M-189
			Ra	te per sqm = (a+b+c+d+e)/16000				119.02	
5.15		(ii)	Un	nm thickness <mark>it = sqm</mark> king output = 20000 sqm (60 cum))		say	<u>119.00</u>	
			a)	Labour					
				Mate	day	0.200	551.00	110.20	
				Mazdoor	day	5.000	424.00	2120.00	L-13
			b)	Machinery					5011001
				Mechanical broom	hour	6.000	473.00		P&M-031
				Air compressor 250 cfm	hour	6.000	658.00		P&M-001
				Mobile slurry seal equipment	hour	6.000	1328.00	7968.00	P&M-033
				Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
				Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler	hour	6.000	916.00	5496.00	P&M-048
			c)	Water tanker6 KL capacity Material	hour	2.000	724.00	1448.00	P&M-060
			-,	Residual Binder @ 13 per cent of mix = 60 x 2.2 x 0.13	tonne	17.160	55000.00	943800.00	M-077
				Fine aggregate 3 mm and below 85 per cent of total mix, 60x 2.2 x 0.85 = 112.2 tonnes. Taking density 1.5,	cum	74.800	700.00	52360.00	M-022
				Filler @ 2 per cent of total mix = 60x 2.2 x 0.02	tonne	2.640	15000.00	39600.00	M-188
				Cost of water	KL	12.000	71.00	852.00	M-189
			d) e) f) g)	GST (multiplying factor 0.2016) Overhead charges @ 10 % on (Contractor's profit @ 10 % on (Cess @ 1% on (a+b+c+d+e+f)	a+b+c+c	l)		216028.15 128759.64 141635.60 15579.92	
			Co	st for 30000 sqm = a+b+c+d+e+f+g				1573571.51	
			Rat	te per sqm = (a+b+c+d+e+f+g)/200	000			78.68	
							say	<u>79.00</u>	
5.15		(iii)	Un Tal cui	mm thickness it = sqm king output = 24000 sqm (36 m) Labour			·		
			aj	Mate	day	0.200	551.00	110.20	L-12
				Mazdoor	day	5.000	424.00	2120.00	
			b)	Machinery				_:_0.30	
			,	Mechanical broom	hour	6.000	473.00	2838.00	P&M-031
				Air compressor 250 cfm	hour	6.000	658.00		P&M-001
				Mobile slurry seal equipment	hour	6.000	1328.00		P&M-033
				Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017

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SI. No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
				Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry	hour	6.000	916.00	5496.00	P&M-048
				equipment, bitumen emulsion and filler.					
			c)	Water tanker6 KL capacity Material	hour	2.000	724.00	1448.00	P&M-060
			~ <i>,</i>	Residual Binder @ 16 per cent of mix, 36 x 2.2 x 0.16	tonne	12.670	55000.00	696850.00	M-077
				Fine aggregate 2.36 mm and below,82 per cent of total mix,36x 2.2 x 0.82 = 64.94 tonnes. Taking density 1.5	cum	43.300	700.00	30310.00	M-022
				Filler @ 2 per cent of total mix = 36x 2.2 x 0.02	tonne	1.580	15000.00	23700.00	M-188
				Cost of water	KL	12.000	71.00	852.00	M-189
			d)	GST (multiplying factor 0.2016)	on (a+	b+c)		158592.31	
			e)	Overhead charges @ 10 % on (a+b+c+	d)		94526.05	
			f)	Contractor's profit @ 10 % on (a+b+c+	d+e)		103978.66	
			g)	Cess @ 1% on (a+b+c+d+e+f)				11437.65	
			Cos	t for 24000 sqm = a+b+c+d+e+f+g				1155202.87	
			Rat	e per sqm = (a+b+c+d+e+f+g)/240	000			48.13	
		Note	1 Ta	ck coat if required to be provided before Is	avina elurr	v seal may he	say	<u>48.00</u>	

Note 1.Tack coat, if required to be provided, before laying slurry seal may be measured and paid separately

5.17 518 Fog Spray

Providing and applying low viscosity bitumen emulsion for sealing cracks less than 3 mm wide or incipient fretting or disintegration in an existing bituminous surfacing.

Unit = sqm

a) Labour

Mate

Taking output = 10500 sqm
a) Labour

a)	Labour					
	Mate	day	0.120	551.00	66.12	L-12
	Mazdoor	day	3.000	424.00	1272.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031
	Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
	Bitumen emulsion pressure distributor @ 1750 sqm per hour	tonne	6.000	1509.00	9054.00	P&M-004
c)	Material					
,	Bitumen emulsion @ 0.75 kg per sqm	tonne	7.880	55000.00	433400.00	M-077
d)	GST (multiplying factor 0.2016)	on (a+b+c	;)		90836.55	
e)	Overhead charges @ 10 % on (a	a+b+c+d)			54141.47	
f)	Contractor's profit @ 10 % on (a+b+c+d+e	e)		59555.61	
g)	Cess @ 1% on (a+b+c+d+e+f)				6551.12	
Cos	t for 10500 sqm = a+b+c+d+e+f+g				661662.87	
Rat	e per sqm = (a+b+c+d+e+f+g)/105	00			63.02	
				say	<u>63.00</u>	
	case it is decided by the engineer to					
ine '	fog spray, the following may be add	eu				

88.16 L-12

day

0.160

551.00

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SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Mazdoor for precoating of grit	day	4.000	424.00	1696.00	L-13
		b)	Material					
			Crushed stone grit 3 mm size @ 3.75 kg per sqm	cum	26.250	780.00	20475.00	M-024
			Bitumen emulsion for precoating grit @ 2 per cent of grit,39.38 x 0.02	tonne	0.790	55000.00	43450.00	M-077
			0.02				65709.16	
							6.26	
- 40	510					say	<u>6.00</u>	

5.18 519 Bituminous Cold Mix (Including Gravel Emulsion)

Providing, laying and rolling of bituminous cold mix on prepared base consisting of a mixture of unheated mineral aggregate and emulsified or cutback bitumen, including mixing in a plant of suitable type and capacity, transporting, laying, compacting and finishing to specified grades and levels.

Unit = cum

Taking output = 205 cum (450 tonne)

(i) Using bitumen emulsion and 9.5 mm or 13.2 mm size aggregate

Composition of mix (450 tonne) is

assumed to be as under:-

Bitumen Emulsion 8 per cent By weight of total mix

Filler2 per cent

Total aggregates 90 per cent

Proportion of aggregates

19 mm to 9.5 mm25 per cent 9.5 mm to 6 mm29 per cent

6 mm to 0.075 mm 36 per cent

a)	Lah	Our		

a)	Labour					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor	day	16.000	424.00	6784.00	L-13
	Mazdoor skilled	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	6.000	449.00	2694.00	P&M-077
	Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	d 10 per cent of cost of carriage to er cost of loading and unloading				0.00	
	Paver finisher	hour	6.000	3847.00	23082.00	P&M-034
	Pneumatic tyred roller 12-15 tonnes	hour	6.00x0.65*	1708.00	6661.20	P&M-037
	Smooth wheeled steel tandem roller 6-8 tonnes	hour	6.00x0.65*	1641.00	6399.90	P&M-045
c)	Material					
	Bitumen emulsion @ 8 per cent	tonne	36.000	55000.00	1980000.00	M-077
	Filler (lime)@ 2 per cent	tonne	9.000	15000.00	135000.00	M-188
	Aggregates size 19 to 9.5 mm - 450 x 0.25 x 1/1.5	cum	75.000	1850.00	138750.00	M-045
	Aggregates size 9.5 to 6 mm - 450 x 0.29 x 1/1.5	cum	87.000	1550.00	134850.00	M-040

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			BASES AND SURFACE (COURSES	S (BITUMINOUS	5)		
SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Aggregates size 6 to 0.075 mm -	cum	108.000	1300.00	140400.00	M-030
			450 x 0.36 x 1/1.5 d) GST (multiplying factor 0.2016)	on (a+h	n+c)		523245.13	
			e) Overhead charges @ 10 % on (a	•	•		311870.71	
			f) Contractor's profit @ 10 % on (343057.78	
			g) Cess @ 1% on (a+b+c+d+e+f)		,		37736.36	
			Cost for 205 cum = a+b+c+d+e+f+g				3811371.92	
			Rate per cum = $(a+b+c+d+e+f+g)/205$;			18592.06	
			3, 11			say	18592.00	
	N	Note	(Applicable to cases I to IV) 1.Density of aggregates has been assumed 1.5	gms/cc		·		
			2. Tack coat where provided will be measured a	nd paid se	eparately.			
			*3. Though the rollers are required only for 3.5 of output, but these are required to be available	hours ead at site for	ch as per norms r 6 hours as the			
			drum mix plant and the paver would take 6 hou To cater for the idle period, their usage rates has factor of 0.65					
5.18		(ii)	Using bitumen emulsion and 19 mm	or 26.5	mm nominal	size aggreg	jate	
			Composition of mix (450 tonne) is ass	sumed to	be as under:	-		
			Bitumen Emulsion 8 per cent Filler2 per cent Total aggregates 90 per cent Proportion of aggregates 37.5 mm to 19 mm25 per cent 19 mm to 6 mm 30 per cent 6 mm to 0.075 mm 35 per cent a) Labour					
			Mate	day	0.840	551.00	462.84	L-12
			Mazdoor	day	16.000	424.00	6784.00	L-13
			Mazdoor skilled	day	5.000	508.00	2540.00	L-15
			b) Machinery Drum mix plant for cold mixes 60- 90 tonne per hour producing average output of 75 tonnes per hour	hour	6.000	449.00	2694.00	P&M-077
			Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
			Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
			Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
			Add 10 per cent of cost of carriage to cover cost of loading and unloading				0.00	
			Paver finisher	hour	6.000	3847.00	23082.00	P&M-034
			Pneumatic tyred roller 12-15 tonnes	hour	6.00x0.65*	1708.00		P&M-037
			Smooth wheeled steel tandom roller 6-8 tonnes c) Material	hour	6.00x0.65*	1641.00	6399.90	P&M-045
			Bitumen emulsion @ 8 per cent	tonne	36.000	55000.00	1980000.00	
			Filler (lime)@ 2 per cent	tonne	9.000	15000.00	135000.00	
			nagrogotoc cizo 2 / 6 to 10 mm	cum	7 P (100)	200000000	2.42600.00	11/1-11/42

cum

cum

75.000

90.000

1900.00

1600.00

142500.00 M-048

144000.00 M-047

450 x 0.25 x 1/1.5

x 0.3 x 1/1.5

Aggregates size 37.5 to 19 mm -

Aggregates size 19 to 6 mm - 450

			CHAPT	ER - 5					
			BASES AND SURFACE C	OURSES	(BITUMINOUS	5)			
SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.	
•		•	Aggregates size 6 to 0.075 mm - 450 x 0.35 x 1/1.5	cum	105.000	1300.00	136500.00	M-030	
			d) GST (multiplying factor 0.2016)	on (a+b)+c)		525059.53		
			e) Overhead charges @ 10 % on (a	+b+c+c	I)		312952.15		
			f) Contractor's profit @ 10 % on (a	344247.36					
			g) Cess @ 1% on (a+b+c+d+e+f)				37867.21		
			Cost for 205 cum = $a+b+c+d+e+f+g$				3824588.19		
			Rate per cum = $(a+b+c+d+e+f+g)/205$				18656.53		
						say	<u>18657.00</u>		
		Note	1.Density of aggregates has been assumed 1.5 gms/cc 2. Tack coat where provided will be measured and paid separately.						
			drum mix plant and the paver would take 6 hour To cater for the idle period, their usage rates he factor of 0.65						
5.18		(iii)	Using cutback bitumen and 9.5 mm o	r 13.2 n	nm nominal s	size aggreg	ate		
			Composition of mix (450 tonne) is assi	umed to	be as under:	-			
			Cutback bitumen 5 per cent						
			Filler (lime) 2 per cent						
			Total aggregates 93 per cent						
			Proportion of aggregates						
			19 mm to 9.5 mm26 per cent						
			9.5 mm to 6 mm31 per cent						
			6 mm to 0.075 mm 36 per cent a) Labour						
			a) Labour Mate	day	0.840	551.00	462.84	L-12	
			Mazdoor	day	16.000	424.00	6784.00		
			Mazdoor skilled	day	5.000	508.00	2540.00		
			b) Machinery	,					
			Drum mix plant for cold mixes 60- 90 tonne per hour producing average output of 75 tonnes per	hour	6.000	449.00	2694.00	P&M-07	

	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	10 per cent of cost of carriage to er cost of loading and unloading				0.00	r am coo
	Paver finisher	hour	6.000	3847.00	23082.00	P&M-034
	Pneumatic tyred roller 12-15 tonnes	hour	6.00x0.65*	1708.00	6661.20	P&M-037
	Smooth wheeled steel tandem roller 6-8 tonnes	hour	6.00x0.65*	1641.00	6399.90	P&M-045
c)	Material					
,	Cutback bitumen @ 5 per cent	tonne	22.500	63348.00	1425330.00	M-076
	Filler (lime)@ 2 per cent	tonne	9.000	15000.00	135000.00	M-188
	Aggregates size 19 to 9.5 mm - 450 x 0.26 x 1/1.5	cum	78.000	1850.00	144300.00	M-045
	Aggregates size 9.5 to 6 mm - 450 x 031 x 1/1.5	cum	93.000	1550.00	144150.00	M-040
	Aggregates size 6 to 0.075 mm - 450 x 0.36 x 1/1.5	cum	108.000	1300.00	140400.00	M-030

hour 6.000 1135.00

6810.00 P&M-018

hour Electric generator 125 KVA

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		d)	GST (multiplying factor 0.2016)	on (a+l	b+c)		414417.42	
		e)	Overhead charges @ 10 % on (a+b+c+c	d)		247005.94	
		f)	Contractor's profit @ 10 % on (271706.53				
		g)	Cess @ 1% on (a+b+c+d+e+f)				29887.72	
		Cost	t for 205 cum = a+b+c+d+e+f+g				3018659.55	
		Rate	e per cum = (a+b+c+d+e+f+g)/205	;			14725.17	
						say	<u>14725.00</u>	

Note 1.Density of aggregates has been assumed 1.5 gms/cc

- 2. Tack coat where provided will be measured and paid separately.
- *3. Though the rollers are required only for 3.5 hours each as per norms of output, but these are required to be available at site for 6 hours as the drum mix plant and the paver would take 6 hours for mixing and paving. To cater for the idle period, their usage rates have been multiplied by a factor of 0.65

5.18 (iv) Using cutback bitumen and 19 mm or 26.5 mm nominal size aggregate

Composition of mix (450 tonne) is assumed to be as under:-

Cutback bitumen 5 per cent

Filler2 per cent

Total aggregates 93 per cent

Proportion of aggregates

37.5 mm to 19 mm25 per cent 19 mm to 6 mm 30 per cent 6 mm to 0.075 mm 38 per cent

a) Labour

~,	24504.					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor	day	16.000	424.00	6784.00	L-13
	Mazdoor skilled	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes 60- 90 tonne per hour producing output of 75 tonnes per hour	hour	6.000	449.00	2694.00	P&M-077
	Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	d 10 per cent of cost of carriage to er cost of loading and unloading				0.00	
	Paver finisher	hour	6.000	3847.00	23082.00	P&M-034
	Pneumatic tyred roller 12-15 tonnes.	hour	6.00x0.65*	1708.00	6661.20	P&M-037
-1	Smooth wheeled steel tandem roller 6-8 tonnes	hour	6.00x0.65*	1641.00	6399.90	P&M-045
c)	Material Cutback bitumen on @ 5 per cent	tonne	22.500	63348.00	1425330.00	M-076
	Filler (lime)@ 2 per cent	tonne	9.000	15000.00	135000.00	M-188
	Aggregates size 37.5 to 19 mm - 450 x 0.25 x 1/1.5	cum	75.000	1900.00	142500.00	M-048

cum

cum

90.000

114.000

1600.00

1300.00

144000.00 M-047

148200.00 M-030

415596.78 247708.87

Aggregates size 19 to 6 mm - 450

Aggregates size 6 to 0.075 mm -

GST (multiplying factor 0.2016) on (a+b+c)

Overhead charges @ 10 % on (a+b+c+d)

x 0.3 x 1/1.5

d)

450 x0.38 x 1/1.5

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.		
		f)	Contractor's profit @ 10 % on (a+b+c+	d+e)		272479.76			
	g) Cess @ 1% on (a+b+c+d+e+f)						29972.77			
		С	Cost for 205 cum = a+b+c+d+e+f+g				3027250.12			
	Rate per cum = (a+b+c+d+e+f+g)/205						14767.07			
						sav	14767 00			

Note 1.Density of aggregates has been assumed 1.5 gms/cc

- 2. Tack coat where provided will be measured and paid separately.
- *3. Though the rollers are required only for 3.5 hours each as per norms of output, but these are required to be available at site for 6 hours as the drum mix plant and the paver would take 6 hours for mixing and paving. To cater for the idle period, their usage rates have been multiplied by a factor of 0.65

5.19 Sand Asphalt Base Course

Providing, laying and rolling sand-asphalt base course composed of sand, mineral filler and bituminous binder on a prepared sub-grade or sub-base to the lines, levels, grades and cross sections as per the drawings including mixing in a plant of suitable type and capacity, transporting, laying, compacting and finishing.

Unit = cum

Taking output = 205 cum (450 tonne)

a)	Labour					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor	day	16.000	424.00	6784.00	L-13
	Mazdoor skilled	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	Hot Mix Plant of appropriate capacity but not less than 75	hour	6.000	20099.00	120594.00	P&M-023
	tonnes/hour					D014.004
	Electric generator set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
	d 10 per cent of cost of carriage to ver cost of loading and unloading				0.00	FAIVI-U36
	Paver finisher	hour	6.000	3847.00	23082.00	P&M-034
	smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65	783.00	3053.70	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65	969.00	3779.10	P&M-059
	Finish rolling with 6-8 tonnes smooth wheeled tandem rollers.	hour	6.00x0.65	1641.00	6399.90	P&M-045

c) Material

Composition of mix (450 tonne)

is assumed to be as under:-

Density 2.20 tonne per cum

Weight450 tonne

Bitumen5 per cent

Filler2 per cent

Sand of size 4.75 to 0.075 mm 93 $\,$ per

cent

Bitumen@ 5 per cent	tonne	22.500	57924.00	1303290.00	M-074
Filler (lime)@ 2 per cent	tonne	9.000	15000.00	135000.00	M-188
Sand of size 4.75 to 0.075 mm -	cum	288.620	650.00	187603.00	M-004
450 x 0.93 x 1/1.5					

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		d)	GST (multiplying factor 0.2016)	on (a+	b+c)		365004.97	
		e)	Overhead charges @ 10 % on (a+b+c+	d)		217554.55	
		f)	Contractor's profit @ 10 % on (a+b+c+	d+e)		239310.01	
		g)	Cess @ 1% on (a+b+c+d+e+f)				26324.10	
		Cos	t for 205 cum = a+b+c+d+e+f+g				2658734.17	
		Rate	e per cum = (a+b+c+d+e+f+g)/205	5			12969.43	
						sav	12969.00	

Note 1. Tack coat will be measured and paid separately

2. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of this roller, their usage rates has been multiplied by a factor of 0.65

5.21 522 Crack Prevention Courses

(i) Stress absorbing membrane (SAM) crack width less than 6 mm

Providing and laying of a stress absorbing membrane over a cracked road surface, with crack width below 6 mm after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 9 kg per 10 sqm and spreading 5.6 mm crushed stone aggregates @ 0.11 cum per 10 sqm with hydraulic chip spreader, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.

Unit = sqm

Taking output = 10500 sqm

a)	Labour					
	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor	day	6.000	424.00	2544.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm	hour	6.000	473.00	2838.00	P&M-031
	per hour		0.000	050.00	0040.00	D0M 004
	Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
	Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	P&M-004
	Hydraulic Chip spreader	hour	6.000	3640.00	21840.00	P&M-025
	Smooth wheeled road roller 8-10 tonne	783.00	4698.00	P&M-044		
c)	Material					
	Modified binder	tonne	9.450	58000.00	548100.00	M-078
	Crushed stone aggregates 5.6 mm size	cum	105.000	1300.00	136500.00	M-050
d)	GST (multiplying factor 0.2016)	on (a+b+	⊦c)		147098.29	
e)	Overhead charges @ 10 % on (a+b+c+d)			87675.25	
f)	Contractor's profit @ 10 % on (96442.78			
g)	Cess @ 1% on (a+b+c+d+e+f)		10608.71			
Cos	st for 10500 sqm = a+b+c+d+e+f+g		1071479.27			
Rat	te per sqm = (a+b+c+d+e+f+g)/105	500			102.05	
				say	102.00	

5.21 (ii) Stress absorbing membrane (SAM) with crack width 6 mm to 9 mm

Providing and laying of a stress absorbing membrane over a cracked road surface, with crack width 6 to 9 mm after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 11 kg per 10 sqm and spreading 11.2 mm crushed stone aggregates @ 0.12 cum per 10 sqm, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.

Unit = sqm

Taking output = 10500 sqm

a) Labour

Mate day 0.240 551.00 132.24 L-12

CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Mazdoor	day	6.000	424.00	2544.00	L-13
		b)	Machinery		0.000	470.00	0000 00	D0M 004
			Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00		P&M-031
			Air compressor 250 cfm capacity	hour	6.000	658.00	3948.00	P&M-001
			Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	P&M-004
			Hydraulic Chip spreader	hour	6.000	3640.00	21840.00	P&M-025
			Smooth wheeled road roller 8-10 tonne	hour	6.000	783.00	4698.00	P&M-044
		c)	Material					
			Modified binder	tonne	11.550	58000.00	669900.00	M-078
			Crushed stone chipping 11.2 mm size	cum	105.000	1800.00	189000.00	M-051
		d)	GST (multiplying factor 0.2016)	on (a+b	o+c)		182237.17	
		e)	Overhead charges @ 10 % on (a+b+c+c	d)		108619.14	
		f)	Contractor's profit @ 10 % on ((a+b+c+	d+e)		119481.06	
		g)	Cess @ 1% on (a+b+c+d+e+f)				13142.92	
		Cos	st for 10500 sqm = a+b+c+d+e+f+g				1327434.53	
		Rat	te per sqm = (a+b+c+d+e+f+g)/10	500			126.42	
						say	<u>126.00</u>	

5.21 (iii) Stress absorbing membrane (SAM) crack width above 9 mm and cracked area above 50 per cent

Providing and laying a single coat of a stress absorbing membrane over a cracked road surface, with crack width above 9 mm and cracked area above 50 per cent after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 15 kg per 10 sqm and spreading 11.2 mm crushed stone aggregates @ 0.12 cum per 10 sqm, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.

Unit = sqm	U	ni	t	=	s	q	m	
------------	---	----	---	---	---	---	---	--

Un	it = sqm					
Tal	king output = 10500 sqm					
a)	Labour					
•	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor	day	6.000	424.00	2544.00	L-13
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15
b)	Machinery					
	Mechanical broom @ 1250 sqm per hour	hour	6.000	473.00	2838.00	P&M-031
	Air compressor 250 cfm capacity	hour	6.000	658.00	3948.00	P&M-001
	Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1509.00	9054.00	P&M-004
	Hydraulic Chip spreader	hour	6.000	3640.00	21840.00	P&M-025
	Smooth wheeled road roller 8-10 tonne	hour	6.000	783.00	4698.00	P&M-044
c)	Material					
	Modified binder	tonne	15.750	58000.00	913500.00	M-078
	Crushed stone aggregates 11.2 mm size	cum	126.000	1800.00	226800.00	M-051
d)	GST (multiplying factor 0.2016)	on (a+b+	+c)		239172.24	
e)	Overhead charges @ 10 % on (a+b+c+d)			142554.25	
f)	Contractor's profit @ 10 % on (a+b+c+d-	+e)		156809.67	
g)	Cess @ 1% on (a+b+c+d+e+f)				17249.06	
Cos	st for 10500 sqm = a+b+c+d+e+f+g				1742155.46	
Rat	te per sqm = (a+b+c+d+e+f+g)/105	500			165.92	

<u>166.00</u>

ſ		Ref. to						Remarks
-	SI. No	MoRTH/ DSR	Description	Unit	Quantity	Rate in Rs	Cost in Rs	/ Input
-		Spec.						ref.

Note In case 2nd coat is also required to be provided, material provided for the 2nd coat shall be as per table 500-47.

5.22 519.3 Recipe Cold Mix

(i)

Providing and laying of premix of crushed stone aggregates and emulsion binder, mixed in a batch type cold mixing plant, laid over prepared surface, by paver finisher, rolled with a pneumatic tyred roller initially and finished with a smooth steel wheel roller, all as per clause 519.3

Unit = cum

	it – Cuiii					
	king output = 205 cum (450 tonne	s)				
	mm thickness					
a)	Labour					
	Mate	day	1.000	551.00	551.00	
	Mazdoor	day	12.000	424.00	5088.00	L-13
	Mazdoor skilled	day	5.000	508.00	2540.00	L-15
b)	Machinery					D014.004
	Batch type cold mixing plant 100-	hour	6.000	23790.00	142740.00	P&M-064
	120 TPH capacity producing an					
	average output of 75 tonne per hour					
	Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
	Front end loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
	Paver finisher hydrostatic with	hour	6.000	3847.00	23082.00	P&M-034
	sensor control @ 75 cum per		0.000	3030	20002.00	
	hour					
	Tipper 10 tonne capacity	tonne.	450 x L	18.00	0.00	Lead =0
		km				km & P&M-058
Ad	d 10 per cent of cost of carriage to				0.00	1 (1111-000
	ver cost of loading and unloading					
	Pneumatic tyred roller12-15	hour	6.00x0.65*	1708.00	6661.20	P&M-037
	tonnes.					
	Smooth wheeled steel roller6-8	hour	6.00x0.65*	783.00	3053.70	P&M-044
	tonnes.		4.000	704.00	704.00	D0M 000
	Water tanker6 KL capacity	hour	1.000	724.00	724.00	P&M-060
c)	Material		00.050	55000.00	4440750.00	M 077
	Bitumen emulsion @ 45 litres per	tonne	20.250	55000.00	1113750.00	M-077
	tonne Crushed stone aggregates 40	cum	297.000	1900.00	564300.00	M-055
	mm nominal size	Culli	237.000	1300.00	304300.00	
	Cost of water	KL	6.000	71.00	426.00	M-189
d)	GST (multiplying factor 0.2016)	on (a+k)+c)		379159.99	
e)	Overhead charges @ 10 % on (-	-		225991.39	
f)	Contractor's profit @ 10 % on (•		248590.53	
g)	Cess @ 1% on (a+b+c+d+e+f)		•		27344.96	
•	st for 10500 sqm = a+b+c+d+e+f+g				2761840.77	
	te per sqm = (a+b+c+d+e+f+g)/205	5			13472.39	
	(-				

13472.00

sav

Note (Case I to III)

- 1. These mixes are considered suitable for minor repair work and temporary road surface improvement.
- 2. In case concrete mixtures are required to be used for mixing, a number of these will be needed to match the capacity of road rollers.
- 3. Tack coat, where provided, will be measured and paid separately.

^{*4.}Both the rollers have to be available at site to match with the output of batch mixing plant and paver finisher. A multiplying factor of 0.65 has been adopted to cater for the idling period of road rollers.

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
5.22		(ii)	40	mm thickness			•		
			a)	Labour					
				Mate	day	1.000	551.00	551.00	
				Mazdoor Akillad	day	12.000	424.00	5088.00	
			h۱	Mazdoor skilled Machinery	day	5.000	508.00	2540.00	L-10
			b)	Batch type cold mixing plant100- 120 TPH capacity producing an	hour	6.000	23790.00	142740.00	P&M-064
				average output of 75 tonne per hour					
				Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
				Front end loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
				Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3847.00	23082.00	P&M-034
				Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058
				I 10 per cent of cost of carriage to er cost of loading and unloading				0.00	
				Pneumatic tyred roller 12-15 tonnes.	hour	6.00x0.65*	1708.00	6661.20	P&M-037
				Smooth wheeled steel roller 6-8 tonnes.	hour	6.00x0.65*	783.00	3053.70	P&M-044
				Water tanker6 KL capacity	hour	1.000	724.00	724.00	P&M-060
			c)	Material Bitumen emulsion @ 70 litres per	tonne	31.500	55000.00	1732500.00	M-077
				tonne Crushed stone aggregates 14 mm nominal size	cum	287.000	1820.00	522340.00	M-052
			d)	Cost of water GST (multiplying factor 0.2016)	KL \ on (a+l	6.000	71.00	426.00 495440.85	M-189
			e)	Overhead charges @ 10 % on (•		295298.48	
			f)	Contractor's profit @ 10 % on (324828.32	
			•		arbici	u·e,		35731.12	
			g)	Cess @ 1% on (a+b+c+d+e+f) st for 10500 sqm = a+b+c+d+e+f+g				3608842.67	
				,	_				
			Rai	te per sqm = (a+b+c+d+e+f+g)/205	•			17604.11	
							say	<u>17604.00</u>	
5.22		(III)		mm thickness					
			a)	Labour Mate	dov	1.000	551.00	551.00	L-12
				Mazdoor	day day	12.000	424.00	5088.00	
				Mazdoor skilled	day	5.000	508.00	2540.00	
			b)	Machinery	,				
				Batch type cold mixing plant 100- 120 TPH capacity producing an average output of 75 tonne per	hour	6.000	23790.00	142740.00	P&M-064
				hour Electric generator 125 KVA	hour	6.000	1135.00	6810.00	P&M-018
				Front end loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
				Paver finisher hydrostatic with sensor control @ 75 cum per	hour	6.000	3847.00	23082.00	P&M-034
				hour Tipper 10 tonne capacity	tonne. km	450 x L	18.00	0.00	Lead =0 km & P&M-058

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			d 10 per cent of cost of carriage to er cost of loading and unloading				0.00	
			Pneumatic tyred roller	hour	6.00x0.65*	1708.00	6661.20	P&M-037
			Smooth wheeled steel roller	hour	6.00x0.65*	783.00	3053.70	P&M-044
			Water tanker6 KL capacity	hour	1.000	724.00	724.00	P&M-060
		c)	Material Bitumen emulsion @ 85 litres per tonne Crushed stone aggregates 6 mm nominal size	tonne	38.250 270.000	55000.00 1300.00	2103750.00 351000.00	
			Cost of water	KL	6.000	71.00	426.00	M-189
			GST (multiplying factor 0.2016) Overhead charges @ 10 % on (Contractor's profit @ 10 % on (Cess @ 1% on (a+b+c+d+e+f) st for 10500 sqm = a+b+c+d+e+f+g) te per sqm = (a+b+c+d+e+f+g)/205	a+b+c+ a+b+c+	d)	say	535742.71 319319.66 351251.63 38637.68 3902405.58 19036.12 19036.00	
5 22		On	on Graded Premix Surfacing			Suy	10000.00	

5.23 Open - Graded Premix Surfacing

MORTH - 508.2; IRC: SP: 100 - 2004, chapter 6.5 Using Cold Mix Binder (Exceeds IS 8887: 2004 of SS-2) Providing, laying and rolling open graded premix carpet of 20mm thickness copmposed of 13.2 mm to 5.6 mm aggregates using Cold Mix Binder (Tailor made) to reguired line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a three wheel 80-100 KN static roller capacity, finished to required level and grades to be followed by seal coat (Application: Cold OGPC as per Design mix & Implementation by Manufacturer's discretion only)

Unit = sqm

Taking output = 900 s1m (24.3 cum)

cui	'' <i>)</i>					
a)	Labour Mate	day	0.800	551.00	440.80	L-12
	Mazdoor	day	18.000	424.00	7632.00	L-13
	Mazdoor skilled	day	2.000	508.00	1016.00	L-15
b)	Machinery					
	Concrete mixer 0.4/0.28 cum capacity	hour	6.000	291.00	1746.00	P&M-009
	Smooth wheeled steel roller 8-10 tonne	hour	5.000	783.00	3915.00	P&M-044
c)	Material					
·	Cold mix binder @ 2.0-2.3 kg per sqm	tonne	1.940	66861.00	129710.34	M-197
	Crushed stone aggregates 13.2 mm to 5.6 mm @ 0.27 cum per 10 sqm	cum	24.300	1600.00	38880.00	M-043
d)	GST (multiplying factor 0.2016)	on (a+b-	+c)		36961.37	
e)	Overhead charges @ 10 % on (a+b+c+d)	,		22030.15	
f)	Contractor's profit @ 10 % on (a+b+c+d	+e)		24233.17	
g)	Cess @ 1% on (a+b+c+d+e+f)				2665.65	
Cos	st for 900 sqm = a+b+c+d+e+f+g				269230.48	
Rat	te per sqm = (a+b+c+d+e+f+g)/900)			299.14	
				say	<u>299.00</u>	

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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5.24.1 Seal Coat

MORTH - 510; IRC: SP: 100 - 2004, chapter 6.5 & 6.2 Using Cold Mix Binder (Exceeds IS 8887: 2004 of SS-2) Providing, laying and rolling of seal coat sealing the voids i a bituminous surface laid to the specified levels, grade and cross fall using Cold Mix Binder and stone chips passing 6.3 mm and IS sieve (Application: Seal Coat (A), Liquid Seal Coat as per Design mix & implementation by Manufacturers's discretion only)

Unit = sqm

Taking output = 10250 sqm (92.25 cum)

(i) Case - I : Type A

a)	Labour					
	Mate	day	0.240	551.00	132.24	L-12
	Mazdoor	day	6.000	424.00	2544.00	L-13
b)	Machinery					
	Hydraulic Self propelled chip spreader	hour	6.000	3640.00	21840.00	P&M-025
	Tipper 5.5 cum capacity	hour	6.000	916.00	5496.00	P&M-048
	Front end loader 1 cum bucket capacity		6.000	1838.00	11028.00	P&M-017
	Bitumen pressure distributor @ 1750 sqm per hour		6.000	1509.00	9054.00	P&M-004
	Smooth wheeled roller 8-10 tonne weight		6.000	783.00	4698.00	P&M-044
c)	Material					
	Cold mix binder @ 1.2-1.4 kg per sqm	tonne	13.330	66861.00	891257.13	M-197
	Crushed stone chip passing 6.3 mm sieve applied @ 0.09 cum per 10 sqm	cum	92.250	1300.00	119925.00	M-050
d)	GST (multiplying factor 0.2016)	on (a+b+	c)		214900.43	
e)	Overhead charges @ 10 % on (a+b+c+d)			128087.48	
f)	Contractor's profit @ 10 % on (e)		140896.23	
g)	Cess @ 1% on (a+b+c+d+e+f)		•		15498.59	
	st for 10250 sqm = a+b+c+d+e+f+g				1565357.10	
Rat	te per sqm = (a+b+c+d+e+f+g)/102	:50			152.72	
				say	153.00	

5.24.2 (ii) Case - II : Type B

MORTH - 510; IRC: SP: 100 - 2004, chapter 6.5 Using Cold Mix Binder (Exceeds IS 8887: 2004 of SS-2) Providing, laying and rolling of seal coat sealing the voids i a bituminous surface laid to the specified levels, grade and cross fall using Cold Mix Binder and stone chips passing 9.5 mm and IS sieve & retain on 2.36 mm IS sieve (Application: Seal Coat (C), as per Design mix & implementation by Manufacturers's discretion only)

Unit = sqm

Taking output = 7858 sqm (47.16 cum)

Cui	III)					
a)	Labour					
	Mate	day	0.160	551.00	88.16	L-12
	Mazdoor	day	4.000	424.00	1696.00	L-13
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	2.000	449.00	898.00	P&M-077
	Electric Generator set 250 KVA	hour	2.000	1154.00	2308.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	2.000	1838.00	3676.00	P&M-017

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Tipper 10 tonne capacity	tonne. km	104x'L'	87.00	0.00	Lead =0 km & P&M-047
			Add 10 per cent of cost of carriage to cover cost of loading and unloading					
			Paver finisher hydrostatic with sensor attachment	hour	2.000	3847.00	7694.00	P&M-034
			Smooth wheeled 8-10 tonnes capacity	hour	2.000	783.00	1566.00	P&M-044
		c)	Material					
			Cold mix binder @ 1.0-1.2 kg per sqm	tonne	8.640	66861.00	577679.04	M-197
			Crushed stone chip passing 9.5 mm sieve and retained on 2.36 mm sieve applied @ 0.06 cum per 10 sqm	cum	47.150	1300.00	61295.00	M-050
		d)	GST (multiplying factor 0.2016)	on (a+l	o+c)		132431.08	
		e)	Overhead charges @ 10 % on (•	•		78933.13	
		f)	Contractor's profit @ 10 % on (86826.44	
		g)	Cess @ 1% on (a+b+c+d+e+f)				9550.91	
		Cos	st for 7858 sqm = a+b+c+d+e+f+g				964641.76	
		Rat	e per sqm = (a+b+c+d+e+f+g)/785	58			122.76	
						say	<u>123.00</u>	

5.25.1 Close Graded Premix Surfacing/Mixed Seal Surfacing

 $\stackrel{\hbox{\scriptsize Case}}{\cdot}$ Mechanical means using HMP of appropriate capacity not less than 75 tonnes/hour.

MORTH - 511; IRC: SP: 100 - 2004, chapter 6.5 Using Cold Mix Binder (Exceeds IS 8887: 2004 of SS-2) Providing, laying and rolling of close graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.09 mm (Type A) or 13.2 mm to 0.09 mm (Type B) aggregates using using Cold Mix Binder to the required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 ton cappacity and finishing to required level and grade (Application: Cold MiSS (Mix Seal Surfacing as per Designmix & Implementation by Manufacturer's discretion only)

Unit = sqm

Taking output = 10250 sqm (205 cum)

I al	king output – 10250 Sqiii (205 Cuii	1)				
a)	Labour					
	Mate	day	0.840	551.00	462.84	L-12
	Mazdoor working with WMP, road sweeper, paver and roller	day	16.000	424.00	6784.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	5.000	449.00	2245.00	P&M-077
	Electric Generator set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	104x'L'	87.00	0.00	Lead =0 km & P&M-047
	Add 10 per cent of cost of					

Add 10 per cent of cost of carriage to cover cost of loading and unloading

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BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Paver finisher hydrostatic with sensor attachment	hour	6.000	3847.00	23082.00	P&M-034
			Smooth wheeled 8-10 tonnes capacity	hour	6.000	783.00	4698.00	P&M-044
		c)	Material					
		Ту	rpe - A					
			Cold mix binder @ 3.0 kg per sqm	tonne	30.750	66861.00	2055975.75	M-197
			Stone crushed aggregates 11.2 mm to 0.09 mm @ 0.27cum per 10 sqm	cum	276.750	1500.00	415125.00	M-041
		d)	GST (multiplying factor 0.2016) on (a+k	o+c)		509819.10	
		e)	Overhead charges @ 10 % on	(a+b+c+c	d) (k		303868.37	
		e)	Overhead charges @ 10 % on	(a+b+c+c	d)		334255.21	
		g)	Cess @ 1% on (a+b+c+d+e+f)				36768.07	
		Co	ost for 10250 sqm = a+b+c+d+e+f+g				3713575.34	
		Ra	ate per sqm = (a+b+c+d+e+f+g)/10	250			362.30	
						say	<u>362.00</u>	

5.25.2 Close Graded Premix Surfacing/Mixed Seal Surfacing

Case Mechanical means using HMP of appropriate capacity not less than 75 tonnes/hour.

MORTH - 511; IRC: SP: 100 - 2004, chapter 6.6 Using Cold Mix Binder (Exceeds IS 8887: 2004 of SS-2)

Providing, laying and rolling of close graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.09 mm (Type A) or 13.2 mm to 0.09 mm (Type B) aggregates using using Cold Mix Binder to the required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 ton cappacity and finishing to required level and grade (Application: Cold MSS (Mix Seal Surfacing as per Designmix & Implementation by Manufacturer's discretion only)

Unit = sqm

Taking output = 10250 sqm (205 cum)

ing output Tozoo sqiii (200 cuii	"/				
Labour					
Mate	day	0.840	551.00	462.84	
Mazdoor working with WMP, road sweeper, paver and roller	day	16.000	424.00	6784.00	L-13
Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
Machinery					
Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	5.000	449.00	2245.00	P&M-077
Electric Generator set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
Tipper 10 tonne capacity	tonne. km	104x'L'	87.00	0.00	Lead =0 km & P&M-047
Add 10 per cent of cost of carriage to cover cost of loading and unloading					
Paver finisher hydrostatic with sensor attachment	hour	6.000	3847.00	23082.00	P&M-034
Smooth wheeled 8-10 tonnes capacity	hour	6.000	783.00	4698.00	P&M-044
	Labour Mate Mazdoor working with WMP, road sweeper, paver and roller Skilled mazdoor for checking line & levels Machinery Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour. Electric Generator set 250 KVA Front end loader 1 cum bucket capacity Tipper 10 tonne capacity Add 10 per cent of cost of carriage to cover cost of loading and unloading Paver finisher hydrostatic with sensor attachment Smooth wheeled 8-10 tonnes	Mate day Mazdoor working with WMP, road sweeper, paver and roller Skilled mazdoor for checking line & levels Machinery Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour. Electric Generator set 250 KVA hour Front end loader 1 cum bucket capacity Tipper 10 tonne capacity tonne. km Add 10 per cent of cost of carriage to cover cost of loading and unloading Paver finisher hydrostatic with sensor attachment Smooth wheeled 8-10 tonnes hour	Mate day 0.840 Mazdoor working with WMP, road day sweeper, paver and roller Skilled mazdoor for checking line & levels Machinery Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour. Electric Generator set 250 KVA hour 6.000 Front end loader 1 cum bucket hour capacity Tipper 10 tonne capacity tonne. hour km Add 10 per cent of cost of carriage to cover cost of loading and unloading Paver finisher hydrostatic with sensor attachment Smooth wheeled 8-10 tonnes hour 6.000	Labour Mate day 0.840 551.00 Mazdoor working with WMP, road day 16.000 424.00 sweeper, paver and roller Skilled mazdoor for checking line day 5.000 508.00 & levels Machinery Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour. Electric Generator set 250 KVA hour 6.000 1154.00 Front end loader 1 cum bucket hour 6.000 1838.00 capacity Tipper 10 tonne capacity tonne. 104x'L' 87.00 Add 10 per cent of cost of carriage to cover cost of loading and unloading Paver finisher hydrostatic with sensor attachment Smooth wheeled 8-10 tonnes hour 6.000 783.00	Labour Mate day 0.840 551.00 462.84 Mazdoor working with WMP, road sweeper, paver and roller day 16.000 424.00 6784.00 Skilled mazdoor for checking line & levels day 5.000 508.00 2540.00 Machinery Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour. Electric Generator set 250 KVA hour 6.000 1154.00 6924.00 Front end loader 1 cum bucket hour apacity 6.000 1838.00 11028.00 capacity Tipper 10 tonne capacity tonne. 104x'L' 87.00 0.00 Add 10 per cent of cost of carriage to cover cost of loading and unloading 4698.00 23082.00 Paver finisher hydrostatic with sensor attachment hour 6.000 783.00 4698.00

c) Material

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SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Type - B					
		Cold mix binder @ 3.3 kg per sqm	tonne	33.830	66861.00	2261907.63	M-197
		Stone crushed aggregates 11.2 mm to 0.09 mm @ 0.27cum per 10 sqm	cum	276.750	1200.00	332100.00	M-042
		d) GST (multiplying factor 0.201	6) on (a+l	o+c)		534597.13	
		e) Overhead charges @ 10 % on	(a+b+c+	d)		318636.86	
		f) Contractor's profit @ 10 % on	(a+b+c+	d+e)		350500.55	
		g) Cess @ 1% on (a+b+c+d+e+f)				38555.06	
		Cost for 10250 sqm = $a+b+c+d+e+f+g$	g			3894061.07	
		Rate per sqm = (a+b+c+d+e+f+g)/10	0250			379.91	
					say	<u>380.00</u>	
5.26		MORTH - 504 IRC: SP: 100 - 2004,	chapter 7	'.1 Using Col	d Mix Binde	r (Exceeds IS	

MORTH - 504 IRC: SP : 100 - 2004, chapter 7.1 Using Cold Mix Binder (Exceeds IS 8887 : 2004 of SS-2)

Providing, laying and rolling of cold BM (50 mm) on prepared base consisting of a mixture of unheated mineral aggregate (19 mm nominal size) and Cold Mix Binder, including mixing in a plant of suitable type and capacity, transporting, laying, compacting and finsishing to specified grades and levels (Application: Cold BM as per Designmix & Implementation by manufacturer's discretion only)

Unit = cum

Taking output = 205 cum (450 tonnes)

ton	nes)					
a)	Labour					
	Mate	day	0.840	551.00	462.84	
	Mazdoor working with CMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction.	day	16.000	424.00	6784.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	508.00	2540.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	6.000	449.00	2694.00	P&M-077
	Mechanical broom hydraulic @ 1250 sqm per hour	hour	2.200	473.00	1040.60	P&M-031
	Air Compressor 250 cfm	hour	2.200	658.00	1447.60	P&M-001
	Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3847.00	23082.00	P&M-034
	Electric Generator set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
	Tipper 10 tonne capacity	tonne. km	104x'L'	18.00	0.00	Lead =0 km & P&M-058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading					
	Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	783.00	3053.70	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	969.00	3779.10	P&M-059
	Finish rolling with 6-8 tonnes smooth wheeled tandem rollers.	hour	6.00x0.65*	1641.00	6399.90	P&M-045

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Type - B					•
			Cold mix binder @ 5.5% by Wt. of mix Weight of mix=205x2.2=450 tonne Aggregate Total weight of mix = 450 tonnes Weight of bitumen=24.75 tonnes Weight of aggregate = 450 - 24.75 = 425.25 tonnes Taking density of aggregate = 1.5	tonne	24.750	66861.00	1654809.75	M-197
			ton/cum Volume of aggregate=283.50					
			cum					
			Grading II (19 mm nominal size)					
			25-10 mm 40 per cent	cum	113.400	1860.00	210924.00	M-046
			10-5 mm 40 per cent	cum	113.400	1550.00	175770.00	M-040
			5m and below 20 per cent * Any one of the alternative may be adopted as per approved design	cum	56.700	1300.00	73710.00	M-030
		(ii)	For Grading II (19 mm nominal size)					
			d) GST (multiplying factor 0.2016)	on (a+b	+c)		440385.02	
			e) Overhead charges @ 10 % on (a	a+b+c+d)		262483.45	
			f) Contractor's profit @ 10 % on (a+b+c+c	l+e)		288731.80	
			g) Cess @ 1% on (a+b+c+d+e+f)				31760.50	
			Cost for 205 cum = $a+b+c+d+e+f+g$	o "			3207810.26	
			Rate per cum = (a+b+c+d+e+f+g)/205 (Fe	or Gradin	ig II)		15647.85	

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have be multiplied by a factor of 0.65.

- 2. Quantity of bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
- Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 4. In case BM is laid over freshly laid tack coat, provision of Mechanical broom and 2 mazdoors for the same shall be deleted as the same has been included in the oost of tack coat

5.27 MORTH - 504 IRC: SP: 100 - 2004, chapter 7.2 Using Cold Mix Binder (Exceeds IS 8887: 2004 of SS-2)

Providing, laying of Semi Dense Bituminous Concrete with 100-120 TPH HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading (9.5 mm nominal size), premixed with cold mix binder @ 7.5% by weight of mix, transporting the cold mix to work site, laying with a hydrostatic paver finisher with sensor control to required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction (Application: Cold BM as per Designmix & Implementation by manufacturer's discretion only)

Unit = cum

Taking output = 195 cum (450 tonnes)

a) Labour

Mate day 0.840 551.00 462.84 L-12

15648.00

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SI. No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		,	•	Mazdoor working with CMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction.	day	16.000	424.00	6784.00	L-13
			b)	Skilled mazdoor for checking line & levels Machinery	day	5.000	508.00	2540.00	L-15
			IJ)	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	6.000	449.00	2694.00	P&M-077
				Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3847.00	23082.00	P&M-034
				Electric Generator set 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
				Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	
				Tipper 10 tonne capacity	tonne. km	104x'L'	18.00	0.00	Lead =0 km & P&M-058
				Add 10 per cent of cost of carriage to cover cost of loading and unloading					
				Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	783.00	3053.70	P&M-044
				Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	969.00	3779.10	P&M-059
			c)	Finish rolling with 6-8 tonnes smooth wheeled tandom rollers. Material	hour	6.00x0.65*	1641.00	6399.90	P&M-045
			٠,	Cold mix binder @ 7.5% by Wt. of mix Weight of mix=450 tonne	tonne	33.750	66861.00	2256558.75	M-197
				Aggregate					
				Total weight of mix = 450 tonnes Weight of bitumen=33.75 tonnes					
				Weight of aggregate = 450 - 33.75 = 416.25 tonnes					
				Taking density of aggregate = 1.5 ton/cum					
				Volume of aggregate=277.50 cum					
				9.5 - 4.75 mm @ 57 per cent	cum	158.175	1550.00	245171.25	M-040
				4.75 and below W 43 per cent	cum	119.325	1300.00	155122.50	M-030
		(ii)	ado	ny one of the alternative may be opted as per approved design For Grading II (9.50 mm nominal					
			d)	size) GST (multiplying factor 0.2016)	on (a4l	n+c)		549077.77	
			u) e)	Overhead charges @ 10 % on (-		327267.78	
			e) f)	Contractor's profit @ 10 % on (-		359994.56	
			g)	Cess @ 1% on (a+b+c+d+e+f)		∪ j		39599.40	
				st for 195 cum = a+b+c+d+e+f+g				3999539.55	
				e per sqm = (a+b+c+d+e+f+g)/195 (F	or Gradiı	ng II)		20510.46	
							say	<u>20510.00</u>	

	Ref. to						Remarks
SI. N	lo MoRTH/	Description	Unit	Quantity	Rate in Rs	Cost in Rs	/ Input
	Spec.						ref.

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have be multiplied by a factor of 0.65.

- 2. Quantity of bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
- Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 4. In case SDBC is laid over freshly laid tack coat, provision of broom and 2 mazdoors for the same shall be deleted as the same has been included in the oost of tack coat
- 5. The quantity of Bitumen to be adjusted as per job mix formula.

5.28 16.57.2

Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.

(a) 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.

Details of cost for 191 cum (450 tonnes)

a) Material

Paving Asphalt VG-30 of approved	tonne	24.750	41549.00	1028337.75 M-198
quality' @5.50% (percentage by weight of				
total mix)				
Aggregate				
Total weight of mix = 450 tonnes				
Weight of bitumen = 24.75 tonnes				
Weight of aggregate = 450 -24.75 =				
425.25 tonnes				
Taking density of aggregate = 1.5 tonne/cum				
Volume of aggregate =425.25/1.5 =				
283.50cum				
Grading - II/19 mm (Nominal Size)				
13.2 - 10mm size = 30% of 283.50 =				
85.05 cum				
10 - 5mm size = 25% of 283.50 =				
70.88 cum				
5mm and below = 42% of 283.50 = 119.07 cum.				
Waste Plastic @ 8% of the weigh of				
bitumen i.e. 24.75*8%				
Waste plastic additive	tonne	1.980	42000.00	83160.00 M-199
Stone Aggregate (Single size) :12.5	cum	42.750	1820.00	77805.00 M-052
mm nominal size (Qty = 85.5 * 50				
/100)				
Stone Aggregate (Single size) :10 mm	cum	42.750	1800.00	76950.00 M-051
nominal size (Qty = 85.5 * 50 /100)				

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Stone Aggregate (Single size) :10 mm nominal size(Qty = 70.88 * 50 /100)	cum	35.440	1800.00	63792.00	
		Stone Aggregate (Single size) :06 mm nominal size(Qty = 70.88 * 50 /100)	cum	35.440	1300.00	46072.00	M-050
		Stone chippings/ screenings 4.75 mm nominal size (Qty = 283.5 * 40 /100)	cum	113.400	1500.00	170100.00	M-041
		Dry hydrated lime (factory made) b) Transport	quintal	127.600	300.00	38280.00	M-200
		Carriage of Tar bitumen	tonne	24.750	0.00	0.00	
		Carriage of Stone aggregate below 40 mm nominal size		275.000	0.00		
		Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.890	0.00	0.00	
		Tipper -5 Cum, Tipper 10 tonne capacity (Taken 10 km average lead)Km	tonne/ km	4,500.000	0.00	0.00	
		Add 10 per cent of cost of carriage to cover cost of loading and unloading)	10 per cent of cost of carriage		0.00	
		c) MACHINERY/ HIRE CHARGES:					
		Hot mix Plant -120 TPH capacity	hour	3.000	15000.00	45000.00	P&M-095
		Hot mix Plant 100 TPH Capacity	hour	3.000	13681.00	41043.00	P&M-096
		Paver finisher Hydrostatic with senso control 100 TPH	r hour	6.000	3847.00	23082.00	P&M-034
		Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
		Front end loader 1 cum bucke capacity (incl POL)	t hour	6.000	1838.00	11028.00	P&M-017
		Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	e hour	3.900	783.00	3053.70	P&M-044
		Vibratory roller 8 to 10 tonne fo intermediate rolling.(6*0.65)	r hour	3.900	856.00	3338.40	P&M-062 (A)
		Tandem Road Roller, Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.900	1641.00	6399.90	P&M-045
		d) Labour		0.040	554.00	400.04	L 40
		Mate Beldar	each each	0.840 14.000	551.00 424.00		
		working with HMP, mechanical broom paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	, 1	14.000	424.00	3930.00	L-10
		Skilled Beldar (for floor rubbing etc. for checking line & levels) each	5.000	508.00	2540.00	L-15
		Other Costs	t) on (a+1	2±0±4/		240424 24	
		e) GST (multiplying factor 0.2016	-	-		349434.21	
		f) Overhead charges @ 10 % on	•	•		208273.88	
		g) Contractor's profit @ 10 % on		u rer i)		229101.27	
		h) Cess @ 1% on (a+b+c+d+e+f+	•	\+f+a+b\		25201.14 2545315.00	
		Cost for 191 cum(450 Tonne) (a- Cost per cum. (a+		0 ,	Sav	2545315.09 13326.26	
					Say	13326.30	

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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16.57.6 (b) 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.

Details of cost for 191 cum (450 tonnes) a) Material Paving Asphalt VG-30 of approved tonne 24.750 41549.00 1028337.75 M-198 quality, @5.50% (percentage by weight of total mix) Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate = 425.25/ 1.5=283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum Waste Plastic @ 8% of the weigh of bitumen i.e. 24.75*8% 42000.00 83160.00 M-199 Waste plastic additive tonne 1.980 Stone Aggregate (Single size) :12.5 42.750 1820.00 77805.00 M-052 cum mm nominal size (Qty = 85.5 * 50/100) 76950.00 M-051 Stone Aggregate (Single size):10 mm 42.750 1800.00 cum nominal size (Qty = 85.5 * 50 / 100) 63792.00 M-051 Stone Aggregate (Single size):10 mm 35.440 1800.00 cum nominal size (Qty = 70.88 * 50/100) Stone Aggregate (Single size):06 mm cum 35.440 1300.00 46072.00 M-050 nominal size (Qty = 70.88 * 50 / 100) Stone chippings/ screenings 4.75 mm 113.400 1500.00 170100.00 M-041 cum nominal size (Qty = 283.5 * 40 / 100) Dry hydrated lime (factory made) 300.00 38280.00 M-200 quintal 127.600 b) Transport @5.50% (percentage by weight of total mix Carriage of Tar bitumen tonne 24.750 0.00 0.00 Carriage of Stone aggregate below 40 275.000 0.00 0.00 cum mm nominal size Lime Filler @ 2% (percentage by weight of aggregate) 0.00 Carriage of Lime (consitering cum 9.890 0.00

density of lime as 1.29 T per cum) V =

12.758/1.29 = 9.89 cum

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Tipper -5 Cum Tipper 10 tonne capacity (Taken 10 km average lead) 450 x 10 = 4500 tonne Km	tonne/ km	4,500.000	0.00	0.00	
		Add 10 per cent of cost of carriage to cover cost of loading and unloading		10 per cent of cost of carriage		0.00	
		c) MACHINERY/ HIRE CHARGES: Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.000	10712.00	64272.00	P&M-097
		Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.000	3847.00	23082.00	P&M-034
		Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
		Front end loader 1 cum bucket capacity (incl POL)	hour	6.000	1838.00	11028.00	P&M-017
		Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.900	783.00	3053.70	P&M-044
		Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.900	856.00	3338.40	P&M-062 (A)
		Tandem Road Roller, Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.900	1641.00	6399.90	P&M-045
		d) Labour					
		Mate	each	0.840	551.00	462.84	L-12
		Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	each	14.000	424.00	5936.00	L-20
		Skilled Beldar (for floor rubbing etc.) for checking line & levels Other Costs	each	5.000	508.00	2540.00	L-15
		e) GST (multiplying factor 0.2016) f) Overhead charges @ 10 % on (a g) Contractor's profit @ 10 % on (a h) Cess @ 1% on (a+b+c+d+e+f+g Cost for 191 cum(450 Tonne) (a+b+c+ Cost per cum. (a+b+c+d+e+f+g+h)/1 Cost per cum (Per Tonne).	a+b+c+d a+b+c+d) -d+e+f+g	l+e) l+e+f)	Say	345045.17 205657.88 226223.66 24884.60 2513344.90 13158.87 13158.90	
5.29	16.573	Providing and laying Bituminous cond	rete usi	ng crushed st	•		

Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.

(a) 40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.

Details of cost for 191 cum (450 tonnes)

a) Material

Bitumen grade PMB - 40, tonne 24.750 37030.00 916492.50 M-078 @5.50% (percentage by weight of total mix)

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate = 425.25/1.5 = 283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 5mm and below= 42% of 283.50 = 119.07					
		Stone Aggregate (Single size) :12.5 mm nominal size (Qty = 85.5 * 50	cum	42.750	1820.00	77805.00	M-052
		/100) Stone Aggregate (Single size) :10 mm nominal size (Qty = 85.5 * 50 /100)	cum	42.750	1800.00	76950.00	M-051
		Stone Aggregate (Single size) :10 mm nominal size (Qty = 70.88 * 50 /100)	cum	35.440	1800.00	63792.00	M-051
		Stone Aggregate (Single size) :06 mm nominal size (Qty = 70.88 * 50 /100)	cum	35.440	1300.00	46072.00	M-050
		Stone chippings/ screenings 4.75 mm nominal size (Qty = 283.5 * 40 /100)	cum	113.400	1500.00	170100.00	M-041
		Dry hydrated lime (factory made) b) Transport	quintal	127.600	300.00	38280.00	M-200
		Carriage of Tar Bitumen Carriage of Stone aggregate below 40 mm nominal size Lime Filler @ 2% (percentage by	tonne cum	24.750 275.000	0.00 0.00		
		weight of aggregate) Carriage of Lime, (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.890	0.00	0.00	
		Tipper 10 tonne capacity (Taken 10 km average lead) 450 x 10 = 4500 tonne Km Tipper -5 Cum	tonne/ km	4,500.000	0.00	0.00	
		Add 10 per cent of cost of carriage to cover cost of loading and unloading		10 per cent of cost of carriage		0.00	
		c) MACHINERY/ HIRE CHARGES: Hot mix Plant -120 TPH capacity	hour	3.000	16471.00	49413.00	P&M-095
		Hot mix Plant 100 TPH Capacity	hour	3.000	13681.00		
		Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.000	3847.00		
		Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
		Front end loader 1 cum bucket capacity (incl POL)	hour	6.000	1838.00	11028.00	P&M-017
		Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.900	783.00	3053.70	P&M-044

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Vibratory roller 8 to 10 tonne fo intermediate rolling.(6*0.65)	r hour	3.900	856.00	3338.40	P&M-062 (A)
		Tandem Road Roller, Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.900	1641.00	6399.90	P&M-045
		d) Labour Mate	each	0.840	400.00	336.00	I -12
		Beldar	each	14.000	424.00		
		working with HMP, mechanical broom paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	l				
		Skilled Beldar (for floor rubbing etc. for checking line & levels Other Costs) each	5.000	508.00	2540.00	L-15
		e) GST (multiplying factor 0.2016	i) on (a+l	o+c+d)		310985.24	
		f) Overhead charges @ 10 % on	a+b+c+c	l+e)		185357.07	
		g) Contractor's profit @ 10 % on	(a+b+c+c	l+e+f)		203892.78	
		h) Cess @ 1% on (a+b+c+d+e+f+g	3)			22428.21	
		Cost for 191 cum(450 Tonne)				2265248.80	
		Cost per cum (Per Tonne).				11859.94	
					Say	11859.90	

5.30 16.57.4

Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.

(a) 440/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.

Details of cost for 191 cum (450 tonnes)

a) Material

Modified Bitumen Refinary produced tonne 24.750 35116.00 869121.00 M-078 CRMB - 60, (B)

'@5.50% (percentage by weight of

total mix)

Aggregate

Total weight of mix = 450 tonnes

Weight of bitumen = 24.75 tonnes

Weight of aggregate = 450 -24.75 =

425.25 tonnes

Taking density of aggregate =

1.5 tonne/cum

Volume of aggregate =425.25/1.5 =

283.50cum

Grading - II/19 mm (Nominal Size)

13.2 - 10mm size = 30% of 283.50 =

85.05 cum

10 - 5mm size = 25% of 283.50 =

70.88 cum

5mm and below = 42% of 283.50 =

119.07 cum

Stone Aggregate (Single size): cum 42.750 1820.00 77805.00 M-052

12.5 mm nominal size (Qty = 85.5 * 50 / 100)

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

			BASES AND SURFACE	COUNCES (BITCHINGOO)			·	1
SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Stone Aggregate (Single size) :	cum	42.750	1800.00	76950.00	M-051
			10 mm nominal size					
			(Qty = 85.5 * 50 /100)					14.054
			Stone Aggregate (Single size) :	cum	35.440	1800.00	63792.00	M-051
			10 mm nominal size					
			(Qty = 70.88 * 50 /100)		05.440	4000.00	40070.00	M OFO
			Stone Aggregate (Single size) :	cum	35.440	1300.00	46072.00	IVI-UJU
			06 mm nominal size (Qty = 70.88 * 50 /100)					
			Stone chippings/ screenings	cum	113.400	1500.00	170100.00	M-041
			4.75 mm nominal size	Cum	113.400	1300.00	170100.00	•
			(Qty = 283.5 * 40 /100)					
			Dry hydrated lime (factory made)	quintal	127.600	300.00	38280.00	M-200
			b) Transport	•				
			Carriage of Bitumen	tonne	24.750	0.00	0.00	
			Carriage of Stone aggregate below 40	cum	275.000	0.00	0.00	
			mm nominal size					
			Lime Filler @ 2% (percentage by weigh	it of aggr	egate)			
			Carriage of Lime	cum	9.890	0.00	0.00	
			(consitering density of lime as 1.29 T					
			per cum) V = 12.758/1.29 = 9.89 cum					
			Tipper 10 tonne capacity (Taken 10	tonne/	4,500.000	0.00	0.00	
			km average lead) $450 \times 10 = 4500$	km				
			tonne Km Tipper -5 Cum					
			Add 10 per cent of cost of carriage to		10 per cent		0.00	
			cover cost of loading and unloading		of cost of			
			\		carriage			
			c) MACHINERY/ HIRE CHARGES:	l	0.000	40474.00	40.440.00	D 9 M 005
			Hot mix Plant -120 TPH capacity	hour	3.000	16471.00	49413.00	
			Hot mix Plant 100 TPH Capacity	hour	3.000	13681.00	41043.00	P&M-096
			Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.000	3847.00	23082.00	P&M-034
			Generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
			Front end loader 1 cum bucket	hour	6.000	1838.00	11028.00	P&M-017
			capacity (incl POL)					
			Smooth Wheeled Roller 8 to 10 tonne	hour	3.900	783.00	3053.70	P&M-044
		,	for initial break down rolling.(6*0.65)					
		,	\(\frac{1}{2} \rightarrow \cdot \frac{1}{2} \rightarrow \frac{1}{2} \rightarro	l	2.000	050.00	2222 40	D 0 M 0 C O
			Vibratory roller 8 to 10 tonne for	hour	3.900	856.00	3338.40	P&M-062 (A)
			intermediate rolling.(6*0.65) Tandem Road Roller,	hour	3.900	1641.00	6300 00	P&M-045
			Finish rolling with 6-8 tonnes smooth	Houi	3.900	1041.00	0399.90	
			wheeled tandem roller.(6*0.65)					
			d) Labour					
			Mate	each	0.840	551.00	462.84	L-12
			Beldar	each	14.000	424.00		
		,	working with HMP, mechanical broom,	paver,				
			roller, asphalt cutter & assistance for se					
			out lines, levels and layout of construct	ion				
			Olellad Daldan (f. f		F 000	F00.00	0510.55	1 45
			Skilled Beldar (for floor rubbing etc.)	each	5.000	508.00	2540.00	L-15
			for checking line & levels Other Costs					
				on (ath	7+C+4/		301460.71	
			e) GST (multiplying factor 0.2016)f) Overhead charges @ 10 % on (a				179680.16	
			g) Contractor's profit @ 10 % on (a				197648.17	
			h) Cess @ 1% on (a+b+c+d+e+f+g		,		21741.30	
			Cost for 191 cum(450 Tonne)				2195871.18	
			Cost per cum (Per Tonne).				11496.71	
						Say	11496.70	

Chapter - 6

CEMENT CONCRETE PAVEMENT

Preamble:

- 1 High capacity batch mix plants of 75 cum/hour (effective output) has been considered in the rate analysis of cement concrete pavement works.
- While tippers have been provided for transportation of dry lean cement concrete and rolled cement concrete, transit truck mixers have been considered for the cement concrete pavement.
- 3 Super plasticizer admixture has been provided to improve workability with reduced water cement ratio.
- 4 Cement 43 grade has been catered for the cement concrete pavement i.e., for pavement quality concrete to get higher strength. However, for dry lean concrete, cement of 33 grade may be preferred.
- While a slip form paver has been catered for the top layer of concrete pavement, a mechanical paver has been provided for dry lead and roller cement concrete.
- 6 Materials provided in the rate analysis are for estimating prupose. Exact quantity of materials be determined for the job mix formula.

CHAPTER- 6 CEMENT CONCRETE PAVEMENTS

ſ	Sr	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
- 1	_	MoRTH						Input ref.
-	No	Spec.						

6.1 601 Dry Lean Cement Concrete Sub- base

Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.

Unit = cum

Taking output = 450 cum (990 tonne)

raking output – 450 cum (990 tonne)					
a) Labour					
Mate	day	1.120	551.00	617.12	L-12
Mazdoor skilled	day	6.000	508.00	3048.00	L-15
Mazdoor	day	22.000	424.00	9328.00	L-13
b) Machinery					5011015
Front end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
Cement concrete batch mix plant @ 75 cum per hour	hour	6.000	5170.00	31020.00	P&M-068
Electric generator 100 KVA	hour	6.000	938.00	5628.00	P&M-080
Paver with electronic sensor	hour	6.000	3847.00	23082.00	P&M-034
Vibratory roller 8-10 t capacity	hour	8.000	969.00	7752.00	P&M-059
Water tanker6 KL capacity	hour	8.000	724.00	5792.00	P&M-060
Tipper	tonne.k m	990 x L	18.00	0.00	Lead =0 km & P&M-058
Add 10 per cent of cost of carriage to cover cost of loading and unloading c) Material				0.00	
Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table 600-1 @ 0.90 cum/cum of concrete conforming to clause 602.2.4.	cum	405.000	1870.00	757350.00	M-052 and M-054
Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	203.000	650.00	131950.00	M-004
Cement @ 150 kg/cum of concrete	tonne	67.500	9100.00	614250.00	M-081
Cost of water	KL	48.000	71.00	3408.00	M-189
d) GST (multiplying factor 0.2016) on	(a+b+c)			323417.43	
e) Overhead charges @ 10 % on (a+b+	+c+d)			192767.06	
f) Contractor's profit @ 10 % on (a+b-	+c+d+e)			212043.76	
g) Cess @ 1% on (a+b+c+d+e+f)	,			23324.81	
Cost for 205 cum = a+b+c+d+e+f+g				2355806.18	
Rate per cum = $(a+b+c+d+e+f+g)/450$				5235.12	
			say	<u>5235.00</u>	

Note Quantity provided for aggregate is for estimating purpose. Exact quantity shall be as per mix design.

6.2 602 Cement Concrete Pavement

Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, for M40 Grade having minimum 28 days flexural strength of 4.5 Mpa, using approved admixtures, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing.

CHAPTER- 6 CEMENT CONCRETE PAVEMENTS

Ref. to MoRTH

Spec.

Sr No

Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
Unit = cum Taking output = 1050 cum (2415 tonne)					
a) Labour					
Mate	day	2.000	551.00	1102.00	L-12
Mazdoor skilled	day	15.000	508.00	7620.00	L-15
Mazdoor	day	35.000	424.00	14840.00	L-13
b) Machinery Road Sweeper @ 1250 sqm per hour	hour	2.800	473.00	1324.40	P&M-031
Front end loader 1 cum bucket capacity	hour	18.000	1838.00	33084.00	P&M-017
Cement concrete batch mix plant @ 175	hour	6.000	3770.00	22620.00	P&M-067
cum per hour (effective output) Electric generator 250 KVA	hour	6.000	1154.00	6924.00	P&M-081
Slip form paver with electronic sensor	hour	6.000	3690.00	22140.00	P&M-006
Water tanker6 KL capacity	hour	36.000	724.00	26064.00	P&M-060
Transit truck agitator 5 cum capacity.	tonne.k	2415xL	18.00	0.00	Lead =0
Transit track agreetor o cam capacity.	m	ZHIOKE	10.00	0.00	km & P&M-
Add 10 per cent of cost of carriage to	,			0.00	058
cover cost of loading and unloading				0.00	
Concrete joint cutting machine .	hour	12.000	143.00	1716.00	P&M-083
Texturing machine .	hour	12.000	301.00	3612.00	P&M-088
c) Material					
Crushed stone coarse aggregates of 25mm and 12.5mm nominal size @ 0.90 cum/cum of concrete conforming to clause 602.2.4.	cum	945.000	1870.00	1767150.00	M-052 and M-054
Sand as per IS: 383 and conforming to clause 602.2.4 @ 0.45 cum/cum of concrete	cum	473.000	650.00	307450.00	M-004
Cement 43 grade @ 400 kg/cum of concrete	tonne	414.000	9100.00	3767400.00	M-081
32 mm mild steel dowel bars of grade S 240	tonne	9.450	67000.00	633150.00	M-126
16 mm deformed steel tie bars of grade S 415	tonne	1.170	67000.00	78390.00	M-082
Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	3675.000	32.00	117600.00	M-164
Pre moulded Joint filler, 25 mm thick for expansion joint.	sqm	16.330	950.00	15513.50	M-141
Joint sealant	kg	875.000	340.00	297500.00	M-120 M-097
Sealant primer Plastic sheath,1.25 mm thick for dowel	kg sqm	116.670 46.670	281.00 2.00	32784.27 93.34	M-138
bars	Sqiii	40.070	2.00	30.04	
Curing compound	liter	1850.000	59.00	109150.00	M-090
Super plastisizer admixture IS marked as per 9103-1999 @ 0.5 per cent by weight of cement	kg	2070.000	64.00	132480.00	M-180
Cost of water	KL	216.000	71.00	15336.00	M-189
Add 1 per cent of material for miscellaneous materials like tarpauline, cloth, metal cap, cotton / compressible spocradle for dowel bars, work bridges for approach concrete surface without walking cutting blades and bites, minor equipme scabbling machine, threads, ropes, guid and any other unforeseen items.	cost of Hessian onge and men to g over it, ents like			72739.97	
d) GST (multiplying factor 0.2016) on e) Overhead charges @ 10 % on (a+b	-			1509537.15 899732.06	

				CHAPTE CEMENT CONCRET		ENTS			
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		l .	f)	Contractor's profit @ 10 % on (a+b	+c+d+e)			989705.27	
			g)	Cess @ 1% on (a+b+c+d+e+f)				108867.58	
			Cost	for 1050cum = a+b+c+d+e+f+g				10995625.54	
			Rate	per cum = (a+b+c+d+e+f+g)/1050				10472.02	
							say	<u>10472.00</u>	
		Note	estim be as	quantities for cement, coarse egate and fine aggregates are for atting only .The exact quantities will a per mix design.					
6.3	603			ed Cement Concrete Base					
			confo minir aggre at op sens the d	struction of rolled cement concrete orming to IS:383, the size of coamum, aggregate cement ratio15:1 a legate gradation to be as per table 6 timum moisture content, transportior, compacting with 8-10 tonnes selesigned flexural strength, finishing = cum	rse agg nd minir 600-4 afte ng to site smooth	regate not num cemei er blending e, laying wi wheeled vi	exceeding nt content o , mixing in th a paver v	g 25 mm with of 200 kg/cum, batching plant with electronic	! ! !
				ng output = 450 cum (990 tonne)					
			,	Labour		4.000	554.00	004.00	L-12
			Mate	loor skilled	day day	1.200 7.000	551.00 508.00	661.20 3556.00	L-12 L-15
			Mazd		day	23.000	424.00	9752.00	L-13
			b)	Machinery	day	20.000	424.00	3732.00	
			,	end loader 1 cum bucket capacity	hour	6.000	1838.00	11028.00	P&M-017
			Ceme	ent concrete batch mix plant @ 75	hour	6.000	5170.00	31020.00	P&M-068
				per hour		0.000	000.00	5000.00	D0M 000
				ric generator 100 KVA r with electronic sensor @ 75 cum/hr.	hour hour	6.000 6.000	938.00 3847.00	5628.00 23082.00	P&M-080 P&M-034
			rave	with electronic sensor @ 75 cum/iii.	Houl	0.000	3047.00	23062.00	
			Vibra	tory roller 8-10 t capacity	hour	8.000	969.00	7752.00	P&M-059
			Wate	r tanker with 5 km lead 6 KL capacity	hour	8.000	724.00	5792.00	P&M-060
			Tippe	er	tonne.k m	990xL	18.00	0.00	Lead =0 km & P&M- 058
				10 per cent of cost of carriage to cost of loading and unloading Material				0.00	
			Crush 25mr cum/c	ned stone coarse aggregates of m and 12.5mm nominal size @ 0.90 cum of concrete conforming to clause	cum	405.000	1870.00	757350.00	M-052 and M-054
				as per IS: 383 and conforming to e 602.2.3 @ 0.45 cum/cum of	cum	203.000	650.00	131950.00	M-004
				ent @ 200 kg/cum of concrete	tonne	90.000	9100.00	819000.00	M-081
				of water	KL	48.000	71.00	3408.00	M-189
			d)	GST (multiplying factor 0.2016) on	(a+b+c)			364891.81	
			e)	Overhead charges @ 10 % on (a+b-				217487.10	
			f)	Contractor's profit @ 10 % on (a+b	-			239235.81	
			g)	Cess @ 1% on (a+b+c+d+e+f)	,			26315.94	
				for 450cum = a+b+c+d+e+f+g				2657909.86	
				per cum = (a+b+c+d+e+f+g)/450				5906.47	
							say	<u>5906.00</u>	

Note The quantities for cement, coarse aggregate and fine aggregates are for estimating only .The exact quantities will be as per mix design.

Chapter-8

TRAFFIC SIGNS, MARKINGS AND OTHER APPURTENANCES

Preamble:

- 1 Rate analysis for fencing has been done for two different heights, i.e., 1.20 m and 1.80 m. Any of these two can be adopted depending upon a particular situation and design.
- 2 Rate analysis for fencing provides for three types as under:
 - a) Barbed wire fencing
 - b) Welded steel wire fencing with mesh size of 75X25 mm
 - c) Welded steel wire fabric with mesh size of 75X50 mm
- 3 Kerbstone laying and road marking has been provided for laying by mechanical means.
- 4 Back filling of foundatin of boudary pillars has been proposed with stone spalls, tightly packed and compacted.
- The item pertaining to road traffic signals has not been analysed as this is a specialised work and rates can be obtained from firms having specialisation for design and installation of this work.
- For metal beam crash barrier, a 'W' shaped beam of size 311 x 83 mm flange width made with structural steel corrugated plate 3 mm thick and having a length of 4.5 m has been provided, over a channel post of 150 x 75 x 5 mm with a spacer of channel section 150 x 75 x 5 mm, 330 mm long.
- 7 Printing of letters and signs is required to be measured and paid separately. A separate rate for lettering has been prepared and included in this chapter for this purpose.
- 8 Two support have been provided for direction and place identification signs where size is more than 0.9 sqm. Only one support is provided for size upto 0.9 sqm.
- 9 The traffic signs proposed are of retro-reflectorised type made of encapsulated lens type reflective sheeting fixed over almunium sheeting as per Clause 801.3 and installation.
- 10 The size, location of traffic signs shall be as per IRC:67.
- 11 The rates for rigid, semi-regid and flexible crash barriershave been included.
- 12 Provision has been made for a crance for installation of overhead signs.
- 13 Separate rates have been derived for Tubular steel railing with RCC posts and MS steel posts.
- 14 The organisation and financial aspects are required to be finalised in consultation with administrative and traffic authorities.

- 15 The rate for message display board for gantry mounted variable message sign is required to be ascertained from the market, this being a commercially produced item by specialised firms.
- 16 The rate analysis for traffic impact attenuators at abutments and piers have been inlcuded.
- 17 In the case of road signs and direction boards the depth of foundation and quantity of cement concrete provided in the rate analysis are indicative. These may be suitably increased in areas of higher wind velocities like coastal areas.

18 Ducts for Utility Services Along and Across the Expressway/Highways :

The running metre cost of duct along the road including inspection chambers (where applicable) or across the road will depend upon the approved design. The various item involved are earthen work, plain cement concrete, brick stone masonry, reinforcement cement concrete, form work, steel reinforcement, laying of pipe line (where duct is of pipe) and cast iron/RCC cover for the inspection chamber. The rate for these items are available under respective clauses which can be applied and running metre cost of duct worked out as per the approved design and drawing for particular situations. In case cast iron cover for the inspection chamber, the rate can be ascertained from the market for the size provided in the design and approved drawings.

19 Noise Barriers:

Noise barrier can be provided in the form of a brick wall of a suitable height as per the site requirement and approved design. The items involved for the construction of this barrier like earthwork, brick masonry, plain cement concrete, etc. are available in the Data Book, which can be applied to arrive at the cost of noise barrier based on the design adopted.

Alternatively, wherever space permits, cluster of trees, shrubs and plants can be grown by the road side 6 m away from the edge of the roadway. This will intercept the annoying sound waves and fumes from road vehicles.

CHAPTER-8

TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH	· ·		-			Input ref.
	/ DSR						'
	Spec.						

8.1 408 Cast in Situ Cement Concrete M20 Kerb

Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408

Unit = Running metre

Taking output = 360 metre

A. Using Concrete Mixer

Cement Concrete

В

Cement Concrete											
Cement concrete of grade M20 = 12.60 cum											
Cement concrete of grade M10 for base= 1	1.61 cum										
Total Concrete = 24.21 cu.m											
a) Labour											
Mate	day	0.720	551.00	396.72	L-12						
Mason	day	2.000	593.00	1186.00	L-11						
Mazdoor	day	16.000	424.00	6784.00	L-13						
b) Machinery											
Kerb casting machine @ 60 metres/hour	hour	6.000	407.00	2442.00	P&M-029						
Concrete mixer 0.48/0.28 cum capacity	hour	12.000	291.00	3492.00	P&M-009						
Water tanker6 KL capacity c) Material	hour	5.000	724.00	3620.00	P&M-060						
Crushed stone aggregate 20 mm nominal size 59 per cent	cum	21.790	1900.00	41401.00	M-053						
Coarse sand 30 per cent	cum	10.900	650.00	7085.00	M-005						
Cement 11 per cent	tonne	5.700	9100.00	51870.00	M-081						
Cost of water	KL	30.000	71.00	2130.00	M-189						
d) GST (multiplying factor 0.2016) on	(a+b+c)			24273.99							
e) Overhead charges @ 10 % on (a+b-	+c+d)			14468.07							
f) Contractor's profit @ 10 % on (a+b	+c+d+e)			15914.88							
g) Cess @ 1% on (a+b+c+d+e+f)				1750.64							
Cost for 360 meter = a+b+c+d+e+f+g				176814.30							
Rate per metre = (a+b+c+d+e+f+g)/360				491.15							
· · · · · · · · · · · · · · · · · · ·			say	<u>491.00</u>							
Using Concrete Batching and Mixing Pla	ant		_								
Cement Concrete											
Cement concrete of grade M20 = 12.60 cur	m										
Cement concrete of grade M10 for base =	11.61 cum										
Total Concrete = 24.21 cu.m											
a) Labour											
Mate	day	0.120	551.00	66.12	L-12						
Mason	day	1.000	593.00	593.00	L-11						
Mazdoor	day	2.000	424.00	848.00	L-13						
b) Machinery		0.000	407.00	0.440.00	D						

hour

6.000

407.00

2442.00 P&M-029

Kerb casting machine @ 60 metres/hour

CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			crete batching and mixing plant @ cum/hr.	hour	1.600	3154.00	5046.40	P&M-003
		Wat	er tanker6 KL capacity	hour	5.000	724.00	3620.00	P&M-060
		Tipp	er 5.5 cum capacity	hour	6.000	916.00	5496.00	P&M-048
		c)	Material					
			shed stone aggregate 20 mm iinal size 59 per cent	cum	21.790	1900.00	41401.00	M-053
		Coa	rse sand 30 per cent	cum	10.900	650.00	7085.00	M-004
		Cen	nent 11 per cent	tonne	5.700	9100.00	51870.00	M-081
		Cos	t of water	KL	30.000	71.00	2130.00	M-189
		d)	GST (multiplying factor 0.2016) o	n (a+b+c)			24312.46	
		e)	Overhead charges @ 10 % on (a+	b+c+d)			14491.00	
		f)	Contractor's profit @ 10 % on (a-	b+c+d+e)		15940.10	
		g)	Cess @ 1% on (a+b+c+d+e+f)				1753.41	
		Cos	t for 360 meter = a+b+c+d+e+f+g				177094.49	
		Rate	e per metre = (a+b+c+d+e+f+g)/360				491.93	
						say	<u>492.00</u>	

408 Cast in Situ Cement Concrete M 20 Kerb with Channel 8.2

Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCCM20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408

A Using Concrete Mixer

Unit = Running metre

Taking output = 300 metre length

Cement Concrete

Cement concrete of grade M20= 17.48 cum

Cement concrete of grade M10 for base = 23.18 cum

Total Concrete = 40.66 cum					
a) Labour					
Mate	day	0.720	551.00	396.72	L-12
Mason	day	2.000	593.00	1186.00	L-11
Mazdoor	day	16.000	424.00	6784.00	L-13
b) Machinery					
Kerb casting machine @ 50 metres/hour	hour	6.000	407.00	2442.00	P&M-029
for laying kerb and channel					
Concrete mixer 0.48/0.28	hour	16.000	291.00	4656.00	P&M-009
Water tanker6 KL capacity	hour	6.000	724.00	4344.00	P&M-060
c) Material					
Crushed stone aggregate 20 mm	cum	36.590	1900.00	69521.00	M-053
nominal size 60 per cent					
Coarse sand 30 per cent	cum	18.300	650.00	11895.00	M-005
Cement 10 per cent	tonne	9.010	9100.00	81991.00	M-081
Cost of water	KL	36.000	71.00	2556.00	M-189
d) GST (multiplying factor 0.2016) on	(a+b+c)			37451.58	
e) Overhead charges @ 10 % on (a+b	+c+d)			22322.33	
f) Contractor's profit @ 10 % on (a+b			24554.56		
g) Cess @ 1% on (a+b+c+d+e+f)				2701.00	

CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

				TRAFFIC SIGNS, MARKINGS & U					
Sr No	Ref. to MoRTH / DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	орсс.		Cost	t for 300 meter = a+b+c+d+e+f+g				272801.19	
				e per metre = (a+b+c+d+e+f+g)/300				909.34	
			ivate	s per metre – (a · b · c · a · e · i · g)/300					
8.2		В	Usin	ng Concrete Batching and Mixing P	lant		say	909.00	
				= Running metre					
			Taki	ing output = 300 metre length					
				nent Concrete nent concrete of grade M20= 17.48 cu	ım				
				nent concrete of grade M10 for base .18 cum					
			Tota	l Concrete = 40.66 cum					
			a)	Labour					
			Mate		day	0.120	551.00	66.12	L-12
			Mas	on	day	1.000	593.00	593.00	
			Maz	door	day	2.000	424.00	848.00	L-13
			b)	Machinery		0.000	407.00	0440.00	DOM OOO
				o casting machine @ 50 metres/hour aying kerb and channel	hour	6.000	407.00	2442.00	P&M-029
				crete batching and mixing plant @ um/hr.	hour	2.700	3154.00	8515.80	P&M-003
			Wate	er tanker6 KL capacity	hour	6.000	724.00	4344.00	P&M-060
				er of 5.5 cum capacity	hour	6.000	916.00	5496.00	P&M-048
				Material shed stone aggregate 20 mm inal size 60 per cent	cum	36.590	1900.00	69521.00	M-053
				rse sand 30 per cent	cum	18.300	650.00	11895.00	M-004
				nent 10 per cent	tonne	9.010	9100.00	81991.00	
				t of water	KL	36.000	71.00	2556.00	
			d)	GST (multiplying factor 0.2016) or	n (a+b+c			37954.81	
			e)	Overhead charges @ 10 % on (a+	b+c+d)			22622.27	
			f)	Contractor's profit @ 10 % on (a+		.)		24884.50	
			g)	Cess @ 1% on (a+b+c+d+e+f)		,		2737.30	
			•	,					
				t for 300 meter = a+b+c+d+e+f+g e per metre = (a+b+c+d+e+f+g)/300				276466.80 921.56	
			Nate	per metre = (a+b+c+d+e+1+g)/300					
8.3	801		Prin	ting New Letter and Figures of any	Shade		say	<u>922.00</u>	
0.0			Prin	ting new letter and figures of any other approved colour to give an e	shade		ic enamel pa	aint black or	-
		(i)		di (Matras commas and the like not nted as half)	to be me	easured and p	paid for Half	letter shall be	•
				ails for 100 letters of 16 cm height i	.e. 1600 (ст			
				= per cm height per letter					
			a)	Labour		0.400	554.00	00.40	1 40
			Mate		day	0.120	551.00	66.12	
			Pain		day		593.00	1186.00	
				door	day	1.000	424.00	424.00	L-13
			b) Pain	Material	Liter	0.700	450.00	315.00	M_131
					Litre	0.700	450.00		101-101
			c)	GST (multiplying factor 0.2016) or				401.41	
			d)	Overhead charges @ 10 % on (a+	-			239.25	
			e)	Contractor's profit @ 10 % on (a+	b+c+d)			263.18	
			f)	Cess @ 1% on (a+b+c+d+e)				28.95	

CHAPTER-8
TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to MoRTH / DSR		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.							
			Cost for 1600 cm = a+b+c+d+e+f				2923.91	
			Rate per cm height per letter = (a+b+c+	+ d+e+f)/1	1600		1.83	
						say	<u>1.80</u>	
8.3		(ii)	English and Roman					
			Hyphens and the like not to be measured	and paid	for			
			Detail for 100 letters of 16 cm height. i.e.1	1600 cm				
			Unit = per cm height per letter					
			a) Labour Mate	day	0.070	551.00	38.57	I -12
			Painter Ist class			593.00	741.25	
				day				
			Mazdoor	day	0.500	424.00	212.00	L-13
			b) Material Paint	Litre	0.500	450.00	225.00	M_131
			c) GST (multiplying factor 0.2016) o		0.300	430.00	245.31	WI-101
			, , , , , , , , , , , , , , , , , , , ,				146.21	
			,	•			160.83	
			e) Contractor's profit @ 10 % on (a+	D+C+a)				
			f) Cess @ 1% on (a+b+c+d+e)				17.69	
			Cost for 1600 cm = a+b+c+d+e+f				1786.86	
			Rate per cm height per letter = (a+b+c	+d+e+f)/1	1600		1.12	
						say	<u>1.10</u>	

8.5 Board. Direction and Place Identification Signs upto 0.9 sqm Size Board.

Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawing

Unit = sqm Taking output = 0.9 sqm					
i) Excavation for foundation	cum	0.220	524.00	115.28	Item No. 3.13
ii) Cement concrete M15 grade	cum	0.120	9371.00	1124.52	Item 12.8 (A)
iii) Painting angle iron post two coats	sqm	0.430	141.00	60.63	Item 8.9
(Including GST,OH,CP &Cess of i,ii & iii)					
a) Labour (For fixing at site)					
Mate	day	0.010	551.00	5.51	L-12
Mazdoor	day	0.200	424.00	84.80	L-13
b) Material	•				
Mild steel angle iron 75 mm x 75 mm x 6 mm,2.85 metres long	kg	19.000	50.73	963.87	M-179 /1000
Aluminium sheeting fixed with encapsulated lens type reflective sheeting of size 0.9 sqm	sqm	0.900	170.00	153.00	M-061
Add 2 per cent of cost of materials for drilling holes, nuts, bolts, fabrication etc.					
c) Machinery					
Tractor-trolley	hour	0.020	530.00	10.60	P&M-053
d) GST (multiplying factor 0.2016) on	(a+b+c)			245.50	
e) Overhead charges @ 10 % on (a+b+	-c+d)			146.33	

CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			f) Contractor's profit @ 10 % on (a+k	o+c+d+e)		160.96	
			g) Cess @ 1% on (a+b+c+d+e+f)				17.71	
	Cost for 0.9 sqm =i+ii+iii+ a+b+c+d+e+f+g						3088.71	
			Rate per sqm (for sign having area upto (l+ii+iii+a+b+c+d+e+f+g)/0.90	o 0.9 sqr	n) =		3431.90	
						say	<u>3432.00</u>	
			 Lettering and arrow marks on sign l separately as per actual requirement. F have been analysed separately 					
			ii) Rate for excavation, cement concrete N	Л- 15 and	painting may			

8.6 Direction and Place Identification Signs with size more than 0.9 sqm size Board.

Providing and erecting direction and place identification retro- reflectorised sign as per IRC :67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm, 2 Nos. firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing

	-	-	_	_	~	-
u	П	ıſ	-	s	u	ıΠ
_	• • • •			_	7	• • • •

be taken from respective chapters

Taking output = 1.50 sqm					
i) Excavation for foundation	cum	0.430	524.00	225.32	Item No. 3.13
ii) Cement concrete M15 grade	cum	0.240	9371.00	2249.04	Item 12.8 (A)
iii) Painting angle iron post 2 coats	sqm	0.860	141.00	121.26	Item 8.9
(Including GST,OH,CP &Cess of i,ii & iii))				
a) Labour (For fixing at site)					
Mate	day	0.010	551.00	5.51	L-12
Mazdoor	day	0.300	424.00	127.20	L-13
b) Material					
Mild steel angle iron 75 mm x 75 mm x 6 mm, 2.85 metres long, 2 nos	kg	38.000	50.73	1927.74	M-179 /1000
Aluminium sheeting fixed with encapsulated lens type reflective sheeting Add 2 per cent of cost of materials for drilling holes, nuts, bolts, fabrication etc.	sqm	1.500	170.00	255.00	M-061
c) Machinery					
Tractor-trolley	hour	0.020	530.00	10.60	P&M-053
d) GST (multiplying factor 0.2016) on	(a+b+c)			468.93	
e) Overhead charges @ 10 % on (a+b	+c+d)			279.50	
f) Contractor's profit @ 10 % on (a+b	, +c+d+e)			307.45	
g) Cess @ 1% on (a+b+c+d+e+f)	,			33.82	
Cost for 1.5 sqm = + + + + a+b+c+d+e+ +				6011.37	
Rate per sqm (for sign having area mor	o than C O	cam) =		6679.30	
i+ii+iii+a+b+c+d+e+f+g)/1.50	e iliali U.S	əqiii) –		0079.30	
O,			say	<u>6679.00</u>	

Note i) Lettering and arrow marks on sign board to be provided separately as per actual requirement. Rates for these items have been analysed separately

ii) Rate for excavation, cement concrete M-15 and painting may be taken from respective chapters

CHAPTER-8

TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

	Sr No	Ref. to MoRTH / DSR Spec.	Description	Unit	Quantity	Rate in Rs	 Remarks/ Input ref.
_		902	D : (: T O (N O (

8.8 Painting Two Coats on New Concrete Surfaces

Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces

Unit = sqm

Taking output = 40 sqm

raking output – 40 3qm					
a) Labour					
Mate	day	0.120	551.00	66.12	L-12
Painter	day	2.000	593.00	1186.00	L-18
Mazdoor	day	1.000	424.00	424.00	L-13
b) Material Paint conforming to requirement of	Litre	6.000	450.00	2700.00	M-132
clause 803.3. Add for scaffolding @ 1 per cent of labour cost where required				27.00	
Add @ 5 per cent cost of labour and materials to prepare the surface by filling minuts roughness on the surface and priming the surface before laying 2 coats				218.81	

c) GST (multiplying factor 0	0.2016) on (a+b)	931.78
d) Overhead charges @ 10	% on (a+b+c)	555.37
e) Contractor's profit @ 10	% on (a+b+c+d)	610.91
f) Cess @ 1% on (a+b+c+d-	+e)	67.20
Cost for 40 sqm = a+b+c+d+e+f		6787.19
Rate per sqm = $(a+b+c+d+e+f)$	/40	169.68
	say	<u>170.00</u>

8.9 803 Painting on Steel Surfaces

of painting.

Providing and applying two coats of ready mix paint of approved brand on steel surface after through cleaning of surface to give an even shade

Unit = sqm

Taking output = 10 sqm

Taking output = 10 sqm					
a) Labour Mate	day	0.030	551.00	16.53	L-12
Painter	day	0.450	593.00	266.85	
Mazdoor	day	0.250	424.00	106.00	L-13
b) Material					
Paint ready mixed approved brand. Add @ 1 per cent on cost of material for scaffolding	Litre	1.250	450.00	562.50 5.63	M-131
Add @ 5 per cent cost of labour and materials to prepare the surface by filling minuts roughness on the surface and priming the surface before laying 2 coats of painting.				47.59	
c) GST (multiplying factor 0.2016) on	(a+b)			202.63	
d) Overhead charges @ 10 % on (a+b-	+c)			120.77	
e) Contractor's profit @ 10 % on (a+b-	+c+d)			132.85	
f) Cess @ 1% on (a+b+c+d+e)				14.61	
Cost for 10 sqm = a+b+c+d+e+f				1475.96	
Rate per sqm= (a+b+c+d+e+f)/10				147.60	

<u>148.00</u>

say

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TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH	•					Input ref.
	/ DSR						
	Spec.						
- 40	002	5 1 41 10 4					

8.10 **Painting on Wood Surfaces**

> Providing and applying two coats of ready mix paint of approved brand on wood surface after thorough cleaning of surface to give an even shade

Unit = sqm

Taking output = 10 sqm

a) Labour					
Mate	day	0.030	551.00	16.53 L-12	
Painter	day	0.500	593.00	296.50 L-18	i
Mazdoor	day	0.200	424.00	84.80 L-13	i
b) Material					
Paint ready mixed of approved brand.	Litre	1.500	450.00	675.00 M-13	31
Add @ 1 per cent on cost of material for scaffolding				6.75	
Add @ 5 per cent cost of labour and materials to prepare the surface by filling minuts roughness on the surface and priming the surface before laying 2 coats of painting.				53.64	
c) GST (multiplying factor 0.2016) on	ı (a+b)			228.46	
d) Overhead charges @ 10 % on (a+b	o+c)			136.17	
e) Contractor's profit @ 10 % on (a+b	o+c+d)			149.79	
f) Cess @ 1% on (a+b+c+d+e)				16.48	
Cost for 10 sqm = a+b+c+d+e+f				1664.12	
Rate per sqm= (a+b+c+d+e+f)/10				166.41	
			say	<u>166.00</u>	

803 8.11 Painting Lines, Dashes, Arrows etc on Roads in Two Coats on New Work

> Painting lines, dashes, arrows etc on roads in two coats on new work with ready mixed road marking paint conforming to IS:164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control

(i) Over 10 cm in width

Unit = sqm

8.11

(ii)

Painter

Taking output = 10 sqm					
a) Labour					
Mate	day	0.090	551.00	49.59	L-12
Painter	day	0.550	593.00	326.15	L-18
Mazdoor	day	1.550	424.00	657.20	L-13
b) Material					
Road marking Paint as per IS :164	Litre	1.480	450.00	666.00	M-132
c) GST (multiplying factor 0.2016)	on (a+b)			342.51	
d) Overhead charges @ 10 % on (a	a+b+c)			204.15	
e) Contractor's profit @ 10 % on (a	a+b+c+d)			224.56	
f) Cess @ 1% on (a+b+c+d+e)				24.70	
Cost for 10 sqm = a+b+c+d+e+f				2494.86	
Rate per sqm= (a+b+c+d+e+f)/10				249.49	
			say	<u>249.00</u>	
Up to 10 cm in width					
Unit = sqm					
Taking output = 10 sqm					
a) Labour					
Mate	day	0.070	551.00	38.57	L-12

day

0.350

593.00

207.55 L-18

CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

				TRAFFIC SIGNS, MARKINGS & O	1111111111	אט אווי טוע	LITAITOLO		
Sr No	Ref. to MoRTH / DSR			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.		<u> </u>	da au	alas i	4.250	424.00	F70.40	I 13
			b)	door Material	day	1.350	424.00	572.40	L-13
			Roa	d marking paint	Litre	1.480	450.00	666.00	M-132
			c)	GST (multiplying factor 0.2016) or	n (a+b)			299.28	
			d)	Overhead charges @ 10 % on (a+	b+c)			178.38	
			e)	Contractor's profit @ 10 % on (a+	b+c+d)			196.22	
			f)	Cess @ 1% on (a+b+c+d+e)				21.58	
			Cos	t for 10 sqm = a+b+c+d+e+f				2179.98	
			Rate	e per sqm= (a+b+c+d+e+f)/10				218.00	
							say	<u>218.00</u>	
8.12	803		Pair	nting Lines, Dashes, Arrows etc on	Roads in	Two Coats	on Old Work		
		(i)	mixo clea and	nting lines, dashes, arrows etc on ed road marking paint conforming ning the surface of all dirt, dust a traffic control	to IS: 1	64 on bitum	inous surfac	ce, including	l
		(1)		er 10 cm in width e = sqm					
				ing output = 10 sqm					
				Labour					
			Mate		day	0.060	551.00	33.06	L-12
				ter lst class	day	0.300	593.00	177.90	
				door	day	1.250	424.00	530.00	
			b)	Material	auy	1.200	12 1.00	000.00	
			•	d marking paint	Litre	0.900	450.00	405.00	M-132
			c)	GST (multiplying factor 0.2016) or	n (a+b)			231.03	
			d)	Overhead charges @ 10 % on (a+	b+c)			137.70	
			e)	Contractor's profit @ 10 % on (a+	b+c+d)			151.47	
			f)	Cess @ 1% on (a+b+c+d+e)	-			16.66	
			Cos	t for 10 sqm = a+b+c+d+e+f				1682.82	
			Rate	e per sqm= (a+b+c+d+e+f)/10				168.28	
8.12		(ii)	l lm 4	o 40 am in width			say	<u>168.00</u>	
0.12		(")	•	o 10 cm in width					
				t = sqm ng output = 10 sqm					
			a)	Labour					
			Mate		day	0.070	551.00	38.57	L-12
				ter lst class	day	0.350	593.00	207.55	
				door	day	1.350	424.00	572.40	
			b)	Material					
			Roa	d marking Paint	Litre	0.900	450.00	405.00	M-132
			c)	GST (multiplying factor 0.2016) or	n (a+b)			246.66	
			d)	Overhead charges @ 10 % on (a+	b+c)			147.02	
			e)	Contractor's profit @ 10 % on (a+	b+c+d)			161.72	
			f)	Cess @ 1% on (a+b+c+d+e)				17.79	
				t for 10 sqm = a+b+c+d+e+f e per sqm= (a+b+c+d+e+f)/10			say	1796.71 179.67 <u>180.00</u>	
8.13	803			d Marking with Hot Applied Therm ds on Bituminous Surface	oplastic	Compound v	•		•
			Prov	viding and laying of hot applied the	ermoplas	tic compoun	d 2.5 mm th	ick including	1

Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Un	it = sqm			•		
		Tal	king output = 600 sqm					
		a)	Labour					
		Ma	te	day	0.030	551.00	16.53	L-12
		Ma	zdoor	day	0.750	424.00	318.00	L-13
		b)	Machinery					
		Ro	ad marking machine @ 60 sqm per	hour	10.000	128.00	1280.00	P&M-043
		hou			0.500	500.00	005.00	D0M 050
		l ra	actor-trolley	hour	0.500	530.00	265.00	P&M-053
		c)	Material					
		Hot	t applied thermoplastic compound	Litre	1500.000	209.00	313500.00	M-118
		Ref	flectorising glass beads	kg	150.000	243.00	36450.00	M-152
		d)	GST (multiplying factor 0.2016) of	on (a+b+c)			70928.83	
		e)	Overhead charges @ 10 % on (a-	+b+c+d)			42275.84	
		f)	Contractor's profit @ 10 % on (a-	+b+c+d+e)			46503.42	
		g)	Cess @ 1% on (a+b+c+d+e+f)				5115.38	
		Cos	st for 600 sqm = a+b+c+d+e+f+g				516653.00	
		Rat	te per sqm = a+b+c+d+e+f+g)/600				861.09	
						say	<u>861.00</u>	

Note 1. A sealing primer may be applied in advance on cement concrete pavement to ensure proper bonding. Any laitance and/or curing compound to be removed where paint is required to be applied on concrete surface.

2.Cost of painter is already included in hire charges of road marking machine.

8.14 804 Kilometre Stone

i)

j)

Reinforced cement concrete M15grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc

(i) 5th kilometre stone (precast)

· · · · · · · · · · · · · · · · · · ·					
Unit = Nos.					
Taking output = 6 Nos.					
a) M-15 grade of concrete	cum	2.350	9371.00	22021.85	Item 12.8 (A)
b) Steel reinforcement @ 5 kg per sqm	kg	22.080	120.32	2656.67	Item 13.6/1000
c) Excavation in soil for foundation	cum	1.680	524.00	880.32	Item No. 3.13
d) Painting two coats on concrete surface	sqm	9.850	162.00	1595.70	Item 8.8
e) Lettering on km post (average 30 letters of 10 cm height each)	per cm per letter	1800.000	1.10	1980.00	Item 8.3
(Including GST,OH,CP &Cess of a,b,c,c Transportation and fixing f) Labour	i & e)				
Mate	day	0.260	551.00	143.26	L-12
Mason	day	0.600	593.00	355.80	L-11
Mazdoor including loading/unloading	day	6.000	424.00	2544.00	L-13
g) Machinery Tractor-trolley	hour	6.000	530.00	3180.00	P&M-053
h) GST (multiplying factor 0.2016) or	n (f+g)			1254.57	

747.76

822.54

Overhead charges @ 10 % on (f+g+h)

Contractor's profit @ 10 % on (f+g+h+i)

CHAPTER-8
TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

O-N-	Dof to I		Description				0 4 i D-	[Damasilan/]
Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	орес.		k) Cess @ 1% on (f+g+h+i+j)				90.48	
			Cost for 6 Nos. 5th km stone = $a+b+c+d+$	e +f+a+h	n +i +i+k		38272.95	
			Rate for each 5th km stone = (a+b+c+d	J	•		6378.83	
			Nate for each still kill stolle - (a+b+c+u	re rirgr	11+1+j+k <i>)/</i> 0		0370.03	
						say	<u>6379.00</u>	
8.14		(ii)	Ordinary kilometer stone (precast)					
			Unit = Nos.					
			Taking output = 14 Nos.					
			a) M-15 grade of concrete	cum	3.770	9371.00	35328.67	Item 12.8
			h) Stool reinforcement @ E kg nor	ka	26.320	120.32	3166.82	(A) Item
			b) Steel reinforcement @ 5 kg per sqm	kg	20.320	120.32	3100.02	13.6/1000
			c) Excavation in soil for foundation	cum	2.770	524.00	1451.48	Item No
			c) Excavation in son for foundation	Cum	2.110	324.00	1431.40	3.13
			d) Painting two coats on concrete surface	sqm	11.410	162.00	1848.42	Item 8.8
			e) Lettering on km post (average 12 letters of 10 cm height each)	per cm per letter	1680.000	1.10	1848.00	Item 8.3
			(Including GST,OH,CP &Cess of a,b,c,c	1 & e)				
			Transportation and fixing					
			f) Labour					
			Mate	day	0.320	551.00	176.32	
			Mason	day	1.000	593.00	593.00	
			Mazdoor	day	7.000	424.00	2968.00	L-13
			g) Machinery Tractor-trolley	hour	6.000	530.00	3180 00	P&M-053
			h) GST (multiplying factor 0.2016) or	n (f+g)			1394.53	
			i) Overhead charges @ 10 % on (f+g				831.19	
			j) Contractor's profit @ 10 % on (f+g	-			914.30	
				*11*1)				
			k) Cess @ 1% on (f+g+h+i+j)				100.57	
			Cost for 14 Nos. ordinary km stone = (a+b+d+e+f+g+h+i+j+k))+ C			53801.30	
			Rate for each ordinary km stone = (a+b+d+e+f+g+h+i+j+k)/14	+c			3842.95	
		_				say	<u>3843.00</u>	
8.14		(iii)	Hectometer stone (precast)					
			Unit = Nos.					
			Taking output = 33 Nos.		4.500	0074.00	44000 40	Itam 40.0
			a) M-15 grade of concrete	cum	1.580	9371.00	14806.18	(A)
			b) Steel reinforcement @ 5 kg per sqm	kg	66.000	120.32	7941.12	Item 13.6/1000
			c) Excavation in soil for foundation	cum	1.390	524.00	728.36	Item No. 3.13
			d) Painting two coats on concrete surface	sqm	6.270	162.00	1015.74	Item 8.8
			e) Lettering on km post (average 1 letter of 10 cm height each)	per cm per letter	330.000	1.10	363.00	Item 8.3
			(Including GST,OH,CP &Cess of a,b,c,d & e)					

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Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Trar	nsportation and fixing	•				•
		f)	Labour					
		Mate	е	day	0.340	551.00	187.34	L-12
		Mas	on	day	1.500	593.00	889.50	L-11
		Maz	door	day	7.000	424.00	2968.00	L-13
		g) Trac	Machinery ctor-trolley	hour	6.000	530.00	3180.00	P&M-053
		h)	GST (multiplying factor 0.2016) o	n (f+g)			1456.53	
		i)	Overhead charges @ 10 % on (f+g)+h)			868.14	
		j)	Contractor's profit @ 10 % on (f+g	ı+h+i)			954.95	
		k)	Cess @ 1% on (f+g+h+i+j)				105.04	
			t for 33 Nos. Hectometer stone = 0 +c +d+e+f+ g+h+i+j+k)				35463.90	
			e for each Hectometer stone = b+c+d+e+f+ g+h+i+j+k) 33				1074.66	
						say	<u>1075.00</u>	
		Note The	rate for excavation, cement concrete	e, steel re	einforcement,			

Note The rate for excavation, cement concrete, steel reinforcement painting and lettering may be taken from respective chapters.

8.16 806 Boundary pillar

Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering but excluding painting.

Unit = Each

Taking output = 57 Nos.

lak	ing output = 57 Nos.					
a) sto	M-15 grade of the boundary ne	cum	1.250	9371.00	11713.75	Item 12.8 (A)
b)	Steel reinforcement	kg	79.800	120.32	9601.54	Item 13.6/1000
c)	Excavation in soil	cum	10.720	524.00	5617.28	Item No. 3.13
d)	Lettering, each 10 cm high	per letter per cm high	2280.000	1.10	2508.00	Item 8.3
(Inc	cluding GST,OH,CP &Cess of a,b	,c & d)				
Tra e)	nsportation and fixing Labour					
Mat	te	day	0.570	551.00	314.07	L-12
Ma	zdoor	day	14 250	424.00	6042.00	I -13

Tra e)	nsportation and fixing Labour					
Mat	e	day	0.570	551.00	314.07	L-12
Maz	door	day	14.250	424.00	6042.00	L-13
f)	Machinery					
Trad	ctor-trolley	hour	6.000	530.00	3180.00	P&M-053
g)	Material					
Stor	ne spall	cum	11.970	300.00	3591.00	M-008
h)	GST (multiplying factor 0.2016)	on (e+f+g)			2646.42	
i)	Overhead charges @ 10 % on (e+	f+g+h)			1577.35	
j)	Contractor's profit @ 10 % on (e-	·f+g+h+i)			1735.08	
k)	Cess @ 1% on (f+g+h+i+j)				190.86	
	t for 57 Nos. boundary pillar = (a+l d +e+ f+g+h+i+j+k))			48717.35	

Rate for each boundary pillar = 854.69
(a+b+c+d+e+f+g+h+i+j+k)/57

say 855.00

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TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
/ DSR						input rei.
Spec.						

Note In case of soft ground, a proper foundation may be provided as per approved design. In case foundation is required to be provided, the items of excavation and foundation concrete are required to be measured and paid separately.

8.17 807 G.I Barbed Wire Fencing 1.2 Metre High

Providing and fixing 1.2 metres high GI barbed wire fencing with 1.8 m angle iron posts 40 mm x 40 mm x 6 mm placed every 3 metres center to center founded in M15 grade cement concrete, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 9 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807

Unit = per running metre

Taking output = 30 metres

Taking output = 30 metres					
a) Labour					
Mate	day	0.090	551.00	49.59	L-12
Blacksmith	day	0.250	593.00	148.25	L-02
Mazdoor	day	2.000	424.00	848.00	L-13
b) Material					
Barbed wire 335 metres length @ 9.38 kg per 100 metres	kg	31.420	102.00	3204.84	M-063
MS angle iron 40 mm x 40mm x 6 mm, 23 metres in length @ 3.5 kg per metre	kg	80.500	50.73	4083.77	M-179 /1000
Add for GI staple binding wire, drilling holes etc. @ 2 per cent of the cost of material				145.77	
c) Painting Applying two coats of painting on exposed surface of angle iron posts (Rate as per item no. 8.9)	sqm	2.110	141.00	297.51	Item 8.9
c) GST (multiplying factor 0.2016) on	ı (a+b)			1709.61	
e) Overhead charges @ 10 % on (a+b	o+d)			1018.98	
f) Contractor's profit @ 10 % on (a+k	o+d+e)			1120.88	
g) Cess @ 1% on (a+b+d+e+f)				123.30	
Cost for 30 metres fencing = a+b+c+d+e+	f+g			12750.50	
Rate per metre = (a+b+c+d+e+f+g)/30				425.02	
			sav	425.00	

Note Cost of excavation for foundation and foundation concrete to be added separately in the cost estimate as per approved design. The rate for these items may be taken from respective chapters.

8.18 G.I Barbed Wire Fencing 1.8 Metre High

Providing and fixing 1.8 metres high GI barbed wire fencing with 2.4 m angle iron posts 50 mm x 50 mm x 6 mm placed every 3 metres center to center founded in M15 grade cement concrete, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807

Unit = per running metre

Taking output = 30 metres

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TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		a)	Labour	l				
		Mate	:	day	0.120	551.00	66.12	L-12
			ksmith	day	0.400	593.00	237.20	
		Maz		day	2.500	424.00	1060.00	L-13
			Material ed wire 428 metres length @ 9.38 er 100 metres	kg	40.150	102.00	4095.30	M-063
			angle iron 50 mm x 50 mm x 6 33.8 metres in length @ 4.5 kg per e	kg	152.000	50.73	7710.96	M-179 /1000
			for GI staple, binding wire, drilling s etc. @ 2 per cent of the cost of rial				236.13	
		c)	Painting					
		expo	ying two coats of painting on sed surface of angle iron posts uding GST,OH,CP &Cess)	sqm	3.960	141.00	558.36	Item 8.9
		c)	GST (multiplying factor 0.2016) o	n (a+b)			2702.59	
		e)	Overhead charges @ 10 % on (a+	b+d)			1610.83	
		f)	Contractor's profit @ 10 % on (a+	·b+d+e)			1771.91	
		g)	Cess @ 1% on (a+b+d+e+f)	-			194.91	
		٠.	for 30 metres fencing = a+b+c+d+e+	⊦f+a			20244.31	
			per metre fencing = (a+b+c +d+e+	Ū			674.81	
						say	675.00	

Note Cost of excavation for foundation and foundation concrete to be added separately in the cost estimate as per approved design. The rate for these items may be taken from respective chapters.

8.19 Suggest ive

Fencing With Welded Steel Wire Fabric 75 mm x 50 mm

Providing 1.20 metre high fencing with angle iron posts 50 mm x 50 mm x 6 mm at 3 metre center to center with 0.40 metre embedded in M15 grade cement concrete, corner, end and every 10th post to be strutted, provided with welded steel wire fabric of 75 mm x 50 mm mesh or 75 mm x 25 mm mesh and fixed to iron posts by flat iron 50 x 5 mm and bolts etc. complete in all respects.

Unit = Running metre Taking output = 30 m a) Labour day Mate 0.120 551.00 66.12 L-12 Welder day 1.000 593.00 593.00 L-02 Mazdoor day 2.000 424.00 848.00 L-13 Material 5377.38 M-179 i) Angle iron for posts 50 x 50 x 6 mm kg 106.000 50.73 /1000 1318.98 M-179 ii) Runner flat 50 x 5 mm 26.000 50.73 kg iii) Welded steel wire fabric 75x50 mm 151.000 69.00 10419.00 M-191 kg mesh @ 4 kg/sqm,4 x 30 x 1.2 + 5 per cent wastage OR Welded steel wire fabric 75 x 25 mm 293.000 kg mesh @ 7.75 kg/sqm, 7.75 x 30 x 1.2 + 5 per cent wastage

Sr No	Ref. to MoRTH / DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		6	drillir angle	2.5 per cent of cost of material for ig holes in angles, flats, splitting at bottom, nuts and bolts and ed consumables					
		(c)	Machinery					
		-	Tract	tor-trolley	hour	0.100	530.00	53.00	P&M-053
			d)	Painting					
			Paint	ting two coats including priming	sqm	8.000	141.00	1128.00	Item 8.9
		(e)	GST (multiplying factor 0.2016) or	n (a+b+c))		3764.98	
		1	f)	Overhead charges @ 10 % on (a+l	b+c+e)			2244.05	
		9	g)	Contractor's profit @ 10 % on (a+	b+c+e+f)			2468.45	
		ı	h)	Cess @ 1% on (a+b+c+e+f+g)				270.87	
		(Cost	for 30 metre = a+b+c+d+e+f+g+h				28551.83	
		ı	Rate	per metre = $(a+b+c+d+e+f+h)/30$				951.73	
							say	<u>952.00</u>	
		Note i) Ad	opt any one type of welded steel wire	a fabric 7	5 x 50 mm or			

Note i) Adopt any one type of welded steel wire fabric 75 x 50 mm or 75 x 25 mm as per approved design.

ii) The item of excavation and cement concrete in foundation shall be measured and paid separately

8.20 Tubular Steel Railing on Medium Weight Steel Channel (ISMC series) 100 mm x 50 mm

Providing, fixing and erecting 50 mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings

Unit = Running metre

Taking output = 10metres					
i) Excavation for foundation (6 Nos) x 0.6 x 0.6 x 0.6	6 cum	1.300	524.00	681.20	Item No. 3.13
ii) Foundation concrete M-15 grade PCC 6 x 0.6 x 0.6 x 0.3	cum	0.650	9371.00	6091.15	Item 12.8 (A)
iii) Painting of pipe	sqm	4.710	141.00	664.11	Item 8.9
iv) Painting of channel section 6 nos,1.8 metres each 0.2 x 1.8 x 6 = 2.16	sqm	2.160	141.00	304.56	Item 8.9
(Including GST,OH,CP &Cess of i,ii,i	iii & iv)				
a) Labour (For fixing at site)					
Mate	day	0.010	551.00	5.51	L-12
Mazdoor	day	0.250	424.00	106.00	L-13
Plumber	day	0.010	593.00	5.93	L-02
b) Material					
Steel pipe 50 mm external dia as per IS:1239	metre	30.000	280.00	8400.00	M-175
Medium weight steel channel (ISMC series) 100 mm x 50 mm,10.8 metres length @ 9.2 kg per metre	kg	99.360	50.73	5040.53	M-179 /1000
Add for drilling holes @ 2 per cent cost of channels	of			100.81	
c) Machinery					
Tractor-trolley	hour	0.040	530.00	21.20	P&M-053
e) GST (multiplying factor 0.2016) on (a+b+c)			2757.88	
e) Overhead charges @ 10 % on ((a+b+c+d)			1643.79	
f) Contractor's profit @ 10 % on	(a+b+c+d+e)			1808.17	

0- 1-	D-f ·		TRAFFIC SIGNS, MARKINGS &				0-111-	In-
Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Dec.		g) Cess @ 1% on (a+b+c+d+e+f)				198.90	1
			Cost for 10 metre =i+ii+iii+iv+ a+b+c+d+	e+f+a			27829.74	
			Rate per metre = (i+ii+iii+iv+a+b+c+d+	U			2782.97	
			Trate per metre (Transmitted Section	g _/ / 10		say	2783.00	
8.21	808		Tubular Steel Bailing on Bracest BCC	Doots 11	om Himb Aba	•		
0.21			Tubular Steel Railing on Precast RCC Providing, fencing and erecting 50 r precast M20 grade RCC vertical post: 50 mm dia for pipe, fixed 2 metres cer	nm dia pa s1.8 metre	inted steel pes high (1.2 n	oipe railing in above GL)	in 3 rows on with 3 holes	
			Unit = Running metre					
			Taking output = 10metres i) Excavation for foundation (6 Nos)6 x 0.6 x 0.6 x 0.6	cum	1.300	524.00	681.20	Item No. 3.13
			ii) Foundation concrete M - 15 grade PCC 6 x 0.6 x 0.6 x 0.3	cum	0.650	9371.00	6091.15	Item 12.8 (A)
			iii) RCC M - 20 for pre cast posts 6 nos of 1.8 metres each	cum	0.320	11044.00	3534.08	Item 14.1(A)
			iv) Painting of pipe	sqm	4.710	141.00	664.11	Item 8.9
			(Including GST,OH,CP &Cess of i,ii,iii	& iv)				
			a) Labour	4	0.040	554.00	E E4	L 10
			Mate	day	0.010	551.00	5.51	
			Mazdoor	day	0.350	424.00	148.40	
			Plumber	day	0.010	593.00	5.93	L-02
			b) Material Steel pipe 50 mm dia as per IS:1239	metre	30.000	280.00	8400.00	M-175
			c) Machinery Tractor-trolley	hour	0.250	530.00	132.50	P&M-053
			e) GST (multiplying factor 0.2016)				1752.38	
			, , , , , , ,		•		1044.47	
			e) Overhead charges @ 10 % on (a	•				
			f) Contractor's profit @ 10 % on (a	1+D+C+a+e)		1148.92	
			g) Cess @ 1% on (a+b+c+d+e+f)	_			126.38	
			Cost for 10 metre =i+ii+iii+iv+ a+b+c+d+	Ŭ			23735.03	
			Rate per metre = (i+ii+iii+iv+a+b+c+d+	e+f+g)/10			2373.50	
0.00	809		Daimfarrand Compant Compants Co. 1. 5) a uuda		say	<u>2374.00</u>	
8.22		(i)	Reinforced Cement Concrete Crash E Provision of an Reinforced cement c approaches to bridge structures a concrete with HYSD reinforcement cc 450 mm long at expansion joints fille to the structure on which it is bu enclosure to MOST circular No. RW/N dimensions in the approved drawing as specified Unit = Linear metre Taking output = 10 m a) M 20 grade concrete	oncrete cr and medi onforming ed with pre ilt and in IH - 33022/ and at lo	ans, construto IRC:21 and e-moulded as stalled as plant of the construction of the constructions directions di	ucted with d dowel bar sphalt filler l er design ; ated 24 Jund cted by the	M-20 grade s 25 mm dia, board, keyed given in the e 1994 as per Engineer, all	
			M 20 grade concrete (Including GST,OH,CP &Cess)	cum	3.000	11044.00	33132.00	14.1(A)

day

day

22.04 L-12

424.00 L-13

0.040 551.00

424.00

1.000

b) Labour

Mate

Mazdoor

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Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Material D steel reinforcement including el bars	tonne	0.280	67000.00	18760.00	M-082
		Pre-r	moulded asphalt filler board	sqm	0.320	71.00	22.72	M-144
		c)	GST (multiplying factor 0.2016) of	n (a+b)			3876.52	
		e)	Overhead charges @ 10 % on (b-	+c+d)			2310.53	
		f)	Contractor's profit @ 10 % on (b	+c+d+e)			2541.58	
		g)	Cess @ 1% on (b+c+d+e+f)				279.57	
		Cost	for 10 metre = a+b+c+d+e+f+g				61368.96	
		Rate	per metre = (a+b+c+d+e+f+g)/10				6136.90	
						say	<u>6137.00</u>	
	İ	,	cavation and backfilling are incidenta	al to work a	and not to be			

measured separately.

ii) Rate for RCC M 20 may be taken from chapter on super structure.

8.23 810 Metal Beam Crash Barrier

Type - A, "W" : Metal Beam Crash Barrier

Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810

Unit =	Running metre	
Taking	output = 4.5 metre lengt	h

a) Labour Mate day 0.060 551.00 33.06 L-12 day 296.50 L-02 Blacksmith 0.500 593.00 day 424.00 L-13 Mazdoor 1.000 424.00 Machinery b) 53.00 P&M-053 Tractor-trolley hour 0.100 530.00 Material C) 2090.58 M-179 Corrugated sheet,3 mm thick, "W" beam 41.210 50.73 kg /1000 section railing,4.5 m in length 4492.65 M-179 Channel post 150 x 75 x 5 mm, 1.8 m 88.560 50.73 kg /1000 long,3 Nos @ 16.4 kg per metre Spacer 150 x 75 x 5 mm channel 0.33 m 16.240 50.73 823.86 M-179 kg /1000 long,3 Nos @ 16.4 kg per metre 2400.00 M-130 Nuts and bolts kg 20.000 120.00 2451.77 Add 25 per cent of the cost of material for fabrication, nuts, bolts and washers etc.) 2633 99 GST (multiplying factor 0.2016) on (a+b+c)

e)	GST (multiplying factor 0.2016) on (a+b+c)		2033.99
e)	Overhead charges @ 10 % on (a+b+c+d)		1569.94
f)	Contractor's profit @ 10 % on (a+b+c+d+e)		1726.94
g)	Cess @ 1% on (a+b+c+d+e+f)		189.96
Cos	t for 4.5 metre = a+b+c+d+e+f+g		19186.25
Rate	e per metre = (a+b+c+d+e+f+g)/4.5		4263.61
		sav	4264.00

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TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	 Remarks/
	MoRTH					Input ref.
	/ DSR					'
	Spec.					

8.23 B Type - B, "THRIE" : Metal Beam Crash Barrier

Providing and erecting a "Thrie" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 85 cm above road/ground level, fixed on ISMC series channel vertical post, $150 \times 75 \times 5$ mm spaced 2 m centre to centre, 2 m high with 1.15 m below ground level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a space of channel section 150 x 75 x 5 mm, 546 mm long complete as per clause 810

Unit = Running metre

Taking output = 4.5 metre length

l aking output = 4.5 metre length					
a) Labour					
Mate	day	0.060	551.00	33.06	L-12
Blacksmith	day	0.500	593.00	296.50	L-02
Mazdoor	day	1.000	424.00	424.00	L-13
b) Machinery					
Tractor-trolley	hour	0.100	530.00	53.00	P&M-053
c) Material					
Corrugated sheet,3 mm thick, "Thrie" beam section railing,4.5 m in length	kg	72.940	71.00	5178.74	M-088
Channel post 150 x 75 x 5 mm, 2 m long,3 Nos @ 16.4 kg per metre	kg	98.400	50.73	4991.83	M-179 /1000
Spacer 150 x 75 x 5 mm channel 0.546 m long,3 Nos	kg	26.860	50.73	1362.61	M-179 /1000
Nuts and bolts	kg	30.000	120.00	3600.00	M-130
Add 15 per cent of the cost of material for fabrication, nuts, bolts and washers etc.)				2269.98	
e) GST (multiplying factor 0.2016) on	(a+b+c)			3671.08	
e) Overhead charges @ 10 % on (a+b-	+c+d)			2188.08	
f) Contractor's profit @ 10 % on (a+b	+c+d+e)			2406.89	
g) Cess @ 1% on (a+b+c+d+e+f)				264.76	
Cost for 4.5 metre = a+b+c+d+e+f+g				26740.53	
Rate per metre= (a+b+c+d+e+f+g)/4.5				5942.34	

5942.00

Note In the case of median crash barrier, 'W' metal beam or thrie beam section should be provided on both sides of the vertical posts fixed in the median. Extra provision for metal beam railing and spacer is required to be made when fixed in the median depending on approved design.

8.24 811 Road Traffic Signals electrically operated

Note Since it is a ready made item commercially produced and erected by specialised firm in the electrical and electronic field, rate may be taken based on market enquiry from firms specialised in this field and ISI certified for the approved design and drawing.

8.25 Suggest Flexible Crash Barrier, Wire Rope Safety Barrier

Providing and erecting a wire rope safety barrier with vertical posts of medium weight RS Joist (ISMB series) 100 mm x 75 mm (11.50 kg/m), 1.50 m long 0.85 m above ground and 0.65 m below ground level, split at the bottom for better grip, embedded in M 15 grade cement concrete 450 x 450 x 450 mm, 1.50 m center to center and with 4 horizontal steel wire rope 40 mm dia and anchored at terminal posts 15 m apart. Terminal post to be embedded in M 15 grade cement concrete foundation 2400 x 450 x 900 mm (depth), strengthened by a strut of RS joist 100 x 75 mm, 2 m long at 450 inclination and a tie 100 x 8 mm, 1.50 m long at the bottom, all embedded in foundation concrete as per approved design and drawing, rate excluding excavation and cement concrete.

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TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Ref. to MoRTH		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
/ DSR Spec.							
•	Unit	= Running metre					•
	Takii	ng output = 15 metre					
		Labour					
	Mate		day	0.120	551.00	66.12	
	Maz	door	day	2.000	424.00	848.00	
	Blac	ksmith	day	1.000	593.00	593.00	L-02
	b)	Material					
	kg p	3 Joist 100 x 75 mm - 16.5 m @ 11.5 er metre	kg	190.000	50.73	9638.70	M-179 /1000
		ruts - 2 Nos. for terminal posts,2 m each 2 x 2 x 11.50	kg	46.000	50.73	2333.58	M-179 /1000
	sqm	e 2 Nos. of 8 mm steel plate,1.5 each for terminal posts @ 62.80 qm (2 x 1.5)	kg	188.400	50.73	9557.53	M-179 /1000
	per c	teel wire rope 40 mm, including 7.50 cent extra for fixing at ends 15 x 4 x 5 @ 1 kg per m	kg	65.000	823.00	53495.00	M-177
	drillir	5 per cent of cost of material for ng, gripping, fixing, fabrication and ing consumables				3751.24	
	c)	Painting					
	Appl surfa	ying 2 coats of painting on exposed ace	sqm	16.500	141.00	2326.50	Item 8.9
	d)	Machinery					
	Trac	tor-trolley	hour	0.250	530.00	132.50	P&M-053
	e)	GST (multiplying factor 0.2016) on	(a+b+d))		16211.80	
	f)	Overhead charges @ 10 % on (a+b	o+d+e)			9662.75	
	g)	Contractor's profit @ 10 % on (a+l	o+d+e+f)			10629.02	
	h)	Cess @ 1% on (a+b+d+e+f+g)	·			1169.19	
	Cost	for 15 m = $a+b+c+d+e+f+g+h$				120414.93	
		per m = (a+b+c+d+e+f+g+h)/15				8027.66	
					say	<u>8028.00</u>	
Note		items of excavations and cement co					

ote The items of excavations and cement concrete works will be measured and included separately as per the approved designs and drawings.

8.27 Suggest ive

Street Lighting

Providing and erecting street light mounted on a steel circular hollow pole of standard specifications for street lighting, 9 m high spaced 40 m apart, 1.8 m overhang on both sides if fixed in the median and on one side if fixed on the footpath, fitted with sodium vapour lamp and fixed firmly in concrete foundation.

Unit = Each

Taking output = one light

a) Labour					
Mate	day	0.030	551.00	16.53	L-12
Mazdoor	day	0.500	424.00	212.00	L-13
Electrician	day	0.250	593.00	148.25	L-02
b) Material					
i) Steel circular hollow pole of standard specification for street lighting to mount light at 9 m height above road level	each	1.000	10625.00	10625.00	M-171
ii) Sodium vapour lamp	each	1.000	2125.00	2125.00	M-168

	1	_	TRAFFIC SIGNS, MARKINGS & O					1_
Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Сресе		Add 5 per cent of cost of material for holder, electric cable, insulation, ladder, scaffolding etc				637.50	1
			c) Painting					
			For Fixing in Median					
			Providing two coats of alluminium paint over steel circular hollow pipe with overhang on both sides	sqm	5.750	141.00	810.75	Item 8.9
			For fixing in Footpath					
			Providing two coats of alluminium paint over steel circular hollow pipe with	sqm	4.630	141.00	652.83	Item 8.9
			overhang on one side (Including GST,OH,CP &Cess of C)					
		(i)	For Fixing in Median					
		(-)	_	, (a.t.b.)			2774 00	
			c) GST (multiplying factor 0.2016) ore) Overhead charges @ 10 % on (a+l)	, ,			2774.88 1653.92	
			f) Contractor's profit @ 10 % on (a+	•			1819.31	
			g) Cess @ 1% on (a+b+d+e+f)	J - G - G,			200.12	
			Rate per light for fixing in Median= a+b	+c+d+e+	f+g		21676.09	
					-	say	<u>21676.00</u>	
		(ii)	For fixing in Footpath Rate per light for Fixing in Footpath = a	+b+o+d-	La		20065.24	
			Rate per light for Fixing III Footpatil – a	i+b+C+u-	re	say	20865.34 20865.00	
			The items of excavation and cement conc measured and included separately in approved design and drawing. The rate analysed in this chapter.	the esti	mate as per			
8.28	Suggest ive		Lighting on Bridges					
			Providing and fixing lighting on bridge standard specifications, 5 m high fixe apart and fitted with sodium vapour land	d on pa				
			Unit = Each					
			Taking output = one light					
			a) Labour					
			Marte	day	0.020	551.00	11.02	
			Mazdoor Electrician	day day	0.400 0.200	424.00 593.00	169.60 118.60	
			b) Material	uay	0.200	393.00	110.00	L-02
			i) Steel circular hollow pole of standard specification for street lighting to mount light at 5 m above deck level	each	1.000	6500.00	6500.00	M-170
			ii) Sodium vapour lamp 70 watt	each	1.000	2125.00	2125.00	M-168
			Add 1 per cent of cost of material for holder, electric cable, insulation, ladder, scaffolding etc				86.25	
			c) Painting					
			Providing two coats of alluminium paint over steel circular hollow pipe	sqm	2.760	141.00	389.16	Item 8.9
			c) GST (multiplying factor 0.2016) or	า (a+b)			1816.51	

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		e)	Overhead charges @ 10 % on (a	ı+b+d)		•	1082.70	
		f)	Contractor's profit @ 10 % on (a	a+b+d+e)			1190.97	97
		g)	Cess @ 1% on (a+b+d+e+f)				131.01	
		Ra	Rate per light = a+b+c+d+e+f+g				13620.82	
						say	<u>13621.00</u>	

Note The items of cement concrete to be measured and paid separately as per approved design. The rate for painting has already been analysed in this chapter.

8.29 Suggest ive

Cable Duct Across the Road

Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings.

(i) Single row for one utility service

Unit = Running metre

Taking ou	tout	= 20	lmetre	25
-----------	------	------	--------	----

a) Random Rubble masonry/Brick masonry in cement mortar 1:6 for head wall both side	cum	2.360	5605.00	13227.80	Item 12.7 (Addl) B)
(Including GST,OH,CP &Cess of a)					
b) Labour	a	0.050	FF4 00	07.55	I 10
Mardan	day	0.050 1.000	551.00 424.00	27.55 424.00	
Mazdoor Mazdoor skilled	day	0.250	508.00	127.00	
c) Material	day	0.250	506.00	127.00	L-10
Reinforced Cement Concrete pipe 300 mm dia	metre	20.000	490.00	9800.00	M-151
Granular soil with PI less than 6 for bedding and sides of pipe (0.6 x 0.6 x 20 m)	cum	7.200	500.00	3600.00	M-009
Collar for joints 300 mm dia	each	9.000	143.00	1287.00	M-083
Cement mortar 1:2 for joints (Excluding GST,OH,CP &Cess)	cum	0.020	7105.00	142.10	Item 12.6 (B)
d) Machinery					
Tractor-trolley	hour	0.500	530.00	265.00	P&M-053
e) GST (multiplying factor 0.2016) on	(b+c+d)			3159.61	
f) Overhead charges @ 10 % on (b+c	:+d+e)			1883.23	
g) Contractor's profit @ 10 % on (b+c	:+d+e+f)			2071.55	
h) Cess @ 1% on (b+c+d+e+f+g)	-			227.87	
Cost for 20 metre = a+b+c+d+e+f+g+h				36242.71	
Rate per metre = (a+b+c+d+e+f+h)/20				1812.14	
			say	<u>1812.00</u>	

8.29 (ii) Double row for two utility services

Unit = Running metre

Taking output = 20metres

a) Random Rubble brick/Brick cum 3.370 5605.00 18888.85 Item 12.7 masonry in cement mortar 1:6 for head wall both sides. (Including GST,OH,CP &Cess)

CHAPTER-8
TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

				TRAFFIC SIGNS, MARKINGS & U					1_
Sr No	Ref. to MoRTH / DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.		b)	 Labour					
			Mate		day	0.050	551.00	27.55	L-12
			Maz	door	day	2.000	424.00	848.00	L-13
			Maz	door skilled	day	0.250	508.00	127.00	L-15
			c)	Material					
			Rein mm	forced Cement Concrete pipe 300 dia	metre	40.000	490.00	19600.00	
				nular soil with PI less than 6 for ling and sides of pipe (0.6 x 0.6 x 40	cum	14.400	500.00	7200.00	M-009
			Colla	ar for joints 300 mm dia	each	18.000	143.00	2574.00	M-083
				ent mortar 1:2 for joints (Excluding 7,0H,CP &Cess)	cum	0.040	7105.00	284.20	Item 12.6 (B)
			d)	Machinery					
			Trac	tor-trolley	hour	1.000	530.00	530.00	P&M-053
			e)	GST (multiplying factor 0.2016) or	ı (b+c+d)		6288.06	
			f)	Overhead charges @ 10 % on (b+	c+d+e)			3747.88	
			f)	Overhead charges @ 10 % on (b+	c+d+e)			4122.67	
			h)	Cess @ 1% on (b+c+d+e+f+g)				453.49	
			Cost	for 20 metre = a+b+c+d+e+f+g+h				64691.70	
			Rate	e per metre = (a+b+c+d+e+f+g+h)/20)			3234.59	
							say	<u>3235.00</u>	
8.29		(iii)	Trip	le rRow for three utility services					
			Unit	= Running metre					
			Taki	ng output = 20metres					
			a)	Random Rubble brick/Brick	cum	4.380	5605.00	24549.90	
				onry in cement mortar 1:6 for					(Addl) B)
			GST	d wall both sides. (Including ,OH,CP &Cess)					
			b) Mate	Labour	day	0.160	551.00	88.16	I -12
			Maz		day	3.000	424.00	1272.00	
				door skilled	day	1.000	508.00	508.00	
			c)	Material	•				
			Rein mm	forced Cement Concrete pipe 300 dia	metre	60.000	490.00	29400.00	M-151
				nular soil with PI less than 6 for ding and sides of pipe (0.6 x 0.6 x 60	cum	21.600	500.00	10800.00	M-009
				ar for joints 300 mm dia	each	27.000	143.00	3861.00	M-083
				nent mortar 1:2 for joints (Excluding ,OH,CP &Cess)	cum	0.060	7105.00	426.30	Item 12.6 (B)
			d)	Machinery					
			•	tor-trolley	hour	1.500	530.00	795.00	P&M-053
			e)	GST (multiplying factor 0.2016) or	ı (b+c+d)		9505.53	
			f)	Overhead charges @ 10 % on (b+	•			5665.60	
			g)	Contractor's profit @ 10 % on (b+	-)		6232.16	
			h)	Cess @ 1% on (b+c+d+e+f+g)	,			685.54	
			•	for 20 metre = a+b+c+d+e+f+g+h				93789.19	
				e per metre = (a+b+c+d+e+f+g+h)/20)			4689.46	
				(a a c a c a c a g i i)/20			say	<u>4689.00</u>	
		Note	1.Ins	spection chamber at both ends is the r	esponsib	ility of the	Juy		

Note 1.Inspection chamber at both ends is the responsibility of the agency who is laying the duct. Hence not included.

CHAPTER-8

TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	 Remarks/
	MoRTH					Input ref.
	/ DSR					'
	Spec.					

2.The rates for stone masonry / brick masonry and cement mortar to be adopted from respective clauses.

8.35 Suggest

Road Markers/Road Stud with Lense Reflector

Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973

Unit = Nos Taking output = 50Nos a) Labour Mate	day	0.040	551.00	22.04	L-12
Mazdoor	day	1.000	424.00	424.00	
b) Material Aluminium studs 100 x 100 mm fitted with lense reflectors	each	50.000	567.00	28350.00	M-062
Add 10 per cent of cost of material fo fixing and installation c) GST (multiplying factor 0.2016) of				2835.00 6376.82	
d) Overhead charges @ 10 % on (a-	+b+c)			3800.79	
e) Contractor's profit @ 10 % on (a-	+b+c+d)			4180.87	
f) Cess @ 1% on (a+b+c+d+e)				459.90	
Cost for 50 studs = a+b+c+d+e+f				46449.42	
Rate per studs = (a+b+c+d+e+f)/50				928.99	
			sav	929.00	

8.36 Suggest ive

Traffic Cone

Provision of red fluorescent with white reflective sleeve traffic cone made of low density polyethylene (LDPE) material with a square base of 390 x 390 x 35 mm and a height of 770 mm, 4 kg in weight, placed at 1.5 m interval, all as per BS 873

Unit = Running metre

Taking output = 68 Nos.

a)	Labour					
Mate	е	day	0.020	551.00	11.02	L-12
Maz	door	day	0.500	424.00	212.00	L-13
b)	Material					
Traf	fic cones with 150 mm reflective	each	68.000	1545.00	105060.00	M-186
slee	ve					
c)	Machinery					
Trac	ctor-trolley	hour	0.100	530.00	53.00	P&M-053
d)	GST (multiplying factor 0.2016) o	on (a+b+c)			21235.74	
e)	Overhead charges @ 10 % on (a-	+b+c+d)			12657.18	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e)			13922.89	
g)	Cess @ 1% on (a+b+c+d+e+f)				1531.52	
Cos	t for 68 Nos. = a+b+c+d+e+f+g				154683.35	
Rate	e per metre = (a+b+c+d+e+f+g)/68				2274.76	
				say	2275.00	

8.43 suggest

Portable Barricade in Construction Zone

Installation of a steel portable barricade with horizontal rail 300 mm wide, 2.5 m in length fitted on a 'A' frame made with 45 x 45 x 5 mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150 mm in width at an angle of 450, 'A' frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001

CHAPTER-8
TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

	1 = 4 : '			TRAFFIC SIGNS, MARKINGS & O					1_
Sr No	Ref. to MoRTH / DSR			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.		Unit -	= each					
				g output = one steel portable					
			,	_abour					
			Mate		day	0.020	551.00	11.02	
			Mazd		day	0.250	424.00	106.00	
			Painte		day	0.500	593.00	296.50	
			Welde	er	day	0.250	593.00	148.25	L-02
			,	Material					
			Angle	iron 45 x 45 x 5 mm	kg	25.000	50.73	1268.25	M-179 /1000
				neet 300 mm wide,2.5 m long and m thick	kg	15.000	50.73	760.95	
			Paint		litre	0.500	450.00	225.00	M-131
			weldir	2 per cent of cost of steel for ng consumables, nuts & bolts and				40.58	
			,	g holes GST (multiplying factor 0.2016) on	\ (a±b)			575.88	
			,	` ., ,	` '				
			-	Overhead charges @ 10 % on (a+b	-			343.24	
			-	Contractor's profit @ 10 % on (a+b	o+c+a)			377.57	
				Cess @ 1% on (a+b+c+d+e)				41.53	
			Rate	per barricade = a+b+c+d+e+f				4194.77	
8.44	suggest ive		Perm	anent Type Barricade in Construc	tion Zon	е	say	<u>4195.00</u>	
		Α	With	steel components					
			from 5 mm	truction of a permanent type barr road level, fitted with 3 horizontal angle iron vertical support, pain at an angle of450, complete as pe	rails 200 ited with	0 mm wide a ı yellow and	nd 4 m long	on 50 x 50 x	[
			Unit =	each each					
			Takin	g output = one barricade					
			a) I	_abour					
			Mate		day	0.050	551.00	27.55	L-12
			Mazd	oor	day	0.300	424.00	127.20	L-13
			Painte	er	day	0.600	593.00	355.80	L-18
			Welde	er	day	0.300	593.00	177.90	L-02
			b)	Material					
			Angle Nos.	iron 50 x 50 x 5 mm,2 m long,2	kg	15.000	50.73	760.95	M-179 /1000
			width	neet of 12 SWG,3 Nos of 200 mm and 4 m length	kg	50.000	50.73	2536.50	M-179 /1000
				per cent of cost of steel for welding mables, nuts & bolts and drilling holes	litre	1.000	450.00	450.00 65.95	M-131
			c)	GST (multiplying factor 0.2016) or	ı (a+b)			907.57	
			-	Overhead charges @ 10 % on (a+l				540.94	
			-	Contractor's profit @ 10 % on (a+t	•			595.04	
			-	Cess @ 1% on (a+b+c+d+e)	,			65.45	
			''	Jess (W 1/0 OII (arbrerare)				00.40	

8.44 B With wooden components

Rate per barricade = a+b+c+d+e+f

Construction of a permanent type barricade made of wooden components, 1.5 m high from road level, fitted with 3 horizontal planks 200 mm wide and 3.66 m long on 100 x 100mm wooden vertical post, painted with yellow and white strips, 150 mm in width at an angle of 450, complete as per IRC:SP:55-2001

6610.85

<u>6611.00</u>

say

CHAPTER-8
TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No			TRAFFIC SIGNS, MARKING	 				
31 140	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Unit = each					
			Taking output = one barricade					
			a) Labour					
			Mate	day	0.050	551.00	27.55	
			Mazdoor	day	0.300	424.00	127.20	
			Painter	day	0.600	593.00	355.80	
			Carpenter	day	0.600	593.00	355.80	L-04
			b) Material Timber	oum	0.180	28685.00	5163.30	M_185
			Add 1 per cent of cost of timber for	cum r nute	0.100	20003.00	51.63	W-100
			& bolts, nails, etc.					
			c) GST (multiplying factor 0.20	116) on (a+b)			1225.99	
			d) Overhead charges @ 10 % c	on (a+b+c)			730.73	
			e) Contractor's profit @ 10 % o	on (a+b+c+d)			803.80	
			f) Cess @ 1% on (a+b+c+d+e)				88.42	
			Rate per barricade = a+b+c+d+e+	f			8930.22	
						say	<u>8930.00</u>	
8.44		С	With bricks					
			Construction of a permanent typ 1.5 m high, 4 m long, 600 mm the yellow and white strips.					
			Unit = each					
			Taking output = one barricade					
			raking output one parneade					
			a) Labour					
			a) Labour Mate	day	0.240	551.00	132.24	L-12
			,	day day	0.240 3.000	551.00 424.00	132.24 1272.00	
			Mate	•				L-13
			Mate Mazdoor	day	3.000	424.00	1272.00	L-13 L-18
			Mate Mazdoor Painter Mason b) Material	day day day	3.000 1.000 2.000	424.00 593.00 593.00	1272.00 593.00 1186.00	L-13 L-18 L-11
			Mate Mazdoor Painter Mason b) Material Brick	day day day	3.000 1.000 2.000 1800.000	424.00 593.00 593.00 12.00	1272.00 593.00 1186.00 21600.00	L-13 L-18 L-11 M-079
			Mate Mazdoor Painter Mason b) Material	day day day	3.000 1.000 2.000	424.00 593.00 593.00	1272.00 593.00 1186.00	L-13 L-18 L-11 M-079
			Mate Mazdoor Painter Mason b) Material Brick	day day day	3.000 1.000 2.000 1800.000	424.00 593.00 593.00 12.00	1272.00 593.00 1186.00 21600.00 200.20	L-13 L-18 L-11 M-079 M-081
			Mate Mazdoor Painter Mason b) Material Brick Cement	day day day each kg	3.000 1.000 2.000 1800.000 22.000	424.00 593.00 593.00 12.00 9.10	1272.00 593.00 1186.00 21600.00 200.20	L-13 L-18 L-11 M-079 M-081 /1000 M-005
			Mate Mazdoor Painter Mason b) Material Brick Cement Sand	day day day each kg cum litre	3.000 1.000 2.000 1800.000 22.000 0.090	424.00 593.00 593.00 12.00 9.10 650.00	1272.00 593.00 1186.00 21600.00 200.20 58.50	L-13 L-18 L-11 M-079 M-081 /1000 M-005
			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint	day day day each kg cum litre	3.000 1.000 2.000 1800.000 22.000 0.090	424.00 593.00 593.00 12.00 9.10 650.00	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50	L-13 L-18 L-11 M-079 M-081 /1000 M-005
			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c	day day day each kg cum litre 116) on (a+b+c)	3.000 1.000 2.000 1800.000 22.000 0.090	424.00 593.00 593.00 12.00 9.10 650.00	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86	L-13 L-18 L-11 M-079 M-081 /1000 M-005
			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % cee	day day day each kg cum litre 116) on (a+b+c) on (a+b+c+d)	3.000 1.000 2.000 1800.000 22.000 0.090	424.00 593.00 593.00 12.00 9.10 650.00	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29	L-13 L-18 L-11 M-079 M-081 /1000 M-005
			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % ce e) Contractor's profit @ 10 % ce f) Cess @ 1% on (a+b+c+d+e)	day day day each kg cum litre 116) on (a+b) on (a+b+c) on (a+b+c+d)	3.000 1.000 2.000 1800.000 22.000 0.090	424.00 593.00 593.00 12.00 9.10 650.00	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27	L-13 L-18 L-11 M-079 M-081 /1000 M-005
			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+	day day day each kg cum litre 116) on (a+b) on (a+b+c+d)	3.000 1.000 2.000 1800.000 22.000 0.090	424.00 593.00 593.00 12.00 9.10 650.00	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29	L-13 L-18 L-11 M-079 M-081 /1000 M-005
8.45	suggest ive		Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+	day day day each kg cum litre 116) on (a+b) on (a+b+c) on (a+b+c+d)	3.000 1.000 2.000 1800.000 22.000 0.090 1.250	424.00 593.00 593.00 12.00 9.10 650.00 450.00	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131
8.45			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+	day day day each kg cum litre e16) on (a+b) on (a+b+c) on (a+b+c+d) f Zone bitumen drum ability, painted	3.000 1.000 2.000 1800.000 22.000 0.090 1.250 delineator, 3 in circumfer	424.00 593.00 593.00 12.00 9.10 650.00 450.00 say	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131
8.45			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+ Drum Delineator in Construction Provision of metal drum/empty k mm high, filled with earth for sta black and white 100 mm wide fit	day day day each kg cum litre e16) on (a+b) on (a+b+c) on (a+b+c+d) f Zone bitumen drum ability, painted	3.000 1.000 2.000 1800.000 22.000 0.090 1.250 delineator, 3 in circumfer	424.00 593.00 593.00 12.00 9.10 650.00 450.00 say	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131
8.45			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % of e) Contractor's profit @ 10 % of f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+ Drum Delineator in Construction Provision of metal drum/empty & mm high, filled with earth for sta black and white 100 mm wide fit IRC:SP:55-2001	day day day each kg cum litre e16) on (a+b) on (a+b+c) on (a+b+c+d) f Zone bitumen drum ability, painted tted with reflect	3.000 1.000 2.000 1800.000 22.000 0.090 1.250 delineator, 3 in circumfer	424.00 593.00 593.00 12.00 9.10 650.00 450.00 say	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131
8.45			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+ Drum Delineator in Construction Provision of metal drum/empty k mm high, filled with earth for sta black and white 100 mm wide fit IRC:SP:55-2001 Unit = each	day day day each kg cum litre e16) on (a+b) on (a+b+c) on (a+b+c+d) f Zone bitumen drum ability, painted tted with reflect	3.000 1.000 2.000 1800.000 22.000 0.090 1.250 delineator, 3 in circumfer	424.00 593.00 593.00 12.00 9.10 650.00 450.00 say	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131
8.45			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+ Drum Delineator in Construction Provision of metal drum/empty k mm high, filled with earth for sta black and white 100 mm wide fit IRC:SP:55-2001 Unit = each Taking output = one drum delineato	day day day each kg cum litre e16) on (a+b) on (a+b+c) on (a+b+c+d) f Zone bitumen drum ability, painted tted with reflect	3.000 1.000 2.000 1800.000 22.000 0.090 1.250 delineator, 3 in circumfer	424.00 593.00 593.00 12.00 9.10 650.00 450.00 say	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131
8.45			Mate Mazdoor Painter Mason b) Material Brick Cement Sand Paint c) GST (multiplying factor 0.20 d) Overhead charges @ 10 % c e) Contractor's profit @ 10 % c f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+ Drum Delineator in Construction Provision of metal drum/empty k mm high, filled with earth for sta black and white 100 mm wide fit IRC:SP:55-2001 Unit = each Taking output = one drum delineato a) Labour	day day day day each kg cum litre e16) on (a+b) on (a+b+c) on (a+b+c+d) f Zone citumen drum ability, painted tted with reflect	3.000 1.000 2.000 1800.000 22.000 0.090 1.250 delineator, 3 in circumferctors 3 Nos	424.00 593.00 593.00 12.00 9.10 650.00 450.00 say 800 mm in d rential strips of 7.5 cm di	1272.00 593.00 1186.00 21600.00 200.20 58.50 562.50 5161.86 3076.63 3384.29 372.27 37599.49 37599.00 iameter, 800 of alternate a, all as per	L-13 L-18 L-11 M-079 M-081 /1000 M-005 M-131

CHAPTER-8 TRAFFIC SIGNS. MARKINGS & OTHER ROAD APPURTENANCES

		TRAFFIC SIGNS, MARKINGS & O	THER RO	JAD APPUR	ENANCES		
Sr No Ref. to MoRTH / DSR Spec.	1	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
1	b)	Material	l l				1
	Ste	el drum 300 mm dia 1.2 m h/empty bitumen drum	each	1.000	71.00	71.00	M-172
	Pai	nt	litre	0.500	450.00	225.00	M-131
	c)	GST (multiplying factor 0.2016) or	n (a+b)			113.15	
	d)	Overhead charges @ 10 % on (a+	b+c)			67.44	
	e)	Contractor's profit @ 10 % on (a+	b+c+d)			74.19	
	f)	Cess @ 1% on (a+b+c+d+e)				8.16	
	Rat	te per drum delineator = a+b+c+d+e-	+f			824.21	
R 46 sugges	it Ele	aman			say	<u>824.00</u>	
3.46 sugges ive		gman					
	600	sitioning of a smart flagman with a 0 x 600 mm securely fastened to a st	-	_	-	_	l
		it = each king output = one flagman					
		Labour					
	Mat		day	0.040	551.00	22.04	
		zdoor Material	day	1.000	424.00	424.00	L-13
	b) Fla	g of red color cloth 600 x 600 mm	each	1.000	69.00	69.00	M-099
	Wo	oden staff for fastening of flag 25 mm, one m long	each	1.000	71.00		M-196
	c)	GST (multiplying factor 0.2016) or	n (a+b)			118.15	
	d)	Overhead charges @ 10 % on (a+				70.42	
	e)	Contractor's profit @ 10 % on (a+	-			77.46	
	f)	Cess @ 1% on (a+b+c+d+e)	,			8.52	
	•	te per flagman = a+b+c+d			say	860.59 <u>861.00</u>	
8.47 ^{3.9}	Cer	ment mortar 1 : 4 (1 cement : 4 fine s	sand)		Suy	001.00	
	Det	tails of cost for 1 Cu.m.	,				
	a)	Labour					
		der 	Each	0.600	424.00	254.40	
	Bhi b)	stı Material	Each	0.300	424.00	127.20) L-21
		ment	Tonne	0.380	9100.00	3458.00	M-081
		e Sand	Cu.m.	1.070	650.00	695.50	
		Transport	_				
		rriage of Cement rriage of Fine Sand	Tonne Cu.m.	0.380 1.070	0.00	0.00 0.00	
		Other Costs	Ou.iii.	1.070	0.00	0.00	'
		ndries			LS	10.31	M-209
	Hire	e and running charges of mech mixer			LS	20.63	
					st of 1 Cu.m. st per Cu.m.	4566.04 4566.04	
				00	Say	4566.00	
8.48 16.68	blo cor ove	oviding and laying 60mm thick facion ock of M - 30 grade made by blood mpaction, of approved size, design or and including 50mm thick compa or sand etc. all complete as per the di	ock mal & shape cted bed	king machine, laid in requote of coarse sa	ncrete interlo e with stro uired colour and, filling th	ocking paver ng vibratory and pattern	, l
	Det	tails of cost for 10.00 sqm					
		Material					
	•	orlooking C.C. povor blook		10 000	420.00	4200.00	M 203

Interlocking C.C. paver block (60 mm thick, M-30)

10.000

sqm

420.00

4200.00 M-203

CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No Ref. to MoRTH / DSR Spec.	Description	Unit	Quantity	Rate in Rs		Remarks/ nput ref.
1811	Bedding layer - 50mm thick Coarse sand =10x0.050=0.50 cum	cum	0.500	650.00	325.00 N	M-005
	Fine sand	cum	0.150	650.00	97.50 N	M-006
	b) TransportCarriage of Coarse sand	cum	0.500	0.00	0.00	
	Carriage of Fine sand Laying charges (Bassed on actual	cum	0.150	0.00	0.00	
	observation)					
	c) Labour					
	Mason (1st Class)	day	0.500	593.00	296.50 L	₁₁
	Mason (2nd Class)	day	0.500	551.00	275.50 L	₋ -10
	Beldar	day	1.000	424.00	424.00 L	20
	Coolie d) GST (multiplying factor 0.2016) o	day n (a+b+c)	0.500	424.00	212.00 ^L 1175.43	₂₁
	e) Overhead charges @ 10 % on (a+	·b+c+d)			700.59	
	f) Contractor's profit @ 10 % on (a-	+b+c+d+e)			770.65	
	g) Cess @ 1% on (a+b+c+d+e+f)				84.77	
	Rate per 10 Sqm = (a+b+c+d+e+f+g)		Cost for 10.0	00 sqm	8561.94	
			Co	st per Sqm.	856.19	
				Say	856.20	

8.49 16.86.1

Providing and laying gang saw cut 18 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1cement: 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineerin-Charge.

(i) With granite stone of area less than 0.50 sqm.

Detail of cost for 0.50 sqm.

a) Material

Mirror polished granite 0.5 sgm.

Waste @5% = 0.025 +0.5 = 0.525 sqm.					
Granite of any colour, 18 mm thick	sqm	0.525	1739.00	912.98	M-201
(slab area upto 0.50 sqm)					
Mason (1st Class)	day	0.560	593.00	332.08	L-11
Beldar	day	0.050	424.00	21.20	L-20
Coolie	day	0.050	424.00	21.20	L-21
c) Other Costs Base Cement mortar 1 : 4 (1 cement : 4 coarse sand) Rate as per item 8.47. SH: Cement Mortars (Excluding GST,OH,CP &Cess)	cum	0.012	4566.00	54.79	Item 8.47
Sundries d) GST (multiplying factor 0.2016) on (a+e) Overhead charges @ 10 % on (a+b+c+f) Contractor's profit @ 10 % on (a+b+c+g) Cess @ 1% on (a+b+c+d+e+f)	⊦d)		LS	48.40 280.36 167.10 183.81 20.22	M-209
Rate per 0.50 sqm = (a+b+c+d+e+f+g)	(Cost for 0.50 so	ηm	2042.14	

Cost per sqm. 4084.28 4084.30 Say

- 1	Sr No	Ref. to		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	SI NO		1	Description	Unit	Quantity	Rate in RS		
		MoRTH	1		1				Input ref.
		/ DSR							
		Spec.							

8.50 16.87.1

Providing and laying gang saw cut 30 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineer-in-Charge.

(a) With granite stone of area less than 0.50 sqm.

Detail of cost for 0.5 sqm.

a) Material

Mirror polished granite 0.50 sqm.

Waste @5% = 0.025 + 0.5 = 0.525 sqm.

Granite stone slab 30mm thick	sqm	0.525	1890.00	992.25 M-202
b) Labour				
Mason (1st Class)	day	0.560	593.00	332.08 L-11
Beldar	day	0.050	424.00	21.20 L-20
Coolie	day	0.050	424.00	21.20 L-21
c) Other Costs				
Base Cement mortar 1 : 4 (1 cement : 4 coarse sand) Rate as per item 8.47. SH: Cement Mortars (Excluding GST,OH,CP &Cess)	cum	0.012	4566.00	54.79 Item 8.47
Sundries			LS	48.40 M-209
d) GST (multiplying factor 0.2016) on	(a+b+c)			296.34
e) Overhead charges @ 10 % on (a+b	+c+d)			176.63
f) Contractor's profit @ 10 % on (a+b	+c+d+e)			194.29
g) Cess @ 1% on (a+b+c+d+e+f)				21.37
Rate per $0.50 \text{ sqm} = (a+b+c+d+e+f+g)$	C	ost for 0.50 s	sqm	2158.55
		Cost	per Sqm.	4317.10
			Say	4317.10

8.51 16.88

f)

Providing and laying matt finished vitrified tile of size 100x100x16mm having water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in out door floors such as footpath, court yard multi models etc., laid on 20mm thick base of cement mortar 1:4 (1cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as direction of Engineer-in-Charge.

Detail of cost for 1 sqm. a) Material Matt finished vitrified tile 1100.00 1100.00 M-204 1.000 sam 100x100 x16mm 30.03 M-081 Cement 0.0033 9100.00 tonne b) Labour 118.60 L-11 Mason (1st Class) day 0.200 593.00 day 0.200 424.00 84.80 L-21 c) Other Costs Base Cement mortar 1:4 (1 cement: 4 cum 0.024 4566.00 109.58 Item 8.47 coarse sand) Rate as per item 8.47. SH: Cement Mortars (Excluding GST.OH.CP &Cess) LS 101.17 M-209 Sundries 311.31 GST (multiplying factor 0.2016) on (a+b+c) d) Overhead charges @ 10 % on (a+b+c+d) 185.55 e) 204.10

Contractor's profit @ 10 % on (a+b+c+d+e)

CHAPTER-8

TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

			TIVALLIC SIGNS, MARKINGS & C	IIILIX IX	DAD AFFOR	LIVANOLO		
Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		g)	Cess @ 1% on (a+b+c+d+e+f)				22.45	Į.
		•	e per sqm = (a+b+c+d+e+f+g)		C	ost per sqm	2267.59	
						Say	2267.60	
8.52	16.89	wate all e mod coal	viding and laying matt finished viter absorption less than 0.5% and occlours and shades in for outdoodals location etc., laid on 20mm three sand) in all shapes & patter the mixed with matching pigments arge.	conformi or floors nick base ns inclu	ing to IS: 156 such as foce of cement inding grouting	622 of appro otpath, cour mortar 1:4 (g the joints	oved make in t yard, multi 1 cement : 4 s with white	
		Deta	ail of cost for 1 sqm.					
		a) M	laterial					
		Vitr	ified tile 300x300 x9.8mm	sqm	1.000	559.50	559.50	M-205
		Cem	nent	tonne	0.0033	9100.00	30.03	M-081
		,	abour					
			on (1st Class)	day	0.200	593.00	118.60	
		Coo		day	0.200	424.00	84.80	L-21
		Base coar SH:	e Cement mortar 1 : 4 (1 cement : 4 se sand) Rate as per item 8.47. Cement Mortars (Excluding OH.CP &Cess)	cum	0.024	4566.00	109.58	Item 8.47
			dries			LS	91.16	M-209
		d)	GST (multiplying factor 0.2016) o	n (a+b+c)		200.32	
		e)	Overhead charges @ 10 % on (a+	b+c+d)			119.40	
		f)	Contractor's profit @ 10 % on (a+	b+c+d+e	e)		131.34	
		g)	Cess @ 1% on (a+b+c+d+e+f)				14.45	
		Rate	e per sqm = (a+b+c+d+e+f+g)		C	ost per sqm Say	1459.18 1459.20	
8.53	16.90	size to IS as f cem grou	viding and laying tactile tile (for v 300x300 x 9.8 mm having with wa 5:15622 of approved make in all construction of a proved make in all construction of a construction of a construction of a construction of Engineer-in-Charge	ter absorolours and solours an	rption less th nd shades in on etc., laid l) in all shap	an 0.5% and for outdoor on 20mm tl es & patter	l conforming r floors such hick base of ns including	.
		Deta	ail of cost for 1 sqm.					
		•	laterial					
			tile tile 300x300 x9.8mm	sqm	1.000	1050.00	1050.00	
		Cen		tonne	0.0033	9100.00	30.03	M-081
		•	abour on (1st Class)	day	0.200	593.00	118.60	I -11
		Coo		day		424.00	84.80	
		_	ther Costs	day	0.200	424.00	04.00	
		Base coar SH: GST	e Cement mortar 1 : 4 (1 cement : 4 rse sand) Rate as per item 8.47. Cement Mortars (Excluding T,OH,CP &Cess)		0.024	4566.00		Item 8.47
			dries with Carrage			LS		M-209
		d)	GST (multiplying factor 0.2016) o)		297.77	
		e)	Overhead charges @ 10 % on (a+	-			177.48	
		f)	Contractor's profit @ 10 % on (a+	b+c+d+e	?)		195.23	
		g)	Cess @ 1% on (a+b+c+d+e+f)		^		21.48	
					C	ost per sqm	2168.98	

Say

2169.00

			,		-	_		
ſ	Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
		MoRTH	·					Input ref.
		/ DSR						'
		Spec.						

Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in- Charge.

(i) 60mm thick cement concrete paver block of M-35 grade with approved colour, design & pattern.

Detail of cost for 10 sqm.

a)	Material
_	

8.54

a) Material						
Coloured inter	r locking C.C. paver Block	sqm	10.000	472.50	4725.00 M-207	
Fine sand		cum	0.500	650.00	325.00 M-006	
b) Transport	i .					
Carriage of F	ine Sand	cum	0.500	0.00	0.00	
c) Labour						
Mason (1st C	class)	day	0.500	593.00	296.50 L-11	
Mason (2nd 0	Class)	day	0.500	551.00	275.50 L-10	
Beldar		day	1.000	424.00	424.00 L-20	
Coolie		day	0.500	424.00	212.00 L-21	
c) Other Cos	sts					
Sundries				LS	68.75 M-209	
d) GST (m	nultiplying factor 0.2016) o	n (a+b+c)			1275.47	
e) Overhe	ead charges @ 10 % on (a+	b+c+d)			760.22	
f) Contra	ctor's profit @ 10 % on (a+	·b+c+d+e)			836.24	
g) Cess @	0 1% on (a+b+c+d+e+f)				91.99	
	Total	Def	tails of cost fo	or 10 sqm	9290.67	
			Cost	per sqm	929.07	
				Sav	929.10	

(ii) 80 mm thick C.C. paver block of M-30 grade with approved color design and pattern.

Deta	ail of cost for 10 sqm.				
a) N	laterial				
	rlocking C.C. paver block mm thick, M-30)	sqm	10.000	470.00	4700.00 M-208
Fine	e sand	cum	0.150	650.00	97.50 M-006
Coa	rse sand	cum	0.500	650.00	325.00 M-005
b) T	ransport				
Car	riage of Fine Sand	cum	0.150	0.00	0.00
Car	riage of Coarse Sand	cum	0.500	0.00	0.00
c) L	abour				
Mas	son (1st Class)	day	0.500	593.00	296.50 L-11
Mas	son (2nd Class)	day	0.500	551.00	275.50 L-10
Belo	dar	day	1.000	424.00	424.00 L-20
Coo	lie	day	0.500	424.00	212.00 L-21
d)	GST (multiplying factor 0.201	6) on (a+b+c)			1276.23
e)	Overhead charges @ 10 % on	(a+b+c+d)			760.67
f)	Contractor's profit @ 10 % on	(a+b+c+d+e)			836.74
g)	Cess @ 1% on (a+b+c+d+e+f)	ı			92.04
		Det	ails of cost fo	or 10 sqm	9296.18
			Cos	t per sqm	929.62

Say 929.60

Chapter - 9

PIPE CULVERTS

Preamble:

- Pipe culverts of sizes 1000 mm and 1200 mm dia in single row and double row which are generally used on roads, have been included. Providing and laying of pipe has been included in the rate analysis. Items of auxiliary works such as excavation, bedding, backfilling, concrete and masonry shall be analysed, as provided under the respective sections and paid for separately.
- 2 Analysis has been given separately for NP2 pipes for ease of adoption.
- Cost of any river training and protection work like stone pitching, apron, curtain wall etc. may be analysed under the respective item included in Chapter 16.
- 4 The joining of pipes is proposed by collar joints.
- 5 Chain & pulley for lifting the pipes is considered part of overheads.
- The thickness of first class bedding has been taken as 150 mm. The height of bedding has been taken as 1/10th of overall height of pipe in the analysis. This may be modified as per thickness indicated in the approved drawing.

CHAPTER-9

			PIPE CI	JLVERTS					
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
9.1	408	PC	C 1:3:6 in Foundation				-	-	
		Pla	Plain cement concrete 1:3:6 mix with crushed stone aggregate 40 mm nominal size						
			mechanically mixed, placed in foundation and compacted by vibration including curing for						
		14	14 days.						
		Un	it = cum						
		Tai	king output = 15 cum						
		a)	Labour						
			Mate	day	0.640	551.00	352.64	L-12	
			Mason	day	1.000	593.00	593.00	L-11	
			Mazdoor	day	15.000	424.00	6360.00	L-13	
		b)							
			40mm Aggregate at site	cum		1900.00	26220.00	M-055	
			Sand at site	cum		650.00	4485.00	M-005	
			Cement at site	tonne		9100.00	30030.00	M-081	
			Cost of water	KL	18.000	71.00	1278.00	M-189	
		c)	Machinery						
			Concrete mixer0.4/ 0.28 cum	hour		291.00	1746.00	P&M-009	
			Generator set 33 KVA	hour	6.000	506.00	3036.00	P&M-079	
			Water tanker6 KL capacity	hour		724.00	2172.00	P&M-060	
		d)	GST (multiplying factor 0.2016)	on (a+b+c	;)		15376.56		
		e)	Overhead charges @ 10 % on (a	a+b+c+d)			9164.92		
		f)	Contractor's profit @ 10 % on (a	a+b+c+d+e	e)		10081.41		
		-	,						

Note Vibrator is a part of minor T & P which is already included in overhead charges of the contractor.

9.2 2900 Laying Reinforced Cement Concrete Pipe NP2 / Prestressed Concrete Pipe on First Class Bedding in Single Row .

Laying Reinforced cement concrete pipe NP2/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets .

1108.96

7466.97 **7467.00**

112004.49

say

Unit = metre

Taking output = 12.5 metres (5 pipes of 2.5 m length each)

g) Cess @ 1% on (a+b+c+d+e+f)

Rate per cum = (a+b+c+d+e+f+g)/15

Cost for 15 cum = a+b+c+d+e+f+g

A 1000 mm dia

a)	Labour					
•	Mate	day	0.180	551.00	99.18	L-12
	Mason	day	0.500	593.00	296.50	L-11
	Mazdoor	day	4.000	424.00	1696.00	L-13
b)	Material					
	Sand at site	cum	0.070	650.00	45.50	M-005
	Cement at site	tonne	0.050	9100.00	455.00	M-081
	RCC pipe NP-2/prestressed concrete pipe including collar at site	metre	12.500	1800.00	22500.00	M-149
	Granular material passing 5.6 mm sieve for bedding	cum	4.500	500.00	2250.00	M-009
c)	GST (multiplying factor 0.2016) or	n (a+b)			5512.18	
d)	Overhead charges @ 10 % on (a+	b+c)			3285.44	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			3613.98	
f)	Cess @ 1% on (a+b+c+d+e)				397.54	
Cos	st for 12.5 metres = a+b+c+d+e+f				40151.32	
Rat	te per metre = (a+b+c+d+e+f)/12.5				3212.11	
				say	3212.00	

CHAPTER-9 PIPE CULVERTS

Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/	
	Spec.						iliput lei.	П

Note 1. In case of cement craddle bedding, quantity of PCC M15 is to be calculated as per design and priced separately and added.

2. The rate analysis does not include excavation, cement /masonry works in head walls, backfilling, protection works and parapet walls. The same are to be calculated as per approved design and drawings and priced separately on rates available under respective sections

9.2 B 1200 mm dia

a)	Labour					
	Mate	day	0.280	551.00	154.28	L-12
	Mason	day	1.000	593.00	593.00	L-11
	Mazdoor	day	6.000	424.00	2544.00	L-13
b)	Material					
	Sand at site	cum	0.090	650.00	58.50	M-005
	Cement at site	tonne	0.070	9100.00	637.00	M-081
	RCC pipe NP-2/prestressed	metre	12.500	2210.00	27625.00	M-150
	concrete pipe including collar at site					
	Granular material passing 5-6 mm	cum	5.000	500.00	2500.00	M-009
	sieve for class bedding					
c)	GST (multiplying factor 0.2016) or	n (a+b)			6876.93	
d)	Overhead charges @ 10 % on (a+	b+c)			4098.87	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			4508.76	
f)	Cess @ 1% on (a+b+c+d+e)				495.96	
Cos	st for 12.5 metres = a+b+c+d+e+f				50092.30	
Rat	te per metre= (a+b+c+d+e+f)/12.5				4007.38	
				say	<u>4007.00</u>	

Note 1. In case of cement craddle bedding, quantity of PCC M15 is to be calculated as per design and priced separately and added.

2. The rate analysis does not include excavation, cement /masonry works in head walls, backfilling, protection works and parapet walls. The same are to be calculated as per approved design and drawings and priced separately on rates available under respective sections

9.3 2900 Laying Reinforced Cement Concrete Pipe NP2 / Prestressed Concrete Pipe on First Class Bedding in Double Row .

Laying Reinforced cement concrete pipe NP2 / prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets .

Unit = metre

Taking output = 12.5 metres (10 pipes of 2.5 m length each in two rows.)

A 1000 mm dia

a)	Labour					
	Mate	day	0.360	551.00	198.36	L-12
	Mason	day	1.000	593.00	593.00	L-11
	Mazdoor	day	8.000	424.00	3392.00	L-13
b)	Material					
•	Sand at site	cum	0.140	650.00	91.00	M-005
	Cement at site	tonne	0.100	9100.00	910.00	M-081

CHAPTER-9 PIPE CULVERTS

	Ref. to		7 II E 00E	1 1	1			
Sr No			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	-	-	RCC pipe NP-2/prestressed	metre	25.000	1800.00	45000.00	M-149
			concrete pipe including collar at site					
			Granular material passing 5.6 mm sieve for bedding	cum	12.500	500.00	6250.00	M-009
			c) GST (multiplying factor 0.2016) or	n (a+b)			11377.17	
			d) Overhead charges @ 10 % on (a+				6781.15	
			e) Contractor's profit @ 10 % on (a+	b+c+d)			7459.27	
			f) Cess @ 1% on (a+b+c+d+e)	,			820.52	
			Cost for 12.5 metres = a+b+c+d+e+f				82872.47	
			Rate per metre = $(a+b+c+d+e+f)/12.5$				6629.80	
		Note	1. In case of cement craddle bedding, quar be calculated as per design and priced sep	•		say	<u>6630.00</u>	
			to calculated as per assign and prised sep	u. u.to., u.				
			2. The rate analysis does not include /masonry works in head walls, backfilling, parapet walls. The same are to be calcula design and drawings and priced separate under respective sections	protection ated as p	n works and er approved			
9.3		В	1200 mm dia					
			a) Labour					
			Mate	day	0.560	551.00	308.56	L-12
			Mason	day	2.000	593.00	1186.00	L-11
			Mazdoor	day	12.000	424.00	5088.00	L-13
			b) Material					
			Sand at site	cum	0.180	650.00	117.00	M-005
			Cement at site	tonne	0.140	9100.00	1274.00	M-081
			RCC pipe NP-2 /prestressed concrete pipe including collar at site	metre	25.000	2210.00	55250.00	M-150
			Granular material passing 5-6 mm sieve for class bedding	cum	13.750	500.00	6875.00	M-009
			c) GST (multiplying factor 0.2016) or	n (a+b)			14131.87	
			d) Overhead charges @ 10 % on (a+	b+c)			8423.04	
			e) Contractor's profit @ 10 % on (a+	-			9265.35	
			f) Cess @ 1% on (a+b+c+d+e)				1019.19	
			Cost for 12.5 metres = a+b+c+d				102938.01	
			Rate per metre= (a+b+c+d)/12.5				8235.04	
		Note	1. In case of cement craddle bedding, qu to be calculated as per design and pr added.			say	<u>8235.00</u>	
			2. The rate analysis does not include /masonry works in head walls, backfillin and parapet walls. The same are to b approved design and drawings and priced available under respective sections	ng, prote e calcula	ction works ated as per			

Chapter - 10

MAINTENANCE OF ROADS

Preamble:

- In the case of rain cuts, it has been assumed that some material cut by rain, approximately 25 per cent will be available at site which can be retrieved and re-used and the balance 75 per cent is required to be provided as fresh material.
- For making up earthen shoulders, it has been assumed that on an average 150 mm filling will be required. Similarly, for stripping of excess soil from shoulder, an average depth of 75 mm has been assumed.
- In the case of chocking of drain, it has been assumed that half the depth of drain has been filled with earth/debris, which requires clearance.
- During the process of landslide clearance on hill roads, it has been assumed that earth will be disposed off by dozer on the valley side. In case there is any objection to this arrangement due to particular site conditions, resources like loader and tipper will have to be provided for disposal of earth/debris for the lead involved.
- 5 The item like slurry seal, fog spray, crack preventation courses, surface dressing for maintenance works have already been included in chapter 5 and are not being repeated in this chapter.
- The cost of other items like repair of ruts and undulation maintenance of earthen shoulders, cross drainage works, minor and major bridges and miscelleneous items like turfing and arboriculture, painting and lettering on km stones, repair to signage, repair to footpath, street lighting, railing dividers, separators and under passes for pedestrains has been given in the "Report of the Committee on Norms for Maintenance of Roads In India" Published by IRC in January 2001 which may be referred for guidance.
- 7 The repair items related to bridges have been given in chapter 16

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
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3002 10.1 **Restoration of Rain Cuts**

Restoration of rain cuts with soil, moorum, gravel or a mixture of these, clearing the loose soil, benching for 300 mm width, laying fresh material in layers not exceeding 250 mm and compacting with plate compactor or power rammers to restore the original alignment, levels and slopes

Unit = cum

Taking output	= 10	CL
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a) Labour						
Mate	day	0.080	551.00	44.08	L-12	
Mazdoor	day	2.000	424.00	848.00	L-13	
b) Machinery						
Excavator1.0 cum bucket capacity @ 60 cum per hour	hour	0.130	2044.00	265.72	P&M-026	
Tipper (L is average lead in km for borrow earth)	tonne. km	12 x L	18.00	648.00	Lead =3 km & P&M-058	
Add 10 per cent of cost of carriage	е			64.80		
towards loading and unloading charges.						
Plate compactor	hour	0.500	382.00	191.00	P&M-086	
c) GST (multiplying factor 0.2016) o	n (a+b)			415.62		
d) Overhead charges @ 10 % on (a-	+b+c)			247.72		
e) Contractor's profit @ 10 % on (a-	+b+c+d)			272.49		
f) Cess @ 1% on (a+b+c+d+e)	f) Cess @ 1% on (a+b+c+d+e)					
Cost for 10 cum = a+b+c+d+e+f				3027.40		
Rate per cum = $(a+b+c+d+e+f)/10$				302.74		
,			say	<u>303.00</u>		

Note Only 75 per cent of fresh material has been provided as 25 per cent can be retrieved at site from earth that is flown down the slope in the form of slurry and deposited at the foot of there in cuts

3003 10.2 Maintenance of Earthen Shoulder (filling with fresh soil)

Making up loss of material/ irregularities on shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment.

Taking output = 100 sqm

Assuming average thickness of filling to be 150 mm

C

(Quantity of fresh material = 15 cum					
i	a) Labour					
	Mate	day	0.180	551.00	99.18	L-12
	Mazdoor	day	4.500	424.00	1908.00	L-13
I	b) Machinery					
	Excavator1.0 cum bucket capacity @ 60 cum per hour	hour	0.250	2044.00	511.00	P&M-026
	Tipper (L is average lead in km for borrow earth)	tonne. km	24xL	18.00	1296.00	Lead =3 km & P&M-058
	Add 10 per cent of cost of transportation to cover cost of loading and unloading				129.60	
	Plate compactor @ 25 sqm per hour	hour	12.000	382.00	4584.00	P&M-086
	c) GST (multiplying factor 0.2016) on	(a+b)			1719.20	
(d) Overhead charges @ 10 % on (a+b)+c)			1024.70	
(e) Contractor's profit @ 10 % on (a+b	+c+d)			1127.17	
1	f) Cess @ 1% on (a+b+c+d+e)				123.99	
(Cost for 100 sqm = a+b+c+d+e+f				12522.84	
	Rate per sqm = (a+b+c+d+e+f)100				125.23	

125.00

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
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10.3 3003 Maintenance of Earth Shoulder (stripping excess soil)

Stripping excess soil from the shoulder surface to achieve the approved level and compacting with plate compactor

Unit = sqm

Taking output = 100 sqm

Assuming average depth of stripping as

75 mm

Quantity of earth cutting involved = 7.5 cum

a)	Labour					
	Mate	day	0.100	551.00	55.10	L-12
	Mazdoor	day	2.500	424.00	1060.00	L-13
b)	Machinery					
	Plate compactor @ 25 sqm per hour	hour	4.000	382.00	1528.00	P&M-086
c)	GST (multiplying factor 0.2016) on		532.85			
d)	Overhead charges @ 10 % on (a+b	+c)			317.60	
e)	Contractor's profit @ 10 % on (a+b	+c+d)			349.36	
f)	Cess @ 1% on (a+b+c+d+e)		38.43			
Cos	st for 100 sqm = a+b+c+d				3881.34	
Rat	te per sqm on = (a+b+c+d)100				38.81	
				say	<u>39.00</u>	

Note The earth stripped from earthen shoulders to be dumped on the side slopes locally for disposal.

10.4 3004.2 Filling Pot-holes and Patch Repairs with open-Graded Premix surfacing, 20mm.

Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 511, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2

Unit = Sqm

Taking out put = 10250 sqm (205 cum)(405 toppo)

cui	m)(405 tonne)					
a)	Labour					
	Mate	Day	3.760	551.00	2071.76	L-12
	Mazdoor	Day	90.000	424.00	38160.00	L-13
	Mazdoor skilled	Day	4.000	508.00	2032.00	L-15
b)	Machinery					
	Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
	HMP 100-110 TPH Capacity	hour	6.000	32730.00	196380.00	P&M-021
	Tipper 10 tonnes capacity	hour	45.000	916.00	41220.00	P&M-048
	Smooth wheeled roller 8-10 tonnes	hour	12.000	783.00	9396.00	P&M-044
c)	Material					
	Crushed stone aggregates nominal size 13.2mm	cum	184.500	1820.00	335790.00	M-052
	Crushed stone aggregates nominal size 11.2mm	cum	92.250	1800.00	166050.00	M-051
	Bitumen 80/100	tonne	14.970	57924.00	867122.28	M-075
	Bitumen emulsion for tack coat including vertical sides of pot hole.	tonne	2.460	55000.00	135300.00	M-077
d)	GST (multiplying factor 0.2016) or	n (a+b+c)		362369.96	
e)	Overhead charges @ 10 % on (a+	b+c+d)			215984.00	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e	·)		237582.40	
g)	Cess @ 1% on (a+b+c+d+e+f)				26134.06	
Cos	st for 10250 sqm = a+b+c+d+e				2639540.46	
Rat	te per sqm = (a+b+c+d+e)/10250				257.52	
				say	<u>258.00</u>	

	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
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3004.2 10.5 Filling Pot-holes and Patch Repairs with Bituminous concrete, 40mm.

> Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as

	es, cleaning of surface, painting of tac clause 503, back filling the pot holes v					
	npacting, trimming and finishing the su					
as	per clause 3004.2					
Un	it = Sqm					
	king out put = 4900 sqm (196					
	m)(450 Tonnes)					
a)	Labour Mate	Day	2.920	551.00	1609.02	L-12
	Mazdoor	Day Day	70.000	424.00	1608.92 29680.00	L-13
	Mazdoor skilled	Day	3.000	508.00	1524.00	L-15
b)	Machinery	Duy	0.000	000.00	1024.00	
~,	Air compressor 250 cfm	hour	6.000	658.00	3948.00	P&M-001
	HMP 100-110 TPH Capacity	hour	6.000	25480.00	152880.00	P&M-022
	Tipper 10 tonnes capacity	hour	45.000	916.00	41220.00	P&M-048
	Smooth wheeled roller 8-10 tonnes	hour	12.000	783.00	9396.00	P&M-044
c)	Material					
,	I) Bitumen	tonne	22.500	57924.00	1303290.00	M-075
	ii) Bitumen emulsion for tack coat .	tonne	1.180	55000.00	64900.00	M-077
iii) A	Aggregates					
-	ading I - 19mm(Nominal size)					
	20-10mm 35 per cent	cum	99.750	1860.00	185535.00	M-051,M-
						052,M-053 and M-054
	10 5 mm 22 per cent	oum	65.550	800.00	52440.00	M-025
	10-5 mm 23 per cent	cum				M-021,M-
	5mm and below40 per cent	cum	114.000	967.00	110238.00	022 and
						M-024
Add	d 5 per cent for wastage				17410.65	
C	Or					
Gra	ading-II 13mm (Nominal size) 13.2-10 mm 30 per cent	cum	85.500	1810.00	154755.00	M-051 and
	13.2-10 mm 30 per cent	Culli	00.000	1010.00	134733.00	M-052
	10-5 mm 25 per cent	cum	71.250	800.00	57000.00	M-025
	5 mm and Below43 per cent	cum	122.550	967.00	118505.85	M-021,M- 022 and
						M-024
	Filler 2 per cent	tonne	9.000	15000.00	135000.00	M-188
	d 5 per cent for wastage				23263.04	
	y one of the above alternatives of aggr			13mm		
nor	ninal size may be adopted as per appr	oved des	sign.			
foi	r grading I Material					
d)	GST (multiplying factor 0.2016) or	n (a+b+c	:)		397972.63	
e)	Overhead charges @ 10 % on (a+	b+c+d)			237204.32	
f)	Contractor's profit @ 10 % on (a+))		260924.75	
g)	Cess @ 1% on (a+b+c+d+e+f)		•		28701.72	
	st for 4900 cum = a+b+c+d+e+f+q				2898873.99	
	te per cum = (a+b+c+d+e+f+g)/4900				591.61	
	(a a a a a g)			say	592.00	
for	grading II Material					
d)	GST (multiplying factor 0.2016) or	n (a+b+c	:)		422749.32	
e)	Overhead charges @ 10 % on (a+	•	,		251972.01	
f)	Contractor's profit @ 10 % on (a+	•	<u>.)</u>		277169.21	
g)	Cess @ 1% on (a+b+c+d+e+f)	2.0.u.e	''		30488.61	
	st for 4900 cum = a+b+c+d+e+f+a				3079349.96	
_	te per cum = (a+b+c+d+e+f+g)/4900				628.44	
					520.14	

say

<u>628.00</u>

10.5

10.5

		WAINTENANCE	JF KUA	פעו			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
10.6	3004.3.3	For detailed working of quantities of aggree 5.8 of chapter 5 Crack Filling	gates, re	efer item			
		Filling of crack using slow - curing bitume crack are wider than 3mm.	n emuls	ion and ap	plying crush	er dust in case	
		Unit = Running Meter					
		Taking out put = 500m					
		a) Labour		0.040	554.00	00.04	L-12
		Mate Mazdoor	day day	0.040 1.000	551.00 424.00	22.04 424.00	L-12 L-13
		b) Material	uay	1.000	424.00	424.00	
		Slow-curing bitumen emulsion	Kg	33.000	55.00	1815.00	M-077
		Stone crusher dust	cum	0.020	700.00	14.00	M-021
		c) GST (multiplying factor 0.2016) on				458.65	
		d) Overhead charges @ 10 % on (a+b)e) Contractor's profit @ 10 % on (a+b)	-			273.37 300.71	
		e) Contractor's profit @ 10 % on (a+b f) Cess @ 1% on (a+b+c+d+e)	тстиј			33.08	
		Cost for 500sqm = a+b+c+d+e+f				3340.85	
		Rate per meter = $(a+b+c+d+e+f)/500$				6.68	
40.7	3004.4	Duction			say	<u>7.00</u>	
10.7	3004.4	Dusting Applying crusher dust to areas of roa	d wher	e bleeding	n of excess	hitumen has	
		occurred.	u wiici	c biccaiii	y or excess	bituillell lius	
		Unit = Sqm Taking output = 3500 sqm					
		a) Labour					
		Mate	day	0.080	551.00	44.08	L-12
		Mazdoor	day	2.000	424.00	848.00	L-13
		b) Material Stone crusher dust finer than	cum	6.250	700.00	4375.00	M-021
		3mm with not more than 10 per	Culli	0.230	700.00	4373.00	
		cent passing 0.075 sieve.					
		c) GST (multiplying factor 0.2016) on				1061.84	
		d) Overhead charges @ 10 % on (a+b	-			632.89	
		e) Contractor's profit @ 10 % on (a+b	+c+d)			696.18	
		f) Cess @ 1% on (a+b+c+d+e)				76.58	
		Cost for 3500 sqm = $a+b+c+d+e+f$ Rate per meter = $(a+b+c+d+e+f)/3500$				7734.57 2.21	
		(, , , , , , , , , , , , , , , , , , ,			say	<u>2.21</u>	
10.8	(A) 3004.3.2	Fog Seal					
	(B) 3004.3.4	Crack Prevention courses.					
	(C) 3004.5	Slurry Seal					
	(D) 3004.6	Surface Dressing for maintenance work	s.				
		The above mentioned items have already been included in Chapter 5.					
10.9	3005.1	Repair of Joint Grooves with Epoxy Mo	rtar				
		Repair of spalled joint grooves of contract joints in concrete pavements using epoxy in	-	•	•	and expansion	
		Unit = running metre		, ,			
		Taking output = 10 metres					
		a) Labour					
		Mate	day	0.040	551.00	22.04	L-12
		Mazdoor	day	0.500	424.00	212.00	L-13
		Chiseller	day	0.500	551.00	275.50	L-05

	Dof to 1	MAINTENANCE	OF ROA	DS	T		1
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
	<u> </u>	b) Material			,		
		Epoxy primer	kg	2.500	281.00	702.50	M-097
		Epoxy compound with accessories	kg	10.000	257.00	2570.00	M-095
		for preparing epoxy mortar					
		c) Machinery	h a	0.050	CE0.00	22.00	P&M-00
		Air compressor 250 cfm for cleaning	hour	0.050	658.00	32.90	r aivi-uu
		d) GST (multiplying factor 0.2016) or	n (a+b+c	:)		769.09	
		e) Overhead charges @ 10 % on (a+	b+c+d)			458.40	
		f) Contractor's profit @ 10 % on (a+	b+c+d+e))		504.24	
		g) Cess @ 1% on (a+b+c+d+e+f)				55.47	
		Cost for 10 metres = a+b+c+d+e+f+g				5602.14	
		Rate per metre = (a+b+c+d+e+f+g)/10				560.21	
					say	<u>560.00</u>	
10.10	3005.2	Repair of old Joints Sealant			Say	000.00	
		Removal of existing sealant and re sea	ling of c	ontraction	longitudinal	or expansion	
		joints in concrete pavement with fresh sea			iorigitudiriai	or expansion	
		Unit = running metre	alant mat	Cital			
		Taking output = 10 metres					
		a) Labour					
		Mate	day	0.040	551.00	22.04	L-12
		Mazdoor	day	0.500	424.00	212.00	L-13
		b) Material		0.000			
		Primer	kg	0.250	207.50	51.88	M-146
		Sealant	kg	1.000	340.00	340.00	M-120
		c) Machinery	Ŭ				
		Air compressor 250 cfm for cleaning	hour	0.050	658.00	32.90	P&M-00
		d) GST (multiplying factor 0.2016) or	n (a+b+c	:)		132.82	
		e) Overhead charges @ 10 % on (a+	b+c+d)			79.16	
		f) Contractor's profit @ 10 % on (a+	b+c+d+e))		87.08	
		g) Cess @ 1% on (a+b+c+d+e+f)		•		9.58	
		Cost for 10 metres = a+b+c+d+e+f+g				967.46	
		Rate per metre = (a+b+c+d+e+f+g)/10				96.75	
		(a a a a a g)			say	<u>97.00</u>	
10.11	3000	Hill Side Drain Clearance			·		
		Removal of earth from the choked hill s manually	side drai	n and disp	osing it on t	he valley side	
		Unit = running metre					
		Taking output = 10 metres					
		Assuming muck causing choking of drain					
		to be 0.2 cum per metre, quantity of earth					
		to be removed for 10 metres = 2 cum					
		a) Labour		0.000	554.00	44.00	1 10
		Marte	day	0.080	551.00	44.08	L-12 L-13
		Mazdoor	day	1.000	424.00	424.00	L-13
		b) GST (multiplying factor 0.2016) or	ıı (a)			94.36	
		c) Overhead charges @ 10 % on				56.24	
		d) Contractor's profit @ 10 % on (a+	b+c)			61.87	
		e) Cess @ 1% on (a+b+c+d)				6.81	
		Cost for 10 metres = a+b+c+d+e				687.36	
		Rate per metre = (a+b+c+d+e)/10				68.74	
					say	<u>69.00</u>	
10.12	3000	Land Slide Clearance in soil				_	

(i) Clearance of land slides in soil and ordinary rock by a bull-dozer D 80 A-12, 180 HP and disposal of the same on the valley side

Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer 180 HP @ 60 cum per hour hour 1.670 5045.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e)	22.04 424.00 8425.15 1788.43 1065.96 1172.56 128.98 13027.12 130.27 130.00	Remarks/Input ref.
a) Labour Mate Mate Mazdoor Mazdoor Mazdoor Mazdoor Machinery Dozer 180 HP @ 60 cum per hour Moverhead charges @ 10 % on (a+b+c) Dozer 180 HP @ 60 cum per hour Moverhead charges @ 10 % on (a+b+c) Dozer 180 HP @ 60 cum per hour Moverhead charges @ 10 % on (a+b+c) Contractor's profit @ 10 % on (a+b+c+d) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate Mazdoor day 0.040 551.00 Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	424.00 8425.15 1788.43 1065.96 1172.56 128.98 13027.12 130.27	L-13
a) Labour Mate Mazdoor Mazdoor day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer 180 HP @ 60 cum per hour hour 1.670 5045.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c)	424.00 8425.15 1788.43 1065.96 1172.56 128.98 13027.12 130.27	L-13
Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer 180 HP @ 60 cum per hour hour 1.670 5045.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d)	424.00 8425.15 1788.43 1065.96 1172.56 128.98 13027.12 130.27	L-13
Mazdoor b) Machinery Dozer 180 HP @ 60 cum per hour hour 1.670 5045.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c+d)	424.00 8425.15 1788.43 1065.96 1172.56 128.98 13027.12 130.27	L-13
b) Machinery Dozer 180 HP @ 60 cum per hour hour 1.670 5045.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate Mazdoor day 0.040 551.00 Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	8425.15 1788.43 1065.96 1172.56 128.98 13027.12 130.27	
C) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e+d) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	1788.43 1065.96 1172.56 128.98 13027.12 130.27	P&M-014
c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	1788.43 1065.96 1172.56 128.98 13027.12 130.27	
d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c)	1065.96 1172.56 128.98 13027.12 130.27	
e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	1172.56 128.98 13027.12 130.27	
f) Cess @ 1% on (a+b+c+d+e) Cost for 100 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/100 Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	128.98 13027.12 130.27	
Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	13027.12 130.27	
Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	130.27	
Note Land Slide clearance involves pushing of loose earth slided on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
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on the road surface from hill face on the valley side. Since no cutting of original ground is involved, the output of dozer has been taken as 60 cum per hour for soil, ordinary rock and blasted hard rock. However, if there are objection to disposing of earth on valley side, additional resources for its disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
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disposal shall be considered as per site conditions. (ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
(ii) Clearance of land slides in soil and ordinary rock by a bull-dozer D 50 A-15 and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
### dozer D 50 A-15 and disposal of the same on the valley side Unit = cum		
### dozer D 50 A-15 and disposal of the same on the valley side Unit = cum		
Unit = cum Taking output = 100 cum a) Labour Mate Mazdoor Mazdoor Machinery Dozer D 50 A-15 C) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
Taking output = 100 cum a) Labour Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
a) Labour Mate		
Mate day 0.040 551.00 Mazdoor day 1.000 424.00 b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
Mazdoor day 1.000 424.00 b) Machinery	22.04	L-12
b) Machinery Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)	424.00	L-13
Dozer D 50 A-15 hour 1.670 3398.00 c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d)		
d) Overhead charges @ 10 % on (a+b+c)e) Contractor's profit @ 10 % on (a+b+c+d)	5674.66	P&M-014
e) Contractor's profit @ 10 % on (a+b+c+d)	1233.93	
	735.46	
	809.01	
, , ,	88.99	
Cost for 100 cum = a+b+c+d+e+f	8988.09	
Rate per cum = (a+b+c+d+e+f)/100	89.88	
say	<u>90.00</u>	
0.13 3000 Landslide Clearance in Hard Rock Requiring Blasting		
Clearing of land slide in hard rock requiring blasting for 50 per cent of the bou	ılders and	
disposal of the same on the valley side (Boll Dozer D 50)		
Unit = cum		
Taking output = 100 cum		
a) Labour		
Mate day 0.090 551.00	49.59	L-12
Mazdoor day 1.500 424.00	636.00	L-13
Driller day 0.750 551.00		L-06
Blaster day 0.070 551.00	413.25	L-03
b) Machinery		D&M 044
Dozer D 50 @ 60 cum per hour hour 1.670 3398.00	413.25 38.57	P&M-014
Air compressor 250 cfm with two hour 2.500 658.00	413.25 38.57 5674.66	D01.00
jack hammer	413.25 38.57	P&M-001
c) Materials	413.25 38.57 5674.66	P&M-001
Gelatine 80 per cent @ 35 kg per kg 17.500 166.00	413.25 38.57 5674.66	P&M-001 M-104

MAINTENANCE OF ROADS									
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
			Electric Detonators @ 1 Detonator for 2 Gelatine sticks of 125 gms each	each	70.000	11.59	811.30	M-094 /100	
			d) GST (multiplying factor 0.2016) or	n (a+b+c	:)		2454.15		
			e) Overhead charges @ 10 % on (a+	-			1462.75		
			f) Contractor's profit @ 10 % on (a+		e)		1609.03		
			g) Cess @ 1% on (a+b+c+d+e+f)				176.99		
			Cost for 100 cum = a+b+c+d+e+f+g				17876.29		
			Rate per cum = $(a+b+c+d+e+f+g)/100$				178.76		
		Note	Credit for the rock if found acceptable as material shall be afforded	construc	tion	say	<u>179.00</u>		
10.14	3000		Snow Clearance on Roads with Dozer						
			Snow clearance from road surface by a biside	ull- doze	r 165 Hp ar	nd disposing i	t on the valley	,	
			Unit = cum Taking output = 5000 cum a) Labour						
			Mate	day	0.080	551.00	44.08	L-12	
			Mazdoor	day	2.000	424.00	848.00	L-13	
			b) Machinery Dozer D-50 @ 850 cum per hour	hour	5.880	3398.00	19980.24	P&M-014	
			c) GST (multiplying factor 0.2016) or	n (a+b)			4207.86		
			d) Overhead charges @ 10 % on (a+	b+c)			2508.02		
			e) Contractor's profit @ 10 % on (a+	b+c+d)			2758.82		
			f) Cess @ 1% on (a+b+c+d+e)				303.47		
			Cost for 5000 cum = a+b+c+d+e+f				30650.49		
			Rate per cum = (a+b+c+d+e+f)/5000				6.13		
		Note	i) Labour provided will not be cutting the guiding the dozer operator on the alignmentire surface gets covered with snow ar road are not visible and for changing the they will keep a watch on the hill side for avalanches, slide etc	nent of the edest blade a	ne road as lges of the ingle. Also	say	<u>6.00</u>		
10.15	1900		Maintenance of WBM Road						
			Maintenance of WBM road including corrugated surface, damaged edges and 1906. Unit = Sqm. Taking output = affected area @ 5% in 1 km = 1000 x 3.75 x 0.05 = 187.5 Sqm.	ravelling					
			•						
			Quantity = 187.5 x 0.075 = 14.06 cum		14.000	0544.00	0.5700.40		
			 a) Rate as per item No. 4.9 A (iii) (a) b) Add 50% for Extra efforts involved on maintenance to be done in small reaches 		14.060	2541.00	35726.46 17863.23		
			Cost for 187.5 Sqm. = a+b				53589.69		
			•				285.81		
			Rate per Sqm = (a+b)/187.5			6917			
		Note	The cost of 25% retrived material may			say	<u>286.00</u>		

Note The cost of 25% retrived material may be deducted from rates.

Sr No	Ref. to MoRTH/ DSR	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	Spec.		1	l	l		

10.16 Maintenance of Hume Pipe

Maintenance of Hume Pipe Culvert by way of Cleaning, Clearing, Erosion repair, repairs to cracks, parapet wall and protection work as per drawing and technical specification Clasue 1908.

Unit = One No. Hume Pipe (1000 mm dia)

Taking output = One No. H. P. Culvert

a)	Labour					
	Mate	day	0.100	551.00	55.10	L-12
	Mazdoor (Unskilled)	day	1.000	424.00	424.00	L-13
	Mason 2nd Class	day	1.400	551.00	771.40	
b)	Material					
	Cement, Sand, Brick, Boulder etc.	L.S.			200.00	P&M-014
c)	GST (multiplying factor 0.2016) or		292.42			
d)	Overhead charges @ 10 % on (a+			174.29		
e)	Contractor's profit @ 10 % on (a+l	b+c+d)			191.72	
f)	Cess @ 1% on (a+b+c+d+e)				21.09	
Co	st for one No., Hume Pipe Culvert = a+	b+c+d+e+	-f		2130.02	
Ra	te per Hume Pipe Culvert = (a+b+c+c	d+e+f)			2130.02	
				say	<u>2130.00</u>	

10.17 Maintenance of Culverts Slab type

Maintenance of Slab type Culvert by way of Cleaning, Clearing, Erosion repair, repairs to cracks, parapet wall and protection work as per drawing and technical specification Clasue 1908.

Unit = One No. Culvert (2 m span)

Taking output = One No. Slab Culvert

a)	Labour					
	Mate	day	0.200	551.00	110.20	L-12
	Mazdoor (Unskilled)	day	4.000	424.00	1696.00	L-13
	Mason 2nd Class	day	1.000	551.00	551.00	
b)	Material					
	Cement, Sand, Brick, Boulder etc.	L.S.			500.00	P&M-014
c)	GST (multiplying factor 0.2016) or		576.01			
d)	Overhead charges @ 10 % on (a+		343.32			
e)	Contractor's profit @ 10 % on (a+	b+c+d)			377.65	
f)	Cess @ 1% on (a+b+c+d+e)				41.54	
Co	st for one No., Slab Culvert = a+b+c+d	+e+f			4195.72	
Ra	te per Slab Culvert = (a+b+c+d+e+f)				4195.72	
				say	<u>4196.00</u>	
84-	Intercept of Courselles					

10.18 **Maintenance of Causeway**

Maintenance of Causeway by way of minor Surface repairs, replacing Guide Posts, repair of flood gauges, removal of debris, providing boulders and protection work and painting as per technical specifications Clause 1909.

Unit = One metre

UII	it – One metre					
Tal	king output = 50 metre causeway					
a)	Labour					
	Mate	day	0.800	551.00	440.80	L-12
	Mazdoor (Unskilled)	day	1.600	424.00	678.40	L-13
	Mason 1st Class/Painter 1st Class	day	4.000	593.00	2372.00	
b)	Material					
	Cement, Sand, Brick, Boulder etc.	L.S.			350.00	P&M-014
c)	GST (multiplying factor 0.2016) or	n (a+b)			774.39	
d)	Overhead charges @ 10 % on				461.56	
e)	Contractor's profit @ 10 % on (a+l	b+c+d)			507.72	

MAINTENANCE OF ROADS								
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f) Cess @ 1% on (a+b+c-	+d+e)			55.85	•
			Cost for 50 metre = a+b+c+d+	-e+f			5640.72	
			Rate per metre = (a+b+c+d+	e+f)/50			112.81	
						say	<u>113.00</u>	
10.19			Maintenance of Road signs			. ,.		
			Maintenance of Road sign /regulatory/cautionary/informa and technical specifications C	tory and place iden				
			Unit = 1 km					
			Taking output = one km					
			All types of signs in one km a) Labour					
			Mate	day	0.090	551.00	49.59	L-12
			Mazdoor (Unskilled)	day		424.00	848.00	L-13
			Painter 1st Class			593.00	74.13	2 .0
				day	0.125	595.00	74.13	
			b) Material Cement, Sand, Brick, Box	ulder etc. L.S.			270.00	
							250.33	
			c) GST (multiplying facto	, , ,			149.21	
			d) Overhead charges @ 1e) Contractor's profit @ 1				164.13	
							18.05	
			f) Cess @ 1% on (a+b+c- Cost for one km = a+b+c+d+e	•			1823.44	
			Rate per km = $(a+b+c+d+e+)$				1823.44	
			rate per kiii (a.p.e.a.e.	• •		say	1823.00	
			disposal of wood and leaves 1914. Unit = 1 tree Taking output = 10 trees of average girth		as per tec	hnical specif	ication Clause	
			a) Labour					
			Mate	day	0.120	551.00	66.12	L-12
			Mazdoor (Skilled)	day	1.000	508.00	508.00	L-15
			Mazdoor (Unskilled)	day	2.000	424.00	848.00	L-13
			c) GST (multiplying facto	, , ,			286.70	
			d) Overhead charges @ 1				170.88	
			e) Contractor's profit @ 1				187.97	
			f) Cess @ 1% on (a+b+c-	-			20.68	
			Cost for 10 trees = $a+b+c+d+$	е			2088.35	
			Rate per tree= (a+b+c)/10			cav	208.84	
		(ii)	Cutting of shrubs from the roal location as per technical specturit = Each Taking output = 100 nos. sh	ification Clause 191		say sposal of shr	<u>209.00</u> ubs to suitable	
			a) Labour					
			Mate	day		551.00	44.08	L-12
			Mazdoor (Unskilled)	day	2.000	424.00	848.00 170.84	L-13
			c) GST (multiplying facto				179.84 107.19	
			c) Overhead charges @ 1					
			d) Contractor's profit @ 1				117.91	
			e) Cess @ 1% on (a+b+c+	-			12.97	
			Cost for 100 shrubs = a+b+c+ Rate per shrub= (a+b+c+d+c				1309.99 13.10	
			וימנס אסו פווועט- (מדטדנדעדנ	5 ji 100		say	13.10 <u>13.00</u>	
						Say	15.00	

Sr No	Ref. to MoRTH/ DSR Spec	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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(iii) Triming of grass and weeds from the shoulders/berms and disposing off the same to suitable locations as per technical specifications Clause 1914.

Unit = Sqm.

Taking output = 1500 Sqm.

a)	Labour				
	Mate	day	0.400	551.00	220.40
	Mazdoor (Unskilled)	day	10.000	424.00	4240.00
c)	GST (multiplying factor 0.2016) or	n (a+b)			899.22
c)	Overhead charges @ 10 % on				535.96
d)	Contractor's profit @ 10 % on (a+	b+c)			589.56
e)	Cess @ 1% on (a+b+c+d)				64.85
Cos	st for 1500 sqm = a+b+c+d+e				6549.99
Rat	e per sqm = (a+b+c+d+e)/1500				4.37
				say	<u>4.00</u>

L-12 L-13

10.21 White washing of parapet walls of CD work and tree trunks

White washing two coats on parapet walls and tree trunks including preparation of surface by cleaning scraping etc. as per technical specifications Clause 1915.

Unit = sqm.

Taking output = 9 sqm.

	• .					
a)	Labour					
	Mate	day	0.010	551.00	5.51	L-12
	Mazdoor (Unskilled)	day	0.143	424.00	60.63	L-13
	Mazdoor (White washer)	day	0.143	424.00	60.63	L-13
b)	Material					
	Lime	quintel	0.045	1500.00	67.50	
	Fevicol adhesive	kg	0.100	135.00	13.50	
	Indigo	kg	0.013	130.00	1.69	
c)	GST (multiplying factor 0.201	l6) on (a+b)			42.23	
d) Overhead charges @ 10 % on (a+b+c) 25.17						
e)	Contractor's profit @ 10 % or	n (a+b+c+d)			27.69	
f)	Cess @ 1% on (a+b+c+d+e)				3.05	
Cos	st for 9 sqm = a+b+c+d			307.60		
Rat	te per sqm = (a+b+c+d)/9				34.18	
				say	<u>34.00</u>	

Note For analysis of rates for maintenance works bitumen grade

10.22 3000 Land Slide Clearance in soil

Clearance of land slides in soil and ordinary rock by a Hydrolic Excavator including loding in a truck and carrying of excavated material to embankment site with a lift upto 1.5 m and lead upto 20 m.

Unit = cum

Taking output = 100 cum

a)	Labour					
	Mate	day	0.008	551.00	4.41	L-12
	Mazdoor	day	0.200	424.00	84.80	L-13
b)	Machinery					
	Hydraulic excavator 0.9 cum bucket capacity @ 60 cum per hour	hour	1.670	2044.00	3413.48	P&M-026
	Tipper 5.5 cum capacity,	hour	0.320	916.00	293.12	P&M-048
c)	GST (multiplying factor 0.2016) on		765.24			
d)	Overhead charges @ 10 % on (a+b)+c)			456.11	
e)	Contractor's profit @ 10 % on (a+b)+c+d)			501.72	
f)	Cess @ 1% on (a+b+c+d+e)				55.19	
Co	st for 100 cum = a+b+c+d+e+f				5574.07	
Ra	te per cum = (a+b+c+d+e+f)/100				55.74	
				say	56.00	

S-90 has been taken. User may modify as per site requirements.

CHAPTER- 10 MAINTENANCE OF ROADS

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
10.23			Snow Clearance on Roads					
			with Backhoe-loader					
		(i)	Snow clearance from road					
			surface by a Backhoe-loader					
			and disposing it on the valley					
			side					
			Unit = cum					
			Taking output = 5000 cum					
			a) Labour					
			Mate	day	0.200	551.00	110.20	L-12
			Mazdoor	day	5.000	424.00	2120.00	L-13
			b) Machinery					
			Backhoe-loader	hour	10.200	2200.00	22440.00	P&M-098
			c) GST (multiplying factor 0.201	l6) on (a+b)			4973.51	
			d) Overhead charges @ 10 % o	n (a+b+c)			2964.37	
			e) Contractor's profit @ 10 % or	n (a+b+c+d)			3260.81	
			f) Cess @ 1% on (a+b+c+d+e)				358.69	
			Cost for 100 cum = a+b+c+d+e+f				36227.58	
			Rate per cum = $(a+b+c+d+e+f)/500$	00			7.25	
						sav	7.00	

Note i)Labour provided will not be cutting the snow. They will be guiding the Backhoeloader operator on the alignment of the road as entire surface gets covered with snow and the edges of the road are not visible. Also they will keep a watch on the hill side for any eventuality of avalanches, slide etc.

Chapter – 11 HORTICULTURE

Preamble:

- 1. The items of turfing with sods andf seeding and mulching have been included in the chapter of earthwork.
- 2. The rates for grassing of lawns and hedges has been included, as the same may be needed for resting places on highways.
- 3. Five types of tree guards as under have been provided
 - a) Half brick circular type
 - b) Tree guards made from empty bitumen drums 1.30 m high.
 - c) Tree guards made from empty bitumen drums 2.00 m high.
 - d) Tree guards with MS flat iron.
 - e) Tree guards with MS angle and 3 mm steel wire welded on MS flat and bolted to angle iron posts.
- 4. Selection from above may be made as per actual situation and design.
- 5. Rates for wrought iron and mild welded work has been included to cater for any miscelleneous work in connection with horticulture, fencing and traffic sign.
- 6. Though the estimate for compensatory afforestation is made by the forest department, the rate for this item has been analysed and included for the purpose of estimation.
- 7. As grass and plantation need more care, one mate has been provided for every 10 mazdoors in case of horticulture.

			HORTICULT	UKE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
11.1	307		Spreading of Sludge Farm Yard Manure	or/and	good Earth	1		•
			Spreading of sludge farm yard manure or/ sludge, farm yard manure or/and good ear <i>Unit = cum</i>	-		-	kness (cost of	•
			Taking output = 15 cum					
			a) Labour Mate	day	0.040	551.00	22.04	L-12
			Mazdoor	day day	1.000	424.00	424.00	L-12
			b) GST (multiplying factor 0.2016) on	•	1.000	121.00	89.92	
			c) Overhead charges @ 10 % on (a+b				53.60	
			d) Contractor's profit @ 10 % on (a+b	-			58.96	
			e) Cess @ 1% on (a+b+c+d)	,			6.49	
			Cost for 15 cum= a+b+c+d+e				655.01	
			Rate per cum = (a+b+c+d+e)/15				43.67	
			. ,			say	<u>44.00</u>	
11.2	307		Grassing with ' Doobs' Grass					
			Grassing with 'Doobs' grass including wadays or more till the grass forms a thic including supplying good earth if needed					
			Unit = sqm Taking output = 100 sqm					
		(i)	In rows 15 cm apart in either direction					
		(-)	a) Labour					
			Mate	day	0.170	551.00	93.67	L-12
			Mazdoor for grassing	day	0.750	424.00	318.00	L-13
			Mazdoor for maintenance for 30 days	day	1.000	424.00	424.00	L-13
			b) Machinery					
			Water tanker6 KL capacity c) Material	hour	0.500	724.00	362.00	P&M-060
			Doob grass	kg	100.000	18.00	1800.00	M-112
			d) GST (multiplying factor 0.2016) on	(a+b+c))		604.33	
			e) Overhead charges @ 10 % on (a+b	+c+d)			360.20	
			f) Contractor's profit @ 10 % on (a+b	+c+d+e)		396.22	
			g) Cess @ 1% on (a+b+c+d+e+f)				43.58	
			Cost for 100 sqm = $a+b+c+d+e+f+g$				4402.00	
			Rate per sqm= (a+b+c+d+e+f+g)/100				44.02	
						say	<u>44.00</u>	
11.2		(ii)	In rows 7.5 cm apart in either direction					
			a) Labour					
			Mate	day	0.220	551.00	121.22	L-12
			Mazdoor for grassing. for maintenance for 30 days	day day	1.250 1.000	424.00 424.00	530.00 424.00	L-13 L-13
			b) Machinery	uay	1.000	724.00	424.00	
			Water tanker6 KL capacity	hour	0.750	724.00	543.00	P&M-060
			c) Material					
			Doob grass	•	200.000	18.00	3600.00	M-112
			d) GST (multiplying factor 0.2016) on	-)		1051.99	
			e) Overhead charges @ 10 % on (a+b	-			627.02	
			f) Contractor's profit @ 10 % on (a+b	+c+d+e)		689.72	
			g) Cess @ 1% on (a+b+c+d+e+f)				75.87	
			Cost for 100 sqm = $a+b+c+d+e+f+g$				7662.82	
			Rate per sqm = $(a+b+c+d+e+f+g)/100$				76.63	
						say	<u>77.00</u>	

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	ı
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Note In the case of horticulture one mate has been provided for every 10 mazdoors as maintenance of grass and plants require more care.

11.3 307 Making Lawns including Ploughing and Dragging with 'Swagha' Breaking of Clod

Making lawns including ploughing and breaking of clod, removal of rubbish, dressing and supplying doobs grass roots and planting at 15 cm apart, including supplying and spreading of farm yard manure at rate of 0.18 cum per 100 sqm

Unit = sqm

Taking output = 100 sqm

a)	Labour					
,	Mate	day	0.150	551.00	82.65	L-12
	Mazdoor for preparation of ground	day	0.500	424.00	212.00	L-13
	Mali for fetching doobs grass roots and grassing at 15 cm apart	day	1.000	551.00	551.00	L-09
b)	Machinery					
	Water tanker6 KL capacity	hour	0.500	724.00	362.00	P&M-060
	Tractor with tiller	hour	0.010	530.00	5.30	P&M-053
c)	Material					
	Supply of farm yard manure at site of work	cum	0.180	141.00	25.38	M-167
	Fine grass	kg	100.000	18.00	1800.00	M-113
d)	GST (multiplying factor 0.2016) on	(a+b+c)			612.53	
e)	Overhead charges @ 10 % on (a+b-	⊦c+d)			365.09	
f)	Contractor's profit @ 10 % on (a+b	+c+d+e)			401.60	
g)	Cess @ 1% on (a+b+c+d+e+f)				44.18	
Cos	st for 100 sqm = a+b+c+d+e+f+g				4461.73	
Rat	te per sqm = (a+b+c+d+e+f+g)/100				44.62	
				say	<u>45.00</u>	

11.4 307 Maintenance of Lawns or Turfing of Slopes

Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc

Unit = sqm

Taking output = 100 sqm

a)	Labour					
	Mali	day	10.000	551.00	5510.00	L-09
b)	Machinery					
	Water tanker6 KL capacity	hour	15.000	724.00	10860.00	P&M-060
c)	Material					
	Cost of water	KL	90.000	71.00	6390.00	M-189
d)	GST (multiplying factor 0.2016)	on (a+b+c)			4588.42	
e)	Overhead charges @ 10 % on (a	+b+c+d)			2734.84	
f)	Contractor's profit @ 10 % on (a	a+b+c+d+e)			3008.33	
g)	Cess @ 1% on (a+b+c+d+e+f)				330.92	
Co	st for 100 sqm = a+b+c+d+e+f+g				33422.51	
Ra	te per sqm = (a+b+c+d+e+f+g)/100				334.23	
				say	<u>334.00</u>	

11.5 Turfing Lawns with Fine Grassing including Ploughing, Dressing

Turfing lawns with fine grassing including ploughing, dressing including breaking of clods, removal of rubbish, dressing and supplying doobs grass roots at 10 cm apart, including supplying and spreading of farm yard manure at rate of 0.6 cum per 100 sqm

Unit = sqm

Taking output = 100 sqm

a) Labour

Laboui					
Mate	day	0.250	551.00	137.75	L-12

	D.		I	1	- 1	-		
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
	•		Mazdoor for preparation of ground	day	1.000	424.00	424.00	L-13
			Mali for fetching doobs grass roots	day	1.500	551.00	826.50	L-09
			hedges and grassing at 10 cm apart b) Machinery					
			Water tanker6 KL capacity	hour	0.500	724.00	362.00	P&M-06
			Tractor with tiller	hour	0.010	530.00	5.30	P&M-05
			c) Material					
			Supply of farm yard manure at site of work @ 0.6 cum per 100 sqm	cum	0.600	141.00	84.60	M-167
			Fine grass	kg	100.000	18.00	1800.00	M-113
			d) GST (multiplying factor 0.2016) on				733.85	
			e) Overhead charges @ 10 % on (a+b	-			437.40	
			f) Contractor's profit @ 10 % on (a+b	+c+d+e)			481.14	
			g) Cess @ 1% on (a+b+c+d+e+f)				52.93	
			Cost for 100 sqm = $a+b+c+d+e+f+g$				5345.47	
			Rate per sqm = $(a+b+c+d+e+f+g)/100$				53.45	
1.6	307		Maintenance of Lawns with Fine Grassi	na for th	o Eiret Vo	say	<u>53.00</u>	
1.0	00.			-			a oto	
			Maintenance of lawns with fine grassing fo Unit = sqm	i tile ilist	year includ	aing watering	g etc	
			Taking output = 100 sqm					
			a) Labour					
			, Mali	day	10.000	551.00	5510.00	L-09
			b) Machinery					
			Water tanker6 KL capacity	hour	20.000	724.00	14480.00	P&M-06
			c) Material	121	00.000	74.00	4000.00	M-189
			Cost of water d) GST (multiplying factor 0.2016) on	(a+b+c)	60.000	71.00	4260.00 4888.80	IVI-105
			e) Overhead charges @ 10 % on (a+b	-			2913.88	
			f) Contractor's profit @ 10 % on (a+b	-			3205.27	
				тстите)				
			g) Cess @ 1% on (a+b+c+d+e+f)				352.58	
			Cost for 100 sqm = a+b+c+d+e+f+g Rate per sqm = (a+b+c+d+e+f+g)/100				35610.53 356.11	
			Trate per squi = (a·b·c·a·c·i·g)/100			say	356.00	
				Hodase		,		
1.7	307		Planting and Maintaining of Permanent	Heuges				
11.7	307	(a)	Planting and Maintaining of Permanent Planting permanent hedges including d	•	trenches			
11.7	307	(a)	Planting permanent hedges including d	igging of		em wide and	1 15 cm doop	
11.7	307	(a)	•	i gging of ng of trei rmyard n	nches, 60 d nanure, su	pplied at the	e rate of 4.65	
11.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla	i gging of ng of trei rmyard n	nches, 60 d nanure, su	pplied at the	e rate of 4.65	
11.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre	i gging of ng of trei rmyard n	nches, 60 d nanure, su	pplied at the	e rate of 4.65	
11.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre	i gging of ng of trei rmyard n	nches, 60 d nanure, su	pplied at the	e rate of 4.65	
11.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour	igging of ng of trei rmyard n nting hec	nches, 60 d nanure, su lge plants a	pplied at the at 30 cm apa	e rate of 4.65 art	L-12
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate	igging of ng of trei rmyard n nting hed day	nches, 60 d nanure, su	pplied at the	e rate of 4.65	
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour	igging of ng of trei rmyard n nting hec	nches, 60 d nanure, su dge plants a	pplied at the at 30 cm apa	e rate of 4.65 art 771.40	L-12
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggirefilling the excavated earth mixed with facum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated	igging of ng of trei rmyard n nting hed day	nches, 60 d nanure, su dge plants a	pplied at the at 30 cm apa	e rate of 4.65 art 771.40	L-12
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggirefilling the excavated earth mixed with facum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung,	igging of ng of trei rmyard in nting hed day day	nches, 60 c nanure, su dge plants a 1.400 10.000	pplied at the at 30 cm apa 551.00 424.00	e rate of 4.65 art 771.40 4240.00	L-12 L-13
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of	igging of ng of trei rmyard in nting hed day day	nches, 60 c nanure, su dge plants a 1.400 10.000	pplied at the at 30 cm apa 551.00 424.00	e rate of 4.65 art 771.40 4240.00	L-12 L-13
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to	igging of ng of trei rmyard in nting hed day day	nches, 60 c nanure, su dge plants a 1.400 10.000	pplied at the at 30 cm apa 551.00 424.00	e rate of 4.65 art 771.40 4240.00	L-12 L-13
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggirefilling the excavated earth mixed with facum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to site and planting in position	igging of ng of trei rmyard in nting hed day day	nches, 60 c nanure, su dge plants a 1.400 10.000	pplied at the at 30 cm apa 551.00 424.00	e rate of 4.65 art 771.40 4240.00	L-12 L-13
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggirefilling the excavated earth mixed with facum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to site and planting in position b) Machinery	igging of ng of trei rmyard in nting hed day day	nches, 60 c nanure, su dge plants a 1.400 10.000	pplied at the at 30 cm apa 551.00 424.00	e rate of 4.65 art 771.40 4240.00	L-12 L-13 L-13
1.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggirefilling the excavated earth mixed with facum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to site and planting in position	dgging of ng of trei rmyard in nting hed day day day	1.400 10.000 4.000	pplied at the at 30 cm apa 551.00 424.00 424.00	771.40 4240.00	L-12 L-13 L-13
11.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to site and planting in position b) Machinery Water tanker6 KL capacity	dgging of ng of trei rmyard in nting hed day day day	1.400 10.000 4.000	pplied at the at 30 cm apa 551.00 424.00 424.00	771.40 4240.00	L-12 L-13 L-13
11.7	307	(a)	Planting permanent hedges including d Planting permanent hedges including diggi refilling the excavated earth mixed with fa cum per 100 metres and supplying and pla Unit = Running metre Taking output = 100metre a) Labour Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to site and planting in position b) Machinery Water tanker6 KL capacity C) Material Cost of hedge plants 2 rows at 30 cm	day day hour	1.400 10.000 4.000	551.00 424.00 724.00	771.40 4240.00 1696.00	L-12 L-13 L-13

	Ref. to	I		- C. (_				
Sr No	MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Pesticide	kg	0.250	361.00	90.25	M-136
			Cost of water	KL	3.000	71.00	213.00	M-189
			d) GST (multiplying factor 0.2016) or	n (a+b+c))		3401.22	
			e) Overhead charges @ 10 % on (a+l	o+c+d)			2027.23	
			f) Contractor's profit @ 10 % on (a+	-)		2229.96	
			g) Cess @ 1% on (a+b+c+d+e+f)		•		245.30	
			Cost for 100 metres = $a+b+c+d+e+f+g$				24774.83	
			Rate per metre = $a+b+c+d+e+f+q$)/100				247.75	
			3,			say	<u>248.00</u>	
		(b)	Maintenance of hedge for one year					
			Unit = Running metre					
			Taking output = 100 m					
			a) Labour		0.000	EE4 00	4050.00	1.40
			Mate	day		551.00	1653.00	L-12 L-13
			Mazdoor b) Machinery	day	30.000	424.00	12720.00	L-13
			Water tanker6 KL capacity	hour	5.000	724.00	3620.00	P&M-060
			c) Material	noui	0.000	724.00	0020.00	
			Manure sludge/Farm yard manure	cum	2.000	141.00	282.00	M-167
			Pesticide	kg	0.500	361.00	180.50	M-136
			Cost of water	KL	30.000	71.00	2130.00	M-189
			Cost of hedge plants @ 10 per cent casualty	each	68.000	13.00	884.00	M-116
			d) GST (multiplying factor 0.2016) or	n (a+b+c))		4328.25	
			e) Overhead charges @ 10 % on (a+l	o+c+d)			2579.78	
			f) Contractor's profit @ 10 % on (a+	b+c+d+e)		2837.75	
			g) Cess @ 1% on (a+b+c+d+e+f)		•		312.15	
			Cost for 100 metres = a+b+c+d+e+f+g				31527.43	
			Rate per metre = $a+b+c+d+e+f+g)/100$				315.27	
						say	<u>315.00</u>	
11.8	307		Planting and Maintaining of Flowering I	Plants ar	d Shrubs			
		(a)	Planting flowering plants and shrubs in	central	verge			
			Unit = Running metres 200 plants and of road where width of verge is 3m and		ıbs in two	rows in on	e km length	
			Taking output = 1000 metres					
			a) Labour					
			Mate	day	1.200	551.00	661.20	L-12
			Mazdoor	day	12.000	424.00	5088.00	L-13
			b) Machinery					B017 55-
			Water tanker6 KL capacity	hour	6.000	724.00	4344.00	P&M-060
			c) Material		200,000	E0 00	10000 00	M 100
			Plants Shrubs		200.000 800.000	50.00 25.00	10000.00 20000.00	M-100 M-166
			Manure sludge/Farm yard manure	cum	63.640	141.00	8973.24	M-167
			Pesticide	kg	0.500	361.00	180.50	M-136
			Cost of water	KĽ	36.000	71.00	2556.00	M-189
			d) GST (multiplying factor 0.2016) or	n (a+b+c))		10443.47	
			e) Overhead charges @ 10 % on (a+l	o+c+d)			6224.64	
			f) Contractor's profit @ 10 % on (a+	-)		6847.11	
			g) Cess @ 1% on (a+b+c+d+e+f)	-	•		753.18	
			Rate per Km = $(a+b+c+d+e+f+g)/1000$				76071.34	
			, , , , , , , , , , , , , , , , , , , ,			say	<u>76071.00</u>	
11.8		(b)	Maintenance of flowering plants and sh	rubs in o	central ver	ge for one	year	

Unit = km

Taking output = one km

		·					
Sr No Ref. MoRT DSF Spec	TH/ R	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		a) Labour	· · · ·		-		
		Mate	day	36.000	551.00	19836.00	L-12
		Mazdoor	day	365.000	424.00	154760.00	L-13
		b) Machinery					
		Water tanker6 KL capacity	hour	90.000	724.00	65160.00	P&M-060
		c) Material					
		Manure Sludge / farm yard manure a	t cum	10.000	141.00	1410.00	M-167
		site					
		Cost of water	KL	180.000	71.00	12780.00	M-189
		Replacement of casualties @ 10 per cent					
		Plants	each	20.000	50.00	1000.00	M-100
		Shrubs	each	80.000	25.00	2000.00	M-166
		Pesticides	kg	1.500	361.00	541.50	M-136
		d) GST (multiplying factor 0.2016) o	n (a+b+c)			51909.48	
		e) Overhead charges @ 10 % on (a+	-			30939.70	
		f) Contractor's profit @ 10 % on (a+		1		34033.67	
			D. C. a. c,	,		3743.70	
		g) Cess @ 1% on (a+b+c+d+e+f)					
		Rate per Km for one year = (a+b+c+d+e	+1+g)			378114.05	
					631/	378114.00	
	_				say	070114.00	
11.9 307		Planting of Trees and their Maintenance Planting of trees by the road side (Avenu the ground, mixing the soil with decay	e trees) ir	n 0.60 m di	ia holes, 1 r	n deep dug in	
11.9 307		Planting of trees by the road side (Avenu	e trees) ir yed farm	n 0.60 m di yard/sludg	ia holes, 1 r ge manure,	m deep dug in planting the	
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each	e trees) ir yed farm	n 0.60 m di yard/sludg	ia holes, 1 r ge manure,	m deep dug in planting the	
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees	e trees) ir yed farm	n 0.60 m di yard/sludg	ia holes, 1 r ge manure,	m deep dug in planting the	
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour	e trees) ir yed farm g, fixing tl	n 0.60 m di yard/sludç he tree gu	ia holes, 1 r ge manure, uard and m	n deep dug in planting the aintaining the	
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate	e trees) ir yed farm g, fixing tl day	n 0.60 m di yard/sludg he tree gu 1.700	ia holes, 1 r ge manure, uard and m	n deep dug in planting the aintaining the	L-12
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting	e trees) ir yed farm g, fixing tl day day	n 0.60 m di yard/sludo he tree gu 1.700 2.000	ia holes, 1 r ge manure, uard and m 551.00 424.00	n deep dug in planting the aintaining the 936.70 848.00	L-12 L-13
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one	e trees) ir yed farm g, fixing tl day	n 0.60 m di yard/sludg he tree gu 1.700	ia holes, 1 r ge manure, uard and m	n deep dug in planting the aintaining the	L-12
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year	e trees) ir yed farm g, fixing tl day day	n 0.60 m di yard/sludo he tree gu 1.700 2.000	ia holes, 1 r ge manure, uard and m 551.00 424.00	n deep dug in planting the aintaining the 936.70 848.00	L-12 L-13
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery	e trees) ir yed farm g, fixing tl day day day	1.700 2.000 15.000	551.00 424.00	n deep dug in planting the aintaining the 936.70 848.00 6360.00	L-12 L-13 L-13
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity	e trees) ir yed farm g, fixing tl day day	n 0.60 m di yard/sludo he tree gu 1.700 2.000	ia holes, 1 r ge manure, uard and m 551.00 424.00	n deep dug in planting the aintaining the 936.70 848.00	L-12 L-13
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material	e trees) ir yed farm g, fixing the day day day hour	1.700 2.000 15.000	551.00 424.00 724.00	936.70 848.00 6360.00	L-12 L-13 L-13
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decase saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia	e trees) ir yed farm g, fixing tl day day day	1.700 2.000 15.000	551.00 424.00	n deep dug in planting the aintaining the 936.70 848.00 6360.00	L-12 L-13 L-13 P&M-060
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material	e trees) ir yed farm g, fixing the day day day hour each cum	1.700 2.000 15.000 10.000	551.00 424.00 424.00 103.00	936.70 848.00 6360.00 1030.00	L-12 L-13 L-13 P&M-060 M-160
11.9 307		Planting of trees by the road side (Avenu the ground, mixing the soil with deca saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure	e trees) ir yed farm g, fixing the day day day hour each	1.700 2.000 15.000 10.000 0.940	551.00 424.00 424.00 103.00 141.00	936.70 848.00 6360.00 1030.00 132.54	L-12 L-13 L-13 P&M-060 M-160 M-167
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decase saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide	e trees) ir yed farm g, fixing the day day day hour each cum kg KL	1.700 2.000 15.000 10.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 1030.00 132.54 180.50	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decase saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide Cost of water d) GST (multiplying factor 0.2016) o	e trees) ir yed farm g, fixing the day day day hour each cum kg KL n (a+b+c)	1.700 2.000 15.000 10.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 1030.00 132.54 180.50 852.00	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide Cost of water d) GST (multiplying factor 0.2016) of e) Overhead charges @ 10 % on (a+)	e trees) ir yed farm g, fixing the day day day hour each cum kg KL n (a+b+c)	1.700 2.000 15.000 30.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 1030.00 132.54 180.50 852.00 6463.24 3852.30	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide Cost of water d) GST (multiplying factor 0.2016) of e) Overhead charges @ 10 % on (a+f) Contractor's profit @ 10 % on (a+f)	e trees) ir yed farm g, fixing the day day day hour each cum kg KL n (a+b+c)	1.700 2.000 15.000 30.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 21720.00 1030.00 132.54 180.50 852.00 6463.24 3852.30 4237.53	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide Cost of water d) GST (multiplying factor 0.2016) of e) Overhead charges @ 10 % on (a+f) Contractor's profit @ 10 % on (a+f) Cess @ 1% on (a+b+c+d+e+f)	e trees) ir yed farm g, fixing the day day day hour each cum kg KL n (a+b+c)	1.700 2.000 15.000 30.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 21720.00 1030.00 132.54 180.50 852.00 6463.24 3852.30 4237.53 466.13	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide Cost of water d) GST (multiplying factor 0.2016) of e) Overhead charges @ 10 % on (a+f) Contractor's profit @ 10 % on (a+f) Cost for 10 trees = a+b+c+d+e+f+g	e trees) ir yed farm g, fixing the day day day hour each cum kg KL n (a+b+c)	1.700 2.000 15.000 30.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 21720.00 1030.00 132.54 180.50 852.00 6463.24 3852.30 4237.53 466.13 47078.94	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136
11.9 307		Planting of trees by the road side (Avenuthe ground, mixing the soil with decay saplings, backfilling the trench, watering plants for one year Unit = Each Taking output = 10 trees a) Labour Mate Mazdoor for planting Mazdoor for maintenance for one year b) Machinery Water tanker6 KL capacity c) Material Sapling 2 m high 25 mm dia Farm yard manure Pesticide Cost of water d) GST (multiplying factor 0.2016) of e) Overhead charges @ 10 % on (a+f) Contractor's profit @ 10 % on (a+f) Cess @ 1% on (a+b+c+d+e+f)	e trees) ir yed farm g, fixing the day day day hour each cum kg KL n (a+b+c)	1.700 2.000 15.000 30.000 0.940 0.500 12.000	551.00 424.00 424.00 103.00 141.00 361.00	936.70 848.00 6360.00 21720.00 1030.00 132.54 180.50 852.00 6463.24 3852.30 4237.53 466.13	L-12 L-13 L-13 P&M-060 M-160 M-167 M-136

Forked Soil

Renovation lawns including, weeding, forking the ground, top dressing with forked soil, watering and maintenance the lawns, for 30 days or more, till the grass forms a thick lawn, free from weeds, and fit for moving and disposal of rubbish as directed, including supplying good earth, if needed but excluding the cost of well decayed farm yard manure

Unit = sqm

Taking output = 100 sqm

a)	Labour					
	Mate	day	0.120	551.00	66.12	L-12
	Mazdoor	day	3.000	424.00	1272.00	L-13

CHAPTER-11

			CHAPTER HORTICULT					
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•	•	b) Machinery		•	•		•
			Water tanker6 KL capacity	hour	0.500	724.00	362.00	P&M-060
			c) Material	121	2.000	74.00	040.00	M-189
			Cost of water d) GST (multiplying factor 0.2016) or	KL (a+b+c)	3.000	71.00	213.00 385.68	IVI-109
			e) Overhead charges @ 10 % on (a+b		,		229.88	
			,	,	`		252.87	
			f) Contractor's profit @ 10 % on (a+l	тстите)			
			g) Cess @ 1% on (a+b+c+d+e+f)				27.82	
			Cost for 100 sqm = a+b+c+d+e+f+g Rate per sqm = (a+b+c+d+e+f+g)				2809.37 28.09	
			Rate per squi - (a+b+C+u+e+i+g)			say	28.09 28.00	
11.11	308.2		Supply at Site Well Decayed Farm Yard	Manure		Suy	20.00	
			Taking output = one cum a) Material a) Cost of well decayed farm yard manure duly screened, loading, carriage, unloading and stacking at site	cum	1.000	141.00	141.00	M-167
			b) GST (multiplying factor 0.2016) or	ı (a)			28.43	
			c) Overhead charges @ 10 % on (a+b)			16.94	
			d) Contractor's profit @ 10 % on (a+l	o+c)			18.64	
			e) Cess @ 1% on (a+b+c+d)				2.05	
			Rate per cum = (a+b+c)				207.06 207.00	
11.14		New	Half Brick Circular Tree Guard, in 2nd 0 and height 1.2 metres, above ground an					
			Half brick circular tree guard, in 2nd class height 1.2 metres, above ground and 0.2 laid dry, and top three courses in ceme intermediate courses being in dry honey co	0 metre ent mort	below gro ar 1:6 (1	und, bottom cement 6 s	n two courses and) and the	;
			Unit = Each Taking output = one tree guard					

Tal	king output = one tree guard					
a)	Labour					
	Mate	day	0.050	551.00	27.55	L-12
	Mason	day	0.250	593.00	148.25	L-11
	Mazdoor	day	0.250	424.00	106.00	L-13
b)	Material					
	Brick 2nd class including carriage	each	230.000	12.00	2760.00	M-079
	Cement mortar 1:6 (Excluding GST,OH,CP &Cess)	cum	0.030	3823.00	114.69	Item 12.6 (D)
c)	GST (multiplying factor 0.2016) or	า (a+b)			636.35	
d)	Overhead charges @ 10 % on (a+l	b+c)			379.28	
e)	Contractor's profit @ 10 % on (a+l	b+c+d)			417.21	
f)	Cess @ 1% on (a+b+c+d+e)				45.89	
Rat	te per tree guard = a+b+c+d+e+f				4635.22	
	-			say	4635.00	

11.15 New Edging with 2nd Class Bricks, Laid Dry Lengthwise

Edging with 2nd class bricks, laid dry lengthwise, including excavation, refilling, consolidation, with a hand packing and spreading nearly surplus earth within a lead of 50 metres

Unit = Metre

Taking output= 10 metres

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	-	а	a) Labour			-		
			Mate	day	0.002	551.00	1.10	L-12
			Mason	day	0.050	593.00	29.65	L-11
			Mazdoor	day	0.050	424.00	21.20	L-13
		k	o) Material					
			Brick 2nd class including carriage	each	50.000	12.00	600.00	M-079
		c	c) GST (multiplying factor 0.2016) or	า (a+b)			131.43	
		c	i) Overhead charges @ 10 % on (a+l	b+c)			78.34	
		e	e) Contractor's profit @ 10 % on (a+l	b+c+d)			86.17	
		f) Cess @ 1% on (a+b+c+d+e)				9.48	
		(Cost for 10 metre = a+b+c+d+e+f				957.37	
		F	Rate per metre = (a+b+c+d+e+f)/10				95.74	
						say	<u>96.00</u>	
11 16		Now B	Jaking Tree Guard 52 cm die and 1.2 n	n Hiab a	nar Daai	an from En	antı / Dituman	

11.16 New Making Tree Guard 53 cm dia and 1.3 m High as per Design from Empty Bitumen Drums

Making tree guard 53 cm dia and 1.3 m high as per design from empty bitumen drum, slit suitably to permit sun and air, (supplied by the department at stock issue rate) including providing and fixing 2 nos MS sheet rings 50 x 0.5 mm with rivets, complete in all respect

Unit = Each

Taking output = one tree guard

I al	king output – one tree guard					
a)	Labour					
	Mate	day	0.020	551.00	11.02	L-12
	Blacksmith	day	0.150	593.00	88.95	L-02
	Mazdoor	day	0.070	424.00	29.68	L-13
b)	Material					
	Empty bitumen drum	each	1.000	71.00	71.00	M-172
	MS sheet 50 x 0.5 mm	kg	0.650	50.73	32.97	M-179 /1000
	Rivets 6 mm dia and 10 mm in length	each	22.000	1.00	22.00	M-158
c)	GST (multiplying factor 0.2016) on	(a+b)			51.53	
d)	Overhead charges @ 10 % on (a+b-	tc)			30.72	
e)	Contractor's profit @ 10 % on (a+b-	+c+d)			33.79	
f)	Cess @ 1% on (a+b+c+d+e)				3.72	
Ra	te for each tree guard = a+b+c+d+e+f				375.38	
	-			say	375.00	

11.17 New Making Tree Guard 53 cm dia and 2 Metre High as per Design from Empty Bitumen Drums

Making tree guard 53 cm dia and 2 metres high as per design from empty bitumen drums, slit suitably to permit sun and air, (supplied by the department at stock issue rate) including providing and fixing four legs 40 cm long of 30 x 3 mm MS riveted to tree guard and providing and fixing 2 nos MS sheet rings 50 x 0.5 mm with rivets complete in all respects

Unit = Each

Taking output = one tree guard

a)	Labour					
	Mate		0.040	551.00	22.04	L-12
	Blacksmith	day	0.200	593.00	118.60	L-02
	Mazdoor		0.200	424.00	84.80	L-13
b)	Material					
	Empty bitumen drum	each	1.500	71.00	106.50	M-172
	MS sheet50 x 0.5 mm	kg	0.650	50.73	32.97	M-179 /1000
	Rivets 6 mm dia and 10 mm in length	each	50.000	1.00	50.00	M-158
	MSplate30 x 3 mm	kg	1.300	50.73	65.95	M-179 /1000

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	-	-	c) GST (multiplying factor 0.2016) of	n (a+b)	-		96.94	
			d) Overhead charges @ 10 % on (a-	b+c)			57.78	
			e) Contractor's profit @ 10 % on (a-	b+c+d)			63.56	
			f) Cess @ 1% on (a+b+c+d+e)				6.99	
			Rate for each tree guard = a+b+c+d+e-	f			706.13	
						say	<u>706.00</u>	

11.18 New Wrought Iron and Mild Steel Welded Work

Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately

Unit = quintal

Taking output = one quintal

ı aı	nng output - one quintai					
a)	Labour					
	Mate	day	0.450	551.00	247.95	L-12
	Blacksmith/ welder for cutting to	day	2.000	593.00	1186.00	L-02
	design and shape and jointing					
	Mazdoor for fixing and helper for	day	2.500	424.00	1060.00	L-13
	Blacksmith/welder					
b)	Material					
	Angle, tees, channels etc	quintal	1.050	5072.80	5326.44	M-179 /10
	Deduct the cost of scrap	quintal	0.050	(1690.93)	(84.55)	M- 179/10/3
we	d 5 per cent of cost of material fo lding rods and other weldinູ ເອຣsories				262.09	
c)	GST (multiplying factor 0.2016) or	n (a+b)			1612.38	
d)	Overhead charges @ 10 % on (a+	b+c)			961.03	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			1057.13	
f)	Cess @ 1% on (a+b+c+d+e)				116.28	
Ra	te per quintal = a+b+c+d				11744.75	
	-			say	<u>11745.00</u>	

11.19 Tree Guard with MS Iron

Providing and fixing MS iron tree guard 60 cm dia and 2 metre high above ground level formed of 4 Nos (25 x 6 mm) and 8 Nos (25 x 3 mm) vertical MS riveted to 3 Nos (25 x 6 mm) iron rings in two halves, bolted together with 8 mm dia and 30 mm long bolts including painting two coats with paint of approved brand over a coat of priming, complete in all respects.

Unit = Each

Taking output = one tree guard

a)	Labour					
	Mate	day	0.050	551.00	27.55	L-12
	Blacksmith	day	0.250	593.00	148.25	L-02
	Mazdoor	day	0.250	424.00	106.00	L-13
b)	Material					
-	MS iron 25 x 6 mm	kg	19.200	50.73	974.02	M-179 /1000
	MS iron 25 x 3 mm	kg	9.600	50.73	487.01	M-179 /1000
	Add 5 per cent of cost of material for riveting, bolting and welding accessories					71000
c)	Machinery					
	Tractor-trolley	hour	0.040	530.00	21.20	P&M-053
d)	Painting					
	Painting two coats including priming	sqm	1.770	141.00	249.57	Item 8.9

			HORHOULI	OIL				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		-	e) GST (multiplying factor 0.2016) or	(a+b+c))		355.63	
	f) Overhead charges @ 10 % on (a+b+c+e)						211.97	
			g) Contractor's profit @ 10 % on (a+l	o+c+e+f))		233.16	
			h) Cess @ 1% on (a+b+c+e+f+g)				25.65	
			Rate per tree guard =a+b+c+d+e+f+g+h				2840.01	
						say	<u>2840.00</u>	
		Note	1 The items of excavation and concreting					

Note 1 The items of excavation and concreting to be measured and paid separately as per design.

2 . Rate of painting may be adopted from the chapter as Traffic signs.

11.20 New Tree Guard with MS Angle Iron and Steel Wire

Providing and fixing tree guard 0.60 metre square, 2.00 metre high fabricated with MS angle iron 30 x 30 x 3 mm, MS iron 25 x 3 mm and steel wire3 mm dia welded and fabricated as per design in two halves bolted together

Unit = Each

Taking output = one

Tal	king output = one					
a)	Labour					
	Mate	day	0.050	551.00	27.55	L-12
	Blacksmith	day	0.250	593.00	148.25	L-02
	Welder	day	0.250	593.00	148.25	L-02
	Mazdoor	day	0.250	424.00	106.00	L-13
b)	Material					
	MS angle 30 x 30 x 3 mm	kg	13.500	50.73	684.86	M-179 /1000
	MS iron 25 x 3 mm	kg	18.000	50.73	913.14	M-179 /1000
	Steel wire 3 mm dia	kg	6.000	170.00	1020.00	M-192
	Add 5 per cent of cost of material for riveting, bolting and welding accessories				130.90	
c)	Machinery					
-	Tractor-trolley	hour	0.040	530.00	21.20	P&M-053
d)	Painting					
	Painting two coats including priming	sqm	1.500	141.00	211.50	Item 8.9
e)	GST (multiplying factor 0.2016) on	(a+b+c)			645.15	
f)	Overhead charges @ 10 % on (a+b	+c+e)			384.53	
g)	Contractor's profit @ 10 % on (a+b	+c+e+f)			422.98	
h)	Cess @ 1% on (a+b+c+e+f+g)				46.53	
Ra	te per tree guard = a+b+c+d+e+f+g+h				4910.84	
				say	<u>4911.00</u>	

11.21 New Compensatory Afforestation

Planting trees as compensatory afforestation at the rate of 290 trees per hectare at a spacing of 6 m by grubbing and leveling the ground upto a depth of 150 mm, digging holes 0.9 m dia, 1 m deep, mixing farm yard/sludge manure with soil, planting of sapling 2 m high with 25 cm dia stem, backfilling the hole and watering

Unit = Hectare

Taking output = one hectare

a) Labour

i) Planting

Mate Mazdoor ii) For Maintenance for one year	day day	2.500 25.000	551.00 424.00	1377.50 10600.00	L-12 L-13
Mate	day	5.000	551.00	2755.00	L-12
Mazdoor	day	50.000	424.00	21200.00	L-13

CHAPTER-11 HORTICULTURE

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b)	Machinery					-
			Dozer D 50 @ 1000 sqm/hour	hour	10.000	3398.00	33980.00	P&M-015
			Water tanker6 KL capacity (for planting)	hour	3.000	724.00	2172.00	P&M-060
		c)	Water tanker6 KL capacity (for maintenance) Material	hour	25.000	724.00	18100.00	P&M-060
		υ,	Sapling 1 to 1.5 m high 2 cm dia stem	each	290.000	82.40	23896.00	M-160 x 0.8
			Add 10 per cent of sapling	each	29.000	82.40	2389.60	M-160 x 0.8
			Decayed farm yard/sludge manure (planting)	cum	60.900	141.00	8586.90	M-167
			Decayed farm yard/sludge manure (maintenance)	cum	4.000	141.00	564.00	M-167
			Pesticides for planting	kg	0.500	361.00	180.50	M-136
			Pesticides for maintenance	kg	1.500	361.00	541.50	M-136
			Cost of water	KL	18.000	71.00	1278.00	M-189
		d)	GST (multiplying factor 0.2016) or	n (a+b+c)			25728.39	
		e)	Overhead charges @ 10 % on (a+l	o+c+d)			15334.94	
		f)	Contractor's profit @ 10 % on (a+	b+c+d+e))		16868.43	
		g)	Cess @ 1% on (a+b+c+d+e+f)				1855.53	
		Rat	te per hectare = a+b+c+d+e			say	187408.29 187408.00	

Note Cost of fencing to be provided as per size of plot and approved design, measured and paid separately

Chapter – 12

FOUNDATION

Preamble:

- 1 Excavation for structures has been provided both by manual and mechanical means.
- The earth excavated from foundation has been proposed to be backfilled and balance quantity utilised for road works locally except for marshy soil where disposal has been provided.
- 3 In case of rocks, excavation has been considered upto a depth of 3 m only.
- 4 Embedment of foundation in soft and hard rocks has been provided as required by the specifications.
- Dewatering has been provided in excavation for foundation on percentage basis. In case less dewatering is required or is not required at all for a particular site condition, the same may be reduced/omitted.
- 6 Mixing of cement concrete has been considered by using concrete mixer and batching plant. The rate can be adopted depending upon availability of equipment and as approved by the Engineer.
- 7 Concrete batching plant is considered to be placed within 10 (ten) km of the bridge site.
- 8 The coarse and fine aggregate for cement concrete shall be as per IS:383.
- 9 Description of items has been given very briefly. Relevant Clause of MoRT&H Specifications have to be referred for detailed specification.
- 10 The rate for well foundation has been included for diametre varying from 6 m to 12 m. Well for twin D type has also been included.
- 11 Pneumatic sinking is a specialised job. All safety precautions as per IS:4138 are required to be taken. Medical supervision for such works is considered very essential. Depth of Pneumatic sinking has been restricted to 30 m below normal water level.
- 12 Rates for various type of piles like bored cast-in-situ, driven precast RCC pile and driven steel piles of H section have been included. If the steel casting in case of driven pile is required to be retained the same is required to be priced separately.
- 13 Pile driving rigs including vibratory hammers are considered to be self contained with power units and necessary accessories required for driving.
- 14 The quantity of concrete which is required to be stripped off upto a minimum height of 600 mm above the designed top level of the pile has been taken into account in the rate.
- 15 The levelling course below the pile cap is proposed with M 15 grade concrete.
- 16 Rates for Steel reinforcement for cement concrete works are provided separately.
- 17 Appendix-4 of IRC:78-2000 has to be referred regarding precautions to be taken during sinking of wells.

- 18 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 upto 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.
- 19 The concrete mix used in bottom plug shall have a minimum cement content of 330 kg/cum and a slump of abot 150 mm to permit easy flow of concrete through tremie to fill-up all cavaties.
- 20 Necessary safety precautions shall be taken for excavation on open foundations for which guidance may be taken from IS:3764.
- 21 A levelling course of 100 mm thickness in M 10 (1:3:6) shall be provided before laying open foundations.
- In the case of open foundation, dewatering shall not be permitted from the time of placing of concrete upto 24 hours after placement.
- 23 In case of open foundations in rock, the trenches around the footing shall be fillied-up with concrete of M 15 grade upto a level of 0.6 m for hard rock and 1.5 m for soft rock above the foundation level. The portion above this shall be filled by boulders grouted with cement.
- When there are two or more compartments in a well, the lower edge of the cutting edge of the middle stems of such wells shall be kept about 300 mm above that of outer stems to prevent rocking.
- 25 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.
- 26 The top of bottom plug shall be atleast 300 mm above top of curb.
- 27 No dewatering shall be carried out within 7 days of casting of bottom plug.
- 28 In case of cement concrete piles, the minimum grade of concrete shall be M 35 with minimum cement content of 400 kg/cum.
- 29 The top of the pile shall project 50 mm into the pile cap and reinforcement of pile shall be fully anchored in pile cap.
- 30 The minimum thickness of pile cap should be atleast 0.6 m or 1.5 times the diametre of the pile whichever is more.
- 31 Guidance for piles is to be obtained from IS:2911.
- 32 Concrete in driven cast-in-situ piles shall be cast upto a minimum height of 600 mm above the designed top level of pile, which shall be stripped off to obtain sound concrete either before final set or after 3 days.
- 33 In remote areas, for isolated slab culvert/box culvert upto 2 m span, concrete can be hand mixed in accordance with Clause 806 of MORD Specifications. Therefore, in the analysis, for items of concrete, the alternative of hand mixing has also been considered.

Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	DSR Spec.							Input ref.
12.1	304		Excavation for Structures	'				!
			Earth work in excavation o specification, including sett stumps and other deleterio with approved material (with	ing out, const us matter, dre	ruction of short ssing of sides	ing and bracin	g, removal of	
		I A	Ordinary soil Unit = cum Taking output = 10 cum Manual Means		-			
		(i)	Depth upto 3 m					
			a) Labour Mate	day	0.140	551.00	77.14	L-12
			Mazdoor	day	3.500	424.00	1484.00	L-13
			b) GST (multiplying factor				314.73	
			c) Overhead charges @ 2				375.17	
			d) Contractor's profit @ 1				225.10	
			e) Cess @ 1% on (a+b+c+	d)			24.76	
			Cost for 10 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)	/10			2500.90 250.09	
			Kate per cuiti - (a+b+c+u+e)	710		say	250.09 250.00	
		.,	Earth work in excavation o specification, including sett stumps and other deleterio with approved material (with	ing out, const us matter, dre	ruction of short	per drawing ing and bracin	g, removal of	
		ı	Ordinary soil Unit = cum					
		A	Taking output = 10 cum Manual Means					
		(i)	Depth upto 3 m a) Labour					
			Mate	day	0.150	551.00	82.65	L-12
			Mazdoor b) GST (multiplying factor	day r 0 2016) op (a)	3.850	424.00	1632.40 345.75	L-13
			c) Overhead charges @ 2				412.16	
			d) Contractor's profit @ 1				247.30	
			e) Cess @ 1% on (a+b+c+				27.20	
			Cost for 10 cum = a+b+c+d+e	,			2747.46	
			Rate per cum = (a+b+c+d+e)/	/10			274.75	
						say	<u>275.00</u>	
12.1 (I) A	١.	(ii)	Depth 3 m to 6 m (without do	e-watering)				
			a) Labour Mate/Supervisor	day	0.180	551.00	99.18	L-12
			Mazdoor	day	4.500	424.00	1908.00	L-13
			b) GST (multiplying factor	r 0.2016) on (a)			404.65	
			c) Overhead charges @ 2	0 % on (a+b)			482.37	
			d) Contractor's profit @ 1	0 % on (a+b)			289.42	
			e) Cess @ 1% on (a+b+c+	·d)			31.84	
			Cost for 10 cum = a+b+c+d+e				3215.46	
			Rate per cum = (a+b+c+d+e)/	/10			321.55	
						say	<u>322.00</u>	
		(ii) b	Depth 3 m to 6 m (with de-w	atering)				
			a) Labour Mate/Supervisor	day	0.210	551.00	115.71	L-12
			Mazdoor	day	5.180	424.00	2196.32	L-13
			b) GST (multiplying factor	•			466.11	
			c) Overhead charges @ 2				555.63	
			d) Contractor's profit @ 1				333.38	
			e) Cess @ 1% on (a+b+c+				36.67	
			- •	-				

				FO	UNDATION	<u> 15 </u>			
Sr No	Ref. to MoRTH/ DSR Spec			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		1	Cost	t for 10 cum = a+b+c+d+e				3703.82	
			Rate	e per cum = (a+b+c+d+e)/10				370.38	
				. ,			say	<u>370.00</u>	
12.1 (I) A		(iii)	Dep	th above 6 m (without de-wat	tering)				
			a)	Labour		0.040	554.00	100.04	L-12
				te/Supervisor zdoor	day day	0.240 6.000	551.00 424.00	132.24 2544.00	L-12 L-13
			b)	GST (multiplying factor 0.2	•		424.00	539.53	
			c)	Overhead charges @ 20 %				643.15	
			d)	Contractor's profit @ 10 %	on (a+b)			385.89	
			e)	Cess @ 1% on (a+b+c+d)				42.45	
			Cos	t for 10 cum = a+b+c+d+e				4287.26	
			Rate	e per cum = (a+b+c+d+e)/10				428.73	
		(iii) b	Dep	th above 6 m (with de-wateri	ng)		say	<u>429.00</u>	
			a)	Labour		0.000	554.00	450.70	1.40
				te/Supervisor zdoor	day day	0.290 7.200	551.00 424.00	159.79 3052.80	L-12 L-13
			b)	GST (multiplying factor 0.2	-			647.66	
			c)	Overhead charges @ 20 %	on (a+b)			772.05	
			d)	Contractor's profit @ 10 %	on (a+b)			463.23	
			e)	Cess @ 1% on (a+b+c+d)				50.96	
				t for 10 cum = a+b+c+d+e				5146.49	
			Rate	e per cum = (a+b+c+d+e)/10			say	514.65 515.00	
12.1 (I)		В	Mec	hanical Means			Suy	<u>575.00</u>	
		(i)	-	th upto 3 m (without de-wate t = cum	ring)				
			Tak	ing output = 240 cum					
			a)	Labour			== 4 00	470.00	1.40
			Mate	e door	day	0.320 8.000	551.00 424.00	176.32	L-12 L-13
			b)	Machinery	day	8.000	424.00	3392.00	L-13
			Hyd	raulic excavator 1.0 cum ket capacity	hour	6.000	2044.00	12264.00	P&M-026
			c)	GST (multiplying factor 0.2	016) on (a+	-b)		3191.80	
			d)	Overhead charges @ 20 %	on (a+b+c))		3804.82	
			e)	Contractor's profit @ 10 %	on (a+b+c-	⊦d)		2282.89	
			f)	Cess @ 1% on (a+b+c+d+e))			251.12	
			Cost	t for 240 cum = a+b+c+d+e+f				25362.95	
			Rate	e per cum = (a+b+c+d+e+f)/24	10			105.68	
			_				say	<u>106.00</u>	
		(i) C	-	th upto 3 m (with de-watering	g)				
				t = cum ing output = 240 cum					
			a)	ing output = 240 cum Labour					
			Mate		day	0.336	551.00	185.14	L-12
			Maz	door	day	8.400	424.00	3561.60	L-13
			•	Machinery raulic excavator 1.0 cum	hour	6.300	2044.00	12877.20	P&M-026
				ket capacity					
			c)	GST (multiplying factor 0.2		•		3351.39	
			d)	Overhead charges @ 20 %				3995.07	
			e)	Contractor's profit @ 10 %	•	ra)		2397.04	
			f)	Cess @ 1% on (a+b+c+d+e) t for 240 cum = a+b+c+d+e+f)			263.67 26631.11	
				e per cum = (a+b+c+d+e+f)/24	10			110.96	
							say	<u>111.00</u>	

				F	OUNDATIONS				
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.1 (I) B		(ii)	Dep	th 3 m to 6 m (without de-w	vatering)	1			
			Unit	= cum					
				ing output = 210 cum					
			•	Labour		0.000	554.00	470.00	1 42
			Mate		day day	0.320 8.000	551.00 424.00	176.32 3392.00	L-12 L-13
			b)	Machinery	day	0.000	424.00	3332.00	
			•	raulic excavator 1.0 cum set capacity	hour	6.000	2044.00	12264.00	P&M-026
			c)	GST (multiplying factor 0	.2016) on (a+b)			3191.80	
			ď)	Overhead charges @ 20 9	, , ,			3804.82	
			e)	Contractor's profit @ 10 %)		2282.89	
			f)	Cess @ 1% on (a+b+c+d+				251.12	
			,	t for 210 cum = a+b+c+d+e+	•			25362.95	
			Rate	e per cum = (a+b+c+d+e+f)/	210			120.78	
				(2 2 2 2 2 3)			say	121.00	
		(ii) c	Dep	th 3 m to 6 m (with de-wate	ering)		•		
			-	:= cum	- -				
				ing output = 210 cum					
				Labour					
			Mate	e	day	0.344	551.00	189.54	L-12
			Maz		day	8.600	424.00	3646.40	L-13
			•	Machinery raulic excavator 1.0 cum ket capacity	hour	6.450	2044.00	13183.80	P&M-026
					0040) (-+			2424 40	
			c)	GST (multiplying factor 0				3431.18	
			d)	Overhead charges @ 20 9				4090.18	
			e)	Contractor's profit @ 10 %)		2454.11	
			f)	Cess @ 1% on (a+b+c+d+	•			269.95	
			Cost	t for 210 cum = a+b+c+d+e+	Ī			27265.16	
			Rate	e per cum = (a+b+c+d+e+f)/	210			129.83	
24 (I) B		/:::\	Dam	th above Con (with aut da w	-4- win w\		say	<u>130.00</u>	
2.1 (I) B		(111)	Бер	th above 6m (without de-wa	atering)				
			Taki	t = cum ing output = 180 cum					
			a) Mate	Labour	day	0.400	551.00	220.40	L-12
			Maz		day	10.000	424.00	4240.00	L-13
			b)	Machinery	day	10.000	121.00	12 10:00	
			•	raulic excavator 1.0 cum	hour	6.000	2044.00	12264.00	P&M-026
			c)	GST (multiplying factor 0	.2016) on (a+b)			3371.64	
			d)	Overhead charges @ 20 9				4019.21	
			e)	Contractor's profit @ 10 %)		2411.53	
			f)	Cess @ 1% on (a+b+c+d+	·e) `			265.27	
				•	•			26792.05	
			•	t for 180 cum = a+b+c+d+e+t	ſ				
			Cost					148.84	
			Cost	t for 180 cum = a+b+c+d+e+f)/ e per cum = (a+b+c+d+e+f)/			say	148.84 <u>149.00</u>	
	((iii) c	Cost		180		say		
		(iii) c	Cost Rate Dept	e per cum = (a+b+c+d+e+f)/	180		say		
	((iii) c	Cost Rate Dept Unit Taki	e per cum = (a+b+c+d+e+f)/ th above 6m (with de-water t = cum ing output = 180 cum	180		say		
	((iii) c	Cost Rate Dept Unit Taki	e per cum = (a+b+c+d+e+f)/ th above 6m (with de-water i = cum ing output = 180 cum Labour	180	0.440	551.00		L-12
	•	(iii) c	Depter Unite Takina) Mate Maze	e per cum = (a+b+c+d+e+f)/ th above 6m (with de-water i = cum ing output = 180 cum Labour eddoor	180 ring)	0.440 11.000		<u>149.00</u>	L-12 L-13
	•	(iii) c	Cost Rate Dept Unit Taki a) Mate Maze b)	th above 6m (with de-water c cum ing output = 180 cum Labour door Machinery	day day	11.000	551.00 424.00	242.44 4664.00	L-13
	•	(iii) c	Cost Rate Depr Unit Taki a) Mate Maze b) Hydr	e per cum = (a+b+c+d+e+f)/ th above 6m (with de-water i = cum ing output = 180 cum Labour eddoor	180 ring) day		551.00	<u>149.00</u> 242.44	L-13
		(iii) c	Cost Rate Depr Unit Taki a) Mate Maze b) Hydr	th above 6m (with de-water = cum ing output = 180 cum Labour edoor Machinery raulic excavator 1.0 cum	day day day hour	6.600	551.00 424.00	242.44 4664.00	

			FOUNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			e) Contractor's profit @ 10 % on (a+b+c	.±4/		2652.68	
			e) Contractor's profit @ 10 % on (a+b+c f) Cess @ 1% on (a+b+c+d+e)	·+u)		2032.00	
			Cost for 180 cum = a+b+c+d+e+f			29471.24 163.73	
			Rate per cum = (a+b+c+d+e+f)/180		say	164.00	
12.1		II	Ordinary Rock (not requiring blasting)		Suy	104.00	
		Α	Manual Means				
		(i)	Depth upto 3 m (without de-watering)				
			Unit = cum				
			Taking output = 10 cum a) Labour				
			Mate day	0.200	551.00	110.20	L-12
			Mazdoor day	5.000	424.00	2120.00	L-13
			c) GST (multiplying factor 0.2016) on (a	+b)		449.61	
			c) Overhead charges @ 20 % on (a+b)			535.96	
			d) Contractor's profit @ 10 % on (a+b+c	:)		321.58	
			e) Cess @ 1% on (a+b+c+d)			35.37	
			Cost for 10 cum = a+b+c+d+e			3572.72	
			Rate per cum = (a+b+c+d+e)/10			357.27	
			. ,		say	<u>357.00</u>	
		(ii)	Depth upto 3 m (with de-watering)		_		
			Unit = cum				
			Taking output = 10 cum				
			a) Labour				
			Mate day	0.220	551.00	121.22	L-12
			Mazdoor day	5.500	424.00	2332.00	L-13
			b) GST (multiplying factor 0.2016) on (a)		494.57	
			c) Overhead charges @ 20 % on (a+b)			589.56	
			d) Contractor's profit @ 10 % on (a+b+c	;)		353.74	
			e) Cess @ 1% on (a+b+c+d)			38.91	
			Cost for 10 cum = a+b+c+d+e			3930.00	
			Rate per cum = (a+b+c+d+e)/10			393.00	
12.1		В	Mechanical Means		say	<u>393.00</u>	
(II)			Depth upto 3 m (without de-watering)				
(,			Unit = cum				
			Taking output = 180 cum				
			a) Labour				
			Mate day	0.240	551.00	132.24	L-12
			Mazdoor day	6.000	424.00	2544.00	L-13
			b) Machinery	6.000	2044.00	12264.00	P&M-026
			Hydraulic excavator 1.0 cum hour bucket capacity	0.000	2044.00	12204.00	
			c) GST (multiplying factor 0.2016) on (a	+b)		3011.95	
			d) Overhead charges @ 20 % on (a+b+c	•		3590.44	
			e) Contractor's profit @ 10 % on (a+b+c	•		2154.26	
			f) Cess @ 1% on (a+b+c+d+e)	- 4)		236.97	
			Cost for 180 cum = a+b+c+d+e+f			23933.86	
			Rate per cum = (a+b+c+d+e+f)/180			132.97	
			Kate per cuiti - (a+b+c+u+e+i)/100		say	133.00	
		С	Depth upto 3 m (with de-watering) Unit = cum				
			Taking output = 180 cum				
			a) Labour				
			Mate day	0.264	551.00	145.46	L-12
			Mazdoor day	6.600	424.00	2798.40	L-13
			b) Machinery				D014 000
			Hydraulic excavator 1.0 cum hour bucket capacity	6.600	2044.00	13490.40	P&M-026
			c) GST (multiplying factor 0.2016) on (a	•		3313.15	
			d) Overhead charges @ 20 % on (a+b+c	;)		3949.48	

			FOUNDATIONS						
Sr No	Ref. to MoRTH/ DSR Spec.		Description	on Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
			a) Contractorio ne	rofit @ 40 % on /o+b+o	\ \		2260.60		
			· ·	ofit @ 10 % on (a+b+c	:+a)		2369.69		
			f) Cess @ 1% on	•			260.67		
			Cost for 180 cum = a+				26327.25		
			Rate per cum = (a+b-	+c+d+e+f)/180			146.26		
12.1		Ш	Hard Rock (requiring	a blastina)		say	<u>146.00</u>		
12.1				g blastilig /					
		Α	Manual Means						
			Without de-watering						
			Unit = cum						
			Taking output = 10 c	eum .					
			a) Labour						
			Mate	day	0.350	551.00	192.85	L-12	
			Driller	day	0.500	551.00	275.50	L-06	
			Blaster	day	0.250	551.00	137.75	L-03	
			Mazdoor	day	8.000	424.00	3392.00	L-13	
			b) Machinery						
			Air Compressor 250 c	fm with 2 hour	1.000	658.00	658.00	P&M-001	
			jack hammer for drilling	ng.					
			c) Material						
			Blasting Material	kg	3.500	166.00	581.00	M-104	
			Detonator electric	each	14.000	11.59	162.26	M-094/100	
			d) GST (multiplyir	ng factor 0.2016) on (a	+b+c)		1088.51		
				ges @ 20 % on (a+b+c	•		1297.57		
			•	ofit @ 10 % on (a+b+c	•		778.54		
			•	•	·u·e)		85.64		
			g) Cess @ 1% on (Cost for 10 cum = a+b	•			8649.62		
				•			864.96		
			Rate per cum = (a+b-	-C-u-e-1-g)/10		621/	865.00		
		В	With de-watering			say	003.00		
			Unit = cum						
			Taking output = 10 c	um					
			a) Labour	um					
			Mate	day	0.385	551.00	212.14	L-12	
			Driller	day	0.550	551.00	303.05	L-06	
			Blaster	day	0.275	551.00	151.53	L-03	
			Mazdoor	•				L-13	
				day	8.800	424.00	3731.20	L-10	
			b) Machinery Air Compressor 250 c	ofm with 2 hour	1.100	658.00	723.80	P&M-001	
			jack hammer for drilling		1.100	030.00	723.00		
			•	19.					
			c) Material Blasting Material	ka	3.500	166.00	E91 00	M-104	
			Detonator electric	kg			581.00	M-094/100	
			Detonator electric	each	14.000	11.59	162.26	100-03-7/100	
			d) GST (multiplyir	ng factor 0.2016) on (a	+h+c)		1182.38		
				ges @ 20 % on (a+b+c	•		1409.47		
			•	ofit @ 10 % on (a+b+c	•		845.68		
			g) Cess @ 1% on (•	,		93.03		
			Cost for 10 cum = a+b	,			9395.54		
			Rate per cum = (a+b	•			939.55		
			rate per cam – (a.b	· · · · · · · · · · · · · · · · · · ·		say	940.00		
12.1		IV	Hard Rock (blasting	prohibited)		Juy	0-10.00		
			Unit = cum	,					
			Taking output = 10 c	rum					
		Α	Mechanical Means (v	without de-watering)					
			a) Labour						
			Mate	day	0.200	551.00	110.20	L-12	
			Mazdoor	day	5.000	424.00	2120.00	L-13	
			b) Machinery Air Compressor 250 c	fm with 2 hour	6.000	658.00	3948.00	P&M-001	
			leads of pneumatic br		0.000	000.00	J340.00		

			FOUNDA	ATIONS				
Sr No	Ref. to MoRTH/ DSR Spec.		Description U	nit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			c) GST (multiplying factor 0.2016) o	on (a+h)			1245.53	
			d) Overhead charges @ 20 % on (a				1484.75	
			e) Contractor's profit @ 10 % on (a-	-	`		890.85	
			,	тытстиј	,		97.99	
			f) Cess @ 1% on (a+b+c+d+e)					
			Cost for 10 cum = a+b+c+d+e+f				9897.32 989.73	
			Rate per cum = (a+b+c+d+e+f)/10			621/	909.73 990.00	
		В	Mechanical Means (with de-watering)			say	<u>990.00</u>	
			a) Labour					
			•	av	0.220	551.00	121.22	L-12
			Mazdoor d	ay	5.500	424.00	2332.00	L-13
			b) Machinery					
			Air Compressor 250 cfm with 2 holeads of pneumatic breaker	our	6.600	658.00	4342.80	P&M-001
			c) GST (multiplying factor 0.2016) of	on (a+b))		1370.08	
			d) Overhead charges @ 20 % on (a	+b+c)			1633.22	
			e) Contractor's profit @ 10 % on (a-	+b+c+d))		979.93	
			f) Cess @ 1% on (a+b+c+d+e)				107.79	
			Cost for 10 cum = a+b+c+d+e+f				10887.04	
			Rate per cum = (a+b+c+d+e+f)/10				1088.70	
						say	<u>1089.00</u>	
12.1		٧	Marshy Soil					
			Unit = cum					
			Taking output = 10 cum Depth upto 3 m					
		Α	Manual means (without de-watering)					
			a) Labour					
			•	ay	0.400	551.00	220.40	L-12
				ay	10.000	424.00	4240.00	L-13
			b) Machinery					
			•	our	2.670	530.00	1415.10	P&M-053
			c) GST (multiplying factor 0.2016) of				1184.50	
			d) Overhead charges @ 20 % on (a	-			1412.00	
			e) Contractor's profit @ 10 % on (a-	+b+c+d))		847.20	
			f) Cess @ 1% on (a+b+c+d+e)				93.19	
			Cost for 10 cum = a+b+c+d+e+f				9412.39	
			Rate per cum = (a+b+c+d+e+f)/10				941.24	
		В	Manual means (with de-watering)			say	<u>941.00</u>	
		_	` ,					
			a) Labour		0.500	FF1 00	200 52	L-12
				ay ay	0.520 13.000	551.00 424.00	286.52 5512.00	L-12 L-13
			b) Machinery	ч	10.000	424.00	0012.00	
			· ·	our	2.670	530.00	1415.10	P&M-053
			c) GST (multiplying factor 0.2016) of	on (a+b))		1454.27	
			d) Overhead charges @ 20 % on (a	+b+c)			1733.58	
			e) Contractor's profit @ 10 % on (a-	+b+c+d))		1040.15	
			f) Cess @ 1% on (a+b+c+d+e)				114.42	
			Cost for 10 cum = a+b+c+d+e+f				11556.04	
			Rate per cum = (a+b+c+d+e+f)/10			eav	1155.60 1156.00	
12.1 (V)		Α	Mechanical Means (without de-watering	na)		say	1130.00	
(-)			a) Labour	J,				
			•	ay	0.080	551.00	44.08	L-12
				ay	2.000	424.00	848.00	L-13
			and backfilling					
			b) Machinery		0.470	0044.00	0.47.40	D&M noe
			Hydraulic excavator 1.0 cum ho bucket capacity @ 60 cum per	our	0.170	2044.00	347.48	P&M-026
			hour					
				our	0.450	916.00	412.20	P&M-048
			hour.					

	1 - 4 - 1		_		NDATION				
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
				GST (multiplying factor 0.20	16) on (a+	 b)		332.99	
			d)	Overhead charges @ 20 % o	. ,	• •		396.95	
			e)	Contractor's profit @ 10 % o		d)		238.17	
			f)	Cess @ 1% on (a+b+c+d+e)	(a · b · c ·	ω,		26.20	
			,	for 10 cum = a+b+c+d+e+f				2646.07	
				per cum = (a+b+c+d+e+f)/10				264.61	
			Nate	per cum = (a·b·c·u·e·i)/10			001/	265.00	
		В	Mac	hanical Means (with de-wateri	na)		say	203.00	
		_		Labour	iig)				
			a) Mate		day	0.096	551.00	52.90	L-12
				door for dressing sides, bottom	day	2.400	424.00	1017.60	L-13
			and	backfilling	day	2.100	121.00	1017.00	
			b)	Machinery			004400	440.00	D014 000
			•	raulic excavator 1.0 cum set capacity @ 60 cum per	hour	0.204	2044.00	416.98	P&M-026
			Tipp	er 5.5 cum capacity, 4 trips per	hour	0.540	916.00	494.64	P&M-048
			c)	GST (multiplying factor 0.20	16) on (a+	b)		399.60	
			d)	Overhead charges @ 20 % o	n (a+b+c)			476.34	
			e)	Contractor's profit @ 10 % o	n (a+b+c+	d)		285.81	
			f)	Cess @ 1% on (a+b+c+d+e)				31.44	
			Cost	for 10 cum = a+b+c+d+e+f				3175.31	
			Rate	e per cum = (a+b+c+d+e+f)/10				317.53	
		VI	Bacl	k Filling in Marshy Foundation	Pits		say	<u>318.00</u>	
				: Cum					
			Taki	ng Output : 6 cum					
			a)	Labour	4	0.400	554.00	00.40	L-12
			Mate	door for dressing sides, bottom	day day	0.120 3.000	551.00 424.00	66.12 1272.00	L-12 L-13
				backfilling Machinery	day	3.000	424.00	1272.00	
			Trac	tor-trolley for transportation	hour	2.000	530.00	1060.00	P&M-053
			c)	GST (multiplying factor 0.20	. ,	-		483.46	
			d)	Overhead charges @ 20 % o				576.32	
			e)	Contractor's profit @ 10 % o	n (a+b+c+	d)		345.79	
			f)	Cess @ 1% on (a+b+c+d+e)				38.04	
				for 6 cum = a+b+c+d+e+f				3841.73	
			Rate	per cum = (a+b+c+d+e+f)/6				640.29	
12.2	304		Fillir	ng Annular Space Around Foo	ting in Ro	ck	say	<u>640.00</u>	
			<i>Taki</i> Lear nom	= cum ing out put = 1 cum n cement concrete 1:3:6 inal mix. Rate may be taken as tem 12.4.					
12.3	304		San	d Filling in Foundation Trench	es as per	Drawing & Tech	nnical Specific	ation	
				= cum ing output = 1 cum					
			,	Labour		0.045	FF1.00		1.40
			Mate		day	0.010	551.00 424.00	5.51	L-12 L-13
			Mazo b)	door Material	day	0.300	424.00	127.20	L-13
			,	d (assuming 20 per cent	cum	1.200	650.00	780.00	M-006
			c)	S) GST (multiplying factor 0.20 ^o	16) on (a+	b)		184.00	

		FOUNDATIONS								
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.		
			d) Overhead charges @ 20	% on (a+b+c)			219.34			
			e) Contractor's profit @ 10	, ,			131.61			
			f) Cess @ 1% on (a+b+c+d		α,		14.48			
			, ,	1.6)			1462.14			
			Rate per cum = a+b+c+d+e+f			say	1462.14 1462.00			
12.4	2100		PCC 1:3:6 in Foundation							
			Plain cement concrete 1:3:6 if 40 mm nominal size mechal vibration including curing for Unit = cum	nically mixed						
			Taking output = 15 cum a) Labour							
			Mate	day	0.640	551.00	352.64	L-12		
			Mason	day	1.000	593.00	593.00	L-11		
			Mazdoor	day	15.000	424.00	6360.00	L-13		
			b) Material	,						
			40 mm Aggregate	cum	13.500	1900.00	25650.00	M-055		
			coarse Sand	cum	6.750	650.00	4387.50	M-005		
			cement	tonne	3.450	9100.00	31395.00	M-081		
			Cost of water	KL	18.000	71.00	1278.00	M-189		
			c) Machinery Concrete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009		
			cum)							
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079		
			Water tanker 6 KL capacity	hour	2.000	724.00	1448.00	P&M-060		
			c) GST (multiplying factor (15371.22			
			e) Overhead charges @ 2	•	•		18323.47			
			f) Contractor's profit @ 10 %	•	d+e)		10994.08			
			g) Cess @ 1% on (a+b+c+	•			1209.35			
			Cost for 15 cum = a+b+c+d+e+f	J			122144.26			
			Rate per cum = (a+b+c+d+e+f-	+g)/15			8142.95			
		Note	Vibrator is a part of minor T & P overhead charges of the contract		dy included in	say	<u>8143.00</u>			
12.5	1300		Brick Masonry Work in Ceme and Plastering, as per Drawin			-	iding Pointing			
			Unit = cum Taking output = 5 cum a) Material							
			Bricks Ist class	each	2500.000	12.00	30000.00	M-079		
			Cement mortar 1:3 (Rate as in Item 12.6 A sub-analysis)	cum	1.200	5727.00	6872.40	Item 12.6 (A)		
			(Excluding GST,OH,CP &Cess) b) Labour							
			Mate	day	0.480	551.00	264.48	L-12		
			Mason	day	4.000	593.00	2372.00	L-11		
			Mazdoor	day	8.000	424.00	3392.00	L-13		
			c) GST (multiplying factor (0.2016) on (a+	·b)		8648.82			
			d) Overhead charges @ 20	% on (a+b+c)			10309.94			
			e) Contractor's profit @ 10	% on (a+b+c+	-d)		6185.96			
			f) Cess @ 1% on (a+b+c+d	l+e)			680.46			
			Cost for 5 cum = a+b+c+d+e+f Rate per cum (a+b+c+d+e+f)/5	;			68726.06 13745.21			
12.6	Sub- analysis	(A)	Cement Mortar 1:3 (1 cement	: 3 sand)		say	<u>13745.00</u>			
			Unit = 1 cum							
			Taking output = 1 cum							
			a) Materials		0.510	0400.00	40.44.05	M 004		
			Cement	tonne	0.510	9100.00	4641.00	M-081		

				FOUNDATIONS								
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.			
			San	d	cum	1.050	650.00	682.50	M-005			
			b)	Labour								
			Mate	е	day	0.040	551.00	22.04	L-12			
			Maz	door	day	0.900	424.00	381.60	L-13			
			Tota	al Material and Labour = (a+b)			say	5727.00				
	Sub- analysis (Addl.)	(B)	Cen	nent Mortar1:2 (1cement :2 sa	nd)							
	, ,			t = <mark>1 cum</mark> ing output = 1 cum Materials								
			Cen	nent	tonne	0.672	9100.00	6115.20	M-081			
			San		cum	0.930	650.00	604.50	M-005			
			b)	Labour		0.040	554.00	00.04	L-12			
			Mate	e door	day	0.040 0.900	551.00 424.00	22.04 381.60	L-12 L-13			
				al Material and Labour = (a+b)	day	0.900	424.00 say	7123.00	2-10			
	Sub- analysis (Addl.)	(C)		nent Mortar1:4 (1cement :4 sa	nd)		Suy	7120.00				
				t = 1 cum ing output = 1 cum Materials								
			Cen		tonne	0.403	9100.00	3667.30	M-081			
			San	d	cum	1.120	650.00	728.00	M-005			
			b)	Labour								
			Mate		day	0.040	551.00	22.04	L-12			
				door	day	0.900	424.00	381.60 4799.00	L-13			
	Sub- analysis (Addl.)	(D)		al Material and Labour = (a+b) nent Mortar1:6 (1cement :6 sa	nd)		say	4799.00				
	, , ,		Tak	t = 1 cum ing output = 1 cum								
			a)	Materials		0.000	0100.00	2620.00	M-081			
			Cen		tonne	0.288	9100.00	2620.80	M-005			
			San		cum	1.337	650.00	869.05	IVI-005			
			b)	Labour	alas i	0.040	EE4 00	22.04	L-12			
			Mate		day		551.00	22.04				
				door	day	0.900	424.00	381.60	L-13			
				al Material and Labour = (a+b)			say	3893.00				
12.7	1400		Tec	ne Masonry Work in Cement M hnical Specifications.	lortar 1:3	in Foundation co	omplete as pe	r Drawing and				
	1405.4	(A)	Tak	t = <mark>cum</mark> ing output = 5 cum are Rubble Coursed Rubble N	lasonry (1	first sort)						
			a)	Material								
			Stor		cum	5.500	605.00	3327.50	M-169			
				ough and bond stone	each	35.000	15.00	525.00	M-182			
			0.79	no.x0.24mx0.24mx0.39m = 0 cu.m)		4.500		0500.50	No 42 C			
			Item (Exc	nent mortar 1:3 (Rate as in 12.6 A sub-analysis) cluding GST,OH,CP &Cess)	cum	1.500	5727.00	8590.50	Item 12.6 (A)			
			b)	Labour	و المام	0.000	EE4.00	262.00	L-12			
			Mate		day	0.660	551.00	363.66				
			Mas		day	7.500	593.00	4447.50	L-11			
				door	day	9.000	424.00	3816.00	L-13			
			c)	GST (multiplying factor 0.20		•		4247.74				
			d)	Overhead charges @ 20 % o	n (a+b+c)		5063.58				
			e)	Contractor's profit @ 10 % o	n (a+b+c	+d)		3038.15				
			f)	Cess @ 1% on (a+b+c+d+e)				334.20				
			Cos	t for 5 cum = a+b+c+d+e+f				33753.83				
			Rate	e per cum (a+b+c+d+e+f)/5				6750.77				
							say	<u>6751.00</u>				
								2101100				

			FC	DUNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	1405.3	(B)	Random Rubble Masonry					
		(5)	(coursed/uncoursed)					
			Unit = cum					
			Taking output = 5 cum					
			a) Material					
			Stone	cum	5.500	605.00	3327.50	M-148
			Through and bond stone	each	35.000	15.00	525.00	M-182
			(35nos.x0.24mx0.24mx0.39m = 0.79 cu.m)					
			Cement mortar 1:3 (Rate as in	cum	1.550	5727.00	8876.85	Item 12.6
			Item 12.6 A sub-analysis)					(A)
			(Excluding GST,OH,CP &Cess)					
			b) Labour Mate	day	0.620	551.00	341.62	L-12
			Mason	day	6.000	593.00	3558.00	L-11
			Mazdoor	day	9.000	424.00	3816.00	L-13
			c) GST (multiplying factor 0.2	2016) on (a+	b)		4121.71	
			d) Overhead charges @ 20 %				4913.34	
			e) Contractor's profit @ 10 %	on (a+b+c+	d)		2948.00	
			f) Cess @ 1% on (a+b+c+d+e))			324.28	
			Cost for 5 cum = a+b+c+d+e+f				32752.30	
			Rate per cum (a+b+c+d+e+f)/5				6550.46	
		Note	The labour already considered in o	cement		say	<u>6550.00</u>	
			mortar has been taken into account					
			proposing labour for masonry world	ks.				
12.8	1500, 1700 & 2100		Plain/Reinforced Cement Concr	rete in Oper	Foundation co	mplete as per	Drawing and	
			Technical Specifications.					
		A (i)	PCC Grade M15					
			Unit = cum Taking output = 15 cum					
			a) Material					
			Cement	tonne	4.130	9100.00	37583.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005 M-055
			40 mm Aggregate 20 mm Aggregate	cum	8.100 4.050	1900.00 1900.00	15390.00 7695.00	M-053
			10 mm Aggregate	cum	1.350	1800.00	2430.00	M-051
			b) Labour					
			Mate	day	0.860	551.00	473.86	L-12
			Mason Mazdoor	day day	1.500 20.000	593.00 424.00	889.50 8480.00	L-11 L-13
			c) Machinery	uay	20.000	424.00	0400.00	
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 63 KVA	hour	6.000	883.00	5298.00	P&M-019
			Per Cum Basic Cost of Labour,		5625.000	000.00	0200.00	
			Machinery (a+b+c)					
			d) Formwork @ 4 per cent on	1			3374.91	
			cost of concrete i.e. cost of material, labour and machinery					
			e) GST (multiplying factor 0.2	2016) on (a+	b+c+d)		17689.95	
			f) Overhead charges @ 20 %	on (a+b+c+	d+e)		21087.54	
			g) Contractor's profit @ 10 %	on (a+b+c+	d+e+f)		12652.53	
			h) Cess @ 1% on (a+b+c+d+e	e+f+a)	-		1391.78	
			Cost for 15 cum = $a+b+c+d+e+f+g$	•			140569.57	
			Rate per cum = (a+b+c+d+e+f+g	T11)/13			9371.30	
		Note	Needle Vibrator is an item of mi	inor T & D v	which is already	say	<u>9371.00</u>	
			included in overhead charges.	Hence not	•			

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analysis of cement concrete works.

			FC	UNDATION	<u>S</u>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.8		В	PCC Grade M20					
			Unit : cum					
			Taking output = 15 cum					
			a) Material					
			Cement	tonne	5.160	9100.00	46956.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
			20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
			10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
			b) Labour					
			Mate	day	0.860	551.00	473.86	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Per Cum Basic Cost of Labour, I Machinery (a+b+c)	Material &	6090.000			
			d) Formwork @ 4 per cent of cost of concrete i.e. cost of material, labour and machinery				3653.95	
			e) GST (multiplying factor 0.2	016) on (a+	b+c+d)		19152.57	
			f) Overhead charges @ 20 %		22831.08			
			g) Contractor's profit @ 10 %		•		13698.65	
			h) Cess @ 1% on (a+b+c+d+e		,		1506.85	
			Cost for 15 cum = $a+b+c+d+e+f+g$	•			152191.96	
			Rate per cum = (a+b+c+d+e+f+g-		10146.13			
			(a a a a a g			say	10146.00	
12.8		С	RCC Grade M20			51.,	<u> </u>	
	Case I	I	Using Concrete Mixer					
			Unit = cum					
			Taking output = 15 cum					
			a) Material		E 040	0400.00	47444.00	M-081
			Cement Coarse sand	tonne	5.210 6.750	9100.00 650.00	47411.00 4387.50	M-005
			20 mm Aggregate	cum cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour					
			Mate	day	0.860	551.00	473.86	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Per Cum Basic Cost of Labour, I Machinery (a+b+c)		6103.000			
			d) Formwork @ 4 per cent on (a+b+c)				3661.35	
			e) GST (multiplying factor 0.2	016) on (a+	b+c+d)		19191.35	
			f) Overhead charges @ 20 %		•		22877.31	
			g) Contractor's profit @ 10 %	•	•		13726.39	
		h) Cess @ 1% on (a+b+c+d+e+f+g)					1509.90	
			Cost for 15 cum = $a+b+c+d+e+f+g$		152500.16			
			Rate per cum = $(a+b+c+d+e+f+g)$				10166.68	
			Tate per cuiti - (a DTCTUTETITY	· 11/1 13		eav	10160.00	
12.8 C	(Case	With Batching Plant, Transit Mix	er and Con	crete Pump	say	10101.00	
		••						

Unit : cum

Taking Output = 120 cum

		FC	UNDATION	3			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		a) Material					
		Cement	tonne	41.660	9100.00	379106.00	M-081
		Coarse Sand	cum	54.000	650.00	35100.00	M-004
		20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053 M-051
		10 mm Aggregate b) Labour	cum	43.200	1800.00	77760.00	IVI-U5 I
		b) Labour Mate	day	0.840	551.00	462.84	L-12
		Mason	day	3.000	593.00	1779.00	L-11
		Mazdoor	day	18.000	424.00	7632.00	L-13
		c) Machinery Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Generator 100 KVA	noui	0.00	330.00	3020.00	
		Loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017 P&M-049
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	FOINI-049
		Lead beyond 1 km, L-lead in km	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
		Comprete Duman		•	0700.00	46050.00	P&M-007
		Concrete Pump Per Cum Basic Cost of Labour, I Machinery (a+b+c)	hour Material &	5802.000	2726.00	16356.00	P&W-007
		d) Formwork @ 4 per cent on cost of concrete i.e. cost of				27845.87	
		material, labour and machinery					
		e) GST (multiplying factor 0.2		-		145956.93	
		f) Overhead charges @ 20 %	•	-		173989.93	
		g) Contractor's profit @ 10 %	•	d+e+f)		104393.96	
		h) Cess @ 1% on (a+b+c+d+e	•			11483.34	
		Cost for 120 cum = a+b+c+d+e+f+	•			1159816.87	
		Rate per cum = (a+b+c+d+e+f+g	j+h)/120		001/	9665.14	
12.8	D	PCC Grade M25			say	<u>9665.00</u>	
	Case	^I Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material Cement	tonne	5.990	9100.00	54509.00	M-081
		Coarse sand	cum	6.750	650.00	4387.50	M-005
		40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
		20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
		10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
			Culli	2.700	1800.00	4800.00	
		b) Labour	dov	0.000	EE4 00	470.00	L-12
		Mate Mason	day	0.860 1.500	551.00 593.00	473.86 889.50	L-12 L-11
		Mazdoor	day				L-13
		c) Machinery	day	20.000	424.00	8480.00	L-13
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
		Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
		Per Cum Basic Cost of Labour, I Machinery (a+b+c)					
		d) Formwork @ 3.75 per cent		3708.82			
	e) GST (multiplying factor 0.2016) on (a+b+c+d)					20686.31	
	f) Overhead charges @ 20 % on (a+b+c+d+e)					24659.40	
		,	•	•		14795.64	
		g) Contractor's profit @ 10 %	on (a+b+c+	u rer i)		14/95.04	

				FOL	FOUNDATIONS				
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			h)	Cess @ 1% on (a+b+c+d+e+	f+q)			1627.52	
			•	t for 15 cum = a+b+c+d+e+f+g+				164379.55	
				e per cum = (a+b+c+d+e+f+g+l				10958.64	
				, po. oa (a a o a o . g .	.,		621/	10959.00	
12.8 D		Case	With	n Batching Plant, Transit Mixe	r and Cor	ncrete Pumn	say	10939.00	
12.0 5		II		•	i and ooi	icrete i dilip			
				: cum					
			a)	ing Output = 120 cum Material					
			Cen		tonne	47.950	9100.00	436345.00	M-081
				rse sand	cum	54.000	650.00	35100.00	M-004
				nm Aggregate	cum	43.200	1900.00	82080.00	M-055
				nm Aggregate	cum	43.200	1900.00	82080.00	M-053
				nm Aggregate	cum	21.600	1800.00	38880.00	M-051
			b)	Labour		21.000		00000.00	
			Mate		day	0.840	551.00	462.84	L-12
			Mas		day	3.000	593.00	1779.00	L-11
				door	day	18.000	424.00	7632.00	L-13
			c)	Machinery		.3.000	1.00	. 552.50	
			•	ching Plant @ 20 cum/hour	hour	6.000	3200.00	19200.00	P&M-002
				erator 100 KVA	hour	6.000	938.00	5628.00	P&M-080
			Load	der 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
				nsit Mixer 4 cum capacity for upto 1 km.	hour	6.000	1265.00	7590.00	P&M-049
				nsit Mixer 4 cum capacity lead and 1 Km, L - lead in Kilometer	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
			Con	crete Pump	hour	6.000	2726.00	16356.00	P&M-007
				Cum Basic Cost of Labour, M hinery (a+b+c)	aterial &	6202.000			
				Formwork @ 3.75 per cent or crete i.e. cost of material, labour hinery		27906.03			
			e)	GST (multiplying factor 0.20	16) on (a -	+b+c+d)		155648.68	
			f)	Overhead charges @ 20 % o	n (a+b+c	+d+e)		185543.11	
			g)	Contractor's profit @ 10 % o	n (a+b+c	+d+e+f)		111325.87	
			h)	Cess @ 1% on (a+b+c+d+e+				12245.85	
				t for 120 cum = a+b+c+d+e+f+g				1236830.38	
			Rate	e per cum = (a+b+c+d+e+f+g+	h)/120			10306.92	
12.8		Е	RCC	Grade M25			say	<u>10307.00</u>	
12.0				ng Concrete Mixer					
				= cum					
			Tak	ing output = 15 cum					
			a)	Material					
			Cen		tonne	6.050	9100.00	55055.00	M-081
				rse sand	cum	6.750	650.00	4387.50	M-005
				nm Aggregate	cum	8.100	1900.00	15390.00	M-053 M-051
			10 n b)	nm Aggregate Labour	cum	5.400	1800.00	9720.00	M-031
			Mate		day	0.860	551.00	473.86	L-12
			Mas		day	1.500	593.00	889.50	L-11
			Maz	door	day	20.000	424.00	8480.00	L-13
			c)	Machinery					
			Con	crete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			Per	erator 33 KVA Cum Basic Cost of Labour, M	hour aterial &	6.000 6612.000	506.00	3036.00	P&M-079
			wac	hinery (a+b+c)					

			FO	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d) Formwork @ 3.75 per cent				3719.17	
			e) GST (multiplying factor 0.20	, ,	•		20744.04	
			f) Overhead charges @ 20 %		•		24728.21	
			g) Contractor's profit @ 10 %	-	+d+e+t)		14836.93	
			h) Cess @ 1% on (a+b+c+d+e+	•			1632.06	
			Cost for 15 cum = $a+b+c+d+e+f+g-$ Rate per cum = $(a+b+c+d+e+f+g+$				164838.27 10989.22	
			reacte per cum – (a.b.c.a.e.r.g.	11), 13		say	10989.00	
12.8 E		Case II	With Batching Plant, Transit Mixe	er and Co	ncrete Pump			
			Unit: cum					
			Taking Output = 120 cum					
			a) Material					
			Cement	tonne	48.380	9100.00	440258.00	M-081
			Coarse sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
			10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
			b) Labour					
			Mate	day	0.840	551.00	462.84	L-12
			Mason	day	3.000	593.00	1779.00	L-11
			Mazdoor	day	18.000	424.00	7632.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
			Loader 1 cum capacity 1 cum	hour	6.000	1838.00	11028.00	P&M-017
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
			Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
			Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
			Per Cum Basic Cost of Labour, Machinery (a+b+c)	faterial &	6311.000			
			d) Formwork @ 3.75 per cent concrete i.e. cost of material, labou machinery				28398.71	
				116) on (a	+b+c+d)		158396.63	
			e) GST (multiplying factor 0.20f) Overhead charges @ 20 % of the control of the		•		188818.84	
			g) Contractor's profit @ 10 %	•	•		113291.30	
			h) Cess @ 1% on (a+b+c+d+e+				12462.04	
			Cost for 120 cum = $a+b+c+d+e+f+e$				1258666.36	
			Rate per cum = (a+b+c+d+e+f+g				10488.89	
			(,		say	10489.00	
12.8		F	PCC Grade M30			,		
		Case I	Using Concrete Mixer					
			Unit = cum					
			Taking output = 15 cum					
			a) Material					
			Cement	tonne	6.080	9100.00	55328.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
			20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
			10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
			b) Labour	ouiii	2.700	1000.00	₹500.00	
			Mate Labour	day	0.860	551.00	473.86	L-12
			Mason	day	1.500	593.00	889.50	L-11
			WG3UII	uay	1.500	383.00	009.30	

				FOUNDA	TIONS	3			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Un	it	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			Mazdoor	lda	ıy	20.000	424.00	8480.00	L-13
			c) Machinery						
			Concrete mixer (cap. 0.40/0.28 cum)	ho	ur	6.000	291.00	1746.00	P&M-00
			Generator 33 KVA	ho	ur	6.000	506.00	3036.00	P&M-07
			Per Cum Basic Cost of Labor Machinery (a+b+c)	ır, Materia	al &	6649.000			
			d) Formwork @ 3.50 per coof cost of concrete i.e. cost of material, labour and machinery					3490.23	
			e) GST (multiplying factor f) Overhead charges @ 20 g) Contractor's profit @ 10 h) Cess @ 1% on (a+b+c+d cost for 15 cum = a+b+c+d+e+	% on (a+l) % on (a+ l+e+f+g)	b+c+d	+e)		20807.36 24803.69 14882.21 1637.04 165341.39	
			Rate per cum = (a+b+c+d+e+	-				11022.76	
							say	<u>11023.00</u>	
12.8 F		Case	Using Batching Plant, Transi	t Mixer an	d Con	crete Pump			
			Unit : cum						
			Taking Output = 120 cum						
			a) Material						
			Cement	ton	ne	48.600	9100.00	442260.00	M-081
			Coarse sand	cui	m	54.000	650.00	35100.00	M-004
			40 mm Aggregate	cui	m	43.200	1900.00	82080.00	M-055
			20 mm Aggregate	cui	m	43.200	1900.00	82080.00	M-053
			10 mm Aggregate	cui	m	21.600	1800.00	38880.00	M-051
			b) Labour			0.040	554.00	400.04	
			Mate	da	-	0.840	551.00	462.84	L-12 L-11
			Mason	da	•	3.000	593.00	1779.00	L-11
			Mazdoor	da	ıy	18.000	424.00	7632.00	L-13
			c) Machinery Batching Plant @ 20 cum/hour	ho	ur	6.00	3200.00	19200.00	P&M-00
			Generator 100 KVA	ho		6.00	938.00	5628.00	P&M-08
									P&M-0
			Loader 1 cum capacity	ho		6.000	1838.00	11028.00	P&M-04
			Transit Mixer 4 cum capacity for lead upto 1 km.		ur	15.00	1265.00	18975.00	
			Transit Mixer 4 cum capacity le beyond 1 Km, L - lead in Kilom			300L	80.00	0.00	P&M-05 Lead= 0 I
			Concrete Pump	ho	ur	6.00	2726.00	16356.00	P&M-00
			Per Cum Basic Cost of Labou Machinery (a+b+c)	ır, Materia	al &	6346.000			
			d) Formwork @ 3.50 per coof cost of concrete i.e. cost of material, labour and machinery					26651.13	
			e) GST (multiplying factor		n (a+b	+c+d)		158883.37	
			f) Overhead charges @ 20) % on (a+	b+c+c	l+e)		189399.07	
			g) Contractor's profit @ 10) % on (a+	b+c+d	l+e+f)		113639.44	
			h) Cess @ 1% on (a+b+c+c	d+e+f+g)				12500.34	
			Cost for 120 cum = a+b+c+d+e	+f+g+h				1262534.19	
			Rate per cum = (a+b+c+d+e+	f+g+h)/12	20			10521.12	
		_	B00 0 1				say	<u>10521.00</u>	
12.8		G	RCC Grade M30						
		case	Using Concrete Mixer						

Unit = cum

Taking output = 15 cum

			FOL	JNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		_a)	Material					
		Cem	nent	tonne	6.100	9100.00	55510.00	M-081
		Coa	rse sand	cum	6.750	650.00	4387.50	M-005
		20 n	nm Aggregate	cum	8.100	1900.00	15390.00	M-053
		10 n	nm Aggregate	cum	5.400	1800.00	9720.00	M-051
		b)	Labour					
		Mate		day	0.860	551.00	473.86	L-12
		Mas		day	1.500	593.00	889.50	L-11
			door	day	20.000	424.00	8480.00	L-13
		c) Con cum	Machinery crete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			erator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Cum Basic Cost of Labour, M	aterial &	6643.000			
			hinery (a+b+c)					
			Formwork @ 3.5 per cent or crete i.e. cost of material, labour hinery				3487.15	
		e)	GST (multiplying factor 0.20	16) on (a+	b+c+d)		20788.99	
		f)	Overhead charges @ 20 % o	, ,	•		24781.80	
		g)	Contractor's profit @ 10 % o	•	•		14869.08	
		9) h)	Cess @ 1% on (a+b+c+d+e+	,	/		1635.60	
		•	•	•				
			t for 15 cum = a+b+c+d+e+f+g+				165195.48	
		Rate	e per cum = (a+b+c+d+e+f+g+l	n)/15			11013.03	
12.8 G		aso Iloir	a Patahina Diant Transit Miv	or and Ca	noroto Bumn	say	<u>11013.00</u>	
12.0 G	`	II	ng Batching Plant, Transit Mix	er and Co	ncrete Pump			
		Unit	= cum					
		Tak	ing output = 120 cum					
		a)	Material					
		Cem		tonne	48.800	9100.00	444080.00	M-081
			rse sand	cum	54.000	650.00	35100.00	M-004 M-053
			nm Aggregate nm Aggregate	cum	64.800 43.200	1900.00 1800.00	123120.00 77760.00	M-051
		b)	Labour	cum	43.200	1800.00	77700.00	
		Mate		day	0.840	551.00	462.84	L-12
		Mas		day	3.000	593.00	1779.00	L-11
			door	day	18.000	424.00	7632.00	L-13
			Machinery	,				
		-	hing Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Gen	erator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Load	der 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
		Trar	sit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
		Trar	nsit Mixer 4 cum capacity lead and 1 Km, L - lead in Kilometer	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
		_		h a	6.00	2726.00	16356.00	P&M-007
		Con	crete Pump	hour				
		Per	crete Pump Cum Basic Cost of Labour, M hinery (a+b+c)		6343.000			
		Per Mac d) cond	Cum Basic Cost of Labour, Mohinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour	cost of			26639.23	
		Per Mac d) cond mac	Cum Basic Cost of Labour, Mohinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery	cost of	6343.000			
		Per Mac d) cond mac e)	Cum Basic Cost of Labour, Mehinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery GST (multiplying factor 0.20	cost of and	6343.000 b+c+d)		158812.43	
		Per Mac d) cond mac e) f)	Cum Basic Cost of Labour, Mehinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery GST (multiplying factor 0.20 Overhead charges @ 20 % o	cost of and 16) on (a+ n (a+b+c+e	6343.000 b+c+d) d+e)		158812.43 189314.50	
		Per Mac d) cond mac e) f)	Cum Basic Cost of Labour, M chinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery GST (multiplying factor 0.20 Overhead charges @ 20 % of Contractor's profit @ 10 % of	cost of and 16) on (a+ n (a+b+c+c) n (a+b+c+c)	6343.000 b+c+d) d+e)		158812.43 189314.50 113588.70	
		Per Mac d) conc mac e) f) g)	Cum Basic Cost of Labour, M chinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery GST (multiplying factor 0.20 Overhead charges @ 20 % of Contractor's profit @ 10 % of Cess @ 1% on (a+b+c+d+e+f	cost of and 16) on (a+ n (a+b+c+ on (a+b+c+	6343.000 b+c+d) d+e)		158812.43 189314.50 113588.70 12494.76	
		Per Mac d) conc mac e) f) g) h) Cost	Cum Basic Cost of Labour, Mehinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery GST (multiplying factor 0.20 Overhead charges @ 20 % of Contractor's profit @ 10 % of Cess @ 1% on (a+b+c+d+e+f+g) tor 120 cum = a+b+c+d+e+f+g	cost of and 16) on (a+ n (a+b+c+con (a+b+c+	6343.000 b+c+d) d+e)		158812.43 189314.50 113588.70 12494.76 1261970.46	
		Per Mac d) conc mac e) f) g) h) Cost	Cum Basic Cost of Labour, M chinery (a+b+c) Formwork @ 3.5 per cent of crete i.e. cost of material, labour hinery GST (multiplying factor 0.20 Overhead charges @ 20 % of Contractor's profit @ 10 % of Cess @ 1% on (a+b+c+d+e+f	cost of and 16) on (a+ n (a+b+c+con (a+b+c+	6343.000 b+c+d) d+e)		158812.43 189314.50 113588.70 12494.76	

Sr No			_	OUNDATION	•			
	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.8		Н	RCC Grade M35					
	c	ase I	Using Concrete Mixer					
			Unit = cum					
			Taking output = 15 cum					
			a) Material					
			Cement	tonne	6.330	9100.00	57603.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour					
			Mate	day	0.860	551.00	473.86	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery Concrete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			Congretor 22 KV/A	hour	6.000	E06.00	2026.00	P&M-079
			Generator 33 KVA Per Cum Basic Cost of Labour,	hour Material &	6.000 6782.000	506.00	3036.00	1 GM-073
			Machinery (a+b+c)d) Formwork @ 3 per cent o	n a+b+c			3051.78	
			,				21123.17	
			e) GST (multiplying factor 0.		-			
			f) Overhead charges @ 20 %		-		25180.16 15108.10	
			g) Contractor's profit @ 10 %	•	a+e+t)			
			h) Cess @ 1% on (a+b+c+d+e	-			1661.89	
			Cost for 15 cum = a+b+c+d+e+f+	· ·			167850.96	
			Rate per cum = (a+b+c+d+e+f+	g+h)/15			11190.06	
12.8 H	(Using Batching Plant, Transit M	Mixer and Cor	ncrete Pump	say	<u>11190.00</u>	
		II .						
		II	Unit; cum					
		II	Unit ; cum Taking Output = 120 cum					
		II						
		II	Taking Output = 120 cum	tonne	50.640	9100.00	460824.00	M-081
		II	Taking Output = 120 cum a) Material	tonne cum	50.640 54.000	9100.00 650.00	460824.00 35100.00	M-081 M-004
		II	Taking Output = 120 cum a) Material Cement					
		II	Taking Output = 120 cum a) Material Cement Coarse sand	cum	54.000	650.00	35100.00	M-004
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate	cum cum	54.000 64.800	650.00 1900.00	35100.00 123120.00	M-004 M-053
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate	cum cum	54.000 64.800	650.00 1900.00	35100.00 123120.00	M-004 M-053
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour	cum cum	54.000 64.800 43.200	650.00 1900.00 1800.00	35100.00 123120.00 77760.00	M-004 M-053 M-051
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate	cum cum cum	54.000 64.800 43.200 0.840	650.00 1900.00 1800.00 551.00	35100.00 123120.00 77760.00 462.84	M-004 M-053 M-051
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery	cum cum cum day day	54.000 64.800 43.200 0.840 3.000	650.00 1900.00 1800.00 551.00 593.00	35100.00 123120.00 77760.00 462.84 1779.00	M-004 M-053 M-051 L-12 L-11
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor	cum cum cum day day	54.000 64.800 43.200 0.840 3.000	650.00 1900.00 1800.00 551.00 593.00	35100.00 123120.00 77760.00 462.84 1779.00	M-004 M-053 M-051 L-12 L-11
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery	cum cum cum day day	54.000 64.800 43.200 0.840 3.000 18.000	650.00 1900.00 1800.00 551.00 593.00 424.00	35100.00 123120.00 77760.00 462.84 1779.00 7632.00	M-004 M-053 M-051 L-12 L-11 L-13
		II	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader1 cum capacity	cum cum day day day hour hour	54.000 64.800 43.200 0.840 3.000 18.000 6.00 6.00 6.000	650.00 1900.00 1800.00 551.00 593.00 424.00 3200.00 938.00 1838.00	35100.00 123120.00 77760.00 462.84 1779.00 7632.00 19200.00 5628.00 11028.00	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017
		ı	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery Batching Plant @ 20 cum/hour Generator 100 KVA	cum cum cum day day day hour	54.000 64.800 43.200 0.840 3.000 18.000 6.00	650.00 1900.00 1800.00 551.00 593.00 424.00 3200.00 938.00	35100.00 123120.00 77760.00 462.84 1779.00 7632.00 19200.00 5628.00	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080
		ı	Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader1 cum capacity Transit Mixer 4 cum capacity for	cum cum day day day hour hour hour hour hour hour	54.000 64.800 43.200 0.840 3.000 18.000 6.00 6.00 6.000	650.00 1900.00 1800.00 551.00 593.00 424.00 3200.00 938.00 1838.00	35100.00 123120.00 77760.00 462.84 1779.00 7632.00 19200.00 5628.00 11028.00	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017 P&M-049
			Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader1 cum capacity Transit Mixer 4 cum capacity for lead upto 1 km. Transit Mixer 4 cum capacity lead	cum cum day day day hour hour hour hour hour hour hour	54.000 64.800 43.200 0.840 3.000 18.000 6.00 6.000 15.00	650.00 1900.00 1800.00 551.00 593.00 424.00 3200.00 938.00 1838.00 1265.00	35100.00 123120.00 77760.00 462.84 17779.00 7632.00 19200.00 5628.00 11028.00 18975.00	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-049

				FOL	INDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			e)	GST (multiplying factor 0.20	16) on (a [.]	 +b+c+d)		161522.08	
			f)	Overhead charges @ 20 % or		-		192544.57	
			g)	Contractor's profit @ 10 % o	•	•		115526.74	
			h)	Cess @ 1% on (a+b+c+d+e+f	•	,		12707.94	
			•	t for 120 cum = a+b+c+d+e+f+g	•			1283502.12	
				e per cum = (a+b+c+d+e+f+g+				10695.85	
				, po. ca (a a c a c . g	, •		say	10696.00	
		Note:	tran: weig	ere ever concrete is carried of sit mixer, concrete pump, Admi ght of cement may be added fo procrete.	ixtures @	0.4 per cent of	•		
			WEI	LL FOUNDATION					
12.9	1200			viding and Constructing Tem ndation for 8m dia. Well.	porary Is	land 16 m diame	ter for Constru	uction of Well	
		Α	Ass	uming depth of water 1.0 m ar	nd height	of island to be 1	.25 m.		
			Unit	t = 1 No					
				ing output = 1 No.					
				•					
			a) Fart	Material h (compacted)	cum	251.200	0.00	0.00	M-092
									M-159
			b)	d bags Labour	each	750.000	11.00	8250.00	IVI-159
			•		4	0.400	554.00	000.40	L-12
			Mate		day	0.400	551.00	220.40 6360.00	L-12 L-13
				door for filling sand bags, hing and placing Machinery	day	15.000	424.00	6360.00	L-10
				ne with grab 1 cum capacity sumables @ 2.5 per cent of	hour	20.000	1166.00	23320.00 583.00	P&M-012
			` '	bove	16\ on /o.	+b+a\		7000 65	
			d)	GST (multiplying factor 0.20				7808.65	
			e)	Overhead charges @ 20 % o	•	•		9308.41 5585.05	
			f) ~\	Contractor's profit @ 10 % or	•	ru re)			
			g)	Cess @ 1% on (a+b+c+d+e+f)			614.36	
			Rate	e per No. (a+b+c+d+e+f+g)			eav	62049.87 62050.00	
		Note		assumed that earth will be avail be of crane with grab bucket.	able withi	n the working	say	<u>62030.00</u>	
12.9		В	•	uming depth of water 4.0 m ar	nd height	of island 4.5 m.			
				t = 1No ing output = 1 No					
			a)	Material					
			•	h (compacted)	cum	904.320	0.00	0.00	M-092
			San	d bags	each	6000.000	11.00	66000.00	M-159
			Woo	oden ballies 8" Dia and 9 m	each	95.000	580.00	55100.00	M-194
			Woo	oden ballies 2" Dia for bracing Labour	metre	190.000	45.00	8550.00	M-193
			b) Mate		day	5.600	551.00	3085.60	L-12
			Maz	door for piling 8" dia ballies for g 8" dia ballies	day	18.000	424.00	7632.00	L-13
				door for bracing with 2" dia	day	12.000	424.00	5088.00	L-13
				door for filling sand bags, hing and placing Machinery	day	110.000	424.00	46640.00	L-13
			•	ne with grab 1 cum capacity	hour	50.000	1166.00	58300.00	P&M-012

				FOL	JNDATIOI	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
				sumables and other arrangeme cent of (a+b+c).	nts for pili	ng ballies @ 2.5		6259.89	
			d)	GST (multiplying factor 0.20	16) on (a	+b+c)		51741.75	
			e)	Overhead charges @ 20 % o	on (a+b+c	+d)		61679.45	
			f)	Contractor's profit @ 10 % o	n (a+b+c+	-d+e)		37007.67	
			g)	Cess @ 1% on (a+b+c+d+e+f	f)			4070.84	
			Rate	e per No. (a+b+c+d+e+f+g)				411155.20	
			of c shall spec	other well diameters rate can b ross-sectional area of well. The be in the conformity with of diffications.	he diamet clause 12	ter of the island 03.2 of MoRTH	say	<u>411155.00</u>	
12.9		С		viding and constructing one location to another pier locat		vice road to rea	ch island loca	tion from one	
			of so wate Unit Taki	uming span length 30 m, width ervice road 10m and depth of er 1m = 1 meter ing output = 30 metre					
			a) Eart	Material h	cum	450.000	0.00	0.00	M-092
				d bags	each	300.000	11.00	3300.00	M-159
			b)	Labour	dov	0.240	EE1 00	132.24	L-12
				e door for filling sand bags, ning and placing	day day	0.240 6.000	551.00 424.00	2544.00	L-12 L-13
			c)	Machinery					
			•	t end Loader 1 cum capacity	hour	27.000	1838.00	49626.00	P&M-017
				er 5.5 cum capacity	hour	28.000	916.00	25648.00	P&M-048
							0.0.00	16380.05	
			d) e)	GST (multiplying factor 0.20 Overhead charges @ 20 % o		-		19526.06	
			f)	Contractor's profit @ 10 % c	-	-		11715.64	
			g)	Cess @ 1% on (a+b+c+d+e+	•	,		1288.72	
			•	for 30 m (a+b+c+d+e+f+g)	-,			130160.71	
				per m (a+b+c+d+e+f+g)/30				4338.69	
							say	<u>4339.00</u>	
12.10	1200 & 1900			viding and Laying Cutting Edundation complete as per Draw	•	•	• • •	netre for Well	
			Unit	= 1 MT					
			Taki	ing output = 1 MT					
			a)	Material					
				ctural steel in plates, angles, ncluding 5 per cent wastage	tonne	1.050	50728.00	53264.40	M-179
			Nuts	& bolts	Kg	20.000	120.00	2400.00	M-130
			b)	Labour					
			hole	cutting, bending, making s, joining, welding and ting in position)					
			Mate	e	day	1.320	551.00	727.32	L-12
			Fitte	r	day	5.500	593.00	3261.50	L-08
			Blac	ksmith	day	5.500	593.00	3261.50	L-02
			Wel		day	5.500	593.00	3261.50	L-02
			cons	door trodes, cutting gas and other sumables @ 10 per cent of of (a) above		16.500	424.00	6996.00 5566.44	L-13

			FOUNDATIONS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	ļ		c) GST (multiplying factor 0.2016) on (a+b)		15873.71	
			d) Overhead charges @ 20 % on (a+b+c)		18922.47	
			e) Contractor's profit @ 10 % on (a+b+c+d)		11353.48	
			f) Cess @ 1% on (a+b+c+d+e)		1248.88	
			Rate per MT (a+b+c+d+e+f)		126137.20	
				say	126137.00	
12.11	1200, 1500 & 1700		Plain/Reinforced Cement Concrete, in Well Foundation co Technical Specification.	•		
			Unit = 1 cum			
		Α	Taking output = 1 cum Well curb			
		(i)	RCC M20 Grade Same as for 12.8 © Case I except for formwork which shall be@ 20 per cent of the cost of concrete instead of 4 per cent.			
		Case I	Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6103.00	12.8 (C) Case I
			d) formwork @ 20 per cent of the cost of concrete		1220.60	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1476.44	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1760.01	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1056.01	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		116.16	
			Rate perm (a+b+c+d+e+f+g+h)		11732.22	
12.11 A (i)		Case II	With Batching Plant, Transit Mixer and Concrete Pump	say	<u>11732.00</u>	
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		5802.00	12.8 (C) Case II
			d) formwork @ 20 per cent of the cost of concrete		1160.40	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1403.62	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1673.20	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1003.92	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		110.43	
			Rate perm (a+b+c+d+e+f+g+h)		11153.57	
12.11 A		/ii\	BCC M25 Crado	say	<u>11154.00</u>	
12.11 A		(11)	RCC M25 Grade			
			Same as for 12.8 (E) I except for formwork which shall be@ 20 per cent of the cost of concrete instead of 3.75 per cent.			
		Case I	Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6612.00	Item 12.8 (E) I
			d) formwork @ 20 per cent of the cost of concrete		1322.40	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1599.58	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1906.80	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1144.08	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		125.85	
			Rate perm (a+b+c+d+e+f+g+h)		12710.71	
12.11 A (ii)		Case II	With Batching Plant, Transit Mixer and Concrete Pump	say	<u>12711.00</u>	
(**)			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6415.00	Item 12.8 (E) II

			FOUNDATIONS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	<u> </u>		d) formwork @ 20 per cent of the cost of concrete		1283.00	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1551.92	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1849.98	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1109.99	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		122.10	
			Rate perm (a+b+c+d+e+f+g+h)		12331.99	
				say	<u>12332.00</u>	
12.11 A			RCC M35 Grade Same as for 12.8 (H) I except for formwork			
		,	which shall be@ 20 per cent of the cost of concrete instead of 3.0 per cent.			
	C	ase I	Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6782.00	Item 12.8 (H) I
			d) formwork @ 20 per cent of the cost of concrete		1356.40	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1640.70	
			Overhead charges @ 20 % on (a+b+c+d+e)		1955.82	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1173.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		129.08	
			Rate perm (a+b+c+d+e+f+g+h)		13037.49	
			• •	say	13037.00	
12.11 A (iii)	C	Case	With Batching Plant, Transit Mixer and Concrete Pump			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6591.00	Item 12.8 (H) II (SA)
			d) formwork @ 20 per cent of the cost of concrete		1318.20	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1594.49	
			Overhead charges @ 20 % on (a+b+c+d+e)		1900.74	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1140.44	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		125.45	
			Rate perm (a+b+c+d+e+f+g+h)		12670.32	
	N		f curb concrete is carried out within steel iner, cost of formwork shall be excluded.	say	<u>12670.00</u>	
12.11		В	Well steining			
			PCC M15 Grade			
			Same as for 12.8 (A) (SA) except for for for for the control of the formwork which shall be @ 10 per cent of			
	C		the cost of concrete instead of 4 per cent. Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		5625.00	Item 12.8 A (SA)
			d) formwork @ 10 per cent of the cost of concrete		562.50	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1247.40	
			i) Overhead charges @ 20 % on (a+b+c+d+e)		1486.98	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		892.19	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		98.14	
			Rate perm (a+b+c+d+e+f+g+h)		9912.21	

O. N. Bo	f. to	FOUNDATIONS			Domoniles/
Mol	RTH/ Spec.	Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.11 B	(ii)	PCC M20 Grade			
	Cas	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			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6090.00	Item 12.8 (B)
		d) formwork @ 10 per cent of the cost of concrete		609.00	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		1350.52	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1609.90	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		965.94	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		106.25	
		Rate perm (a+b+c+d+e+f+g+h)		10731.61	
		• •	say	<u>10732.00</u>	
12.11 B	(iii	RCC M20 Grade			
		Same as for 12.8 (C) I except for formwork which shall be @ 10 per cent of the cost of concrete instead of 4 per cent.			
	Cas	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6103.00	Item 12.8 (C) I
		d) formwork @ 10 per cent of the cost of concrete		610.30	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		1353.40	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1613.34	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		968.00	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		106.48	
		Rate perm (a+b+c+d+e+f+g+h)		10754.52	
12.11 B (iii)	Cas	e With Batching Plant, Transit Mixer and Concrete Pump	say	<u>10755.00</u>	
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5802.00	Item 12.8 (C) II (SA
		d) formwork @ 10 per cent of the cost of concrete		580.20	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		1286.65	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1533.77	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		920.26	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		101.23	
		Rate perm (a+b+c+d+e+f+g+h)		10224.11	
12.11 B	(iv	PCC M25 Grade	say	<u>10224.00</u>	
	Cas	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			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6594.00	Item 12.8 (D) I
		d) formwork @ 10 per cent of the cost of concrete		659.40	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		1462.29	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1743.14	

			FOUNDATIONS			
Sr No	Ref. to MoRTH/ DSR Spec.			Rate Rs	Cost Rs	Remarks/ Input ref.
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1045.88	<u> </u>
			h) Cess @ 1% on (a+b+c+d+e+f+g)		115.05	
			Rate perm (a+b+c+d+e+f+q+h)		11619.76	
			Nate perm (a.b.c.a.e.i.g.ii)	cav	11620.00	
12.11 B ((iv)	Case II	With Batching Plant, Transit Mixer and Concrete Pump	say	11020.00	
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6297.00	Item 12.8 (D) II (SA)
			d) formwork @ 10 per cent of the cost of concrete		629.70	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1396.42	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1664.62	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		998.77	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		109.87	
			Rate perm (a+b+c+d+e+f+g+h)		11096.38	
			Tate perm (a-b-e-a-e-r-g-ri)			
'12.11 B		(v)	RCC M25 Grade	say	<u>11096.00</u>	
12.7.			Same as for 12.8 (E) I except for formwork which shall be @ 10 per cent of the cost of concrete instead of 3.5 per cent.			
		Case	Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (avaluating GST, OH, CP & Cost)		6612.00	Item 12.8 (E) I
			(excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete		661.20	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1466.28	
					1747.90	
			f) Overhead charges @ 20 % on (a+b+c+d+e)			
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1048.74	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		115.36	
			Rate perm (a+b+c+d+e+f+g+h)		11651.48	
12.11 B ((v)	Case	With Batching Plant, Transit Mixer and Concrete Pump	say	<u>11651.00</u>	
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6415.00	Item 12.8 (E) II
			d) formwork @ 10 per cent of the cost of concrete		641.50	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1422.59	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1695.82	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1017.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		111.92	
			Rate perm (a+b+c+d+e+f+q+h)		11304.32	
'12.11 B		(vi)	PCC M30 Grade	say	<u>11304.00</u>	
12.11 5		(*.,	Same as for 12.8 (F) I except for formwork which shall be @ 10 pe concrete instead of 3.5 per cent.	r cent of the	cost of	
		Case	Using Concrete Mixer			
		-400	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6649.00	Item 12.8 (F) I
			d) formwork @ 10 per cent of the cost of concrete		664.90	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)		1474.48	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1757.68	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1054.61	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		116.01	
			Rate perm (a+b+c+d+e+f+g+h)		11716.68	
				say	<u>11717.00</u>	

Series Description Unit Quantity Rate Rs Cost Rs Remarker Rem				FOUNDATIONS			
Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)	Sr No	MoRTH/		Description Unit Quantity	Rate Rs	Cost Rs	1
(excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d+d+) 1407.29 f) Overhead charges @ 20 % on (a+b+c+d+e+f) 1006.55 h) Cess @ 1% on (a+b+c+d+e+fy) 1107.75 Rate perm (a+b+c+d+e+fy+h) 11182.74 12.11 B (vii) RCC M30 Grade	12.11 B	(vi)		With Batching Plant, Transit Mixer and Concrete Pump			
ST (multiplying factor 0.2016) on (a+b+c+d)						6346.00	
e) GST (multiplying factor 0.2016) on (a+b+c+d+o) 1407.29 1, Overhead charges @ 20 % on (a+b+c+d+o) 1677.58 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.72 110.				d) formwork @ 10 per cent of		634.60	
1, Overhead charges @ 20 % on (a+b+c+d+e) 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58 1677.58						1407.29	
See						1677.58	
Rate perm (a+b+c+d+e+f+g+h)						1006.55	
12.11 B (vii) RCC M30 Grade Same as for 12.8 (G) I except for formwork which shall be @ 10 per cent of the cost of concrete instead of 3.5 per cent. concrete instead of 3.5 per cent. Fee Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) 6643.00 lent 12.8 (G) I except for formwork @ 10 per cent of the cost of concrete elements elements elements of concrete elements el elem				h) Cess @ 1% on (a+b+c+d+e+f+g)		110.72	
12.11 B				Rate perm (a+b+c+d+e+f+g+h)		11182.74	
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.	'12 11 B		(vii)	PCC M30 Grado	say	<u>11183.00</u>	
### which shall be @ 10 per cent of the cost of concrete instead of 3.5 per cent. Case Using Concrete Mixer	12.11 6		(*11)				
Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete				which shall be @ 10 per cent of the cost of			
Cexcluding GST, OH, CP & Cess Cess			Case	Using Concrete Mixer			
### Cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d)						6643.00	
f) Overhead charges @ 20 % on (a+b+c+d+e) 1756.09 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1053.65 h) Cess @ 1% on (a+b+c+d+e+f+g) 115.90 Rate perm (a+b+c+d+e+f+g+h) 11706.09 12.11 B (vii) Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6343.00 (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d+e+f) 1006.07 h) Cess @ 1% on (a+b+c+d+e+f+g) 1106.07 Rate perm (a+b+c+d+e+f+g+h) 1006.07 h) Cess @ 1% on (a+b+c+d+e+f+g) 1106.07 Rate perm (a+b+c+d+e+f+g+h) 11177.40 12.11 B (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 12.8 (H) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 12.8 (H) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 12.8 (H) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 1503.98 12.8 (H) (excluding GST, OH, CP & Cess) 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 1792.84 179				,		664.30	
g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1053.65 h) Cess @ 1% on (a+b+c+d+e+f+g) 115.90 Rate perm (a+b+c+d+e+f+g+h) 11706.09 Rate perm (a+b+c+d+e+f+g+h) 11706.09 12.11 B (vii) Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d+e+f) 1006.07 h) Cess @ 1% on (a+b+c+d+e+f+g+h) 11177.44 12.11 B (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 d) formwork @ 10 per cent of the cost of concrete instead of 3 per cent. Gase I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 1503.98 d) formwork @ 10 per cent of				e) GST (multiplying factor 0.2016) on (a+b+c+d)		1473.15	
h) Cess @ 1% on (a+b+c+d+e+f+g) 115.90 Rate perm (a+b+c+d+e+f+g+h) 11706.09 12.11 B (vii)				f) Overhead charges @ 20 % on (a+b+c+d+e)		1756.09	
Rate perm (a+b+c+d+e+f+g+h) 11706.09 say 11706.00 12.11 B (vii) Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete				g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1053.65	
12.11 B (vii)				h) Cess @ 1% on (a+b+c+d+e+f+g)		115.90	
12.11 B (vii) Case With Batching Plant, Transit Mixer and Concrete Pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) 6343.00 tem 12.8 (G) ii 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 634.30 6				Rate perm (a+b+c+d+e+f+g+h)		11706.09	
(vii)					say	<u>11706.00</u>	
Cexcluding GST, OH, CP & Cess) City			Case II	With Batching Plant, Transit Mixer and Concrete Pump			
Concrete						6343.00	
f) Overhead charges @ 20 % on (a+b+c+d+e) 1676.78 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1006.07 h) Cess @ 1% on (a+b+c+d+e+f+g) 1110.67 Rate perm (a+b+c+d+e+f+g+h) 11177.44 ***say*** 11177.00 **12.11 B (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 1183.3 Rate perm (a+b+c+d+e+f+g+h) 11951.05				· · · · · · · · · · · · · · · · · · ·		634.30	
g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1006.07 h) Cess @ 1% on (a+b+c+d+e+f+g) 1110.67 Rate perm (a+b+c+d+e+f+g+h) 11177.44 ***say 11177.00** ***12.11 B** (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 12.8 (H) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of 678.20 the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 1183.3 Rate perm (a+b+c+d+e+f+g+h) 11951.05				e) GST (multiplying factor 0.2016) on (a+b+c+d)			
h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h) 11177.44 say 11177.00 12.11 B (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of 678.20 the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h) 1195.05				· · · · · · · · · · · · · · · · · · ·		1676.78	
Rate perm (a+b+c+d+e+f+g+h) 11177.44 say 11177.00 '12.11 B (viii) RCC M35 Grade 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.				,			
'12.11 B (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 11951.05				, , ,			
'12.11 B (viii) RCC M35 Grade 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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) 6782.00 12.8 (H) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05				Rate perm (a+b+c+d+e+t+g+n)			
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. Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h) 11951.05	'12.11 B		(viii)	RCC M35 Grade	say	<u>11177.00</u>	
Case I Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05				Same as for 12.8 (H) except for formwork which shall be @ 10 per cent of the cost of			
Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess) d) formwork @ 10 per cent of the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05			Casa	•			
the cost of concrete e) GST (multiplying factor 0.2016) on (a+b+c+d) 1503.98 f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05			Case	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6782.00	12.8 (H)
f) Overhead charges @ 20 % on (a+b+c+d+e) 1792.84 g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05		ď				678.20	
g) Contractor's profit @ 10 % on (a+b+c+d+e+f) 1075.70 h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05				e) GST (multiplying factor 0.2016) on (a+b+c+d)		1503.98	
h) Cess @ 1% on (a+b+c+d+e+f+g) 118.33 Rate perm (a+b+c+d+e+f+g+h) 11951.05				f) Overhead charges @ 20 % on (a+b+c+d+e)		1792.84	
Rate perm (a+b+c+d+e+f+g+h) 11951.05				g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1075.70	
				h) Cess @ 1% on (a+b+c+d+e+f+g)		118.33	
say <u>11951.00</u>				Rate perm (a+b+c+d+e+f+g+h)		11951.05	
					say	<u>11951.00</u>	

			FC	DUNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.11 B	(viii)	Case	With Batching Plant, Transit Mix	er and Cor	 ncrete Pump			
	()	II	-					
			Per Cum Basic Cost of Labour, Ma (excluding GST, OH, CP & Cess)		chinery (a+b+c)		6591.00	
			d) formwork @ 10 per cent of the cost of concrete	of			659.10	
			e) GST (multiplying factor 0.2	2016) on (a-	+b+c+d)		1461.62	
			f) Overhead charges @ 20 %	on (a+b+c+	+d+e)		1742.34	
			g) Contractor's profit @ 10 %				1045.41	
			h) Cess @ 1% on (a+b+c+d+e	+f+g)			114.99	
			Rate perm (a+b+c+d+e+f+g+h)				11614.46	
						say	<u>11614.00</u>	
'12.11 B		(ix)	RCC M40 Grade					
			Using Batching Plant, Transit M	ixer and Co	oncrete Pump			
			Unit = cum					
			Taking output = 120 cum					
			a) Material					
			Cement	tonne	51.600	9100.00	469560.00	M-081
			Coarse Sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053 M-051
			10 mm Aggregate	cum	43.200	1800.00	77760.00	M-180
			Admixture b) Labour	kg	206.000	64.00	13184.00	IVI-100
			Mate	day	0.840	551.00	462.84	L-12
			Meson	day	3.000	593.00	1779.00	L-11
			Mazdoor					L-13
			c) Machinery	,		424.00	7632.00	
			Batching Plant	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.000	938.00	5628.00	P&M-080
			Loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.000	1265.00	18975.00	P&M-049
			Transit Mixer 4 cum capacity for lead beyond 1 km.	tonne. km	300xL	80.00	0.00	Lead= 0 , P&M-050
			Concrete Pump	hour	6.000	2726.00	16356.00	P&M-007
			Per Cum Basic Cost of Labour, Machinery (a+b+c)	Material &	53319.000			
			d) Formwork @ 10 per cent of concrete i.e. cost of material, labor machinery				79978.48	
			e) GST (multiplying factor 0.2	2016) on (a-	+b+c+d)		177360.29	
			f) Overhead charges @ 20 %		•		211424.72	
			g) Contractor's profit @ 10 %	on (a+b+c	+d+e+f)		126854.83	
			h) Cess @ 1% on (a+b+c+d+e-	+f+g)			13954.03	
			cost of 120 cum = a+b+c+d+e+f+g	j+h			1409357.19	
			Rate per cum = (a+b+c+d+e+f+g	+h)/120			11744.64	
12.11 C		С	Bottom Plug			say	<u>11745.00</u>	
			Concrete to be placed using tremi	e pipe				
			Note: 10% extra cement to be add under water concreting is involved	led where				
		(i)	PCC Grade M20					
		_	Using Concrete Mixer					
			g					

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Unit = cum

Taking output = 15 cum

		FC	DUNDATION	<u>S</u>			
Sr No Ref. to MoRTH DSR Spe	1/	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		a) Material					
		Cement	tonne	5.550	9100.00	50505.00	M-081
		Coarse sand	cum	6.750	650.00	4387.50	M-005
		40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
		20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
		10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
		Admixture	Kg	18.600	64.00	1190.40	M-180
		b) Labour	· ·				
		Mate	day	0.900	551.00	495.90	L-12
		Mason	day	1.500	593.00	889.50	L-11
		Mazdoor	day	20.000	424.00	8480.00	L-13
		c) Machinery	,				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
		Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
		Light Crane 3 tonnes capacity for	hour	6.000	490.00	2940.00	P&M-013
		handling tremie pipe			450.00	2040.00	
		Per Cum Basic Cost of Labour, Machinery (a+b+c)	Materiai &	6604.000			
		Add 5 per cent of cost of m labour towards cost of form protective bunds, chiselling an arrangements for under water with tremie pipe	ing sump, nd making			4566.42	
		d) GST (multiplying factor 0.2	2016) on (a+	b+c)		20889.13	
		e) Overhead charges @ 20 %		•		24901.17	
		f) Contractor's profit @ 10 %				14940.70	
		,	•	1.6)			
		g) Cess @ 1% on (a+b+c+d+e	+T)			1643.48	
		cost of 15 cum = a+b+c+d+e+f+g				165991.20	
		Rate per cum = (a+b+c+d+e+f+g	J)/15			11066.08	
2.11 C (i)	Case	Using Batching Plant, Transit M	lixer and Cra	ne/concrete pui	<i>say</i> np	<u>11066.00</u>	
	"	Unit; cum Taking Output = 120 cum a) Material					
		Cement	tonne	44.400	9100.00	404040.00	M-081
		Coarse sand	cum	54.000	650.00	35100.00	M-004
		20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
		10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
		Admixture	Kg	148.800	64.00	9523.20	M-180
		b) Labour					
		Mate	day	0.880	551.00	484.88	L-12
		Mason	day	3.000	593.00	1779.00	L-11
		Mazdoor	day	18.000	424.00	7632.00	L-13
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilomete		300L	80.00	0.00	P&M-050 Lead= 0 kr
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007

				FOUNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Per Cum Basic Cost of Labo Machinery (a+b+c)	our, Material &	6089.000			
			Add 5 per cent of cost of labour towards cost of for protective bunds, chiselling arrangements for under was with tremie pipe	orming sump, and making			32971.95	
			d) GST (multiplying facto	r 0.2016) on (a-	+b+c)		153941.36	
			e) Overhead charges @ 2				183507.88	
			f) Contractor's profit @ 10	•	•		110104.73	
				-	u·e,		12111.52	
			g) Cess @ 1% on (a+b+c+	•				
			cost of 120 cum = a+b+c+d+e	· ·			1223263.52	
			Rate per cum = (a+b+c+d+e+	+f+g)/120			10193.86	
140.44.0		<i>(**</i>)				say	<u>10194.00</u>	
'12.11 C	,		PCC Grade M25					
	,		Using Concrete Mixer					
			Unit = cum					
			Taking output = 15 cum					
			a) Material Cement	tonno	E 000	0100.00	E4E00.00	M-081
			Coarse sand	tonne	5.990 6.750	9100.00 650.00	54509.00 4387.50	M-005
			40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
			20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
			10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
			Admixture	Kg	21.600	64.00	1382.40	M-180
			b) Labour	Ng	21.000	04.00	1302.40	
			Mate	day	0.900	551.00	495.90	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.2 cum)	8 hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Light Crane of 3 tonnes capac for handling tremie pipe	city hour	6.000	490.00	2940.00	P&M-013
			Per Cum Basic Cost of Labo Machinery (a+b+c)	our, Material &	6884.000			
			Add 5 per cent of cost of labour towards cost of frostective bunds, chiselling arrangements for under wa with tremie pipe	orming sump, and making			4776.22	
			d) GST (multiplying facto	r 0.2016) on (a+	+b+c)		21777.34	
			e) Overhead charges @ 2	20 % on (a+b+c-	+d)		25959.97	
			f) Contractor's profit @ 10	0 % on (a+b+c+	d+e)		15575.98	
			g) Cess @ 1% on (a+b+c+	-	•		1713.36	
			cost of 15 cum = a+b+c+d+e+	-			173049.17	
			Rate per cum = (a+b+c+d+e+	· ·			11536.61	
			rate per cam – (a.b.c.a.c.	· · · · g), · · ·		cav	<u>11537.00</u>	
12.11 C	(ii)	Case II	Using Batching Plant, Trans	it Mixer and Cr	ane/concrete pu	mp	11337.00	
			Unit = cum Taking output = 120 cum					
			a) Material Cement	tonne	47.880	9100.00	435708.00	M-081
			Coarse sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
			10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051 M-180
			Admixture	Kg	172.800	64.00	11059.20	IVI- I OU

			FOUNDATION:	<u> </u>			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b) Labour					
		Mate	day	0.880	551.00	484.88	L-12
		Mason Mazdoor	day day	3.000 18.000	593.00 424.00	1779.00 7632.00	L-11 L-13
		c) Machinery	uay	18.000	424.00	7032.00	2-10
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
		Transit Mixer 4 cum capacity, lea beyond 1 Km, L - lead in Kilome		300L	80.00	0.00	P&M-050 Lead= 0 km
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
		Per Cum Basic Cost of Labour Machinery (a+b+c)	r, Material &	6366.000			
		Add 5 per cent of cost of labour towards cost of for protective bunds, chiselling arrangements for under wate with tremie pipe.	ming sump, and making			34632.15	
		d) GST (multiplying factor ().2016) on (a+l	b+c)		160969.99	
		e) Overhead charges @ 20	, ,	•		191886.44	
		,		•		115131.87	
		f) Contractor's profit @ 10 9	-	1 +e)			
		g) Cess @ 1% on (a+b+c+d+	-			12664.51	
		cost of 120 cum = a+b+c+d+e+f	+g+h			1279115.04	
		Rate per cum = (a+b+c+d+e+f+	⊦g)/120			10659.29	
12.11 C	(iii) PCC Grade M30			say	<u>10659.00</u>	
.2 0		se I Using Concrete Mixer					
	0.	•					
		Unit = 1 cum Taking output = 15 cum					
		a) Material					
		Cement	tonne	6.080	9100.00	55328.00	M-081
		Coarse sand	cum	6.750	650.00	4387.50	M-005
		40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
		20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
		10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
		Admixture	Kg	21.600	64.00	1382.40	M-180
		b) Labour					
		Mate	day	0.900	551.00	495.90	L-12
		Mason	day	1.500	593.00	889.50	L-11
		Mazdoor	day	20.000	424.00	8480.00	L-13
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
		Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
		Light Crane of 3 tonnes capacity for handling tremie pipe		6.000	490.00	2940.00	P&M-013
		Per Cum Basic Cost of Labour Machinery (a+b+c)		6938.000			
		Add 5 per cent of cost of labour towards cost of for protective bunds, chiselling arrangements for under wate with tremie pipe.	ming sump, and making			4817.17	

			FOUNDATION	S			
Mc Mc	ef. to oRTH/ R Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		d) GST (multiplying factor	or 0.2016) on (a+	b+c)		21950.71	
		e) Overhead charges @ 2		•		26166.64	
		f) Contractor's profit @ 1	-	•		15699.98	
		g) Cess @ 1% on (a+b+c	•	,		1727.00	
		cost of 15 cum = a+b+c+d+e+	•			174426.80	
		Rate per cum = (a+b+c+d+e	· ·			11628.45	
		(4	3,		say	11628.00	
12.11 C (iii)	Case II	Using Batching Plant, TransUnit = cum	sit Mixer and Cra	ane/concrete pu			
		Taking output = 120 cum					
		a) Material					
		Cement	tonne	48.640	9100.00	442624.00	M-081
		Coarse sand	cum	54.000	650.00	35100.00	M-004
		20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
		10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
		Admixture	Kg	172.800	64.00	11059.20	M-180
		b) Labour					
		Mate	day	0.880	551.00	484.88	L-12
		Mason	day	3.000	593.00	1779.00	L-11
		Mazdoor	day	18.000	424.00	7632.00	L-13
		c) Machinery	ır bour	6.00	3200.00	10200 00	P&M-002
		Batching Plant @ 20 cum/hou Generator 100 KVA		6.00		19200.00	P&M-080
		Loader 1 cum capacity	hour hour	6.00 6.000	938.00 1838.00	5628.00 11028.00	P&M-017
		Transit Mixer 4 cum capacity lead upto 1 km.		15.00	1265.00	18975.00	P&M-049
		Transit Mixer 4 cum capacity, beyond 1 Km, L - lead in Kilor		300L	80.00	0.00	P&M-050 Lead= 0 km
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
		Per Cum Basic Cost of Labo Machinery (a+b+c)	our, Material &	6423.000			
		Add 5 per cent of cost of labour towards cost of the protective bunds, chiselling arrangements for under was with tremie pipe	forming sump, g and making			34977.95	
		d) GST (multiplying factor	or 0.2016) on (a+	b+c)		162433.96	
		e) Overhead charges @ 2	20 % on (a+b+c+	·d)		193631.60	
		f) Contractor's profit @ 1	0 % on (a+b+c+	d+e)		116178.96	
		g) Cess @ 1% on (a+b+c+	d+e+f)			12779.69	
		cost of 120 cum = a+b+c+d+e	e+f+g+h			1290748.24	
		Rate per cum = (a+b+c+d+e	+f+g)/120			10756.24	
					say	<u>10756.00</u>	
'12.11 C	(iv)	PCC Grade M35					
	Case	Using Concrete Mixer					
		Unit = 1 cum					
		Taking output = 15 cum a) Material					
		Cement	tonne	6.290	9100.00	57239.00	M-081
		Coarse sand	cum	6.750	650.00	4387.50	M-005
		40 mm Aggregate	cum	5.400	1900.00	10260.00	M-055
		20 mm Aggregate	cum	5.400	1900.00	10260.00	M-053
		10 mm Aggregate	cum	2.700	1800.00	4860.00	M-051
		Admixture	Kg	21.600	64.00	1382.40	M-180

		FO	UNDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b) Labour					
		Mate	day	0.900	551.00	495.90	L-12
		Mason	day	1.500	593.00	889.50	L-11
		Mazdoor	day	20.000	424.00	8480.00	L-13
		c) Machinery		20.000		0.00.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
		Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
		Light Crane of 3 tonnes capacity for handling tremie pipe	hour	6.000	490.00	2940.00	P&M-013
		Per Cum Basic Cost of Labour, I Machinery (a+b+c)	Material &	7066.000			
		Add 5 per cent of cost of malabour towards cost of forming protective bunds, chiselling an arrangements for under water with tremie pipe.	ng sump, d making			4912.72	
		d) GST (multiplying factor 0.2	016) on (a+	·b+c)		22355.23	
		e) Overhead charges @ 20 %	on (a+b+c+	· ⊦d)		26648.85	
		f) Contractor's profit @ 10 %	on (a+b+c+	d+e)		15989.31	
		g) Cess @ 1% on (a+b+c+d+e+	⊦f)			1758.82	
		cost of 15 cum = a+b+c+d+e+f+g				177641.23	
		Rate per cum = (a+b+c+d+e+f+g)	/15			11842.75	
					say	<u>11843.00</u>	
		Unit = cum Taking output = 120 cum a) Material					
		Cement	tonne	50.280	9100.00	457548.00	M-081
		Coarse sand	cum	54.000	650.00 1900.00	35100.00	M-004 M-053
		20 mm Aggregate 10 mm Aggregate	cum	64.800 43.200	1800.00	123120.00 77760.00	M-051
		Admixture	cum Kg	172.800	64.00	11059.20	M-180
		b) Labour	119	172.000	01.00	11000.20	
		Mate	day	0.880	551.00	484.88	L-12
		Mason	day	3.000	593.00	1779.00	L-11
		Mazdoor	day	18.000	424.00	7632.00	L-13
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Loader 1 cum capacity	hour	6.000	1838.00	11028.00	P&M-017
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer		300L	80.00	0.00	P&M-050 Lead= 0 km
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
		Per Cum Basic Cost of Labour, I Machinery (a+b+c)	Waterial &	6548.000			
		Add 5 per cent of cost of malabour towards cost of forming protective bunds, chiselling an arrangements for under water with tremie pipe.	ng sump, d making			35724.15	
		d) GST (multiplying factor 0.2	016) on (a+	-b+c)		165593.08	

				FOL	INDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Descr	ription	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			e) Overhead o	charges @ 20 % o	n (a+b+c			197397.46	
				s profit @ 10 % o	-	•		118438.48	
			•	on (a+b+c+d+e+f	•	,		13028.23	
				a+b+c+d+e+f+g	,			1315851.48	
				a+b+c+d+e+f+g)/	120			10965.43	
				3,			say	<u>10965.00</u>	
12.11		D	ntermediate plu	g					
		(i)	Grade M20 PCC						
				m plug concrete, o sump, protective	_				
		Case	Jsing Concrete	Mixer					
			Per Cum Basic Ce excluding GST,	ost of Labour, Mate OH, CP & Cess)	erial & Ma	chinery (a+b+c)		6604.00	Item 12.11 C (i) I
			d) GST (multi	plying factor 0.20	16) on (a+	+b+c)		1331.37	
			e) Overhead o	charges @ 20 % o	n (a+b+c	+d)		1587.07	
			Contractor's	s profit @ 10 % o	n (a+b+c+	·d+e)		952.24	
			g) Cess @ 1%	on (a+b+c+d+e+f)			104.75	
			Rate per cum = (a+b+c+d+e+f+g)				10579.43	
							say	<u>10579.00</u>	
12.11 D	(i)	Case II	Jsing Batching I	Plant, Transit Mix	er and Cr	ane/concrete pu	mp		
			Per Cum Basic Control excluding GST,	ost of Labour, Mate OH, CP & Cess)	erial & Ma	chinery (a+b+c)		6089.00	Item 12.11 C (i) II
			d) GST (multi	plying factor 0.20	16) on (a -	+b+c)		1227.54	
			e) Overhead o	charges @ 20 % o	n (a+b+c	+d)		1463.31	
) Contractor	's profit @ 10 % o	n (a+b+c	+d+e)		877.99	
			g) Cess @ 1%	on (a+b+c+d+e+	f)			96.58	
			Rate per cum = (a+b+c+d+e+f+g)				9754.42	
'12.11 D		(ii)	Grade M25 PCC				say	<u>9754.00</u>	
12.11 0		(11)		m plug concrete, e	xcluding c	ost of forming su	mp, protective b	ounds,	
		Case	Jsing Concrete	Mixer					
			Per Cum Basic Ce excluding GST,	ost of Labour, Mate OH, CP & Cess)	erial & Ma	chinery (a+b+c)		6884.00	Item 12.11 C (ii) I
			d) GST (multi	plying factor 0.20	16) on (a -	+b+c)		1387.81	
			e) Overhead o	charges @ 20 % o	n (a+b+c	+d)		1654.36	
) Contractor	's profit @ 10 % o	n (a+b+c	+d+e)		992.62	
			g) Cess @ 1%	on (a+b+c+d+e+	f)			109.19	
			Rate per cum = (a+b+c+d+e+f+g)				11027.98	
12.11 D	(ii)	Case	Ising Batching I	Plant, Transit Mix	er and Cr	ane/concrete nu	say mn	<u>11028.00</u>	
12.11	('')	II	-			une/concrete pu			
			Machinery (a+b+c	•		(h)		6366.00	Item 12.11 C (ii) II
			,	plying factor 0.20	, ,	•		1283.39	
			•	charges @ 20 % o	•	•		1529.88	
			•	's profit @ 10 % o	•	ru r e)		917.93	
				on (a+b+c+d+e+	')			100.97 10198.17	
			vare her crim = (a+b+c+d+e+f+g)			eau	10198.17 10198.00	
12.11 D		(iii)	Grade M30 PCC				say	10130.00	
			Same as in bottor	m plug concrete, e	xcluding c	ost of forming su	mp, protective b	ounds,	

chiseling etc.

				FOL	JNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Case	 []sir	ng Concrete Mixer					
			Per	Cum Basic Cost of Labour, Mat	erial & Ma	chinery (a+b+c)		6938.00	Item 12.11 C (iii) I
			d)	GST (multiplying factor 0.20	16) on (a-	+b+c)		1398.70	
			e)	Overhead charges @ 20 % o	on (a+b+c	+d)		1667.34	
			f)	Contractor's profit @ 10 % o	on (a+b+c	+d+e)		1000.40	
			g)	Cess @ 1% on (a+b+c+d+e+	·f)			110.04	
			Rate	per cum = (a+b+c+d+e+f+g)				11114.48	
							say	<u>11114.00</u>	
12.11 D	(iii)	Case II		ng Batching Plant, Transit Mix		_	ımp		
				Cum Basic Cost of Labour, Mat cluding GST, OH, CP & Cess)	erial & Ma	chinery (a+b+c)		6423.00	Item 12.11 C (iii) II
			d)	GST (multiplying factor 0.20	16) on (a-	+b+c)		1294.88	
			e)	Overhead charges @ 20 % o	on (a+b+c	+d)		1543.58	
			f)	Contractor's profit @ 10 % o		+d+e)		926.15	
			g)	Cess @ 1% on (a+b+c+d+e+	·f)			101.88	
			Rate	per cum = (a+b+c+d+e+f+g)				10289.49	
12.11		E	Ton	plug			say	<u>10289.00</u>	
		(i)	-	de M15 PCC					
				ie as Item 12.8(a) excluding for	mwork				
		Case		ng Concrete Mixer	inwonk				
		Guoc	· USII	ig Concrete wilker					
				Cum Basic Cost of Labour, Mat cluding GST, OH, CP & Cess)	erial & Ma	chinery (a+b+c)		5625.00	Item 12.8 (a)
			d)	GST (multiplying factor 0.20	16) on (a-	+b+c)		1134.00	
			e)	Overhead charges @ 20 % o	on (a+b+c	+d)		1351.80	
			f)	Contractor's profit @ 10 % o	on (a+b+c	+d+e)		811.08	
			g)	Cess @ 1% on (a+b+c+d+e+	•	ŕ		89.22	
			•	per cum = (a+b+c+d+e+f+g)	,			9011.10	
				(4 4 5 4 5 9)			say	<u>9011.00</u>	
'12.11 E		(ii)	Grad	de M20 PCC					
			Sam	e as Item 12.8(b) excluding for	mwork				
		Case	l Usir	ng Concrete Mixer					
				Cum Basic Cost of Labour, erial & Machinery (a+b+c)				6090.00	Item 12.8 (b)
			d)	GST (multiplying factor 0.20	16) on (a-	+b+c)		1227.74	
			e)	Overhead charges @ 20 % o	-	•		1463.55	
			f)	Contractor's profit @ 10 % o	•	+d+e)		878.13	
			g)	Cess @ 1% on (a+b+c+d+e+	·f)			96.59	
			Rate	per cum = (a+b+c+d+e+f+g)				9756.01	
'12.11 E		(iii)	Grad	de M25 PCC			say	<u>9756.00</u>	
		` ,	Sam	ue as Item 12.8 (d) uding formwork					
		Case		ng Concrete Mixer					
			Per	Cum Basic Cost of Labour, Mat	erial & Ma	chinery (a+b+c)		6594.00	Item 12.8 (D) I
			d)	GST (multiplying factor 0.20	16) on (a-	+b+c)		1329.35	
			e)	Overhead charges @ 20 % o		•		1584.67	
			f)	Contractor's profit @ 10 % of		•		950.80	
			g)	Cess @ 1% on (a+b+c+d+e+		- - /		104.59	
				per cum = (a+b+c+d+e+f+g)	-,			10563.41	
				(m m 0.0.1.9)			say	10563.00	
							Suy	.0000.00	

				FC	DUNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.11 E (⊥ (iii)	Case	Using	Batching Plant, Transit M	ixer and Cr	ane/concrete pu	mp		
		II		m Basic Cost of Labour, Mading GST, OH, CP & Cess)		chinery (a+b+c)		6297.00	Item 12.8 (D) II (SA)
			•	SST (multiplying factor 0.2		+b+c)		1269.48	
			e) (Overhead charges @ 20 %	on (a+b+c-	+d)		1513.30	
			f) (Contractor's profit @ 10 %	on (a+b+c	+d+e)		907.98	
				Cess @ 1% on (a+b+c+d+e	-			99.88	
			Rate p	er cum = (a+b+c+d+e+f+g)		cav	10087.64 10088.00	
'12.11 E		(iv)	Grade	M30 PCC			say	10000.00	
			Same	as Item 12.8(f) excluding for	rmwork				
		Case	l Using	Concrete Mixer					
				m Basic Cost of Labour, Mading GST, OH, CP & Cess)		chinery (a+b+c)		6649.00	Item 12.8 (F) I
			•	GST (multiplying factor 0.2		-		1340.44	
			•	Overhead charges @ 20 %	•	•		1597.89	
			-	Contractor's profit @ 10 %		+d+e)		958.73 105.46	
			•	Cess	•			10651.52	
			reate p	er cum – (a.b.c.u.e.r.g	,		say	<u>10652.00</u>	
12.11 E ((iv)		Using	Batching Plant, Transit M	ixer and Cr	ane/concrete pu	•		
		II		m Basic Cost of Labour, Mading GST, OH, CP & Cess)		chinery (a+b+c)		6346.00	Item 12.8 (F) II
			d) (GST (multiplying factor 0.2	2016) on (a+	+b+c)		1279.35	
				Overhead charges @ 20 %	on (a+b+c	+d)		1525.07	
			f) (,					
			•	Cess @ 1% on (a+b+c+d+e	•			100.65	
			Rate p	er cum = (a+b+c+d+e+f+g)		cav	10166.11 10166.00	
12.11		F	Well c	ар			say	10100.00	
		(i)	RCC (Grade M20					
		Case	l Using	Concrete Mixer					
			Unit =						
				output = 15 cum					
			a) M	aterial					
			Cemer	nt	tonne	5.120	9100.00	46592.00	M-081
			Coarse	esand	cum	6.750	650.00	4387.50	M-005
			20 mm	Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm	Aggregate	cum	5.400	1800.00	9720.00	M-051
			,	abour					
			Mate		day	0.860	551.00	473.86	L-12
			Mason		day	1.500	593.00	889.50	L-11
			Mazdo	or	day	20.000	424.00	8480.00	L-13
			•	Machinery ete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			•	ator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
				Vork @ 4 per cent of a+b+		3.330	300.00	3628.59	
				GST (multiplying factor 0.2		+b+c)		19019.64	
			•	Overhead charges @ 20 %		•		22672.62	
			,	Contractor's profit @ 10 %	•	•		13603.57	
			•	Cess @ 1% on (a+b+c+d+e	e+f)			1496.39	
				15 cum = $a+b+c+d+e+f+g$	\/1E			151135.67 10075.71	
			rate p	er cum = (a+b+c+d+e+f+g	<i>ji</i> 13		say	10075.71 10076.00	
							Suy	10070.00	

Sr No	Ref. to		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	MoRTH/ DSR Spec.		-		-			Input ref.
	<u> </u>	<u> </u>						
12.11 F	(i)	Case	Using Batching Plant, Transit Mix	ker and Co	oncrete Pump			
			Unit = cum					
			Taking output = 120 cum a) Material					
			a) Material Cement	tonne	40.920	9100.00	372372.00	M-081
			Coarse sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
			10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
			b) Labour	day	0.040	EE4.00	460.04	L-12
			Mate Mason	day day	0.840 3.000	551.00 593.00	462.84 1779.00	L-12 L-11
			Mazdoor	day	18.000	424.00	7632.00	L-13
			c) Machinery	•				
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
			Loader (capacity 1 cum)	hour	6.000	1838.00	11028.00	P&M-017
			Transit Mixer (capacity 4.0 cu.m)					
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
			Lead beyond 1 Km, L - lead in Kilometer	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
			Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
			Formwork @ 4 per cent of (a+b+c)				27576.51	
			d) GST (multiplying factor 0.20		144545.05			
			e) Overhead charges @ 20 % (, ,	•		172306.88	
			f) Contractor's profit @ 10 %				103384.13	
			g) Cess @ 1% on (a+b+c+d+e+	•	,		11372.25	
			cost of 120 cum = $a+b+c+d+e+f+g$	•			1148597.66	
			Rate per cum = $(a+b+c+d+e+f+g)$	/120			9571.65	
		<i>(**</i>)				say	<u>9572.00</u>	
12.11 F		(ii) Case I	RCC Grade M25 Using Concrete Mixer					
			•					
			Unit = cum Taking output = 15 cum					
			a) Material					
			•,	tanna	6.050	0400.00	EE0EE 00	M-081
			Cement Coarse sand	tonne cum	6.050 6.750	9100.00 650.00	55055.00 4387.50	M-005
			20 mm Aggregate		8.100	1900.00	15390.00	M-053
				cum				M-051
			10 mm Aggregate	cum	5.400	1800.00	9720.00	WI-031
			b) Labour			554.00	470.00	1.40
			Mate	day	0.860	551.00	473.86	L-12 L-11
			Mason Mazdoor	day	1.500 20.000	593.00 424.00	889.50 8480.00	L-11
			c) Machinery	day	20.000	424.00	0400.00	
			Concrete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Form Work @ 3.75 per cent of	Hour	0.000	300.00	3719.17	
			a+b+c				07 10.17	
			d) GST (multiplying factor 0.20	016) on (a+	·b+c)		20744.04	
			e) Overhead charges @ 20 %		•		24728.21	
			f) Contractor's profit @ 10 %	on (a+b+c+	+d+e)		14836.93	
			g) Cess @ 1% on (a+b+c+d+e+				1632.06	
			cost of 15 cum = a+b+c+d+e+f+g				164838.27	
			Rate per cum = $(a+b+c+d+e+f+g)$	/15			10989.22	
12.11 F	(ii)		Using Batching Plant, Transit Mix	ker and Co	oncrete Pump	say	<u>10989.00</u>	
		II	Unit = cum					
			Taking output = 120 cum					

				FOUNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			a) Material					
			Cement	tonne	48.400	9100.00	440440.00	M-081
			Coarse sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053 M-051
			10 mm Aggregate b) Labour	cum	43.200	1800.00	77760.00	IVI-U3 I
			Mate	day	0.840	551.00	462.84	L-12
			Mason	day	3.000	593.00	1779.00	L-11
			Mazdoor	day	18.000	424.00	7632.00	L-13
			c) Machinery	h	0.00	2000.00	40000.00	P&M-002
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-080
			Generator 100 KVA	hour	6.00	938.00	5628.00	
			Loader (capacity 1 cum)	hour	6.000	1838.00	11028.00	P&M-017
			Transit Mixer(capacity 4.0 cu.r	•	45.00	4005.00	40075.00	P&M-049
			Transit Mixer 4 cum capacity fo lead upto 1 km.	r hour	15.00	1265.00	18975.00	F 0:1VI - U49
			Lead beyond 1 Km, L - lead in Kilometer	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
			Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
			Formwork @ 3.75 per cent of a+b+c)		0.00	2,20,00	28405.53	
			d) GST (multiplying factor	0.2016) on (a+	b+c)		158434.69	
			e) Overhead charges @ 20		•		188864.21	
			f) Contractor's profit @ 10	•	•		113318.53	
			g) Cess @ 1% on (a+b+c+c		•		12465.04	
			cost of 120 cum = a+b+c+d+e+	•			1258968.84	
			Rate per cum = (a+b+c+d+e+f	•			10491.41	
						say	<u>10491.00</u>	
12.11 F			RCC Grade M30					
		Case I	Using Concrete Mixer					
			Unit = cum					
			Taking output = 15 cum					
			a) Material Cement	tonne	6.100	9100.00	55510.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
				Cum	3.400	1000.00	3720.00	
			b) Labour Mate	day	0.860	551.00	473.86	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery	22,	20.000		0.00.00	
			Concrete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Formwork @ 3.5 per cent of (a+b+c)				3487.15	
			d) GST (multiplying factor	0 2016) on /s±	h+c)		20788.99	
			e) Overhead charges @ 20	, ,	,		24781.80	
			f) Contractor's profit @ 10				14869.08	
			g) Cess @ 1% on (a+b+c+c	-	u · 0,		1635.60	
			cost of 15 cum = a+b+c+d+e+f	•			165195.48	
				0			11013.03	
			Rate per cum = (a+b+c+d+e+f	÷q)/15				
			Rate per cum = (a+b+c+d+e+f	+g)/15		say	11013.00	
12.11 F ((iii)	Case II	Using Batching Plant, Transit		ncrete Pump	say		
12.11 F (iii)	Case II	Using Batching Plant, Transit		ncrete Pump	say		
12.11 F ((iii)	Case II	Using Batching Plant, Transit <i>Unit</i> = cum <i>Taking output</i> = 120 cum		ncrete Pump	say		
12.11 F (iii)	Case II	Using Batching Plant, Transit <i>Unit</i> = cum <i>Taking output</i> = 120 cum a) Material	t Mixer and Co	·		<u>11013.00</u>	M 004
12.11 F ((iii)	Case II	Using Batching Plant, Transit <i>Unit</i> = cum <i>Taking output</i> = 120 cum		48.790 54.000	9100.00 650.00		M-081 M-004

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Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			20 m	nm Aggregate	cum	64.800	1900.00	123120.00	M-053
				nm Aggregate	cum	43.200	1800.00	77760.00	M-051
			b)	Labour	oum	10.200	1000.00	77700.00	
			Mate		day	0.840	551.00	462.84	L-12
			Mas		day	3.000	593.00	1779.00	L-11
			Maz		day	18.000	424.00	7632.00	L-13
			c)	Machinery	ady	10.000	121.00	7002.00	
			•	hing Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
				erator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
				ler (capacity 1 cum)	hour	6.000	1838.00	11028.00	P&M-017
			Tran	sit Mixer (capacity 4.0 cu.m)					
				sit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
				l beyond 1 Km, L - lead in neter	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
			Cond	crete Pump	hour	6.00	2726.00	16356.00	P&M-007
				nwork @ 3.5 per cent of		0.00	2,20,00	26636.04	
			d)	GST (multiplying factor 0.20	016) on (a-	-b+c)		158793.44	
			e)	Overhead charges @ 20 %		•		189291.86	
			f)	Contractor's profit @ 10 %	•	•		113575.12	
			g)	Cess @ 1% on (a+b+c+d+e-	•	,		12493.26	
				of 120 cum = a+b+c+d+e+f+g	•			1261819.56	
			Rate	per cum = (a+b+c+d+e+f+g)	/120			10515.16	
		<i>"</i> 、					say	<u>10515.00</u>	
12.11 F				Grade M35					
		Case		g Concrete Mixer					
				= cum					
				ng output = 15 cum					
			a)	Material			0.400.00		M 004
			Cem		tonne	6.330	9100.00	57603.00	M-081 M-005
				rse sand nm Aggregate	cum cum	6.750 8.100	650.00 1900.00	4387.50 15390.00	M-053
				im Aggregate im Aggregate	cum	5.400	1800.00	9720.00	M-051
			b)	Labour	oum	0.100	1000.00	0720.00	
			Mate		day	0.860	551.00	473.86	L-12
			Mas		day	1.500	593.00	889.50	L-11
			Maz	door	day	20.000	424.00	8480.00	L-13
			c)	Machinery					
			Conc	crete mixer (cap. 0.40/0.28)	hour	6.000	291.00	1746.00	P&M-009
			Gen	erator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Forr (a+b	mwork @ 3 per cent of +c)				3051.78	
			d)	GST (multiplying factor 0.20	016) on (a+	-b+c)		21123.17	
			e)	Overhead charges @ 20 %	, ,	•		25180.16	
			f)	Contractor's profit @ 10 %	•	•		15108.10	
			g)	Cess @ 1% on (a+b+c+d+e-	•	•		1661.89	
				of 15 cum = a+b+c+d+e+f+g	•			167850.96	
			Rate	per cum = (a+b+c+d+e+f+g)	/15			11190.06	
12.11 F ((iv)		Usin	g Batching Plant, Transit Mi	xer and Co	oncrete Pump	say	<u>11190.00</u>	
		II	Heis	= oum					
				= cum ng output = 120 cum					
			a)	Material					
			Cem		tonne	50.640	9100.00	460824.00	M-081
			23.11			00.010	3.00.00		

Sr No Ref. MoR' DSR S	RTH/	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Coarse sand	cum	54.000	650.00	35100.00	M-004
		20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
		10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
		b) Labour					
		Mate	day	0.840	551.00	462.84	L-12
		Mason	day	3.000	593.00	1779.00	L-11
		Mazdoor	day	18.000	424.00	7632.00	L-13
		c) Machinery		0.00	0000.00	40000 00	D 0 M 002
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002 P&M-080
		Generator 100 KVA	hour hour	6.00 6.000	938.00 1838.00	5628.00 11028.00	P&M-017
		Loader (capacity 1 cum)	Houl	0.000	1030.00	11020.00	1 0111
		Transit Mixer (capacity 4.0 cu.m)					D014 040
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1265.00	18975.00	P&M-049
		Lead beyond 1 Km, L - lead in Kilometer	tonne. km	300L	80.00	0.00	P&M-050 Lead= 0 km
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
		Formwork @ 3 per cent of (a+b+c)				23335.95	
		d) GST (multiplying factor 0.2	016) on (a+b	+c)		161522.08	
		e) Overhead charges @ 20 %	on (a+b+c+c	1)		192544.57	
		f) Contractor's profit @ 10 %	on (a+b+c+c	i+e)		115526.74	
		g) Cess @ 1% on (a+b+c+d+e-	+f)			12707.94	
		cost of 120 cum = a+b+c+d+e+f+g				1283502.12	
		2221 21 1 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3					
		Rate per cum = (a+b+c+d+e+f+g)	/120			10695.85	
	Note	Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adm	out using b	.4 per cent of	say	10695.85 <u>10696.00</u>	
2.11 F	Note	Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried	out using b	.4 per cent of	say		
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade	out using b nixtures @ 0 for achieving	.4 per cent of desired slump	say		
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade Using Batching Plant, Transit Mi	out using b nixtures @ 0 for achieving	.4 per cent of desired slump	say		
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade Using Batching Plant, Transit Mit Unit = cum	out using b nixtures @ 0 for achieving	.4 per cent of desired slump	say		
I2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum	out using b nixtures @ 0 for achieving	.4 per cent of desired slump	say		
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material	out using be nixtures @ 0 for achieving xer and Con	4 per cent of desired slump		<u>10696.00</u>	M-081
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement	out using be nixtures @ 0 for achieving exer and Contonne	4 per cent of desired slump crete Pump 52.200	9100.00	<u>10696.00</u> 475020.00	M-081 M-004
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added f of concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand	out using be nixtures @ 0 for achieving exer and Contonne cum	.4 per cent of desired slump crete Pump 52.200 54.000	9100.00 650.00	475020.00 35100.00	
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mit Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate	out using be nixtures @ 0 for achieving exer and Contonne cum cum	.4 per cent of desired slump crete Pump 52.200 54.000 64.800	9100.00 650.00 1900.00	475020.00 35100.00 123120.00	M-004
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mill Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate	out using be nixtures @ 0 for achieving exer and Con tonne cum cum cum	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200	9100.00 650.00 1900.00 1800.00	475020.00 35100.00 123120.00 77760.00	M-004 M-053 M-051
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added to f concrete. RCC M40 Grade Using Batching Plant, Transit Mill Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate Admixture	out using be nixtures @ 0 for achieving exer and Contonne cum cum	.4 per cent of desired slump crete Pump 52.200 54.000 64.800	9100.00 650.00 1900.00	475020.00 35100.00 123120.00	M-004 M-053
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Minum Ecum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour	out using be nixtures @ 0 for achieving the connectuming cuming kg	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000	9100.00 650.00 1900.00 1800.00 64.00	475020.00 35100.00 123120.00 77760.00 13184.00	M-004 M-053 M-051 M-180
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate	out using be nixtures @ 0 for achieving tonne cum cum kg day	4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840	9100.00 650.00 1900.00 1800.00 64.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84	M-004 M-053 M-051 M-180
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason	tonne cum cum kg day day day	4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00	M-004 M-053 M-051 M-180 L-12 L-11
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mit Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate 4dmixture b) Labour Mate Mason Mazdoor	out using be nixtures @ 0 for achieving tonne cum cum kg day	4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840	9100.00 650.00 1900.00 1800.00 64.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84	M-004 M-053 M-051 M-180
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Millonia e cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason Mazdoor c) Machinery	out using benixtures @ 0 for achieving tonne cum cum kg day day day	4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Minum = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason Mazdoor c) Machinery Batching Plant	out using benixtures @ 0 for achieving were and Con tonne cum cum kg day day day hour	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000 6.00	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Minum Ecum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason Mazdoor c) Machinery Batching Plant Generator 100 KVA	tonne cum cum cum kg day day day hour hour	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000 6.000	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00 3200.00 938.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00 19200.00 5628.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason Mazdoor c) Machinery Batching Plant Generator 100 KVA Loader 1 cum capacity	tonne cum cum kg day day day hour hour	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000 6.000 6.000 6.000	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00 3200.00 938.00 1838.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00 19200.00 5628.00 11028.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason Mazdoor c) Machinery Batching Plant Generator 100 KVA Loader 1 cum capacity Transit Mixer 4 cum capacity for	tonne cum cum cum kg day day day hour hour	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000 6.000	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00 3200.00 938.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00 19200.00 5628.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080
2.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Mi Unit = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate 10 mm Aggregate Admixture b) Labour Mate Mason Mazdoor c) Machinery Batching Plant Generator 100 KVA Loader 1 cum capacity	tonne cum cum kg day day day hour hour	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000 6.000 6.000 6.000	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00 3200.00 938.00 1838.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00 19200.00 5628.00 11028.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017
12.11 F		Rate per cum = (a+b+c+d+e+f+g) Where ever concrete is carried transit mixer, concrete pump, Adn weight of cement may be added for concrete. RCC M40 Grade Using Batching Plant, Transit Millonia = cum Taking output = 120 cum a) Material Cement Coarse Sand 20 mm Aggregate 10 mm Aggregate 4dmixture b) Labour Mate Mason Mazdoor c) Machinery Batching Plant Generator 100 KVA Loader 1 cum capacity Transit Mixer 4 cum capacity for lead upto 1 km. Transit Mixer 4 cum capacity for	out using benixtures @ 0 for achieving were and Con tonne cum cum kg day day day hour hour hour hour tonne.	.4 per cent of desired slump crete Pump 52.200 54.000 64.800 43.200 206.000 0.840 3.000 18.000 6.000 6.000 6.000 15.00	9100.00 650.00 1900.00 1800.00 64.00 551.00 593.00 424.00 3200.00 938.00 1838.00 1265.00	475020.00 35100.00 123120.00 77760.00 13184.00 462.84 1779.00 7632.00 19200.00 5628.00 11028.00 18975.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017 P&M-049 P&M-050

			FOUN	IDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d) GST (multiplying factor 0.2016	6) 00 (24	-b+c)		167207.48	
					•			
			e) Overhead charges @ 20 % on	•	•		199321.93	
			f) Contractor's profit @ 10 % on	(a+b+c+	+d+e)		119593.16	
			g) Cess @ 1% on (a+b+c+d+e+f)				13155.25	
			cost of 120 cum = $a+b+c+d+e+f+g$				1328680.01	
			Rate per cum = $(a+b+c+d+e+f+g)/12$	20			11072.33	
						say	11072.00	
12.12	Section 1200		Sinking of 6 m external diameter through all types of strata namely each case, complete as per drawin reckoned from bed level.	sandy s	soil, clayey soil	and rock as s	hown against	
		A (i)	Unit = Running Meter. Taking output = 1 m Diameter of well - 6 m. Sandy Soil Depth below bed level upto 3.0 M					
			Rate of sinking = 0.50 m per hour.					
			reace of sinking – 0.50 m per nour.					
			a) Labour					
			Mate	day	0.120	551.00	66.12	L-12
			Sinker (skilled)	day	1.000	508.00	508.00	L-15
			Sinking helper (semi-skilled) b) Machinery	day	2.000	424.00	848.00	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	2.000	1040.00	2080.00	P&M-075
			Consumables in sinking @10 per cent of (b)				208.00	
			c) GST (multiplying factor 0.2016	6) on (a+	-b)		747.96	
			d) Overhead charges @ 20 % on		•		891.62	
			e) Contractor's profit @ 10 % on	(a+b+c+	ra)		534.97	
			f) Cess @ 1% on (a+b+c+d+e)				58.85	
			Rate per metre = (a+b+c+d+e+f)			say	5943.52 5944.00	
12.12 A		(ii)	Beyond 3m upto 10m depth			·		
			Rate of sinking = 0.33 m per hour.					
			a) Labour					
			Mate	day	0.150	551.00	82.65	L-12
			Sinker	day	1.250	508.00	635.00	L-15
			Sinking helper (semi-skilled)	day	2.500	424.00	1060.00	L-14
			b) Machinery					
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories	hour	3.000	1040.00	3120.00	P&M-075
			Consumables in sinking @10 per cent of (b)				312.00	
			c) GST (multiplying factor 0.2016	6) on (a+	-b)		1050.27	
			d) Overhead charges @ 20 % on		•		1251.98	
			e) Contractor's profit @ 10 % on	(aTDTC1	ruj		751.19	
			f) Cess @ 1% on (a+b+c+d+e)				82.63	
			Rate per metre = (a+b+c+d+e+f)				8345.72	
12.12 A		(iii)	Beyond 10m upto 20m			say	<u>8346.00</u>	
		а	Add 5 per cent for every additional previous meter	meter de	epth of sinking o	ver the rate of	sinking for the	
			•	5 0/	9762 000			
			11th m	5% 5%	8763.000			
			12th m 13th m	5% 5%	9201.000 9661.000			
			14th m	5% 5%	10144.000			
			15th m	5% 5%	10651.000			
			16th m	5%	11184.000			
			TOWN THE	U 70	11104.000			

			FOU	INDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			17th m	5%	11743.000			
			18th m	5%	12330.000			
			19th m	5%	12947.000			
			20th m	5%	13594.000			
			Total Cost from 10m upto 20m		110218.000			
12.12 A		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>11022.000</u>			
		а	Add 7.5 per cent for every addition	al meter	depth of sinking	over the rate of	sinking for the	
			previous meter				· ·	
		b	Add 20 per cent of cost for			Including 20%		
			Kentledge including supports, loading arrangement and Labour.			for Kentledge		
			21st m	7 50/-	14614 000	17537.00		
			22nd m	7.5% 7.5%	14614.000 15710.000	18852.00		
			23rd m	7.5%	16888.000	20266.00		
			24th m	7.5%	18155.000	21786.00		
			25th m	7.5%	19517.000	23420.00		
			26th m	7.5%	20981.000	25177.00		
			27th m	7.5%	22555.000	27066.00		
			28th m	7.5%	24247.000	29096.00		
			29th m	7.5%	26066.000	31279.00		
			30th m	7.5%	28021.000	33625.00		
			Total Cost from 20m upto 30m	. 10 / 0	206754.000	248104.00		
			Avg Rate per metre		20675.000	24810.00		
12.12 A			Beyond 30m upto 40 m					
		а	Add 10 per cent for every additional previous meter	al meter o	depth of sinking o	over the rate of	sinking for the	
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge		
			04.1	400/	00000 000	00000 00		
			31st m	10%	30823.000	36988.00		
			32nd m	10% 10%	33905.000	40686.00		
			33rd m 34th m	10%	37296.000 41026.000	44755.00 49231.00		
			35th m	10%	45129.000	54155.00		
			36th m	10%	49642.000	59570.00		
			37th m	10%	54606.000	65527.00		
			38th m	10%	60067.000	72080.00		
			39th m	10%	66074.000	79289.00		
			40th m	10%	72681.000	87217.00		
			Total Cost from 30m upto 40m		491249.000	589498.00		
12.12		В	Avg Rate per metre Clayey Soil (6m dia. Well)		<u>49125.000</u>	<u>58950.00</u>		
			Unit = Running Meter.					
			Taking output = 1 meter					
		(i)	Depth below bed level upto 3.0 M					
		(•)	Rate of sinking = 0.33 m per hour.					
			a) Labour					
			Mate	day	0.150	551.00	82.65	L-12
			Sinker (skilled)	day	1.500	508.00	762.00	L-15
			Sinking helper (semi-skilled)	day	2.250	424.00	954.00	L-14
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum	hour	3.000	1040.00	3120.00	P&M-075
			capacity and accessories Consumables in sinking @ 10 per				312.00	
			cent of (b) ST (multiplying factor 0.20)	16) 05 /5	+b)		1054 50	
			c) GST (multiplying factor 0.20		•		1054.50	
			d) Overhead charges @ 20 % o		•		1257.03	
			e) Contractor's profit @ 10 % o	n (a+b+c	+a)		754.22	

		FOL					
Sr No Ref. to MoRTH DSR Spe	1/	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		f) Cess @ 1% on (a+b+c+d+e)				82.96	
		Rate per metre = (a+b+c+d+e+f)				8379.36	
10.40 D	(!!)	Davier d One contact done doneth			say	<u>8379.00</u>	
12.12 B	(ii)	Beyond 3m upto 10m depth					
		Rate of sinking = 0.17 m per hour.					
		a) Labour					
		Mate	day	0.300	551.00	165.30	L-12
		Sinker	day	3.000	508.00	1524.00	L-15
		Sinking helper (semi-skilled)	day	4.500	424.00	1908.00	L-14
		b) Machinery					
		Hire & running charges of crane	hour	6.000	1040.00	6240.00	P&M-075
		with grab bucket of 0.75 cum					
		capacity and accessories.					
		Air compressor with pneumatic	hour	2.000	723.00	1446.00	P&M-063
		chisel attachment for cutting hard clay.					
		•				760.60	
		Consumables in sinking @ 10 per cent of (b)				768.60	
		c) GST (multiplying factor 0.20	16) on (a+l	o)		2429.66	
		d) Overhead charges @ 20 % o		•		2896.31	
				۵۱,			
		e) Contractor's profit @ 10 % o	ın (a+b+c+	u)		1737.79	
		f) Cess @ 1% on (a+b+c+d+e)				191.16	
		Rate per metre = (a+b+c+d+e+f)				19306.82	
					say	<u> 19307.00</u>	
		Beyond 10 m upto 20 m					
2.12 B	(iii)	Deyona 10 ili apto 20 ili					
2.12 B	(iii) a	Add 5 per cent for every additional	meter dept	h of sinking ove	r the rate of sink	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter	meter dept	h of sinking ove		ing for the	
2.12 B	` ,	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent	meter dept	h of sinking ove	Including for	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter	meter dept	h of sinking ove	Including for dewatering @	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent	meter dept	h of sinking ove	Including for dewatering @ 5% of cost, if	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required.	·	·	Including for dewatering @ 5% of cost, if required	ing for the	
.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required.	5%	20272.000	Including for dewatering @ 5% of cost, if required 21286.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m	5% 5%	20272.000 21286.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00	ing for the	
.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m	5% 5% 5%	20272.000 21286.000 22350.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m	5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m	5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m	5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m	5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m	5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m	5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 16th m 17th m 18th m 19th m 20th m	5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m	5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00	ing for the	
2.12 B	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 16th m 17th m 18th m 19th m 20th m	5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00	ing for the	
	a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m	5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00	ing for the	
	a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m	5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00	ing for the	
	a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additiondepth of sinking over the rate of sin	5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00	ing for the	
	a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additionate of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewatering	5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00	ing for the	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additionate of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required	5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00		
	a b (iv) a	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additionate of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00	Including 5%	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additionate of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00		
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every addition depth of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arrange Labour).	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00	Including 5% for	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additionate of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arranger	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00	Including 5% for dewatering, if	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every addition depth of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arrange Labour).	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m 5m	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00 Including 25% for Kentledge	Including 5% for dewatering, if required	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every addition depth of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arrange Labour).	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000 25498.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 267731.00 26773.00 Including 25% for Kentledge 42260.00	Including 5% for dewatering, if required 44373.00	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every addition depth of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arrange Labour).	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000 25498.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 267731.00 26773.00 26773.00 26773.00	Including 5% for dewatering, if required 44373.00 47702.00	
	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 19th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every addition depth of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arranger Labour). 21st m 22nd m 23rd m	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 27167.000 28525.000 29951.000 31449.000 254982.000 25498.000 33808.000 36344.000 39070.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 267731.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26773.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770.00 26770	Including 5% for dewatering, if required 44373.00 47702.00 51280.00	
2.12 B	a b (iv) a b	Add 5 per cent for every additional previous meter Add for dewatering @ 5 per cent of cost, if required. 11th m 12th m 13th m 14th m 15th m 16th m 17th m 18th m 20th m Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m Add 7.5 per cent for every additiondepth of sinking over the rate of sin the previous meter Add 5 per cent of cost for dewateric cost, if required Add 25 per cent of cost for Kentled including supports, loading arranger Labour). 21st m 22nd m 23rd m 24th m	5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5	20272.000 21286.000 22350.000 23468.000 24641.000 25873.000 29951.000 31449.000 254982.000 25498.000 33808.000 36344.000 39070.000 42000.000	Including for dewatering @ 5% of cost, if required 21286.00 22350.00 23468.00 24641.00 25873.00 27167.00 28525.00 29951.00 31449.00 33021.00 267731.00 26773.00 26773.00 26773.00 26773.00 26773.00 252500.00 45430.00 4838.00 52500.00	Including 5% for dewatering, if required 44373.00 47702.00 51280.00 55125.00	

			FO	UNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			28th m	7.5%	56089.000	70111.00	73617.00	
			29th m	7.5%	60296.000	75370.00	79139.00	
			30th m	7.5%	64818.000	81023.00	85074.00	
			Total Cost from 20m upto 30m		478287.000	597860.00	627755.00	
			Avg Rate per metre		<u>47829.000</u>	<u>59786.00</u>	<u>62776.00</u>	
12.12 B		(v)	Beyond 30m upto 40 m					
		а	Add 10 per cent for every additional	al meter				
			depth of sinking over the rate of sin the previous meter	-				
		b	Add 5 per cent of cost for dewateri required	ng, if				
		С	Add 20 per cent of cost for Kentled	•		Including 20%	Including 5%	
			including supports, loading arrange	ment and		for Kentledge	for	
			Labour).				dewatering, if	
							required	
			31st m	10%	71300.000	85560.00	89838.00	
			32nd m	10%	78430.000	94116.00	98822.00	
			33rd m	10%	86273.000	103528.00	108704.00	
			34th m	10%	94900.000	113880.00	119574.00	
			35th m	10%	104390.000	125268.00	131531.00	
			36th m 37th m	10% 10%	114829.000	137795.00	144685.00	
			38th m	10%	126312.000	151574.00 166732.00	159153.00	
			39th m	10%	138943.000 152837.000	183404.00	175069.00 192574.00	
			40th m	10%	168121.000	201745.00	211832.00	
			Total Cost from 30m upto 40m	10 70	1136335.000	1363602.00	1431782.00	
			Avg Rate per metre		113634.000	<u>136360.00</u>	<u>143178.00</u>	
12.12		С	Soft Rock (6m dia well)		1100011000	10000000	11011000	
		_	Unit = Running Meter.					
			Taking output = 1 m					
			• •	_				
			Depth in Soft rock strata up to 3n Rate of sinking = 0.25 m per hour.	n				
			a) Labour					
			Mate	dov	0.020	EE1 00	506.92	L-12
				day	0.920	551.00		L-15
			Sinker (skilled)	day	3.000	508.00	1524.00	
			Sinking helper (semi-skilled)	day	20.000	424.00	8480.00	L-14
			Diver	day	0.500	869.00	434.50	L-07
			b) Machinery					
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	1040.00	4160.00	P&M-075
			Air compressor with pneumatic breakers	hour	3.500	723.00	2530.50	P&M-063
			Consumables in sinking @ 10 per				669.05	
			cent of (b) Add for dewatering @ of 5 per cent of (a+b), if required				915.25	
							007:55	
			c) GST (multiplying factor 0.20		•		3874.80	
			d) Overhead charges @ 20 %	• •			4619.00	
			e) Contractor's profit @ 10 % o	on (a+b+c	⊦d)		2771.40	
			f) Cess @ 1% on (a+b+c+d+e)				304.85	
			Rate per metre = (a+b+c+d+e+f)				30790.27	
12.12		D	Hard Rock (6m dia well)			say	<u>30790.00</u>	
			Unit = Running Meter					
			Taking output = 1 m					
			Depth in hard rock strata upto 3 i	m				
			Rate of sinking = 0.17 m per hour.					
			a) Material	IZ	4.000	400.00	004.00	M 404
			Gelatine 80 per cent	Kg	4.000	166.00	664.00	M-104

CHAPTER-12

				CHAPTER-12 OUNDATION				
Sr No	Ref. to		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	MoRTH/ DSR Spec.		·					Input ref.
			Electric Detonators	each	18.000	11.59	208.62	M-094/100
			b) Labour	day	1 560	EE1 00	9E0 E6	L-12
			Mate Driller	day day	1.560 2.000	551.00 551.00	859.56 1102.00	L-06
			Blaster	day	0.250	551.00	137.75	L-03
			Mazdoor	day	12.000	424.00	5088.00	L-13
			Mazdoor (Skilled)	day	4.000	508.00	2032.00	L-15
			c) Machinery	b	0.000	4040.00	0040.00	P&M-075
			Hire & running charges of crane with grab bucket of 0.75 cum	hour	6.000	1040.00	6240.00	FORWI-075
			capacity and accessories.					
			Hire & running charges of	hour	2.000	723.00	1446.00	P&M-063
			compressor with pneumatic		2.000	. 20.00		
			breaker/Jack hammer for drilling	L				
			Dewatering @ 5 per cent of cos	t			845.27	
			of (b+c), if required.					
			Consumables in sinking @ 10 pe	er			768.60	
			cent of cost of (b).					
			d) GST (multiplying factor 0	.2016) on (a+	b+c)		3909.39	
			e) Overhead charges @ 20	% on (a+b+c+	d)		4660.24	
			f) Contractor's profit @ 10	% on (a+b+c+	d+e)		2796.14	
			g) Cess @ 1% on (a+b+c+d-	+e+f)			307.58	
			Rate per metre = (a+b+c+d+e+	f+g)			31065.15	
12.13	Section		Sinking of 7 m external dian			say	<u>31065.00</u>	
			through all types of strata na each case, complete as per d reckoned from bed level.				-	
			Unit = Running Meter.					
			Taking output = 1 m					
			Diameter of well - 7 m.					
		Α	Sandy Soil					
		(i)	Depth below bed level upto 3.	0 M				
			Rate of sinking = 0.30 m per hou	ır.				
			a) Labour					
			Mate	day	0.150	551.00	82.65	L-12
			Sinker (skilled)	day	1.250	508.00	635.00	L-15
			Sinking helper (semi-skilled)	day	2.500	424.00	1060.00	L-14
			b) Machinery	day	2.000	121.00	1000.00	
			Hire & running charges of crane	hour	3.250	1040.00	3380.00	P&M-075
			with grab bucket of 0.75 cum		0.200	70.000	3333.33	
			capacity and accessories.					
			Consumables in sinking @10 pecent of (b)	er			338.00	
			c) GST (multiplying factor 0	.2016) on (a+	b)		1107.92	
			d) Overhead charges @ 20		-,		1320.71	
				` '	d)		792.43	
			,	•	u,			
			f) Cess @ 1% on (a+b+c+d-	•			87.17	
			Rate per metre = (a+b+c+d+e+	1)		say	8803.88 <u>8804.00</u>	
12.13 A		(ii)	Beyond 3m upto 10m depth			Suy	0004.00	
		. ,	Rate of sinking = 0.22 m per hou	ır.				
			a) Labour					
			Mate	day	0.180	551.00	99.18	L-12

Mate

Sinker

Sinking helper (semi-skilled)

Machinery

day

day

day

0.180

1.500

3.000

551.00

508.00

424.00

L-12

L-15

L-14

99.18

762.00

1272.00

			FO	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.500	1040.00	4680.00	P&M-075
			Consumables in sinking @10 per cent of (b)				468.00	
			c) GST (multiplying factor 0.20)16) on (a	+b)		1467.89	
			d) Overhead charges @ 20 %		-		1749.81	
			e) Contractor's profit @ 10 % o	on (a+b+c	+d)		1049.89	
			f) Cess @ 1% on (a+b+c+d+e)				115.49	
			Rate per metre = (a+b+c+d+e+f)			say	11664.26 <u>11664.00</u>	
12.13 A		(iii)	Beyond 10m upto 20m					
		а	Add 5 per cent for every additional previous meter	al meter o	lepth of sinking o	ver the rate of	sinking for the	
			11th m	5%	12247.000			
			12th m	5% 5%	12859.000			
			13th m 14th m	5% 5%	13502.000 14177.000			
	0.165		15th m	5%	14886.000			
			16th m	5%	15630.000			
			17th m	5%	16412.000			
			18th m 19th m	5% 5%	17233.000 18095.000			
			20th m	5%	19000.000			
			Total Cost from 10m upto 20m		154041.000			
12.13 A		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>15404.000</u>			
		а	Add 7.5 per cent for every addition	nal meter	depth of sinking	over the rate of	sinking for the	
		b	previous meter Add 20 per cent of cost for Kentledge including supports,			Including 20% for Kentledge		
			loading arrangement and Labour).					
			21st m	7.5%	20425.000	24510.00		
			22nd m 23rd m	7.5% 7.5%	21957.000 23604.000	26348.00 28325.00		
			24th m	7.5%	25374.000	30449.00		
			25th m	7.5%	27277.000	32732.00		
			26th m	7.5%	29323.000	35188.00		
			27th m 28th m	7.5% 7.5%	31522.000	37826.00		
			29th m	7.5%	33886.000 36427.000	40663.00 43712.00		
			30th m	7.5%	39159.000	46991.00		
			Total Cost from 20m upto 30m		288954.000	346744.00		
			Avg Rate per metre		<u>28895.000</u>	<u>34674.00</u>		
12.13 A		(v) a	Beyond 30m upto 40 m Add 10 per cent for every addition previous meter	nal meter	depth of sinking o	over the rate of	sinking for the	
		b	Add 20 per cent of cost for Kentledge including supports,	,		Including 20% for Kentledge		
			loading arrangement, and Labour etc.	r		•		
			31st m	10%	43075.000	51690.00		
			32nd m	10%	47383.000	56860.00		
			33rd m 34th m	10% 10%	52121.000 57333.000	62545.00 68800.00		
			35th m	10%	63066.000	75679.00		
			36th m	10%	69373.000	83248.00		
			37th m	10%	76310.000	91572.00		
			38th m 39th m	10% 10%	83941.000 92335.000	100729.00 110802.00		
			oaut III	10%	9 2333.000	110002.00		

			FO	UNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			40th m Total Cost from 30m upto 40m	10%	101569.000 686506.000	121883.00 823808.00		
12.13		В	Avg Rate per metre Clayey Soil (7m dia. Well) Unit = Running Meter.		<u>68651.000</u>	<u>82381.00</u>		
		(I)	Taking output = 1 cum Depth below bed level upto 3.0 I	М				
			Rate of sinking = 0.22 m per hour.					
			a) Labour					
			Mate	day	0.180	551.00	99.18	L-12
			Sinker (skilled)	day	1.500	508.00	762.00	L-15
			Sinking helper (semi-skilled)	day	3.000	424.00	1272.00	L-14
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.500	1040.00	4680.00	P&M-075
			Consumables in sinking @ 10 per cent of (b)				468.00	
			c) GST (multiplying factor 0.20	016) on (a+b	o)		1467.89	
			d) Overhead charges @ 20 %		,		1749.81	
			e) Contractor's profit @ 10 %	on (a+b+c+c	d)		1049.89	
			f) Cess @ 1% on (a+b+c+d+e))			115.49	
			Rate per metre = (a+b+c+d+e+f)				11664.26	
						say	<u>11664.00</u>	
12.13 B		(ii)	Beyond 3m upto 10m depth					
			Rate of sinking = 0.17 m per hour.					
			a) Labour					
			Mate	day	0.260	551.00	143.26	L-12
			Sinker	day	2.000	508.00	1016.00	L-15 L-14
			Sinking helper (semi-skilled) b) Machinery	day	4.000	424.00	1696.00	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	1040.00	6240.00	P&M-075
			Air compressor with pneumatic	hour	3.250	723.00	624.00	P&M-063
			chisel attachment for cutting hard clay.	noui	3.230	723.00		
			Consumables in sinking @ 10 per cent of (b)	046) on (o+k			686.40	
			c) GST (multiplying factor 0.20d) Overhead charges @ 20 %		,,		2097.78 2500.69	
			e) Contractor's profit @ 10 %		4/		1500.41	
			f) Cess @ 1% on (a+b+c+d+e)	•	4)		165.05	
			Rate per metre = (a+b+c+d+e+f)	,			16669.59	
			Nate per metre – (a.b.c.u.e.i)			say	<u>16670.00</u>	
12.13 B		(iii)	Beyond 10 m upto 20 m			Cuy	70070100	
		а	Add 5 per cent for every addition previous meter	al meter de	pth of sinking o	ver the rate of	sinking for the	
		b	Add for dewatering @ 5 per cent			Including for		
			of cost, if required.			dewatering @ 5% of cost, if required		
			11th m	5%	17503.000	18378.00		
			12th m	5%	18378.000	19297.00		
			13th m	5%	19297.000	20262.00		
			14th m	5% 5%	20262.000	21275.00		
			15th m 16th m	5% 5%	21275.000 22339.000	22339.00 23456.00		
			17th m	5% 5%	23456.000	24629.00		
			18th m	5%	24629.000	25860.00		
			19th m	5%	25860.000	27153.00		
			20th m	5%	27153.000	28511.00		

			FOU	NDATION	<u> </u>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.13 B		(iv)	Total Cost from 10m upto 20m Avg Rate per metre Beyond 20m upto 30 m		220152.000 22015.000	231160.00 <u>23116.00</u>		
		а	Add 7.5 per cent for every addition previous meter	al meter o	depth of sinking	over the rate of	sinking for the	
		b	Add 5 per cent of cost for dewatering on the cost, if required					
		С	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour			Including 25% for Kentledge	Including 5% for dewatering, if	
			loading arrangement and Labour				required	
			31st m	7.5%	29189.000	36486.00	38310.00	
			32nd m	7.5%	31378.000	39223.00	41184.00	
			33rd m	7.5%	33731.000	42164.00	44272.00	
			34th m	7.5%	36261.000	45326.00	47592.00	
			35th m	7.5%	38981.000	48726.00	51162.00	
			36th m	7.5%	41905.000	52381.00	55000.00	
			37th m	7.5%	45048.000	56310.00	59126.00	
			38th m	7.5%	48427.000	60534.00	63561.00	
			39th m	7.5%	52059.000	65074.00	68328.00	
			40th m Total Cost from 30m upto 40m	7.5%	55963.000 412942.000	69954.00 516178.00	73452.00 541987.00	
			Avg Rate per metre		<u>41294.000</u>	<u>51618.00</u>	<u>54199.00</u>	
12.13 B		(v)	Beyond 30m upto 40 m					
		а	Add 10 per cent for every additional	al meter o	depth of sinking	over the rate of	sinking for the	
		b	previous meter Add 5 per cent of cost for dewatering, if required					
		С	Add 20 per cent of cost for			Including 20%	Including 5%	
			Kentledge including supports,			for Kentledge	for	
			loading arrangement and Labour).			-	dewatering, if required	
			31st m	10%	61559.000	73871.00	77565.00	
			32nd m	10%	67715.000	81258.00	85321.00	
			33rd m	10%	74487.000	89384.00	93853.00	
			34th m	10%	81936.000	98323.00	103239.00	
			35th m	10%	90130.000	108156.00	113564.00	
			36th m	10%	99143.000	118972.00	124921.00	
			37th m	10%	109057.000	130868.00	137411.00	
			38th m	10%	119963.000	143956.00	151154.00	
			39th m 40th m	10% 10%	131959.000	158351.00	166269.00	
			Total Cost from 30m upto 40m	10%	145155.000 981104.000	174186.00 1177325.00	182895.00 1236192.00	
			Avg Rate per metre		98110.000	1177323.00	123619.00	
12.13		С	Soft Rock (7m dia well)		90110.000	111733.00	123019.00	
			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	0.580	551.00	319.58	L-12
			Sinker (skilled)	day	4.000	508.00	2032.00	L-15
			Sinking helper (semi-skilled) Diver	day	10.000	424.00	4240.00 651.75	L-14 L-07
			b) Machinery	day	0.750	869.00	651.75	L-01
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.500	1040.00	4680.00	P&M-075
			Air compressor with pneumatic breakers	hour	3.750	723.00	2711.25	P&M-063

	_		FO	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Consumables in sinking @ 10 per cent of (b)				739.13	
			Add for dewatering @ of 5 per cen of (a+b), if required	t			768.69	
			c) GST (multiplying factor 0.2	016) on (a [.]	+b)		3254.31	
			d) Overhead charges @ 20 %	on (a+b+c)		3879.34	
			e) Contractor's profit @ 10 %				2327.61	
			f) Cess @ 1% on (a+b+c+d+e	•	,		256.04	
			Rate per metre = (a+b+c+d+e+f)	,			25859.70	
			(a b c a c),			say	25860.00	
12.13		D	Hard Rock (7m dia well)			•		
			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	7.000	166.00	1162.00	M-104
			Electric Detonators	each	30.000	11.59	347.70	M-094/100
			b) Labour					
			Mate	day	1.600	551.00	881.60	L-12
			Driller	day	2.000	551.00	1102.00	L-06
			Blaster	day	0.250	551.00	137.75	L-03
			Mazdoor	day	18.000	424.00	7632.00	L-13
			Mazdoor (Skilled)	day	4.000	508.00	2032.00	L-15
			Diver	day	0.500	869.00	434.50	L-07
			c) Machinery	•				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	1040.00	6240.00	P&M-075
			Hire & running charges of compressor with pneumatic breaker/Jack hammer for drilling.	hour	2.000	723.00	1446.00	P&M-063
			Dewatering @ 5 per cent of cost of (b+c), if required.				995.29	
			Consumables in sinking @ 10 per cent of cost of (b).				868.13	
			d) GST (multiplying factor 0.2	016) on (a	+b+c)		4693.04	
			e) Overhead charges @ 20 %	on (a+b+c	+d)		5594.40	
			f) Contractor's profit @ 10 %	on (a+b+c	+d+e)		3356.64	
			g) Cess @ 1% on (a+b+c+d+e	+f)			369.23	
			Rate per metre = (a+b+c+d+e+f+g	g)			37292.28	
						say	37292.00	
12.14	Section 1200		Sinking of 8 m external diame through all types of strata name each case, complete as per dra reckoned from bed level.	ely sandy	soil, clayey soil	and rock as s	hown against	
		A	Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. Sandy Soil					
		(i)		М				
			Mate	day	0.180	551.00	99.18	L-12
			Sinker (skilled)	day	1.500	508.00	762.00	L-15
			Sinking helper (semi-skilled)	day	3.000	424.00	1272.00	L-14
			b) Machinery	auy	3.000	124.00	12.2.00	

			FO	UNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	1040.00	4160.00	P&M-075
			Consumables in sinking @10 per				416.00	
			cent of (b)	116) on (a+	h\		1352.57	
			c) GST (multiplying factor 0.20d) Overhead charges @ 20 %		•		1612.35	
			e) Contractor's profit @ 10 % o				967.41	
			f) Cess @ 1% on (a+b+c+d+e)				106.42	
			Rate per metre = (a+b+c+d+e+f)				10747.93	
12.14 A		/::\	Payand 2m unto 40m danth			say	<u>10748.00</u>	
12.14 A		(ii)	Beyond 3m upto 10m depth Rate of sinking @ 0.20 m/hour					
			a) Labour					
			Mate	day	0.250	551.00	137.75	L-12
			Sinker	day	1.750	508.00	889.00	L-15
			Sinking helper (semi-skilled)	day	3.500	424.00	1484.00	L-14
			b) Machinery					
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	1040.00	5200.00	P&M-075
			Consumables in sinking @10 per cent of (b)				520.00	
			c) GST (multiplying factor 0.20)16) on (a+	b)		1659.32	
			d) Overhead charges @ 20 %	on (a+b+c)			1978.01	
			e) Contractor's profit @ 10 % o	on (a+b+c+	d)		1186.81	
			f) Cess @ 1% on (a+b+c+d+e)				130.55	
			Rate per metre = (a+b+c+d+e+f)				13185.44	
12.14 A		(iii)	Beyond 10m upto 20m			say	<u>13185.00</u>	
12.147		(, a	Add 5 per cent for every addition	al meter de	epth of sinking o	ver the rate of	sinkina for the	
			previous meter				J	
			11th m	5%	13845.000			
			12th m 13th m	5% 5%	14537.000			
			14th m	5% 5%	15264.000 16027.000			
			15th m	5%	16828.000			
			16th m	5%	17669.000			
			17th m	5% 5%	18552.000			
			18th m 19th m	5% 5%	19480.000 20454.000			
			20th m	5%	21477.000			
			Total Cost from 10m upto 20m		174133.000			
			Avg Rate per metre		<u>17413.000</u>			
12.14 A		` '	Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every addition previous meter		epth of sinking o		sinking for the	
		b	Add 20 per cent of cost for Kentledge including supports loading arrangement and Labour.			Including 20% for Kentledge		
			21st m	7.5%	23088.000	27706.00		
			22nd m	7.5%	24820.000	29784.00		
			23rd m 24th m	7.5% 7.5%	26682.000 28683.000	32018.00 34420.00		
			25th m	7.5% 7.5%	30834.000	37001.00		
			26th m	7.5%	33147.000	39776.00		
			27th m	7.5%	35633.000	42760.00		
			28th m	7.5%	38305.000	45966.00		
			29th m 30th m	7.5% 7.5%	41178.000 44266.000	49414.00 53119.00		
				0 /0	. 1200.000	20110.00		

Total Cost from 20m upto 30m 326636.000 391964.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00 39196.00				FOL	INDATION	NS			
12.14 A (v) Rate per metre a Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter b Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour 3 ist m 10% 4893.000 58432.00 32nd m 10% 589818.000 70702.00 33rd m 10% 689818.000 70702.00 33rd m 10% 689818.000 70702.00 33rd m 10% 689818.000 70702.00 35th m 10% 71291.000 85549.00 37th m 10% 68262.000 103514.00 38th m 10% 77291.000 85549.00 38th m 10% 77291.000 81549.00 38th m 10% 86262.000 103514.00 38th m 10% 104377.000 125252.00 40th m 10% 114815.000 137778.00 1701 Cost from 30m upto 40m 776036.000 93124.300 Avg Rate per metre (v) Depth from bed level upto 3.0 M Rate G sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 10160.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiplying factor 0.2016) on (a+b+c) c) Contractor's profile (b) % on (a+b+c+d) 7) Cess @ 1% on (a+b+c+d+e) Rate per metre (ab+b-c+d+e+f) Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.0	Sr No	MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	
12.14 A (v) Rate per metre a Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter b Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour 3 ist m 10% 4893.000 58432.00 32nd m 10% 589818.000 70702.00 33rd m 10% 689818.000 70702.00 33rd m 10% 689818.000 70702.00 33rd m 10% 689818.000 70702.00 35th m 10% 71291.000 85549.00 37th m 10% 68262.000 103514.00 38th m 10% 77291.000 85549.00 38th m 10% 77291.000 81549.00 38th m 10% 86262.000 103514.00 38th m 10% 104377.000 125252.00 40th m 10% 114815.000 137778.00 1701 Cost from 30m upto 40m 776036.000 93124.300 Avg Rate per metre (v) Depth from bed level upto 3.0 M Rate G sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 10160.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiplying factor 0.2016) on (a+b+c) c) Contractor's profile (b) % on (a+b+c+d) 7) Cess @ 1% on (a+b+c+d+e) Rate per metre (ab+b-c+d+e+f) Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.0				Total Cost from 20m upto 30m		326636.000	391964.00		
a Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter b Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour 31st m 10% 48883.000 58432.00 32nd m 10% 58918.000 77772.00 33rd m 10% 58918.000 77772.00 33rd m 10% 68918.000 77772.00 33th m 10% 77291.000 85649.00 33th m 10% 77420.000 49104.00 33th m 10% 78420.000 49104.00 37th m 10% 104377.000 125252.00 40th m 10% 104377.000 125252.00 40th m 10% 104377.000 125252.00 40th m 10% 104377.000 391243.00 Avg Rate per metre 77504.000 508.00 1016.00 L-18 Sinking helper (semi-skilled) day 2.000 508.00 1016.00 L-18 Sinking helper (semi-skilled) hour 3.500 424.00 1448.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiphying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c+d) 10 Cess @ 1% on (a+b+c+d+e) Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.00 176.32 L-12 Sinker day 0.424.00 1900.00 L-14 D) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 PAM-975 Sinker day 0.75 cum capacity and accessories. Air compressor with preumatic chief attachment for cutting hard clay. Consumables in sinking @ 10 per	12 14 Δ		(v)	Avg Rate per metre		<u>32664.000</u>	<u>39196.00</u>		
b Add 20 per cent of cost for Kentledge including supports, leading arrangement, and Lebour 31st m 10% 48893.00 58432.00 32nd m 10% 53562.000 64274.00 33rd m 10% 53562.000 64274.00 33rd m 10% 54810.000 77772.00 35th m 10% 64810.000 77772.00 35th m 10% 77291.000 85549.00 4914.00 37th m 10% 77291.000 85649.00 4914.00 37th m 10% 94888.00 113866.00 39th m 10% 94888.00 113866.00 39th m 10% 14881.000 37th m 10% 14881.000 37778.00 1701al Cost from 30m upto 40m 776036.000 931243.00 400 th m 10% 114815.000 337778.00 1701al Cost from 30m upto 40m 776036.000 931243.00 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820 42820	12.1.47		` '	Add 10 per cent for every addition	al meter o	depth of sinking	over the rate of	sinking for the	
loading arrangement, and Labour 31st m			b	Add 20 per cent of cost for					
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33rd m 10% 58918.000 70702.00 34th m 10% 64810.000 77772.00 35th m 10% 71291.000 85549.00 36th m 10% 74291.000 94104.00 37th m 10% 86262.000 103514.00 38th m 10% 94888.000 113866.00 39th m 10% 104377.000 125252.00 40th m 10% 104377.000 125252.00 40th m 10% 114815.000 137778.00 Total Cost from 30m upto 40m 776036.000 931243.00 12.14 B Clayey Soil (8 m dia. Well) Unit = Running Meter. Taking output = 1 meter (I) Depth from bed level upto 3.0 M Rate of sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 1016.00 L-15 Sinking helper (semi-skilled) hour 3.500 424.00 1484.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per 572.00 e) Contractor's profit @ 10 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e+f) 1285.22 f) Cess @ 1% on (a+b+c+d+e+f) 1285.22 f) Cess @ 1% on (a+b+c+d+e+f) 141.37 Rate per metre = (a+b+c+d+e+f) 14278.75 Sinking helper (semi-skilled) day 2.500 508.00 1270.00 L-15 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-15 Sinker day 2.500 508.00 1270.00 L-15 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-16 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) hour 3.500 723.00 2530.50 PAM-943 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per						48693.000	58432.00		
34th m 10% 64810.000 77772.00 35th m 10% 78420.000 94104.00 37th m 10% 78420.000 94104.00 38th m 10% 78420.000 103514.00 38th m 10% 866262.000 103514.00 38th m 10% 104377.000 125252.00 40th m 10% 104377.000 125252.00 40th m 10% 104377.000 125252.00 39th m 10% 104377.000 125252.00 40th m 776036.000 931243.00 Avg Rate per metre 776036.000 931243.00 Avg Rate per metre 776036.000 931243.00 Avg Rate per metre 776036.000 931243.00 Avg Rate of sinking @ 0.18 m/hour a) Labour Mate									
36th m 10% 71291.000 85549.00 36th m 36th m 10% 74290.000 94104.00 37th m 10% 86262.000 103514.00 38th m 10% 94888.000 113866.00 39th m 10% 10% 114815.000 137778.00 Total Cost from 30m upto 40m 776036.000 931243.00 Avg Rate per metre 77604.000 931243.00 Avg Rate of sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 1016.00 L-16 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) Corrector's profit @ 10 % on (a+b+c+d) 1285.22 f) Coss @ 1% on (a+b+c+d+e) 142.37 Rate per metre = (a+b+c+d+e) 142.37 Rate per metre = (a+b+c+d+e) 142.37 Rate per metre = (a+b+c+d+e) 142.30 50 Avg 0.320 551.00 176.32 L-12 Sinker day 0.370 551.00 176.30 L-14 Sinking helper (semi-skilled) day 4.500 508.00 17270.00 L-15 Sinking helper (semi-skilled) day 4.500 508.00 17270.00 L-15 Sinking helper (semi-skilled) day 4.500 508.00 17270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 Sinking day 0.370 551.00 723.00 2530.50 PAM-93 chief attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05									
36th m 10% 78420,000 94104,00 37th m 10% 10% 103514,00 38th m 10% 9488,000 113866,00 39th m 10% 9488,000 113866,00 39th m 10% 104377,000 125252,00 40th m 10% 104377,000 756036,000 931243,00 Avg Rate per metre 76036,000 931243,00 Avg Rate per metre 776036,000 931243,00 Avg Rate per metre 776036,000 931243,00 Avg Rate per metre 776036,000 931243,00 Avg Rate of sinking @ 0.18 m/hour 3.0 M Rate of sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508,00 1016,00 L-19 Sinking helper (semi-skilled) hour 3.500 424,00 1484,00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per 572.00 cent of (b) C; GST (multiplying factor 0.2016) on (a+b+c) 1796.91 d) Overhead charges @ 20 % on (a+b+c) 2142.03 e) Contractor's profit @ 10 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e+f) 14278.75 say 14279.00 L-14 Sinker = (a+b+c+d+e+f) 14278.75 say 14279.00 L-14 Sinker day 2.500 508.00 1270.00 L-14 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 Sinking daccessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05									
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39th m				37th m	10%				
### 40th m					10%	94888.000	113866.00		
Total Cost from 30m upto 40m 776036.000 931243.00 Avg Rate per metre 77604.000 93124.00 12.14 B Clayey Soil (8m dia. Well) Unit = Running Meter. Taking output = 1 meter (i) Depth from bed level upto 3.0 M Rate of sinking @ 0.18 m/hour a) Labour Hire & running charges of crane with grab bucket of 0.75 cum capacity and a charges @ 20 % on (a+b+c+d+e) (a) Contractor's profit @ 10 % on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) Sinker day 0.320 551.00 121.22 L-12 Sinker day 0.320 508.00 1016.00 L-14 Sinking helper (semi-skilled) hour 3.500 424.00 1484.00 L-14 Sinking helper (semi-skilled) hour 3.500 1040.00 5720.00 PAM-975 Sinking helper (semi-skilled) on (a+b+c) 572.00 cent of (b) c) GST (multiplying factor 0.2016) on (a+b) 1796.91 1796.91 d) Overhead charges @ 20 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 14278.75 Rate per metre = (a+b+c+d+e+f) 14278.75 Sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.00 176.32 L-12 Sinker day 0.320 550.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 PAM-975 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				**********					
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12.14 B Clayey Soil (8m dia. Well) Unit = Running Meter. Taking output = 1 meter (i) Depth from bed level upto 3.0 M Rate of sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 1016.00 L-18 Sinking helper (semi-skilled) hour 3.500 424.00 1484.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiplying factor 0.2016) on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				•					
Taking output = 1 meter (i) Depth from bed level upto 3.0 M	12.14		В	-		77604.000	<u>93124.00</u>		
(i) Depth from bed level upto 3.0 M Rate of sinking @ 0.18 m/hour a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 1016.00 L-15 Sinking helper (semi-skilled) hour 3.500 424.00 1484.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) C) GST (multiplying factor 0.2016) on (a+b+c+d) 1796.91 d) Overhead charges @ 20 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 14278.75 Rate per metre = (a+b+c+d+e+f) 14278.75 Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per				Unit = Running Meter.					
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a) Labour Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 1016.00 L-15 Sinking helper (semi-skilled) hour 3.500 424.00 1484.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-083 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05			(i)	Depth from bed level upto 3.0 M					
Mate day 0.220 551.00 121.22 L-12 Sinker (skilled) day 2.000 508.00 1016.00 L-15 Sinking helper (semi-skilled) hour 3.500 424.00 1484.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) C) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) Contractor's profit @ 10 % on (a+b+c+d) Rate per metre = (a+b+c+d+e+f) Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-083 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05									
Sinker (skilled) day 2.000 508.00 1016.00 L-15				,	day	0.220	551.00	121.22	L-12
b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				Sinker (skilled)	•		508.00		L-15
Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 per cent of (b) c) GST (multiplying factor 0.2016) on (a+b) d) 0verhead charges @ 20 % on (a+b+c) 2142.03 e) Contractor's profit @ 10 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 141.37 Rate per metre = (a+b+c+d+e+f) 14278.75 Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-063 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05					hour	3.500	424.00	1484.00	L-14
cent of (b) c) GST (multiplying factor 0.2016) on (a+b) 1796.91 d) Overhead charges @ 20 % on (a+b+c) 2142.03 e) Contractor's profit @ 10 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 141.37 Rate per metre = (a+b+c+d+e+f) 14278.75 say 14279.00 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-063 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				Hire & running charges of crane with grab bucket of 0.75 cum		5.500	1040.00	5720.00	P&M-075
c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 0.320 551.00 176.32 L-12 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 capacity and accessories. Air compressor with pneumatic ohisel attachment for cutting hard clay. Consumables in sinking @ 10 per 112.14 b) Machinery Hire & Rate of Sinking @ 10 per 12.14 b) Rate of Sinking @ 10 per								572.00	
e) Contractor's profit @ 10 % on (a+b+c+d) 1285.22 f) Cess @ 1% on (a+b+c+d+e) 141.37 Rate per metre = (a+b+c+d+e+f) 14278.75 say 14279.00 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05					16) on (a+	⊦b)		1796.91	
f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) 14278.75 say 14279.00 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				d) Overhead charges @ 20 % o	n (a+b+c)		2142.03	
f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f) 14278.75 say 14279.00 12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				e) Contractor's profit @ 10 % o	n (a+b+c-	+d)		1285.22	
Rate per metre = (a+b+c+d+e+f)					•	-		141.37	
12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per									
12.14 B (ii) Beyond 3m upto 10m depth Rate of sinking @ 0.17 m/hour a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 per				rate per metre (avavevavevi)			sav		
a) Labour Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-063 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05	12.14 B		(ii)	Beyond 3m upto 10m depth					
Mate day 0.320 551.00 176.32 L-12 Sinker day 2.500 508.00 1270.00 L-15 Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. hour 6.000 1040.00 6240.00 P&M-075 Air compressor with pneumatic chisel attachment for cutting hard clay. hour 3.500 723.00 2530.50 P&M-063 Consumables in sinking @ 10 per 877.05									
Sinking helper (semi-skilled) day 4.500 424.00 1908.00 L-14 b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-063 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05					day	0.320	551.00	176.32	L-12
b) Machinery Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-063 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				Sinker	day	2.500	508.00	1270.00	L-15
Hire & running charges of crane hour 6.000 1040.00 6240.00 P&M-075 with grab bucket of 0.75 cum capacity and accessories. Air compressor with pneumatic hour 3.500 723.00 2530.50 P&M-063 chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				Sinking helper (semi-skilled)	day	4.500	424.00	1908.00	L-14
chisel attachment for cutting hard clay. Consumables in sinking @ 10 per 877.05				Hire & running charges of crane with grab bucket of 0.75 cum	hour	6.000	1040.00	6240.00	P&M-075
Consumables in sinking @ 10 per 877.05				chisel attachment for cutting hard	hour	3.500	723.00	2530.50	P&M-063
				Consumables in sinking @ 10 per				877.05	

CHAPTER-12

				JNDATION				
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
	DSR Spec.							
			c) GST (multiplying factor 0.20	16) on (a+l	b)		2621.18	
			d) Overhead charges @ 20 % o	n (a+b+c)			3124.61	
			e) Contractor's profit @ 10 % o	n (a+b+c+	d)		1874.77	
			f) Cess @ 1% on (a+b+c+d+e)				206.22	
			Rate per metre = (a+b+c+d+e+f)				20828.65	
						say	<u>20829.00</u>	
12.14 B		(iii)	Beyond 10 m upto 20 m					
		а	Add 5 per cent for every additional	meter dept	h of sinking ove	r the rate of sink	ing for the	
			previous meter					
		b	Add for dewatering @ 5 per cent			Including for		
			of cost, if required.			dewatering @		
						5% of cost, if		
						required		
			11th m	5%	21870.000	22964.00		
			12th m	5%	22964.000	24112.00		
			13th m	5% 5%	24112.000	25318.00		
			14th m 15th m	5% 5%	25318.000 26584.000	26584.00 27913.00		
			16th m	5%	27913.000	29309.00		
			17th m	5%	29309.000	30774.00		
			18th m	5%	30774.000	32313.00		
			19th m	5%	32313.000	33929.00		
			20th m	5%	33929.000	35625.00		
			Total Cost from 10m upto 20m		275086.000	288841.00		
			Avg Rate per metre		<u>27509.000</u>	<u>28884.00</u>		
12.14 B		(iv)	Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every additional	al meter de	pth of sinking o	er the rate of si	nking for the	
			previous meter					
		b	Add 5 per cent of cost for dewatering on the cost, if required					
		С	Add 25 per cent of cost for			Including 25%	Including 5%	
			Kentledge including supports,			for Kentledge	for	
			loading arrangement and Labour).				dewatering, if required	
			24 - 4	7.50/	20474 000	45500.00	·	
			31st m 32nd m	7.5% 7.5%	36474.000	45593.00	47873.00 51464.00	
			33rd m	7.5%	39210.000 42151.000	49013.00 52689.00	55323.00	
			34th m	7.5%	45312.000	56640.00	59472.00	
			35th m	7.5%	48710.000	60888.00	63932.00	
			36th m	7.5%	52363.000	65454.00	68727.00	
			37th m	7.5%	56290.000	70363.00	73881.00	
			38th m	7.5%	60512.000	75640.00	79422.00	
			39th m	7.5%	65050.000	81313.00	85379.00	
			40th m	7.5%	69929.000	87411.00	91782.00	
			Total Cost from 30m upto 40m		516001.000	645004.00	677255.00	
12.14 B		(11)	Avg Rate per metre Beyond 30m upto 40 m		<u>51600.000</u>	<u>64500.00</u>	<u>67726.00</u>	
12.14 0		(v) a	Add 10 per cent for every additiona	l meter der	oth of sinking ov	er the rate of sin	king for the	
		a	previous meter	i ilicici ucț	our or sinking ov	ci tile fate of sill	iking for the	
		b	Add 5 per cent of cost for dewatering, if required					
		С	Add 20 per cent of cost for			Including 20%	Including 5%	
			Kentledge including supports,			for Kentledge	for	
			loading arrangement and Labour).				dewatering, if required	
			31st m	10%	76922.000	92306.00	96921.00	
			32nd m	10%	84614.000	101537.00	106614.00	
			33rd m	10%	93075.000	111690.00	117275.00	
			34th m	10%	102383.000	122860.00	129003.00	
			35th m	10%	112621.000	135145.00	141902.00	
			36th m	10%	123883.000	148660.00	156093.00	
			37th m	10%	136271.000	163525.00	171701.00	

			FOUNDATIONS							
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
	1		38th	m	10%	149898.000	179878.00	188872.00	<u> </u>	
			39th		10%	164888.000	197866.00	207759.00		
			40th	m	10%	181377.000	217652.00	228535.00		
			Tota	Cost from 30m upto 40m		1225932.000	1471119.00	1544675.00		
			Avg	Rate per metre		<u>122593.000</u>	<u>147112.00</u>	<u>154468.00</u>		
12.14		С	Soft	Rock (8m dia well)						
				= Running Meter.						
				ng output = 1 m						
			-	th in soft rock strata upto 3m of sinking @ 0.20 m/hour						
			a)	Labour						
			Mate		day	0.680	551.00	374.68	L-12	
				er (skilled)	day	4.000	508.00	2032.00	L-15	
			Sink	ing helper (semi-skilled)	day	12.000	424.00	5088.00	L-14	
			Dive	r	day	1.000	869.00	869.00	L-07	
			b)	Machinery						
				& running charges of crane	hour	5.000	1040.00	5200.00	P&M-075	
				grab bucket of 0.75 cum city and accessories.						
				ompressor with pneumatic	hour	3.750	723.00	2711.25	P&M-063	
			Cons	sumables in sinking @ 10 per of (b)				791.13		
				for dewatering @ of 5 per cent +b), if required				853.30		
			c)	GST (multiplying factor 0.20	16) on (a+	-b)		3612.54		
			d)	Overhead charges @ 20 % o	n (a+b+c)			4306.38		
			e)	Contractor's profit @ 10 % o	n (a+b+c+	⊦d)		2583.83		
			f)	Cess @ 1% on (a+b+c+d+e)				284.22		
			Rate	per metre = (a+b+c+d+e+f)				28706.33		
12.14		D	Hard	l Rock (8m dia well)			say	<u>28706.00</u>		
		_		= Running Meter						
				ng output = 1 m						
				-	_					
			•	th in hard rock strata upto 3 n of sinking @ 0.17 m/hour	•					
			a)	Material						
				tine 80 per cent	Kg	8.000	166.00	1328.00	M-104	
				tric Detonators Labour	each	32.000	11.59	370.88	M-094/100	
			b) Mate		day	1.090	551.00	600.59	L-12	
			Drille		day	2.000	551.00	1102.00	L-06	
			Blas		day	0.250	551.00	137.75	L-03	
			Mazo	door	day	20.000	424.00	8480.00	L-13	
			Mazo	door (Skilled)	day	4.000	508.00	2032.00	L-15	
				Machinery			40.15.55	0010.00	D015 5=5	
			c)	=						
			Hire with	& running charges of crane grab bucket of 0.75 cum	hour	6.000	1040.00	6240.00	P&M-075	
			Hire with capa	& running charges of crane grab bucket of 0.75 cum city and accessories.						
			Hire with capa Hire comp	& running charges of crane grab bucket of 0.75 cum	hour	2.000	723.00	1446.00	P&M-075	
			Hire with capa Hire complete breat Dewit	& running charges of crane grab bucket of 0.75 cum city and accessories. & running charges of pressor with pneumatic						
			Hire with capa Hire comp brea Dewlord (b) Cons	& running charges of crane grab bucket of 0.75 cum city and accessories. & running charges of pressor with pneumatic ker/Jack hammer for drilling. atering @ 5 per cent of cost				1446.00		
			Hire with capa Hire comp brea Dewlord (b) Cons	& running charges of crane grab bucket of 0.75 cum city and accessories. & running charges of pressor with pneumatic ker/Jack hammer for drilling. attering @ 5 per cent of cost +c), if required. sumables in sinking @ 10 per	hour	2.000		1446.00 1001.92		

			FOL	JNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	I		f) Contractor's profit @ 10 % o	n (a+b+c	+d+e)		3456.91	
			g) Cess @ 1% on (a+b+c+d+e+	f)			380.26	
			Rate per metre = (a+b+c+d+e+f+g))			38406.29	
						say	<u>38406.00</u>	
12.15	Section 1200		Sinking of 9 m external diamete through all types of strata namel each case, complete as per draw reckoned from bed level.	y sandy	soil, clayey soil	and rock as s	hown against	
		A	Unit = Running Meter. Taking output = 1 m Diameter of well - 9 m. Sandy Soil					
		(i)	Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour	l				
			a) Labour	dayı	0.400	FF1 00	104.60	L-12
			Mate Sinker (skilled)	day day	0.190 1.500	551.00 508.00	104.69 762.00	L-12 L-15
			Sinking helper (semi-skilled)	day	3.250	424.00	1378.00	L-14
			b) Machinery	,				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	1040.00	4160.00	P&M-075
			Consumables in sinking @10 per ce	ent of (b)			416.00	
			c) GST (multiplying factor 0.20		+b)		1375.05	
			d) Overhead charges @ 20 % o		•		1639.15	
			e) Contractor's profit @ 10 % o		•		983.49	
			f) Cess @ 1% on (a+b+c+d+e)		.,		108.18	
			Rate per metre = (a+b+c+d+e+f)				10926.56	
			. ,			say	<u>10927.00</u>	
12.15 A		(ii)	Beyond 3m upto 10m depth					
			Rate of sinking @ 0.18 m/hour					
			a) Labour					
			Mate	day	0.270	551.00	148.77	L-12 L-15
			Sinker Sinking helper (semi-skilled)	day day	1.750 4.000	508.00 424.00	889.00 1696.00	L-13 L-14
			b) Machinery Hire & running charges of crane	hour	5.500	1040.00	5720.00	P&M-075
			with grab bucket of 0.75 cum capacity and accessories.					
			Consumables in sinking @10 per ce	ent of (b)			572.00	
			c) GST (multiplying factor 0.20	16) on (a	+b)		1819.60	
			d) Overhead charges @ 20 % o		•		2169.07	
			e) Contractor's profit @ 10 % o	n (a+b+c	+d)		1301.44	
			f) Cess @ 1% on (a+b+c+d+e)				143.16	
			Rate per metre = (a+b+c+d+e+f)			say	14459.04 <u>14459.00</u>	
12.15 A		(iii)	•	l motor o	lonth of sinking o	ver the rate of	cinking for the	
		а	Add 5 per cent for every additional previous meter			ver the rate of	sirking for the	
			11th m	5% 5%	15182.000			
			12th m	5% 5%	15941.000			
			13th m	5%	16738.000			
			14th m	5%	17575.000			
			15th m	5%	18454.000			
			16th m	5%	19377.000			
			17th m	5%	20346.000			
			18th m	5%	21363.000			
			19th m	5%	22431.000			

			FO	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			20th m	5%	23553.000			
			Total Cost from 10m upto 20m		190960.000			
			Avg Rate per metre		<u>19096.000</u>			
2.15 A			Beyond 20m upto 30 m			tht f	-1-1-1	
		а	Add 7.5 per cent for every addition previous meter	nai meter	depth of sinking	over the rate of	sinking for the	
		b	Add 20 per cent of cost fo	r		Including 20%		
			Kentledge including supports loading arrangement and Labour.	,		for Kentledge		
			21st m	7.5%	25319.475	30383.00		
			22nd m	7.5%	27218.000	32662.00		
			23rd m	7.5%	29259.000	35111.00		
			24th m 25th m	7.5% 7.5%	31453.000	37744.00 40574.00		
			26th m	7.5%	33812.000 36348.000	43618.00		
			27th m	7.5%	39074.000	46889.00		
			28th m	7.5%	42005.000	50406.00		
			29th m	7.5%	45155.000	54186.00		
			30th m	7.5%	48542.000	58250.00		
			Total Cost from 20m upto 30m		358185.475	429823.00		
2.15 A		(11)	Avg Rate per metre Beyond 30m upto 40 m		<u>35819.000</u>	<u>42982.00</u>		
2.13 A		a	Add 10 per cent for every addition previous meter	nal meter o	depth of sinking	over the rate of	sinking for the	
		b	Add 20 per cent of cost fo	r		Including 20%		
			Kentledge including supports loading arrangement, and Labou	,		for Kentledge		
			31st m	10%	53396.200	64075.00		
			32nd m	10%	58736.000	70483.00		
			33rd m	10%	64610.000	77532.00		
			34th m	10%	71071.000	85285.00		
			35th m	10%	78178.000	93814.00		
			36th m	10%	85996.000	103195.00		
			37th m 38th m	10% 10%	94596.000	113515.00 124867.00		
			39th m	10%	104056.000 114462.000	137354.00		
			40th m	10%	125908.000	151090.00		
			Total Cost from 30m upto 40m	10 /0	851009.200	1021210.00		
			Avg Rate per metre		85101.000	102121.00		
12.15		В	Clayey Soil (9m dia. Well)					
			Unit = Running Meter.					
			Taking output = 1 cum					
		(i)	Rate of sinking 0.17 m / hour					
			a) Labour Mate	day	0.240	551.00	132.24	L-12
			Sinker (skilled)	day day	2.250	508.00	132.24	L-12
			Sinking helper (semi-skilled)	day	3.750	424.00	1590.00	L-14
			b) Machinery Hire & running charges of crane	hour	5.750	1040.00	5980.00	P&M-075
			with grab bucket of 0.75 cum capacity and accessories.	rioui	3.730	1040.00	3980.00	i am-oro
			Consumables in sinking @ 10 per cent of (b)				598.00	
			c) GST (multiplying factor 0.20)16) on (a -	+b)		1903.76	
			d) Overhead charges @ 20 %	on (a+b+c)		2269.40	
			e) Contractor's profit @ 10 %	on (a+b+c	+d)		1361.64	
			f) Cess @ 1% on (a+b+c+d+e)				149.78	
			Rate per metre = (a+b+c+d+e+f)				15127.82	
						say	<u>15128.00</u>	

			FOU	NDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.15 B		(ii)	Beyond 3m upto 10m depth					
		(,	Rate of sinking 0.15 m / hour					
			a) Labour					
			Mate	day	0.340	551.00	187.34	L-12
			Sinker	day	2.500	508.00	1270.00	L-15
			Sinking helper (semi-skilled)	day	5.000	424.00	2120.00	L-14
			b) Machinery					5011.075
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	1040.00	6760.00	P&M-075
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.750	723.00	2711.25	P&M-063
			Consumables in sinking @ 10 per cent of (b)				947.13	
			c) GST (multiplying factor 0.201	6) on (a	+b)		2821.54	
			d) Overhead charges @ 20 % or		•		3363.45	
			e) Contractor's profit @ 10 % or	•	•		2018.07	
			f) Cess @ 1% on (a+b+c+d+e)				221.99	
			Rate per metre = (a+b+c+d+e+f)				22420.77	
						say	<u>22421.00</u>	
12.15 B		(iii)	Beyond 10 m upto 20 m					
		а	Add 5 per cent for every additional r previous meter	neter de	pth of sinking ove	r the rate of sink	ing for the	
		b	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required		
			11th m	5%	23542.000	24719.00		
			12th m	5%	24719.000	25955.00		
			13th m	5%	25955.000	27253.00		
			14th m	5%	27253.000	28616.00		
			15th m 16th m	5% 5%	28616.000 30047.000	30047.00 31549.00		
			17th m	5%	31549.000	33126.00		
			18th m	5%	33126.000	34782.00		
			19th m	5%	34782.000	36521.00		
			20th m	5%	36521.000	38347.00		
			Total Cost from 10m upto 20m		296110.000	310915.00		
12.15 B		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>29611.000</u>	<u>31092.00</u>		
		a	Add 7.5 per cent for every additional previous meter			ver the rate of si	nking for the	
		b	Add 5 per cent of cost for dewatering	g on the	cost, if required			
		С	Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 25% for Kentledge	Including 5% for dewatering, if	
			.gggaa. 2023di).				required	
			31st m	7.5%	39260.000	49075.00	51529.00	
			32nd m	7.5%	42205.000	52756.00	55394.00	
			33rd m	7.5%	45370.000	56713.00	59549.00	
			34th m	7.5% 7.5%	48773.000	60966.00	64014.00	
			35th m 36th m	7.5% 7.5%	52431.000 56363.000	65539.00 70454.00	68816.00 73977.00	
			37th m	7.5%	60590.000	75738.00	79525.00	
			38th m	7.5%	65134.000	81418.00	85489.00	
			39th m	7.5%	70019.000	87524.00	91900.00	
			40th m	7 50%	75270 000	04088 00	08702 00	

7.5%

75270.000

555415.000

<u>55542.000</u>

94088.00

694271.00

<u>69427.00</u>

98792.00

728985.00

<u>72899.00</u>

40th m

Total Cost from 30m upto 40m

Avg Rate per metre

			FOL	JNDATION	S			
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	DSR Spec.							Input ref.
12.15 B		(v)	Beyond 30m upto 40 m	I				
			•					
		а	Add 10 per cent for every additiona	ı meter dep	oth of sinking ov	er the rate of sin	iking for the	
			previous meter					
		b	Add 5 per cent of cost for					
			dewatering, if required					
		С	Add 20 per cent of cost for			Including 20%	Including 5%	
			Kentledge including supports,			for Kentledge	for	
			loading arrangement and Labour).				dewatering, if	
							required	
			31st m	10%	82797.000	99356.00	104324.00	
			32nd m	10%	91077.000	109292.00	114757.00	
			33rd m	10%	100185.000	120222.00	126233.00	
			34th m	10%	110204.000	132245.00	138857.00	
			35th m	10%	121224.000	145469.00	152742.00	
			36th m	10%				
					133346.000	160015.00	168016.00	
			37th m	10%	146681.000	176017.00	184818.00	
			38th m	10%	161349.000	193619.00	203300.00	
			39th m	10%	177484.000	212981.00	223630.00	
			40th m	10%	195232.000	234278.00	245992.00	
			Total Cost from 30m upto 40m		1319579.000	1583494.00	1662669.00	
			Avg Rate per metre		131958.000	158349.00	166267.00	
12.15		С	Soft Rock (9m dia well)					
		_	Contribute (cite and troil)					
			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	0.760	551.00	418.76	L-12
				-				L-15
			Sinker (skilled)	day	4.000	508.00	2032.00	
			Sinking helper (semi-skilled)	day	14.000	424.00	5936.00	L-14
			Diver	day	1.200	869.00	1042.80	L-07
			b) Machinery					
			Hire & running charges of crane	hour	6.500	1040.00	6760.00	P&M-075
			with grab bucket of 0.75 cum					
			capacity and accessories.					
			Air compressor with pneumatic	hour	4.000	723.00	2892.00	P&M-063
			breakers	noui	1.000	720.00	2002.00	
							005.00	
			Consumables in sinking @ 10 per				965.20	
			cent of (b)					
			Add for dewatering @ of 5 per cent				1002.34	
			of (a+b), if required					
			c) GST (multiplying factor 0.20	16) on (a+l	b)		4243.50	
			d) Overhead charges @ 20 % d	on (a+b+c)			5058.52	
			e) Contractor's profit @ 10 % o		۹)		3035.11	
				יוו (מדטדנד	u)			
			f) Cess @ 1% on (a+b+c+d+e)				333.86	
			Rate per metre = (a+b+c+d+e+f)				33720.09	
						say	<u>33720.00</u>	
12.15		D	Hard Rock (9m dia well)					
			Unit = Running Meter					
			•					
			Taking output = 1 m					
			Depth in hard rock strata upto 3 n	n				
			Rate of sinking 0.15 m / hour					
			a) Material					
			Gelatine 80 per cent	Kg	10.000	166.00	1660.00	M-104
			Electric Detonators	each	40.000	11.59	463.60	M-094/100
			b) Labour		.5.550	. 1.00	.55.55	
			Mate	day	1.170	551.00	644.67	L-12
			Driller	day	2.000	551.00	1102.00	L-06
			Blaster	•	0.250	551.00	137.75	L-03
				day				L-13
			Mazdoor (Skilled)	day	22.000	424.00 508.00	9328.00	L-15
			Mazdoor (Skilled)	day	4.000	508.00	2032.00	L-13

0.11.	Ref. to			-OUNDATION		1		Remarks/
Sr No	MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Input ref.
			Diver	day	1.000	869.00	869.00	L-07
			c) Machinery	,				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	7.000	1040.00	7280.00	P&M-075
			Hire & running charges of compressor with pneumatic breaker/Jack hammer for drilling	hour	2.500	723.00	1807.50	P&M-063
			Dewatering @ 5 per cent of cos of (b+c), if required.				1160.05	
			Consumables in sinking @ 10 percent of cost of (b).	er			1411.34	
			d) GST (multiplying factor 0).2016) on (a-	+b+c)		5623.82	
			e) Overhead charges @ 20		•		6703.95	
			f) Contractor's profit @ 10	% on (a+b+c	+d+e)		4022.37	
			g) Cess @ 1% on (a+b+c+d+	•	•		442.46	
			Rate per metre = (a+b+c+d+e+f	f+g)			44688.51	
						say	44689.00	
12.16	1200		Sinking of 10 m external diam		-			
			through all types of strata nat each case, complete as per d reckoned from bed level.				-	
			Unit = Running Meter					
			Taking output = 1 m Diameter of well - 10 m.					
		٨						
		(i)	A Sandy Soil (i) Depth below bed level upto 3.0 M					
		(')		, 111				
			Rate of sinking 0.20 m / hour					
			a) Labour			==	440.00	1.40
			Mate	day	0.200	551.00	110.20	L-12
			Sinker (skilled)	day	1.500	508.00	762.00	L-15 L-14
			Sinking helper (semi-skilled)	day	3.500	424.00	1484.00	L-14
			b) Machinery		F 000	4040.00	5000.00	D0M 075
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	1040.00	5200.00	P&M-075
			Consumables in sinking @10 pe cent of (b)	r			520.00	
			c) GST (multiplying factor 0	.2016) on (a-	⊦b)		1628.16	
			d) Overhead charges @ 20				1940.87	
			e) Contractor's profit @ 10 9	•	+d)		1164.52	
			f) Cess @ 1% on (a+b+c+d-	+e)			128.10	
			Rate per metre = (a+b+c+d+e+f	f)			12937.85	
12.16 A		/::\	Poyond 2m unto 40m double			say	<u>12938.00</u>	
12.16 A		(ii)	• • •					
			Rate of sinking 0.17 m / hour					
			a) Labour	deri	0.240	EE4 00	470.04	L-12
			Mate Sinker	day day	0.310 2.000	551.00 508.00	170.81	L-12 L-15
			Sinking helper (semi-skilled)	day day	4.250	424.00	1016.00 1802.00	L-13 L-14
			b) Machinery	uay	7.230	724.00	1002.00	-
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.750	1040.00	5980.00	P&M-075
			Consumables in sinking @10 pe cent of (b)	er			598.00	
			c) GST (multiplying factor 0	.2016) on (a+	⊦b)		1928.67	

				FOL	JNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			۳/	Overhead charges @ 20 % o	n (othto			2299.10	
			d)		•	•			
			e)	Contractor's profit @ 10 % o	n (a+b+c	:+a)		1379.46	
			f)	Cess @ 1% on (a+b+c+d+e)				151.74	
			Rate	per metre = (a+b+c+d+e+f)			say	15325.78 <u>15326.00</u>	
12.16 A		(iii)	Bey	ond 10m upto 20m					
		а		5 per cent for every additionations meter	al meter o	depth of sinking o	ver the rate of	sinking for the	
			11th	n m	5%	16092.000			
			12th	n m	5%	16897.000			
			13th	n m	5%	17742.000			
			14th		5%	18629.000			
			15th		5%	19560.000			
			16th	n m	5%	20538.000			
			17th	n m	5%	21565.000			
			18th		5%	22643.000			
			19th		5%	23775.000			
			20th		5%	24964.000			
			I ota	I Cost from 10m upto 20m		202405.000			
12.16 A		(iv)	_	Rate per metre ond 20m upto 30 m		<u>20241.000</u>			
		а		7.5 per cent for every addition ious meter	al meter	depth of sinking of	over the rate of	sinking for the	
		b	Add	20 per cent of cost for			Including 20%		
				ledge including supports, ing arrangement and Labour.			for Kentledge		
			21st	m	7.5%	26836.000	32203.00		
			22nd	d m	7.5%	28849.000	34619.00		
			23rd	m	7.5%	31013.000	37216.00		
			24th	m	7.5%	33339.000	40007.00		
			25th	m	7.5%	35839.000	43007.00		
			26th	m	7.5%	38527.000	46232.00		
			27th	m	7.5%	41417.000	49700.00		
			28th	m	7.5%	44523.000	53428.00		
			29th		7.5%	47862.000	57434.00		
			30th		7.5%	51452.000	61742.00		
			Tota	I Cost from 20m upto 30m		379657.000	455588.00		
12.16 A		(v)	_	Rate per metre rond 30m upto 40 m		<u>37966.000</u>	<u>45559.00</u>		
		а		10 per cent for every addition ious meter	al meter	depth of sinking o	over the rate of	sinking for the	
		b	Add	20 per cent of cost for			Including 20%		
		-	Kent	ledge including supports, ing arrangement, and Labour			for Kentledge		
			31st	m	10%	56597.000	67916.00		
			32nc		10%	62257.000	74708.00		
			33rd		10%	68483.000	82180.00		
			34th		10%	75331.000	90397.00		
			35th		10%	82864.000	99437.00		
			36th		10%	91150.000	109380.00		
			37th		10%	100265.000	120318.00		
			38th		10%	110292.000	132350.00		
			39th		10%	121321.000	145585.00		
			40th		10%	133453.000	160144.00		
				l Cost from 30m upto 40m		902013.000	1082415.00		
12.16		P	Avg	Rate per metre		<u>90201.000</u>	<u>108242.00</u>		
12.10		В	-	rey Soil (10m dia. Well) = Running Meter					
				ing output = 1 cum					

Taking output = 1 cum

(i) Depth below bed level upto 3.0 M

				FC	DUNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Rate	e of sinking 0.18m/hour.					
			a)	Labour					
			Mate		day	0.250	551.00	137.75	L-12
			Sink	er (skilled)	day	2.500	508.00	1270.00	L-15
			Sink	ing helper (semi-skilled)	day	5.500	424.00	2332.00	L-14
			b)	Machinery					
				& running charges of crane	hour	6.000	1040.00	6240.00	P&M-075
				grab bucket of 0.75 cum acity and accessories.					
				•				004.00	
				sumables in sinking @ 10 per of (b)				624.00	
			c)		016) on (ad	-b)		2137.72	
			•	GST (multiplying factor 0.2		•		2548.29	
			d)	Overhead charges @ 20 %					
			e)	Contractor's profit @ 10 %	•	ra)		1528.98	
			f)	Cess @ 1% on (a+b+c+d+e	·)			168.19	
			Rate	e per metre = (a+b+c+d+e+f)				16986.93	
12.16 B		/ii\	Boy	and 2m unto 10m danth			say	<u>16987.00</u>	
12.10 B		(ii)	-	ond 3m upto 10m depth of sinking 0.15m/hour.					
				•					
			a)	Labour		0.400	554.00	000.40	1.40
			Mate		day	0.400	551.00	220.40	L-12
			Sink		day	3.000	508.00	1524.00	L-15
			Sink	ing helper (semi-skilled)	day	5.500	424.00	2332.00	L-14
			b)	Machinery					
			Hire	& running charges of crane	hour	6.000	1040.00	6240.00	P&M-075
				grab bucket of 0.75 cum acity and accessories.					
				compressor with pneumatic el attachment for cutting hard	hour	4.000	723.00	2892.00	P&M-063
			Con	sumables in sinking @ 10 per of (b)				913.20	
			c)	GST (multiplying factor 0.2	016) on (a+	-b)		2846.91	
			d)	Overhead charges @ 20 %	on (a+b+c))		3393.70	
			e)	Contractor's profit @ 10 %				2036.22	
			f)	Cess @ 1% on (a+b+c+d+e	•	,		223.98	
			•	per metre = (a+b+c+d+e+f)	,			22622.41	
				,			say	22622.00	
12.16 B		(iii)	Bey	ond 10 m upto 20 m			•		
		а		5 per cent for every addition ious meter	nal meter d	epth of sinking o	over the rate of	sinking for the	
		b		for dewatering @ 5 per cent			Including for		
			of co	ost, if required.			dewatering @		
							5% of cost, if required		
			440		E01	00751005	•		
			11th		5% 5%	23754.000	24942.00		
			12tl		5% 5%	24942.000 26189.000	26189.00 27498.00		
			14th		5% 5%	27498.000	28873.00		
			15tl		5%	28873.000	30317.00		
			16tl		5%	30317.000	31833.00		
			17tl		5%	31833.000	33425.00		
			18tl	n m	5%	33425.000	35096.00		
			19tl		5%	35096.000	36851.00		
			20tl		5%	36851.000	38694.00		
				I Cost from 10m upto 20m		298778.000	313718.00		
			Avg	Rate per metre		<u>29878.000</u>	<u>31372.00</u>		
12.16 B		(iv)	Bey	ond 20m upto 30 m					

(iv) Beyond 20m upto 30 m

a Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter

FOUNDATIONS								
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b	Add 5 per cent of cost for dewate	ring on the o	cost, if required			
		С	Add 25 per cent of cost for	or		Including 25%	Including 5%	
			Kentledge including support			for Kentledge	for	
			loading arrangement and Labour).			dewatering, if required	
			31st m	7.5%	39615.000	49519.00	51995.00	
			32nd m	7.5%	42586.000	53233.00	55895.00	
			33rd m 34th m	7.5% 7.5%	45780.000 49214.000	57225.00 61518.00	60086.00 64594.00	
			35th m	7.5%	52905.000	66131.00	69438.00	
			36th m	7.5%	56873.000	71091.00	74646.00	
			37th m 38th m	7.5% 7.5%	61138.000 65723.000	76423.00 82154.00	80244.00 86262.00	
			39th m	7.5%	70652.000	88315.00	92731.00	
			40th m	7.5%	75951.000	94939.00	99686.00	
			Total Cost from 30m upto 40m		560437.000	700548.00	735577.00	
12.16 B		(v)	Avg Rate per metre Beyond 30m upto 40 m		<u>56044.000</u>	<u>70055.00</u>	<u>73558.00</u>	
		а	Add 10 per cent for every addition previous meter	nal meter de	pth of sinking ov	er the rate of sin	king for the	
		b	Add 5 per cent of cost for dewatering, if required	or				
		С	Add 20 per cent of cost for	or		Including 20%	Including 5%	
			Kentledge including support loading arrangement and Labour)			for Kentledge	for dewatering, if required	
			31st m	10%	83546.000	100255.00	105268.00	
			32nd m	10%	91901.000	110281.00	115795.00	
			33rd m 34th m	10% 10%	101091.000 111200.000	121309.00 133440.00	127374.45 140112.00	
			35th m	10%	122320.000	146784.00	154123.20	
			36th m	10%	134552.000	161462.00	169535.10	
			37th m 38th m	10% 10%	148007.000 162808.000	177608.00 195370.00	186488.40 205138.50	
			39th m	10%	179089.000	214907.00	225652.35	
			40th m	10%	196998.000	236398.00	248217.90	
			Total Cost from 30m upto 40m		1331512.000	1597814.00	1677704.90	
12.16		С	Avg Rate per metre Soft Rock (10m dia well)		<u>133151.000</u>	<u>159781.00</u>	<u>167770.00</u>	
			Unit = Running Meter. Taking output = 1 m					
			Depth in soft rock strata upto 3r Rate of sinking 0.14m/hour.	m				
			a) Labour Mate	day	0.860	551.00	473.86	L-12
			Sinker (skilled)	day	4.000	508.00	2032.00	L-15
			Sinking helper (semi-skilled)	day	16.000	424.00	6784.00	L-14
			Diver	day	1.400	869.00	1216.60	L-07
			b) Machinery					D014.075
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	7.000	1040.00	7280.00	P&M-075
			Air compressor with pneumatic breakers	hour	4.250	723.00	3072.75	P&M-063
			Consumables in sinking @ 10 per cent of (b)				1035.28	
			Add for dewatering @ 5 per cent of cost, if required				569.40	
			c) GST (multiplying factor 0.2		•		4528.72	
			d) Overhead charges @ 20 %	on (a+b+c)			5398.52	

			F ^c	OUNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
				/ (-1 h) -	1\		2020 44	
			e) Contractor's profit @ 10 %	•	Fd)		3239.11	
			f) Cess @ 1% on (a+b+c+d+	e)			356.30	
			Rate per metre = (a+b+c+d+e+f))			35986.54	
						say	<u>35987.00</u>	
12.16		D	Hard Rock (10m dia well)					
			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	11.000	166.00	1826.00	M-104
			Electric Detonators	each.	44.000	11.59	509.96	M-094/100
			b) Labour	odon.	11.000	11.00	000.00	
			Mate	day	1.270	551.00	699.77	L-12
				day				L-06
			Driller	day	2.000	551.00	1102.00	
			Blaster	day	0.250	551.00	137.75	L-03
			Mazdoor	day	24.000	424.00	10176.00	L-13
			Mazdoor (Skilled)	day	4.000	508.00	2032.00	L-15
			c) Machinery					
			Hire & running charges of crane	hour	8.500	1040.00	8840.00	P&M-075
			with grab bucket of 0.75 cum					
			capacity and accessories.					
			Hire & running charges of	hour	3.000	723.00	2169.00	P&M-063
			compressor with pneumatic					
			breaker/Jack hammer or drill				550.45	
			Dewatering @ 5 per cent of cost				550.45	
			(c), if required.	_			2570.70	
			Consumables in sinking @ 10 pe cent of cost of (b+c).	I			2570.70	
			d) GST (multiplying factor 0.	2016) on (a	-h+c\		6171.71	
			e) Overhead charges @ 20 %		•		7357.07	
			f) Contractor's profit @ 10 %		•		4414.24	
			g) Cess @ 1% on (a+b+c+d+	•	. u . c,		485.57	
			Rate per metre = (a+b+c+d+e+f-	•			49042.22	
			rtate per metre (a b e a e e e	- 97		sav	49042.00	
12.17	1200		Sinking of 11 m external dian	neter well (other than one	•		
			through all types of strata nan each case, complete as per dr reckoned from bed level.	nely sandy :	soil, clayey soil	and rock as s	hown against	
			Unit = Running Meter					
			Taking output = 0.50 m					
			Diameter of well - 11 m.					
		Α	Sandy Soil					
		(i)	Depth from bed level upto 3.0 M	1				
			Rate of sinking @ 0.15 m/hour					
			a) Labour					
			Mate	day	0.210	551.00	115.71	L-12
			Sinker (skilled)	day	1.500	508.00	762.00	L-15
			Sinking helper (semi-skilled)	day	3.300	424.00	1399.20	L-14
			b) Machinery					
			Hire & running charges of crane with grab bucket of 0.75 cum	hour	6.000	1040.00	6240.00	P&M-075
			capacity and accessories. Consumables in sinking @10 per cent of (b)				624.00	
				2016) on (a-	-h)		1842.81	
			, , , , ,		•		2196.74	
			d) Overhead charges @ 20 %				1318.05	
			e) Contractor's profit @ 10 %	•	ruj		144.99	
			f) Cess @ 1% on (a+b+c+d+ Cost for 0.5m = a+b+c+d+e+f	e)			14643.50	
			Rate per metre = $(a+b+c+d+e+f)$	/0.50			29287.00	
			rate per mene - (a.p.e.d.e.i)	, 0.00		eav	<u>29287.00</u>	
						say	<u> 29207.00</u>	

			FOU	INDATIO	N5			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.17 A		(ii)	Beyond 3m upto 10m depth					
		` '	Rate of sinking @ 0.13 m/hour					
			a) Labour					
			Mate	day	0.320	551.00	176.32	L-12 L-15
			Sinker Sinking helper (semi-skilled)	day day	2.000 4.500	508.00 424.00	1016.00 1908.00	L-15 L-14
			b) Machinery	uay	4.500	424.00	1900.00	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	1040.00	4160.00	P&M-075
			Consumables in sinking @10 per cent of (b)				416.00	
			c) GST (multiplying factor 0.20	16) on (a	+b)		1547.55	
			d) Overhead charges @ 20 % o		-		1844.77	
			e) Contractor's profit @ 10 % o		•		1106.86	
			f) Cess @ 1% on (a+b+c+d+e)	•	•		121.76	
			Cost for $0.5m = a+b+c+d+e+f$				12297.26	
			Rate per metre = (a+b+c+d+e+f)/0.	50			24594.52	
						say	<u>24595.00</u>	
12.17 A		(iii)	Beyond 10m upto 20m					
		а	Add 5 per cent for every additional previous meter	l meter o	depth of sinking o	ver the rate of	sinking for the	
			11th m	5%	25824.000			
			12th m	5%	27115.000			
			13th m	5% 5%	28471.000			
			14th m 15th m	5% 5%	29895.000 31390.000			
			16th m	5%	32960.000			
			17th m	5%	34608.000			
			18th m	5%	36338.000			
			19th m	5%	38155.000			
			20th m	5%	40063.000			
			Total Cost from 10m upto 20m		324819.000			
12.17 A		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>32482.000</u>			
		a	Add 7.5 per cent for every addition previous meter	al meter	depth of sinking of	over the rate of	sinking for the	
		b	Add 20 per cent of cost for			Including 20%		
		-	Kentledge including supports, loading arrangement and Labour.			for Kentledge		
			21st m	7.5%	43068.000	51682.00		
			22nd m 23rd m	7.5% 7.5%	46298.000	55558.00		
			24th m	7.5% 7.5%	49770.000 53503.000	59724.00 64204.00		
			25th m	7.5%	57516.000	69019.00		
			26th m	7.5%	61830.000	74196.00		
			27th m	7.5%	66467.000	79760.00		
			28th m	7.5%	71452.000	85742.00		
			29th m	7.5%	76811.000	92173.00 99086.00		
			30th m Total Cost from 20m upto 30m	7.5%	82572.000 609287.000	731144.00		
12.17 A		(v)	Avg Rate per metre Beyond 30m upto 40 m		60929.000	<u>73114.00</u>		
12.17		a	Add 10 per cent for every additional previous meter	al meter	depth of sinking o	over the rate of	sinking for the	
		h	Add 20 per cent of cost for			Including 20%		
		b	Kentledge including supports, loading arrangement, and Labour etc.			for Kentledge		
			31st m	10%	90829.000	108995.00		
			32nd m	10%	99912.000	119894.00		

CHAPTER-12

				FOI	UNDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			00-4		400/	400000 000	404004.00		
			33rd		10%	109903.000	131884.00		
			34th		10%	120893.000	145072.00		
			35th		10%	132982.000	159578.00		
			36th		10%	146280.000	175536.00		
			37th		10%	160908.000	193090.00		
			38th		10%	176999.000	212399.00		
			39th		10%	194699.000	233639.00		
			40th		10%	214169.000	257003.00		
				I Cost from 30m upto 40m		1447574.000	1737090.00		
12.17		В	Clay	Rate per metre rey Soil (11 m dia. Well) = Running Meter		<u>144757.000</u>	<u>173709.00</u>		
				ing output = 0.50 meter					
		(i)		th from bed level upto 3.0 M					
		(1)	•	e of sinking @ 0.10 m/hour					
			a)	Labour					
			Mate		day	0.260	551.00	143.26	L-12
			Sink	er (skilled)	day	2.500	508.00	1270.00	L-15
				ing helper (semi-skilled) Machinery	day	4.000	424.00	1696.00	L-14
			with	& running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	5.000	1040.00	5200.00	P&M-075
				sumables in sinking @ 10 per of (b)				520.00	
			c)	GST (multiplying factor 0.20)16) on (a+	b)		1779.98	
			d)	Overhead charges @ 20 %		•		2121.85	
			e)	Contractor's profit @ 10 % o				1273.11	
			•	Cess @ 1% on (a+b+c+d+e)		u,		140.04	
			f)						
				t for 0.5m = a+b+c+d+e+f				14144.24	
			Rate	e per metre = (a+b+c+d+e+f)/0	.50			28288.48	
12.17 B		(ii)	Boy	ond 3m upto 10m depth			say	<u>28288.00</u>	
12.17 0		(11)	-	•					
				e of sinking @ 0.08 m/hour					
			a) Mate	Labour	day	0.430	551.00	236.93	L-12
			Sink		day	3.500	508.00	1778.00	L-15
				ing helper (semi-skilled)	day	5.750	424.00	2438.00	L-14
			b)	Machinery	day	0.700	121.00	2100.00	
			with	& running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	6.000	1040.00	6240.00	P&M-075
				compressor with pneumatic el attachment for cutting hard	hour	4.250	723.00	3072.75	P&M-063
				sumables in sinking @ 10 per of (b)				931.28	
			c)	GST (multiplying factor 0.20)16) on (a+	b)		2962.91	
			d)	Overhead charges @ 20 %		-		3531.97	
			e)	Contractor's profit @ 10 % o				2119.18	
			f)	Cess @ 1% on (a+b+c+d+e)	•	,		233.11	
			•	t for 0.5m = a+b+c+d+e+f				23544.13	
				e per metre = (a+b+c+d+e+f)/0	50			47088.26	
				. , ,			say	<u>47088.00</u>	
12.17 B		(iii)	Bey	ond 10 m upto 20 m					

(iii) 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

			FOU	NDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Rema Input
		b	Add for dewatering @ 5 per cent			Including for		
			of cost, if required.			dewatering @		
			•			5% of cost, if		
						required		
			11th m	5%	49443.000	51915.00		
			12th m	5%	51915.000	54511.00		
			13th m	5%	54511.000	57237.00		
			14th m	5%	57237.000	60099.00		
			15th m	5% 5%	60099.000	63104.00		
			16th m 17th m	5% 5%	63104.000 66259.000	66259.00 69572.00		
			18th m	5%	69572.000	73051.00		
			19th m	5%	73051.000	76704.00		
			20th m	5%	76704.000	80539.00		
			Total Cost from 10m upto 20m		621895.000	652990.00		
			Avg Rate per metre		<u>62190.000</u>	<u>65299.00</u>		
2.17 B		(iv)	Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every additional previous meter	al meter	depth of sinking	over the rate of	sinking for the	
		b	Add 5 per cent of cost for dewatering on the cost, if required					
		С	Add 25 per cent of cost for			Including 25%	Including 5%	
		•	Kentledge including supports,			for Kentledge	for	
			loading arrangement and Labour			·	dewatering, if required	
			31st m	7.5%	82457.000	103071.00	108225.00	
			32nd m	7.5%	88641.000	110801.00	116341.00	
			33rd m	7.5%	95289.000	119111.00	125067.00	
			34th m	7.5%	102436.000	128045.00	134447.00	
			35th m	7.5%	110119.000	137649.00	144531.00	
			36th m	7.5%	118378.000	147973.00	155372.00	
			37th m	7.5%	127256.000	159070.00	167024.00	
			38th m	7.5%	136800.000	171000.00	179550.00	
			39th m	7.5%	147060.000	183825.00	193016.00	
			40th m	7.5%	158090.000 1166526.000	197613.00	207494.00	
			Total Cost from 30m upto 40m			1458158.00	1531066.00	
2.17 B		(v)	Avg Rate per metre Beyond 30m upto 40 m		<u>116653.000</u>	<u>145816.00</u>	<u>153107.00</u>	
		а	Add 10 per cent for every additional previous meter	al meter o	depth of sinking	over the rate of	sinking for the	
		b	Add 5 per cent of cost for dewatering, if required					
		С	Add 20 per cent of cost for			Including 20%	Including 5%	
			Kentledge including supports, loading arrangement and Labour).			for Kentledge	for dewatering, if required	
			31st m	10%	173899.000	208679.00	219113.00	
			32nd m	10%	191289.000	229547.00	241024.00	
			33rd m	10%	210418.000	252502.00	265127.00	
			34th m	10%	231460.000	277752.00	291640.00	
			35th m	10%	254606.000	305527.00	320803.00	
			36th m	10%	280067.000	336080.00	352884.00	
			37th m	10%	308074.000	369689.00	388173.00	
			38th m	10%	338881.000	406657.00	426990.00	
			39th m 40th m	10% 10%	372769.000	447323.00 492055.00	469689.00	
			Total Cost from 30m upto 40m	1070	410046.000 2771509.000	3325811	516658.00 3492101	
			·					
12.17		С	Avg Rate per metre Soft Rock (11m dia well)		<u>277151.000</u>	<u>332581.00</u>	<u>349210.00</u>	
			Unit = Running Meter.					
			Taking output = 0.50 m					

			OUNDATIONS				
Mo	ef. to pRTH/ R Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
		Depth in soft rock strata upto 3	m				
		Rate of sinking @ 0.06 m/hour					
		a) Labour					
		Mate	day	0.950	551.00	523.45	L-12
		Sinker (skilled)	day	4.250	508.00	2159.00	L-15
		Sinking helper (semi-skilled)	day	18.000	424.00	7632.00	L-14 L-07
		Diver	day	1.500	869.00	1303.50	L-01
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.000	1040.00	8320.00	P&M-0
		Air compressor with pneumatic breakers	hour	4.500	723.00	3253.50	P&M-0
		Consumables in sinking @ 10 per cent of (b)	r			1157.35	
		Add for dewatering @ 5 per cent of cost, if required				636.54	
		c) GST (multiplying factor 0.2	2016) on (a+b)			5037.04	
		d) Overhead charges @ 20 %	on (a+b+c)			6004.48	
		e) Contractor's profit @ 10 %	on (a+b+c+d))		3602.69	
		f) Cess @ 1% on (a+b+c+d+e	e)			396.30	
		Cost for $0.5m = a+b+c+d+e+f$				40025.85	
		Rate per metre = (a+b+c+d+e+f)	/0.50			80051.70	
					say	<u>80052.00</u>	
2.17	D	Hard Rock (11m dia well)					
		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	12.000	166.00	1992.00	M-10
		Electric Detonators	each.	48.000	11.59	556.32	M-094/
		b) Labour					
		Mate	day	1.350	551.00	743.85	L-12
			day				
		Driller		2.000	551.00	1102.00	
		Blaster	day	0.250	551.00	137.75	L-03
		Blaster Mazdoor	day	0.250 26.000	551.00 424.00	137.75 11024.00	L-03 L-13
		Blaster Mazdoor Mazdoor (Skilled)	-	0.250	551.00	137.75	L-03 L-13
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum	day	0.250 26.000	551.00 424.00	137.75 11024.00	L-03 L-13 L-15
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic	day day	0.250 26.000 4.000	551.00 424.00 508.00	137.75 11024.00 2032.00	L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill Dewatering @ 5 per cent of cost	day day hour	0.250 26.000 4.000 10.000	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00	L-06 L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill	day day hour	0.250 26.000 4.000 10.000	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00 2530.50	L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill Dewatering @ 5 per cent of cost (c), if required. Consumables in sinking @ 10 per cent of cost of (b+c).	day day hour hour	0.250 26.000 4.000 10.000	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00 2530.50 646.53 2797.01	L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill Dewatering @ 5 per cent of cost (c), if required. Consumables in sinking @ 10 per cent of cost of (b+c). d) GST (multiplying factor 0.3	day day hour hour 2016) on (a+b+	0.250 26.000 4.000 10.000 3.500	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00 2530.50 646.53 2797.01 6846.73	L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill Dewatering @ 5 per cent of cost (c), if required. Consumables in sinking @ 10 per cent of cost of (b+c). d) GST (multiplying factor 0.3 e) Overhead charges @ 20 %	day day hour hour 2016) on (a+b+ 6 on (a+b+c+d)	0.250 26.000 4.000 10.000 3.500	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00 2530.50 646.53 2797.01 6846.73 8161.74	L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill Dewatering @ 5 per cent of cost (c), if required. Consumables in sinking @ 10 per cent of cost of (b+c). d) GST (multiplying factor 0.2 e) Overhead charges @ 20 % f) Contractor's profit @ 10 %	day day hour hour 2016) on (a+b+ on (a+b+c+d) on (a+b+c+d+	0.250 26.000 4.000 10.000 3.500	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00 2530.50 646.53 2797.01 6846.73 8161.74 4897.04	L-03 L-13 L-15 P&M-0
		Blaster Mazdoor Mazdoor (Skilled) c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of compressor with pneumatic breaker/Jack hammer or drill Dewatering @ 5 per cent of cost (c), if required. Consumables in sinking @ 10 per cent of cost of (b+c). d) GST (multiplying factor 0.3 e) Overhead charges @ 20 %	day day hour hour 2016) on (a+b+ on (a+b+c+d) on (a+b+c+d+	0.250 26.000 4.000 10.000 3.500	551.00 424.00 508.00 1040.00	137.75 11024.00 2032.00 10400.00 2530.50 646.53 2797.01 6846.73 8161.74	L-03 L-13 L-15 P&M-0

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.

			FC	DUNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Unit = Running Meter					
			Taking output = 0.25 m					
			Diameter of well - 12 m.					
		Α	Sandy Soil					
		(i)	I) Depth below bed level upto 3.0	М				
			Rate of sinking @ 0.05 m/hour					
			a) Labour					
			Mate	day	0.220	551.00	121.22	L-12
			Sinker (skilled)	day	1.750	508.00	889.00	L-15 L-14
			Sinking helper (semi-skilled) b) Machinery	day	4.000	424.00	1696.00	
			Hire & running charges of crane	hour	6.000	1040.00	6240.00	P&M-075
			with grab bucket of 0.75 cum					
			capacity and accessories.				004.00	
			Consumables in sinking @10 per cent of (b)				624.00	
			c) GST (multiplying factor 0.2	(016) on (a+	b)		1929.36	
			d) Overhead charges @ 20 %		•		2299.92	
			,				1379.95	
			e) Contractor's profit @ 10 %	•	a)			
			f) Cess @ 1% on (a+b+c+d+e	?)			151.79	
			Cost for $0.25m = a+b+c+d+e+f$				15331.24	
			Rate per metre = (a+b+c+d+e+f)/	0.25			61324.96	
						say	<u>61325.00</u>	
12.18 A		(ii)	Beyond 3m upto 10m depth					
			Rate of sinking @ 0.038 m/hour					
			a) Labour					
			Mate	day	0.370	551.00	203.87	L-12
			Sinker	day	2.500	508.00	1270.00	L-15
			Sinking helper (semi-skilled)	day	4.750	424.00	2014.00	L-14
			b) Machinery					D014.075
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	1040.00	6760.00	P&M-075
			Consumables in sinking @10 per cent of (b)				676.00	
			c) GST (multiplying factor 0.2	.016) on (a+	b)		2202.25	
			d) Overhead charges @ 20 %		•		2625.22	
			e) Contractor's profit @ 10 %	on (a+b+c+	d)		1575.13	
			f) Cess @ 1% on (a+b+c+d+e	e)			173.26	
			Cost for $0.25m = a+b+c+d+e+f$				17499.73	
			Rate per metre = (a+b+c+d+e+f)/	0.25			69998.92	
40.40.4			D 140			say	<u>69999.00</u>	
12.18 A		(iii)	Beyond 10m upto 20m Add 5 per cent for every addition	nal meter de	anth of sinking o	ver the rate of	sinking for the	
		а	previous meter	iai illetei ut	pur or sinking of	rei tile late oi s	silikilig lor tile	
			11th m	5%	73499.000			
			12th m	5%	77174.000			
			13th m	5% 5%	81032.700			
			14th m 15th m	5% 5%	85084.335 89338.552			
			16th m	5%	93805.480			
			17th m	5%	98495.754			
			18th m	5%	103420.542			
			19th m	5% 5%	108591.569			
			20th m Total Cost from 10m upto 20m	5%	114021.147			
			Avg Rate per metre		924463.079 92446.000			
			g rate per mene		<u> </u>			

	_				FOUR	NDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description		Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.18 A		(iv)	Beyo	ond 20m upto 30 m						
		а		7.5 per cent for eve ious meter	ry additiona	ıl meter	depth of sinking	over the rate of	sinking for the	
		h	•	20 per cent of	cost for			Including 20%		
		b	Kent	ledge including ing arrangement and	supports,			for Kentledge		
			21st	m		7.5%	122573.000	147088.00		
			22nd			7.5%	131766.000	158119.00		
			23rd			7.5%	141648.000	169978.00		
			24th			7.5%	152272.000	182726.00		
			25th			7.5%	163692.000	196430.00		
			26th			7.5%	175969.000	211163.00		
			27th			7.5%	189167.000	227000.00		
			28th			7.5%	203355.000	244026.00		
			29th			7.5%	218607.000	262328.00		
			30th			7.5%	235003.000	282004.00		
				I Cost from 20m upto	30m		1734052.000	2080862.00		
				Rate per metre			173405.000	208086.00		
12.18 A		(1/1)	_	ond 30m upto 40 m						
12.10 A		(v) a	•	10 per cent for ever	y additiona	l meter o	depth of sinking	over the rate of	sinking for the	
		b	•	ious meter 20 per cent of	cost for			Including 20%	-	
		b	Kent	ledge including ing arrangement, ar	supports,			for Kentledge		
			31st	m		10%	259503 000	210204.00		
			32nd			10%	258503.000 284353.000	310204.00 341224.00		
			33rd			10%	312788.000	375346.00		
			34th			10%	344067.000	412880.00		
			35th			10%	378474.000	454169.00		
			36th			10%	416321.000	499585.00		
			37th			10%	457953.000	549544.00		
			38th			10%	503748.000	604498.00		
			39th			10%	554123.000	664948.00		
			40th			10%	609535.000	731442.00		
			Tota	l Cost from 30m upto Rate per metre	40m		4119865.000 <u>411987.000</u>	4943840 494384.00		
12.18		В	Clay	ey Soil (12 m dia. W	'ell)					
				= Running Meter. ing output = 0.25 me	ter.					
		(i)		th below bed level u						
				of sinking @ 0.04 m	/hour					
			•	Labour						,
			Mate			day	0.300	551.00	165.30	L-12
			Sink	er (skilled)		day	3.000	508.00	1524.00	L-15
			Sinki b)	ing helper (semi-skille Machinery	ed)	day	4.500	424.00	1908.00	L-14
			Hire with	& running charges of grab bucket of 0.75 cacity and accessories	um	hour	6.250	1040.00	6500.00	P&M-075
				sumables in sinking (of (b)	0 10 per				650.00	
			c)	GST (multiplying fa			•		2166.66	
			d)	Overhead charges	_		•		2582.79	
			e)	Contractor's profit	•	(a+b+c	+d)		1549.68	
			f)	Cess @ 1% on (a+	•				170.46	
			Cost	for 0.25m = a+b+c+c	d+e+f				17216.89	
			Rate	per metre = (a+b+c	+d+e+f)/0.2	25			68867.56	
								say	<u>68868.00</u>	

			F	OUNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.18 B		(ii)	Beyond 3m upto 10m depth					
		(,	Rate of sinking @ 0.03 m/hour a) Labour					
			Mate	day	0.480	551.00	264.48	L-12
			Sinker	day	3.750	508.00	1905.00	L-15
			Sinking helper (semi-skilled)	day	6.000	424.00	2544.00	L-14
			b) Machinery	day	0.000	424.00	2044.00	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.330	1040.00	8663.20	P&M-075
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.500	723.00	3253.50	P&M-063
			Consumables in sinking @ 10 percent of (b)	er			1191.67	
			c) GST (multiplying factor 0.	2016) on (a+	-b)		3592.88	
			d) Overhead charges @ 20 %		•		4282.95	
			e) Contractor's profit @ 10 %				2569.77	
			f) Cess @ 1% on (a+b+c+d+	•	· u)		282.67	
			Cost for $0.25m = a+b+c+d+e+f$	-,			28550.12	
			Rate per metre = (a+b+c+d+e+f	f)/0.25			114200.48	
			(4 2 0 4 0 1	.,		say	114200.00	
12.18 B		(iii)	Beyond 10 m upto 20 m					
		а	Add 5 per cent for every addition previous meter	nal meter dep	th of sinking ove	r the rate of sink	ing for the	
		b	Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required		
			11th m	5%	119911.000	125907.00		
			12th m	5%	125907.000	132202.00		
			13th m	5%	132202.000	138812.00		
			14th m	5%	138812.000	145753.00		
			15th m	5%	145753.000	153041.00		
			16th m	5%	153041.000	160693.00		
			17th m	5%	160693.000	168728.00		
			18th m	5%	168728.000	177164.00		
			19th m	5% 5%	177164.000	186022.00		
			20th m Total Cost from 10m upto 20m	5%	186022.000 1508233.000	195323.00 1583645.00		
			Avg Rate per metre		<u>150823.000</u>	<u>158365.00</u>		
12.18 B		(iv)	Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every additi previous meter	ional meter de	epth of sinking o	ver the rate of sir	nking for the	
		a b		for	epth of sinking o	ver the rate of sin	nking for the	
			previous meter Add 5 per cent of cost	for ed for	epth of sinking ov	ver the rate of single	Ü	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost	for ed for rts,	epth of sinking ov	Including 25%	Including 5%	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including support	for ed for rts,	epth of sinking ov	Including 25%	Including 5% for dewatering, if	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m	for ed for rts, r	·	Including 25% for Kentledge 249968.00 268715.00	Including 5% for dewatering, if required 262466.00 282151.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m	for sed for rts, r 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000	Including 25% for Kentledge 249968.00 268715.00 288869.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m	for sed for rts, r 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m 35th m	for sed for rts, r 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000 267059.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00 333824.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00 350515.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m 35th m 36th m	for sed for rts, for 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000 267059.000 287088.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00 333824.00 358860.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00 350515.00 376803.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m 35th m 36th m 37th m	for sed for rts, for 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000 267059.000 287088.000 308620.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00 333824.00 358860.00 385775.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00 376803.00 405064.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m 35th m 36th m 37th m 38th m	for sed for rts, for 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000 267059.000 287088.000 308620.000 331767.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00 338824.00 358860.00 385775.00 414709.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00 376803.00 405064.00 435444.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m 35th m 36th m 37th m	for sed for rts, for 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000 267059.000 287088.000 308620.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00 333824.00 358860.00 385775.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00 376803.00 405064.00	
		b	previous meter Add 5 per cent of cost dewatering on the cost, if require Add 25 per cent of cost Kentledge including suppor loading arrangement and Labour 31st m 32nd m 33rd m 34th m 35th m 36th m 37th m 38th m 39th m	for sed for rts, 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	199974.000 214972.000 231095.000 248427.000 267059.000 287088.000 308620.000 331767.000 356650.000	Including 25% for Kentledge 249968.00 268715.00 288869.00 310534.00 33824.00 358860.00 385775.00 414709.00 445813.00	Including 5% for dewatering, if required 262466.00 282151.00 303312.00 326061.00 376803.00 405064.00 435444.00 468104.00	

			FOU	NDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
2.18 B		(v)	Beyond 30m upto 40 m					
		a	Add 10 per cent for every additional previous meter	meter dep	oth of sinking ov	er the rate of sin	king for the	
		b	Add 5 per cent of cost for dewatering, if required					
		С	Add 20 per cent of cost for Kentledge including supports,			Including 20% for Kentledge	Including 5% for	
			loading arrangement and Labour).				dewatering, if required	
			31st m	10%	421739.000	506087.00	531391.00	
			32nd m	10%	463913.000	556696.00	584531.00	
			33rd m	10%	510304.000	612365.00	642983.00	
			34th m	10%	561334.000	673601.00	707281.00	
			35th m	10% 10%	617467.000	740960.00	778008.00	
			36th m 37th m	10%	679214.000	815057.00	855810.00	
			38th m	10%	747135.000 821849.000	896562.00	941390.00	
			39th m	10%	904034.000	986219.00 1084841.00	1035530.00 1139083.00	
			40th m	10%	994437.000	1193324.00	1252990.00	
				10 /0	6721426.000	8065712	8468997	
12.18		С	Total Cost from 30m upto 40m Avg Rate per metre Soft Rock (12m dia well)		672143.000 672143.000	806571.00	846900.00	
			Unit = Running Meter Taking output = 0.25 m Depth in soft rock strata upto 3m					
			Rate of sinking @ 0.025 m/hour					
			a) Labour					
			Mate	day	1.060	551.00	584.06	L-12
			Olesteen (at illust)	44	4.500	500.00	0000.00	1.15
			Sinker (skilled)	day	4.500	508.00	2286.00	L-15
			Sinking helper (semi-skilled)	day	20.000	424.00	8480.00	L-14
			Diver	day	1.750	869.00	1520.75	L-07
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	10.000	1040.00	10400.00	P&M-075
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.750	723.00	3434.25	P&M-063
			Consumables in sinking @ 10 per cent of (b)				1383.43	
			Add for dewatering @ 5 per cent, if required				760.88	
			c) GST (multiplying factor 0.201	6) on (a+l	b)		5816.03	
			d) Overhead charges @ 20 % or		-		6933.08	
			e) Contractor's profit @ 10 % or		d)		4159.85	
			f) Cess @ 1% on (a+b+c+d+e)	1 (4.5.0.	u,		457.58	
			, ,					
			Cost for 0.25m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/0.2	25		say	46215.91 184863.64 <u>184864.00</u>	
12.18		D	Hard Rock (12m dia well) Unit = Running Meter					
		(i)	Taking output = 0.25 m Depth in hard rock strata upto 3 m Rate of sinking @ 0.020 m/hour					
			a) Material					
			Gelatine80 per cent	Kg	14.000	166.00	2324.00	M-104
			Electric detonator	each.	56.000	11.59	649.04	M-094/100
			b) Labour					
			Mate	day	1.440	551.00	793.44	L-12

Sr No	Ref. to			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	MoRTH/ DSR Spec.			·					Input ref.
			Driller		day	2.000	551.00	1102.00	L-06
			Blaste	er	day	0.250	551.00	137.75	L-03
			Mazd	oor	day	28.000	424.00	11872.00	L-13
			Mazd	oor (Skilled)	day	4.500	508.00	2286.00	L-15
			•	Machinery					
				k running charges of crane	hour	12.500	1040.00	13000.00	P&M-075
			_	rab bucket of 0.75 cum sity and accessories.					
				k running charges of	hour	4.000	723.00	2892.00	P&M-063
				ressor with pneumatic			. 20.00	2002.00	
			break	er/Jack hammer or drill					
			Dewa	tering @ 5 per cent, if				794.60	
			Const cent	umables in sinking @ 10 per of (c).				1668.66	
			d)	GST (multiplying factor 0.20	16) on (a+	·b+c)		7563.93	
			•	Overhead charges @ 20 % o		•		9016.68	
			-	Contractor's profit @ 10 % o	•	•		5410.01	
				Cess @ 1% on (a+b+c+d+e+		,		595.10	
				for 0.25m = a+b+c+d+e+f+g	-,			60105.21	
				per metre = (a+b+c+d+e+f+g))/0.25			240420.84	
				,	,		say	240421.00	
12.19	1200		Sinki	ng of Twin D Type well (ot	ther than	pneumatic metl			
				of strata namely sandy soi					
			-	lete as per drawing and tec	chnical s	pecifications. De	pth of sinking	j is reckoned	
			from	bed level.					
			Unit =	Running Meter					
			Takin	g output = 1 m					
				nsions of well.					
				all length = 12 m					
		_		all width = 6 m					
			Sand						
		(i)	Deptr	n from bed level upto 3.0 M					
			Rate	of sinking @ 0.18 m/hour					
			•	_abour					
			Mate	- (alcillad)	day	0.200	551.00	110.20	L-12 L-15
				r (skilled) ng helper (semi-skilled)	day day	1.250 3.750	508.00 424.00	635.00 1590.00	L-13
				Machinery	day	0.700	424.00	1000.00	
			•	running charges of crane	hour	5.500	1040.00	5720.00	P&M-075
			with g	rab bucket of 0.75 cum					
			capac	city and accessories.					
				umables in sinking @10 per				572.00	
			cent	* *	4C) on (o.	L \		1720.24	
			•	GST (multiplying factor 0.20		•		1739.24	
			•	Overhead charges @ 20 % o Contractor's profit @ 10 % o	, ,			2073.29 1243.97	
			•	Cess @ 1% on (a+b+c+d+e)	יוו (מדטדני	·u)		136.84	
			•	per metre = (a+b+c+d+e+f)				13820.54	
			ivate	per metre – (a.b.c.d.e.i)			621/		
12.19 A		(ii)	Bevo	nd 3m upto 10m depth			say	<u>13821.00</u>	
		(")	-	of sinking @ 0.17 m/hour					
				Labour					
			Mate		day	0.300	551.00	165.30	L-12
			Sinke	r	day	1.500	508.00	762.00	L-15
				ng helper (semi-skilled)	day	4.000	424.00	1696.00	L-14
			•	Machinery			40.555	0	D0M 077
				k running charges of crane	hour	5.880	1040.00	6115.20	P&M-075
			_	rab bucket of 0.75 cum city and accessories.					
				,					

			FOL	<u> INDATIO</u>	<u> </u>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Consumables in sinking @10 per cent of (b)				611.52	
			c) GST (multiplying factor 0.20	16) on (a-	+b)		1884.96	
			d) Overhead charges @ 20 % o		•		2247.00	
			e) Contractor's profit @ 10 % o	•	•		1348.20	
			f) Cess @ 1% on (a+b+c+d+e)	(,		148.30	
			Rate per metre = (a+b+c+d+e+f)				14978.48	
			,			say	14978.00	
12.19 A		(iii)	Beyond 10m upto 20m			•		
		а	Add 5 per cent for every additional previous meter	meter der	oth of sinking over	the rate of sink	ing for the	
			11th m	5%	15727.000			
			12th m	5% 5%	16513.000			
			13th m	5%	17339.000			
			14th m	5%	18206.000			
			15th m	5%	19116.000			
			16th m	5%	20072.000			
			17th m	5%	21076.000			
			18th m	5%	22130.000			
			19th m	5%	23237.000			
			20th m	5%	24399.000			
			Total Cost from 10m upto 20m		197815.000			
12.19 A		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>19782.000</u>			
2.13 A		a (IV)	Add 7.5 per cent for every additional	al meter d	enth of sinking ov	er the rate of si	nking for the	
			previous meter		cpur or on king ov		inding for the	
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge		
			21st m	7.5%	26229.000	31475.00		
			22nd m	7.5%	28196.000	33835.00		
			23rd m	7.5%	30311.000	36373.00		
			24th m	7.5%	32584.000	39101.00		
			25th m 26th m	7.5% 7.5%	35028.000 37655.000	42034.00 45186.00		
			27th m	7.5%	40479.000	48575.00		
			28th m	7.5%	43515.000	52218.00		
			29th m	7.5%	46779.000	56135.00		
			30th m	7.5%	50287.000	60344.00		
			Total Cost from 20m upto 30m		371063.000	445276.00		
12.19 A		(v)	Avg Rate per metre Beyond 30m upto 40 m		<u>37106.000</u>	<u>44528.00</u>		
		а	Add 10 per cent for every additional previous meter	l meter de	epth of sinking ove	er the rate of sir	nking for the	
		b	Add 20 per cent of cost for Kentledge including supports, loading arrangement, and Labour etc.			Including 20% for Kentledge		
			31st m	10%	55316.000	66379.00		
			32nd m	10%	60848.000	73018.00		
			33rd m	10%	66933.000	80320.00		
			34th m	10%	73626.000	88351.00		
			35th m	10%	80989.000	97187.00		
			36th m	10%	89088.000	106906.00		
			37th m	10%	97997.000	117596.00		
			38th m 39th m	10% 10%	107797.000 118577.000	129356.00 142292.00		
			40th m	10%	130435.000	156522.00		
			Total Cost from 30m upto 40m	10 /0	881606.000	1057927.00		
			Avg Rate per metre		<u>88161.000</u>	<u>105793.00</u>		
12.19		В	Clayey Soil (Twin D Type Well)					
-		_	Unit = Running Meter					
			Taking output = 1 meter					

Taking output = 1 meter

				FO	UNDATION	<u> </u>			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		(i)	Dept	th below bed level upto 3.0 M	1				
			Rate	of sinking @ 0.16 m/hour					
				Labour					
			Mate		day	0.260	551.00	143.26	L-12
			Sinke	er (skilled)	day	2.500	508.00	1270.00	L-15
				ing helper (semi-skilled)	day	4.000	424.00	1696.00	L-14
			with	Machinery & running charges of crane grab bucket of 0.75 cum licity and accessories.	hour	6.250	1040.00	6500.00	P&M-075
			Cons	sumables in sinking @ 10 per of (b)				650.00	
				•	040\ (L-X		0000.07	
			c)	GST (multiplying factor 0.2		•		2068.27	
			d)	Overhead charges @ 20 %				2465.51	
			e)	Contractor's profit @ 10 %	•	+d)		1479.30	
			f)	Cess @ 1% on (a+b+c+d+e)			162.72	
			Rate	per metre = (a+b+c+d+e+f)				16435.06	
							say	<u>16435.00</u>	
2.19 B		(ii)	•	ond 3m upto 10m depth					
				of sinking @ 0.15 m/hour					
			•	Labour		0.455	EE 1 00	0.17.07	1.40
			Mate		day	0.450	551.00	247.95	L-12
			Sink		day	3.250	508.00	1651.00	L-15 L-14
			b)	ing helper (semi-skilled) Machinery	day	6.000	424.00	2544.00	
			with	& running charges of crane grab bucket of 0.75 cum city and accessories.	hour	6.670	1040.00	6936.80	P&M-075
				ompressor with pneumatic el attachment for cutting hard	hour	4.500	723.00	3253.50	P&M-063
				sumables in sinking @ 10 per of (b)				1019.03	
				007 (185-1 5 5 4 0 0	040) (2455.50	
			c)	GST (multiplying factor 0.2		•		3155.50	
			d)	Overhead charges @ 20 %				3761.56	
			e)	Contractor's profit @ 10 %	-	+d)		2256.93	
			f)	Cess @ 1% on (a+b+c+d+e)			248.26	
			Rate	per metre = (a+b+c+d+e+f)				25074.53	
2.19 B		(iii)	Roya	ond 10 m upto 20 m			say	<u>25075.00</u>	
2.19 0		(III) a	Add	• 5 per cent for every additiona	l meter dep	th of sinking ove	r the rate of sinki	ng for the	
			•	ious meter					
		b		for dewatering @ 5 per cent est, if required.			Including for dewatering @ 5% of cost, if required		
			11th	n m	5%	26328.000	27644.00		
			12th	ı m	5%	27644.000	29026.00		
			12th 13th	1 m 1 m	5% 5%	27644.000 29026.000	29026.00 30477.00		
			12th 13th 14th	n m n m n m	5% 5% 5%	27644.000 29026.000 30477.000	29026.00 30477.00 32001.00		
			12th 13th 14th 15th	n m n m n m n m	5% 5% 5% 5%	27644.000 29026.000 30477.000 32001.000	29026.00 30477.00 32001.00 33601.00		
			12th 13th 14th 15th 16th	n m n m n m n m	5% 5% 5% 5%	27644.000 29026.000 30477.000 32001.000 33601.000	29026.00 30477.00 32001.00 33601.00 35281.00		
			12th 13th 14th 15th 16th 17th	n m n m n m n m n m	5% 5% 5% 5% 5%	27644.000 29026.000 30477.000 32001.000 33601.000 35281.000	29026.00 30477.00 32001.00 33601.00 35281.00 37045.00		
			12th 13th 14th 15th 16th 17th	n m n m n m n m n m n m	5% 5% 5% 5% 5% 5%	27644.000 29026.000 30477.000 32001.000 33601.000 35281.000 37045.000	29026.00 30477.00 32001.00 33601.00 35281.00 37045.00 38897.00		
			12th 13th 14th 15th 16th 17th 18th 19th	n m n m n m n m n m n m	5% 5% 5% 5% 5% 5% 5%	27644.000 29026.000 30477.000 32001.000 33601.000 35281.000 37045.000 38897.000	29026.00 30477.00 32001.00 33601.00 35281.00 37045.00 38897.00 40842.00		
			12th 13th 14th 15th 16th 17th 18th 19th	n m n m n m n m n m n m	5% 5% 5% 5% 5% 5%	27644.000 29026.000 30477.000 32001.000 33601.000 35281.000 37045.000	29026.00 30477.00 32001.00 33601.00 35281.00 37045.00 38897.00		

12.19 B (V) Beyond 20m upto 30 m a Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter				FC	DUNDATION	NS			
a Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter b Add 5 per cent of cost for dewatering on the cost, if required c Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour). 31st m 7.5% 43905.00 54881.00 57625.00 54881.00 57625.00 532nd 7.5% 47198.000 68998.00 61948.00 534th m 7.5% 54543.000 68179.00 71588.00 33rd m 7.5% 54643.000 68179.00 71588.00 33rd m 7.5% 63032.000 6849.00 73788.00 33rd m 7.5% 63032.000 78790.00 82730.00 63998.00 33th m 7.5% 63032.000 78790.00 82730.00 73780.00 3471 m 7.5% 54643.000 73790.00 82730.00 73780.00 3471 m 7.5% 63032.000 78790.00 82730.00 7371 m 7.5% 63032.000 78790.00 82730.00 73780.00 3471 m 7.5% 63032.000 78790.00 82730.00 73780.00 3471 m 7.5% 63032.000 78790.00 82730.00 73780 m 7.5% 7380.00 34790.00 82730.00 73780.00 3471 m 7.5% 63032.000 78790.00 82730.00 73780 m 7.5% 7380.00 34790.00 91051.00 95604.00 73780 m 7.5% 7380.00 34790.00 91051.00 95604.00 7400 7400 7400 7400 7400 7400 7400	Sr No	MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
a Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter b Add 5 per cent of cost for dewatering on the cost, if required c Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour). 3 1st m 7.5% 43905.00 54881.00 57625.00 10 10 10 10 10 10 10 10 10 10 10 10 1	12.19 B		(iv)	Beyond 20m unto 30 m					
b Add 5 per cent of cost for dewatering on the cost, if required c Add 25 per cent of cost for Kentledge including supports, loading arrangement and Labour J. 31st m 7.5% 43905.000 54881.00 57625.00 32nd m 7.5% 50738.000 63423.00 66594.00 33rd m 7.5% 50738.000 63423.00 66594.00 33rd m 7.5% 56843.000 63423.00 66594.00 33rd m 7.5% 56834.000 73293.00 76958.00 33rd m 7.5% 68034.000 73293.00 76958.00 33rd m 7.5% 67759.000 84699.00 88934.00 37rd m 7.5% 67759.000 84699.00 88934.00 38th m 7.5% 67759.000 84699.00 98004.00 38th m 7.5% 67759.000 84699.00 98004.00 38th m 7.5% 67759.000 84699.00 98004.00 38th m 7.5% 78304.000 97808.00 102774.00 40th m 7.5% 84177.000 105221.00 102724.00 102724.00 40th m 7.5% 84177.000 105221.00 102724.00 102724.00 40th m 7.5% 84177.000 176224.00 102724.00 815237.00 Avg Rate per metre b Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter b Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour). 31st m 10% 92595.000 1111114.00 116670.00 33rd m 10% 11855.000 122226.00 1111114.00 116670.00 35th m 10% 112041.000 13444.90 111171.00 35th m 10% 132345.000 147894.00 114791.00 134418.00 35th m 10% 135570.000 162286.00 170818.00 35th m 10% 180440.000 162286.00 170818.00 35th m 10% 180440.000 180888.00 227680.00 170818.00 170818.00 40th m 10% 128370.00 262004.00 275104.00 40th m 10% 128370.00 262004.00 275104.00 40th m 10% 128370.00 262004.00 275104.00 40th m 10% 128374.000 170898.00 185943.00 40th m 10% 180440.000 180888.00 227680.00 35th m 10% 180440.000	.=		` '	Add 7.5 per cent for every additional depth of sinking over the rate of					
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38th m 39th m 10% 180444.000 216533.00 227360.00 39th m 10% 198488.000 238186.00 250095.00 40th m 10% 218337.000 262004.00 275104.00 Total Cost from 30m upto 40m 1475742.000 1770890.00 1859434.00 Avg Rate per metre 147574.000 177089.00 185943.00 12.19 C Soft Rock (Twin D Type Well) 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 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				36th m				187900.00	
39th m				37th m	10%		196848.00		
40th m Total Cost from 30m upto 40m Avg Rate per metre 12.19 C Soft Rock (Twin D Type Well) Unit = Running Meter Taking output = 1 m Depth in soft rock strata upto 3m Rate of sinking @ 0.12 m/hour a) Labour Mate Sinker (skilled) Sinking helper (semi-skilled) 407 147574.000 1770890.00 1770890.00 1859434.00 177089.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185943.00 185				38th m	10%	180444.000	216533.00	227360.00	
Total Cost from 30m upto 40m				39th m	10%	198488.000	238186.00	250095.00	
Avg Rate per metre 147574.000 177089.00 185943.00 12.19 C Soft Rock (Twin D Type Well) 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 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				40th m	10%	218337.000	262004.00	275104.00	
12.19 C Soft Rock (Twin D Type Well) **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 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				Total Cost from 30m upto 40m		1475742.000	1770890.00	1859434.00	
12.19 C Soft Rock (Twin D Type Well) **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 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				Avg Rate per metre		<u>147574.000</u>	<u>177089.00</u>	<u>185943.00</u>	
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 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00	12.19		С						
Taking output = 1 m Depth in soft rock strata upto 3m Rate of sinking @ 0.12 m/hour a) Labour Mate day 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				` '					
Depth in soft rock strata upto 3m Rate of sinking @ 0.12 m/hour a) Labour Mate day 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				•					
Rate of sinking @ 0.12 m/hour a) Labour Mate day 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				• ,					
a) Labour day 0.860 551.00 473.86 Mate day 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				Depth in soft rock strata upto 3r	n				
Mate day 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				Rate of sinking @ 0.12 m/hour					
Mate day 0.860 551.00 473.86 Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				a) Labour					
Sinker (skilled) day 4.500 508.00 2286.00 Sinking helper (semi-skilled) day 15.000 424.00 6360.00				•	desi	0.000	FF1 00	472.00	L-12
Sinking helper (semi-skilled) day 15.000 424.00 6360.00					•				
					_				L-15
				Sinking helper (semi-skilled)	day	15.000	424.00	6360.00	L-14
Diver day 1.500 869.00 1303.50				Diver	day	1.500	869.00	1303.50	L-07
b) Machinery				b) Machinery					
•				Hire & running charges of crane with grab bucket of 0.75 cum	hour	8.330	1040.00	8663.20	P&M-075
Air compressor with pneumatic hour 6.000 723.00 4338.00 F breakers				· · · · · · · · · · · · · · · · · · ·	hour	6.000	723.00	4338.00	P&M-063

CHAPTER-12

Sr No	Ref. to MoRTH/ DSR Spec.		Description		Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	DSR Spec.								
			Consumables in sinking (cent of (b)	@ 10 per				1300.12	
			Add for dewatering @ 5 prequired	per cent, if				715.07	
			c) GST (multiplying f	actor 0.20	16) on (a-	+b)		5128.65	
			d) Overhead charges	@ 20 % c	n (a+b+c)		6113.68	
			e) Contractor's profit	t @ 10 % o	n (a+b+c	+d)		3668.21	
			f) Cess @ 1% on (a+	b+c+d+e)				403.50	
			Rate per metre = (a+b+c	:+d+e+f)				40753.79	
12.19		D	Hard Rock (Twin D Type	e Well)			say	<u>40754.00</u>	
			Unit = Running Meter	,					
			Taking output = 1 m						
			Depth in hard rock strat	ta unto 3 n	n				
			Rate of sinking @ 0.10 m	•	11				
				i/iioui					
			,		I/ m	10.000	166.00	1660.00	M-104
			Geletine80 per cent		Kg	10.000	166.00	1660.00	M-094/10
			Electric detonators b) Labour		each.	40.000	11.59	463.60	IVI-U54/10
			Mate		day	1.340	551.00	738.34	L-12
			Driller		day	2.000	551.00	1102.00	L-06
			Blaster		day	0.250	551.00	137.75	L-03
			Mazdoor Mazdoor (Skilled)		day day	25.000 4.250	424.00 508.00	10600.00 2159.00	L-13 L-15
			c) Machinery		uay	4.230	300.00	2139.00	
			Hire & running charges o	f crane	hour	10.000	1040.00	10400.00	P&M-07
			with grab bucket of 0.75						
			capacity and accessories		haun	2.000	702.00	2460.00	P&M-06
			Hire & running charges o compressor with pneuma		hour	3.000	723.00	2169.00	F & WI-UU
			breaker/Jack hammer or						
			Dewatering @ 5 per cent of (b+c), if required.	of cost				1365.30	
			Consumables in sinking (cent of (b).	@ 10 per				1393.43	
			d) GST (multiplying f	actor 0.20	16) on (a	+b+c)		6489.19	
			e) Overhead charges	@ 20 % o	n (a+b+c	+d)		7735.52	
			f) Contractor's profit	t @ 10 % o	n (a+b+c	+d+e)		4641.31	
			g) Cess @ 1% on (a+	b+c+d+e+	f)			510.54	
			Rate per metre = (a+b+c	:+d+e+f+g)			51564.98	
							say	<u>51565.00</u>	
12.20	1200		Pneumatic sinking of specifications worked compression and decomen and plant & mater check valves, exhaust not less than 6 mm thic of hard rock where requirangement for compression of the compression of	by compount by compression ials, arrand valves, show ith suired, stail ession an	petent a n chamb gement f nafts mad stand an a rcases a d decom	nd trained persers, reducers, to or supply of freste from steel plair pressure of 0 nd 1 m wide landression, electric	sonnel and co wo air locks s sh air to working ates of riveted .50 MPa, contro ding plateforms c lighting of 50	omprising of separately for any chambers, construction olled blasting, with railing, V maximum,	

Unit - 1 cum

Taking output = 5 cum

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

8.000

10874.00

86992.00

Item 12.8 (H)

		FOU	FOUNDATIONS							
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.			
		HYSD bar reinforcement in corbel	tonne	0.480	67000.00	32160.00	M-082			
		Blasting material								
		Gelatine 80 per cent	Kg	1.500	166.00	249.00	M-104			
		Electric detonators	each	6.000	11.59	69.54	M-094/100			
		b) Labour								
		Medical Officer	day	0.500	1490.00	745.00	L-16			
		Para medical personnel	day	1.000	869.00	869.00	L-19 L-12			
		Mate Driller	day day	1.860 1.000	551.00 551.00	1024.86 551.00	L-12 L-06			
		Blaster	day	0.500	551.00	275.50	L-03			
		Mazdoor (for cutting, blasting,	day	30.000	424.00	12720.00	L-13			
		cleaning, removal of Material etc.)	uay	00.000	121.00	12120.00				
		Mazdoor (Skilled) (for fixation and removal of adopter for air lock, carrying out mechanical and electrical operations and repairs and other skilled jobs.)	day	10.000	508.00	5080.00	L-15			
		Diver	day	4.000	869.00	3476.00	L-07			
		c) Machinery								
		(i) Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	6.000	input		P&M-082			
		Induction and deinduction	L.S			95000.00				
		Erection at site and commissioning	L.S			145000.00				
		Usage of plant and equipment for pneumatic method of well sinking	hour	6.000	5508.00	33048.00	P&M-038			
		Air compressor 250 cfm, 2 nos.	hour	2 x 6	658.00	7896.00	P&M-001			
		Hire and running charges of crane of 15 tonne capacity	hour	6.000	902.00	5412.00	P&M-072			
		Motorised barge of 20 tonne capacity	hour	6.000	2278.00	13668.00	P&M-066			
		Boat to carry atleast 20 persons	hour	6.000	2278.00	13668.00	P&M-066			
		Electric generating set 33 KVA	hour	6.000	506.00	3036.00	P&M-079			
		Tipper 10 tonne capacity d) GST (multiplying factor 0.20	hour 16) on (a+l	6.000 o+c)	916.00	5496.00 76495.89	P&M-048			
		e) Overhead charges @ 20 % o	n (a+b+c+	d)		91187.96				
		f) Contractor's profit @ 10 % o	n (a+b+c+	d+e)		54712.78				
		g) Cess @ 1% on (a+b+c+d+e+1	•	•		6018.41				
		Cost for 5 cum = $a+b+c+d+e+f+g$ (se		elow)		694850.94				
		Rate per cum = (a+b+c+d+e+f+g)/5		,		138970.19				
		,			say	138970.00				
	N-	4- 4 -1 1								

- Note 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.
 - 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.

		F	OUNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		6.Small equipments like welding pneumatic tools, portable lamp pipes etc., have not been include as items of minor T&P under over 7.Depth of sinking shall be restricted.	os, fire ext ed as the s rhead charg	inguishers, hose ame are covered ges.			
12.21	1207	Sand Filling in Wells complete			al Snecificatio	ne	
		Unit = 1 cum Taking output = 1 cum a) Material Sand (assuming 20 per cent	cum	1.200	650.00	780.00	M-006
		voids) b) Labour					
		Mate	day	0.010	551.00	5.51	L-12
		Mazdoor	day	0.300	424.00	127.20	L-13
		c) GST (multiplying factor 0.2	2016) on (a	+b)		184.00	
		d) Overhead charges @ 20 %	ն on (a+b+c	;)		219.34	
		e) Contractor's profit @ 10 %	on (a+b+c	:+d)		131.61	
		f) Cess @ 1% on (a+b+c+d+	e)			14.48	
		Rate per cum (a+b+c+d+e+f)				1462.14	
		. , ,			say	1462.00	
12.22	1200 & 1900	Providing Steel Liner 10 mm				ning of Wells	
		including Fabricating and Setti	ng out as p	er Detailed Drawi	ng.		
		Unit = 1 MT					
		Taking output = 1 MT					
		a) Material					
		 i) Structural steel including 5 per cent wastage 	tonne	1.050	50728.00	53264.40	M-179
		b) Labour		4.040	== 4 00	000.04	
		Mate Fitter	day	1.240 6.000	551.00 593.00	683.24 3558.00	L-12 L-08
		Blacksmith	day day	5.000	551.00	2755.00	L-01
		Welder	day	5.000	593.00	2965.00	L-02
		Mazdoor	day	10.000	424.00	4240.00	L-13
		Electrodes, cutting gas and other consumables @ 5 per cent on cost a (a) above.				2663.22	
		c) GST (multiplying factor 0.:	2016) on (a	+b)		14137.98	
		d) Overhead charges @ 20 %	6 on (a+b+c	· :)		16853.37	
		e) Contractor's profit @ 10 %	on (a+b+c	;+d)		10112.02	
		f) Cess @ 1% on (a+b+c+d+	•	•		1112.32	
		Rate for per MT (a+b+c+d+e+f)	•			112344.55	
		. , ,			say	112345.00	
12.23	1100 &	Bored cast-in-situ M35 grade	R.C.C. Pile	excluding Rein	forcement co	mplete as per	
	1700	Drawing and Technical Specific lead upto 1000 m.	cations and	d removal of exca	vated earth w	ith all lifts and	
		Pile diameter-750 mm					
		Unit = meter					
		Taking output = 15 m					
		a) Materials		2 222	40005.00	70500 00	11 40.44
		PCC Grade M35	cum	6.620	10965.00	72588.30	Item 12.11 (C) iv
		Rate for concrete may be adopted same as for bottom plug vide ite no. 12.11(C) (IV) Including GST, OH, CP & Cess) Concrete to be cast with a tremie	em (, ,
		pipe 200mm dia.					
		b) Machinery(for boring and construction)					

		FOL	JNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Hire and running charges of hydraulic piling rig with power unit and complete accessories including shifting from one bore location to another.	hour	6.000	10129.00	60774.00	P&M-036
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.500	490.00	245.00	P&M-013
		Hire and running charges of Bentonite pump	hour	6.000	Rate included in piling rig		
		Loader I cum bucket capacity.	hour	0.300	1838.00	551.40	P&M-017
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.300	916.00	274.80	P&M-048
		Bentonite c) Labour	kg	300.000	14.00	4200.00	M-071
		Mate/Supervisor	day	0.140	551.00	77.14	L-12
		Mazdoor	day	3.500	424.00	1484.00	L-13
		d) GST (multiplying factor 0.20	16) on (a	+b+c)		13629.44	
		e) Overhead charges @ 20 % o	on (a+b+c	+d)		16247.16	
		f) Contractor's profit @ 10 % o	on (a+b+c	+d+e)		9748.29	
		g) Cess @ 1% on (a+b+c+d+e+		,		1072.31	
		Cost for 15 m = $a+b+c+d+d+e+f+g$,			180891.84	
		Rate per metre (a+b+c+d+e+f+g)/	15		say	12059.46 12059.00	
		Unit = meter Taking output = 10 m					
		• .					
		a) Materials PCC Grade M35	cum	7.850	10965.00	86075.25	Item 12.1 (C) iv
		Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV) (Including GST, OH, CP & Cess)					, ,
		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	6.000	10129.00	60774.00	P&M-03
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.500	490.00	245.00	P&M-01
		Hire and running charges of Bentonite pump	hour	6.000	Rate included in piling rig		
		Loader I cum bucket capacity.	hour	0.400	1838.00	735.20	P&M-017
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.400	916.00	366.40	P&M-048
		Bentonite c) Labour	kg	350.000	14.00	4900.00	M-071
		Mate/Supervisor	day	0.160	551.00	88.16	L-12

		FC	DUNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Mazdoor	l day	4.000	424.00	1696.00	L-13
		d) GST (multiplying factor 0.2	•		424.00	13871.04	
		, , , , , ,		•		16535.16	
		e) Overhead charges @ 20 %	-	•			
		f) Contractor's profit @ 10 %	•	-a+e)		9921.10	
		g) Cess @ 1% on (a+b+c+d+e	-			1091.32	
		Cost for 10 m = $a+b+c+d+d+e+f+c$	•			196298.63	
		Rate per metre (a+b+c+d+e+f+g)	/10			19629.86	
12.25	1100 & 1700	Bored cast-in-situ M35 grade I Drawing and Technical Specific lead upto 1000 m.					
		Pile diameter-1200 mm					
		Unit = meter Taking output = 9 m					
		a) Materials					
		PCC Grade M35	cum	10.170	10965.00	111514.05	Item 12.11
		Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV) (Including GST, OH, CP & Cess) Concrete to be cast with a tremie pipe 200mm dia.					(C) iv
		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	6.000	10129.00	60774.00	P&M-036
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.500	490.00	245.00	P&M-013
		Hire and running charges of Bentonite pump	hour	6.000	Rate included in piling rig		
		Loader I cum bucket capacity.	hour	0.500	1838.00	919.00	P&M-017
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.500	916.00	458.00	P&M-048
		Bentonite	kg	385.000	14.00	5390.00	M-071
		c) Labour Mate/Supervisor	day	0.180	551.00	99.18	L-12
		Mazdoor	day	4.500	424.00	1908.00	L-13
		d) GST (multiplying factor 0.2				14070.31	
		e) Overhead charges @ 20 %		•		16772.70	
		f) Contractor's profit @ 10 %				10063.62	
				,		1107.00	
		o ,	;+I)				
		Cost for 9 m = a+b+c+d+d+e+f+g	VO.			223320.86	
		Rate per metre (a+b+c+d+e+f+g)	1/9		2014	24813.43	
12.26	1100 & 1700	Driven cast-in-place vertical M3 as per Drawing and & Technical			say ing Reinforcen	24813.00 nent complete	
		Pile diameter - 750 mm					
		Unit = Running meter					
		Taking output = 40 metre					
		• •					
		a) Materials PCC Grade M35	cum	17.660	10965.00	193641.90	Item 12.11 (C) iv

			FOU	NDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV) (Including GST, OH, CP & Cess)					
			b) Materials Pile shoes					
			i) C.I. shoes for the pile ii) M.S. clamps for shoe @ 35 Kg	Kg Kg	160.000 70.000	66.00 257.00	10560.00 17990.00	M-080 M-124
			per pile of 15 m iii) Steel helmet and cushion block on top of casing head during	Kg	50.000	212.00	10600.00	M-173
			driving c) Machinery					
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories	hour	6.000	7335.00	44010.00	P&M-085
			Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	hour	0.500	827.00	413.50	P&M-070
			d) Labour					
			Mate/Supervisor	day	0.120	551.00	66.12	L-12
			Mazdoor	day	3.000	424.00	1272.00	L-13
			e) GST (multiplying factor 0.201		+b+c+d)		17118.18	
			f) Overhead charges @ 20 % or		•		20405.96	
			g) Contractor's profit @ 10 % or	•	•		12243.58	
			h) Cess @ 1% on (a+b+c+d+e+f	+g)	•		1346.79	
			Cost for 40 m = $a+b+c+d+e+f+g+h$				329668.03	
			Rate per metre (a+b+c+d+e+f+g+h)	/40			8241.70	
		Note	1.The quantity of concrete required designed top level of concrete, if ar the rate analysis.			say	<u>8242.00</u>	
12.27	1100 &		2.In case steel lining is included in the in-situ pile and is planned to be retincluded in the rate analysis. In casing used during casting is planted additional cost @ 0.50 per cent of provided to cover its usage. Driven cast-in-place vertical M35 g	ained, thase the ned to cost of o	te same may be temporary steel be removed, an concrete may be	na Reinforcem	ent complete	
	1700		as per Drawing and & Technical S	-		ig itemioreem	ioni complete	
			Pile diameter - 1000 mm					
			Unit = Running meter Taking output = 30 metre a) Materials					
			PCC Grade M35	cum	23.550	10965.00	258225.75	Item 12.11 (C) iv
			Rate for concrete may be adopted same as for bottom plug vide item no. 12.11(C) (IV) (Including GST, OH, CP & Cess)					
			b) Materials Pile shoes					
					400.000	66.00	40500.00	
			i) C.I. shoes for the pile	Kg	160.000	66.00	10560.00	M-080
			i) C.I. shoes for the pile ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg Kg	70.000	257.00	17990.00	M-080 M-124

CHARTER 42

			CHAPTER-1 FOUNDATION				
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		c) Machinery					
		Hire and running charges of pili rig Including double acting pile driving hammer complete with power unit and accessories.	ng hour	6.000	7335.00	44010.00	P&M-085
		Hiring and running charges for crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	•	0.500	827.00	413.50	P&M-070
		Hire and running charges for lig crane for lowering reinforcemer cage.		0.500	490.00	245.00	P&M-013
		d) Labour Mate/Supervisor	day	0.160	551.00	88.16	L-12
		Mazdoor	day	4.000	424.00	1696.00	L-13
		e) GST (multiplying factor	•	+b+c+d)		17257.50	
		f) Overhead charges @ 20	, ,	•		20572.03	
		g) Contractor's profit @ 10	% on (a+b+c	+d+e+f)		12343.22	
		h) Cess @ 1% on (a+b+c+c	l+e+f+g)			1357.75	
		Cost for 30 m = a+b+c+d+e+f+g	g+h			395358.91	
		Rate per metre (a+b+c+d+e+f-	+g+h)/30			13178.63	
					say	<u>13179.00</u>	
	Note	 1.The quantity of concrete requestigned top level of concrete the rate analysis. 					
		2.In case steel lining is included	U				

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.

12.28 1100 & Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification

cum

Pile diameter - 1200 mm

Unit = Running meter

Materials

PCC Grade M35

Taking output = 20 metre

Rate	for	con	cret	e m	nay	be
adopte	ed s	ame	as	for	bot	tom
plug v	ide it	em n	o. 12	2.11(C) (I	V) (
Land Land	:	OT 4	 /	. .	0	٠.

Including GST, OH, CP & Cess) **Materials Pile shoes** b) M-080 160.000 66.00 10560.00 i) C.I. shoes for the pile Kg ii) M.S. clamps for shoe @ 35 Kg M-124 70.000 257.00 17990.00 Kg per pile of 15 m 50.000 212.00 10600.00 M-173 iii) Steel helmet on top of casing Kg head during driving Machinery Hire and running charges of piling 6.000 7335.00 44010.00 P&M-085 hour rig Including double acting pile driving hammer complete with power unit and accessories. 413.50 P&M-070 Hiring and running charges for light 0.500 827.00 crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.

22.610

10965.00

247918.65 Item 12.11

(C) iv

				F(OUNDATION	NS	FOUNDATIONS							
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.					
	-		d)	Labour					ļ					
			•	e/Supervisor	day	0.180	551.00	99.18	L-12					
				door	day	4.500	424.00	1908.00	L-13					
			e)	GST (multiplying factor 0.2	2016) on (a+	-b+c+d)		17253.07						
			f)	Overhead charges @ 20 %		-		20566.75						
			g)	Contractor's profit @ 10 %		•		12340.05						
			h)	Cess @ 1% on (a+b+c+d+e	e+f+g)	•		1357.41						
			Cost	t for 20 m = a+b+c+d+e+f+g+l	h			385016.61						
			Rate	e per metre (a+b+c+d+e+f+g	+h)/20			19250.83						
		Note	1 Th	ne quantity of concrete require	ed to be rem	noved above the	say	<u>19251.00</u>						
			desi	gned top level of concrete, if rate analysis.										
				case steel lining is included i tu pile and is planned to be	Ū									
			inclu	uded in the rate analysis. Ir	n case the	temporary steel								
			addi	ng used during casting is p itional cost @ 0.50 per cent rided to cover its usage.										
12.37	1100			Load Test on single Vertica	al Pile in acc	cordance with IS	:2911(Part-IV)							
			Unit	t = 1 MT										
			Taki	ing output = 1 MT										
			a) In	nitial and routine load test	tonne	1.000	450.00							
			b) La	ateral load test	tonne	1.000	6400.00							
12.38	1100 , 1500	Note	be ii adde	ough, this item is incidental to ncluded in BOQ of contract, ed in the estimate to assess on the Concrete for Reinforce	the same is cost of work.	s required to be	mplete as per	Drawing and						
	& 1700	Δ		hnical Specification C Grade M20										
		^		t = cum										
				ing output = 15 cum										
		(i)		ng Concrete Mixer										
		(-)	a)	Material										
			Cem		tonne	5.120	9100.00	46592.00	M-081					
			- 2 -	rse sand	cum	6.750 8.100	650.00 1900.00	4387.50 15390.00	M-005 M-053					
				nm Aggregate nm Aggregate	cum cum	5.400	1800.00	9720.00	M-051					
			b)	Labour										
			Mate		day	0.900	551.00	495.90	L-12 L-10					
			Mas Maz	on door for concreting	day day	1.500 20.000	551.00 424.00	826.50 8480.00	L-10 L-13					
				door for breaking pile head,	day	1.000	424.00	424.00	L-13					
			bend	ding bars, cleaning etc.	•									
			c) Concum	Machinery crete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009					
				erator (capacity 33 KVA)	hour	6.000	506.00	3036.00	P&M-079					
				mwork @ 4 per cent on cost				3643.92						
			i.e. c	•	bour and									
			d)	GST (multiplying factor 0.2	2016) on (a-	+b+c)		19099.95						
			e)	Overhead charges @ 20 %	on (a+b+c	+d)		22768.35						
			f)	Contractor's profit @ 10 %	on (a+b+c	+d+e)		13661.01						
								1500 71						
			g)	Cess @ 1% on (a+b+c+d+e	e+f)			1502.71						
				Cess @ 1% on (a+b+c+d+e t for 15 cum = a+b+c+d+e+f+g	•			151773.84						
			Cost	•	g									

			F	OUNDATION	3			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.38 A		(ii)	Using Batching Plant, Transit N	lixer and Co	ncrete Pump			
			a) Material					
			Cement	tonne	5.120	9100.00	46592.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-004
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour					
			Mate	day	0.160	551.00	88.16	L-12
			Mason	day	0.380	551.00	209.38	L-10
			Mazdoor for concreting	day	2.500	424.00	1060.00	L-13
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.000	424.00	424.00	L-13
			c) Machinery	hour	0.75	3200.00	2400.00	P&M-002
			Batching Plant @ 20 cum/hour	hour	0.75	3200.00		P&M-080
			Generator 100 KVA	hour		938.00	703.50	P&M-017
			Loader (capacity 1 cum)	hour	0.750	1838.00	1378.50	POWI-UI7
			Transit Mixer (capacity 4.0 cu.m	,	2.25	4005.00	0500.00	P&M-049
			Lead upto 1 Km	hour	2.00	1265.00	2530.00	Lead =0 km
			Lead beyond 1 Km, L - lead in Kilometer	tonne. km	37.5L	80.00	0.00	& P&M-050
			Concrete Pump	hour	0.75	2726.00	2044.50	P&M-007
			Formwork @ 4 per cent on cost i.e. cost of a) Material, b) La c) Machinery	of concrete bour and			3477.10	
			d) GST (multiplying factor 0.	2016) on (a+	b+c)		18225.58	
			e) Overhead charges @ 20 %		•		21726.04	
			f) Contractor's profit @ 10 %	-	•		13035.63	
			g) Cess @ 1% on (a+b+c+d+c	•	u·c,		1433.92	
			Cost for 15 cum = a+b+c+d+e+f+	•			144825.81	
			Rate per metre (a+b+c+d+e+f+g	•			9655.05	
			Nate per metre (a b c u e m g	<i>)</i> / 13		say	9655.00	
12.38		Note B	The value of a, b and c may be ta using concrete mixer or batching RCC Grade M25		cable i.e. either	52,	<u> </u>	
12.50			Unit = cum					
			Taking output = 15 cum					
		(i)	Using Concrete Mixer					
		(-)	a) Material					
			Cement	tonne	5.990	9100.00	54509.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour	oum	0.100	1000.00	0720.00	
			Mate	day	0.900	551.00	495.90	L-12
			Mason	day	1.500	551.00	826.50	L-10
			Mazdoor for concreting	day	20.000	424.00	8480.00	L-13
			•	•				L-13
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.000	424.00	424.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator (capacity 33 KVA)	hour	6.000	506.00	3036.00	P&M-079

			FC	DUNDATIO	NS			
от но м	Ref. to oRTH/ R Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Fo	ormwork @ 4 per cent on cost	of			3960.60	
		COI	ncrete i.e. cost of a) Material,	i				
		b)	Labour and c) Machinery	•				
		d)	GST (multiplying factor 0.2	2016) on (a	+b+c)		20759.86	
		e)	Overhead charges @ 20 %	, ,	•		24747.07	
		f)	Contractor's profit @ 10 %	-	•		14848.24	
		•	. •	•	Ture)		1633.31	
		g)	Cess @ 1% on (a+b+c+d+e	•				
			st for 15 cum = a+b+c+d+e+f+ç	•			164963.98	
		Ra	te per metre (a+b+c+d+e+f+g)/15			10997.60	
12.38B	(i	i) Us	ing Batching Plant, Transit M	ixer and Co	oncrete Pump	say	<u>10998.00</u>	
		a)	Material		-			
		•	ment	tonne	5.990	9100.00	54509.00	M-081
			arse sand	cum	6.750	650.00	4387.50	M-004
			mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			mm Aggregate	cum	5.400	1800.00	9720.00	M-051
		b)	Labour		3.100	. 555.00	5. 20.00	
		Ma		day	0.160	551.00	88.16	L-12
			ason	day	0.380	551.00	209.38	L-10
			azdoor for concreting	day	2.500	424.00	1060.00	L-13
			azdoor for breaking pile head,	day	1.000	424.00	424.00	L-13
		be	nding bars, cleaning etc.	,				
		c)	Machinery	L	0.75	2222 22	0400.00	P&M-002
			tching Plant @ 20 cum/hour	hour	0.75	3200.00	2400.00	P&M-018
			enerator 125 KVA	hour	0.75	1135.00	851.25	P&M-017
			ader (capacity 1 cum) ansit Mixer (capacity 4.0 cu.m)	hour	0.750	1838.00	1378.50	POINI-U17
		Le	ad upto 1 Km	hour	2.00	1265.00	2530.00	P&M-049
			ad beyond 1 Km, L - lead in ometer	tonne. km	37.5L	80.00	0.00	Lead =0 kn & P&M-050
			ncrete Pump	hour	0.75	2726.00	2044.50	P&M-007
			ormwork @ 4 per cent on cost		55	2,20,00	3799.69	
			ncrete i.e. cost of a) Material, Labour and c) Machinery	1			3733.00	
		d)	GST (multiplying factor 0.2	2016) on (a	+b+c)		19916.46	
		e)	Overhead charges @ 20 %				23741.69	
		f)	Contractor's profit @ 10 %		•		14245.01	
		g)	Cess @ 1% on (a+b+c+d+e	•	- ,		1566.95	
			st for 15 cum = a+b+c+d+e+f+c	•			158262.09	
			te per metre (a+b+c+d+e+f+q	•			10550.81	
		110	to per metre (a.p.o.a.e.r.g	,, 10		say	<u>10551.00</u>	
	No		e value of a, b and c may be to ing concrete mixer or batching p		olicable i.e. either	Suy	70007.00	
12.38	C		C Grade M30					
		Un	nit = cum					
			king output = 15 cum					
	/i		ing Concrete Mixer					
	(,	, os a)	•					
		•	ment	tonne	6.100	9100.00	55510.00	M-081
			arse sand	cum	6.750	650.00	4387.50	M-005
			mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			mm Aggregate		5.400	1800.00	9720.00	M-051
				cum	5.400	1000.00	9120.00	. 11 -051
		b) Ma	Labour	day	0.900	551.00	495.90	L-12
			ason	•	1.500	551.00	826.50	L-10
		IVIC	13011	day	1.500	331.00	020.30	•

				FOL	JNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Maz	door for concreting	day	20.000	424.00	8480.00	L-13
				door for breaking pile head,	day	1.000	424.00	424.00	L-13
			bend	ding bars, cleaning etc.	day	1.000	121.00	12 1.00	
			Concum	Machinery crete mixer (cap. 0.40/0.28)	hour	6.000	291.00	1746.00	P&M-009
			For	erator (capacity 33 KVA) mwork @ 4 per cent on cost of crete i.e. cost of a) Material, Labour and c) Machinery	hour	6.000	506.00	3036.00 4000.64	P&M-079
				GST (multiplying factor 0.20 Overhead charges @ 20 % o Contractor's profit @ 10 % o Cess @ 1% on (a+b+c+d+e+ for 15 cum = a+b+c+d+e+f+g	on (a+b+con (a+b+con (a+b+con f)	+d)		20969.73 24997.25 14998.35 1649.82 166631.69	
			Rate	per metre (a+b+c+d+e+f+g)/1	15			11108.78	
12.38C		(ii)	Hein	ng Batching Plant, Transit Mix	or and Co	neroto Pumn	say	<u>11109.00</u>	
12.300		(11)			ei allu oc	nicrete Fullip			
			a) Cem	Material	tonne	6.100	9100.00	55510.00	M-081
				rse sand		6.750	650.00	4387.50	M-004
					cum				M-053
				nm Aggregate	cum	8.100	1900.00	15390.00	M-053
				nm Aggregate	cum	5.400	1800.00	9720.00	WI-031
			b)	Labour	4	0.400	FF4.00	00.40	L-12
			Mate		day	0.160	551.00	88.16	
			Mas		day	0.380	551.00	209.38	L-10
				door for concreting	day	2.500	424.00	1060.00	L-13
				door for breaking pile head, ling bars, cleaning etc.	day	1.000	424.00	424.00	L-13
			c)	Machinery					
			Bato	hing Plant @ 20 cum/hour	hour	0.75	3200.00	2400.00	P&M-002
			Gen	erator 100 KVA	hour	0.75	938.00	703.50	P&M-080
			Load	der (capacity 1 cum)	hour	0.750	1838.00	1378.50	P&M-017
			Tran	sit Mixer(capacity 4.0 cu.m)					
			Lead	d upto 1 Km	hour	2.00	1265.00	2530.00	P&M-049
				d beyond 1 Km, L - lead in meter	tonne. km	37.5L	80.00	0.00	Lead =0 km & P&M-050
			Con	crete Pump	hour	0.75	2726.00	2044.50	P&M-007
				mwork @ 4 per cent on cost of crete i.e. cost of a) Material, Labour and c) Machinery				3833.82	
			۹/	GST (multiplying factor 0.20	16) on (a	thtc)		20095.36	
			d) e)	Overhead charges @ 20 % c		•		23954.94	
			f)	Contractor's profit @ 10 % o	-	•		14372.97	
			g)	Cess @ 1% on (a+b+c+d+e+	•			1581.03	
				for 15 cum = a+b+c+d+e+f+g	•,			159683.66	
				per metre (a+b+c+d+e+f+g)/1	15			10645.58	
				,	-		say	10646.00	
12.38			usin	value of a, b and c may be tak g concrete mixer or batching pla c Grade M35		licable i.e. either	Í		
			Taki	r = <mark>cum</mark> ing output = 15 cum					
		(i)		ng Concrete Mixer					
			a) Cem	Material	tonne	6.330	9100.00	57603.00	M-081
			Cen	ient	tonne	0.330	9100.00	57003.00	001

				FO	UNDATION	15			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Coa	rse sand	cum	6.750	650.00	4387.50	M-005
				nm Aggregate	cum	8.100	1900.00	15390.00	M-053
				nm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b)	Labour					
			Mate		day	0.900	551.00	495.90	L-12
			Mas	on	day	1.500	551.00	826.50	L-10
			Maz	door	day	20.000	424.00	8480.00	L-13
				door for breaking pile head, ding bars, cleaning etc.	day	1.000	424.00	424.00	L-13
			c)	Machinery					
			Con	crete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			Gen	erator (capacity 33 KVA)	hour	6.000	506.00	3036.00	P&M-079
				mwork @ 4 per cent on cost o crete i.e. cost of a) Material, Labour and c) Machinery	f			4084.36	
			d)	GST (multiplying factor 0.20	016) on (a-	+b+c)		21408.56	
			e)	Overhead charges @ 20 %		•		25520.36	
			f)	Contractor's profit @ 10 %		•		15312.22	
			g)	Cess @ 1% on (a+b+c+d+e-	•	- u · o,		1684.34	
				for 15 cum = a+b+c+d+e+f+g	•••			170118.74	
				per metre (a+b+c+d+e+f+g)/	15			11341.25	
			itate	per metre (a.b.c.a.e.r.g)	10		say	11341.00	
12.38D		(ii)	Usir	ng Batching Plant, Transit Mix	xer and Co	ncrete Pump	ouy	11011100	
			a)	Material					
			Cem	nent	tonne	6.330	9100.00	57603.00	M-081
			Coa	rse sand	cum	6.750	650.00	4387.50	M-004
			20 m	nm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 m	nm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b)	Labour					
			Mate	e	day	0.160	551.00	88.16	L-12
			Mas	on	day	0.380	551.00	209.38	L-10
			Maz	door for concreting	day	2.500	424.00	1060.00	L-13
				door for breaking pile head, ding bars, cleaning etc.	day	1.000	424.00	424.00	L-13
			c)	Machinery					
			Bato	hing Plant @ 20 cum/hour	hour	0.750	3200.00	2400.00	P&M-002
			Gen	erator 125 KVA	hour	0.750	1135.00	851.25	P&M-018
				der (capacity 1 cum) sit Mixer (capacity 4.0 cu.m)	hour	0.750	1838.00	1378.50	P&M-017
			Lead	d upto 1 Km	hour	2.000	1265.00	2530.00	P&M-049
				d beyond 1 Km, L - lead in meter	tonne. km	37.5L	80.00	0.00	Lead =0 km & P&M-050
			For	crete Pump mwork @ 4 per cent on cost o crete i.e. cost of a) Material, b) our and c) Machinery	hour f	0.750	2726.00	2044.50 3923.45	P&M-007
			d)	GST (multiplying factor 0.20	016) on (a-	+b+c)		20565.16	
			e)	Overhead charges @ 20 %		•		24514.98	
			f)	Contractor's profit @ 10 %	•	•		14708.99	
			٠.	Cess @ 1% on (a+b+c+d+e-	•	· u · e)		1617.99	
			g)	for 15 cum = a+b+c+d+e+f+g	•••			163416.86	
				· ·	4.5				
			Kate	e per metre (a+b+c+d+e+f+g)/	15			10894.46	
12.39	1100 &		Leve	elling Course for Pile cap			say	<u>10894.00</u>	
	1700			riding and laying of PCC M15	i levelling	course 100mm th	nick below the	pile cap.	

Unit = cum

Taking output = 15 cum

Sr No				OUNDATION	<u> </u>			
	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		a)	Material					
		Cem	nent	tonne	4.130	9100.00	37583.00	M-081
		Coa	rse sand	cum	6.750	650.00	4387.50	M-005
			nm aggregate	cum	8.100	1900.00	15390.00	M-055
			nm Aggregate	cum	4.050	1900.00	7695.00	M-053
			nm Aggregate	cum	1.350	1800.00	2430.00	M-051
		b) Mate	Labour	day	0.000	FF1 00	472.06	L-12
		Mas		day	0.860	551.00 551.00	473.86	L-12
			door	day day	1.500 20.000	551.00 424.00	826.50 8480.00	L-13
		c)	Machinery	uay	20.000	424.00	0400.00	0
		•	crete mixer (cap. 0.40/0.28	hour	6.000	291.00	1746.00	P&M-009
			erator 33 KVA	hour	6.000	506.00	3036.00	P&M-07
		d)	GST (multiplying factor 0.	.2016) on (a+			16540.85	
		e)	Overhead charges @ 20 %		•		19717.74	
		f)	Contractor's profit @ 10 %	•	•		11830.65	
			. •	•	u+e)			
		g)	Cess @ 1% on (a+b+c+d+	-			1301.37	
			t for 15 cum = a+b+c+d+e+f+	•			131438.47	
		Rate	e per metre (a+b+c+d+e+f+g	g)/15			8762.56	
	1600	_				say	<u>8763.00</u>	
12.40	1000		pplying, Fitting and Placin pplete as per Drawing and T			inforcement i	n Foundation	
		Taki a)	t = 1 MT ing output = 1 MT Material SD bars including5 per cent	tonne	1.050	67000.00	70350.00	M-082
		over	rlaps and wastage					M 070
			ding wire	Kg	6.000	105.00	630.00	M-072
			abaur for autting bandin					
		shif	Labour for cutting, bendin ting to site, tying and placion osition	•				
		shif	ting to site, tying and placi osition	•	0.400	551.00	220.40	L-12
		shift in po Mate	ting to site, tying and placi osition	ng	0.400 2.000	551.00 593.00	220.40 1186.00	L-12 L-02
		shift in po Mate Blace	ting to site, tying and placionsition	day				
		shift in po Mate Blace	ting to site, tying and placionsition e cksmith	day day day day	2.000 6.000	593.00	1186.00	L-02
		shift in po Mate Blac Maz	iting to site, tying and placionsition e cksmith cdoor	day day day day .2016) on (a+l	2.000 6.000	593.00	1186.00 2544.00	L-02
		shiff in po Mate Blac Maz c) d)	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 %	day day day 2016) on (a+1 % on (a+b+c)	2.000 6.000 b)	593.00	1186.00 2544.00 15105.97 18007.27	L-02
		shiff in po Mate Blac Maz c) d)	ting to site, tying and placinosition cksmith tdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 %	day day day .2016) on (a+l % on (a+b+c) % on (a+b+c+	2.000 6.000 b)	593.00	1186.00 2544.00 15105.97 18007.27 10804.36	L-02
		shiff in post Mate Blace Maz c) d) e)	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+	day day day .2016) on (a+l % on (a+b+c) % on (a+b+c+	2.000 6.000 b)	593.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48	L-02
		shiff in post Mate Blace Maz c) d) e)	ting to site, tying and placinosition cksmith tdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 %	day day day .2016) on (a+l % on (a+b+c) % on (a+b+c+	2.000 6.000 b)	593.00 424.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48	L-02
42.44	1600	shiff in property	ting to site, tying and placinosition e cksmith tdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f	day day day .2016) on (a+l % on (a+b+c) % on (a+b+c+	2.000 6.000 b)	593.00 424.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48	L-02 L-13
12.41	1600	shiff in promote Mater Black Maz c) d) e) f) Cost	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+	day day day .2016) on (a+b % on (a+b+c+ % on (a+b+c+ e)	2.000 6.000 b) d)	593.00 424.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48	L-02 L-13
12.41	1600	shiff in promote Mate Black Maz c) d) e) f) Cost	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT	day day day .2016) on (a+b % on (a+b+c+ % on (a+b+c+ e)	2.000 6.000 b) d)	593.00 424.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48	L-02 L-13
12.41	1600	shiff in promote Mater Black Maz c) d) e) f) Cost	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f cplying, fitting and placinodation as per drawing and t = 1 MT	day day day .2016) on (a+b % on (a+b+c+ % on (a+b+c+ e)	2.000 6.000 b) d)	593.00 424.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48	L-02 L-13
12.41	1600	shiff in promote Mater Black Maz c) d) e) f) Cost	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT Material bars including 5 per cent	day day day .2016) on (a+b+c) % on (a+b+c+ e) ng un-coated technical sp	2.000 6.000 b) d) d Mild steel recification	593.00 424.00 say reinforcement	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48 120036.48 complete in	L-02 L-13
12.41	1600	shiff in promote the state of t	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT Material bars including 5 per cent rlaps and wastage	day day day (2016) on (a+b+c) on (a+b+c+e) g un-coated technical sp tonne Kg	2.000 6.000 b) d) d Mild steel recification	\$93.00 424.00 say reinforcement	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48 120036.48 complete in	L-02 L-13 M-126
12.41	1600	shiff in promote the state of t	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT Material bars including 5 per cent rlaps and wastage ting wire Labour for straightening, bending, shifting to site g and placing in position	day day day (ay 2016) on (a+b+c) on (a+b+c+ e) g un-coated technical sp tonne Kg ng, te,	2.000 6.000 b) d) d Mild steel recification	\$93.00 424.00 say reinforcement 67000.00 105.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48 120036.48 complete in	L-02 L-13 M-126
12.41	1600	shiff in promote Mater Black Maz c) d) e) f) Cost Sup four Unit Take a) MS (over Bind b) cutt tying	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT Material bars including 5 per cent rlaps and wastage ting wire Labour for straightening, bending, shifting to site g and placing in position	day day day (ay (ay (ay (ay (ay (a+b+c)) (an (a+b+c+c) (an (a+b+c+c) (ang un-coated technical sp (bnne) (bnne) (conne)	2.000 6.000 b) d) d Mild steel recification	\$93.00 424.00 say reinforcement	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48 120036.48 complete in	L-02 L-13 M-126 M-072
12.41	1600	shiff in promote Materials and Mazer Construction of the Mazer Constru	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT Material bars including 5 per cent rlaps and wastage ding wire Labour for straightening, bending, shifting to site g and placing in position e cksmith	day day day day 2016) on (a+b+c) on (a+b+c+ e) tonne Kg ng, te, day day day	2.000 6.000 b) d) d Mild steel recification 1.050 6.000	\$93.00 424.00 say reinforcement 67000.00 105.00 551.00 593.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48 120036.48 complete in	L-02 L-13 M-126 M-072
12.41	1600	shiff in promote Materials and Mazer Construction of the Mazer Constru	ting to site, tying and placinosition e cksmith cdoor GST (multiplying factor 0. Overhead charges @ 20 % Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+ t per MT = a+b+c+d+e+f oplying, fitting and placinodation as per drawing and t = 1 MT ing output = 1 MT Material bars including 5 per cent rlaps and wastage ding wire Labour for straightening, bending, shifting to site g and placing in position	day day day day 2016) on (a+b+c) on (a+b+c+ e) ung un-coater technical sp tonne Kg ng, te, day day day day day	2.000 6.000 b) d) d Mild steel recification 1.050 6.000	\$93.00 424.00 say reinforcement 67000.00 105.00	1186.00 2544.00 15105.97 18007.27 10804.36 1188.48 120036.48 120036.48 complete in	L-02 L-13 M-126 M-072 L-12 L-02

		FOUI	NDATIONS	<u> </u>			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		e) Contractor's profit @ 10 % or	(3+b+c+c			10858.69	
			ı (a.p.c.c	')		1194.46	
		, , ,				120640.08	
		Rate for per MT (a+b+c+d+e+f)			say	<u>120640.00</u>	
12.42	1900	Providing and Installation of Ste Structural Steel including weldin detailed drawing and specification charge	g of join	ts, fabrication	of Shoe, Cap	etc, as per	
		Unit= 1.00 MT					
		Analysis bas on ISWB 600, upto 40 metre depth					
		 a) Material Corrosion resistant structural steel Gusset plates welded for joints, shoe / cap arrangement. 	tonne	0.390	71000.00	27690.00	M-087
		Fabrication and placing in position charges for Corrosion resistant structural steel Gusset plates welded for joints, shoe / cap arrangement at site of work.	tonne	0.390	75409.00	29409.51	Rate in item 12.10 less Input M-179
		Corrosion resistant structural steel ISWB 600	tonne	5.800	71000.00	411800.00	M-087
		Fabrication and placing in position charges for corrosion resistant structural steel ISWB 600 at site of work.	tonne	5.800	75409.00	437372.20	Rate in item 12.10 less Input M-179
		b) Materials for Pile shoes					
		Steel helmet and cushion block on top of casing head during driving.	Kg	50.000	212.00	10600.00	M-173
		c) Machinery					
		Hire and running charges of pilling rig including double acting pile driving hammer complete with power unit and accessories.	Hour	6.000	7335.00	44010.00	P&M-085
		Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	Hour	0.500	827.00	413.50	P&M-070
		d) Labour					
		Mate / Supervisor		0.180	551.00	99.18	L-12
		Mazdoor		4.500	424.00	1908.00	L-13
		e) GST (multiplying factor 0.201	6) on (b+c	+d)		11497.39	
		f) Overhead charges @ 20 % or	n (b+c+d+e	e)		13705.61	
		g) Overhead charges @ 20 % or	n (b+c+d+e	e+f)		8223.37	
		h) Cess @ 1% on (b+c+d+e+f+g))			9967.29	
		Cost for 40.00 metre $(0.39 + 5.80) =$ = a + b + c + d + e + f + g + h	6.194 MT		Per 6.194 MT	1006696.05	
		Rate per metre (a+b+c+d+e+f+g+h)/(0.394+5.8	0)	Per 1.00 MT	162527.62	
					Say	162528.00	

Chapter - 13

SUBSTRUCTURE

Preamble:

- Although, substructure are generally constructed in cement concrete, the rate for brick and stone masonry in CM 1:3 have also been included which can be adopted permitted by design.
- 2 The cost of formwork will vary with the height and cross-section of the substructure. Provision has been made accordingly.
- 3 Bridge bearing, being commercial item produced by specialised firms with imported technology and parts, the rates for the same are ascertained by quotation from the market for the approved design and technical specifications.
- 4 Filter media and backfilling behind abutment are required to be provided as per guidelines in IRC:78- 2000.
- 5 Weep holes shall be provided as per specifications.
- 6 In case of roller-cum-rocker bearings, only full circular rollers are to be provided.
- 7 Bearing shall be set truly level so as to have full and even seating.
- 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.
- 9 The bearing should be procured only from those manufacturers who have been prequalified by the Ministry of Road Transport and Highways.
- 10 The bottoms of girders resting on the bearing shall be plane and truly horizontal.
- 11 For spans in garde, the bearing shall be placed horizontal by using sole plates for suitbly designed RCC pedestals.

		SUB-STRUC	TURE			1	
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
13.1	1300 &	Brick masonry work in 1:3 in sub-s		-	excluding	pointing and	
	2200	plastering, as per drawing and Technic	al Speci	fications			
		Unit = cum					
		Taking output = 1 cum					
		a) Material Bricks Ist class	each	500.000	12.00	6000.00	M-079
		Cement mortar 1:3 (Rate as in Item	cum	0.240	5727.00	1374.48	Item 12.6
		12.6 A sub-analysis) (Excluding GST,OH,CP &Cess)		5.2.10	5.27.50	.57 1.70	(A)
		b) Labour					
		Mate	day	0.060	551.00	33.06	L-12
		Mason	day	0.800	593.00	474.40	L-11
		Mazdoor	day	0.800	424.00	339.20	L-13
		Add for scaffolding @ 5 per cent of cost of material and labour				411.06	
		c) GST (multiplying factor 0.2016) or	า (a+b)			1740.25	
		d) Overhead charges @ 20 % on (a+				2074.49	
		e) Contractor's profit @ 10 % on (a+	-			1244.69	
		f) Cess @ 1% on (a+b+c+d+e)	-			136.92	
		Rate per cum (a+b+c+d+e+f)				13828.55	
					say	13829.00	
13.2	1300 &	Pointing with cement mortar (1:3) on	brick wo	ork in subs	•		
	2200	Specifications					
		Unit = 10 sqm					
		Taking output = 10 sqm					
		a) Material	_	0.000	F707.00	474.01	Item 12.6
		Cement mortar 1:3 (Rate as in Item 12.6)(Excluding GST,OH,CP &Cess)	cum	0.030	5727.00	171.81	(A)
		b) Labour					
		Mate	day	0.040	551.00	22.04	L-12
		Mason	day	0.500	593.00	296.50	L-11
		Mazdoor	day	0.500	424.00	212.00	L-13
		c) GST (multiplying factor 0.2016) or				141.59	
		d) Overhead charges @ 20 % on (a+				168.79	
		e) Contractor's profit @ 10 % on (a+	b+c+d)			101.27	
		f) Cess @ 1% on (a+b+c+d+e)				11.14	
		Rate per 10 sqm (a+b+c+d+e+f)				1125.14	
	Note	Scaffolding is already included in item 13.	.1		say	<u>112.50</u>	
13.3	1300 & 2200	Plastering with cement mortar (1:3 Technical Specifications) on b	rick work	in sub-stru	icture as per	
		Unit = 10 sqm					
		Taking output = 10 sqm					
		a) Material	01177	0.444	E707.00	004.60	Item 12.6
		Cement mortar 1:3 (Rate as in Item 12.6) (Excluding GST,OH,CP &Cess) b) Labour	cum	0.144	5727.00	824.69	(A)
		Mate	day	0.040	551.00	22.04	L-12
		Mason	day	0.500	593.00		L-11
		Mazdoor	day	0.500	424.00		L-13
		c) GST (multiplying factor 0.2016) or	า (a+b)			273.21	
		d) Overhead charges @ 20 % on (a+	b+c)			325.69	
		e) Contractor's profit @ 10 % on (a+	b+c+d)			195.41	
		f) Cess @ 1% on (a+b+c+d+e)				21.50	
		Rate per 10 sqm (a+b+c+d+e+f)				2171.04	
					say	<u>217.10</u>	

			SUB-STRU	CTURE	 		Г	, , , ,
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	Note		 Scaffolding is already included in item The number of masons and Mazdoor the cement mortar have been taken providing these categories in brick maplastering. 	s already into acc	ount while			
13.4	1400 & 2200		Stone masonry work in cement modrawing and Technical Specifications		for subst	ructure com	plete as per	•
		A	Random Rubble Masonry (coursed/uncoursed) Unit = cum Taking output = 1 cum a) Material					
			Stone	cum	1.000	605.00	605.00	M-148
			Through and bond stone	No	7.000	15.00	105.00	M-182
			(7no.x0.24mx0.24mx0.39m = 0.16 cu.m)					
			Cement mortar 1:3 (Rate as in Item 12.6) (Excluding GST,OH,CP &Cess)	cum	0.330	5727.00	1889.91	Item 12.6 (A)
			b) Labour		0.400	554.00	55.40	L-12
			Mate Mason	day day	0.100 1.200	551.00 593.00	55.10 711.60	L-12 L-11
			Mazdoor	day	1.200	424.00	508.80	L-13
			Add for scaffolding @ 5 per cent of cost of a) Material and b) Labour	day	1.200	424.00	193.77	
			c) GST (multiplying factor 0.2016) of	n (a+b)			820.35	
			d) Overhead charges @ 20 % on (a-				977.91	
			e) Contractor's profit @ 10 % on (a-				586.74	
			f) Cess @ 1% on (a+b+c+d+e)				64.54	
			Rate per cum (a+b+c+d)				6518.72	
			Kate per cuin (a+b+c+u)					
13.4		В	Coursed rubble masonry (first sort)			say	<u>6519.00</u>	
			Unit = cum					
			Taking output = 1 cum a) Material					
			Stone	cum	1.100	605.00	665.50	M-148
			Through and bond stone (7no.x0.24mx0.24mx0.39m = 0.16 cu.m)	each	7.000	15.00	105.00	M-182
			Cement mortar 1:3 (Rate as in Item 12.6) (Excluding GST,OH,CP &Cess)	cum	0.300	5727.00	1718.10	Item 12.6 (A)
			b) Labour					
			Mate	day	0.120	551.00	66.12	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	1.500	424.00	636.00	L-13
			Add for scaffolding @ 5 per cent of cost of material and labour				204.01	
			c) GST (multiplying factor 0.2016) od d) Overhead charges @ 20 % on (a-e) Contractor's profit @ 10 % on (a-f) Cess @ 1% on (a+b+c+d+e) Rate per cum (a+b+c+d+e+f)	+b+c)			863.70 1029.59 617.75 67.95 6863.22	
13.4		_	Ashlar masonry / first sort \			say	<u>6863.00</u>	
13.4		C	Ashlar masonry (first sort) Plain ashlar					
			Unit = cum					
			Taking output = 1 cum					

	1	1	SUB-STRUCT	UKE	,	Т		
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•		a) Material			Į.		
			Stone	cum	1.110	605.00	671.55	M-169
			Through and bond stone	each	7.000	15.00	105.00	M-182
			(7no.x0.24mx0.24mx0.39m = 0.16 cu.m)					
			Cement mortar 1:3 (Rate as in Item	cum	0.330	5727.00	1889.91	Item 12.6
			12.6) (Excluding GST,OH,CP					(A)
			&Cess)					
			b) Labour for masonry work					
			Mate	day	0.200	551.00	110.20	L-12 L-11
			Mason	day	2.500	593.00	1482.50	L-11
			Mazdoor	day	2.500	424.00	1060.00	L-13
			Add for scaffolding @ 5 per cent of cost of a) Material and b)				265.96	
			Labour					
			c) GST (multiplying factor 0.2016) on ((a+h)			1125.96	
			d) Overhead charges @ 20 % on (a+b+				1342.22	
			e) Contractor's profit @ 10 % on (a+b+				805.33	
				c+u)				
			f) Cess @ 1% on (a+b+c+d+e)				88.59	
			Rate per cum (a+b+c+d+e+f)				8947.22	
	Nata		The leber of the second in the second	4		say	<u>8947.00</u>	
	Note		The labour already considered in the cen					
			been taken into account while providing the stone masonry works.	ese ca	negones in			
13.5	1500,		,	ıb-stru	cture comi	olete as per o	drawing and	
	Plain/Reinforced cement concrete in sub-structure complete as per drawing an Technical Specifications							
			Unit = cum					
			Taking output = 1 cum					
		Δ	PCC Grade M15					
			Height upto 5m					
		(P)	• .					
			Same as Item 12.8 (A) upto 5 m height, of formwork which shall be 10 per cent in					
			of 4 per cent of cost of material, labou					
			machinery.	ii uiiu				
			Per Cum Basic Cost of Labour, Mate	rial &			5625.00	Item 12.8
			Machinery (a+b+c) of Item 12.8 (A) (Exc				0020.00	(A)
			GST,OH,CP &Cess)	3				
			d) formwork					
			Add 10 per cent of cost of material,		10.000		562.50	
			labour and machinery (a+b+c) for					
			Formwork					
			e) GST (multiplying factor 0.2016) on (a+b+c	:+d)		1247.40	
			f) Overhead charges @ 20 % on (a+b+		-		1486.98	
			g) Contractor's profit @ 10 % on (a+b-		•		892.19	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	'	- - ,		98.14	
			Rate perm (a+b+c+d+e+f+g+h)				9912.21	
			point (a. b. o. a. o. i. g. ii)			621/	9912.21 9912.00	
13.5		R	PCC Grade M20			say	3312.00	
. 5.5								
		(p)	Height upto 5m					

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

(Excluding GST,OH,CP

12.8 (B)

&Cess)

Same as Item 12.8 (B) PCC upto 5 m height, except for formwork which shall be 10 per

6090.00 Item 12.8 (B) PCC

	SUB-STRUCTURE			
Sr No Ref. to MoRTH.	Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	d) formwork Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork)	609.00	
	e) GST (multiplying factor 0.2016) on (a+b+c+d)		1350.52	
	f) Overhead charges @ 20 % on (a+b+c+d+e)		1609.90	
	g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		965.94	
	h) Cess @ 1% on (a+b+c+d+e+f+g)		106.25	
	Rate perm (a+b+c+d+e+f+g+h)		10731.61	
	Kate periii (a+b+C+u+e+i+g+ii)	201		
13.5	C PCC Grade M25	say	<u>10732.00</u>	
	(p) Height upto 5m Same as Item 12.8 (D) upto 5 m height with the only char work shall be 10 per cent instead of 3.75 per cent of machinery. Case Using concrete Mixer	-		
	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case I (excluding GST,OH,CP &Cess) d) formwork		6594.00	Item 12.8 (D) Case I
	Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork)	659.40	
	e) GST (multiplying factor 0.2016) on (a+b+c+d)		1462.29	
	f) Overhead charges @ 20 % on (a+b+c+d+e)		1743.14	
	g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1045.88	
	h) Cess @ 1% on (a+b+c+d+e+f+g)		115.05	
	Rate perm (a+b+c+d+e+f+g+h)		11619.76	
	Nate perm (a · b · c · a · c · i · g · ii)	say	<u>11620.00</u>	
13.5 C (p)	$_{\rm II}^{\rm Case}$ 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 (excluding GST,OH,CP &Cess) d) formwork		6297.00	Item 12.8 (D) Case II
	Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork)	629.70	
	e) GST (multiplying factor 0.2016) on (a+b+c+d)		1396.42	
	f) Overhead charges @ 20 % on (a+b+c+d+e)		1664.62	
	g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		998.77	
	h) Cess @ 1% on (a+b+c+d+e+f+g)		109.87	
	Rate perm (a+b+c+d+e+f+g+h)		11096.38	
	3 /	say	11096.00	
13.5 C	(q) Height 5m to 10m Same as Item 12.8 (D) with the following changes: (i) Add 2 Labour and machinery excluding form work to cater for extra work shall be 12 per cent instead of 3.75 per cent of machinery	2 per cent of co	st of material	1
	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (D) Case I (Excluding GST,OH,CP &Cess)		6594.00	Item 12.8 (D) Case I
	d) formwork Add 12 per cent of cost of material, 12.000 labour and machinery (a+b+c) for Formwork)	791.28	

Sr No Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
<u> </u>		Add 2 per cent of cost of material,		2.000		131.88	
		Labour and machinery excluding formwork to cater for extra lift					
	e)	GST (multiplying factor 0.2016) on	ı (a+b+c [.]	+d)		1515.46	
	f)	Overhead charges @ 20 % on (a+b	o+c+d+e)		1806.52	
	g)	Contractor's profit @ 10 % on (a+l	b+c+d+e	+f)		1083.91	
	h)	Cess @ 1% on (a+b+c+d+e+f+g)				119.23	
	Ra	ate perm (a+b+c+d+e+f+g+h)				12042.28	
					say	<u>12042.00</u>	
3.5 C (q)	II	ith Batching Plant, Transit Mixer and		e Pump		2227.00	
	Ma (E	er Cum Basic Cost of Labour, Mat achinery (a+b+c) of Item 12.8 (D) xcluding GST,OH,CP &Cess)				6297.00	
	d)	formwork		40.000		755.04	
		Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		755.64	
		Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.000		125.94	
	e)	GST (multiplying factor 0.2016) on	(a+b+c+	·d)		1447.20	
	f)	Overhead charges @ 20 % on (a+b	+c+d+e)			1725.16	
	g)	Contractor's profit @ 10 % on (a+b	+c+d+e	⊦f)		1035.09	
	L\	Cess @ 1% on (a+b+c+d+e+f+g)				113.86	
	h)	3,					
	,	ate perm (a+b+c+d+e+f+g+h)				11499.89	
3.5 C	(r) He	eight above 10m Imme as Item 12.8 (D) with the following bour and machinery excluding form wor	k to cate	r for extra l	ift. (ii) The pro	11500.00 st of material vision of form	, 1
	(r) He Sa lal wo	eight above 10m Imme as Item 12.8 (D) with the following bour and machinery excluding form work shall be 15 per cent instead of 3 achinery.	k to cate	r for extra l	per cent of co	11500.00 st of material vision of form	, 1
	(r) He Sa lal wo ma	eight above 10m Imme as Item 12.8 (D) with the following oour and machinery excluding form work shall be 15 per cent instead of 3 achinery. Sing concrete Mixer	k to cate 3.75 per	r for extra l	per cent of co	11500.00 st of material vision of form II, labour and	, 1 1
	(r) He Sa lal wo ma Case Us Pe Mi	eight above 10m Imme as Item 12.8 (D) with the following abour and machinery excluding form work shall be 15 per cent instead of 3 achinery. Immediately achinery concrete Mixer Immediately achinery (a+b+c) of Item 12.8 (D) accluding GST,OH,CP &Cess)	k to cate 3.75 per terial &	r for extra l	per cent of co	11500.00 st of material vision of form	, 1 1
	(r) He Sa lal wo ma Case Us Pe Mi	eight above 10m Imme as Item 12.8 (D) with the following abour and machinery excluding form work shall be 15 per cent instead of 3 achinery. Imme as Item 12.8 (D) with the following abour and machinery excluding form work shall be 15 per cent instead of 3 achinery. Imme as Item 12.8 (D) with the following achinery. Imme as Item 12.8 (D) with the following achinery (a+b+c) of Item 12.8 (D) accluding GST,OH,CP &Cess) Imme for a significant for a significa	k to cate 3.75 per terial &	r for extra l	per cent of co	11500.00 st of material vision of form II, labour and	, , , , , , , , , , , , , , , , , , ,
	(r) He Sa lal wo ma Case Us Pe Mi	sight above 10m sight above 10	k to cate 3.75 per terial &	r for extra li cent of co	per cent of co	11500.00 st of material vision of form II, labour and 6594.00	, I Item 12.8 (D) Case I
	(r) He Sa lal wo ma Case Us Ma (E d)	sight above 10m Imme as Item 12.8 (D) with the following abour and machinery excluding form work shall be 15 per cent instead of 3 achinery. Sing concrete Mixer For Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift	k to cate 3.75 per terial & Case I	r for extra licent of co	per cent of co	11500.00 st of material vision of form II, labour and 6594.00 989.10 263.76	, I Item 12.8 (D) Case I
	(r) He Sa lal wo ma Case Us Pe M: (E d)	sight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of 3 achinery. Sing concrete Mixer Fr Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on	k to cate 3.75 per terial & Case I	r for extra licent of co	per cent of co	11500.00 st of material vision of form II, labour and 6594.00 989.10 263.76	Item 12.8 (D) Case I
	(r) He Sa lal wom: Case Us Pe M: (E d)	sight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of achinery. Sing concrete Mixer For Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on Overhead charges @ 20 % on (a+b)	k to cate 3.75 per terial & Case I (a+b+c+	r for extra licent of co	per cent of co	11500.00 st of material vision of form il, labour and 6594.00 989.10 263.76 1581.93 1885.76	Item 12.8 (D) Case I
	(r) He Sa lal wom: Case Us Pe Mi (E d)	eight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of 3 achinery. Ising concrete Mixer If Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on Overhead charges @ 20 % on (a+b) Contractor's profit @ 10 % on (a+b)	k to cate 3.75 per terial & Case I (a+b+c+	r for extra licent of co	per cent of co	11500.00 st of material vision of form II, labour and 6594.00 989.10 263.76	Item 12.8 (D) Case I
	Case Us (E d)	eight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of 3 achinery. Ising concrete Mixer If Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on Overhead charges @ 20 % on (a+b) Contractor's profit @ 10 % on (a+b)	k to cate 3.75 per terial & Case I (a+b+c+	r for extra licent of co	per cent of co	11500.00 st of material vision of form il, labour and 6594.00 989.10 263.76 1581.93 1885.76 1131.46	Item 12.8 (D) Case I
	Case Us (E d)	sight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of 3 achinery. Ising concrete Mixer If Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on Overhead charges @ 20 % on (a+b Contractor's profit @ 10 % on (a+b Cess @ 1% on (a+b+c+d+e+f+g)	k to cate 3.75 per terial & Case I (a+b+c+	r for extra licent of co	per cent of co	11500.00 st of material vision of form II, labour and 6594.00 989.10 263.76 1581.93 1885.76 1131.46 124.46	Item 12.8 (D) Case I
	Case Use G	sight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of 3 achinery. Ising concrete Mixer If Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) excluding GST,OH,CP &Cess) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on Overhead charges @ 20 % on (a+b Contractor's profit @ 10 % on (a+b Cess @ 1% on (a+b+c+d+e+f+g)	k to cate 3.75 per terial & Case I (a+b+c+ +c+d+e)	r for extra licent of co	per cent of co- ift. (ii) The pro ost of materia	11500.00 st of material vision of form II, labour and 6594.00 989.10 263.76 1581.93 1885.76 1131.46 124.46 12570.47	Item 12.8 (D) Case I
	Case Use G d) Case Use G d) Case Use G d)	sight above 10m Imme as Item 12.8 (D) with the following our and machinery excluding form work shall be 15 per cent instead of 3 achinery. Sing concrete Mixer Fr. Cum Basic Cost of Labour, Matachinery (a+b+c) of Item 12.8 (D) achinery (a+b+c) of Item 12.8 (D) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift GST (multiplying factor 0.2016) on Overhead charges @ 20 % on (a+b Contractor's profit @ 10 % on (a+b Cess @ 1% on (a+b+c+d+e+f+g) atte perm (a+b+c+d+e+f+g+h)	k to cate 3.75 per terial & Case I (a+b+c+ +c+d+e) +c+d+e-	r for extra licent of co	per cent of co- ift. (ii) The pro ost of materia	11500.00 st of material vision of form II, labour and 6594.00 989.10 263.76 1581.93 1885.76 1131.46 124.46 12570.47	Item 12.8 (D) Case I

			1	SUB-STRUC	TURE				
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			•	Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.000	•	251.88	
			e)	GST (multiplying factor 0.2016) on	(a+b+c+	⊦d)		1510.68	
			f)	Overhead charges @ 20 % on (a+b	o+c+d+e)		1800.82	
			g)	Contractor's profit @ 10 % on (a+b	o+c+d+e	+f)		1080.49	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)				118.85	
			Rat	te perm (a+b+c+d+e+f+g+h)				12004.27	
							say	<u>12004.00</u>	
13.5		D	PC	C Grade M30					
		(p)	Hei	ght upto 5m					
			wor	me as Item 12.8 (F) upto 5 m height ik shall be 10 per cent instead of 3 chinery.		, ,	•		
		Case	• Usi	ng concrete Mixer					
		,	Ma (Ex	Cum Basic Cost of Labour, Ma chinery (a+b+c) of Item 12.8 (F) cluding GST,OH,CP &Cess) formwork				6649.00	12.8 (F) Case I
			-, -	Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		664.90	
			e)	GST (multiplying factor 0.2016) or	n (a+b+c	+d)		1474.48	
			f)	Overhead charges @ 20 % on (a+b	o+c+d+e)		1757.68	
			g)	Contractor's profit @ 10 % on (a+h				1054.61	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		-		116.01	
			Rat	te perm (a+b+c+d+e+f+g+h)				11716.68	
							say	<u>11717.00</u>	
13.5 D ((p)	Case II	• Wit	h Batching Plant, Transit Mixer and	Concret	e Pump			
			Ma (Ex	Cum Basic Cost of Labour, Machinery (a+b+c) of Item 12.8 (F) cluding GST,OH,CP &Cess) formwork				6346.00	12.8 (F) Case II
				Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		634.60	
			e)	GST (multiplying factor 0.2016) on	(a+b+c+	⊦d)		1407.29	
			f)	Overhead charges @ 20 % on (a+b	-	-		1677.58	
			g)	Contractor's profit @ 10 % on (a+t				1006.55	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		,		110.72	
			,	te perm (a+b+c+d+e+f+g+h)				11182.74	
							say	<u>11183.00</u>	
13.5 D			Sar Lab wor mad	ght 5m to 10m me as Item 12.8 (F) with the following your and machinery excluding form work shall be 12 per cent instead of chinery. Ing concrete Mixer	rk to cate	er for extra li	er cent of co	st of material,	
		I	Per Ma (Ex	Cum Basic Cost of Labour, Ma chinery (a+b+c) of Item 12.8 (F) cluding GST,OH,CP &Cess)				6649.00	12.8 (F) Case I
			u, i	Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		797.88	

			SUB-STRU	CTURE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift	1	2.000	•	132.98	1
			e) GST (multiplying factor 0.2016) or	n (a+b+c+	⊦d)		1528.10	
			f) Overhead charges @ 20 % on (a+	•	•		1821.59	
			g) Contractor's profit @ 10 % on (a+				1092.96	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	B.C.u.C	• • • •		120.23	
			Rate perm (a+b+c+d+e+f+g+h)				12142.74	
			Kate periii (a+b+c+u+e+i+g+ii)			001		
13.5 D	(q)	Case II	With Batching Plant, Transit Mixer and	l Concret	te Pump	say	<u>12143.00</u>	
			Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess) d) formwork				6346.00	Item 12.8 (F) Case II
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		761.52	
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.000		126.92	
			e) GST (multiplying factor 0.2016) or	n (a+h+c-	FQ)		1458.46	
			f) Overhead charges @ 20 % on (a+	•	•		1738.58	
			g) Contractor's profit @ 10 % on (a+				1043.15	
				Diciale	*1)		114.75	
			h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h)				11589.38	
			Kate periii (a+b+c+u+e+i+g+ii)			001		
13.5 D		(r)	Height above 10m			say	<u>11589.00</u>	
			Same as Item 12.8 (F) with the following labour and machinery excluding form wo work shall be 15 per cent instead of machinery	rk to cate	r for extra li	ft. (ii) The pro	vision of form	1
		Case I	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess) d) formwork				6649.00	12.8 (F)
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.000		997.35	
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.000		265.96	
			e) GST (multiplying factor 0.2016) or	n (a+b+c+	⊦d)		1595.12	
			f) Overhead charges @ 20 % on (a+	b+c+d+e)		1901.49	
			g) Contractor's profit @ 10 % on (a+	b+c+d+e	+f)		1140.89	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				125.50	
			Rate perm (a+b+c+d+e+f+g+h)				12675.31	
						say	<u>12675.00</u>	
13.5 D	(r)	Case	With Batching Plant, Transit Mixer and	l Concret	te Pump	_		
		"	Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)				6346.00	Item 12.8 (F) Case II
			d) formwork					
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.000		951.90	

			SUB-STRUC	IUKE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		'	Add 4 per cent of cost of material,		4.000	·	253.84	
			Labour and machinery excluding formwork to cater for extra lift					
			e) GST (multiplying factor 0.2016) on	(a+b+c	+d)		1522.43	
			f) Overhead charges @ 20 % on (a+b	•	•		1814.83	
			g) Contractor's profit @ 10 % on (a+b				1088.90	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		119.78	
			Rate perm (a+b+c+d+e+f+g+h)				12097.68	
						say	<u>12098.00</u>	
13.5		Ε	RCC Grade M20					
		(p)	Height upto 5m					
			Same as Item 12.8 (C) upto 5 m height, e	•			10 per cent	
			instead of 4 per cent of cost of material, la	abour an	d machiner	y.		
		l	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Mar Machinery (a+b+c) of Item 12.8 (C)				6103.00	Item 12.8 (C) Case I
			(Excluding GST,OH,CP &Cess)					
			d) formwork Add 10 per cent of cost of material,		10.000		610.30	
			labour and machinery (a+b+c) for Formwork		10.000		010.30	
			e) GST (multiplying factor 0.2016) on	(a+b+c-	+d)		1353.40	
			f) Overhead charges @ 20 % on (a+b	-	-		1613.34	
			g) Contractor's profit @ 10 % on (a+b	o+c+d+e	+f)		968.00	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				106.48	
			Rate perm (a+b+c+d+e+f+g+h)				10754.52	
						say	<u>10755.00</u>	
13.5 E	(p)	Case II	With Batching Plant, Transit Mixer and	Concret	te Pump			
			Per Cum Basic Cost of Labour, Mar Machinery (a+b+c) of Item 12.8 (C) (Excluding GST,OH,CP &Cess)				5802.00	Item 12.8 (C) Case II
			d) formwork					
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		580.20	
			e) GST (multiplying factor 0.2016) or	า (a+b+c	+d)		1286.65	
			f) Overhead charges @ 20 % on (a+b	+c+d+e)		1533.77	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		920.26	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				101.23	
			Rate perm (a+b+c+d+e+f+g+h)				10224.11	
						say	<u>10224.00</u>	
13.5 E		(q)	Height 5m to 10m For height, upto 10m, add 2 per cent of			_		
			formwork add 12 per cent of cost of mate .	erial, labo	our and mac	hinery instead	l of 4 per cent	į
		Case I	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (C) (Excluding GST,OH,CP &Cess)				6103.00	Item 12.8 (C) Case I
			d) formwork		10.555		= 00.65	
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		732.36	
			Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.000		122.06	

Sr No			SUB-STRUCTURE		
	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity Rate Rs	Cost Rs	Remarks/ Input ref.
			e) GST (multiplying factor 0.2016) on (a+b+c+d)	1402.62	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1672.01	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	1003.21	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	110.35	
			Rate perm (a+b+c+d+e+f+g+h)	11145.61	
			say	11146.00	
13.5 E ((a)	Case	With Batching Plant, Transit Mixer and Concrete Pump	11140.00	
	ιΨ/	II		5000.00	Item 12.8
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case II (Excluding GST,OH,CP &Cess) d) formwork	5802.00	(C) Case
			Add 12 per cent of cost of material, 12.000 labour and machinery (a+b+c) for Formwork	696.24	
			Add 2 per cent of cost of material, 2.000 Labour and machinery excluding formwork to cater for extra lift	116.04	
			e) GST (multiplying factor 0.2016) on (a+b+c+d)	1333.44	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1589.54	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	953.73	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	104.91	
			Rate perm (a+b+c+d+e+f+g+h)	10595.90	
			say	10596.00	
			work shall be 15 per cent instead of 4 per cent of cost of material,		
		Case	machinery.	labour and	
		Case I	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess)	6103.00	Item 12.8 (C) Case I
		Case I	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, labour and machinery (a+b+c) for		Item 12.8
		Case I	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding	6103.00	Item 12.8
		Case I	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift	6103.00 915.45 244.12	Item 12.8
		Case I	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d)	6103.00 915.45 244.12 1464.13	Item 12.8
		Case	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e)	915.45 244.12 1464.13 1745.34	Item 12.8
		Case	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	915.45 244.12 1464.13 1745.34 1047.20	Item 12.8
		Case	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g)	915.45 244.12 1464.13 1745.34 1047.20 115.19	Item 12.8
		Case	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h)	915.45 244.12 1464.13 1745.34 1047.20 115.19 11634.43	Item 12.8
42 E E (machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h)	915.45 244.12 1464.13 1745.34 1047.20 115.19	Item 12.8
13.5 E (i	(r)		machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h) say 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 (Excluding GST,OH,CP &Cess)	915.45 244.12 1464.13 1745.34 1047.20 115.19 11634.43	Item 12.8
13.5 E (i	(r)	Case	machinery. Using concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case I (Excluding GST,OH,CP &Cess) d) formwork Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h) say 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	915.45 244.12 1464.13 1745.34 1047.20 115.19 11634.43 11634.00	Item 12.8 (C) Case I

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Sr No	Ref. to MoRTH/ SR Spec.		Description Unit	t Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			e) GST (multiplying factor 0.2016) on (a+b	+c+d)		1391.92	
			f) Overhead charges @ 20 % on (a+b+c+d	+e)		1659.26	
			g) Contractor's profit @ 10 % on (a+b+c+d	+e+f)		995.56	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			109.51	
			Rate perm (a+b+c+d+e+f+g+h)			11060.63	
		_			say	<u>11061.00</u>	
13.5		F	RCC Grade M25				
			Height upto 5m Same as Item 12.8 (E) upto 5m height, excludir per cent of cost of material, labour and machin	•		work, add 10)
		Case	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material Machinery (a+b+c) of Item 12.8 (E) Case (Excluding GST,OH,CP &Cess) d) formwork			6612.00	Item 12.8 (E) Case I
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for	10.000		661.20	
			Formwork	Latd)		1466.28	
			e) GST (multiplying factor 0.2016) on (a+b-f) Overhead charges @ 20 % on (a+b+c+d	•		1747.90	
			g) Contractor's profit @ 10 % on (a+b+c+d	-		1048.74	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	.6.1)		115.36	
			Rate perm (a+b+c+d+e+f+g+h)			11651.48	
			tallo pelli (a a c a c a g a,		say	<u>11651.00</u>	
13.5 F (p)	Case	With Batching Plant, Transit Mixer and Cond	rete Pump	,		
			Per Cum Basic Cost of Labour, Material Machinery (a+b+c) of Item 12.8 (E) Case (Excluding GST,OH,CP &Cess) d) formwork			6415.00	Item 12.8 (E) Case II
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork	10.000		641.50	
			e) GST (multiplying factor 0.2016) on (a+b	+c+d)		1422.59	
			f) Overhead charges @ 20 % on (a+b+c+d	+e)		1695.82	
			g) Contractor's profit @ 10 % on (a+b+c+d	+e+f)		1017.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			111.92	
			Rate perm (a+b+c+d+e+f+g+h)			11304.32	
					say	<u>11304.00</u>	
13.5 F		(q)	Height 5m to 10m For height, upto 10m, add 1.8 per cent of cost	as above exclu	uding formwor	k. For cost of	f
		Case	formwork add 11.8 per cent of cost of material,				
		I	Using concrete Mixer				
			Per Cum Basic Cost of Labour, Material Machinery (a+b+c) of Item 12.8 (E) Case (Excluding GST,OH,CP &Cess) d) formwork			6612.00	Item 12.8 (E) Case I
			Add 11.8 per cent of cost of material, labour and machinery (a+b+c) for Formwork	11.800		780.22	
			Add 1.8 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift	1.800		119.02	
			e) GST (multiplying factor 0.2016) on (a+b	+c+d)		1514.27	

			SUB-STRUC	<u>TURE</u>				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f) Overhead charges @ 20 % on (a+b-	+c+d+e)			1805.10	
			g) Contractor's profit @ 10 % on (a+b-	+c+d+e+	⊦f)		1083.06	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				119.14	
			Rate perm (a+b+c+d+e+f+g+h)				12032.81	
						say	<u>12033.00</u>	
13.5 F	(q)	Case II	With Batching Plant, Transit Mixer and C	Concrete	e Pump			
		II	Per Cum Basic Cost of Labour, Mate Machinery (a+b+c) of Item 12.8 (E) ((Excluding GST,OH,CP &Cess) d) formwork				6415.00	Item 12.8 (E) Case II
			Add 11.8 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.800		756.97	
			Add 1.8 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.800		115.47	
			e) GST (multiplying factor 0.2016) on	(a+b+c+	⊦d)		1469.15	
			f) Overhead charges @ 20 % on (a+b-				1751.32	
			g) Contractor's profit @ 10 % on (a+b-	+c+d+e+	⊦f)		1050.79	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				115.59	
			Rate perm (a+b+c+d+e+f+g+h)				11674.29	
						say	<u>11674.00</u>	
13.5 F		(r)	Height above 10m					
			For height, above 10m, add 4 per cent of formwork add 15 per cent of cost of materi			-	rk. For cost of	:
		Case I	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Mate Machinery (a+b+c) of Item 12.8 (E) ((Excluding GST,OH,CP &Cess) d) formwork				6612.00	Item 12.8 (E) Case I
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.000		991.80	
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.000		264.48	
			e) GST (multiplying factor 0.2016) on	(a+b+c+	d)		1586.25	
			f) Overhead charges @ 20 % on (a+b-	+c+d+e)			1890.91	
			g) Contractor's profit @ 10 % on (a+b-	+c+d+e+	⊦f)		1134.54	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				124.80	
			Rate perm (a+b+c+d+e+f+g+h)				12604.78	
13.5 F	(r)	Case	With Batching Plant, Transit Mixer and C	Concrete	a Dumn	say	<u>12605.00</u>	
13.5 F	(1)	II	Per Cum Basic Cost of Labour, Mate Machinery (a+b+c) of Item 12.8 (E) ((Excluding GST,OH,CP &Cess) d) formwork	erial &	e Fump		6415.00	Item 12.8 (E) Case II
			Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.000		962.25	
			Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.000		256.60	

			SUB-STRUC	TURE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•		e) GST (multiplying factor 0.2016) on	(a+b+c+	⊦d)		1538.98	
			f) Overhead charges @ 20 % on (a+b	+c+d+e)		1834.57	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		1100.74	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		121.08	
			Rate perm (a+b+c+d+e+f+g+h)				12229.22	
			po (a a o a o . g,			say	12229.00	
13.5		G	RCC Grade M30					
		(p)	Height upto 5m					
		,	Same as Item 12.8 (G) upto 5m height, ex	U			nwork, add 10)
		Case	per cent of cost of material, labour and m Using concrete Mixer	achinery	instead of	3.5 per cent .		
		I	•					
			Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (G) (Excluding GST,OH,CP &Cess)				6643.00	Item 12.8 (G) Case I
			d) formwork					
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		664.30	
			e) GST (multiplying factor 0.2016) on	(a+b+c+	⊦d)		1473.15	
			f) Overhead charges @ 20 % on (a+b	•	•		1756.09	
			g) Contractor's profit @ 10 % on (a+k				1053.65	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	,.c.u.e	• • • • • • • • • • • • • • • • • • • •		115.90	
			Rate perm (a+b+c+d+e+f+g+h)			601/	11706.09	
						say	<u>11706.00</u>	
13.5 G	(p)	Case II	With Batching Plant, Transit Mixer and	Concret	te Pump			
		"	Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (G) (Excluding GST,OH,CP &Cess)				6343.00	Item 12.8 (G) Case II
			d) formwork					
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		634.30	
			e) GST (multiplying factor 0.2016) on	(a+b+c+	⊦d)		1406.62	
			f) Overhead charges @ 20 % on (a+b	•	,		1676.78	
			g) Contractor's profit @ 10 % on (a+k				1006.07	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		110.67	
			Rate perm (a+b+c+d+e+f+q+h)				11177.44	
			Kale periii (a+b+c+u+e+i+g+ii)			631/	<u>11177.00</u>	
13.5 G		(a)	Height 5m to 10m			say	11111.00	
			For height, upto 10m, add 1.6 per cent of formwork add 11.5 per cent of cost of ma Using concrete Mixer			-	rk. For cost of	f
		1	-					
			Per Cum Basic Cost of Labour, Mate (a+b+c) of Item 12.8 (G) Case I (Excl &Cess)		-		6643.00	Item 12.8 (G) Case I
			d) formwork					
			Add 11.5 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.500		763.95	
			Add 1.6 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.600		106.29	
			e) GST (multiplying factor 0.2016) (a-	+b+c+d)			1514.67	

	1		SUB-STRUC	TURE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f) Overhead charges @ 20 % on (a+b	+c+d+e))	ļ.	1805.58	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		1083.35	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				119.17	
			Rate perm (a+b+c+d+e+f+g+h)				12036.01	
			po (a. a. o. a. o g)			say	12036.00	
2 5 0	(m)	Case	With Batching Blant Transit Mixer and	Canarat	a Dumn			
3.5 G	(4)	II	With Batching Plant, Transit Mixer and		e Pullip			
			Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (G) ((Excluding GST,OH,CP &Cess)				6343.00	Item 12.8 (G) Case II
			d) formwork					
			Add 11.5 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.500		729.45	
			Add 1.6 per cent of cost of material, Labour and machinery excluding formwork to cater for extra		1.600		101.49	
			lift					
			e) GST (multiplying factor 0.2016) on	(a+b+c	+d)		1446.27	
			f) Overhead charges @ 20 % on (a+b	+c+d+e))		1724.04	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		1034.43	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				113.79	
			Rate perm (a+b+c+d+e+f+g+h)				11492.47	
						say	<u>11492.00</u>	
3.5 G		(r)	Height above 10m					
			For height, above 10m, add 3.5 per cent of formwork add 14 per cent of cost of ma			-	vork. For cost	
		Case I	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (G) (Excluding GST,OH,CP &Cess) d) formwork				6643.00	Item 12.8 (G) Case I
			Add 14 per cent of cost of material, labour and machinery (a+b+c) for Formwork		14.000		930.02	
			Add 3.5 per cent of cost of		3.500		232.51	
			material, Labour and machinery		0.000		202.01	
			excluding formwork to cater for extra lift					
			e) GST (multiplying factor 0.2016) on	(a+b+c	+d)		1573.59	
			f) Overhead charges @ 20 % on (a+b	+c+d+e))		1875.82	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		1125.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				123.80	
			Rate perm (a+b+c+d+e+f+g+h)				12504.23	
						say	<u>12504.00</u>	
3.5 G	(r)	Case	With Batching Plant, Transit Mixer and	Concret	e Pump			
			Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (G) ((Excluding GST,OH,CP &Cess)				6343.00	Item 12.8 (G) Case II
			d) formwork					
			Add 14 per cent of cost of material, labour and machinery (a+b+c) for Formwork		14.000		888.02	

	_	_	SUB-STR	UCTURE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•		e) GST (multiplying factor 0.2016)	on (a+b+c-	+d)		1502.53	
			f) Overhead charges @ 20 % on (a	+b+c+d+e)		1791.11	
			g) Contractor's profit @ 10 % on (a	+b+c+d+e	+f)		1074.67	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				118.21	
			Rate perm (a+b+c+d+e+f+g+h)				11939.55	
						say	<u>11940.00</u>	
13.5			RCC Grade M35 Height upto 5m					
		(P)	Same as Item 12.8 (H) upto 5m height,	eveluding f	formwork F	or cost of form	work add 10	
		Case	per cent of cost of material, labour and Using concrete Mixer	U			iwork, add 10	
		I	Per Cum Basic Cost of Labour, M	Natorial &			6782.00	Item 12.8
			Machinery (a+b+c) of Item 12.8 (Excluding GST,OH,CP &Cess)				0702.00	(H) Case I
			d) formwork					
			Add 10 per cent of cost of materia labour and machinery (a+b+c) for Formwork	ıl,	10.000		678.20	
			e) GST (multiplying factor 0.2016)	on (a+b+c	+d)		1503.98	
			f) Overhead charges @ 20 % on (a				1792.84	
			g) Contractor's profit @ 10 % on (a		-		1075.70	
			h) Cess @ 1% on (a+b+c+d+e+f+g		,		118.33	
			Rate perm (a+b+c+d+e+f+g+h)	,			11951.05	
			, , , , , , , , , , , , , , , , , , ,			say	11951.00	
13.5 H	(p)	Case II	With Batching Plant, Transit Mixer ar	nd Concret	te Pump			
			Per Cum Basic Cost of Labour, Machinery (a+b+c) of Item 12.8 (F (Excluding GST,OH,CP &Cess) d) formwork				6591.00	Item 12.8 (H) Case II
			Add 10 per cent of cost of materia labour and machinery (a+b+c) for Formwork	ıl,	10.000		659.10	
			e) GST (multiplying factor 0.2016)	on (a+h+c	+d)		1461.62	
				-	-		1742.34	
			f) Overhead charges @ 20 % on (a		•			
			g) Contractor's profit @ 10 % on (a		9 + T)		1045.41	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			114.99	
			Rate perm (a+b+c+d+e+f+g+h)				11614.46	
						say	<u>11614.00</u>	
13.5 H		(q)	Height 5m to 10m					_
		0	For height, upto 10m, add 1.4 per cent formwork add 11 per cent of cost of ma			•	rk. For cost of	
		l	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Machinery (a+b+c) of Item 12.8 (I (Excluding GST,OH,CP &Cess)				6782.00	Item 12.8 (H) Case I
			d) formwork					
			Add 11 per cent of cost of materia labour and machinery (a+b+c) for Formwork	ıl,	11.000		746.02	
			Add 1.4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra	ra	1.400		94.95	
			e) GST (multiplying factor 0.2016)	on (a+b+c	+d)		1536.79	

		SUB-STRUC	TURE				
Sr No Ref. to MoRTH/	<i>,</i>	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		f) Overhead charges @ 20 % on (a+	b+c+d+e	·)		1831.95	
		g) Contractor's profit @ 10 % on (a+	b+c+d+e	+f)		1099.17	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				120.91	
		Rate perm (a+b+c+d+e+f+g+h)				12211.79	
					say	12212.00	
13.5 H (q)	Case	With Batching Plant, Transit Mixer and	Concret	e Pumn			
10.0 II (q)	II	Per Cum Basic Cost of Labour, Mar Machinery (a+b+c) of Item 12.8 (H) (Excluding GST,OH,CP &Cess) d) formwork	terial &	o r ump		6591.00	Item 12.8 (H) Case II
		Add 11 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.000		725.01	
		Add 1.4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.400		92.27	
		e) GST (multiplying factor 0.2016) or	ı (a+b+c	+d)		1493.51	
		f) Overhead charges @ 20 % on (a+l	b+c+d+e))		1780.36	
		g) Contractor's profit @ 10 % on (a+	b+c+d+e	+f)		1068.22	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				117.50	
		Rate perm (a+b+c+d+e+f+g+h)				11867.87	
40 = 11		Hallaha da a da a			say	<u>11868.00</u>	
13.5 H	(r)	Height above 10m For height, above 10m, add 3 per cent of formwork add 13 per cent of cost of mate			J	rk. For cost of	•
	Case	Using concrete Mixer					
	·	Per Cum Basic Cost of Labour, Mac Machinery (a+b+c) of Item 12.8 (H) (Excluding GST,OH,CP &Cess) d) formwork				6782.00	Item 12.8 (H) Case I
		Add 13 per cent of cost of material, labour and machinery (a+b+c) for Formwork		13.000		881.66	
		Add 3 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.000		203.46	
		e) GST (multiplying factor 0.2016) or	ı (a+b+c	+d)		1586.01	
		f) Overhead charges @ 20 % on (a+l		-		1890.63	
		g) Contractor's profit @ 10 % on (a+	b+c+d+e	e+f)		1134.38	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				124.78	
		Rate perm (a+b+c+d+e+f+g+h)				12602.92	
				_	say	<u>12603.00</u>	
13.5 H (r)	Case	With Batching Plant, Transit Mixer and	Concret	e Pump			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (H) Case II (Excluding GST,OH,CP &Cess) d) formwork				6591.00	Item 12.8 (H) Case II
		Add 13 per cent of cost of material, labour and machinery (a+b+c) for		13.000		856.83	
		Formwork					

		CHAPTER-13 SUB-STRUCTURE		
Sr No	Ref. to MoRTH/ DSR Spec.	Description Unit Quantity Rate Rs	Cost Rs	Remarks Input ref
		e) GST (multiplying factor 0.2016) on (a+b+c+d)	1541.34	•
		f) Overhead charges @ 20 % on (a+b+c+d+e)	1837.38	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	1102.43	
		h) Cess @ 1% on (a+b+c+d+e+f+g)	121.27	
		Rate perm (a+b+c+d+e+f+g+h)	12247.98	
	N1.4.	say	<u>12248.00</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:		
		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.		
13.6	Section 1600 & 2200	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. Supplying, fitting and placing HYSD bar reinforcement in sub-struct as per drawing and Technical Specifications	ure complete	,
		Output: MT		
		Taking output = 1 MT		
		a) Material		
		HYSD bars including 5 per cent tonne 1.050 67000.00	70350.00	M-082
		overlaps and wastage	620.00	M-072
		Binding wire kg 6.000 105.00	630.00	0.2
		b) Labour for cutting, bending, shifting to site, tying and placing in		
		position Mate day 0.340 551.00	187.34	L-12
		Blacksmith day 2.000 593.00	1186.00	L-02
		Mazdoor day 6.500 424.00	2756.00	L-13
		c) GST (multiplying factor 0.2016) on (a+b)	15142.04	
		d) Overhead charges @ 20 % on (a+b+c)	18050.28	
		e) Contractor's profit @ 10 % on (a+b+c+d)	10830.17	
		f) Cess @ 1% on (a+b+c+d+e)	1191.32	
		Rate for per MT (a+b+c+d)	120323.15	
		say	120323.13 120323.00	
13.7	1600 & 2200	Supplying, fitting and placing Mild steel reinforcement complete in a sper drawing and Technical Specification		,
		Unit = MT		
		Taking output = 1 MT		
		a) Material		
		MS bars including 5 per cent tonne 1.050 67000.00 overlaps and wastage	70350.00	M-126
		Binding wire kg 6.000 105.00	630.00	M-072
		b) Labour for straightening, cutting,bending, shifting to site, tying and		
		placing in position		1
		Mate day 0.280 551.00	154.28	L-12
		Blacksmith day 1.500 593.00	889.50	L-02 L-13
		Mazdoor day 5.500 424.00	2332.00 1/1000 13	L-13
		c) GST (multiplying factor 0.2016) on (a+b)	14990.13	
		d) Overhead charges @ 20 % on (a+b+c)	17869.18	
		e) Contractor's profit @ 10 % on (a+b+c+d)	10721.51	

			SUB-STRU	CTURE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f) Cess @ 1% on (a+b+c+d+e)				1179.37	
			Rate for per MT (a+b+c+d)				119115.97	
						say	<u>119116.00</u>	
13.8	2706 &		Providing weep holes in Brick mason	ry/Plain/	Reinforced	concrete ab	utment, wing	
	2200		wall/ return wall with 100 mm dia AC	pipe, ext	ending thr	ough the full	width of the)
			structure with slope of 1V :20H toward	ards drav	ving foce.	Complete as	per drawing	l
			and Technical Specifications					
			Unit = Nos.					
			Taking output = 30 Nos. a) Material					
			AC pipe 100 mm dia. (including	metre	31.500	43.00	1354.50	M-056
			wastage @ 5 per cent)	mono	01.000	40.00	1004.00	
			Average length of weep hole is taken as	S				
			one metre for the purpose of estimating.					
			MS clamp	each.	30.000	81.00	2430.00	M-123
			collar for AC pipe (average) taking	each.	10.000	4.30	43.00	M-056/10
			10% of above pipe rate					
			Cement mortar 1:3 (Rate as in Item	cum	0.050	5727.00	286.35	Item 12.6 (A)
			12.6) (Excluding GST,OH,CP &Cess) b) Labour					
			b) Labour Mate	day	0.030	551.00	16.53	L-12
			Mason	day	0.500	593.00	296.50	L-11
			Mazdoor	day	0.250	424.00	106.00	L-13
			c) GST (multiplying factor 0.2016) of	-			913.83	
			d) Overhead charges @ 20 % on (a	+b+c)			1089.34	
			e) Contractor's profit @ 10 % on (a-				653.61	
			f) Cess @ 1% on (a+b+c+d+e)				71.90	
			Cost for 30 m = $a+b+c+d+e+f$				7261.56	
			Rate per m (a+b+c+d+e+f)/30				242.05	
						say	242.00	
	Note		1. In case of stone masonry, the size of be 150 mm x 80 mm or circular with 150					
			2. For structure in stone masonry, the deemed to be included in the item of and shall not be paid separately.					
13.9	710.1.4. of		Back filling behind abutment, wing vand Technical Specification	vall and ı	eturn wall	complete as	per drawing	l
	IRC:78 &		Unit = cum					
	2200		Taking output = 10 cum					
		Δ	Granular material					
			a) Labour					
			Mate	day	0.280	551.00	154.28	L-12
			Mazdoor	day	7.000	424.00	2968.00	L-13
			b) Material					
			Granular material	cum	12.000	500.00	6000.00	M-009
			c) Machinery		0.500	000.00	0== 0=	D914 000
			Plate compactor/power rammer	hour	2.500	382.00	955.00	P&M-086
			Water Tanker	hour	0.050	724.00	36.20	P&M-060
			d) GST (multiplying factor 0.2016) o	-)		2038.88	
			e) Overhead charges @ 20 % on (a+	-			2430.47	
			f) Contractor's profit @ 10 % on (a-	-b+c+d+e)		1458.28	
			g) Cess @ 1% on (a+b+c+d+e+f)		_		160.41	
			Cost for 10 cum of granular backfill = a+	b+c+d+e+	f+g		16201.52	
			Rate per cum = $(a+b+c+d+e+f+g)/10$				1620.15	
						say	<u>1620.00</u>	

			1	SUB-STRU	CTURE	, , , , , , , , , , , , , , , , , , ,	Т		1
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
13.9	•	В	San	dy material	•		L		•
			a)	Labour					
				Mate	day	0.280	551.00	154.28	L-12
				Mazdoor for filling, watering, ramming etc.	day	7.000	424.00	2968.00	L-13
			b)	Material					
			_	Sand	cum	12.000	650.00	7800.00	M-006
			c)	Machinery	harm	0.500	202.00	055.00	P&M-086
				Plate compactor/power rammer Water Tanker	hour hour	2.500 0.060	382.00 724.00	955.00 43.44	P&M-060
			d)	GST (multiplying factor 0.2016) o			724.00	2403.22	
			e)	Overhead charges @ 20 % on (a-	•	·,		2864.79	
			f)	Contractor's profit @ 10 % on (a-	-	<u>a)</u>		1718.87	
			g)	Cess @ 1% on (a+b+c+d+e+f)		•,		189.08	
				for 10 cum of sandy backfill = a+b+	c+d+e			19096.68	
				per cum = (a+b+c+d+e)/10	0.4.0			1909.67	
				(a.b.o.a.o)/10			say	1910.00	
13.10	710.1.4.		Prov	riding and laying of Filter me	dia with	granular	•		I
	of			regates satisfying the requirement					
	IRC:78 and			cifications to a thickness of not le					
	2200		-						
				and bigger size towards the wall ment, wing wall and return wall to	-				
				plete as per drawing and Technic		•	pacteu to a n	iiii conditioi	
			00	prote de per drammy and recinne	и. ороон.				
			Unit	= cum					
			Taki	ng output = 10 cum.					
			a)	Labour					
				Mate	day	0.320	551.00	176.32	L-12
				Mazdoor for filling, watering,	day	7.000	424.00	2968.00	L-13
				ramming etc. Mazdoor (Skilled)	day	1.000	508.00	508.00	L-15
			b)	Material	,				
			,	Filter media of stone aggregate	cum	12.000	1450.00	17400.00	M-012
				conforming to clause 2504.2.2. of					
				MoRTH specifications.					
			c)	Machinery		0.000	704.00	40.44	P&M-060
				Water Tanker of 6 KL capacity	hour	0.060	724.00	43.44	Paivi-000
			d)	GST (multiplying factor 0.2016) of	on (a+b+c	;)		4252.91	
			e)	Overhead charges @ 20 % on (a-	+b+c+d)			5069.73	
			f)	Contractor's profit @ 10 % on (a-	+b+c+d+e))		3041.84	
			g)	Cess @ 1% on (a+b+c+d+e+f+g)				334.60	
			cost	for 10 cum of Fiter Media = a+b+c+c	d+e+f+g			33794.84	
			Rate	per cum = (a+b+c+d+e+f+g)/10				3379.48	
							say	<u>3379.00</u>	
13.11	2000,		Sup	plying, fitting and fixing in posit	tion true	to line an	d level cast	steel rocker	r
	1000 & 2200			ing conforming to IRC: 83(Pt	,				
	2200		•	cifications complete including all	accesso	ories as pe	r drawing ar	nd Technica	I
			-	cifications. one tonne capacity					
				sidering a 250 tonne capacity	,				
				ing for this analysis	y				
			a)	Labour Moto	dov	0.000	EE4 00	20.00	L-12
				Mate	day	0.060	551.00	33.06	
				Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
				Mazdoor	day	1.000	424.00	424.00	L-13

	, , , , , , , , , , , , , , , , , , , 		SUB-STRUC	TURE		Ι	Γ	
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b)	Material Cast steel rocker bearing assembly of 250 tonne design load capacity duly painted complete with all its components as per drawing and	each.	1.000	344046.00	344046.00	M-065
			specifications Add 1 per cent of cost of bearing assembly for foundation anchorage bolts, lifting arrangements, grease and other consumables.				3440.46	
		c)	GST (multiplying factor 0.2016) or	n (a+b)			70196.62	
		d)	Overhead charges @ 20 % on (a+	b+c)			83678.83	
		e)	Contractor's profit @ 10 % on (a+	-			50207.30	
		f)	Cess @ 1% on (a+b+c+d+e)	,			5522.80	
		Co	st for 250 tonnes capacity bearing = a-	-b+c+d+e	e+f		557803.07	
		Ra	te per tonne capacity = (a+b+c+d+e+	f)/250			2231.21	
				·		say	<u>2231.00</u>	
13.12	2000,	Su	pplying, fitting and fixing in position	on true	to line and	d level forge	d steel roller	
	1000 & 2200		aring conforming to IRC: 83(Pt1	•				
	2200	-	ecifications complete including all	accesso	ories as pe	er drawing a	nd Technical	
		•	ecifications.					
			it: one tonne capacity					
			nsidering a 250 tonne capacity aring for this analysis					
		a)	Labour					
		u,	Mate	day	0.060	551.00	33.06	L-12
			Mazdoor	day	1.000	424.00	424.00	L-13
			Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
		b)	Material					
			Forged steel roller bearing of 250 tonne design load capacity duly painted complete with all its	each.	1.000	302759.00	302759.00	M-067
			components as per drawing and					
			specifications Add 1 per cent of cost of bearing				3027.59	
			assembly for foundation anchorage bolts, lifting arrangements, grease and other consumables.				3027.39	
		c)	GST (multiplying factor 0.2016) or	n (a+b)			61789.93	
		d)	Overhead charges @ 20 % on (a+				73657.52	
		e)	Contractor's profit @ 10 % on (a+	-			44194.51	
		f)	Cess @ 1% on (a+b+c+d+e)	,			4861.40	
		,	st for 250 tonnes capacity bearing = a+	b+c+d+e	+f		491001.01	
			te per tonne capacity = (a+b+c+d+e+		·		1964.00	
			, (a a a a a	-,		say	1964.00	
13.13	2000 & 2200	wit per PT Uni Cor for	pplying, fitting and fixing in position the PTFE surface sliding on stainless or drawing and Technical Specificans (FE) and clause 2004 of MoRTH Specific one tonne capacity nesidering a 80 tonne capacity bearing this analysis	steel co	omplete in od BS: 540	level sliding cluding all ac	cessories as	
		a)	Labour					
			Mate	day	0.060	551.00	33.06	L-12
			Mazdoor	day	1.000	424.00	424.00	L-13
			Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
				auy	0.000	000.00	204.00	

		CHAPTI SUB-STRU					
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		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.	1.000	206437.00	206437.00	M-069
		Add 1 per cent for foundation anchorage bolts and consumables.				2064.37	
		c) GST (multiplying factor 0.2016)	on (a+b)			42177.23	
		d) Overhead charges @ 20 % on (a				50277.93	
		e) Contractor's profit @ 10 % on (a				30166.76	
		f) Cess @ 1% on (a+b+c+d+e)	,			3318.34	
		cost for 80 tonnes capacity bearing = a+	-b+c+d+e+	·f		335152.69	
		Rate per tonne capacity = (a+b+c+d+c				4189.41	
		. , ,	,		say	<u>4189.00</u>	
	2200	Conforming to IRC: 83 (Part-II) section complete including all accessories as Unit: one cubic centimetre Considering an elastomeric bearing of a 400 x 96 mm for this analysis.	s per draw	ring and Te		-	:
		Overall volume - 19200 cu.cm					
		Volume of 6 nos. 488 x 388 x 4 reinforcing steel plates = 4545 cu.cm.	rrim size				
		Hence volume of elastometer = 1465	55 cu.cm.				
		a) Labour					
		, Mate	day	0.060	551.00	33.06	L-12
		Mazdoor	day	1.000	424.00	424.00	L-13
		Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
		b) Material Elastomeric bearing assembly consisting of 7 layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of	each.	1.000	16514.00	16514.00	M-066

a)	Labour					
	Mate	day	0.060	551.00	33.06	L-12
	Mazdoor	day	1.000	424.00	424.00	L-13
	Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
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. Add 1 per cent of cost of bearing assembly for foundation anchorage	each.	1.000	16514.00	16514.00 165.14	M-066
	bolts and consumables.					
c)	GST (multiplying factor 0.2016) o	n (a+b)			3505.86	
d)	Overhead charges @ 20 % on (a-	+b+c)			4179.21	
e)	Contractor's profit @ 10 % on (a-	+b+c+d)			2507.53	
f)	Cess @ 1% on (a+b+c+d+e)				275.83	
Cos	st for 19200cc of elastomeric bearing	= a+b+c+d			27858.63	
Rat	te per cc of elastomeric bearing = (a	a+b+c+d)/	19200		1.45	

13.15 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.

say

Unit: one tonne capacity

Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
		nsidering the sliding bearing of 80					
	tonr	nes design capacity for this analysis.					
	a)	Labour					
	•	Mate	day	0.040	551.00	22.04	L-12
		Mazdoor	day	0.750	424.00	318.00	L-13
		Mazdoor (Skilled)	day	0.350	508.00	177.80	L-15
	b)	Material					
		Supply of sliding plate bearing of 80	each.	1.000	16514.00	16514.00	M-07
		tonne design capacity complete as					
		per drawings and Technical Specifications.					
		Add 1 per cent of cost of bearing				165.14	
		assembly for foundation anchorage					
		bolts and consumables.					
	c)	GST (multiplying factor 0.2016) or	n (a+b)			3466.91	
	d)	Overhead charges @ 20 % on (a+	b+c)			4132.78	
	e)	Contractor's profit @ 10 % on (a+	-			2479.67	
	f)	Cess @ 1% on (a+b+c+d+e)	,			272.76	
	,	et for 80 tonnes of capacity bearing =	a+b+c+d	+e+f		27549.10	
		e per tonne capacity = (a+b+c+d+e+				344.36	
		- pp , (a z z a c	.,		say	344.00	
6 2000 &	•	oplying, fitting and fixing in position			_		
	stee part and Tec	inst stainless steel mating sur el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specificati hnical Specifications.	and elas	tomer elem	ents to be as 5: 5400, secti er drawing a	s per IRC: 83 ion 9.1 & 9.2	
	stee part and Tec Unit	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specificati hnical Specifications. t: one tonne capacity	and elas s confor ions con	tomer elem	ents to be as 5: 5400, secti	s per IRC: 83 ion 9.1 & 9.2	
	stee part and Tec Unit Con	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specificati chnical Specifications. to one tonne capacity Insidering a Pot bearing assembly of	and elas s confor ions con	tomer elem	ents to be as 5: 5400, secti er drawing a	s per IRC: 83 ion 9.1 & 9.2	
	stee part and Tec Unit Con 250	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specificati hnical Specifications. t: one tonne capacity	and elas s confor ions con	tomer elem	ents to be as 5: 5400, secti er drawing a	s per IRC: 83 ion 9.1 & 9.2	
	stee part and Tec Unit Con	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. thinical Specifications. the connective capacity is idering a Pot bearing assembly of tonne capacity for this analysis.	and elas s confor ions con	tomer elem	ents to be as 5: 5400, secti er drawing a	s per IRC: 83 ion 9.1 & 9.2	
	stee part and Tec Unit Con 250	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specifications. to one tonne capacity asidering a Pot bearing assembly of tonne capacity for this analysis. Labour	and elas s confor ions con	tomer elem ming to BS nplete as p	sents to be as is: 5400, secti er drawing a 387.20	s per IRC: 83 ion 9.1 & 9.2 nd approved	
	stee part and Tec Unit Con 250	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specifications. It: one tonne capacity esidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor	and elas s confor ions con	etomer elem ming to BS nplete as p	sents to be as is: 5400, secti er drawing a 387.20 551.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08	L-12 L-13
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specifications. It one tonne capacity asidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate	and elas s confor ions con day day	otomer elem ming to BS nplete as p 0.080 1.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00	L-12 L-13
	stee part and Tec Unit Con 250	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. to one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) Material Pot type bearing assembly	and elas s confor ions con day day	otomer elem ming to BS nplete as p 0.080 1.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. t: one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) Material Pot type bearing assembly consisting of a metal piston	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. t: one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) Material Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. t: one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) Material Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. thouse capacity esidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. to one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. thouse capacity esidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. to one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. thoical Specifications to one tonne capacity to bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor Mazdoor (Skilled) 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	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. to one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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.	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00 68782.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. the one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00	L-12 L-13 L-15
	stee pari and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. those cone tonne capacity esidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage	day day day	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00 68782.00	L-12 L-13 L-15
	steep part and Tec Unit Con 250 a)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. thoical Specifications to tone capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables.	day day day day each.	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00 68782.00	L-12 L-13 L-15
	steep pari and Tec Unit Con 250 a) b)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. those capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables. GST (multiplying factor 0.2016) of	day day day each.	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00 687.82 14193.43	L-12 L-13 L-15
	steep pari and Tec Unit Corn 250 a) b)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. those content of cost of bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables. GST (multiplying factor 0.2016) or Overhead charges @ 20 % on (a+)	day day day each.	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	s per IRC: 83 ion 9.1 & 9.2 nd approved 44.08 636.00 254.00 687.82 14193.43 16919.47	L-12
	steep pari and Tec Unit Con 250 a) b)	el/fabricated structural steel, metal t-I & II respectively and other parts I clause 2006 of MoRTH Specifications. to one tonne capacity esidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables. GST (multiplying factor 0.2016) of Overhead charges @ 20 % on (a+ Contractor's profit @ 10 % on (a+	day day day each.	o.080 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	44.08 44.08 636.00 254.00 68782.00 687.82	L-12 L-13 L-15
	steep pari and Tec Unit Con 250 a) b)	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specifications. It one tonne capacity isidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables. GST (multiplying factor 0.2016) of Overhead charges @ 20 % on (a+Contractor's profit @ 10 % on (a+Cess @ 1% on (a+b+c+d+e)	day day day each.	0.080 1.500 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	44.08 44.08 636.00 254.00 68782.00 687.82 14193.43 16919.47 10151.68 1116.68	L-12 L-13 L-15
	steep pari and Tec Unit Con 250 a) b)	el/fabricated structural steel, metal t-I & II respectively and other parts clause 2006 of MoRTH Specifications. the one tonne capacity sidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables. GST (multiplying factor 0.2016) or Overhead charges @ 20 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) t for 250 tonnes capacity bearing = a+	day day day each. n (a+b) b+c) b+c+d+e	0.080 1.500 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	44.08 44.08 636.00 254.00 68782.00 687.82 14193.43 16919.47 10151.68 1116.68 112785.16	L-12 L-13 L-15
	steep pari and Tec Unit Con 250 a) b)	el/fabricated structural steel, metal t-l & II respectively and other parts I clause 2006 of MoRTH Specifications. It one tonne capacity isidering a Pot bearing assembly of tonne capacity for this analysis. Labour Mate Mazdoor Mazdoor (Skilled) 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. Add 1 per cent of cost of bearing assembly for foundation anchorage bolts and consumables. GST (multiplying factor 0.2016) of Overhead charges @ 20 % on (a+Contractor's profit @ 10 % on (a+Cess @ 1% on (a+b+c+d+e)	day day day each. n (a+b) b+c) b+c+d+e	0.080 1.500 0.500	sents to be as 5: 5400, secti er drawing a 387.20 551.00 424.00 508.00	44.08 44.08 636.00 254.00 68782.00 687.82 14193.43 16919.47 10151.68 1116.68	L-12 L-13 L-15

Chapter - 14

SUPERSTRUCTURE

Preamble:

- The rate for the wearing coat has been analysed as under in accordance with the provisions of MORD Specifications:
 - a. Cement concrete wearing coat
 - b. Ashphaltic concrete wearing coat
 - c. Bitumen mastic wearing coat

The item may be selected as per approved design

- The rates are provided for both RCC Railing and M. S. Railing, which can be adopted as per approved design.
- 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.
- The rate for anti-corrosive treatment is ascertained from firms specialised in this work. In this connection 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 specialised readymade items commercially produced by reputed firms with imported technology and parts. The rates for such joints are ascertained from the firms pre-qualified by the Ministry.
- 6 The Rates for pre-cast and pre-tensioned girders has also been included.
- 7 MoRT&H letter No. RW/NH-34059/1/96 S&R dated 30-11-2000 and subsequent corrigendum dated 25-01-2001 may be referred for detailed specifications and provisions for various types of expansion joints.
- For bridges 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 joists joint are required for which firms specialised in this field may be consulted. Such cases will require prior approval of Ministry.

			SUPER-S	RUCTU	RE			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.1	1500 , 1600 & 1700		Furnishing and Placing Reinforced/ as per drawing and Technical Specif		ssed cement c	oncrete in su	per-structure	
		A Caso I	RCC Grade M20					
		Case	Using Concrete Mixer					
			Unit = 1 cum Taking output = 15 cum					
			a) Material					
			Cement	tonne	5.120	9100.00	46592.00	M-081
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour Mate	day	0.860	551.00	473.86	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Basic Cost of Labour, Material &		90715.000			
			Machinery (a+b+c) for 15 cum					
			For formwork and staging add the following:					
14.1A		(i)	For solid slab super-structure, 20-30					
Case I		.,	per cent of (a+b+c)					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &				90715.00	
			Machinery (a+b+c) for 15 cum				10110.00	
			d) Formwork and staging 20 per				18143.00	
			cent of (a+b+c) e) GST (multiplying factor 0.2016)	on (a±h+	-c+d)		21945.77	
			f) Overhead charges @ 20 % on (a	•	•		26160.75	
			g) Contractor's profit @ 10 % on (a				15696.45	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		••,		1726.61	
			Cost for 15 cum = $a+b+c+d+e+f+h$				174387.58	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				11625.84	
						say	<u>11626.00</u>	
14.1A		(q)	Height 5m to 10m					
Case I (i)			Basic Cost of Labour, Material &				90715.00	
(-)			Machinery (a+b+c) for 15 cum d) Formwork and staging 25 per				22678.75	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016)	•	•		22860.18	
			f) Overhead charges @ 20 % on (a				27250.79	
			g) Contractor's profit @ 10 % on (a		-f)		16350.47	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1798.55	
			Cost for 15 cum = $a+b+c+d+e+f+h$				181653.74	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				12110.25	
14.1A		(r)	Height above 10m			say	<u>12110.00</u>	
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				90715.00	
			d) Formwork and staging 30 per cent of (a+b+c)				27214.50	
			e) GST (multiplying factor 0.2016)	on (a+b+	+c+d)		23774.59	
			f) Overhead charges @ 20 % on (•	•		28340.82	
			g) Contractor's profit @ 10 % on (a+b+c+d	+f)		17004.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			1870.49	
			Cost for 15 cum = a+b+c+d+e+f+h				188919.89	

			SUPER-S1	INGC 10	\	1		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Rate per cum = (a+b+c+d+e+f+h)/15				12594.66	•
						say	<u>12595.00</u>	
14.1A		(ii)	For T-beam & slab, 25-35 per cent					
Case I			of (a+b+c)					
		(p)	Height upto 5m				00747.00	
			Basic Cost of Labour, Material &				90715.00	
			Machinery (a+b+c) for 15 cum d) Formwork and staging 25 per				22678.75	
			cent of (a+b+c)				22070.73	
			e) GST (multiplying factor 0.2016)	on (a+b-	+c+d)		22860.18	
			f) Overhead charges @ 20 % on (a	•	•		27250.79	
			g) Contractor's profit @ 10 % on (a				16350.47	
			h) Cess @ 1% on (a+b+c+d+e+f+g		-,		1798.55	
			Cost for 15 cum = a+b+c+d+e+f+h	,			181653.74	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				12110.25	
			(4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4			say	12110.00	
14.1A		(q)	Height 5m to 10m			,		
Case I			Basic Cost of Labour, Material &				90715.00	
(ii)			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 30 per				27214.50	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016)	on (a+b-	+c+d)		23774.59	
			f) Overhead charges @ 20 % on (a	+b+c+d+	⊦e)		28340.82	
			g) Contractor's profit @ 10 % on (a	+b+c+d-	+f)		17004.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1870.49	
			Cost for 15 cum = a+b+c+d+e+f+h				188919.89	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				12594.66	
						say	<u>12595.00</u>	
14.1A		(r)	Height above 10m					
Case I			Basic Cost of Labour, Material &				90715.00	
(ii)			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 35 per				31750.25	
			cent of (a+b+c)	(24000.00	
			e) GST (multiplying factor 0.2016)	•	•		24688.99	
			f) Overhead charges @ 20 % on (a		•		29430.85	
			g) Contractor's profit @ 10 % on (a		+T)		17658.51	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			1942.44	
			Cost for 15 cum = $a+b+c+d+e+f+h$				196186.04	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				13079.07	
14.1A		Caso	Using Batching Plant, Transit Mixer a	nd Con	croto Bumn	say	<u>13079.00</u>	
14.14		II	Using Batching Flant, Transit Mixer a	ina Com	crete Fullip			
			Unit = cum					
			Taking output = 120 cum					
			a) Material		40.00-	0.4.0.2.0.0	070070.05	M 004
			Cement	tonne	40.920	9100.00	372372.00	M-081 M-004
			Coarse sand 20 mm Aggregate	cum	54.000	650.00	35100.00	M-053
			10 mm Aggregate	cum cum	64.800 43.200	1900.00 1800.00	123120.00 77760.00	M-051
			b) Labour	Culli	40.200	1000.00	77700.00	
			Mate	day	0.840	551.00	462.84	L-12
			Mason	day	3.000	593.00	1779.00	L-11
			Mazdoor	day	18.000	424.00	7632.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080 P&M-017
			Loader Transit Mixer (capacity 4.0 cu m)	hour	6.00	1838.00	11028.00	F CXIVI-U I /
			Transit Mixer (capacity 4.0 cu.m)	har-	45.00	1005.00	10075.00	P&M-049
			Transit Mixer 4 cum capacity lead upto1 Km	hour	15.00	1265.00	18975.00	1 KIVI-049
			apto i Titii					

ı	Det.			<u>UPER-STRUCTU</u>	KE	I		1
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			Lead beyond 1 Km, L - lea Kilometer	nd in tonne.k m	300L	80.00	0.00	Lead =0 km & P&I
			Concrete Pump	hour	6.00	2726.00	16356.00	050 P&M-007
			Basic Cost of Labour, Materi	al &	689413.000			
			Machinery (a+b+c) for 120 cu					
			For formwork and staging ad	ld the				
4.1A		(i)	following: For solid slab super-structur	o 20 30				
Case		(.,	per cent of (a+b+c)	e, 20-30				
II		(p)	Height upto 5m					
			Basic Cost of Labour, Man Machinery (a+b+c) for 120 cu				689413.00	
			d) Formwork and staging cent of (a+b+c)				137882.60	
			e) GST (multiplying factor	0.2016) on (a+b-	+c+d)		166782.79	
			f) Overhead charges @ 20	, ,	•		198815.68	
			g) Contractor's profit @ 10				119289.41	
			h) Cess @ 1% on (a+b+c+c	l+e+f+g)			13121.83	
			Cost for 120 cum = a+b+c+d+e	e+f+g+h			1325305.31	
			Rate per cum = (a+b+c+d+e+	f+g+h)/120			11044.21	
		, ,				say	<u>11044.00</u>	
14.1A Case		(q)	Height 5m to 10m				000440 00	
II			Basic Cost of Labour, Mac Machinery (a+b+c) for 120 cu	ım			689413.00	
(i)			d) Formwork and staging cent of (a+b+c)	•			172353.25	
			e) GST (multiplying factor	, ,	•		173732.08	
			f) Overhead charges @ 20	•	•		207099.67	
			g) Contractor's profit @ 10	•	l 1)		124259.80	
			h) Cess @ 1% on (a+b+c+c Cost for 120 cum = a+b+c+d+e	•			13668.58 1380526.38	
			Rate per cum = (a+b+c+d+e+	· ·			11504.39	
			Nate per cuin – (a b c u e	11g111/120		say	<u>11504.00</u>	
14.1A		(r)	Height above 10m			,	<u> </u>	
Case II			Basic Cost of Labour, Mat Machinery (a+b+c) for 120 cu				689413.00	
(i)			d) Formwork and staging cent of (a+b+c)	30 per			206823.90	
			e) GST (multiplying factor	0.2016) on (a+b-	+c+d)		180681.36	
			f) Overhead charges @ 20	% on (a+b+c+d-	⊦e)		215383.65	
			g) Contractor's profit @ 10	% on (a+b+c+d-	+f)		129230.19	
			h) Cess @ 1% on (a+b+c+c	•			14215.32	
			Cost for 120 cum = $a+b+c+d+e$	•			1435747.42	
			Rate per cum = (a+b+c+d+e+	t+g+h)/120			11964.56	
4.1A		(i) For T-beam & slab, 25-35 per	cent of (a+h+c)		say	<u>11965.00</u>	
Case II			•	cent of (a.p.c)				
		(P)	Height upto 5m Basic Cost of Labour, Mai	torial &			689413.00	
			Machinery (a+b+c) for 120 cu	ım				
			d) Formwork and staging cent of (a+b+c)				172353.25	
			e) GST (multiplying factor	, ,	•		173732.08	
			f) Overhead charges @ 20	•	•		207099.67	
			g) Contractor's profit @ 10	•	- T)		124259.80	
			h) Cess @ 1% on (a+b+c+d+c	•			13668.58	
			Cost for 120 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e+	•			1380526.38 11504.39	
			Tale her call - (athterutet	y.;;;;;20			11304.39	

Sr No MoRTHID Description Unit Quantity Rate Rs Cost Rs Ing.	emarks/ put ref.
Case Basic Cost of Labour, Material & 689413.00 II Machinery (a+b+c) for 120 cum (ii) d) Formwork and staging 30 per cent of (a+b+c) 206823.90 cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) 180681.36 f) Overhead charges @ 20 % on (a+b+c+d+e) 215383.65	
Machinery (a+b+c) for 120 cum	
(ii) d) Formwork and staging 30 per 206823.90 cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) 180681.36 f) Overhead charges @ 20 % on (a+b+c+d+e) 215383.65	
cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) 180681.36 f) Overhead charges @ 20 % on (a+b+c+d+e) 215383.65	
e) GST (multiplying factor 0.2016) on (a+b+c+d) 180681.36 f) Overhead charges @ 20 % on (a+b+c+d+e) 215383.65	
f) Overhead charges @ 20 % on (a+b+c+d+e) 215383.65	
,	
g) Contractor's profit @ 10 % on (a+b+c+d+f) 129230.19	
h) Cess @ 1% on (a+b+c+d+e+f+g) 14215.32	
Cost for 120 cum = a+b+c+d+e+f+g+h 1435747.42	
Rate per cum = (a+b+c+d+e+f+g+h)/120 11964.56	
say <u>11965.00</u>	
14.1A (r) Height above 10m	
Case Basic Cost of Labour, Material & 689413.00	
Machinery (a+b+c) for 120 cum	
(ii) d) Formwork and staging 35 per 241294.55	
cent of (a+b+c)	
e) GST (multiplying factor 0.2016) on (a+b+c+d) 187630.64	
f) Overhead charges @ 20 % on (a+b+c+d+e) 223667.64	
g) Contractor's profit @ 10 % on (a+b+c+d+f) 134200.58	
h) Cess @ 1% on (a+b+c+d+e+f+g) 14762.06	
Cost for 120 cum = a+b+c+d+e+f+g+h 1490968.47 Rate per cum = (a+b+c+d+e+f+g+h)/120 12424.74	
Rate per cum = (a+b+c+u+e+1+g+n)/120 12424.74 say 12425.00	
14.1 B RCC Grade M25	
Case Using Concrete Mixer	
Unit = 1 cum	
Taking output = 15 cum	
a) Material	
•	M-081
	M-005
	M-053
	M-051
b) Labour	
,	L-12
•	L-11
	L-13
c) Machinery	
	&M-009
cum)	
Generator 33 KVA hour 6.000 506.00 3036.00 P8	&M-079
Basic Cost of Labour, Material & 98643.000	
Machinery (a+b+c) for 15 cum	
For formwork and staging add the following:	
14.1B (i) For solid slab super-structure, 20-30	
Case I per cent of (a+b+c)	
(P) Height upto 5m	
Basic Cost of Labour, Material & 98643.00	
Machinery (a+b+c) for 15 cum	
d) Formwork and staging 20 per 19728.60 cent of (a+b+c)	
e) GST (multiplying factor 0.2016) on (a+b+c+d) 23863.71	
f) Overhead charges @ 20 % on (a+b+c+d+e) 28447.06	
, , , , , , , , , , , , , , , , , , , ,	
g) Contractor's profit @ 10 % on (a+b+c+d+f) 17068.24	
h) Cess @ 1% on (a+b+c+d+e+f+g) 1877.51	

		SUPER-STRUCTURE			
Sr No Ref. MoRT SR Sp	TH/D	Description Unit Quantity	Rate Rs	Cost Rs	Remarks Input ref.
		Cost for 15 cum = a+b+c+d+e+f+g+h		189628.12	<u> </u>
		Rate per cum = (a+b+c+d+e+f+g+h)/15		12641.87	
			say	<u>12642.00</u>	
14.1B	(q)	Height 5m to 10m			
Case I (i)		Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		98643.00	
		d) Formwork and staging 25 per cent of (a+b+c)		24660.75	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		24858.04	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		29632.36	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		17779.42	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		1955.74	
		Cost for 15 cum = a+b+c+d+e+f+g+h		197529.31	
		Rate per cum = (a+b+c+d+e+f+g+h)/15		13168.62	
14.1B	(r)	Height above 10m	say	<u>13169.00</u>	
Case I	(-)	Basic Cost of Labour, Material &		98643.00	
(i)		Machinery (a+b+c) for 15 cum		30043.00	
		d) Formwork and staging 30 per cent of (a+b+c)		29592.90	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		25852.36	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		30817.65	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		18490.59	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		2033.97	
		Cost for 15 cum = a+b+c+d+e+f+g+h		205430.47	
		Rate per cum = $(a+b+c+d+e+f+g+h)/15$		13695.36	
			say	<u>13695.00</u>	
14.1B 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		98643.00	
		d) Formwork and staging 25 per cent of (a+b+c)		24660.75	
		e) GST (multiplying factor 0.2016) on (a+b+c+d)		24858.04	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		29632.36	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		17779.42	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		1955.74	
		Cost for 15 cum = a+b+c+d+e+f+g+h		197529.31	
		Rate per cum = $(a+b+c+d+e+f+g+h)/15$		13168.62	
				13169.00	
			say	13109.00	
14.1B	(q)	Height 5m to 10m	Say	<u>13109.00</u>	
14.1B Case I (ii)	(q)	Basic Cost of Labour, Material &	say	98643.00	
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum d) Formwork and staging 30 per	say		
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum	Say	98643.00	
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum d) Formwork and staging 30 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d)	Say	98643.00 29592.90	
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum d) Formwork and staging 30 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e)	Say	98643.00 29592.90 25852.36	
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum d) Formwork and staging 30 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+f)	say	98643.00 29592.90 25852.36 30817.65	
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum d) Formwork and staging 30 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+f) h) Cess @ 1% on (a+b+c+d+e+f+g)	Say	98643.00 29592.90 25852.36 30817.65 18490.59 2033.97	
Case I	(q)	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum d) Formwork and staging 30 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+f)	Say	98643.00 29592.90 25852.36 30817.65 18490.59	

		SUPER-S	TRUCTU	RE			
Sr No Ref. to MoRTH/I SR Spec		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.1B	(r)	Height above 10m		<u>'</u>			•
Case I		Basic Cost of Labour, Material &				98643.00	
(ii)		Machinery (a+b+c) for 15 cum				0.4-0- 0-	
		d) Formwork and staging 35 per	•			34525.05	
		cent of (a+b+c) e) GST (multiplying factor 0.2016)	on (a+b+	-c+d/		26846.68	
		e) GST (multiplying factor 0.2016)f) Overhead charges @ 20 % on (a)	•	•		32002.95	
		g) Contractor's profit @ 10 % on (a		•		19201.77	
		h) Cess @ 1% on (a+b+c+d+e+f+g		''		2112.19	
		Cost for 15 cum = $a+b+c+d+e+f+g+h$,			213331.64	
		Rate per cum = $(a+b+c+d+e+f+g+h)/f$	15			14222.11	
		(a.b.o.a.e.i.g.ii)			say	14222.00	
14.1B	Case	Using Batching Plant, Transit Mixer	and Cond	rete Pump	·,		
	"	Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	tonne	47.950	9100.00	436345.00	M-081
		Coarse sand	cum	54.200	650.00	35230.00	M-004 M-053
		20 mm Aggregate	cum	64.800	1900.00 1800.00	123120.00	M-053
		10 mm Aggregateb) Labour	cum	43.200	1800.00	77760.00	WI-03 I
		Mate	day	0.840	551.00	462.84	L-12
		Mason	day	3.000	593.00	1779.00	L-11
		Mazdoor	day	18.000	424.00	7632.00	L-13
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Loader	hour	6.00	1838.00	11028.00	P&M-017
		Transit Mixer (capacity 4.0 cu.m)					
		Transit Mixer 4 cum capacity lead upto1 Km	hour	15.00	1265.00	18975.00	P&M-049
		Lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	80.00	0.00	Lead =0 km & P&M- 050
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		753516.000			
		For formwork and staging add the					
		following:					
14.1B	(i)	For solid slab super-structure, 20-30	per cent	of (a+b+c)			
Case II	(p)	Height upto 5m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				753516.00	
		d) Formwork and staging 20 per	•			150703.20	
		cent of (a+b+c) e) GST (multiplying factor 0.2016)	on (a+b+	-c+d)		182290.59	
						217301.96	
		,		•			
		g) Contractor's profit @ 10 % on (+ T)		130381.18	
		h) Cess @ 1% on (a+b+c+d+e+f+g	1)			14341.93	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$				1448534.86	
		Rate per cum = $(a+b+c+d+e+f)/120$				12071.12	
14.1B	(q)	Height 5m to 10m			say	<u>12071.00</u>	
Case		Basic Cost of Labour, Material &				753516.00	
(i)		Machinery (a+b+c) for 120 cum d) Formwork and staging 25 per				188379.00	
		cent of (a+b+c)		-c+d)		189886.03	
		e) GST (multiplying factor 0.2016)	ייט (מדטד	u,		109000.03	

				SUPER-S	TRUCTU	RE				
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quant	tity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f)	Overhead charges @ 20 % on (a	+b+c+d+	+e)	•		226356.21	
			g)	Contractor's profit @ 10 % on (a	a+b+c+d+	+f)			135813.72	
			h)	Cess @ 1% on (a+b+c+d+e+f+g))				14939.51	
			Cost	for 120 cum = a+b+c+d+e+f+g+h					1508890.47	
			Rate	per cum = (a+b+c+d+e+f)/120					12574.09	
								say	<u>12574.00</u>	
14.1B		(r)	Heig	ıht above 10m						
Case II				ic Cost of Labour, Material & hinery (a+b+c) for 120 cum					753516.00	
(i)			d)	Formwork and staging 30 per					226054.80	
				: of (a+b+c)	(!				407404 47	
			e)	GST (multiplying factor 0.2016)	•	-			197481.47	
			f)	Overhead charges @ 20 % on (a					235410.45	
			g)	Contractor's profit @ 10 % on (a		+f)			141246.27	
			h)	Cess @ 1% on (a+b+c+d+e+f+g))				15537.09	
				for 120 cum = a+b+c+d+e+f+g+h					1569246.08	
			Rate	e per cum = (a+b+c+d+e+f)/120					13077.05	
4445		(!!)		T. b	. / l \			say	<u>13077.00</u>	
14.1B		(ii)	For	T-beam & slab, 25-35 per cent of	r (a+b+c)					
Case II		(p)	Heig	jht upto 5m						
"				ic Cost of Labour, Material & hinery (a+b+c) for 120 cum					753516.00	
			d) cent	Formwork and staging 25 per of (a+b+c)					188379.00	
			e)	GST (multiplying factor 0.2016)	on (a+b+	+c+d)			189886.03	
			f)	Overhead charges @ 20 % on (a	•				226356.21	
			g)	Contractor's profit @ 10 % on (a		•			135813.72	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		-,			14939.51	
			•	for 120 cum = a+b+c+d+e+f+g+h	'				1508890.47	
				per cum = (a+b+c+d+e+f)/120					12574.09	
			Nuto	(a · b · c · a · c · 1)/ 120				say	<u>12574.00</u>	
14.1B		(q)	-	ht 5m to 10m						
Case II				ic Cost of Labour, Material & hinery (a+b+c) for 120 cum					753516.00	
(ii)			d) cent	Formwork and staging 30 per of (a+b+c)					226054.80	
			e)	GST (multiplying factor 0.2016)	on (a+b-	+c+d)			197481.47	
			f)	Overhead charges @ 20 % on (a	ı+b+c+d+	+e)			235410.45	
			g)	Contractor's profit @ 10 % on (a	+b+c+d+	+f)			141246.27	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		,			15537.09	
			•	for 120 cum = $a+b+c+d+e+f+g+h$					1569246.08	
				e per cum = (a+b+c+d+e+f)/120					13077.05	
				(4 2 6 4 6 1).126				say	13077.00	
14.1B		(r)	Heig	jht above 10m				,		
Case			d)	Formwork and staging 35 per					263730.60	
II			,	of (a+b+c)					200700.00	
(ii)			e)	GST (multiplying factor 0.2016)	on (a+b+	+c+d)			205076.91	
			f)	Overhead charges @ 20 % on (a	•	-			244464.70	
			g)	Contractor's profit @ 10 % on (a		•			146678.82	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		•			16134.67	
			,	for 120 cum = $a+b+c+d+e+f+g+h$					1629601.70	
				per cum = (a+b+c+d+e+f)/120					13580.01	
				. , , , ,				say	<u>13580.00</u>	
14.1		С	RCC	Grade M 30					_	
		Case I	l Usin	g Concrete Mixer						
				= 1 cum						
			Taki	ng output = 15 cum						
			a)	Material			2.466	0400 ==		M 001
				Cement	tonne	(3.100	9100.00	55510.00	M-081

			SUPER-ST	RUCTU	RE			1
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour Mate	day	0.900	551.00	495.90	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor	day	21.000	424.00	8904.00	L-13
			c) Machinery	,				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum For formwork and staging add the following:		100079.000			
14.1C Case I		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)					
Case i		(p)	Height upto 5m					
		(17)	Basic Cost of Labour, Material &				100079.00	
			Machinery (a+b+c) for 15 cum d) Formwork and staging 20 per cent of (a+b+c)				20015.80	
			e) GST (multiplying factor 0.2016)	on (a+b	+c+d)		24211.11	
			f) Overhead charges @ 20 % on (a	•	•		28861.18	
			g) Contractor's profit @ 10 % on (a				17316.71	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		1904.84	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				192388.64	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			12825.91	
			3 ,			say	12826.00	
14.1C		(q)	Height 5m to 10m			•		
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				100079.00	
			d) Formwork and staging 25 per cent of (a+b+c)				25019.75	
			e) GST (multiplying factor 0.2016)	on (a+b·	+c+d)		25219.91	
			f) Overhead charges @ 20 % on (a	+b+c+d-	+e)		30063.73	
			g) Contractor's profit @ 10 % on (a	+b+c+d-	+f)		18038.24	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1984.21	
			Cost for 15 cum = a+b+c+d+e+f+g+h				200404.84	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			13360.32	
14.1C		(r)	Height above 10m			say	<u>13360.00</u>	
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				100079.00	
.,			d) Formwork and staging 30 per cent of (a+b+c)				30023.70	
			e) GST (multiplying factor 0.2016) of	on (a+b+	-c+d)		26228.70	
			f) Overhead charges @ 20 % on (a				31266.28	
			g) Contractor's profit @ 10 % on (a		•		18759.77	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				2063.57	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				208421.02	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			13894.73	
			, , ,			say	<u>13895.00</u>	
14.1C 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				100079.00	
			d) Formwork and staging 25 per cent of (a+b+c)				25019.75	
			e) GST (multiplying factor 0.2016) o	on (a+b+	·c+d)		25219.91	

,			SUPER-S1	RUCTU	KE	- 1		
	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f) Overhead charges @ 20 % on (a	+b+c+d+	-e)		30063.73	
			g) Contractor's profit @ 10 % on (a	+b+c+d+	⊦f)		18038.24	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1984.21	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				200404.84	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			13360.32	
			(, , , , , , , , , , , , , , , , , , ,			say	13360.00	
14.1C		(q)	Height 5m to 10m			_		
Case I			Basic Cost of Labour, Material &				100079.00	
(ii)			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 30 per				30023.70	
			cent of (a+b+c)		1\		00000 70	
			e) GST (multiplying factor 0.2016) of	•	•		26228.70	
			f) Overhead charges @ 20 % on (a		•		31266.28	
			g) Contractor's profit @ 10 % on (a		ғт)		18759.77	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				2063.57	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$	-			208421.02	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5		2014	13894.73	
14.1C		(r)	Height above 10m			say	<u>13895.00</u>	
Case I		٠,	· ·				100070.00	
(ii)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				100079.00	
` ,			d) Formwork and staging 35 per				35027.65	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		27237.50	
			f) Overhead charges @ 20 % on (a	+b+c+d+	e)		32468.83	
			g) Contractor's profit @ 10 % on (a	+b+c+d+	⊦f)		19481.30	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				2142.94	
			Cost for 15 cum = a+b+c+d+e+f+g+h				216437.22	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			14429.15	
						say	<u>14429.00</u>	
14.1C	C	ase II	Using Batching Plant, Transit Mixer a	and Cond	crete Pump.			
		-	Unit = cum					
			Taking output = 120 cum					
			a) Material		40.700	0400.00	440000 00	M 004
			Cement	tonne	48.790	9100.00	443989.00	M-081 M-004
			Coarse sand 20 mm Aggregate	cum	54.600 64.800	650.00 1900.00	35490.00 123120.00	M-053
			10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
			b) Labour		13.203	223.00	50.00	
			Mate	day	0.880	551.00	484.88	L-12
			Mason	day	3.000	593.00	1779.00	L-11
			Mazdoor	day	19.000	424.00	8056.00	L-13
			c) Machinery	L	0.00	2002.00	40000.00	D&M 002
			Batching Plant @ 20 cum/hour Generator 100 KVA	hour hour	6.00 6.00	3200.00 938.00	19200.00 5628.00	P&M-002 P&M-080
			Loader	hour	6.00	1838.00	11028.00	P&M-017
			Transit Mixer (capacity 4.0 cu.m)	noui	0.00	1000.00	11020.00	
			Transit Mixer 4 cum capacity lead	hour	15.00	1265.00	18975.00	P&M-049
			upto1 Km	noui	10.00	1200.00	10010.00	
			Lead beyond 1 Km, L - lead in	tonne.k	300L	80.00	0.00	Lead =0
			Kilometer	m				km & P&M- 050
			Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
			Basic Cost of Labour, Material &		761866.000			
			Machinery (a+b+c) for 120 cum					
			For formwork and staging add the					
14.1C			following: For solid slab super-structure, 20-30					
Case		(-)	per cent of (a+b+c)					
II		(p)	Height upto 5m					
		,						

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	OK OPEC.		Basic Cost of Labour, Material &				761866.00	
			Machinery (a+b+c) for 120 cum					
			d) Formwork and staging 20 per cent of (a+b+c)				152373.20	
			e) GST (multiplying factor 0.2016) of	n (a+b+	c+d)		184310.62	
			f) Overhead charges @ 20 % on (a-	•	•		219709.96	
			g) Contractor's profit @ 10 % on (a-		•		131825.98	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		14500.86	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1464586.62	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			12204.89	
						say	<u>12205.00</u>	
14.1C		(q)	Height 5m to 10m					
Case II			Basic Cost of Labour, Material &				761866.00	
 (i)			Machinery (a+b+c) for 120 cum				190466.50	
(-)			d) Formwork and staging 25 per cent of (a+b+c)				190400.50	
			e) GST (multiplying factor 0.2016) of	n (a+b+	c+d)		191990.23	
			f) Overhead charges @ 20 % on (a-	•	•		228864.55	
			g) Contractor's profit @ 10 % on (a-		•		137318.73	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		15105.06	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1525611.07	
			Rate per cum = (a+b+c+d+e+f+g+h)/12	20			12713.43	
						say	<u>12713.00</u>	
14.1C		(r)	Height above 10m					
Case II			Basic Cost of Labour, Material &				761866.00	
(i)			Machinery (a+b+c) for 120 cum				000550 00	
(-)			d) Formwork and staging 30 per cent of (a+b+c)				228559.80	
			e) GST (multiplying factor 0.2016) of	n (a+b+	c+d)		199669.84	
			f) Overhead charges @ 20 % on (a-	+b+c+d+	·e)		238019.13	
			g) Contractor's profit @ 10 % on (a-	+b+c+d+	·f)		142811.48	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				15709.26	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1586635.51	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			13221.96	
14.1C		(ii)	For T beam & slab 25 25 per cent of	(2+b+c)		say	<u>13222.00</u>	
Case			For T-beam & slab, 25-35 per cent of	(атытс)				
II		(p)	Height upto 5m Basic Cost of Labour, Material &				761866.00	
			Machinery (a+b+c) for 120 cum				701000.00	
			d) Formwork and staging 25 per				190466.50	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016) of	n (a+b+	c+d)		191990.23	
			f) Overhead charges @ 20 % on (a-	+b+c+d+	·e)		228864.55	
			g) Contractor's profit @ 10 % on (a-	+b+c+d+	·f)		137318.73	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				15105.06	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1525611.07	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			12713.43	
						say	<u>12713.00</u>	
14.1C		(q)	Height 5m to 10m					
Case			Basic Cost of Labour, Material &				761866.00	
II (ii)			Machinery (a+b+c) for 120 cum				000550 00	
(11)			d) Formwork and staging 30 per cent of (a+b+c)				228559.80	
			e) GST (multiplying factor 0.2016) of	n (a+b+	c+d)		199669.84	
			f) Overhead charges @ 20 % on (a-	•	•		238019.13	
			g) Contractor's profit @ 10 % on (a-				142811.48	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		•		15709.26	

			SUPER-S	STRUCTU	RE			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Cost for 120 cum = a+b+c+d+e+f+g+h				1586635.51	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	/120			13221.96	
14.1C		(r)	Height above 10m			say	<u>13222.00</u>	
Case		(r)	Height above 10m	0			761966 00	
II			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum	S :			761866.00	
(ii)			d) Formwork and staging 35 pe	er			266653.10	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016	on (a+b+	·c+d)		207349.45	
			f) Overhead charges @ 20 % on	(a+b+c+d	+e)		247173.71	
			g) Contractor's profit @ 10 % on	(a+b+c+d	+f)		148304.23	
			h) Cess @ 1% on (a+b+c+d+e+f+g				16313.46	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1647659.95	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	/120			13730.50	
14.1		D	RCC/PSC Grade M35			say	<u>13731.00</u>	
14.1			Using Concrete Mixer.					
			Unit = 1 cum					
			Taking output = 15 cum					
			a) Material					
			Cement	tonne	6.330	9100.00	57603.00	M-081
			Coarse sand 20 mm Aggregate	cum	6.750 8.100	650.00 1900.00	4387.50 15390.00	M-005 M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051
			b) Labour					
			Mate	day	0.900	551.00	495.90	L-12
			Mason	day	1.500	593.00	889.50	L-11
			Mazdoor c) Machinery	day	21.000	424.00	8904.00	L-13
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Basic Cost of Labour, Material &		102172.000			
			Machinery (a+b+c) for 15 cum For formwork and staging add the f	ollowina.				
14.1D		(i)	For solid slab super-structure, 18-2	•				
Case I		(-)	per cent of (a+b+c)					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material Machinery (a+b+c) for 15 cum	&			102172.00	
			d) Formwork and staging 18 percent of (a+b+c)	er			18390.96	
			e) GST (multiplying factor 0.2016		•		24305.49	
			f) Overhead charges @ 20 % on	(a+b+c+d-	+e)		28973.69	
			g) Contractor's profit @ 10 % on		+f)		17384.21	
			h) Cess @ 1% on (a+b+c+d+e+f+g	g)			1912.26	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				193138.61	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	/15			12875.91	
14.1D		(p)	Height 5m to 10m			say	<u>12876.00</u>	
Case I (i)			Basic Cost of Labour, Material of Machinery (a+b+c) for 15 cum				102172.00	
			d) Formwork and staging 23 percent of (a+b+c)				23499.56	
			e) GST (multiplying factor 0.2016)				25335.39	
			f) Overhead charges @ 20 % on				30201.39	
			g) Contractor's profit @ 10 % on	•	+ T)		18120.83	
			h) Cess @ 1% on (a+b+c+d+e+f+g+b	3)			1993.29	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				201322.46	

			SUPER-STRUCT	URE				
Sr No	Ref. to MoRTH/D SR Spec.		Description Unit		Quantity	Rate Rs	Cost Rs	Remarks Input ref
			Rate per cum = (a+b+c+d+e+f+g+h)/15				13421.50	
			. , , , , , , , , , , , , , , , , , , ,			say	<u>13422.00</u>	
14.1D		(r)	Height above 10m					
Case I			Basic Cost of Labour, Material &				102172.00	
(i)			Machinery (a+b+c) for 15 cum d) Formwork and staging 28 per				28608.16	
			cent of (a+b+c)				20000.10	
			e) GST (multiplying factor 0.2016) on (a+b	o+c+c	d)		26365.28	
			f) Overhead charges @ 20 % on (a+b+c+c	-			31429.09	
			g) Contractor's profit @ 10 % on (a+b+c+c	d+f)			18857.45	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				2074.32	
			Cost for 15 cum = a+b+c+d+e+f+g+h Rate per cum = (a+b+c+d+e+f+g+h)/15				209506.30 13967.09	
			Rate per cum = (a·b·c·d·e·r·g·m/15			say	13967.00	
14.1D		(ii)	For T-beam & slab, 23-33 per cent			,	10001100	
Case I			of (a+b+c)					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &				102172.00	
			Machinery (a+b+c) for 15 cum d) Formwork and staging 23 per				23499.56	
			cent of (a+b+c)				20.00.00	
			e) GST (multiplying factor 0.2016) on (a+b	o+c+c	d)		25335.39	
			f) Overhead charges @ 20 % on (a+b+c+c	d+e)			30201.39	
			g) Contractor's profit @ 10 % on (a+b+c+	d+f)			18120.83	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1993.29	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				201322.46	
			Rate per cum = (a+b+c+d+e+f+g+h)/15			2014	13421.50	
14.1D		(q)	Height 5m to 10m			say	<u>13422.00</u>	
Case I		,	Basic Cost of Labour, Material &				102172.00	
(ii)			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 28 per				28608.16	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016) on (a+b		a)		26365.28	
			f) Overhead charges @ 20 % on (a+b+c+c	•			31429.09 18857.45	
			g) Contractor's profit @ 10 % on (a+b+c+c+c+c+c+c+c+c+c+c+c+c+c+c+c+c+c+c+	u+i)			2074.32	
			Cost for 15 cum = a+b+c+d+e+f+g+h				209506.30	
			Rate per cum = (a+b+c+d+e+f+g+h)/15				13967.09	
			(, , , , , , , , , , , , , , , , , , ,			say	<u>13967.00</u>	
14.1D		(r)	Height above 10m					
Case I			Basic Cost of Labour, Material &				102172.00	
(ii)			Machinery (a+b+c) for 15 cum				22740 70	
			d) Formwork and staging 33 per cent of (a+b+c)				33716.76	
			e) GST (multiplying factor 0.2016) on (a+b	o+c+c	d)		27395.17	
			f) Overhead charges @ 20 % on (a+b+c+c		•		32656.79	
			g) Contractor's profit @ 10 % on (a+b+c+c	d+f)			19594.07	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				2155.35	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				217690.14	
			Rate per cum = (a+b+c+d+e+f+g+h)/15			2014	14512.68	
14.1D		(iii)	For box girder and balanced			say	<u>14513.00</u>	
Case I		()	cantilever, 38-58 per cent of cost of					
			concrete.					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &				102172.00	
			Machinery (a+b+c) for 15 cum d) Formwork and staging 38 per				38825.36	
			cent of (a+b+c)				JUUZJ.JU	
			` '					

			SUPER-S	SIRUCIU	\ <u>L</u>			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	ок орес.		e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		28425.07	
			f) Overhead charges @ 20 % on (33884.49	
							20330.69	
			g) Contractor's profit @ 10 % on		·1)			
			h) Cess @ 1% on (a+b+c+d+e+f+g	3)			2236.38	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				225873.99	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	/15			15058.27	
						say	<u>15058.00</u>	
14.1D		(q)	Height 5m to 10m					
Case I			Basic Cost of Labour, Material &	દ			102172.00	
(iii)			Machinery (a+b+c) for 15 cum	-			.022.00	
			d) Formwork and staging 48 pe	er			49042.56	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		30484.86	
			f) Overhead charges @ 20 % on (•		36339.88	
			g) Contractor's profit @ 10 % on (•	•		21803.93	
				•	')		2398.43	
			h) Cess @ 1% on (a+b+c+d+e+f+g	3)				
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				242241.66	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	15			16149.44	
						say	<u>16149.00</u>	
14.1D		(r)	Height above 10m					
Case I			Basic Cost of Labour, Material &	<u> </u>			102172.00	
(iii)			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 58 pe	er			59259.76	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.2016)) on (a+b+	c+d)		32544.64	
			f) Overhead charges @ 20 % on ((a+b+c+d+	-e)		38795.28	
			g) Contractor's profit @ 10 % on	(a+b+c+d+	-f)		23277.17	
			h) Cess @ 1% on (a+b+c+d+e+f+c	•	,		2560.49	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$, ,			258609.34	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	14.5			17240.62	
			nate per cum = (a·b·c·u·e·r·g·n)	13		621/	17241.00	
		Case	Using Batching Plant, Transit Mixer	and Conc	rete Pumn	say	17241.00	
		II		una come	note i ump			
			Unit = cum					
			Taking output = 120 cum					
			a) Material	tonno	E0 640	0100.00	460004.00	M-081
			Cement Coarse sand	tonne	50.640	9100.00 650.00	460824.00 35100.00	M-004
			20 mm Aggregate	cum cum	54.000 64.800	1900.00	123120.00	M-053
			10 mm Aggregate		43.200	1800.00	77760.00	M-051
			b) Labour	cum	43.200	1000.00	77700.00	00 .
			Mate	day	0.880	551.00	484.88	L-12
			Mason	day	3.000	593.00	1779.00	L-11
			Mazdoor	day	19.000	424.00	8056.00	L-13
			c) Machinery	uay			3333.33	
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
			Loader	hour	6.00	1838.00	11028.00	P&M-017
			Transit Mixer (capacity 4.0 cu.m					
			Transit Mixer 4 cum capacity lead	•	15.00	1265.00	18975.00	P&M-049
			upto1 Km					
			Lead beyond 1 Km, L - lead in	tonne.k	300L	80.00	0.00	Lead =0
			Kilometer	m				km & P&M- 050
			Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
			Basic Cost of Labour, Material &		778311.000	2,20,00		
			Machinery (a+b+c) for 120 cum					
			For formwork and staging add the f	ollowina:				
14.1D		(i)	For solid slab super-structure, 18-2					
Case		.,	per cent of (a+b+c)	-				
II		(p)	Height upto 5m					
		/	. gp					

		SUPER-STRUCT	URE			
Sr No Mo	Ref. to DRTH/D R Spec.	Description Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•	Basic Cost of Labour, Material &			778311.00	-
		Machinery (a+b+c) for 120 cum d) Formwork and staging 18 per cent of (a+b+c)			140095.98	
		e) GST (multiplying factor 0.2016) on (a+k	o+c+d)		185150.85	
		f) Overhead charges @ 20 % on (a+b+c+	d+e)		220711.57	
		g) Contractor's profit @ 10 % on (a+b+c+	d+f)		132426.94	
		h) Cess @ 1% on (a+b+c+d+e+f+g)			14566.96	
		Cost for 120 cum = a+b+c+d+e+f+g+h			1471263.30	
		Rate per cum = $(a+b+c+d+e+f+g+h)/120$			12260.53	
14.1D	(q)	Height 5m to 10m		say	<u>12261.00</u>	
Case II		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum			778311.00	
(i)		d) Formwork and staging 23 per cent of (a+b+c)			179011.53	
		e) GST (multiplying factor 0.2016) on (a+b	o+c+d)		192996.22	
		f) Overhead charges @ 20 % on (a+b+c+	d+e)		230063.75	
		g) Contractor's profit @ 10 % on (a+b+c+	d+f)		138038.25	
		h) Cess @ 1% on (a+b+c+d+e+f+g)			15184.21	
		Cost for 120 cum = a+b+c+d+e+f+g+h			1533604.96	
		Rate per cum = (a+b+c+d+e+f+g+h)/120			12780.04	
4445	(=)	Halashi ah aya 40m		say	<u>12780.00</u>	
14.1D Case II	(r)	Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum			778311.00	
(i)		d) Formwork and staging 28 per cent of (a+b+c)			217927.08	
		e) GST (multiplying factor 0.2016) on (a+b	o+c+d)		200841.60	
		f) Overhead charges @ 20 % on (a+b+c+	d+e)		239415.94	
		g) Contractor's profit @ 10 % on (a+b+c+	d+f)		143649.56	
		h) Cess @ 1% on (a+b+c+d+e+f+g)			15801.45	
		Cost for 120 cum = a+b+c+d+e+f+g+h			1595946.63	
		Rate per cum = $(a+b+c+d+e+f+g+h)/120$			13299.56	
4445	(II)	F T h 0 -1-h 00 00		say	<u>13300.00</u>	
14.1D Case	(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)				
II	(p)	Height upto 5m				
		Basic Cost of Labour, Material &			778311.00	
		Machinery (a+b+c) for 120 cum d) Formwork and staging 23 per cent of (a+b+c)			179011.53	
		e) GST (multiplying factor 0.2016) on (a+k	o+c+d)		192996.22	
		f) Overhead charges @ 20 % on (a+b+c+			230063.75	
		g) Contractor's profit @ 10 % on (a+b+c+			138038.25	
		h) Cess @ 1% on (a+b+c+d+e+f+g)	- .,		15184.21	
		Cost for 120 cum = $a+b+c+d+e+f+q+h$			1533604.96	
		Rate per cum = (a+b+c+d+e+f+g+h)/120			12780.04	
				say	<u>12780.00</u>	
14.1D	(p)	Height 5m to 10m				
Case II		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum			778311.00	
(ii)		d) Formwork and staging 28 per cent of (a+b+c)			217927.08	
		e) GST (multiplying factor 0.2016) on (a+b	o+c+d)		200841.60	
		f) Overhead charges @ 20 % on (a+b+c+	d+e)		239415.94	
		g) Contractor's profit @ 10 % on (a+b+c+	-d+f)		143649.56	
		h) Cess @ 1% on (a+b+c+d+e+f+g)			15801.45	

r			SUPER-S	TRUCTUE	RE			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Cost for 120 cum = a+b+c+d+e+f+g+h	· ·			1595946.63	•
			Rate per cum = $(a+b+c+d+e+f+g+h)/f$	120			13299.56	
						say	<u>13300.00</u>	
14.1D		(r)	Height above 10m					
Case II			Basic Cost of Labour, Material &	:			778311.00	
;; (ii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 33 per cent of (a+b+c)	r			256842.63	
			e) GST (multiplying factor 0.2016)	on (a+b+c	:+d)		208686.97	
			f) Overhead charges @ 20 % on (•	•		248768.12	
			g) Contractor's profit @ 10 % on (•		149260.87	
			h) Cess @ 1% on (a+b+c+d+e+f+g	g)	•		16418.70	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1658288.29	
			Rate per cum = (a+b+c+d+e+f+g+h)/	120			13819.07	
						say	<u>13819.00</u>	
14.1D		(iii)	For box girder and balanced					
Case			cantilever, 38-58 per cent of cost of					
II		(p)	concrete. Height upto 5m					
		(P)	Basic Cost of Labour, Material &	,			778311.00	
			Machinery (a+b+c) for 120 cum	•				
			d) Formwork and staging 38 per	r			295758.18	
			cent of (a+b+c)		. 0		040500.05	
			e) GST (multiplying factor 0.2016)	•	•		216532.35 258120.31	
			f) Overhead charges @ 20 % on (154872.18	
			 g) Contractor's profit @ 10 % on (h) Cess @ 1% on (a+b+c+d+e+f+c 	•	rı)		17035.94	
			h) Cess @ 1% on (a+b+c+d+e+f+g Cost for 120 cum = a+b+c+d+e+f+g+h	3)			17033.94	
			Rate per cum = (a+b+c+d+e+f+g+h)/	120			14338.58	
			Rate per cam = (a·b·c·a·e·n·g·n)/	120		say	<u>14339.00</u>	
14.1D		(q)	Height 5m to 10m			,	7700000	
Case			Basic Cost of Labour, Material &	:			778311.00	
II 			Machinery (a+b+c) for 120 cum				.=.=.	
(iii)			d) Formwork and staging 48 per	r			373589.28	
			cent of (a+b+c) e) GST (multiplying factor 0.2016)	on (a+b+c	:+d)		232223.10	
			f) Overhead charges @ 20 % on (•	•		276824.68	
			g) Contractor's profit @ 10 % on (•		166094.81	
			h) Cess @ 1% on (a+b+c+d+e+f+g	•	-,		18270.43	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$,			1845313.30	
			Rate per cum = (a+b+c+d+e+f+g+h)/	120			15377.61	
						say	<u>15378.00</u>	
14.1D		(r)	Height above 10m					
Case			Basic Cost of Labour, Material &	:			778311.00	
II (iii)			Machinery (a+b+c) for 120 cum	_			451420.38	
()			 d) Formwork and staging 58 per cent of (a+b+c) 	r			451420.36	
			e) GST (multiplying factor 0.2016)	on (a+b+c	:+d)		247913.85	
			f) Overhead charges @ 20 % on (a	•	•		295529.05	
			g) Contractor's profit @ 10 % on (•		177317.43	
			h) Cess @ 1% on (a+b+c+d+e+f+g		•		19504.92	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1969996.63	
			Rate per cum = $(a+b+c+d+e+f+g+h)/2$	120			16416.64	
						say	<u>16417.00</u>	
14.1		E	PSC Grade M-40					
		Case	Using concrete mixer.					
			Unit = 1 cum					
			Taking output = 15 cum					
			a) Material Cement	tonne	6.45	0 9100.00	58695.00	M-081
			Comon	COLLIG	0.40	5 5100.00	50055.00	

			SUPER-S	TRUCTU	RE			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Coarse sand	cum	6.750	650.00	4387.50	M-005
			20 mm Aggregate	cum	8.100	1900.00	15390.00	M-053
			10 mm Aggregate	cum	5.400	1800.00	9720.00	M-051 M-180
			Admixture @ 0.4 per cent of cement	kg	25.800	64.00	1651.20	IVI- 100
			b) Labour					
			Mate	day	0.960	551.00	528.96	L-12
			Mason	day	2.000	593.00	1186.00	L-11
			Mazdoor	day	22.000	424.00	9328.00	L-13
			c) Machinery				4-40.00	D014.000
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	291.00	1746.00	P&M-009
			Generator 33 KVA	hour	6.000	506.00	3036.00	P&M-079
			Basic Cost of Labour, Material &		105669.000	000.00	3333.33	
			Machinery (a+b+c) for 15 cum					
			For formwork and staging add the following:					
14.1E		(i)	For solid slab super-structure, 20-30	0 per cent	t of (a+b+c)			
Case I		(p)	Height upto 5m					
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum	&			105669.00	
			d) Formwork and staging 20 pe cent of (a+b+c)	er			21133.80	
			e) GST (multiplying factor 0.2016)	on (a+b+	·c+d)		25563.44	
			f) Overhead charges @ 20 % on (a+b+c+d+	+e)		30473.25	
			g) Contractor's profit @ 10 % on	(a+b+c+d	+f)		18283.95	
			h) Cess @ 1% on (a+b+c+d+e+f+g	•	•		2011.23	
			Cost for 15 cum = a+b+c+d+e+f+g+h				203134.67	
			Rate per cum = $(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+d+e+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+g+h)/(a+b+f+f+g+h)/(a+f+f+f+f+f+f+h)/(a+f+f+f+f+f+f+f+f+f+f+f+f+f+f+f+f+f+f+f$	15			13542.31	
14.1E		(q)	Height 5m to 10m			say	<u>13542.00</u>	
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum	3.			105669.00	
			d) Formwork and staging 25 pe cent of (a+b+c)	er			26417.25	
			e) GST @ 0.2016 on (a+b+c+d)				26628.59	
			f) Overhead charges @ 20 % on	•	•		31742.97	
			g) Contractor's profit @ 10 % on		+f)		19045.78	
			h) Cess @ 1% on (a+b+c+d+e+f+	g)			2095.04	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				211598.63	
			Rate per cum = (a+b+c+d+e+f+g+h)/	15		691/	14106.58 <u>14107.00</u>	
14.1E		(r)	Height above 10m			say	14101.00	
Case I (i)			Basic Cost of Labour, Material &	2.			105669.00	
(-)			Machinery (a+b+c) for 15 cum d) Formwork and staging 30 pe cent of (a+b+c)	er			31700.70	
			e) GST (multiplying factor 0.2016)	on (a+b+	·c+d)		27693.73	
			f) Overhead charges @ 20 % on (a+b+c+d+	+e)		33012.69	
			g) Contractor's profit @ 10 % on				19807.61	
			h) Cess @ 1% on (a+b+c+d+e+f+g	3)			2178.84	
			Cost for 15 cum = a+b+c+d+e+f+g+h				220062.57	
			Rate per cum = (a+b+c+d+e+f+g+h)/	15			14670.84	
14.1E		(ii)	For T-beam & slab, 25-35 per cent			say	<u>14671.00</u>	
Case I		(**)	of (a+b+c)					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &	2			105669.00	
			Machinery (a+b+c) for 15 cum					

	, ,		SUPER-S	TRUCTU	RE	г		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d) Formwork and staging 25 per	·	· '		26417.25	
			cent of (a+b+c)	on (o.b.	o.i.d\		26620 50	
			e) GST (multiplying factor 0.2016)f) Overhead charges @ 20 % on (•	•		26628.59 31742.97	
			g) Contractor's profit @ 10 % on (19045.78	
			h) Cess @ 1% on (a+b+c+d+e+f+g		• • • •		2095.04	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$,			211598.63	
			Rate per cum = $(a+b+c+d+e+f+g+h)/f$	15			14106.58	
						say	<u>14107.00</u>	
14.1E Case I		(q)	Height 5m to 10m				105000 00	
(ii)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				105669.00	
()			d) Formwork and staging 30 per	•			31700.70	
			cent of (a+b+c) e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		27693.73	
			f) Overhead charges @ 20 % on (a	•	•		33012.69	
			g) Contractor's profit @ 10 % on (•		19807.61	
			h) Cess @ 1% on (a+b+c+d+e+f+g		,		2178.84	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$,			220062.57	
			Rate per cum = $(a+b+c+d+e+f+g+h)/2$	15			14670.84	
						say	<u>14671.00</u>	
14.1E		(r)	Height above 10m					
Case I (ii)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				105669.00	
			d) Formwork and staging 35 per cent of (a+b+c)	r			36984.15	
			e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		28758.88	
			f) Overhead charges @ 20 % on (a	a+b+c+d+	+e)		34282.41	
			g) Contractor's profit @ 10 % on (a+b+c+d	+f)		20569.44	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			2262.64	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$	_			228526.52	
			Rate per cum = $(a+b+c+d+e+f+g+h)/r$	15			15235.10	
14.1E		Case II	Using Batching Plant, Transit Mixer	and Cond	crete Pump	say	<u>15235.00</u>	
		"	Unit = cum					
			Taking output = 120 cum					
			a) Material					
			Cement	tonne	51.600	9100.00	469560.00	
			Coarse sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053 M-051
			10 mm Aggregate Admixture @ 0.4 per cent of	cum	43.200 206.400	1800.00 64.00	77760.00 13209.60	M-180
			cement	kg	200.400	04.00	13209.00	
			b) Labour					
			Mate	day	0.940	551.00	517.94	
			Mason	day	3.500	593.00	2075.50	L-11
			Mazdoor c) Machinery	day	20.000	424.00	8480.00	L-13
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
			Loader	hour	6.00	1838.00	11028.00	P&M-017
			Transit Mixer (capacity 4.0 cu.m)				:	D011.515
			Transit Mixer 4 cum capacity lead upto1 Km	hour	15.00	1265.00	18975.00	P&M-049
			Lead beyond 1 Km, L - lead in	tonne.k	300L	80.00	0.00	Lead =0 km & P&M-
			Kilometer	m				050

	Ref. to		SUPER-STR	UCTUE	KE			Τ_
Sr No	MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			For formwork and staging add the following:					
14.1E Case		(i)	For solid/voided slab super- structure, 18-28 per cent of (a+b+c)					
II								
		(p)	Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				801011.00	
			d) Formwork and staging 18 per cent of (a+b+c)				144181.98	
			e) GST (multiplying factor 0.2016) on	(a+b+	c+d)		190550.90	
			f) Overhead charges @ 20 % on (a+b	+c+d+	e)		227148.78	
			g) Contractor's profit @ 10 % on (a+	b+c+d+	+e+f)		136289.27	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				14991.82	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1514173.75	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				12618.11	
						say	<u>12618.00</u>	
14.1E		(q)	Height 5m to 10m					
Case			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				801011.00	
(i)			d) Formwork and staging 23 per cent of (a+b+c)				184232.53	
			e) GST (multiplying factor 0.2016) on	(a+b+	c+d)		198625.10	
			f) Overhead charges @ 20 % on (a+b	+c+d+	e)		236773.73	
			g) Contractor's profit @ 10 % on (a+	b+c+d-	⊦f)		142064.24	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				15627.07	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1578333.67	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				13152.78	
14.1E		(r)	Height above 10m			say	<u>13153.00</u>	
Case		(r)	Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				801011.00	
(i)			d) Formwork and staging 28 per cent of (a+b+c)				224283.08	
			e) GST (multiplying factor 0.2016) on	(a+b+c	c+d)		206699.29	
			f) Overhead charges @ 20 % on (a+b	•	•		246398.67	
			g) Contractor's profit @ 10 % on (a+		•		147839.20	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		•		16262.31	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1642493.55	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				13687.45	
			, , , , , , , , , , , , , , , , , , , ,			say	<u>13687.00</u>	
14.1E Case II		(ii) (p)	For T-beam & slab, 23-33 per cent of (a+b+c) Height upto 5m					
		(P)	Basic Cost of Labour, Material &				801011.00	
			d) Formwork and staging 23 per				184232.53	
			cent of (a+b+c) e) GST (multiplying factor 0.2016) on	(a+b+	c+d)		198625.10	
			f) Overhead charges @ 20 % on (a+b	•	•		236773.73	
			g) Contractor's profit @ 10 % on (a+		•		142064.24	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		•		15627.07	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1578333.67	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				13152.78	
						say	<u>13153.00</u>	

			SUPER-ST	RUCTU	RE			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
14.1E		(q)	Height 5m to 10m		l .			
Case II			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				801011.00	
(ii)			d) Formwork and staging 28 per cent of (a+b+c)				224283.08	
			e) GST (multiplying factor 0.2016) o	n (a+b+	c+d)		206699.29	
			f) Overhead charges @ 20 % on (a-	+b+c+d+	⊦e)		246398.67	
			g) Contractor's profit @ 10 % on (a	+b+c+d	+f)		147839.20	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				16262.31	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1642493.55	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			13687.45	
4445		(r)	Height above 40m			say	<u>13687.00</u>	
14.1E Case		(r)	Height above 10m Basic Cost of Labour, Material &				801011.00	
II (ii)			Machinery (a+b+c) for 120 cum					
()			 d) Formwork and staging 33 per cent of (a+b+c) e) GST (multiplying factor 0.2016) o 	n (a+h+	.c+d)		264333.63 214773.48	
			, , , , , , , , , , , , , , , , , , , ,	•	•		256023.62	
			f) Overhead charges @ 20 % on (a-		•		153614.17	
			g) Contractor's profit @ 10 % on (a	тртста	+ 1)			
			h) Cess @ 1% on (a+b+c+d+e+f+g)				16897.56	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$ Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			1706653.46 14222.11	
			Rate per cum = (a·b·c·u·e·i·g·ii)/12	-0		say	14222.00	
14.1E Case II		(iii) (p)	For cast-in-situ box girder, segment construction and balanced cantilever, 38-58 per cent of cost of concrete. Height upto 5m					
		(P)	Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				801011.00	
			d) Formwork and staging 38 per cent of (a+b+c)				304384.18	
			e) GST (multiplying factor 0.2016) o	n (a+b+	c+d)		222847.67	
			f) Overhead charges @ 20 % on (a-	•	•		265648.57	
			g) Contractor's profit @ 10 % on (a		•		159389.14	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		•		17532.81	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1770813.37	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			14756.78	
						say	14757.00	
14.1E		(q)	Height 5m to 10m			_		
Case			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				801011.00	
(iii)			d) Formwork and staging 48 per cent of (a+b+c)				384485.28	
			e) GST (multiplying factor 0.2016) o	•	•		238996.05	
			f) Overhead charges @ 20 % on (a-		•		284898.47	
			g) Contractor's profit @ 10 % on (a	+D+C+d	T1)		170939.08	
			h) Cess @ 1% on (a+b+c+d+e+f+g) Cost for 120 cum = a+b+c+d+e+f+g+h				18803.30 1899133.18	
			Rate per cum = (a+b+c+d+e+f+g+h)/12	20			15826.11	
			(4.6.6.4.6.1.9.11/12			say	<u>15826.00</u>	
14.1E		(r)	Height above 10m					
Case			Basic Cost of Labour, Material &				801011.00	
 			Machinery (a+b+c) for 120 cum				10.1500.55	
(iii)			d) Formwork and staging 58 per cent of (a+b+c)				464586.38	

		SUPER-S	TRUCTUE	RE			
Sr No Mo	Ref. to oRTH/D R Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
ļ	-	e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		255144.43	!
		f) Overhead charges @ 20 % on	•	•		304148.36	
		g) Contractor's profit @ 10 % on				182489.02	
				• • • •		20073.79	
		h) Cess @ 1% on (a+b+c+d+e+f+					
		Cost for 120 cum = a+b+c+d+e+f+g+h				2027452.98	
		Rate per cum = (a+b+c+d+e+f+g+h)/	120			16895.44	
					say	<u>16895.00</u>	
14.1F	F	PSC Grade M-45					
		Unit = 1 cum					
		Taking output = 120 cum					
		a) Material					
		Cement	tonne	55.800	9100.00	507780.00	M-081
		Coarse sand	cum	54.000	650.00	35100.00	M-004
		20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
		10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051
		Admixture @ 0.4 per cent of	kg	223.200	64.00	14284.80	M-180
		cement					
		b) Labour					
		Mate	day	0.940	551.00	517.94	L-12
		Mason	day	3.500	593.00	2075.50	L-11
		Mazdoor	day	20.000	424.00	8480.00	L-13
		c) Machinery	•				
		Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
		Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
		Loader	hour	6.00	1838.00	11028.00	P&M-017
		Transit Mixer (capacity 4.0 cu.m)					
		Transit Mixer 4 cum capacity lead upto1 Km	hour	15.00	1265.00	18975.00	P&M-049
		Lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	80.00	0.00	Lead =0 km & P&M- 050
		Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
		Basic Cost of Labour, Material &		840306.000			
14.1F	(i)	Machinery (a+b+c) for 120 cum For formwork and staging add the for solid slab/voided slab super	_				
14.11	()	structure, 16-26 per cent of cost o concrete (a+b+c)					
	(p)						
	4.7	Basic Cost of Labour, Material &				840306.00	
		Machinery (a+b+c) for 120 cum d) Formwork and staging 16 pe cent of (a+b+c)	r			134448.96	
		e) GST (multiplying factor 0.2016)	on (athi	c+d)		196510.60	
		f) Overhead charges @ 20 % on				234253.11	
		g) Contractor's profit @ 10 % on		+т)		140551.87	
		h) Cess @ 1% on (a+b+c+d+e+f+g				15460.71	
		Cost for 120 cum = a+b+c+d+e+f+g+h				1561531.25	
		Rate per cum = (a+b+c+d+e+f+g+h)/	120			13012.76	
					say	<u>13013.00</u>	
14.1F	(q)	Height 5m to 10m			•	_ 	
(i)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				840306.00	
		d) Formwork and staging 21 pe cent of (a+b+c)	r			176464.26	
		e) GST (multiplying factor 0.2016)	on (a+b+	c+d)		204980.88	
		f) Overhead charges @ 20 % on	•	•		244350.23	
						146610.14	
				• • • •			
		h) Cess @ 1% on (a+b+c+d+e+f+				16127.12	
		Cost for 120 cum = a+b+c+d+e+f+g+h				1628838.63	
		Rate per cum = (a+b+c+d+e+f+g+h)/	120			13573.66	
					say	<u>13574.00</u>	

			SUPER-STRI	JCTU	RE			, , ,
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.1F	. — —	(r)	Height above 10m					
(i)			Basic Cost of Labour, Material &				840306.00	
			Machinery (a+b+c) for 120 cum					
			d) Formwork and staging 26 per				218479.56	
			cent of (a+b+c) e) GST (multiplying factor 0.2016) on	(a+h+	c+q)		213451.17	
			f) Overhead charges @ 20 % on (a+b	•	•		254447.35	
			g) Contractor's profit @ 10 % on (a+b		•		152668.41	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	,a	-1,		16793.52	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1696146.01	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				14134.55	
			. ,			say	<u>14135.00</u>	
14.1F		(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					
		u-7	Basic Cost of Labour, Material &				840306.00	
			Machinery (a+b+c) for 120 cum					
			d) Formwork and staging 21 per				176464.26	
			cent of (a+b+c)	/a.i.b.i.	- 1 d\		204980.88	
			e) GST (multiplying factor 0.2016) onf) Overhead charges @ 20 % on (a+b)	•	•		244350.23	
			f) Overhead charges @ 20 % on (a+b g) Contractor's profit @ 10 % on (a+b				146610.14	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	J+C+u	T1)		16127.12	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1628838.63	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				13573.66	
			(say	<u>13574.00</u>	
14.1F		(q)	Height 5m to 10m					
(ii)			Basic Cost of Labour, Material &				840306.00	
			Machinery (a+b+c) for 120 cum				040470 50	
			d) Formwork and staging 26 per cent of (a+b+c)				218479.56	
				(azbz	c+q/		213451.17	
			e) GST (multiplying factor 0.2016) onf) Overhead charges @ 20 % on (a+b)	•	•		254447.35	
			g) Contractor's profit @ 10 % on (a+b				152668.41	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	, . .	,		16793.52	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1696146.01	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				14134.55	
						say	<u>14135.00</u>	
14.1F		(r)	Height above 10m					
(ii)			Basic Cost of Labour, Material &				840306.00	
			Machinery (a+b+c) for 120 cum				200404.00	
			d) Formwork and staging 31 per cent of (a+b+c)				260494.86	
			e) GST (multiplying factor 0.2016) on	(a+b+	c+d)		221921.45	
			f) Overhead charges @ 20 % on (a+b	•	•		264544.46	
			g) Contractor's profit @ 10 % on (a+b		•		158726.68	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		•		17459.93	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1763453.38	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				14695.44	
		,				say	<u>14695.00</u>	
14.1F		(iii)	3 ,					
			segmental construction and balanced cantilever, 36-56 per cent					
			of cost of concrete.					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &				840306.00	
			Machinery (a+b+c) for 120 cum					

	Def !							
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d) Formwork and staging 36	per		-	302510.16	
			cent of (a+b+c) e) GST (multiplying factor 0.20	16) on (a±b±	c+q/		230391.74	
			, , , , ,	, ,	,			
			f) Overhead charges @ 20 %	•	•		274641.58	
			g) Contractor's profit @ 10 %	•	+1)		164784.95	
			h) Cess @ 1% on (a+b+c+d+e-	•			18126.34	
			Cost for 120 cum = $a+b+c+d+e+f+g$				1830760.77	
			Rate per cum = (a+b+c+d+e+f+g+	h)/120			15256.34	
14.1F		(a)	Unight Fm to 40m			say	<u>15256.00</u>	
(iii)		(q)	• • • • • • • • • • • • • • • • • • • •	1 9			840306.00	
(,			Basic Cost of Labour, Materia Machinery (a+b+c) for 120 cum	/ O:			040300.00	
			d) Formwork and staging 46	per			386540.76	
			cent of (a+b+c)					
			e) GST (multiplying factor 0.20	16) on (a+b+	c+d)		247332.31	
			f) Overhead charges @ 20 % c	n (a+b+c+d+	-е)		294835.81	
			g) Contractor's profit @ 10 %	•	•		176901.49	
			h) Cess @ 1% on (a+b+c+d+e+	•	,		19459.16	
			Cost for 120 cum = $a+b+c+d+e+f+c$	•			1965375.53	
			Rate per cum = (a+b+c+d+e+f+q+	•			16378.13	
			rate per cam (a.b.o.a.o.r.g.	, 0		say	16378.00	
14.1F		(m)	Hairaht ah awa 40m			52,	7007000	
(iii)		(r)	Height above 10m				040200 00	
(,			Basic Cost of Labour, Materia Machinery (a+b+c) for 120 cum	<i>I</i> &			840306.00	
			d) Formwork and staging 56	ner			470571.36	
			cent of (a+b+c)	pei			11 007 1.00	
			e) GST (multiplying factor 0.20	16) on (a+b+	c+d)		264272.88	
			f) Overhead charges @ 20 %		•		315030.05	
			g) Contractor's profit @ 10 %	•	•		189018.03	
			h) Cess @ 1% on (a+b+c+d+e-	•	-,		20791.98	
			Cost for 120 cum = $a+b+c+d+e+f+c$	•			2099990.30	
			Rate per cum = (a+b+c+d+e+f+g+				17499.92	
			rate per cam (a.b.o.a.o.r.g.	, 0		say	<u>17500.00</u>	
14.1		G	PSC Grade M-50					
			Unit = 1 cum					
			Taking output = 120 cum					
			a) Material					
			Cement	tonne	58.800	9100.00	535080.00	M-081
			Coarse sand	cum	54.000	650.00	35100.00	M-004
			20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
			10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051 M-180
			Admixture @ 0.4 per cent of cement	kg	235.200	64.00	15052.80	IVI= 1 OU
			b) Labour					
			Mate	day	0.940	551.00	517.94	L-12
			Mason	day	3.500	593.00	2075.50	L-11
			Mazdoor	day	20.000	424.00	8480.00	L-13
			c) Machinery	•				
			Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
			Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
			Loader	hour	6.00	1838.00	11028.00	P&M-017
			Transit Mixer (capacity 4.0 cu.m)					
			Transit Mixer 4 cum capacity le	ead hour	15.00	1265.00	18975.00	P&M-049
			Lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	80.00	0.00	Lead =0 km & P&M 050
								UOU
			Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007

				SUPER-S	TRUCTU	RE .		ı	
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.1G		(i)	follo For seg bala	formwork and staging add the owing: cast-in-situ box girder mental construction and inced cantilever, 35-55 per cen ost of concrete	Ė				
		(p)	Bas Mac	ght upto 5m ic Cost of Labour, Material & hinery (a+b+c) for 120 cum				868374.00	
				Formwork and staging 35 per t of (a+b+c)				303930.90	
			e)	GST (multiplying factor 0.2016)	•	•		236336.67	
			f)	Overhead charges @ 20 % on	•	•		281728.31	
			g)	Contractor's profit @ 10 % on	•	+f)		169036.99	
			h)	Cess @ 1% on (a+b+c+d+e+f+g	g)			18594.07	
				t for 120 cum = a+b+c+d+e+f+g+h				1878000.94	
			Rate	e per cum = (a+b+c+d+e+f+g+h)/	120			15650.01	
							say	<u>15650.00</u>	
14.1G (i)		(q)	Bas	ght 5m to 10m ic Cost of Labour, Material & hinery (a+b+c) for 120 cum				868374.00	
			d)	Formwork and staging 45 per t of (a+b+c)	r			390768.30	
			e)	GST (multiplying factor 0.2016)	on (a+b+	·c+d)		253843.09	
			f)	Overhead charges @ 20 % on	(a+b+c+d	+e)		302597.08	
			g)	Contractor's profit @ 10 % on	(a+b+c+d	+f)		181558.25	
			h)	Cess @ 1% on (a+b+c+d+e+f+g	g)			19971.41	
			Cos	t for 120 cum = a+b+c+d+e+f+g+h				2017112.13	
			Rate	e per cum = (a+b+c+d+e+f+g+h)/	120			16809.27	
14.1G		(r)	Heiç	ght above 10m			say	<u>16809.00</u>	
(i)				ic Cost of Labour, Material & hinery (a+b+c) for 120 cum	•			868374.00	
				Formwork and staging 55 per t of (a+b+c)				477605.70	
			e)	GST (multiplying factor 0.2016)	•	•		271349.51	
			f)	Overhead charges @ 20 % on	•	•		323465.84	
			g)	Contractor's profit @ 10 % on		l + t)		194079.51	
			h)	Cess @ 1% on (a+b+c+d+e+f+g	3)			21348.75	
				t for 120 cum = a+b+c+d+e+f+g+h				2156223.31	
			Rate	e per cum = (a+b+c+d+e+f+g+h)/	120			17968.53	
14.1		н	Dec	Grade M- 55			say	<u>17969.00</u>	
14.1				t = 1 cum					
				ing output = 120 cum					
			a)	Material					
			•	Cement	tonne	63.500	9100.00	577850.00	M-081
				Coarse sand	cum	54.000	650.00	35100.00	M-004
				20 mm Aggregate	cum	64.800	1900.00	123120.00	M-053
				10 mm Aggregate	cum	43.200	1800.00	77760.00	M-051 M-180
			h)	Admixture @ 0.4 per cent of cement Labour	kg	254.000	64.00	16256.00	IVI- 160
			b)	Mate	day	0.940	551.00	517.94	L-12
				Mason	day	3.500	593.00	2075.50	L-11
				Mazdoor	day	20.000	424.00	8480.00	L-13
			c)	Machinery	•				
				Batching Plant @ 20 cum/hour	hour	6.00	3200.00	19200.00	P&M-002
				Generator 100 KVA	hour	6.00	938.00	5628.00	P&M-080
				Loader	hour	6.00	1838.00	11028.00	P&M-017

	Description Transit Mixer (capacity 4.0 cu.m)	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	ransit Mixer (capacity 4.0 cu.m)					Input ref.
	` . ,					
	Transit Mixer 4 cum capacity lead upto1 Km	hour	15.00	1265.00	18975.00	P&M-049
	Lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	80.00	0.00	Lead =0 km & P&M- 050
	Concrete Pump	hour	6.00	2726.00	16356.00	P&M-007
	•		912347.000			
	5 5					
	• • • • • • • • • • • • • • • • • • • •					
	•					
	•	•				
	• .				912347.00	
	•					
	,	•			319321.45	
•) GST (multiplying factor 0.2016)	on (a+b+c	c+d)		248304.36	
		•	•		295994.56	
		•	•		177596.74	
		1)	•		19535.64	
(Cost for 120 cum = a+b+c+d+e+f+g+h	,			1973099.75	
F	Rate per cum = (a+b+c+d+e+f+g+h)/	120			16442.50	
	. ,			say	16443.00	
(q) H	leight 5m to 10m			•		
	•				912347.00	
	,	•			410556.15	
		on (a+b+c	c+d)		266697.28	
f	Overhead charges @ 20 % on	a+b+c+d+	⊦e)		317920.09	
ç) Contractor's profit @ 10 % on	a+b+c+d+	⊦f)		190752.05	
ŀ	i) Cess @ 1% on (a+b+c+d+e+f+g	1)			20982.73	
(Cost for 120 cum = a+b+c+d+e+f+g+h				2119255.30	
F	Rate per cum = (a+b+c+d+e+f+g+h)/	120			17660.46	
(-) I				say	<u>17660.00</u>	
	•				040047.00	
	•				912347.00	
C	l) Formwork and staging 55 per	•			501790.85	
	` ,	on (a+b+c	c+d)		285090.19	
					339845.61	
		•	•		203907.37	
-		•	-		22429.81	
(2265410.83	
F	Rate per cum = (a+b+c+d+e+f+g+h)/	120			18878.42	
				say	<u>18878.00</u>	
t (ransit mixer, concrete pump, admixers 0.4 per cent of weight of cement may	conformi	ng IS: 9103 @			
	A A A A A A A A A A A A A A A A A A A	Concrete Pump Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum For formwork and staging add the following: (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 d) Formwork and staging 35 per cent of (a+b+c) e) GST (multiplying factor 0.2016) f) Overhead charges @ 20 % on (approximate) on (approxim	Concrete Pump Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum For formwork and staging add the following: (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 d) Formwork and staging 35 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d-g) Contractor's profit @ 10 % on (a+b+c+d-h) Cess @ 1% on (a+b+c+d+e+f+g) Cost for 120 cum = a+b+c+d+e+f+g+h Rate per cum = (a+b+c+d+e+f+g+h)/120 (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d-g) Contractor's profit @ 10 % on (a+b+c+d-g) Contractor's profit @ 10 % on (a+b+c+d-g) Cost for 120 cum = a+b+c+d+e+f+g+h Rate per cum = (a+b+c+d+e+f+g+h)/120 (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d-g) Contractor's profit @ 10 % on (a+b+c+d-g) Cost for 120 cum = a+b+c+d+e+f+g+h)/120 (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d-g) Contractor's profit @ 10 % on (a+b+c+d-d-g) Contractor's profit @ 10 % on (a+b+c+d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d	Concrete Pump Basic Cost of Labour, Material & 912347.000 Machinery (a+b+c) for 120 cum For formwork and staging add the following: (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 d) Formwork and staging 35 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d+) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+f) h) Cess @ 1% on (a+b+c+d+e+f+g+h) Rate per cum = (a+b+c+d+e+f+g+h)/120 (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+f) h) Cess @ 1% on (a+b+c+d+e+f+g+h) Rate per cum = (a+b+c+d+e+f+g+h) Cost for 120 cum a a+b+c+d+e+f+g+h Rate per cum = (a+b+c+d+e+f+g+h) Concrete Pump Basic Cost of Labour, Material & 912347.000 Basic Cost of Labour, Material & 912347.000 For formwork and staging add the following: (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 d) Formwork and staging 35 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) h) Cess @ 1% on (a+b+c+d+e+f+g) Cost for 120 cum = a+b+c+d+e+f+g+h)/120 (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) h) Cess @ 1% on (a+b+c+d+e+f+g+h)/120 (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d+e) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) g) Cost for 120 cum = a+b+c+d+e+f+g+h)/120 say (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 per cent of (a+b+c) e) GST (multiplying factor 0.2016) on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) f) Overhead charges @ 20 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c+d+e) g) Contractor's profit @ 10 % on (a+b+c-d+e) g) Contractor's profit @ 10 % on (a+b-c-d+e) g) Contractor'	Concrete Pump	

			PIROCIURI				
Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		 Cement provided for various of structure is for estimating purpose cement will be as per approved m provision for coarse and fine aggrepurpose and the exact quantity shall be 	only. Actua ix design. S egates is fo	I quantity of Similarly, the or estimating			
		 The items like needle and surface of the control of t	er the overh	ead charges.			
14.2	1600	Supplying, fitting and placing HYSI per drawing and technical specifica		rcement in su	per-structure	e complete as	
		Unit = 1 MT					
		Taking output = 1 MT					
		Material HYSD bars including 5 per cent for laps and wastage	tonne	1.050	67000.00	70350.00	M-082
		Binding wire	Kg	8.000	105.00	840.00	M-072
		b) Labour for cutting, bending	_				
		tying and placing in position	•				
		Mate	day	0.440	551.00	242.44	L-12
		Blacksmith	day	3.000	593.00	1779.00	L-02
		Mazdoor	day	8.000	424.00	3392.00	L-13
		Basic Cost of Labour & Material (a+b)		76604.000			
		c) GST (multiplying factor 0.2016)				15443.25	
		d) Overhead charges @ 20 % on				18409.34	
		e) Contractor's profit @ 10 % on	(a+b+c+d)			11045.60	
		f) Cess @ 1% on (a+b+c+d+e)				1215.02	
		Rate per MT = a+b+c+d+e+f				122716.65	
					say	<u>122717.00</u>	
14.3	1800	High tensile steel wires/strands in operations and grouting complete a	_			-	
				•			
		Unit = 1 MT					
		Unit = 1 MT Taking output = 0 377 MT					
		Taking output = 0.377 MT					
		Taking output = 0.377 MT Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)	tonne	0.390	74697.00	29131.83	M-119
		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	tonne	0.390 42.000	74697.00 116.00	29131.83 4872.00	M-119 M-165
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x	metre h each				
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m. Tube anchorage set complete with bearing plate, permanent wedges	metre h each tonne	42.000	116.00	4872.00	M-165
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m. Tube anchorage set complete with bearing plate, permanent wedges etc Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, =	metre h each tonne	42.000	116.00 4894.00	4872.00 9788.00	M-165 M-187
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m. Tube anchorage set complete with bearing plate, permanent wedges etc Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg) Add 0.50 per cent cost of materia for Spacers, Insulation tape and miscellaneous items b) Labour i) For making and fixing cables	metre h each tonne	42.000	116.00 4894.00	4872.00 9788.00 1183.00	M-165 M-187
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m. Tube anchorage set complete with bearing plate, permanent wedges etc Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg) Add 0.50 per cent cost of materia for Spacers, Insulation tape and miscellaneous items b) Labour i) For making and fixing cables anchorages	metre h each tonne	42.000 2.000 0.130	116.00 4894.00 9100.00	4872.00 9788.00 1183.00 2248.74	M-165 M-187 M-081
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m. Tube anchorage set complete with bearing plate, permanent wedges etc Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg) Add 0.50 per cent cost of materia for Spacers, Insulation tape and miscellaneous items b) Labour i) For making and fixing cables anchorages Mate	metre h each tonne	42.000 2.000 0.130	116.00 4894.00 9100.00	4872.00 9788.00 1183.00 2248.74	M-165 M-187 M-081
		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 Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m. Tube anchorage set complete with bearing plate, permanent wedges etc Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg) Add 0.50 per cent cost of materia for Spacers, Insulation tape and miscellaneous items b) Labour i) For making and fixing cables anchorages	metre h each tonne	42.000 2.000 0.130	116.00 4894.00 9100.00	4872.00 9788.00 1183.00 2248.74	M-165 M-187 M-081

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
		ii) I	For prestressing					
			Mate/Supervisor	day	0.050	551.00	27.55	L-12
			Prestressing operator / Fitter	day	0.250	593.00	148.25	L-08
			Mazdoor	day	1.000	424.00	424.00	L-13
		iii)	For grouting					
		,	Mate/Supervisor	day	0.050	551.00	27.55	L-12
			Mason	day	0.250	593.00	148.25	L-11
			Mazdoor	day	1.000	424.00	424.00	L-13
		c)	Machinery					
			Stressing jack with pump	hour	2.500	170.00	425.00	P&M-040
			Grouting pump with agitator	hour	1.000	193.00	193.00	M-111
			Generator 33 KVA.	hour	3.500	506.00	1771.00	P&M-079
		d)	GST (multiplying factor 0.201	6) on (a+b+c	:)		10637.49	
		e)	Overhead charges @ 20 % or	n (a+b+c+d)			12680.56	
		f)	Contractor's profit @ 10 % or	า (a+b+c+d+	-e)		7608.34	
		g)	Cess @ 1% on (a+b+c+d+e+f)	,		836.92	
		•	st for 0.377 MT (a+b+c+d+e+f+g)	•			84528.64	
			te per MT = $(a+b+c+d+e+f+g)/0.3$	377			224213.90	
			(2 2 0 a 0 a 1 g), o a			sav	224214.00	

Note Cost of HT steel has been taken for delivery at site. Hence carriage has not been considered.

14.4 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	cum	1.000	6349.00	6349.00	Item
	Refer relevant item of concrete in					14.1(C)
	Item 14.1 (Excluding formwork					
	and excluding GST, OH, CP &					
	Cess)					
	HYSD bar reinforcement Rate as	tonne	0.080	76604.00	6128.32	Item 14.2
	per item No 14.2(Excluding					Α
	formwork and excluding GST, OH,					
	CP & Cess)					
b)	Labour					
ω,	Mazdoor for cleaning deck slab	day	0.150	424.00	63.60	L-13
	concrete surface.	day	0.100	12 1.00	00.00	
c)	GST @ 0.2016 on (a+b)				2528.25	
c)	• ,					
d)	Overhead charges @ 20 % on (a	a+b+c)			3013.83	
e)	Contractor's profit @ 10 % on (a	a+b+c+d)			1808.30	
f)	Cess @ 1% on (a+b+c+d+e)				198.91	
Rat	te per cum (a+b+c+d+e+f)				20090.21	
				say	20090.00	

14.5 515 & Mastic Asphalt 2702

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 0.490 551.00 269.99 L-12

			SUPER-ST	RUCTU	RE ,			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		-	Mazdoor	day	11.000	424.00	4664.00	L-13
		b)	Mazdoor (Skilled) Machinery	day	1.250	508.00	635.00	L-15
		,	Mechanical broom @ 1250 sqm per hour	hour	0.060	473.00	28.38	P&M-031
			Air compressor 250 cfm	hour	0.060	658.00	39.48	P&M-001
			Mastic cooker 1 tonne capacity	hour	6.000	135.00	810.00	P&M-030
			Bitumen boiler 1500 litres capacity	hour	6.000	348.00	2088.00	P&M-005
			Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	530.00	530.00	P&M-053
		c) Bas	Material e mastic (without coarse					
			regates) = 60 per cent					
			arse aggregate(3.35mm to 9.5 mm a) = 40 per cent .					
		mas (bas	portion of material required for stic asphalt with coarse aggregates sed on mix design done for a cific case)					
			i) Bitumen 80/100 or 60/70 or 30/40 @ 10.2 per cent by weight of mix. 2 x 10.2/100 = 0.204	tonne	0.200	57924.00	11584.80	M-074
			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	0.390	700.00	273.00	M-021
			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	0.360	15000.00	5400.00	M-188
			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	0.550	1800.00	990.00	M-051
			v) Pre-coated stone chips of 9.5 mm nominal size for skid resistance = 72.46x0.005/10 = 0.036	cum	0.040	2107.00	84.28	M-142
			vi) Bitumen for coating of chips @ 2 per cent by weight = 0.036 x 1.456 x 2/100 = 0.001048MT = 1.05kg	kg	1.050	57.92	60.82	M- 074/1000
		d)	GST (multiplying factor 0.2016) o	n (a+b+c	c)		5535.48	
		e)	Overhead charges @ 20 % on (a				6598.65	
		f)	Contractor's profit @ 10 % on (a				3959.19	
		g)	Cess @ 1% on (a+b+c+d+e+f)		-,		435.51	
		•	t for 72.46 sqm = a+b+c+d+e+f+g				43986.58	
			e per sqm = (a+b+c+d+e+f+g)/72.4	6			607.05	
			- p 24 (* * 2.0.4.0.1.9// 2.4	-		say	607.00	
	Note	. 4 TL	as rates for 6 mm or any other this	knooo ~	nov ho worked			

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.

		CHAP' SUPER-SI	TER-14 RUCTU	RE			1
Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
	cas	his rate analysis is based on designer and is meant for estimating purpolequired to be done for each case.	•	•			
	asp	he quantity of bitumen works out 17 halt blocks without aggregates ndards laid down by MoRTH Specific	and fa				
4.6 2703, 1500, 1600 & 1700	mn cer ade	nstruction of precast RCC railing n, true to line and grade, toleran- ntre to centre spacing between equate space between vertical p wings and technical specification	ce of ve vertical oost for	rtical RCC pos post not to	st not to exceexceed 2000	eed 1 in 500, mm, leaving	l
		it = 1 RM king output = 2 x 24 m span = 48					
	m						
	a)	Material					
	-,	Cement concreteM30 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) (Excluding formwork and excluding GST, OH, CP & Cess) No. of vertical posts = (12 + 2)2 = 28 Nos., External area of vertical	cum	4.090	6349.00	25967.41	Iten 14.1(

CP & Cess)
Refer MoRTH SD / 202.

yard.

Add 5 per cent of (a) for handling and fixing of precast panels in position

Add 5 per cent of above cost for

HYSD bar reinforcement Rate as

per item No 14.2(Excluding formwork and excluding GST, OH,

form work for casting in casting

b)	GST (multiplying factor 0.2016) on (a)		19879.13
c)	Overhead charges @ 20 % on (a+b)		23697.19
d)	Contractor's profit @ 10 % on (a+b+c)		14218.31
e)	Cess @ 1% on (a+b+c+d)		1564.01
Rate	for 48 m (a+b+c+d+e)		157965.46
Rate	per metre (a+b+c+d+e)/48		3290.95
		say	<u>3291.00</u>

tonne

0.870

76604.00

1298.37

4695.56

66645.48 Item 14.2

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.

14.7 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

Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	OK Opec.			ing output = 2 x 24 m span = 48					
			<i>m.</i> a)	Material Cement concreteM30 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) (Excluding formwork and excluding GST, OH, CP & Cess)	cum	4.090	6349.00	25967.41	Item 14.1(C)
				No. of vertical posts = $(12 + 2)2 = 28$ Nos., External area of vertical post $0.25x0.275 = 0.069$ sqm, Concrete in vehicle posts = 0.069 x $28 = 1.932$ 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				3116.09	
			rofo	form work. HYSD bar reinforcement Rate as per item No 14.2(Excluding formwork and excluding GST, OH, CP & Cess)	tonne	0.870	76604.00	66645.48	Item 14.2 A
			refe b)	r MoRTH SD / 202. GST (multiplying factor 0.2016)	on (a)			19298.96	
			c)	Overhead charges @ 20 % on (a				23005.59	
			d)	Contractor's profit @ 10 % on (a	•			13803.35	
			e)	Cess @ 1% on (a+b+c+d)				1518.37	
				e for 48 m (a+b+c+d+e)				153355.25	
			Kat	e per metre (a+b+c+d+e)/48			say	3194.90 <u>3195.00</u>	
		Note		Quantities of material have been as of MoRTH vide drawing no. SD/20		from standard			
			m s	8 m length is the total linear length pan.					
14.8	2703.2 & 1900		_	viding, fitting and fixing mild ste- cification	el railing	j complete as i	per drawing a	and Technical	
				t = 1 RM					
			ı ak m	$ing output = 2 \times 50 m span = 100$					
			a)	Material: 1) ISMC 100 = 2.806 x 1.05 =	tonne	2.950	50728.00	149647.60	M-179
				2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012	tonne	1.010	50728.00	51235.28	M-179
				MT 3) MS bars = 0.17 x 1.05 = 0.180	tonne	0.180	50728.00	9131.04	M-179
				MT 4) MS bolts, nuts and washers	tonne	0.150	120000.00	18000.00	M- 130*1000
				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				11400.70	
				Add for cost of concrete for fixing vertical posts in the performed recess @ 1 per cent of cost of material.				2280.14	

			SUPER-	STRUCTUR	<u>E</u>			,
Sr No	Ref. to MoRTH/D SR Spec.	L	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Add for electricity charges, welding and drilling equipment,			·	2280.14	
			electrodes and other consumable @ 1 per cent of cost of material					
			b) Labour Mate	day	2.800	551.00	1542.80	L-12
			Mazdoor (Skilled) Mazdoor	day day	30.000 40.000	508.00 424.00	15240.00 16960.00	L-15 L-13
			c) GST (multiplying factor 0.2016	•	40.000	424.00	55987.89	
			d) Overhead charges @ 20 % ore) Contractor's profit @ 10 % or				66741.12 40044.67	
			f) Cess @ 1% on (a+b+c+d+e)	r (a · b · c · a)			4404.91	
			Cost for 100 m steel railing = a+b+c+ Rate per metre (a+b+c+d+e+f)/100	d+e+f			444896.29 4448.96	
			Kate per metre (a+b+c+u+e+i)/100			say	<u>4449.00</u>	
14.9	2705		Drainage Spouts complete as per o	drawing and	l Technical spe	ecification		
			Unit = 1 No. Taking output = 1 No.					
			a) Material	17	4.000	74.00	004.00	M
			Corrosion resistant Structural steel including 5 per cent	Kg	4.000	71.00	284.00	M- 087/1000
			GI pipe 100mm dia GI bolt 10 mm Dia	metre each	6.000 6.000	43.00 44.60	258.00 267.60	M-056 M-110
			Galvanised MS flat clamp	each	2.000	38.00	76.00	M-101
			b) Labour For fabrication					
			Mate	day	0.020	551.00	11.02	L-12
			Skilled (Blacksmith, welder etc.) Mazdoor	day day	0.020 0.020	593.00 424.00	11.86 8.48	L-02 L-13
			For fixing in position				E E4	L-12
			Mate Mason	day day	0.010 0.010	551.00 593.00	5.51 5.93	L-12 L-11
			Mazdoor Add @ 5 per cent of cost of	day	0.200	424.00	84.80 50.66	L-13
			material and labour for electrode	*			30.00	
			cutting gas, sealant, anti-corrosive bituminous paint, mild steel	ve				
			grating etc. c) GST (multiplying factor 0.2016	S) on (a+h)			214.47	
			d) Overhead charges @ 20 % or	, , ,			255.67	
			e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e)	n (a+b+c+d)			153.40 16.87	
			Rate per metre (a+b+c+d+e+f)				1704.27	
		Note	1. In case of viaducts in urban are	eas the dr	ainage enquite	say	<u>1704.00</u>	
		11010	should be connected with suitable discharge the surface run-off to drain	oly located	pipelines to			
			2. In case of bridges, sufficient ler provided to ensure that there is no s drainage spout on the structure.	-	•			
14.10	2700		PCC M15 Grade leveling course by Technical specification	pelow appro	oach slab com	plete as per	drawing and	
			Unit = 1 cum Taking output = 1 cum Material					
			Concrete, Rate as per item No. 12.8 (A) excluding formworks (Including GST, OH, CP & Cess	cum s)	1.000	9011.00	9011.00	Item 12.8 (A)
			Rate per cum			say	<u>9011.00</u>	

Ref. to ORTH/ID R R Spec. 1500, 1600, 1700 & 2704		Reinforced cement concrete appr complete as per drawing and Techi Unit = 1 cum Taking output = 1 cum a) Material Cement concreteM30 Grade Refer relevant item of concrete in			Rate Rs	Cost Rs	Remarks/ Input ref.
1600, 1700 &		complete as per drawing and Techn Unit = 1 cum Taking output = 1 cum a) Material Cement concreteM30 Grade	nical spec		nforcement ar	nd formwork	
1700 &		Unit = 1 cum Taking output = 1 cum a) Material Cement concreteM30 Grade		ification			
		Taking output = 1 cum a) Material Cement concreteM30 Grade	Crim				
2704		a) Material Cement concreteM30 Grade	cum				
		Cement concreteM30 Grade	cum				
				1.000	6242.00	6242.00	Item 12.8
				1.000	6343.00	6343.00	(G)
		item 12.8(G)by using batching					
		plant, excluding formwork i.e. per					
		cum basic cost (a+b+c)					
		(Excluding GST, OH, CP & Cess (Refer relevant item of concrete)			126.86	
		in item No. 13.8 (G) except that				120.00	
		form work may be added at the					
		rate of 2 per cent of cost against					
		3.5 per cent provided in the					
			tonne	0.050	76604.00	3830.20	Item 14.2
				0.030	70004.00	3030.20	Α
		OH, CP & Cess)					
		b) GST (multiplying factor 0.2016) on (a)			2076.49	
		c) Overhead charges @ 20 % on	(a+b)			2475.31	
		d) Contractor's profit @ 10 % on	(a+b+c)			1485.19	
		e) Cess @ 1% on (a+b+c+d)				163.37	
		Rate per cum (a+b+c+d+e)				16500.42	
					say	<u>16500.00</u>	
	Note	•	,				
800			r moderate	conditions.			
			rier in reir	forced cement			
		•					
		•		and included in			
800		·	n.				
000			water has	ed coment nair	nt to unnlaste	red concrete	
				•	•		
		paint @ of 1 litre for 2 sqm.	,	, e, g. ee., e		a app.yg	
		Unit = sqm					
		Taking output = 10 sqm					
		a) Labour					
			•				L-12 L-18
							L-15
		• • • • • • • • • • • • • • • • • • • •	uay	0.230	300.00	127.00	2 .0
		Water based paint of approved	Litres	5.000	140.00	700.00	M-190
		quality for cement concrete					
						407.70	
			(a+u+c+a)			
		Tate per equi (a.b.e.a.e.i) 10			sav		
2604		Burried Joint			,		
	800	800	foundation concrete. HYSD bar reinforcement Rate as per item No 14.2(Excluding GST, OH, CP & Cess) b) GST (multiplying factor 0.2016 c) Overhead charges @ 20 % on d) Contractor's profit @ 10 % on e) Cess @ 1% on (a+b+c+d) Rate per cum (a+b+c+d+e) Note The grade of reinforced cement cond M30 for severe conditions and M25 fo Crash Barriers The rate analysis for rigid crash barrier with crash barrier with wire ropes have be chapter-8 on Traffic and Transportatio Painting on concrete surface Providing and applying 2 coats of surface after cleaning the surface of paint @ of 1 litre for 2 sqm. Unit = sqm Taking output = 10 sqm a) Labour Mate Painter Mazdoor (Skilled) b) Material Water based paint of approved quality for cement concrete surface c) GST (multiplying factor 0.2016 d) Overhead charges @ 20 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e+f) Rate per sqm (a+b+c+d+e+f)/10	foundation concrete. HYSD bar reinforcement Rate as tonne per item No 14.2(Excluding GST, OH, CP & Cess) b) GST (multiplying factor 0.2016) on (a) c) Overhead charges @ 20 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per cum (a+b+c+d+e) Note The grade of reinforced cement concrete may M30 for severe conditions and M25 for moderate Crash Barriers The rate analysis for rigid crash barrier in rein concrete, semi-rigid crash barrier with metal becarsh barrier with wire ropes have been made a chapter-8 on Traffic and Transportation. Painting on concrete surface Providing and applying 2 coats of water bas surface after cleaning the surface of dirt, dus paint @ of 1 litre for 2 sqm. Unit = sqm Taking output = 10 sqm a) Labour Mate day Painter day Mazdoor (Skilled) day b) Material Water based paint of approved Litres quality for cement concrete surface c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d-d) Cess @ 1% on (a+b+c+d+e+f) Rate per sqm (a+b+c+d+e+f)	foundation concrete. HYSD bar reinforcement Rate as tonne 0.050 per item No 14.2(Excluding GST, OH, CP & Cess) b) GST (multiplying factor 0.2016) on (a) c) Overhead charges @ 20 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per cum (a+b+c+d+e) Note The grade of reinforced cement concrete may be adopted as M30 for severe conditions and M25 for moderate conditions. Crash Barriers 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. Painting on concrete surface Providing and applying 2 coats of water based cement pair surface after cleaning the surface of dirt, dust, oil, grease, e paint @ of 1 litre for 2 sqm. Unit = sqm Taking output = 10 sqm a) Labour Mate day 0.250 Mazdoor (Skilled) day 0.250 Mazdoor (Skilled) day 0.250 b) Material Water based paint of approved Litres 5.000 quality for cement concrete surface c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e+f) Rate per sqm (a+b+c+d+e+f)/10	foundation concrete. HYSD bar reinforcement Rate as tonne 0.050 76604.00 per item No 14.2 (Excluding GST, OH, CP & Cess) b) GST (multiplying factor 0.2016) on (a) c) Overhead charges @ 20 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per cum (a+b+c+d+e) Note The grade of reinforced cement concrete may be adopted as M30 for severe conditions and M25 for moderate conditions. Crash Barriers 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. Painting on concrete surface Providing and applying 2 coats of water based cement paint to unplaste surface after cleaning the surface of dirt, dust, oil, grease, efflorescence apaint @ of 1 litre for 2 sqm. Unit = sqm Taking output = 10 sqm a) Labour Mate day 0.250 593.00 Mazdoor (Skilled) day 0.250 593.00 Mazdoor (Skilled) day 0.250 508.00 b) Material Water based paint of approved Litres 5.000 140.00 quality for cement concrete surface c) GST (multiplying factor 0.2016) on (a+b) d) Overhead charges @ 20 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c+d+e) Cost for 10 sqm (a+b+c+d+e+f) Rate per sqm (a+b+c+d+e+f)	Foundation concrete.

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.

O., N.				SUPER-STRUCT	-			1
Sr No	Ref. to MoRTH/D SR Spec.		Descripti	on Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Unit = Running meter	•	-	<u> </u>		
			Taking output = 12 m					
			a) Labour Mate	dov	0.020	551.00	11.02	L-12
			Mazdoor	day day	0.400	424.00	169.60	L-13
			Mazdoor (Skilled)	day	0.200	508.00	101.60	L-15
			b) Material	,				
			Galvanised M.S p	ate 200 mm kg	237.500	63.14	14995.75	M- 060/1000
			wide,12 mm thick					000/1000
			kg/sqm including t	•			440.00	
			Add 1 per cent of plate cutting, weld				149.96	
			consumables and	_				
				factor 0.2016) on (a+k)		3110.27	
				es @ 20 % on (a+b+c)	,		3707.64	
			•	ofit @ 10 % on (a+b+c+	d)		2224.58	
			f) Cess @ 1% on (•	,		244.70	
			Cost for 12 m = $(a+b+c)$	•			24715.12	
			Rate per $m = (a+b+c+$,			2059.59	
			(a a c	- · · · · · · ·		say	2060.00	
		Note	Guidelines laid down	vide the MoRTH circu	ar No. RW/NH-			
				ted 30.11.2000 ar				
			•	.01.2001 may be reffer	ed for expansion			
4.18	2605		joints. Filler joint					
4.10		(i)	•	nm thick corrugated c	onnor plato in o	rnancion ioint	complete as	
		(.,	per drawing & Techni	_	opper plate ili ez	tpansion joint	complete as	
			Unit = Running meter					
			•					
			i aking output = 12 m					
			Taking output = 12 m a) Labour					
			a) LabourCutting, bending, carryMate	ing & fixing etc.	0.040	551.00	22.04	L-12
			a) LabourCutting, bending, carryMateMazdoor	ing & fixing etc. day day	0.500	424.00	212.00	L-13
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled)	ing & fixing etc.				
			 a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material 	ing & fixing etc. day day day	0.500 0.500	424.00 508.00	212.00 254.00	L-13
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled)	ing & fixing etc. day day day	0.500	424.00	212.00	L-13 L-15
			 a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r 	ing & fixing etc. day day day day day	0.500 0.500	424.00 508.00	212.00 254.00	L-13 L-15
			 a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide 	ing & fixing etc. day day day n long x 250 kg	0.500 0.500	424.00 508.00	212.00 254.00	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8	day day day n long x 250 kg	0.500 0.500	424.00 508.00	212.00 254.00	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce	day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33	0.500 0.500	424.00 508.00	212.00 254.00	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 st Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k	day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g.	0.500 0.500 55.000	424.00 508.00	212.00 254.00 46750.00	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 sc Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplying	day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. g factor 0.2016) on (a-1)	0.500 0.500 55.000	424.00 508.00	212.00 254.00	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charge	day day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. g factor 0.2016) on (a+0+c)	0.500 0.500 55.000	424.00 508.00	212.00 254.00 46750.00 9523.19 11352.25	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyind) Overhead charge e) Contractor's pro	day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. g factor 0.2016) on (a+b+c) ofit @ 10 % on (a+b+c+c)	0.500 0.500 55.000	424.00 508.00	212.00 254.00 46750.00 9523.19 11352.25 6811.35	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (day day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. log factor 0.2016) on (a+b+c) offit @ 10 % on (a+b+c+a+b+c+d+e)	0.500 0.500 55.000	424.00 508.00	212.00 254.00 46750.00 9523.19 11352.25 6811.35 749.25	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c)	day day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. g factor 0.2016) on (a+b+c) offit @ 10 % on (a+b+c+a+b+c+d+e) c+d+e+f)	0.500 0.500 55.000	424.00 508.00	212.00 254.00 46750.00 9523.19 11352.25 6811.35	L-13 L-15
			a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (day day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. g factor 0.2016) on (a+b+c) offit @ 10 % on (a+b+c+a+b+c+d+e) c+d+e+f)	0.500 0.500 55.000	424.00 508.00	212.00 254.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08	L-13 L-15
4 18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 st Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+c+c)	day day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. gg factor 0.2016) on (a+b+c) offit @ 10 % on (a+b+c+a+b+c+d+e+f) d+e+f)/12	0.500 0.500 55.000 b)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 st Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+c+c)	day day day day day n long x 250 kg qm 900 = 53.4 kg nt = 1.33 g. les @ 20 % on (a+b+c) offt @ 10 % on (a+b+c+a+b+c+d+e+f) d+e+f)/12 mm thick compressible day day day no long x 250 kg qm (a+b+c) offt @ 10 % on (a+b+c+d+e+f) d+e+f)/12	0.500 0.500 55.000 b)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter	day	0.500 0.500 55.000 b)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m	day	0.500 0.500 55.000 b)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m a) Labour	day	0.500 0.500 55.000 b)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m a) Labour For carrying, placing &	day	0.500 0.500 55.000 b) d)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00 int complete	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 sc Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m a) Labour For carrying, placing & Mate	day	0.500 0.500 55.000 b) d)	424.00 508.00 850.00 say expansion jo	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00 int complete	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 sc Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m a) Labour For carrying, placing & Mate Mazdoor	day	0.500 0.500 55.000 b) d)	424.00 508.00 850.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00 int complete	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 sc Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m a) Labour For carrying, placing & Mate	day	0.500 0.500 55.000 b) d) d)	424.00 508.00 850.00 say expansion jo 424.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00 int complete	L-13 L-15 M-086
4.18		(ii)	a) Labour Cutting, bending, carry Mate Mazdoor Mazdoor (Skilled) b) Material Copper plate - 12r mm wide Area = 12 x 0.25 = 3 so Weight = 3 x 0.002 x 8 Wastage @ 2.5 per ce kg/54.73 kg say = 55 k c) GST (multiplyin d) Overhead charg e) Contractor's pro f) Cess @ 1% on (Cost for 12 m = (a+b+c+ Providing & fixing 20 as per drawing & Tec Unit = Running meter Taking output = 12 m a) Labour For carrying, placing & Mate Mazdoor Mazdoor (Skilled)	day	0.500 0.500 55.000 b) d) d)	424.00 508.00 850.00 say expansion jo 424.00	212.00 254.00 46750.00 46750.00 9523.19 11352.25 6811.35 749.25 75674.08 6306.17 6306.00 int complete	L-13 L-15 M-086

			1	SUPER-ST	RUCTU	RE			
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Area =	= 12 x 0.25 = 3 sqm					1
			c) (GST (multiplying factor 0.2016)	on (a+b)			502.53	
			d)	Overhead charges @ 20 % on (a	ı+b+c)			599.05	
			e) (Contractor's profit @ 10 % on (a	+b+c+d))		359.43	
			f) (Cess @ 1% on (a+b+c+d+e)				39.54	
			Cost fo	or 12 m = (a+b+c+d+e+f)				3993.26	
			Rate p	per m = (a+b+c+d+e+f)/12				332.77	
			·				say	<u>333.00</u>	
14.18		(iii)	for fix move	ding and fixing in position 20 m red ends of simply supported sp ment upto 20 mm, covered with fications.	oans not	exceeding 10	m to cater fo	r a horizontal	
			Unit =	Running meter					
			Takin	g output = 12 m					
			a) L	_abour					
			•	late	day	0.010	551.00	5.51	L-12
			M	lazdoor	day	0.200	424.00	84.80	L-13
			M	lazdoor (Skilled)	day	0.100	508.00	50.80	L-15
			b) N	Material					
			lo	remoulded joint filler 12 m ong,20 mm thick and 300 mm eep.	sqm	3.600	950.00	3420.00	M-141
				GST (multiplying factor 0.2016)	on (a+b)			717.92	
			•	Overhead charges @ 20 % on (a				855.81	
			•	Contractor's profit @ 10 % on (a	•	1		513.48	
			•	Cess @ 1% on (a+b+c+d+e)				56.48	
			•	• , ,				5704.80	
				or 12 m = (a+b+c+d+e+f)					
			Rate p	per m = (a+b+c+d+e+f)/12				475.40	
4440		(1)	D	diam and Cillian tales and con-			say	<u>475.00</u>	
14.18		(iv)		ding and filling joint sealing fications with coarse sand and 6		•	_	ina technicai	
			Unit =	Running meter					
			Takin	g output = 12 m					
			deep r	ong x 100 mm wide x 10mm					
			. ,	_abour late	day	0.020	551.00	11.02	L-12
				lazdoor	day	0.500	424.00	212.00	L-13
			M	lazdoor (Skilled)	day	0.100	508.00	50.80	L-15
			,	Material					
				and	cum	0.010	650.00	6.50	M-005
				ne 12 x 0.1 x 0.01 = 0.012 cum nt 0.012 x 1400 = 16.8kg					
			U	ii 0.012 x 1400 – 16.6kg iitumen	cum	0.000	57024 00	0.00	M-074
					cum	0.000	57924.00	0.00	W OI 4
				0.06 = 1 kg	(- i h)			FC F4	
				GST (multiplying factor 0.2016)				56.51	
			-	Overhead charges @ 20 % on (a	•			67.37	
				Contractor's profit @ 10 % on (a	ı+b+c+d))		40.42	
				Cess @ 1% on (a+b+c+d+e)				4.45	
				or 12 m = (a+b+c+d+e+f)				449.07	
			Kate p	per m = (a+b+c+d+e+f)/12				37.42	
			_	and the second second second			say	<u>37.00</u>	
		Note	cm de	riving at the final rate of filler joints pth of joint filling compound, the ra shall be added					

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Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	

14.19 2600 Asphaltic Plug joint

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.

 : 4	_ 4	-	าทเเ	 	4-	

Taking output = 12 m

I al	king output = 12 m					
a)	Labour					
	Mate	day	0.050	551.00	27.55	L-12
	Mazdoor	day	1.000	424.00	424.00	L-13
	Mazdoor (Skilled)	day	0.300	508.00	152.40	L-15
b)	Material					
	Crushed stone aggregate 12.5 mm nominal size	cum	0.750	1820.00	1365.00	M-052
	Polymer modified bitumen	kg	77.500	58.00	4495.00	M-078/ 1000
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	113.000	228.00	25764.00	M-103
	Add 1 per cent for welding and foam caulking/backer rod and other incidentals.				322.28	
c)	Machinery					
	Mastic cooker 1 tonne capacity	hour	1.000	135.00	135.00	P&M-030
	Smooth 3-wheeled steel roller 8- 10 capacity	hour	0.500	783.00	391.50	P&M-044
d)	GST (multiplying factor 0.2016)	on (a+b+c	:)		6668.27	
e)	Overhead charges @ 20 % on (a+b+c+d)			7949.00	
f)	Contractor's profit @ 10 % on (•	e)		4769.40	
g)	Cess @ 1% on (a+b+c+d+e+f)		,		524.63	
•	st for 12 m asphalt plug joint = (a+b	+c+d+e+f+a	1)		52988.03	
			1)			
ка	te per m = (a+b+c+d+e+f+g)/12				4415.67	
				say	<u>4416.00</u>	

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.

14.20 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
	Moto

Mate	day	0.060	551.00	33.06	L-12
Mazdoor	day	1.000	424.00	424.00	L-13
Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15

CHAPTER-14

SUPER-STRUCTURE									
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			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 MoRT&H Specification Add 5 per cent of cost of material			12.000	11591.00	139092.00 6954.60	M-093		
				for anchorage reinforcement, welding and other incidentals.					
			c)	GST (multiplying factor 0.2016)	on (a+b)			29586.34	
			d)	Overhead charges @ 20 % on (a	ı+b+c)			35268.80	
			e)	Contractor's profit @ 10 % on (a	+b+c+d))		21161.28	
			f)	Cess @ 1% on (a+b+c+d+e)				2327.74	
	Cost for 12 m = $(a+b+c+d+e+f)$					235101.82			
			Rat	e per m = (a+b+c+d+e+f)/12				19591.82	
14 21	2600		Cal	mnrassian Saal laint			say	<u>19592.00</u>	

14.21 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

Tak	king output = 12 m					
a)	Labour					
	Mate	day	0.040	551.00	22.04	L-12
	Mazdoor	day	0.600	424.00	254.40	L-13
	Mazdoor (Skilled)	day	0.300	508.00	152.40	L-15
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	446.000	228.00	101688.00	M-103
	Add 5 per cent of cost of above for structural steel for anchorage, welding and other incidentals.				5105.84	
	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	metre	12.000	5151.00	61812.00	M-143
	Add 1 per cent of cost of sealing element for lubricant-cum-adhesive and other consumables.				618.12	
c)	GST (multiplying factor 0.2016)	on (a+b)			34202.00	
d)	Overhead charges @ 20 % on (a				40770.96	
e)	Contractor's profit @ 10 % on (a				24462.58	
f)	Cess @ 1% on (a+b+c+d+e)				2690.88	
Cos	st for 12 m = (a+b+c+d+e+f)				271779.22	
Rat	e per m = (a+b+c+d+e+f)/12				22648.27	

22648.00

Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	$\left \right $
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- 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.

14.22 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

Tal	king output = 12 m					
a)	Labour					
	Mate	day	0.050	551.00	27.55	L-12
	Mazdoor	day	1.000	424.00	424.00	L-13
	Mazdoor (Skilled)	day	0.250	508.00	127.00	L-15
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	12.000	14167.00	170004.00	M-178
	Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals.				8529.13	
c)	GST (multiplying factor 0.2016)	on (a+b)			36108.91	
d)	Overhead charges @ 20 % on (a	a+b+c)			43044.12	
e)	Contractor's profit @ 10 % on (a	•			25826.47	
f)	Cess @ 1% on (a+b+c+d+e)	/			2840.91	
,	st for 12 m = (a+b+c+d+e+f)				286932.09	
Rat	te per m = (a+b+c+d+e+f)/12				23911.01	

23911.00

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.

14.23 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	0.060	551.00	33.06	L-12
	Mazdoor	day	1.000	424.00	424.00	L-13
	Mazdoor (Skilled)	day	0.400	508.00	203.20	L-15

	Ref. to		OGI ER OTI					Ι
Sr No	MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			b) Material					
Supply of a modular strip/box seal joint metre 12.000 244696.00 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.				244696.00	2936352.00	M-127		
			c) GST (multiplying factor 0.2016) o	on (a+b)			592101.67	
			d) Overhead charges @ 20 % on (a	+b+c)			705822.79	
			e) Contractor's profit @ 10 % on (a	+b+c+d))		423493.67	
			f) Cess @ 1% on (a+b+c+d+e)				46584.30	
			Cost for 12 m Modular strip/box seal join	t = (a+b	+c+d+e+f)		4705014.69	
			Rate per m = (a+b+c+d+e+f)/12				392084.56	
						say	<u>392085.00</u>	
		Note	1 The installation shall be done by th	a manii	facturer or his			

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.

14.24 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.

day

day

day

metre

0.070

1.250

0.500

12.000

551.00

424.00

508.00

270454.00

L-12

L-13

L-15

M-128

38.57

530.00

254.00

3245448.00

Unit = Running meter

Taking output = 12 m
a) Labour

Mate

Mazdoor

Mazdoor (Skilled)
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.

c) GST (multiplying factor 0.2016) on (a+b)		654448.15
d) Overhead charges @ 20 % on (a+b+c)		780143.74
e) Contractor's profit @ 10 % on (a+b+c+d)		468086.25
f) Cess @ 1% on (a+b+c+d+e)		51489.49
Cost for 12 m Modular strip/box seal joint = (a+b+c+d+e+f)		5200438.20
Rate per $m = (a+b+c+d+e+f)/12$		433369.85
	say	<u>433370.00</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 - 15

PROTECTION WORKS

Preamble:

- 1 Three types of aprons as under have been catered for:
 - a. Boulder apron laid dry
 - b. Boulder apron laid in wire crates
 - c. Apron laid in cement concrete blocks of M 15 grade
- 2 A toe wall for toe protection of pitching can be either in random rubble masonry or in nominal mix cement concrete M 10, or in brick masonry. 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 cement mortar 1:3, cement concrete blocks M 15 and brick on edge laid in cement mortar (CM) 1:3.
- 4 Curtain walls proposed are of the following types:
 - b. Coursed rubble stone masonry (1st sort) is CM 1:3
 - c. Cement concrete M-15 grade
- 5 The rate analysis for gabionstructures comprising of stone boulders laid in wire crates have been included. Such structures are suited as retaining structures and for crosion 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.

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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15.1 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.

Boulder Laid Dry Without Wire Crates.

Unit = cum

Taking output = 1 cum

a)	Material					
	Stone	cum	1.000	893.00	893.00	M-003
	Stone Spalls	cum	0.200	300.00	60.00	M-008
b)	Labour					
	Mate	day	0.040	551.00	22.04	L-12
	Mason	day	0.350	593.00	207.55	L-11
	Mazdoor *	day	0.750	424.00	318.00	L-13
c)	GST (multiplying factor 0.201	6) on (a+b)			302.52	
d)	Overhead charges @ 20 % or	n (a+b+c)			360.62	
e)	Contractor's profit @ 10 % or	n (a+b+c+d)			216.37	
f)	Cess @ 1% on (a+b+c+d+e)				23.80	
Rat	te per cum = (a+b+c+d+e+f)				2403.90	
				say	<u>2404.00</u>	

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.

15.2 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 wi
	size of 100

,						
	4mm GI wire crates woven in mesh	sqm	22.000	191.00	4202.00	M-102
	size of 100 mm x 100 mm.					
	Stone	cum	5.630	893.00	5027.59	M-003
	Stone Spalls	cum	1.130	300.00	339.00	M-008
b)	Labour					
	Mate	day	0.180	551.00	99.18	L-12
	Mazdoor (Skilled)	day	1.500	508.00	762.00	L-15
	Mazdoor	day	*3.00	424.00	1272.0	L-13
c)	GST (multiplying factor 0.2016) on	ı (a+b)			2359.08	
d)	Overhead charges @ 20 % on (a+b	o+c)			2812.17	
e)	Contractor's profit @ 10 % on (a+k	o+c+d)			1687.30	
f)	Cess @ 1% on (a+b+c+d+e)				185.60	
Co	st for 5.63 cum = a+b+c+d+e+f				18745.92	
Ra	te per cum = (a+b+c+d+e+f)/5.63				3329.65	
				say	<u>3330.00</u>	

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.

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
15.3	2503		Cement Concrete Blocks (size 0.5 x 0.5 x 0.5 m)						
			Providing and laying of apron with ceme cast in-situ and made with nominal mit minimum cement content of 250 kg/cum	c of M-	15 grade	cement co			
			Unit = cum						
			Taking out put = 1 cum						
			Concrete Grade M15 Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	9371.00	9371.00	Item 12.8 (A)	
			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.				187.42		
			Rate per cum				9558.42		
						say	<u>9558.00</u>		
15.4	2504		Providing and laying Pitching on slopes boulder apron laid dry in front of toe of and Technical specifications				_		
		Α	Stone/Boulder						
			Unit = cum						
			Taking output = 1 cum a) Material						
			Stone weighing not less than 40kg	cum	1.000	893.00	893.00	M-003	
			Stone spalls of minimum 25 mm size	cum	0.200	300.00	60.00	M-008	
			b) Labour						
			Mate	day	0.040	551.00	22.04	L-12	
			Mason	day	0.350	593.00	207.55	L-11	
			Mazdoor	day (a±b)	0.750	424.00	318.00 302.52	L-13	
			c) GST (multiplying factor 0.2016) ond) Overhead charges @ 20 % on (a+b				360.62		
			e) Contractor's profit @ 10 % on (a+b				216.37		
			f) Cess @ 1% on (a+b+c+d+e)	,			23.80		
			Rate per cum = (a+b+c+d+e+f)				2403.90		
						say	<u>2404.00</u>		
15.4		В	Cement Concrete Blocks of size 0.3x0.3 Grade M15 Unit = cum	3 x0.3 m	ı cast in c	ement cond	erete of		
			Taking output = 1 cum						
			Concrete Grade M15 Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	9371.00	9371.00	Item 12.8 (A)	
			Add 2 per cent of cost to account for nominal surface reinforcement and filling of granular material in recesses				187.42		
			between blocks.						
			Rate per cum			001/	9558.42 <u>9558.00</u>		
15.5	2504		Providing and laying Filter material unoper drawing and Technical specification		h pitching	<i>say</i> g in slopes			
			Unit = cum						
			Taking output = 1 cum a) Material						
			Graded stone aggregate of required size	cum	1.200	1450.00	1740.00	M-012	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b)	Labour	-				-
			Mate	day	0.050	551.00	27.55	L-12
			Mazdoor (Skilled)	day	0.250	508.00	127.00	L-15
			Mazdoor *	day	1.000	424.00	424.00	L-13
		c)	c) GST (multiplying factor 0.2016) on (a+b)					
		d)	Overhead charges @ 20 %	on (a+b+c)			557.19	
		e)	Contractor's profit @ 10 %	on (a+b+c+d)			334.32	
		f)	Cess @ 1% on (a+b+c+d+e))			36.77	
		Ra	Rate per cum = (a+b+c+d+e+f)				3714.25	
						say	<u>3714.00</u>	
			cludes Mazdoor required for tring ofile and preparation of bed.	nming of slope	to proper			

15.7 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.

15.8 ²⁵⁰⁵ Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concert bedding.

Α	Ru	ibble stone laid in cement mortar 1:3					
	<i>Tal</i> a) 12.	it = cum king output = 1 cum Cement mortor 1:3 (Rate as in Item 6 sub-analysis) excluding GST, OH, & Cess	cum	0.330	5727.00	1889.91	Item 12.6 (A)
	Qu des	Add for cement concrete bedding 15 Nominal mix) vide Item 12.8 (A) cluding GST, OH, CP & Cess . antity shall be adopted as per sign (Assume Rubble stone oring thickness 300mm and cement increte bedding thickness 100mm)	cum	0.330	5625.00	1856.25	Item 12.8 (A)
		Add 1 per cent of cost to account for excavation for preparation of bed.				37.46	
	c)	Material					
		Stone	cum	1.000	893.00	893.00	M-003
		Stone Spalls	cum	0.200	300.00	60.00	M-008
	d)	Labour		0.000	554.00	44.00	1.40
		Mate Mason	day	0.080 0.500	551.00 593.00	44.08 296.50	L-12 L-11
		Mazdoor (for laying stones, filling of quarry spalls)	day day	1.500	424.00	636.00	L-13
	e)	GST (multiplying factor 0.2016) on (a+b+c+	d)		1144.23	
	f)	Overhead charges @ 20 % on (a+b+	c+d+e)			1363.99	
	g)	Contractor's profit @ 10 % on (a+b		818.40			
	h)	Cess @ 1% on (a+b+c+d+e+f+g)		90.02			
	•	te per cum = (a+b+c+d+e+f+g+h)				9129.84	
		(say	9130.00	
*	Inc	ludes cement mortar for laying and fillinզ	g of joint	s.			

	Ref. to	1	RIVER TRAINING AND PRO	TECTI	ON WORK	S		
Sr No	MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
15.8		В	Cement Concrete blocks Grade M15		'			
			Concrete Grade M15 block. (Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	9371.00	9371.00	Item 12.8 (A)
			Add for cement concrete bedding (M15 Nominal mix) vide Item 12.8 (A) including GST, OH, CP & Cess. Quantity shall be adopted as per design (Assume Cement Concrete blocks thickness 300mm and cement concrete bedding thickness 100mm)	cum	0.330	9371.00	3092.43	Item 12.8 (A)
			Add 1 per cent of cost to account for excavation for preparation of bed.				124.63	
15.9	2506		Rate per cum Dry Rubble Flooring			say	12588.06 <u>12588.00</u>	
15.5	2500		Construction of dry rubble flooring at	orocc	drainaga v	vorke for re	Jativaly Jaca	
			important works.	CIUSS	uramaye v	VOIKS IOI IE	ialively less	
			Unit = cum					
			Taking output = 1 cum					
			a) Material Stone	cum	1.000	893.00	893.00	M-003
			Stone Spalls	cum	0.200	300.00	60.00	M-008
			b) Labour					
			Mate	day	0.100	551.00	55.10	L-12
			Mason	day	0.500	593.00	296.50	L-11 L-13
			mazdoor Add 1 per cent of (b) for trimming and preparation of base.	day	1.500	424.00	636.00 9.88	E-10
			c) GST (multiplying factor 0.2016) on	(a+b)			393.22	
			d) Overhead charges @ 20 % on (a+b	+c)			468.74	
			e) Contractor's profit @ 10 % on (a+b-	+c+d)			281.24	
			f) Cess @ 1% on (a+b+c+d+e)				30.94	
			Rate per cum = (a+b+c+d+e+f)				3124.62	
						say	<u>3125.00</u>	
15.10	2507.2		Curtain wall complete as per drawing an	d Tecl	nnical spec	cification		
		Α	Stone masonry in cement mortar (1:3)					
			Coursed rubble masonry (1st sort) (Rate as per item No. 12.7 (A) including GST, OH, CP	cum	1.000	6751.00	6751.00	Item 12.7 (A)
			& Cess.			201	6754 00	
			Rate per cum			say	<u>6751.00</u>	
15.10		В	Or Cement concrete Grade M15					
			Concrete Grade M15 Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	9371.00	9371.00	Item 12.8 (A)
			Rate per cum			say	<u>9371.00</u>	
		Note	Other items like excavation for foundation wall, filter media, weep holes etc. shall be as per approved design.		•			
15.11	2507.2		Flexible Apron :Construction of flexibl stone boulders weighing not less than 4	-		-	ng of loose	
			Unit - arm					

Unit = cum

CHAPTER - 15
RIVER TRAINING AND PROTECTION WORKS

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Tal	king Output = 1 cum					
		a)	Material					
			Stone	cum	1.000	893.00	893.00	M-003
			Stone Spalls	cum	0.200	300.00	60.00	M-008
		b)	Labour					
			Mate	day	0.050	551.00	27.55	L-12
			Mason	day	0.250	593.00	148.25	L-11
			Mazdoor	day	1.000	424.00	424.00	L-13
			Add 1 per cent of cost of (a+b) trimming and preparation of bed.	for			15.53	
		c)	GST (multiplying factor 0.2016	6) on (a+b)			316.18	
		d)	Overhead charges @ 20 % on	(a+b+c)			376.90	
		e)	Contractor's profit @ 10 % on	(a+b+c+d)			226.14	
		f)	Cess @ 1% on (a+b+c+d+e)				24.88	
		Ra	te per cum = (a+b+c+d+e+f)				2512.43	
						say	<u>2512.00</u>	
15 12	2503.3	Ga	hian Structure for Retaining Fart	·h				

15.12 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 = $7 \times 3 \times 0.6 = 12.60 \text{ cum}$

a)	Labour					
uj	Mate	day	0.280	551.00	154.28	L-12
	Mazdoor	day	5.000	424.00	2120.00	L-13
	Mazdoor (Skilled)	day	2.000	508.00	1016.00	L-15
b)	Material					
	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. Gl wire in rolls of required size.	sqm	61.000	191.00	11651.00	M-102
	Stone boulders with least dimension of 200 mm	cum	12.600	893.00	11251.80	M-003
	Stone spalls of minimum size 25 mm	cum	2.520	300.00	756.00	M-008
c)	GST (multiplying factor 0.2016) on	(a+b)			5432.93	
d)	Overhead charges @ 20 % on (a+b	+c)			6476.40	
e)	Contractor's profit @ 10 % on (a+b	+c+d)			3885.84	
f)	Cess @ 1% on (a+b+c+d+e)		427.44			
Co	st for 12.60 cum (a+b+c+d+e+f)				43171.69	
Ra	te per cum (a+b+c+d+e+f)/12.60				3426.32	
				say	<u>3426.00</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.

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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Gabian Structure for Erosion Control, River Training Works and Protection works

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

15.13 2503.3

Taking output = $2 \times 1 \times 0.3 \times 10 \text{ Nos.} = 6.00 \text{ cum}$

0.0	o cum					
a)	Labour					
	Mate	day	0.140	551.00	77.14	L-12
	Mazdoor	day	2.500	424.00	1060.00	L-13
	Mazdoor (Skilled)	day	1.000	508.00	508.00	L-15
b)	Material					
	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. Gl wire in rolls of required size to cover 6.00 cum.	sqm	65.000	191.00	12415.00	M-102
	Stone boulders with least dimension of 200 mm	cum	6.000	893.00	5358.00	M-003
	Stone spalls of minimum size 25 mm	cum	1.200	300.00	360.00	M-008
c)	GST (multiplying factor 0.2016) on	(a+b)			3987.27	
d)	Overhead charges @ 20 % on (a+b	+c)			4753.08	
e)	Contractor's profit @ 10 % on (a+b	+c+d)			2851.85	
f)	Cess @ 1% on (a+b+c+d+e)				313.70	
Cos	st for 6.00 cum (a+b+c+d+e+f)				31684.04	
Rat	te per cum (a+b+c+d+e+f)/6.00				5280.67	
				say	<u>5281.00</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 - 16

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 prestressing 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

	Ref. to		ABILITAT				1
Sr No	MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
16.1	2809	Removal of existing cement conc complete as per Technical Specificati any part of the bridge structure and and lead upto 1000 m	ion witho	ut causing	any detrime	ental effect to	
		Unit = Sq m (Thickness 75 mm)					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.060	551.00	33.06	L-12
		Mazdoor	day	1.000	424.00	424.00	L-13
		b) Machinery Air Compressor 250 cfm with	hour	1.000	658.00	658.00	P&M-001
		pneumatic breaker/jack hammer along with accessories.		0.500	500.00	005.00	D9M 052
		Tractor-trolley.	hour	0.500	530.00	265.00	P&M-053
		c) GST (multiplying factor 0.2016)				278.22	
		d) Overhead charges @ 10 % on (a	-			165.83	
		e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e)	TUTCTO)			182.41 20.07	
		Cost for 10 sqm = (a+d+c+d+e+f)				20.07	
		Rate per sqm = (a+b+c+d+e+f)/10				202.66	
		and the section of the section of			say	203.00	
		concert laid over 12 mm thick mastic lead upto 1000 m. Unit = Sq m Taking output = 10 sqm	c asphalt	including	disposal wi	th all lift and	
		a) Labour					
		Mate	day	0.030	551.00	16.53	L-12
		Mazdoor	day	0.750	424.00	318.00	L-13
		b) Machinery Air Compressor 250 cfm with pneumatic breaker.	hour	0.750	658.00	493.50	P&M-001
		Tractor-trolley.	hour	0.400	530.00	212.00	P&M-053
		c) GST (multiplying factor 0.2016)	on (a+b)			209.67	
		d) Overhead charges @ 10 % on (a	ام د ما د				
		m/ 0101110mm 011mm good (c) 10 /0 011 (m	(D+C)			124.97	
		e) Contractor's profit @ 10 % on (a	•			137.47	
		e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e)	•			137.47 15.12	
		e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f)	•			137.47 15.12 1527.26	
		e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e)	•		201	137.47 15.12 1527.26 152.73	
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f)	+b+c+d)			137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after	
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying of Specification	+b+c+d)		l with comp	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after	
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying viscositication Unit = Sq m	+b+c+d)		l with comp	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after	
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying viscosification Unit = Sq m Taking output = 1 sqm	+b+c+d)		l with comp	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after	
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying viscositication Unit = Sq m	+b+c+d)		l with comp	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after	M-
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying of Specification Unit = Sq m Taking output = 1 sqm Assuming thickness 25 mm a) Material Cement	+b+c+d) nent more with epo	16.000	I with complete as pe	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after Technical	
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying of Specification Unit = Sq m Taking output = 1 sqm Assuming thickness 25 mm a) Material	+b+c+d) nent mori with epo	xy compl	l with comp ete as pe	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after Technical	M- 081/1000
16.3	2807	e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Cost for 10 sqm = (a+d+c+d+e+f) Rate per sqm = (a+b+c+d+e+f)/10 Guniting concrete surface with cencleaning surface and spraying vispecification Unit = Sq m Taking output = 1 sqm Assuming thickness 25 mm a) Material Cement Graded sand Wire mesh 50mm x 50mm size of	hent more with epo	16.000 0.040	with complete as pe	137.47 15.12 1527.26 152.73 <u>153.00</u> pressor after Technical	M- 081/1000 M-005

Sr No	Ref. to								
	MoRTH Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
				Add 2 per cent of cost of material				14.50	•
				for miscellaneous consumables like					
			ل ـ ۱	nozzles, wire brush, cotton waste					
			b)	Labour Mate	day	0.010	551.00	5.51	L-12
				Mason	day	0.040	593.00	23.72	L-11
				Mazdoor	day	0.140	424.00	59.36	L-13
			c)	Machinery	•				
				Compressor with guniting	hour	0.100	896.00	89.60	P&M-0
			.15	equipment along with accessories				404.00	
			d)	GST (multiplying factor 0.2016) or	•	S)		184.96	
			e) f\	Overhead charges @ 10 % on (a+) Contractor's profit @ 10 % on (a+)		٥)		110.24 121.26	
			f) g)	Cess @ 1% on (a+b+c+d+e+f)	ртстит	e)		13.34	
				e per sqm = (a+b+c+d+e+f+g)				1347.24	
			ivat	e per sqiii = (a·b·c·a·c·i·g)			say	1347.00	
16.4	2800		Dro	viding and inserting nipples with	annrov	ad fiving	•		
10.4	2000			es for grouting as per Technic					
				ting/removal and sealing of the hole			_	•	
				routing with Cement/Epoxy		, ,			
			Uni	t = Number					
				ring output = 1 No.					
			a)	Material					
				Nipples	each	1.000	32.00	32.00	M-12
				Cement, fixing compound and				4.80	
				consumables @ 15 per cent of cost					
				of nipple					
			ل ـ ۱	· · ·					
			b)	Labour	alas r	0.040	EE4 00	E E4	1.43
			b)	Labour Mate	day	0.010	551.00	5.51	
			b)	Labour Mate Mazdoor (Skilled) labour for drilling	day	0.080	508.00	40.64	L-18
			b)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets	day day	0.080 0.080	508.00 508.00	40.64 40.64	L-19
			b)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing	day	0.080	508.00	40.64	L-19
			b)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of	day day	0.080 0.080	508.00 508.00	40.64 40.64	L-19
			b)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for	day day day	0.080 0.080	508.00 508.00	40.64 40.64 16.96	L-1:
			c)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc	day day day	0.080 0.080	508.00 508.00	40.64 40.64 16.96 10.38	L-1:
			c)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or	day day day	0.080 0.080	508.00 508.00	40.64 40.64 16.96 10.38 30.43	L-19
			c) d) e) f)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e)	day day day	0.080 0.080	508.00 508.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19	L-19
			c) d) e) f)	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+	day day day	0.080 0.080	508.00 508.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64	L-15
			c) d) e) f) Rat	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d)	day day day to (a+b) b+c) b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-12 L-15 L-15
16.5	2806		c) d) e) f) Rat	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d)	day day day day (a+b) (b+c) (b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-18 L-18
16.5	2806		c) d) e) f) Rat Sea	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) lling of cracks/porous concrete outing complete as per Technical S	day day day day (a+b) (b+c) (b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-18 L-18
16.5	2806	A	c) d) e) f) Rat Sea /Gre	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Idling of cracks/porous concrete outing complete as per Technical S ment Grout	day day day day (a+b) (b+c) (b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-18 L-18
16.5	2806	A	c) d) e) f) Rat Sea /Gro	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) te per No. = (a+b+c+d) lling of cracks/porous concrete outing complete as per Technical States ment Grout it = kg	day day day day (a+b) (b+c) (b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-18 L-18
16.5	2806	A	c) d) e) f) Rat Sea /Gre Uni	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Illing of cracks/porous concrete outing complete as per Technical Section ment Grout it = kg ing output = 1 kg	day day day day (a+b) (b+c) (b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-18 L-18
16.5	2806	A	c) d) e) f) Rat Sea /Gro	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Illing of cracks/porous concrete outing complete as per Technical Syment Grout It = kg King output = 1 kg Material	day day day (a+b) b+c) b+c+d) by injoecifica	0.080 0.080 0.040	508.00 508.00 424.00 say	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00 nipples	L-1!
16.5	2806	A	c) d) e) f) Rat Sea /Gre Uni	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Illing of cracks/porous concrete outing complete as per Technical Section ment Grout it = kg ing output = 1 kg	day day day day (a+b) (b+c) (b+c+d)	0.080 0.080 0.040	508.00 508.00 424.00	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00	L-1! L-1: L-1:
16.5	2806	A	c) d) e) f) Rat Sea /Gre Uni	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Illing of cracks/porous concrete outing complete as per Technical Syment Grout it = kg ing output = 1 kg Material Cement including 10 per cent wastage Admixtures (anti shrinkage	day day day (a+b) b+c) b+c+d) by injoecifica	0.080 0.080 0.040	508.00 508.00 424.00 say	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00 nipples	L-1: L-1:
16.5	2806	A	c) d) e) f) Rat Sea /Gre Uni	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Iting of cracks/porous concrete outing complete as per Technical Syment Grout It = kg Inding output = 1 kg Material Cement including 10 per cent wastage	day day day (a+b) b+c) b+c+d) by injoecifica	0.080 0.080 0.040	508.00 508.00 424.00 say	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00 nipples	L-1.
16.5	2806	A	c) d) e) f) Rat Sea /Gre Uni	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Illing of cracks/porous concrete outing complete as per Technical Syment Grout it = kg ing output = 1 kg Material Cement including 10 per cent wastage Admixtures (anti shrinkage compound) @ 20 per cent of cost	day day day (a+b) b+c) b+c+d) by injoecifica	0.080 0.080 0.040	508.00 508.00 424.00 say	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00 nipples	L-1! L-1: L-1:
16.5	2806	A	c) d) e) f) Rat Sea /Gro Cer Uni Tak	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Illing of cracks/porous concrete outing complete as per Technical Syment Grout it = kg ing output = 1 kg Material Cement including 10 per cent wastage Admixtures (anti shrinkage compound) @ 20 per cent of cost of cement	day day day (a+b) b+c) b+c+d) by injoecifica	0.080 0.080 0.040	508.00 508.00 424.00 say	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00 nipples	L-1! L-1: L-1: M- 081/10
16.5	2806	A	c) d) e) f) Rat Sea /Gro Cer Uni Tak	Labour Mate Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for drilling Mazdoor (Skilled) labour for fixing nipple and sealing inlets Mazdoor for cutting and removing of nipples Add 10 per cent of labour cost for drilling holes etc GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e) e per No. = (a+b+c+d) Idling of cracks/porous concrete outing complete as per Technical Second to the se	day day day day n (a+b) b+c) b+c+d) by inj pecifica	0.080 0.080 0.040 ijection protion.	508.00 508.00 424.00 say ocess through	40.64 40.64 16.96 10.38 30.43 18.14 19.95 2.19 221.64 222.00 nipples	L-18

r No	Ref. to	1						
	MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		c)	Machinery			•		
			Grout pump with agitator and accessories	hour	0.100	193.00	19.30	M-111
		d)	GST (multiplying factor 0.2016) or	າ (a+b+ເ	c)		33.99	
		e)	Overhead charges @ 10 % on (a+l	•	,		20.26	
		f)	Contractor's profit @ 10 % on (a+		e)		22.28	
		g)	Cess @ 1% on (a+b+c+d+e+f)		- ,		2.45	
			te per kg = (a+b+c+d+e+f+g)				247.57	
			1 0 (0,			say	248.00	
		в Се	ement Mortar (1:1) Grouting					
		Un	it = kg					
		Tal	king output = 1 kg					
		a)	Material					
			Cement including 10 per cent	kg	0.550	9.10	5.01	M- 081/1000
			wastage		0.550	0.40	0.04	
			Sand including 10 per cent wastage	kg	0.550	0.43	0.24	M- 005/1500
			Admixtures (anti shrinkage				1.00	
			compound) @ 20 per cent of cost of				1.00	
			cement					
		b)	Labour					
		ŕ	Mate	day	0.080	551.00	44.08	L-12
			Mazdoor (Skilled)	day	0.100	508.00	50.80	L-15
			Mazdoor	day	0.100	424.00	42.40	L-13
		c)	Machinery					
			Grout pump with agitator and accessories	hour	0.100	193.00	19.30	M-111
		d)	GST (multiplying factor 0.2016) or	າ (a+b+ເ	2)		32.83	
		e)	Overhead charges @ 10 % on (a+l		,		19.57	
		,		,				
		f)	Contractor's profit @ 10 % on (a+	b+c+d+	e)		21.52	
		f) q)	Contractor's profit @ 10 % on (a+l Cess @ 1% on (a+b+c+d+e+f)	b+c+d+	e)		21.52 2.37	
		g)	Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g)	b+c+d+	e)			
		g)	Cess @ 1% on (a+b+c+d+e+f)	b+c+d+	e)	say	2.37	
6	2800	g) Ra Par coi	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter,	face wi availab	th polymer	r concrete ent formula	2.37 239.12 239.00 and curing tions, to be	
.6	2800	g) Ra Pa cor app	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact	face wi availab	th polymer	r concrete ent formula	2.37 239.12 239.00 and curing tions, to be	
5.6	2800	g) Ra Pai coi api	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm	face wi availab	th polymer	r concrete ent formula	2.37 239.12 239.00 and curing tions, to be	
.6	2800	g) Ra Pat cor app Un Tai	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm.	face wi availab	th polymer	r concrete ent formula	2.37 239.12 239.00 and curing tions, to be	
.6	2800	g) Ra Pai cor app <i>Un</i>	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour	face wi availab turer an	th polyme le in prese d as approv	r concrete ent formula ved by the E	2.37 239.12 239.00 and curing tions, to be ngineer.	
.6	2800	g) Ra Pat cor app Un Tai	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate	face wi availab turer an day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00	2.37 239.12 239.00 and curing tions, to be ngineer.	•
.6	2800	g) Ra Pat cor app Un Tai	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled)	face wi availab turer an day day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00 508.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00	L-12
6	2800	g) Ra Par cor app <i>Un</i> Tar ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor	face wi availab turer an day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00	2.37 239.12 239.00 and curing tions, to be ngineer.	L-12 L-15
6	2800	g) Ra Pat cor app Un Tai	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material	face wi availab turer an day day day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00 508.00 424.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00 318.00	L-12 L-15 L-13
6	2800	g) Ra Par cor app <i>Un</i> Tar ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 per cent	face wi availab turer an day day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00 508.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00	L-12 L-15
6	2800	g) Ra Pai coo app <i>Un</i> Tai ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 per cent wastage.	face wi availab turer an day day day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00 508.00 424.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00 318.00	L-12 L-15 L-13
6	2800	g) Ra Par cor app <i>Un</i> Tar ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, initiator and promoter including 5 per cent wastage. Machinery	face wi availab turer an day day day kg	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ingineer. 33.06 381.00 318.00	L-12 L-15 L-13 M-145
6	2800	g) Ra Pai coo app <i>Un</i> Tai ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 per cent wastage. Machinery Grout pump with agitator and	face wi availab turer an day day day	th polymer le in prese d as approv	r concrete ent formular ved by the E 551.00 508.00 424.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00 318.00	L-12 L-15 L-13
6	2800	g) Ra Pai coo app <i>Un</i> Tai ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, initiator and promoter including 5 per cent wastage. Machinery	face wi availab turer an day day day kg	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ingineer. 33.06 381.00 318.00	L-12 L-15 L-13 M-145
6	2800	g) Ra Par coo app <i>Un</i> Tai ave a)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surfupounds, initiator and promoter, plied as per instructions of manufactiff = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 per cent wastage. Machinery Grout pump with agitator and accessories GST (multiplying factor 0.2016) or	day day day kg	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00 318.00 12285.00	L-12 L-15 L-13 M-145
5	2800	g) Ra Pai coo app Un Tai ave a) b)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf mpounds, initiator and promoter, plied as per instructions of manufact it = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, initiator and promoter including 5 per cent wastage. Machinery Grout pump with agitator and accessories	face wi availab turer an day day day kg hour	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ingineer. 33.06 381.00 318.00 12285.00	L-12 L-15 L-13 M-145
.6	2800	g) Ra Pai cor app Un Tal ave a) b)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf impounds, initiator and promoter, plied as per instructions of manufact if = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 per cent wastage. Machinery Grout pump with agitator and accessories GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+l Contractor's profit @ 10 % on (a+l	day day day kg	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00 318.00 12285.00 386.00 2702.06 1610.51	L-12 L-15 L-13 M-145
5.6	2800	g) Ra Paticon app Un Tai ave a) b) c) d) e) f)	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf impounds, initiator and promoter, plied as per instructions of manufact if = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 per cent wastage. Machinery Grout pump with agitator and accessories GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+b	day day day kg	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ingineer. 33.06 381.00 318.00 12285.00 386.00 2702.06 1610.51 1771.56	L-12 L-15 L-13 M-145
6.6	2800	g) Ra Paticon app Un Tal ave a) b) c) d) e) f) g) Co	Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete surf impounds, initiator and promoter, plied as per instructions of manufact if = sqm king output = 10 sqm for an erage thickness of 25mm. Labour Mate Mazdoor (Skilled) Mazdoor Material Pre-packed polymer concrete based on epoxy system complete with curing compound, initator and promoter including 5 per cent wastage. Machinery Grout pump with agitator and accessories GST (multiplying factor 0.2016) or Overhead charges @ 10 % on (a+l Contractor's profit @ 10 % on (a+l Cess @ 1% on (a+b+c+d+e+f)	day day day kg	th polymer le in prese d as approv 0.060 0.750 0.750 315.000	r concrete ent formular ved by the E 551.00 508.00 424.00 39.00	2.37 239.12 239.00 and curing tions, to be ngineer. 33.06 381.00 318.00 12285.00 2702.06 1610.51 1771.56 194.87	L-12 L-15 L-13 M-145

				REPAIR AND REHA	BILLIA	IION			
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
40.7	2803	Note	pa per	is item is a proprietory item available cked polymer concrete and is require rinstructions of the manufacturer.	d to be	applied as			•
16.7	2003			aling of crack / porous concrete witl mplete as per clause 2803.1.	п Ероху	Grout by I	njection thre	ougn nippies	
				it = kg king output = 1 kg Material					
			•	Epoxy including 10 per cent wastage	kg	1.100	257.00	282.70	M-095
			b)	Labour					
				Mate	day	0.080	551.00	44.08	L-12
				Mazdoor (Skilled)	day	0.100	508.00	50.80	L-15
				Mazdoor	day	0.100	424.00	42.40	L-13
			c)	Machinery					
				Epoxy Injection gun	hour	0.100	3723.00	372.30	P&M-078
			d)	GST (multiplying factor 0.2016) or	n (a+b+c	c)		159.72	
			e)	Overhead charges @ 10 % on (a+	b+c+d)			95.20	
			f)	Contractor's profit @ 10 % on (a+	b+c+d+	e)		104.72	
			g)	Cess @ 1% on (a+b+c+d+e+f)				11.52	
			Ra	te per kg = (a+b+c+d+e+f+g)				1163.44	
							say	<u>1163.00</u>	

16.9 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.

ave	Labour					
,	Mate	day	0.040	551.00	22.04	L-12
	Mazdoor	day	0.500	424.00	212.00	L-13
	Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
b)	Machinery					
	Air compressor 250 cfm	hour	1.000	658.00	658.00	P&M-001
	Shotcreteing equipment	hour	1.000	896.00	896.00	P&M-076
	water tanker 6 KL capacity	hour	0.020	724.00	14.48	P&M-060
c)	Material					
	Cement	kg	120.000	9.10	1092.00	M- 081/1000
	Sand	cum	0.150	650.00	97.50	M-005
	Coarse aggregate of size 4.75mm	cum	0.150	780.00	117.00	M-024
	Quick setting compound	kg	2.500	59.00	147.50	M-147
	Water	KL	0.100	71.00	7.10	M-189
d)	GST (multiplying factor 0.2016) o	n (a+b+c	c)		709.15	
e)	Overhead charges @ 10 % on (a+	b+c+d)			422.68	
f)	Contractor's profit @ 10 % on (a+	b+c+d+	e)		464.95	
g)	Cess @ 1% on (a+b+c+d+e+f)				51.14	
Cos	st for 10 sqm = a+b+c+d+e+f+g				5165.54	
Rat	e per sqm = (a+b+c+d+e+f+g)/10				516.55	
				say	<u>517.00</u>	

	I Burni I	REPAIR AND REHA	BILITA	TION			1
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
16.10	2800	Applying pre-packed cement based po	lymer n	nortar of str	ength 45 Mp	a at 28 days	•
		for replacement of spalled concrete					
		Unit = sqm					
		Taking output = 10 sqm					
		Assumed thickness - 10 mm					
		a) Material	Litro	1.400	371.00	519.40	M-057
		Acrylic polymer bonding coat pre-packed cement based polymer	Litre kg	12.000	39.00	468.00	M-145
		mortar of strength 45 Mpa at 28 days	ĸg	12.000	39.00	400.00	
		Add 3 per cent of (a) above for wastage.				29.62	
		b) Labour					
		Mate	day	0.040	551.00	22.04	L-12
		Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
		Mazdoor	day	0.500	424.00	212.00	L-13
		c) GST (multiplying factor 0.2016) or	` '			303.42	
		d) Overhead charges @ 10 % on (a+	-			180.85	
		e) Contractor's profit @ 10 % on (a+	b+c+d)			198.93	
		f) Cess @ 1% on (a+b+c+d+e)				21.88	
		Cost for 10 sqm = a+b+c+d+e+f				2210.14	
		Rate per sqm = (a+b+c+d+e+f)/10				221.01	
16.11	2805	Eproxy bonding of new concrete to old	l concre	ete	say	<u>221.00</u>	
		Unit = sqm					
		Taking output = 10 sqm					
		a) Material					
		Epoxy resin with pot life not less than 60-90 minutes and satisfying	kg	8.000	169.00	1352.00	M-098
		testing as per clause 2803.9					
		Add 3 per cent of (a) above for wastage.				40.56	
		b) Labour					
		Mate	day	0.040	551.00	22.04	L-12
		Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
		Mazdoor	day	0.500	424.00	212.00	L-13
		c) GST (multiplying factor 0.2016) or	` '			379.13	
		d) Overhead charges @ 10 % on (a+	•			225.97	
		e) Contractor's profit @ 10 % on (a+	D+C+a)			248.57	
		f) Cess @ 1% on (a+b+c+d+e)				27.34	
		Cost for 10 sqm = a+b+c+d+e+f				2761.61	
		Rate per sqm = (a+b+c+d+e+f)/10			201	276.16	
16.17		Replacement of Expansion Joints com	plete as	s per drawir	<i>say</i> ngs	<u>276.00</u>	
		Unit -1 RM	•	•	ŭ		
		Taking output = 12 RM					
		a) Material					
		Epoxy for bonding new concrete to old concrete @ 0.8 kg/sqm	kg	9.600	257.00	2467.20	M-095
		M-30 grade cement concrete excluding GST,OH, CP & Cess (Rate as per items 14.1 C (i)	cum	3.600	7619.00	27428.40	Item 14.1(C)
		b) Labour					
		Removal of old expansion joint including breaking of concrete, cutting of lugs and shifting of broken material etc.					
		Mate	day	0.260	551.00	143.26	L-12
		Mazdoor	day	6.000	424.00	2544.00	L-13

	12	ı	REPAIR AND REHA	BILITA	TION			
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Mazdoor (Skilled)	day	0.500	508.00	254.00	L-15
			c) GST (multiplying factor 0.2016) or				6619.91	
			d) Overhead charges @ 10 % on (a+	b+c)			3945.68	
			e) Contractor's profit @ 10 % on (a+l	b+c+d)			4340.25	
			f) Cess @ 1% on (a+b+c+d+e)				477.43	
			Cost for replacement of 12 RM = a+b+c+c	l+e+f			48220.13	
			Rate per RM = $(a+b+c+d+e+f)/12$				4018.34	
						say	<u>4018.00</u>	
		Note	The rate for the installation of new expantaken from the chapter on superstructure will have to be replaced which has been analysis.	e. Broke	n concrete			
16.18			Replacement of Damaged Concrete Ra	iling.				
			Unit = RM					
			Taking output = 10 RM					
			a) Labour					
			Labour for dismantling old railing and					
			disposal of dismantled material.	al acce	0.000	FF1 00	110.00	L-12
			Mate Mazdoor	day day	0.200 5.000	551.00 424.00	110.20 2120.00	L-12 L-13
			b) Machinery	uay	5.000	424.00	2120.00	
			Tractor-trolley for disposal of dismantled material	hour	1.000	530.00	530.00	P&M-053
			c) GST (multiplying factor 0.2016) or	ı (a+b)			556.46	
			d) Overhead charges @ 10 % on (a+				331.67	
			e) Contractor's profit @ 10 % on (a+l	•			364.83	
			f) Cess @ 1% on (a+b+c+d+e)	,			40.13	
			Cost for 10 m = $a+b+c+d+e+f$				4053.29	
			Rate per metre = (a+b+c+d+e+f)/10				405.33	
						say	<u>405.00</u>	
		Note	The rate for the provision of new railing from the chapter on superstructure.	g may b	e adopted			
16.19			Replacement of Crash Barrier.					
			Unit = RM					
			Taking output = 10 M					
			a) Labour					
			Labour for dismantling old railing and disposal of dismantled material.					
			Mate	day	0.400	551.00	220.40	L-12 L-13
			Mazdoor	day	10.000	424.00	4240.00	L-10
			b) Machinery Tractor-trolley for disposal of dismantled material	hour	1.000	530.00	530.00	P&M-053
			c) GST (multiplying factor 0.2016) or	ı (a+b)			1006.06	
			d) Overhead charges @ 10 % on (a+	-			599.65	
			e) Contractor's profit @ 10 % on (a+l	•			659.61	
			f) Cess @ 1% on (a+b+c+d+e)	,			72.56	
			Cost for 10 m = $a+b+c+d+e+f$				7328.28	
			Rate per metre = (a+b+c+d+e+f)/10				732.83	
						say	<u>733.00</u>	
		Note	The rate for the construction of new cra adopted from chapter 8 on Traffic and Tra					
16.20			Replacement of Damaged Mild Steel Ra	-				
			Unit = RM	•				
			Taking output = 10 M					

Taking output = 10 M
a) Labour

Labour for dismantling old railing and disposal of dismantled material.

		CHAPTE REPAIR AND REH		TION			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remar Input r
	орсс.	Mate	day	0.160	551.00	88.16	L-12
		Mazdoor	day	4.000	424.00	1696.00	L-1:
		b) Machinery					
		Tractor-trolley for disposal of dismantled material	hour	1.000	530.00	530.00	P&M-
		c) GST (multiplying factor 0.2016)	on (a+b)			466.53	
		d) Overhead charges @ 10 % on (a	+b+c)			278.07	
		e) Contractor's profit @ 10 % on (a	+b+c+d)			305.88	
		f) Cess @ 1% on (a+b+c+d+e)				33.65	
		Cost for 10 m = $a+b+c+d+e+f$				3398.29	
		Rate per metre = (a+b+c+d+e+f)/10				339.83	
					say	340.00	
16.21		Repair of Crash Barrier			_		
		Repair of concrete crash barrier wit	h cement	concert o	f M-30 grade	e by cutting	ı
		repaired thoroughly, applying cement	t concert	after erecti	on of proper	form work.	
		Unit = Running meter. Taking output = 10 M.					
		It is assumed that damage is to the extent of	of				
		10 per cent of the volume of concrete .Thi					
		will require 0.30 cum of concrete.					
		a) Manpower*					
		Mate	day	0.040	551.00	22.04	L-1
		Mazdoor	day	1.000	424.00	424.00	L-1
		* For dismantling and trimming the surfac	•				
		to a regular shape and removal of					
		damaged material.					
		b) Material					
		M-30 grade cement concrete	cum	0.300	7619.00	2285.70	Iten 14.1(
		excluding GST,OH, CP & Cess					
		(Rate as per items 14.1 C (i)					
		This may be priced based on the rate given the chapter of superstructure.					
		c) GST (multiplying factor 0.2016)	on (a+h)			550.72	
		d) Overhead charges @ 10 % on (a				328.25	
			-				
		e) Contractor's profit @ 10 % on (a	+D+C+a)			361.07	
		f) Cess @ 1% on (a+b+c+d+e)				39.72	
		Cost for 10 m = $a+b+c+d+e+f$				4011.50	
		Rate per metre = (a+b+c+d+e+f)/10				401.15	
					say	<u>401.00</u>	
6.22		Repair of RCC Railing					
		Carrying out repair of RCC M30 railing	g to bring	it to the o	riginal shape		
		Unit = Running meter.					
		Taking output = 10 M.					
		It is assumed that damage is to the					
		extent of 10 per cent .					
		a) Material	0	0.400	7640.00	764.00	Iten
		M-30 grade cement concrete	cum	0.100	7619.00	761.90	14.1(
		excluding GST,OH, CP & Cess (Rate as per items 14.1 C (i)					
		HYSD bar reinforcement Rate as	tonne	0.010	76604.00	766.04	Item 1
		per item No 14.2(Excluding	WILLE	0.010	10004.00	700.04	Α

per item No 14.2(Excluding GST,OH, CP & Cess)

b)

Labour* Mate

mazdoor

0.020

0.200

day

day

551.00

424.00

L-12 L-13

11.02

84.80

		REPAIR AND	PTER-16 REHABILITAT	ΓΙΟΝ			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		* For dismantling and trimming the su to a regular shape and remove damaged material.					•
		c) GST (multiplying factor 0.20	16) on (a+b)			327.35	
		d) Overhead charges @ 10 % o				195.11	
		e) Contractor's profit @ 10 % of	,			214.62	
		f) Cess @ 1% on (a+b+c+d+e)	,			23.61	
		Cost for 10 m = a+b+c+d+e+f				2384.45	
		Rate per m = (a+b+c+d)/10				238.45	
		. , ,			say	238.00	
16.23		Repair of Steel Railing					
		Unit = Running meter. Taking output = 10 M. a) Material Mild steel ISMC series	kg	29.000	50.73	1471.17	M- 179/1000
		Flat iron	kg	10.000	50.73	507.30	M- 179/1000
		MS Bolt and nuts Add 5 per cent of cost of mate for painting.	kg rial	1.000	120.00	120.00 104.92	M-130
		b) Labour					
		Mate	day	0.016	551.00	8.82	L-12
		Mazdoor (Skilled) Mazdoor	day	0.200	508.00	101.60	L-15 L-13
		c) GST (multiplying factor 0.20	day (16) on (a+b)	0.200	424.00	84.80 483.56	L-10
		d) Overhead charges @ 10 % o				288.22	
		e) Contractor's profit @ 10 % of				317.04	
		f) Cess @ 1% on (a+b+c+d+e)	,			34.87	
		Cost for 10 m = a+b+c+d+e+f				3522.30	
		Rate per m = (a+b+c+d+e+f)/10				352.23	
		(a. a. a				050.00	

<u>352.00</u>

say

Chapter – 17 B. Bridge Works

eamble:

The basic approach for the preparation of schedule of rates for Bridge works in indicated as under:

1. Description of items

The description of items is given briefly and linked with relevant clause of MoRT&H's Specifications for Road and Bridge Works, which may be referred for detailed description, provisions and interpretation.

2. Overhead Charges

The rates include over head charges considering the following elements -

- i. Site accomodation, setting up plant, access road, water supply, electricity and general site arrangements.
- ii. Office furniture, equipment and communications.
- iii. Expenditure on
 - a) Corporate office of contractor
 - b) Site Supervision
 - c) Documentation and "as built" drawings
- iv. Mobilisation/de-mobilisation of resources.
- v. Labour camps with minimum amenities and transportation to work sites.
- vi. Light vehicles for site supervision including administrative and managerial
- vii. Laboratory equipment and quality control including field and laboratory testing
- viii. Minor T&P and survey instruments and setting out works, including verification of line, dimensions, trial pits and bore holes, where required
- ix. Watch and ward
- x. Traffic management during construction
- xi. Expenditure on safeguarding environment
- xii. Sundries
- xiii. Financing Expenditure
- xiv. Sales/Turn over tax
- xv. Work Insurance/compensation
- 3 20 percent overhead charges has been considered in the schedule of rates

4. **Contractor Profit**

10 percent of cost of works. Contractor profit is also added on overhead charges.

5 **Materials** 6 Quantities of materials considered in the rate are approximate for the purpose of estimating and include normal wastages. 7 The transportation cost has to be included seperately in the estimate as per actual distance from the fabrication shop to work site inclusive of loading and unloading and protected stacking in undamaged condition near site as per direction of the Engineer -in -charge. 8 Painting and the specfication of meterials to be used shall be as per section 1900 of MoRT&H Specifications for Road and Bridge Works. 9 One mate has been provided for 25 labours. 10 Carriage cost of bridge components from protected stacks near site has been included for transportation, assembling and erection as per requirement based on proved erection programme. 11 Arrangement for traffic during construction shall be as per Clause 112 of

MoRT&H Speciffication for Road and Bridge Works.

CHAPTER - 17 STEEL BRIDGES

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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17.1 1900

Supply and fabrication of steel work at Fabricators workshop comprising of Main Girders, Cross Girders, Connecting plates, stringers, stiffening plates etc. from steel plates and structural steel of specified grades as per approved drawing including straightening, descaling, degreasing, cutting to size and shape, drilling, welding and grinding, supply of all MS / HTS shop or site bolts, nuts & washers, holding down bolts and nuts etc., trial assembling at workshop, one priming coat of shop paint with red lead paint conforming to IS-102 with all labour, material, cost of paints, consumables, stacking in protected condition etc complete as per specification and as directed by the Engineer in charge (Carriage cost from fabricator workshop to actual bridge site will be paid separately).

A COMPOSITE BRIDGE

Case

(i) Worked out based on 40m single span or in Multiples

IInit = 1 MT

Un	it = 1 MT					
Tal	king output = 425.472 MT					
a)	Material Structural steel in plates, angles, etc	cum	446.750	50728.00	22662734.00	M-179
	including 5 per cent wastage	Cum	440.730	30720.00	22002704.00	
	Nuts & Bolts	Kg	12764.200	120.00	1531704.00	M-130
b)	Labour					
	cutting, bending, making holes,					
JOIL	ing, welding and erecting in position)					
	Mate	day	421.220	551.00	232092.22	L-12
	Fitter	day	2340.100	593.00	1387679.30	L-08
	Blacksmith	day	2340.100	593.00	1387679.30	L-02
	Welder	day	2340.100	593.00	1387679.30	L-02
	Mazdoor	day	3510.140	424.00	1488299.36	L-13
is:	ner painting at the shop conforming to 102 before shifting to site as per stion 1906.4 3/5 part considered for one coat of primer after cleaning as specified under 1906.2 of section 1900 Add @ 1% on cost of material for scaffolding and temporary arrangement for assembling on (a) Electrodes, cutting gas and other consumables @ 10 percent of cost of (a) above. (Including GST,OH,CP &Cess of C)	sqm	4995.040	141.00	704300.64 241944.38 2419443.80	Item 8.9
C)	GGT (multiplying factor 0 2016) or	1 (a+h)			6063698.08	
•	GST (multiplying factor 0.2016) or					
e)	Overhead charges @ 10 % on (a+l	o+d)			3614156.56	
e) f)	Overhead charges @ 10 % on (a+l Contractor's profit @ 10 % on (a+l	o+d)			3614156.56 3007786.75	
e) f) g)	Overhead charges @ 10 % on (a+l Contractor's profit @ 10 % on (a+l Cess @ 1% on (a+b+d+e+f)	o+d)			3614156.56 3007786.75 300778.67	
e) f) g) Ra	Overhead charges @ 10 % on (a+l Contractor's profit @ 10 % on (a+l	o+d) b+d+f)			3614156.56 3007786.75	

CHAPTER - 17 STEEL BRIDGES

		01222	1100	-0			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
17.2	1900	Taking delivery of fabricated steel assembling and erection at site as nec	essar	y, assembling	g and erection	on of fabricated	

assembling and erection at site as necessary, assembling and erection of fabricated steel structure to proper line, level and camber as per approved drawings complete in asll respect including transportation and handling supply of all fasteners. Painting of all exposed surfaces of steel work after erection with one coat of red lead conforming to IS-102 and two coats Aluminium paint to IS-2339, grouting of anchor bolts in position, including all labour, consumables, materials, machinery, tools and tackles complete as per specification and as directed by the Engineer in charge

COMPOSITE BRIDGE

Case (i) Worked out based on 40m single span or in Multiples

Unit = 1 MT

 a) Assembling and erection at site including lablour component, erection cum dismantling of Staging, Scaffolding, Falsework etc complete. (A full proof method statement of erection programme at site has to be submitted and get approved before start)

approved before starty							
Formwork, Staging and Cost of erection 15% + 15% = 30% of Item: 17.1 (a+b+c+d) (Excluding GST,OH,CP &Cess) b) One coat of ready mixed, red lead primer painting after erection at site conforming to IS:102		tonne	1.000	23581.03	23581.03	Item 17.1	
after	art considered for one coat of primer cleaning as specified under 1906 of on 1900	sqm	11.740	141.00	1655.34	Item 8.9	
prime	coat of aluminium paint over steel er after cleaning as specified under of section 1900	sqm	11.740	141.00	1655.34	Item 8.9	
(Including GST,OH,CP &Cess of b)							
c)	GST (multiplying factor 0.2016) or	ı (a+b)			4753.94		
d)	Overhead charges @ 20 % on (a+l		5666.99				
e)	Contractor's profit @ 10 % on (a+b		3400.20				
f)	Cess @ 1% on (a+b+d+e)				374.02		
Rate	per MT = (a + b + c + d + e + f)			41086.86			
				say	41087.00		