# PUBLIC WORKS DEPARTMENT ARUNACHAL PRADESH



## 2021 ANALYSIS OF RATES

# FOR ROAD AND BRIDGE WORKS

ZERO LEAD BASED (EXCLUDING CARRIAGE COST)

PUBLISHED UNDER THE AUTHORITY OF THE CHIEF ENGINEER (CSQ) PWD, ARUNACHAL PRADESH, ITANGAR

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## CHIEF MINISTER ARUNACHAL PRADESH

#### Message

I am glad to know that Arunachal Pradesh Schedule of Rates – 2021 and Arunachal Pradesh Analysis of Rates -2021 for Road and Bridges is being brought out by Public Works Department, Arunachal Pradesh.

This schedule of rates is needed for realistic preparation of projects as well as their effective implementation on site for road development and bridge infrastructure in the state.

I convey my best wishes to the Engineers of Public Works Department, Arunachal Pradesh for proper and effective use of the Arunachal Pradesh Schedule of Rates 2021 and Arunachal Pradesh Analysis of Rates 2021 for Road and Bridge Works.

My best wishes to the Engineers of Public Works Department,
Arunachal Pradesh.

( Pema Khandu )

## KALING TAYENG, IAS Commissioner



## GOVERNMENT OF ARUNACHAL PRADESH PUBLIC WORKS DEPARTMENT

Block No. 2, 3<sup>rd</sup> Floor, Room No. 316 Civil Secretariat, Itanagar - 791 111

Date: May 6, 2021

### **MESSAGE**

The Public Works Department, Arunachal Pradesh is bringing out the Schedule of Rates-2021 and Analysis of Rates-2021 for Road and Bridge works. The Schedule of Rates once brought out will be very useful for preparation of realistic project estimates at the prevailing price level in the market to be adopted in the various regions of the State.

The Public Works Department under Government of Arunachal Pradesh is one of the premier organisations undertaking construction of roads and bridges in the State. The revision of schedule of rates plays an important role in preparation of estimate, design and scheduling of projects.

I commend all officers and staff who have been part of preparation of Arunachal Pradesh Schedule of Rates-2021 and Arunachal Pradesh Analysis of Rates-2021 for Road and Bridge works.

[Kaling Tayeng]

#### **FOREWORD**

The Arunachal Pradesh Schedule of Rates and Analysis of Rates for Road and Bridge works was last published in the year 2018. The Schedule of Rates and Analysis of Rates provide a basic framework to evaluate cost estimate of the projects. The Arunachal Pradesh Schedule of Rates (APSR 2021) and Analysis of Rates (APAR 2021) for Road and Bridge works is brought out after updating the basic rates of labour and materials to present market rates.

The important establishments in the state where major construction activities take place are scattered in the different locations with varying distance from the foothills. Hence, in order to evolve common rates for the major construction activities for the purpose of the publication of the Schedule of Rates 2021 for Road and Bridge works, the rates of major construction materials like Cement, Steel and Bitumen are updated based on the rates in nearest authorized dealers located in foothill in Assam and in Arunachal Pradesh. In the process of project evaluation based on this Schedule of Rates, the additional cost involved in carriage of materials from approved sources to site of work shall be added to arrive at the actual execution cost. Further the schedule of Rates shall not be directly adopted for payment to contractor for the work done by them at any site.

Basic structure and methodology of items are as per the standard Data Book of the **Ministry of Road Transport and Highways, Govt. of India, New Delhi.** Therefore the executions of items in this schedule at site are to be done in concurrence with the **MoRTH & MoRD Specifications** for Road and Bridge Works.

It is emphasized that while adopting the APSR-2021, the user shall acquaint themselves with the General notes for Road & Bridge for multifarious cost assumptions considered like CP & OH in the analysis and all preambles before every chapter and related MoRTH & MoRD Specifications precisely for accomplishing itemized tasks.

Apart from state PWD, this Schedule of Rates is being used as a guide by a number of departments, public sector undertakings, private builders etc. The state PWD will welcome comments on this Schedule of Rates and Analysis of Rates from the users for improvement in future publications.

I would like to express my appreciation for the sincere effort and dedication put in by all officers and staff in bringing out the Schedule of Rates 2021 and Analysis of Rates 2021 (Road and Bridge works) with the spirit of teamwork.

E-mail: cecsqpwd@gmail.com

Chief Engineer (CSQ) PWD, AP, Itanagar.

#### **PREFACE**

- APSR 2018 and APAR 2018 of Road and bridge works is updated to APSR 2021 and APAR 2021. Carriage charge has to be accounted separately as per actual rate given.
- The rates for completed item at the site of work shall be inclusive of basic rate of material plus the actual carriage cost of materials from source / approved quarry to the site of work. The carriage cost of each category of material can be worked out with the carriage charge attached with this SOR prepared for both plain and hill road parameters based on status of road in hilly Himalayan region of Arunachal Pradesh.
- The basic material incorporated in this APSR 2021 are conforming to IRC standard / MoRTHS specifications. The scheduled rate (Roads and Bridges) 2021 in now brought out purely for calculating cost of the projects by detailed estimation.
- 4 GST 12%, Overhead Charges 10% for Road, Overhead Charges 20% for Bridges, Contractor's profit 10% and Labour Cess 1% has been adopted in the rate of APAR and APSR 2021 (Road and Bridge Works).
- 5 A GST of 12% has been adopted in the rate analysis of APSR and APAR 2021 (Roads and Bridges)
- There has been an addition of 14 new items in this SOR under Bases & Surface courses (Bituminous), Traffic Signs, Markings & other Road Appurtenances and Maintenance of Roads.
- It is mandatory as per CPWD manual that the scheduled rate is updated after every 2 (two) years. Hence, this scheduled rate will be due to revised or updated by 2023.
- I express my sincere thanks to all office staff members and officers of CSQ, PWD for contributing their time compiling this schedule. Special thanks go to Shri P.S Bhattacharjee, Sr. Estimator (CSQ) and Miss Mary Talom, ASW (CSQ) for their special attention on the job.
- Due care has been made to bring APSR 2021 / APAR 2021 without error; still if such errors are noticed; same could be intimated to SE (CSQ) for necessary correction in the next edition.

Rimmar Taso Superintending Engineer (CSQ) PWD, AP, Itanagar.

#### **PAGE-INDEX**

CHAPTER	SUB-HEAD	<b>PAGE</b>
	INPUT BASIC RATES (ZERO LEAD)	1-21
	ROAD WORK - BASIC NOTES	22-25
	BRIDGE WORK-BASIC NOTES	26-29
	DIRECTLY USED ITEMS	30-59
1	CARRIAGE OF MATERIALS	60-65
2	SITE CLEARANCE	66-81
3	EARTH WORK, EROSION CONTROL AND DRAINAGE	82-104
4	SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS	105-123
5	BASES AND SURFACE COURSES (BITUMINOUS)	124-167
6	CEMENT CONCRETE PAVEMENTS	168-171
7	GEOSYNTHETICS AND REINFORCED EARTH	NIL
8	TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES	172-202
9	PIPE CULVERTS	203-206
10	MAINTENANCE OF ROADS	207-217
11	HORTICULTURE	218-228
12	FOUNDATIONS	229-315
13	SUB-STRUCTURE	316-337
14	SUPER-STRUCTURE	338-375
15	RIVER TRAINING AND PROTECTION WORKS	376-382
16	REPAIR AND REHABILITATION	383-391
17	BRIDGE WORKS	392-395

	(A) U	sage Rates of Pla	nt and Machir	nery		
Code	Description of Machine	Activity	Output of Machine	Output	Unit	Rate
P&M-001	Air Compressor	General Purpose	capacity in cfm	170/250	hour	575.22
P&M-002	Batching and Mixing Plant (a) 30 cum capacity	Concrete Mixing	cum/hour	20	hour	2,787.61
P&M-003	Batching and Mixing Plant (b) 15 - 20 cum capacity	Concrete Mixing	cum/hour	13	hour	2,787.61
P&M-004	Bitumen Pressure Distributor	Applying bitumen tack coat	sqm/hour	1750	hour	1,308.85
P&M-005	Bitumen Boiler oil fired	Bitumen Spraying	capacity in litre	1500	hour	241.59
P&M-006	Concrete Paver Finisher with 40 HP Motor	Paving of concrete surface	cum / hour	20	hour	3,259.29
P&M-007	Concrete Pump of 45 & 30 cum capacity	Pumping of concrete	cum / hour	33 / 22	hour	2,576.11
P&M-008	Concrete Bucket	For Pouring concrete	capacity in cum	1	hour	18.58
P&M-009	Concrete Mixer (a) 0.4/0.28 cum	Concrete Mixing	cum/hour	2.5	hour	269.91
P&M-010	Concrete Mixer (b) 1 cum	Concrete Mixing	cum/hour	7.5	hour	269.91
P&M-011	Crane (a) 80 tonnes	Lifting Purpose			hour	1,558.41
P&M-012	Cranes b) 35 tonnes	Lifting Purpose			hour	1,038.94
P&M-013	Cranes c) 3 tonnes	Lifting Purpose			hour	433.63
P&M-014	Dozer D - 80 - A 12	Spreading /Cutting / Clearing	cum/hour	300/ 150/250	hour	4,237.17
P&M-015	Dozer D - 50 - A 15	Spreading /Cutting / Clearing	cum/hour	200/ 120/150	hour	2,934.51
P&M-016	Emulsion Pressure Distributor	Applying emulsion tack coat	sqm/hour	1750	hour	973.45
P&M-017	Front End loader 1 cum bucket capacity	Soil loading / Aggregate loading	cum/hour	60 /25	hour	1,398.23
P&M-018	Generator (a) 125 KVA	Genration of electric Energy	KVA	100	hour	1,003.54
P&M-019	Generator(b) 63 KVA	Genration of electric Energy	KVA	50	hour	780.53

Code	Description of Machine	Activity	Output of Machine	Output	Unit	Rate
P&M-020	GSB Plant 50 cum	Producing GSB	cum/hour	40	hour	1,338.05
P&M-021	Hotmix Plant - 120 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	40	hour	28,522.12
P&M-022	Hotmix Plant - 100 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	30	hour	21,092.92
P&M-023	Hotmix Plant - 60 to 90 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	25	hour	16,867.26
P&M-024	Hotmix Plant - 40 to 60 TPH capacity	DBM/BM/SDC/ Premix	cum/hour	17	hour	13,505.31
P&M-025	Hydraulic Chip Spreader	Surface Dressing	sqm/hour	1500	hour	3,211.50
P&M-026	Hydraulic Excavator of 1 cum bucket	Soil Ordinary/Soil Marshy / Soil Unsuitable	cum/hour	60 /60 /60	hour	1,751.33
P&M-027	Integrated Stone Crusher 100THP	Crushing of Spalls	TPH	100	hour	10,559.29
P&M-028	Integrated Stone Crusher 200 HP	Crushing of Spalls	TPH	200	hour	22,212.39
P&M-029	Kerb Casting Machine	Kerb Making	Rm/hour	80	hour	377.88
P&M-030	Mastic Cooker	Mastic Wearing coat	capacity in tonne	1	hour	104.42
P&M-031	Mechanical Broom Hydraulic	Surface Cleaning	sqm/hour	1250	hour	433.63
P&M-032	Motor Grader 3.35 mtr blade	Clearing /Spreading /GSB /WBM	cum/hour	200/200/50/	hour	2,917.70
P&M-033	Mobile slurry seal equipment	Mixing and laying slurry seal	sqm/hour	2700	hour	1,227.43
P&M-034	Paver Finisher Hydrostatic with sensor control 100 TPH	Paving of DBM/ BM/SDC/ Premix	cum/hour	40	hour	3,259.29
P&M-035	Paver Finisher Mechanical 100 TPH	Paving of WMM /Paving of DLC	cum/hour	40/30	hour	1,187.61
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	6,659.29
P&M-037	Pneumatic Road Roller	Rolling of Asphalt Surface	cum/hour	25	hour	1,515.04
P&M-038	Pneumatic Sinking Plant	Pneumatic Sinking of	cum/hour	1.5 to 2.00	hour	5,081.42

Code	Description of Machine	Activity	Output of Machine	Output	Unit	Rate
P&M-039	Pot Hole Repair Machine	Repair of potholes	cum/hour	4	hour	1,105.31
P&M-040	Prestressing Jack with Pump & access	Stressing of steel wires/stands			hour	157.52
P&M-041	Ripper	Scarifying	cum/hour	60	hour	76.99
P&M-042	Rotavator	Scarifying	cum/hour	25	hour	48.67
P&M-043	Road marking machine	Road marking	Sqm/hour	100	hour	112.39
P&M-044	Smooth Wheeled Roller 8 tonne	Soil Compaction /BM Compaction	cum/hour	70/25	hour	561.95
P&M-045	Tandem Road Roller	Rolling of Aspalt Surface	cum/hour	30	hour	1,393.81
P&M-046	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	km	64.60
P&M-047	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	tonne.km	9.29
P&M-048	Tipper - 5 cum	Transportation of soil, GSB, WMM, Hotmix etc.	Capacity in cum	5.5	hour	779.65
P&M-049	Transit Mixer 4.0/4.5 cum	Transportation of Concrete Mix to site	cum/hour	4.5	hour	1,132.74
P&M-050	Transit Mixer 4/4.5 cum	Transportation of Concrete Mix to site	cum/hour	4.5	tonne.km	18.94
P&M-051	Transit Mixer 3.0 cum	Transportation of Concrete Mix to site	cum/hour	3	hour	1,039.20
P&M-052	Transit Mixer 3.0 cum	Transportation of Concrete Mix to site	cum/hour	3	tonne.km	23.14
P&M-053	Tractor	Pulling	capacity in HP	50	hour	476.11
P&M-054	Tractor with Rotevator	Rate of Tractor + Rotevator			hour	407.96
P&M-055	Tractor with Ripper	Rate of Tractor 6+ Ripper			hour	420.35
P&M-056	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	km	53.27
P&M-057	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	hour	641.59

Code	Description of Machine	Activity	Output of Machine	Output	Unit	Rate
P&M-058	Truck 5.5 cum per 10 tonnes	Material Transport	capacity/cum	4.5	tonne.km	7.65
P&M-059	Three wheel 80-100 kN Statis Roller	Earth or soil / GSB / W	cum/hour	100/60/60	hour	733.63
P&M-060	Water Tanker	Water Transport	capacity in KL	6	hour	544.25
P&M-061	Water Tanker	Water Transport	capacity in KL	6	km	26.55
P&M-062	Wet Mix Plant 60 TPH	Wet Mix	cum/hour	25	hour	1,468.14
P&M-062 (A)	Vibratory roller 8 to 10 tonne	Intermediate rolling.	cum/hour	3.9	hour	600.00

Code	Description of Machine	Unit	Rate
P&M-063	Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	634.51
P&M-064	Batch type cold mixing plant 100-120 TPH capacity producing an average output of 75 tonne per hour	hour	20,912.39
P&M-065	Belt conveyor system	hour	2,023.89
P&M-066	Boat to carry atleast 20 persons	hour	2,023.89
P&M-067	Cement concrete batch mix plant @ 20 cum per hour (effective output)	hour	3,534.51
P&M-068	Cement concrete batch mix plant @ 75 cum per hour	hour	4,722.12
P&M-069	Cold milling machine @ 20 cum per hour	hour	input
P&M-070	Crane 5 tonne capacity	hour	742.48
P&M-071	Crane 10 tonne capacity	hour	769.03
P&M-072	Crane 15 tonne capacity	hour	809.73
P&M-073	Crane 20 tonne capacity	hour	1,296.46
P&M-074	Crane 40 T capacity	hour	1,296.46
P&M-075	Crane with grab 0.75 cum capacity	hour	976.11
P&M-076	Compressor with guniting equipment along with accessories	hour	809.73
P&M-077	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	404.42
P&M-078	Epoxy Injection gun	hour	3,373.45
P&M-079	Generator 33 KVA	hour	453.98
P&M-080	Generator 100 KVA	hour	849.56
P&M-081	Generator 250 KVA	hour	1,012.39
P&M-082	Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	input

Code	Description of Machine	Unit	Rate
P&M-083	Joint Cutting Machine with 2-3 blades (for rigid pavement)	hour	125.66
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	6,659.29
P&M-086	Plate compactor	hour	338.05
P&M-087	Snow blower equipment 140 HP @ 600 cum per hour	hour	input
P&M-088	Texturing machine (for rigid pavement)	hour	269.91
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	2,023.89
P&M-094	Wet Mix Plant 75 TPH	hour	1,619.47
P&M-095	Hot mix Plant -120 TPH capacity	hour	15,000.00
P&M-096	Hot mix Plant -100 TPH capacity	hour	13,000.00
P&M-097	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	12,000.00

	(B) Labour		
Code	Description of Labour	Unit	Rate
L-01	Blacksmith (IInd class)	day	354.00
L-02	Blacksmith (Ist class)/ Welder/ Plumber/ Electrician	day	442.00
L-03	Blaster (Stone cutter)	day	354.00
L-04	Carpenter I Class	day	442.00
L-05	Chiseller (Head Mazdoor)	day	354.00
L-06	Driller (Jumper)	day	354.00
L-07	Diver	day	796.00
L-08	Fitter	day	442.00
L-09	Mali	day	354.00
L-10	Mason (IInd class)	day	354.00
L-11	Mason (Ist class)	day	442.00
L-12	Mate / Supervisor	day	354.00
L-13	Mazdoor	day	310.00
L-14	Mazdoor/Dresser (Semi Skilled)	day	354.00
L-15	Mazdoor/Dresser/Sinker (Skilled)	day	442.00
L-16	Medical Officer	day	1,327.00
L-17	Operator(grouting)	day	442.00
L-18	Painter I class	day	442.00
L-19	Para medical personnel	day	796.00
L-20	Beldar	day	310.00
L-21	Coolie	day	310.00
L-21	Bhisti	day	310.00

(C) Materials		
Description	Unit	Rate
Stone Boulder of size 150 mm and below at Cruser Plant	cum	577.88
Supply of quarried stone 150 - 200 mm size for Hand Broken at site	cum	546.02
Boulder with minimum size of 300 mm for Pitching at Site	cum	484.96
Coarse sand at Mixing Plant	cum	601.77
Coarse sand at Site	cum	601.77
Fine sand at Site	cum	601.77
Moorum at Site	cum	278.76
Gravel/Quarry spall at Site	Cum	446.02
Granular Material or hard murrum for GSB works at Site	Cum	434.51
Granular Material or hard murrum for GSB works at Mixing Plant	Cum	278.76
Fly ash conforming to IS: 3812 ( Part II & I) atHMP Plant / Batching Plant / Crushing Plant	Cum	input
Filter media/Filter Material as per Table 300-3 (MoRT&H Specification)	Cum	1,283.19
	Description  Stone Boulder of size 150 mm and below at Cruser Plant  Supply of quarried stone 150 - 200 mm size for Hand Broken at site  Boulder with minimum size of 300 mm for Pitching at Site  Coarse sand at Mixing Plant  Coarse sand at Site  Fine sand at Site  Moorum at Site  Gravel/Quarry spall at Site  Granular Material or hard murrum for GSB works at Site  Granular Material or hard murrum for GSB works at Mixing Plant  Fly ash conforming to IS: 3812 ( Part II & I) atHMP Plant / Batching Plant / Crushing Plant	Description  Unit  Stone Boulder of size 150 mm and below at Cruser Plant  Supply of quarried stone 150 - 200 mm size for Hand Broken at site  cum  Boulder with minimum size of 300 mm for Pitching at Site  Coarse sand at Mixing Plant  Coarse sand at Site  cum  Fine sand at Site  cum  Gravel/Quarry spall at Site  Cum  Granular Material or hard murrum for GSB works at Site  Cum  Fly ash conforming to IS: 3812 ( Part II & I) atHMP Plant / Batching Plant /  Crushing Plant

Code	Description	Unit	Rate at Plant (HMP/Batc hing)	Rate at Site
M-013	Close graded Granular sub-base Material 53 mm to 9.5 mm	cum	892.04	892.04
M-014	Close graded Granular sub-base Material 37.5 mm to 9.5 mm	cum	947.79	947.79
M-015	Close graded Granular sub-base Material 26.5 mm to 9.5 mm	cum	724.78	724.78
M-016	Close graded Granular sub-base Material 9.5 mm to 4.75 mm	cum	780.53	780.53
M-017	Close graded Granular sub-base Material 9.5 mm to 2.36 mm	cum	757.52	757.52
M-018	Close graded Granular sub-base Material 4.75mm to 2.36 mm	cum	669.03	669.03
M-019	Close graded Granular sub-base Material 4.75mm to 75 micron mm		646.02	646.02
M-020	Close graded Granular sub-base Material 2.36 mm	cum	601.77	601.77
M-021	Stone crusher dust finer than 3mm with not more than 10% passing 0.075 sieve.	cum	624.78	624.78
M-022	Coarse graded Granular sub-base Material 2.36 mm & below	cum	624.78	624.78
M-023	Coarse graded Granular sub-base Material 4.75mm to 75 micron mm		669.03	669.03
M-024	Coarse graded Granular sub-base Material 4.75 mm to 2.36 mm	cum	669.03	669.03
M-025	Coarse graded Granular sub-base Material 9.5 mm to 4.75 mm	cum	724.78	724.78
M-026	Coarse graded Granular sub-base Material 26.5 mm to 4.75 mm	cum	780.53	780.53
M-027	Coarse graded Granular sub-base Material 26.5 mm to 9.5 mm	cum	836.28	836.28
M-028	Coarse graded Granular sub-base Material 37.5 mm to 9.5 mm	cum	892.04	892.04
M-029	Coarse graded Granular sub-base Material 53 mm to 26 .5mm	cum	947.79	947.79

Code	Description	Unit	Rate at Plant (HMP/Batc hing)	Rate at Site
M-030	Aggregates below 5.6 mm	cum	1,828.32	1,828.32
M-031	Aggregates 22.4 mm to 2.36 mm	cum	976.11	976.11
M-032	Aggregates 22.4 mm to 5.6 mm	cum	1,522.12	1,522.12
M-033	Aggregates 45 mm to 2.8 mm	cum	713.27	713.27
M-034	Aggregates 45 mm to 22.4 mm	cum	947.79	947.79
M-035	Aggregates 53 mm to 2.8 mm	cum	780.53	780.53
M-036	Aggregates 53 mm to 22.4 mm	cum	921.24	921.24
M-037	Aggregates 63 mm to 2.8 mm	cum	753.10	753.10
M-038	Aggregates 63 mm to 45 mm	cum	896.46	896.46
M-039	Aggregates 90 mm to 45 mm	cum	871.68	871.68
M-040	Aggregates 10 mm to 5 mm	cum	1,951.33	1,951.33
M-041	Aggregates 11.2 mm to 0.09 mm	cum	1,059.29	1,059.29
M-042	Aggregates 13.2 mm to 0.09 mm	cum	908.85	908.85
M-043	Aggregates 13.2 mm to 5.6 mm	cum	1,672.57	1,672.57
M-044	Aggregates 13.2 mm to 10 mm	cum	1,492.04	1,492.04
M-045	Aggregates 20 mm to 10 mm	cum	1,561.06	1,561.06
M-046	Aggregates 25 mm to 10 mm	cum	1,505.31	1,505.31
M-047	Aggregates 19 mm to 6 mm	cum	1,624.78	1,624.78
M-048	Aggregates 37.5 mm to 19 mm	cum	1,059.29	1,059.29
M-049	Aggregates 37.5 mm to 25 mm	cum	947.79	947.79
M-050	Aggregates 6 mm nominal size	cum	1,939.82	1,939.82
M-051	Aggregates 10 mm nominal size	cum	1,951.33	1,951.33
M-052	Aggregates 13.2/12.5 mm nominal size	cum	1,895.58	1,895.58
M-053	Aggregates 20 mm nominal size	cum	1,784.07	1,784.07
M-054	Aggregates 25 mm nominal size	cum	1,728.32	1,728.32
M-055	Aggregates 40 mm nominal size	cum	1,393.81	1,393.81

Code	Description	Unit	Rate
M-056	AC pipe 100 mm dia	metre	34.51
M-057	Acrylic polymer bonding coat	litre	278.76
M-058	Alluminium Paint	litre	338.05
M-059	Aluminium alloy plate 2mm Thick	sqm	input
M-060	Aluminium alloy/galvanised steel	tonne	60,135.40
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	161.95
M-062	Aluminium studs 100 x 100 mm fitted with lense reflectors	nos	539.82
M-063	G. I Barbed wire	kg	100.00
M-064	Bearing (Cost of parts)	nos	input
M-065	Bearing (Cast steel rocker bearing assembly of 250 tonne )	nos	3,37,300.88
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	16,190.27
M-067	Bearing (Forged steel roller bearing of 250 tonne	nos	2,96,823.01
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	67,433.63
M-069	Bearing (PTFE sliding plate bearing assembly of 80 tonnes )	nos	2,02,389.38
M-070	Bearing (Supply of sliding plate bearing of 80 tonne)	nos	16,190.27
M-071	Bentonite	kg	3.45
M-072	Binding wire	kg	89.38
M-073	Bitumen ( Cationic Emulsion )	tonne	47,120.35
M-074	Bitumen (60-70 grade)	tonne	58,389.38
M-075	Bitumen (80-100 grade )	tonne	57,350.44
M-076	Bitumen (Cutback )	tonne	60,330.97
M-077	Bitumen (emulsion)	tonne	47,120.35

Code	Description	Unit	Rate
M-078	Bitumen (modified graded)	tonne	52,465.49
M-078 (A)	Bitumen grade PMB - 40	tonne	32,200.00
M-078 (B)	Modified Bitumen Refinary produced CRMB - 60	tonne	30,536.00
M-079	Brick	each	9.73
M-080	C.I.shoes for the pile	kg	61.06
M-081	Cement	tonne	9,053.98
M-082	Cold twisted bars (HYSD Bars)	tonne	59,823.01
M-083	Coller for joints 300 mm dia	nos	140.71
M-084	Compressible Fibre Board(20mm thick)	sqm	760.18
M-085	Connectors/ Staples	each	61.06
M-086	Copper Plate(12m long x 250mmwide)	kg	736.28
M-087	Corrosion resistant Structural steel	tonne	68,017.70
M-088	Corrugated sheet, 3 mm thick, "Thrie" beam section railing	kg	67.26
M-089	Credit for excavated rock found suitable for use	cum	257.52
M-090	Curing compound	liter	54.60
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	11,038.94
M-094	Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	100 nos	1,103.54
M-095	Epoxy compound with accessories for preparing epoxy mortar	kg	245.13
M-096	Epoxy mortar	kg	input
M-097	Epoxy primer	kg	278.76
M-098	Epoxy resin-hardner mix for prime coat	kg	167.26
M-099	Flag of red color cloth 600 x 600 mm	each	67.26

Code	Description	Unit	Rate
M-100	Flowering Plants	each	14.16
M-101	Galvanised MS flat clamp	nos	37.17
M-102	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. Gl wire in rolls of required size.	sqm	189.38
M-103	Galvanised structural steel plate 200 mm wide, 6 mm thick, 24 m long	kg	221.24
M-104	Gelatin 80%	kg	164.60
M-105	Geo grids	sqm	input
M-106	Geomembrane	sqm	input
M-107	Geonets	sqm	input
M-108	Geotextile	sqm	50.44
M-109	Geotextile filter fabric	sqm	input
M-110	GI bolt 10 mm Dia	nos	42.48
M-111	Grouting pump with agitator	hour	184.07
M-112	Grass (Doob)	kg	14.16
M-113	Grass (Fine)	kg	14.16
M-114	HDPE pipes 75mm dia	metre	46.90
M-115	HDPE pipes 90mm dia	metre	input
M-116	Hedge plants	each	8.58
M-117	Helical pipes 600mm diameter	metre	1,287.61
M-118	Hot applied thermoplastic compound	litre	199.12
M-119	HTS strand	tonne	71,139.82
M-120	Joint Sealant Compound	kg	337.17
M-121	Jute netting, open weave, 2.5 cm square opening for seeding and Mulching	sqm	14.16
M-122	LDO for steam curing	litre	44.25
M-123	M.S. Clamps	nos	61.06

Code	Description	Unit	Rate
M-124	M.S. Clamps	kg	245.13
M-125	M.S.shoes @ 35 Kg per pile of 15 m	kg	55.75
M-126	Tor Steel bars	tonne	59,823.01
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	2,33,044.25
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	2,57,575.22
M-129	Nipples 12mm	nos	30.09
M-130	Nuts and bolts	kg	111.50
M-131	Paint	litre	323.01
M-132	Pavement Marking Paint	litre	267.26
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	94.69
M-136	Pesticide	kg	343.36
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	0.97
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	613.27
M-142	Pre-coated stone chips of 13.2 mm nominal size	cum	2,007.08
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	4,906.19
M-144	Pre-moulded asphalt filler board	sqm	67.26

Code	Description	Unit	Rate
M-145	Pre-packed cement based polymer concrete of strength 45 Mpa at 28 days	kg	37.17
M-146	Primer	kg	189.38
M-147	Quick setting compound	kg	55.75
M-148	Random Rubble Stone	cum	576.11
M-149	RCC Pipe NP 2 heavy duty non presure pipe 1000 mm dia	metre	1,772.57
M-150	RCC Pipe NP 2 heavy duty non presure pipe 1200 mm dia	metre	2,146.90
M-151	RCC Pipe NP 2 heavy duty non presure pipe 300 mm dia	metre	471.68
M-152	Reflectorising glass beads	kg	231.86
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	362.83
M-158	Rivets	each	0.97
M-159	Sand bags (Cost of sand and Empty cement bag)	nos	9.82
M-160	Sapling 2 m high 25 mm dia	each	98.23
M-161	Scrap tyres of size 900 x 20	nos	134.51
M-162	Seeds	kg	337.17
M-163	Selected earth	cum	201.77
M-164	Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	30.09
M-165	Sheathing duct	metre	110.62
M-166	Shrubs	each	12.39
M-167	Sludge / Farm yard manure @ 0.18 cum per 100 sqm at site of work for turfing	cum	134.51
M-168	Sodium vapour lamp	each	2,023.89
M-169	Square Rubble Coursed Stone	cum	576.11

Code	Description	Unit	Rate
M-170	Steel circular hollow pole of standard specification for street lighting to mount light at 5 m height above deck level	each	6,132.74
M-171	Steel circular hollow pole of standard specification for street lighting to mount light at 9 m height above road level	each	10,119.47
M-172	Steel drum 300 mm dia 1.2 m high/empty bitumen drum	nos	67.26
M-173	Steel helmet and cushion block on top of pile head during driving.	kg	201.77
M-174	Steel pipe 25 mm external dia as per IS:1239	metre	125.66
M-175	Steel pipe 50 mm external dia as per IS:1239	metre	429.20
M-176	Steel wire rope 20 mm	kg	273.45
M-177	Steel wire rope 40 mm	kg	246.02
M-178	Strip seal expansion join	metre	13,492.04
M-179	Structural Steel	tonne	48,312.00
M-180	Super plastisizer admixture IS marked as per 9103-1999	kg	61.06
M-181	Synthetic Geogrids as per clause 3102.8 and approved design and specifications.	sqm	input
M-182	Through and bond stone	each	14.16
M-183	Tie rods 20mm diameter	nos	275.22
M-184	Tiles size 300 x 300 mm and 25 mm thick	each	input
M-185	Timber	cum	27,318.58
M-186	Traffic cones with 150 mm reflective sleeve	nos	1,471.68
M-187	Tube anchorage set complete with bearing plate, permanent wedges etc	nos	4,661.06
M-188	Unstaked lime	tonne	12,878.76
M-189	Water	KL	67.26
M-190	Water based cement paint	litre	85.84
M-191	Welded steel wire fabric	kg	67.26
M-192	Wire mesh 50mm x 50mm size of 3mm wire	kg	161.95
M-193	Wooden ballies 2" Dia for bracing	each	42.48

Description	Unit	Rate
Wooden ballies 8" Dia and 9 m long	each	552.21
Wooden packing	cum	16,168.14
Wooden staff for fastening of flag 25 mm dia, one m long	each	67.26
Coldmix Binder	tonne	63,676.99
Paving Asphalt VG-30 of approved quality	tonne	39,570.00
Waste plastic additive	tonne	40,000.00
Dry hydrated lime (factory made)	quintal	290.00
Mirror polished granite 0.5 sqm. Granite of any colour, 18 mm thick	sqm	1,600.00
Granite stone slab 30mm thick	sqm	1,800.00
Interlocking C.C. paver block, ( 60 mm thick, M-30)	sqm	400.00
Matt finished vitrified tile 100x100 x16mm	sqm	1,000.00
Vitrified tile 300x300 x9.8mm	sqm	500.00
Tactile tile 300x300 9.8mm	sqm	1,000.00
Coloured inter locking C.C. paver Block	sqm	450.00
Sundries	LS	2.54
Hire and running charges of mech mixer	LS	2.54
Lead from Mixing Plant to working site	Km	0
Lead for E/W borow area to site	LS	3
Description	<u> </u>	Percentage of Rate
GST for Road Works		12 %
Overheads for Road Works		10 %
Contractors profit for Road Works		10 %
Cess for Road Works		
Overheads for Bridge Works		20 %
Overheads for Bridge Works (Rehabilitation)		10 %
Contractors profit for Bridge Works		10 %
	Wooden ballies 8" Dia and 9 m long  Wooden packing  Wooden staff for fastening of flag 25 mm dia, one m long  Coldmix Binder  Paving Asphalt VG-30 of approved quality  Waste plastic additive  Dry hydrated lime (factory made)  Mirror polished granite 0.5 sqm. Granite of any colour, 18 mm thick  Granite stone slab 30mm thick  Interlocking C.C. paver block, (60 mm thick, M-30)  Matt finished vitrified tile 100x100 x16mm  Vitrified tile 300x300 x9.8mm  Tactile tile 300x300 y9.8mm  Coloured inter locking C.C. paver Block  Sundries  Hire and running charges of mech mixer  Lead from Mixing Plant to working site  Lead for E/W borow area to site  Description  GST for Road Works  Overheads for Road Works  Cess for Road Works  Overheads for Bridge Works (Rehabilitation)	Wooden ballies 8" Dia and 9 m long  Wooden packing  cum  Wooden staff for fastening of flag 25 mm dia, one m long  each  Coldmix Binder  Paving Asphalt VG-30 of approved quality  tonne  Paving Asphalt VG-30 of approved quality  tonne  Dry hydrated lime (factory made)  Quintal  Mirror polished granite 0.5 sqm. Granite of any colour, 18 mm thick  granite stone slab 30mm thick  Interlocking C.C. paver block, (60 mm thick, M-30)  Matt finished vitrified tile 100x100 x16mm  vitrified tile 300x300 x9.8mm  Sqm  Coloured inter locking C.C. paver Block  Sundries  LS  Hire and running charges of mech mixer  LS  Lead from Mixing Plant to working site  Lead for E/W borow area to site  Contractors profit for Road Works  Coess for Road Works  Coverheads for Bridge Works  Overheads for Bridge Works (Rehabilitation)

Item Nos.	Summary of Rates calculated and used for analysis of rates of other items	Unit	Rate
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	0.80
Item 8.8	Painting Two Coats on New Concrete Surfaces . (D0)	sqm	98.00
Item 8.9	Painting angle iron post two coats. (D0)	sqm	95.00
Item 12.6 (B)	Cement mortor 1:2 (Excluding OH & CP) (D0)	cum	6,919.00
Item 12.6 (A)	Cement mortor 1:3 (Excluding OH & CP) (D0)	cum	5,543.00
Item 12.6 (D)	Cement mortor 1:6 (Excluding OH & CP) (D0)	cum	3,641.00
Item 12.7 (A )	Course Rubble masonary in cement mortor 1:3 (including OH & CP)  (D0)	cum	5,470.00
Item 12.7 B (Addl)	Random Rubble masonary in cement mortor 1:6 (including OH & CP) (D0)	cum	4,470.00
Item 12.8 (A)	PCC Grade M15 including OH & CP for Open Foundation by Mixer.  (D0)	cum	7,876.00
Item 12.8 A (SA)	PCC Grade M15 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	5,072.00
Item 12.8 (B)	PCC Grade M20 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	5,649.00
Item 12.8 (C) I	RCC Grade M20 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	5,849.00
Item 12.8 (C) II	RCC Grade M20 including OH & CP for Open Foundation by Batching Plant.  (D0)	cum	8,793.00
Item 12.8 (C) II (SA)	RCC Grade M20 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	5,663.00
Item 12.8 (D) I	PCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	6,150.00
Item 12.8 (D) II	PCC Grade M25 including OH & CP for Open Foundation by Batching Plant.  (D0)	cum	9,243.00

Item Nos.	Summary of Rates calculated and used for analysis of rates of other items	Unit	Rate
Item 12.8 (D) II (SA)	PCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  ( As per analysis directly used Items)	cum	5,967.00
Item 12.8 (E) I	RCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	6,356.00
Item 12.8 (E) II	RCC Grade M25 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	6,268.00
Item 12.8 (F) I	PCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	6,204.00
Item 12.8 (F) II	PCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	6,016.00
Item 12.8 (G) I	RCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	6,387.00
Item 12.8 (G) II	RCC Grade M30 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	6,201.00
Item 12.8 (H) I	RCC Grade M35 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	6,525.00
Item 12.8 (H)	RCC Grade M35 including OH & CP for Open Foundation by Batching Plant.  (D0)	cum	6,636.00
Item 12.8 (H) II	RCC Grade M35 excluding OH & CP for Open Foundation by Batching Plant.  (D0)	cum	9,909.00
Item 12.8 (H) II (SA)	RCC Grade M35 for Open Foundation Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	6,443.00
Item 12.11 C (i ) I	PCC Grade M20 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer. (D0)	cum	6,134.00
Item 12.11 C (i ) II	PCC Grade M20 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	5,945.00
Item 12.11 C (ii ) I	PCC Grade M25 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer. (D0)	cum	6,412.00
Item 12.11 C (ii ) II	PCC Grade M25 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	6,220.00
Item 12.11 C ( iii) I	PCC Grade M30 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer. (D0)	cum	6,466.00

Item Nos.	Summary of Rates calculated and used for analysis of rates of other items	Unit	Rate
Item 12.11 C ( iii) II	PCC Grade M30 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant. ( As per analysis directly used Items)	cum	6,277.00
Item 12.11 C (iv) I	PCC Grade M35 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Mixer.  (D0)	cum	6,593.00
Item 12.11 C (iv) II	PCC Grade M35 including OH & CP for Well Foundation (Bottom Plug) by Batching Plant.  (D0)	cum	9,996.00
Item 12.11 C (iv) III	PCC Grade M35 for Open Foundation (Bottom Plug) Per Cum Basic Cost of Labour, Material & Mechinery by Batching Plant.  (D0)	cum	6,401.00
Item 12.11 F (iv) II	PCC Grade M35 including OH & CP for Well Foundation (Well Cap) by Batching Plant.  (D0)	cum	9,750.00
Item 3.13 (A)	Excavation for Structures (Manual Means). (D0)	cum	355.00
Item 3.13 (B)	Excavation for Structures (Mechenical Meanse). (D0)	cum	60.00
Item 14.1 (A) II	RCC Grade M20 for super-structure including OH & CP by Batching Plant.  (D0)	cum	10,045.00
Item 14.1 (B) II	RCC Grade M20 for super-structure including OH & CP by Batching Plant.  (D0)	cum	10,998.00
Item 14.1 (E) II	RCC Grade M20 for super-structure including OH & CP by Batching Plant.  (D0)	cum	11,689.38
Item 14.1(C)	RCC Grade M30 for super-structure including formwork and excluding OH & CP by Batching Plant.  (D0)	cum	7,447.00
Item 14.1 (C)(Addl)	RCC Grade M30 for super-structure excluding formwork and excluding OH & CP by Batching Plant.  (D0)	cum	6,206.00
Item 14.2 (A)	Supplying ,fitting and placing HYSD bar reinforcement in super-structure exncluding OH & CP.  (D0)	tonne	67,488.00
Item 13.6	Supplying, fitting and placing HYSD including OH & CP for sub-structure.  (D0)	tonne	99,099.00
Item 5.17	Fog Seal. (D0)	sqm	55.00
Item 5.21 Case-(I)	Crack Prevention courses. Case-I Stress Absorbing Membrane (SAM) crack width less than 6 mm.	sqm	96.00

Item Nos.	Summary of Rates calculated and used for analysis of rates of other items	Unit	Rate
Item 5.21 Case-(II)	Crack Prevention courses. Case-II Stress Absorbing Membrane (SAM) with crack width 6 mm to 9 mm.  ( As per analysis directly used Items)	sqm	110.00
Item 5.21 Case-(III)	Crack Prevention courses. Case-III Stress Absorbing Membrane (SAM) crack width above 9 mm and cracked area above 50 %.  (D0)	sqm	145.00
Item 5.21 Case-(IV)	Crack Prevention courses. Case-IV Bitumen Impregnated Geotextile. (D0)	sqm	164.00
Item 5.15 Case-(I)	Slurry Seal Case-I 5 mm thickness. (D0)	sqm	90.00
Item 5.15 Case-(II)	Slurry Seal Case-II 3 mm thickness. (D0)	sqm	62.00
Item 5.15 Case-(III)	Slurry Seal Case III 1.5 mm thickness. (D0)	sqm	38.00
Item 5.9 Case-(I)	Surface Dressing Case-I 19 mm nominal chipping size. (D0)	sqm	141.00
Item 5.9 Case-(II)	Surface Dressing Case-II 13 mm nominal size chipping. (D0)	sqm	114.00

#### A. Roads Works

#### **Basic Notes for Preparation of Schedule of Rates**

chedule of rates for Road Works is indicated as under:

#### **Description of items**

1. 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

- (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 requirements
- (vii) Laboratory equipment and quality control including field and laboratory testing
- (viii) Minor T&Ps 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 rate for plants & equipments, material and labour are as per the prevailing market rates from the near by authorised dealers/quarry etc. 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 mtr. 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 condition.
- 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-2021 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 2021.
  - (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 headquarters of state.
  - (vi) R.C.C. Hume Pipes: Naharlagun/Likabali or nearby source in Assam.
- 7.3 The alternative proposal for cost of aggregates by installing crusher is to be compared with procurement of crushed aggregates from the market and proposal found more 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 separately.
  - b) In tonne km where lead is variable. The loading and unloading for such cases have been provided separately.

- c) Zero lead has been considered for the stone aggregate in order to work out the actual rate 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.
- 10.40 Arrangement for traffic during construction shall be as per Clause 112 of MoRT&H Specifications for Road and Bridge Works.
- 10.50 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 for 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 video 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, weldability 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 is 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 :-

- (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 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-2021 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 cost of aggregate by installing crusher be 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) Zero lead has been considered for the stone aggregate in order to work out the actual rate of aggregates by adding the transportation cost up to the site of work.

#### 9 General:

- 9.1 The clause numbers refer to are of 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 for 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 video 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.
  - (iil) 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 barrages etc. for taking the construction materiasl and equipments inside water shall be made separately.
- 10.3 The item for singking of wells cover diameters from 6 to 12 mtr 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	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
1.1	Spec.	Loading and unloading of stone boυ	ılder /	stone aggr	egates / sa	nd / kanker /	
		moorum.					
		Placing tipper at loading point, loading witrip, excluding time for haulage and return		t end loader,	dumping, tu	rning 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	779.65	257.28	P&M-048
		Front end-loader 1 cum bucket capacity	hour	0.330	1398.23	461.42	P&M-017
		@ 25 cum/hour		0.000	.000.20		
		b) GST @ 12 % on (a)				86.24	
		c) Overheads @ 10 % on (a+b) d) Contractors profit @ 10 % on (a+b+c	`			80.49 88.54	
		e) Cess @1% on (a+b+c+d)	,			9.74	
		Cost for 5.5 cum = (a+b+c+d+e)				983.71	
		Rate per cum = $(a+b+c+d+e)/5.5$				178.86	
	Note	Unloading will be by tipping.			say	179.00	
1.4	11010	Cost of Haulage Excluding Loading an	d Unlo	ading			
		Haulage of materials by tipper excluding co	ost of lo	oading, unload	ding and stac	king.	
		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	L	0.400	770.05	244.00	P&M-048
		Time taken for onward haulage with load	hour	0.400	779.65	311.86	1 QIVI-040
		Time taken for empty return trip.	hour	0.290	779.65	226.10	P&M-048
		b) GST @ 12 % on (a)				64.56	
		c) Overheads @ 10 % on (a+b)				60.25	
		d) Contractors profit @ 10 % on (a+b+c e) Cess @1% on (a+b+c+d)	)			66.28 7.29	
		cost for 100 t km = a+b+c+d+e				736.34	
		Rate per t.km = $(a+b+c+d+e)/100$				7.36	
1.4(II)	Case II	Unsurfaced Gravelled Road			say	7.40	
(")		Speed with load : 20 km / hour					
		Speed for empty return trip: 30 km /					
		hour alMachinory					
		a)Machinery Tipper 10 tonnes capacity Time taken for onward hanlage with load	hour	0.500	779.65	389.83	P&M-048
		Timo taken for onward harlage with load	Houl	0.000	110.00	503.05	

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/			
	MoRTH Spec.						Input ref.			
		Time taken for empty return trip	hour	0.330	779.65	257.28	P&M-048			
		b) GST @ 12 % on (a)				77.65				
		c) Overheads @ 10 % on (a+b)				72.48				
		d) Contractors profit @ 10 % on (a+b+c)	)			79.72				
		e) Cess @1% on (a+b+c+d)				8.77				
		Cost for 100 t .km = $a+b+c+d+e$				885.73				
		Rate per t.Km = $(a+b+c+d+e)/100$				8.86				
					say	8.90				
1.4(III)	Case III	Katcha Track and Track in river bed / na	illah b	ed and choe	bed.					
		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	779.65	779.65	P&M-048			
		Time taken for empty return trip	hour	0.670	779.65	522.37	P&M-048			
		b) GST @ 12 % on (a)		2.0.0		156.24				
		c) Overheads @ 10 % on (a+b)				145.83				
		d) Contractors profit @ 10 % on (a+b+c)	١			160.41				
		e) Cess @1% on (a+b+c+d)	,			17.65				
		Cost for 100 t .km = a+b+c+d+e				1782.15				
		Rate per t.Km = $(a+b+c+d+e)/100$				17.82				
		(a - b - c - a - c), 100			say	17.80				
1.5		Hand Broken Stone Aggregates 63 mm	nomin	al size						
		(passing 80 mm and retained on 50 mm sid Unit: cum Taking output = 1 cum	eve) ar	nd stacking as	directed					
		a) Labour Mate	day	0.060	354.00	21.24	L-12			
		Mazdoor	day	1.500	310.00	465.00	L-13			
			uay	1.500	310.00	405.00	•			
		Supply of quarried stone 150 - 200 mm	cum	1.100	546.02	600.62	M-002			
		size c) GST @ 12 % on (a+b)				130.42				
		d) Overheads @ 10% on (a+b+c)				121.73				
		e) Contractors profit @10% on (a+b+c+c	d)			133.90				
		f) Cess @1% on (a+b+c+d+e)				14.73				
		Rate per cum = a+b+c+d+e+f				1487.64				
1.6		Consoling of stone agreements 42.2 mm		al aina	say	1488.00				
1.0		Crushing of stone aggregates 13.2 mm								
		Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 13 mm nominal size.								
		Unit : cum Taking Output = 600 cum at crusher location.								
		a) Labour Mate	day	0.760	354.00	269.04	L-12			
			day				L-14			
		Mazdoor Skilled	day	2.000	354.00	708.00				
		Mazdoor including breaking of any oversize boulder.	day	17.000	310.00	5270.00	L-13			

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	MoRTH Spec.						iliput iei.
	т орес.	b) Material	l 1				
		Stone Boulder of size 150 mm and below	cum	800.000	577.88	462304.00	M-001
		c) Machinery					
		Integrated stone crusher of 200 TPH including belt conveyor and vibrating	Hour	6.000	22212.39	133274.34	P&M-028
		screens					
		Front end loader 1 cum bucket capacity	Hour	20.000	1398.23	27964.60	P&M-017
		Tipper 5.5 cum capacity	Hour	20.000	779.65	15593.00	P&M-048
		d) GST @ 12 % on (a+b+c)				77445.96	
		e) Overheads @ 10 % on (a+b+c+d)				72282.89	
		f) Contractors profit @ 10 % on (a+b+c	+d+e)			79511.18	
		g) Cess @1% on (a+b+c+d+e+f)	•			8746.23	
		Cost for 600 cum = a+b+c+d+e+f+g				883369.24	
		Rate per cum = $(a+b+c+d+e+f+g)*0.95/6$	00			1398.67	
					say	1399.00	

- 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 by-product.
  - 3. The integrated stone crusher includes primary and secondary crushing units.

#### 1.7 Crushing of stone aggregates 20 mm nominal size

Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 20 mm nominal size.

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u	ш	L	CU	

Taking Output = 670 cum at crusher location. a) Labour					
Mate	day	0.760	354.00	269.04	L-12
Mazdoor Skilled	day	2.000	354.00	708.00	L-14
Mazdoor including breaking of any size boulder.	day	17.000	310.00	5270.00	L-13
b) Material					
Stone Boulder of size 150 mm and below	cum	800.000	577.88	462304.00	M-001
c) Machinery Integrated stone crusher of 200 TPH including belt conveyor and vibrating screens	Hour	6.000	22212.39	133274.34	P&M-028
Front end loader 1 cum bucket capacity	Hour	20.000	1398.23	27964.60	P&M-017
Tipper 5.5 cum capacity	Hour	20.000	779.65	15593.00	P&M-048
d) GST @ 12 % on (a+b+c)				77445.96	
e) Overheads @ 10 % on (a+b+c+d)				72282.89	
f) Contractors profit @ 10 % on (a+b+c-	+d+e)			79511.18	
g) Cess @1% on (a+b+c+d+e+f)				8746.23	
Cost for 670 cum = $a+b+c+d+e+f+g$	.=.			883369.24	
Rate per cum = $(a+b+c+d+e+f+g)*0.90/6$	5/0			1186.62	

1187.00

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

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

a) Labour					
Mate	day	0.760	354.00	269.04	L-12
Mazdoor Skilled	day	2.000	354.00	708.00	L-14
Mazdoor	day	17.000	310.00	5270.00	L-13
b) Material					
Stone Boulder of size 150 mm and below	cum	800.000	577.88	462304.00	M-001
c) Machinery					D014.000
Integrated stone crusher of 200 TPH	Hour	6.000	22212.39	133274.34	P&M-028
including belt conveyor and vibrating					
screens Front end loader 1 cum bucket capacity	Hour	20.000	1200.22	27964.60	P&M-017
Front end loader i cum bucket capacity	Houi	20.000	1398.23	27904.00	I GIVI-017
Tipper 5.5 cum capacity	Hour	20.000	779.65	15593.00	P&M-048
d) GST @ 12 % on (a+b+c)				77445.96	
e) Overheads @ 10 % on (a+b+c+d)				72282.89	
f) Contractors profit @ 10 % on (a+b+c-	+d+e)			79511.18	
g) Cess @1% on (a+b+c+d+e+f)				8746.23	
Cost for 750 cum = $(a+b+c+d+e+f+g)x0$ .	85			750863.85	
Rate per cum = $(a+b+c+d+e+f+g)\times 0.85/3$				1001.15	

1001.00

- 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.

#### 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 -1:-19 mm nominal chipping size

#### Labour

Mate	day	0.440	354.00	155.76	L-12
Mazdoor	day	9.000	310.00	2790.00	L-13
Mazdoor skilled	dav	2.000	442.00	884.00	L-15

Page: 33

Sr No	Ref. to	Description	Unit	Ouantity	Data in Da	Cost in Rs	Remarks/
31 NO	MoRTH Spec.	Description	Ullit	Quantity	Rate in Rs	COST III KS	Input ref.
		b) Machinery					
		Mechanical broom @ 1250 sqm per hour	hour	7.200	433.63	3122.14	P&M-031
		Air compressor 250 cfm	hour	7.200	575.22	4141.58	P&M-001
		Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	3211.50	19269.00	P&M-025
		Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip spreader	hour	6.000	779.65	4677.90	P&M-048
		Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
		Bitumen pressure distributor	hour	6.000	1308.85	7853.10	P&M-004
		Smooth wheeled roller 8-10 tonne weight	hour	6.000	561.95	3371.70	P&M-044
		c) Material					
		Bitumen@ 1.20 kg per sqm	tonne	10.800	58389.38	630605.30	M-074
		Crushed stone chipping,19 mm nominal size @ 0.015 cum per sqm	cum	135.000	1784.07	240849.45	M-053
		d) GST @ 12 % on (a+b+c)				111133.12	
		e) Overheads @ 10 % on (a+b+c+d)				103724.24	
		f) Contractors profit @ 10 % on (a+b+c+	+d+e)			114096.67	
		g) Cess @1% on (a+b+c+d+e+f)	,			12550.63	
		Cost for 9000 sqm= a+b+c+d+e+f+g				1267613.97	
		Rate per sqm = $(a+b+c+d+e+f+g)/9000$				140.85	
		Case - II13 mm nominal size chipping			say	<u>141.00</u>	
		a) Labour					
		Mate	day	0.440	354.00	155.76	L-12
		Mazdoor	day	9.000	310.00	2790.00	L-13
		Mazdoor skilled	day	2.000	442.00	884.00	L-15
		b) Machinery					D0M 004
		Mechanical broom @ 1250 sqm per hour	hour	7.200	433.63	3122.14	P&M-031
		Air compressor 250 cfm	hour	7.200	575.22	4141.58	P&M-001
		Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	3211.50	19269.00	P&M-025
		Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip spreader	hour	6.000	779.65	4677.90	P&M-048
		Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
		Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1308.85	7853.10	P&M-004
		Vibratory roller 8-10 tonne weight  c) Material	hour	6.000	733.63	4401.78	P&M-059
		Bitumen@ 1.00 kg per sqm	tonne	9.000	58389.38	525504.42	M-074
		Crushed stone chipping,13 mm nominal	cum	90.000	1895.58	170602.20	M-052
		size @ 0.01 cum per sqm d) GST @ 12 % on (a+b+c)				90214.95	
		e) Overheads @ 10 % on (a+b+c+d)				84200.62	
		f) Contractors profit @ 10 % on (a+b+c+	-d+e)			92620.68	
		g) Cess @1% on (a+b+c+d+e+f)	u - 0 j			10188.28	
		Cost for 9000 sqm= a+b+c+d+e+f+g				1029015.79	
		Rate per sqm = $(a+b+c+d+e+f+g)/9000$				114.34	
					say	<u>114.00</u>	

		DIRECTLY U	SED II	EMS			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Note	1.Where the proposed aggregate fails to test, an approved adhesion agent may binder as per clause 510.2.4. Alternatively, coated as per clause 510.2.5	be a	dded to the			
		2.Input for the second coat, where require as per the 1st coat mentioned above	ed, will	be the same			
5.15	516	Slurry Seal					
		Providing andlaying slurry seal consisting of filler, bituminous emulsion and water on mixing of slurry seal in a suitable mobile riding surface	a roa	d surface ind	cluding clear	ning of surface,	
	Case I	5 mm thickness					
		Unit = sqm					
		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		354.00	84.96	L-12
		Mazdoor	day	6.000	310.00	1860.00	L-13
		b) Machinery	hour	6.000	122.62	2604.70	P&M-031
		Mechanical broom Air compressor 250 cfm	hour hour		433.63 575.22	2601.78 3451.32	P&M-001
		Mobile slurry seal equipment	hour		1227.43	7364.58	P&M-033
		Front end loader 1 cum bucket capacity	hour		1398.23	8389.38	P&M-017
							P&M-048
		Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler.	hour	6.000	779.65	4677.90	T GIVI-040
		Pneumatic tyred roller with individual wheel load not exceeding 1.5 tonnes	hour	6.000	1515.04	9090.24	P&M-037
		Water tanker6 KL capacity	hour	2.000	544.25	1088.50	P&M-060
		c) Material					
		Residual Binder @ 11 % of mix 80 x 2.2 x 0.11	tonne	19.360	47120.35	912249.98	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	601.77	61428.68	M-005
		Filler @ 2 % of total mix = 80 x 2.2 x 0.02	tonne	3.520	12878.76	45333.24	M-188
		Cost of water	KL	12.000	67.26	807.12	M-189
		d) GST @ 12 % on (a+b+c) e) Overheads @ 10 % on (a+b+c+d) f) Contractors profit @ 10 % on (a+b+c-d) g) Cess @1% on (a+b+c+d+e+f) Cost for 16000 sqm= a+b+c+d+e+f+g Rate per sqm = (a+b+c+d+e+f+g)/16000	+d+e)			127011.32 105842.77 129128.18 14204.10 1434614.05 89.66	
	Case II	3 mm thickness			say	<u>90.00</u>	
		Unit = sqm					
		Taking output = 20000 sqm (60 cum)					
		a) Labour		0.555	0.00		1 40
		Mate Mazdoor	day day		354.00 310.00	70.80 1550.00	L-12 L-13

Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.						
		b) Machinery	hour	6.000	422.62	2604.70	P&M-031
		Mechanical broom	hour	6.000 6.000	433.63 575.22	2601.78 3451.32	P&M-001
		Air compressor 250 cfm  Mobile slurry seal equipment	hour	6.000	1227.43	7364.58	P&M-033
		Front end loader 1 cum bucket capacity		6.000	1398.23	8389.38	P&M-017
		·					
		Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler	to	6.000	779.65	4677.90	P&M-048
		Water tanker6 KL capacity  c) Material	hour	2.000	544.25	1088.50	P&M-060
		c) Material Residual Binder @ 13 % of mix = 60 x 2.2 x 0.13	tonne	17.160	47120.35	808585.21	M-077
		Fine aggregate 3 mm and below 85 % total mix, $60x 2.2 \times 0.85 = 112.2$ tonnes Taking density 1.5,		74.800	601.77	45012.40	M-005
		Filler @ 2 % of total mix =60x 2.2 x 0.0	2 tonne	2.640	12878.76	33999.93	M-188
		Cost of water	KL	12.000	67.26	807.12	M-189
		d) GST @ 12 % on (a+b+c)				110111.87	
		e) Overheads @ 10 % on (a+b+c+d)				91759.89	
		f) Contractors profit @ 10 % on (a+k	o+c+d+e)			111947.07	
		g) Cess @1% on (a+b+c+d+e+f)				12314.18	
		Cost for 30000 sqm= a+b+c+d+e+f+g	200			1243731.93 62.19	
		Rate per sqm = $(a+b+c+d+e+f+g)/200$	JUU		say	62.19 62.00	
	Case III	1.5 mm thickness			ouy	<u>02.00</u>	
		Unit = sqm					
		Taking output = 24000 sqm (36 cum)					
		a) Labour	4	0.000	054.00	70.00	1 12
		Mate	day	0.200	354.00	70.80	L-12
		Mazdoor	day	5.000	310.00	1550.00	L-13
		b) Machinery Mechanical broom	hour	6.000	422.62	2604.79	P&M-031
		Air compressor 250 cfm	hour hour	6.000	433.63 575.22	2601.78 3451.32	P&M-001
		Mobile slurry seal equipment	hour	6.000	1227.43	7364.58	P&M-033
		Front end loader 1 cum bucket capacity		6.000	1398.23	8389.38	P&M-017
		•					
		Tipper 5.5 cum capacity for carriage of aggregate from stockpile on road side slurry equipment, bitumen emulsion and filler.	to	6.000	779.65	4677.90	P&M-048
		Water tanker6 KL capacity	hour	2.000	544.25	1088.50	P&M-060
		c) Material Residual Binder @ 16 % of mix, 36 x 2 x 0.16	.2 tonne	12.670	47120.35	597014.83	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	624.78	27052.97	M-022
		Filler @ 2 % of total mix = 36x 2.2 x 0.0	02 tonne	1.580	12878.76	20348.44	M-188
		Cost of water	KL	12.000	67.26	807.12	M-189
		d) GST @ 12 % on (a+b+c)				80930.11	
		e) Overheads @ 10 % on (a+b+c+c	d)			67441.76	
		f) Contractors profit @ 10 % on (a	ı+b+c+d+e	)		82278.95	
		g) Cess @1% on (a+b+c+d+e+f)				9050.68	

		DIRECTLY U	ISED IT	EMS			
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	т орес.	Cost for 24000 sqm= a+b+c+d+e+f+g Rate per sqm = (a+b+c+d+e+f+g)/24000			say	914119.12 38.09 <b>38.00</b>	
	Note	1.Tack coat, if required to be provided, be seal may be measured and paid separatel		ying slurry	,		
5.17	518	Fog Spray					
		Providing and applying low viscosity bitun wide or incipient fretting or disintegration in			-		
		Unit = sqm Taking output = 10500 sqm					
		a) Labour					
		Mate	day	0.120	354.00	42.48	L-12 L-13
		Mazdoor b) Machinery	day	3.000	310.00	930.00	L-13
		Mechanical broom @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
		Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
		Bitumen emulsion pressure distributor @ 1750 sqm per hour	tonne	6.000	1308.85	7853.10	P&M-004
		c) Material					
		Bitumenemulsion @ 0.75 kg per sqm	tonne	7.880	47120.35	371308.36	M-077
		d) GST @ 12 % on (a+b+c)				46342.44	
		e) Overheads @ 10 % on (a+b+c+d)				38618.70	
		f) Contractors profit @ 10 % on (a+k	)+c+d+	e)		47114.82	
		g) Cess @1% on (a+b+c+d+e+f)				5182.63	
		Cost for 10500 sqm= a+b+c+d+e+f+g				523445.63 49.85	
		Rate per sqm = $(a+b+c+d+e+f+g)/10500$			say	49.65 <u><b>50.00</b></u>	
		1.In case it is decided by the engineer to blind the fog spray, the following may be added			<b>,</b>	<u> </u>	
		a) Labour					
		Mate	day	0.160	354.00	56.64	L-12
		Mazdoor for precoating of grit	day	4.000	310.00	1240.00	L-13
		c) Material Crushed stone grit 3 mm size @ 3.75 kg per sqm	cum	26.250	669.03	17562.04	M-024
		Bitumenemulsion for precoating grit @ 2 % of grit,39.38 x 0.02	tonne	0.790	47120.35	37225.08	M-077
						56083.76 5.34	
5.21	522	Crack Prevention Courses			say	<u>5.00</u>	

### $^{\mbox{\scriptsize Case-I}}$ 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)	 ab	1	ıır

Mate	day	0.240	354.00	84.96	L-12
Mazdoor	dav	6.000	310.00	1860.00	L-13

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		b)	Machinery					'
		Med	hanical broom @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
		Air o	compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
		Bitumen pressure distributor @ 1750 sqm per hour		hour	6.000	1308.85	7853.10	P&M-004
		Hyd	raulic Chip spreader	hour	6.000	3211.50	19269.00	P&M-025
		Smo	ooth wheeled road roller 8-10 tonne	hour	6.000	561.95	3371.70	P&M-044
		c)	Material					
		Mod	lified binder	tonne	9.450	52465.49	495798.88	M-078
		Crus	shed stone aggregates 5.6 mm size	cum	105.000	1939.82	203681.10	M-050
		d)	GST @ 12 % on (a+b+c)				88556.62	
		e)	Overheads @ 10 % on (a+b+c+d)				82652.85	
		f)	Contractors profit @ 10 % on (a+b	+c+d+e	∌)		90918.13	
		g)	Cess @1% on (a+b+c+d+e+f)				10000.99	
		Cos	t for 10500 sqm= a+b+c+d+e+f+g				1010100.43	
		Rate	e per sqm = (a+b+c+d+e+f+g)/10500				96.20	
						say	<u>96.00</u>	

### Case - 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	354.00	84.96	L-12
Mazdoor	day	6.000	310.00	1860.00	L-13
b) Machinery					
Mechanical broom @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
Air compressor 250 cfem capacity	hour	6.000	575.22	3451.32	P&M-001
Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1308.85	7853.10	P&M-004
Hydraulic Chip spreader	hour	6.000	3211.50	19269.00	P&M-025
Smooth wheeled road roller 8-10 tonne	hour	6.000	561.95	3371.70	P&M-044
c) Material					
Modified binder	tonne	11.550	52465.49	605976.41	M-078
Crushed stone chipping 11.2 mm size	cum	105.000	1951.33	204889.65	M-051
d) GST @ 12 % on (a+b+c)				101922.95	
e) Overheads @ 10 % on (a+b+c+d)				84935.79	
f) Contractors profit @ 10 % on (a+b	o+c+d+e)			103621.67	
g) Cess @1% on (a+b+c+d+e+f)				11398.38	
Cost for 10500 sqm= a+b+c+d+e+f+g				1151236.71	
Rate per sqm = (a+b+c+d+e+f+g)/10500				109.64	
			say	<u>110.00</u>	

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

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

Taking output = 10500 sqm

a)	La	abo	our

a) Labour					
Mate	day	0.240	354.00	84.96	L-12
Mazdoor	day	6.000	310.00	1860.00	L-13
Mazdoor skilled	day	2.000	442.00	884.00	L-15
b) Machinery					
Mechanical broom @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
Air compressor 250 cfem capacity	hour	6.000	575.22	3451.32	P&M-001
Bitumen pressure distributor @ 1750 sqm	hour	6.000	1308.85	7853.10	P&M-004
per hour Hydraulic Chip spreader	hour	6.000	3211.50	19269.00	P&M-025
Smooth wheeled road roller 8-10 tonne	hour	6.000	561.95	3371.70	P&M-044
c) Material					
Modified binder	tonne	15.750	52465.49	826331.47	M-078
Crushed stone aggregates 11.2 mm size	cum	126.000	1951.33	245867.58	M-051
d) GST @ 12 % on (a+b+c)				133388.99	
e) Overheads @ 10 % on (a+b+c+d)				124496.39	
f) Contractors profit @ 10 % on (a+b	+c+d+e)			136946.03	
g) Cess @1% on (a+b+c+d+e+f)	,			15064.06	
Cost for 10500 sqm= a+b+c+d+e+f+g				1521470.38	
Rate per sqm = $(a+b+c+d+e+f+g)/10500$				144.90	
			say	<u>145.00</u>	

#### Case IV Case - IV: Bitumen Impregnated Geotextile

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 = sam

Taking output = 3500 sqm

#### a) Labour

Mate	day	0.560	354.00	198.24	L-12
Mazdoor	day	12.000	310.00	3720.00	L-13
Mazdoor skilled	day	2.000	442.00	884.00	L-15
b) Machinery					
Mechanical broom @ 1250 sqm per hour	hour	2.800	433.63	1214.16	P&M-031
Air compressor 250 cfem capacity	hour	2.800	575.22	1610.62	P&M-001
Bitumen pressure distributor @ 1750 sqm	tonne	2.000	1308.85	2617.70	P&M-004
per hour					
Pneumatic roller	hour	2.000	1515.04	3030.08	P&M-037
c) Material					
Paving grade bitumen of 80 - 100	tonne	3.680	57350.44	211049.62	M-075
penetration @ 1.05 kg per sqm					
Geotextile including 10 % for overlaps	sqm	3850.000	50.44	194194.00	M-108
d) GST @ 12 % on (a+b+c)				50222.21	

Sr No	Ref. to	DIRECTLY U	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks
	MoRTH Spec.						Input ref.
		e) Overheads @ 10 % on (a+b+c+d)				46874.06	
		f) Contractors profit @ 10 % on (a+b	)+c+d+	е)		51561.47	
		g) Cess @1% on (a+b+c+d+e+f)				5671.76	
		Cost for 10500 sqm= a+b+c+d+e+f+g				572847.92	
		Rate per sqm = $(a+b+c+d+e+f+g)/3500$				163.67	
	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 coverlaid by a bitumenious course in a day	3500 s	sqm only has er a length of		<u>164.00</u>	
8.3	801	Printing new letter and figures of any si	hade				
		Printing new letter and figures of any shad approved colour to give an even shade	le with	synthetic ena	mel paint bla	ick 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	354.00	24.78	
		Painter 1st class	day	1.25	442.00	552.50	
		Mazdoor	day	0.50	310.00	155.00	
		b) Material		0.00	0.0.00		
		Paint	Litre	0.50	323.01	161.51	
		c) GST @ 12 % on (a+b)	Litio	0.00	020.01	107.25	
		d) Overheads @ 10 % on (a+b+c)				100.10	
		e) Contractors profit @ 10 % on (a+b-	TCT4/			110.11	
		f) Cess @1% on (a+b+c+d+e)	rcruj			12.11	
		Cost for 1600 cm = a+b+c+d+e+f					
		Rate per cm height per letter = (a+b+c+	.d±a±f	/1600		1223.36 0.76	
		Rate per chi height per letter – (a+b+c+	чтеті	71600	eav	0.76 <b>0.80</b>	
8.8	803	Painting Two Coats on New Concrete S	urface	s	<u>say</u>	<u>0.80</u>	
		Painting two coats after filling the surface of plastered concrete surfaces  Unit = sqm			el paint in all s	shades on new	
		Taking output = 40 sqm					
		a) Labour	dov	0.40	254.00	40.40	
		Mate Painter	day	0.12	354.00	42.48	
		Mazdoor	day day	2.00 1.00	442.00 310.00	884.00 310.00	
		b) Material	uay	1.00	310.00	310.00	
		Paint conforming to requirement of clause 803.3.	Litre	6.00	267.26	1603.56	
		Add for scaffolding @ 1% of labour cost where required				16.04	
		c) GST @ 12 % on (a+b)				342.73	
		d) Overheads @ 10 % on (a+b+c)	المنماة			319.88	
		e) Contractors profit @ 10 % on (a+b	+c+a)			351.87	
		f) Cess @1% on (a+b+c+d+e) Cost for 40 sqm = a+b+c+d+e+f				38.71 3909.27	
		Rate per sqm = $(a+b+c+d+e+f)/40$				3909.27 97.73	
		Tato per squi - (a Dicidieti)/40			eav	98.00	
8 9	803	Painting on Steel Surfaces			<u>say</u>	30.00	

8.9 803 Painting on Steel Surfaces

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

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	т орес.	Unit = sqm	ļ ļ		<u> </u>		l
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.03	354.00	10.62	
		Painter	day	0.45	442.00	198.90	
		Mazdoor	day	0.25	310.00	77.50	
		b) Material					
		Paint ready mixed approved brand.	Litre	1.25	323.01	403.76	
		Add @ 1% on cost of material for scaffolding				4.04	
		c) GST @ 12 % on (a+b)				83.38	
		d) Overheads @ 10 % on (a+b+c)				77.82	
		e) Contractors profit @ 10 % on (a	ı+b+c+d)			85.60	
		f) Cess @1% on (a+b+c+d+e)	,			9.42	
		Cost for 10 sqm = a+b+c+d+e+f				951.04	
		Rate per sqm = $(a+b+c+d+e+f)/10$				95.10	
					<u>say</u>	<u>95.00</u>	
12.6	Sub- analysis	Cement mortar1:3 (1cement :3 sand)			<u>ouy</u>	<u>00.00</u>	
	(A)	Unit = d arm					
		Unit = 1 cum Taking output = 1 cum					
		a) Materials					
		Cement	MT	0.51	9053.98	4617.53	
		Sand	cum	1.05	601.77	631.86	
		b) Labour					
		Mate	day	0.04	354.00	14.16	
		Mazdoor	day	0.90	310.00	279.00	
		Total Material and Labour = (a+b)				5543.00	
	Sub- analysis (B)	Cement mortar1:2 (1cement :2 sand)					
	(5)	Unit = 1 cum					
		Taking output = 1 cum					
		a) Materials					
		Cement	MT	0.67	9053.98	6066.17	
		Sand	cum	0.93	601.77	559.65	
		b) Labour					
		Mate	day	0.04	354.00	14.16	
		Mazdoor	day	0.90	310.00	279.00	
		Total Material and Labour = (a+b)				6919.00	
	Sub- analysis (D)	Cement mortar1:6 (1cement :6 sand)					
	(-)	Unit = 1 cum					
		Taking output = 1 cum					
		a) Materials					
		Cement	MT	0.29	9053.98	2625.65	
		Sand	cum	1.20	601.77	722.12	
		b) Labour					
		Mate	day	0.04	354.00	14.16	
		Mazdoor	day	0.90	310.00	279.00	
		Total Material and Labour = (a+b)	-			3641.00	
12.7	1400	Stone masonry work in cement mort. Technical Specification	ar 1:3 in f	oundation c	omplete as d	lrawing and	

Unit = cum Taking output = 5 cum

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	(A)	Squ	are Rubble Coursed Rubble	)		<u> </u>		1
		Mas	sonry (first sort)					
		a)	Material		5.50	F70.44	0.400.04	M 460
		Sto		cum	5.50	576.11	3168.61	M-169
			ough and bond stone	each	35.00	14.16	495.60	M-182
		•	no.x0.24mx0.24mx0.39m = 0.79 cu.m)		4.50	FF42.00	0244.50	Item 12.6
		A st	nent mortar 1:3 (Rate as in Item 12.6 ub-analysis)	cum	1.50	5543.00	8314.50	(A)
		b) Mat	Labour	dov	0.66	354.00	233.64	L-12
		Mas		day day	7.50	442.00	3315.00	L-11
			zdoor	day	9.00	310.00	2790.00	L-13
		c)	GST @ 12 % on (a+b)	day	0.00	010.00	2198.08	
		d)	Overhead charges @ 20 % on (a+	b+c)			4103.09	
		e)	Contractors profit @ 10 % on (a+t	-			2461.85	
		f)	Cess @1% on (a+b+c+d+e)	3 · 0 · u,			270.80	
		,	t for 5 cum = a+b+c+d+e+f				27351.17	
			e per cum (a+b+c+d+e+f)/5				5470.23	
			, , , , , , , , , , , , , , , , , , , ,			say	<u>5470.00</u>	
	1405.3	B) F	Random Rubble Masonry			_		
		•	ursed/uncoursed )					
			t = cum					
			ing output = 5 cum					
		•	faterial		5.50	F70 44	0400.04	
		Sto		cum	5.50	576.11	3168.61	
			ough and bond stone nos.x0.24mx0.24mx0.39m = 0.79	Nos	35.00	14.16	495.60	
		cu.r						
			nent mortar 1:3 (Rate as in item 12.6	cum	1.55	5543.00	8591.65	
		A)	non merai no (rato de in item 12.0	Guiii		00 10.00	0001.00	
			abour					
		Mat		day	0.62	354.00	219.48	
		Mas	son	day	6.00	442.00	2652.00	
		Maz	zdoor	day	9.00	310.00	2790.00	
		c)	GST @ 12 % on (a+b)	•			2150.08	
		d)	Overheads @ 20 % on (a+b+c)				4013.48	
		e)	Contractors profit @ 10 % on (a+b-	+c+d)			2408.09	
		f)	Cess @1% on (a+b+c+d+e)	,			264.89	
		,	at for 5 cum = $a+b+c+d+e+f$				26753.88	
		Rat	e per cum (a+b+c+d+e+f)/5				5350.78	
						say	<u>5351.00</u>	
	@		labour already considered in cement tar has been taken into account while					
		prop	posing labour for masonry works.					
12.7 (Add)	1400		ne masonry work in cement mortar hnical Specification	1:6 in f	oundation c	omplete as d	rawing and	
,,			t = cum					
			ing output = 5 cum					
	1405.3		Random Rubble Masonry					
		-	ursed/uncoursed)					
		•	t = cum					
			ing output = 5 cum					
			Material					
		Sto		cum	5.50	576.11	3168.61	
		-						

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.						
		Through and bond stone	Nos	35.00	14.16	495.60	
		(35 nos.x 0.24 mx 0.24 mx 0.39 m = 0.79  c)	•				
		Cement mortar 1:3 (Rate as in item 13.6	D) cum	1.55	3641.00	5643.55	
		b) Labour		0.00	0=4.00	040.40	
		Mate	day	0.62	354.00	219.48	
		Mason	day	6.00	442.00	2652.00	
		Mazdoor	day	9.00	310.00	2790.00	
		c) GST @ 12 % on (a+b)				1796.31	
		d) Overheads @ 20 % on (a+b+c)	المنميدال			3353.11	
		e) Contractors profit @ 10 % on (a	1+D+C+a)			2011.87	
		f) Cess @1% on (a+b+c+d+e) Cost for 5 cum = a+b+c+d+e+f				221.31	
		Rate per cum (a+b+c+d+e+f)/5				22351.84 4470.37	
		Kate per cum (a+b+c+u+e+i)/3			say	4470.00	
	@	The labour already considered in cem-	ent		Suy	4470.00	
	٥	mortar has been taken into account w					
		proposing labour for masonry works.					
12.8	1500, 1700 &	Plain/Reinforced cement concrete technical specifications	in open fou	ndation cor	nplete as per	drawing and	
	2100 A	DCC Crede M45					
	^	PCC Grade M15					
		Unit = cum Taking output = 15 cum					
		a) Material					
		Cement	MT	4.13	9053.98	37392.94	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	8.10	1393.81	11289.86	
		20 mm Aggregate	cum	4.05	1784.07	7225.48	
		10 mm Aggregate	cum	1.35	1951.33	2634.30	
		b) Labour					
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 63 KVA	hour	6.00	780.53	4683.18	
		Per Cum Basic Cost of Labour,		5,072.00			
		Material & Mechinery (a+b+c)					
		d) Formwork @ 4% on cost of				3042.98	
		concrete i.e.cost of material, labour	•				
		and machinery					
		e) GST @ 12 % on (a+b+c+d)				9494.11	
		f) Overheads @ 20 % on (a+b+c+	·d+e)			17722.34	
		g) Contractors profit @ 10 % on (		10633.40			
		h) Cess @1% on (a+b+c+d+e+f+g		1169.67			
		Cost for 15 cum = a+b+c+d+e+f+g+h	ı			118137.11	
		Rate per cum (a+b+c+d+e+f+g+h)/1	15			7875.81	
					say	7876.00	
	Note	Nedle Vibrator is an item of minor	T & P whic	h is alreadv			
		included in overhead charges. Her analysis of cement concrete works.		•			
12.8	В	PCC Grade M20					

12.8 B PCC Grade M20

Unit : cum

Taking output = 15 cum

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH	2000		Quantity	Trate iii re	0001111110	Input ref.
	Spec.						
		a) Material					
		Cement	MT	5.16	9053.98	46718.54	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		b) Labour					
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Per Cum Basic Cost of Labour,		5,649.00			
		Material & Mechinery (a+b+c)					
12.8	С	RCC Grade M20					
		Unit = cum					
	Case I						
		Taking output = 15 cum					
		a) Material					
		Cement	MT	5.21	9053.98	47171.24	
		Coarse sand	cum	6.75	601.77	4061.95	
		20 mm Aggregate	cum	8.10	1784.07	14450.97	
		10 mm Aggregate	cum	5.40	1951.33	10537.18	
		b) Labour					
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Per Cum Basic Cost of Labour,		5,849.00			
		Material & Mechinery (a+b+c)					
	Case II	With Batching Plant, Transit Mixer and					
		Conrete Pump					
		Unit : cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	41.66	9053.98	377188.81	
		Coarse Sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		b) Labour					
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto	hour	15.00	1132.74	16991.10	
		1 km.					
		Lead beyond 1 km, L-lead in km	T-km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6	2576.11	15456.66	

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
JI NO	MoRTH Spec.		Jill	Quantity	Nate III KS	COSt III RS	Input ref.
	,	Per Cum Basic Cost of Labour,		5,663.00	<u>.                                    </u>		
		Material & Mechinery (a+b+c)					
		d) Formwork @ 4% on cost of				27178.12	
		concrete i.e.cost of material, labour					
		and machinery e) GST @ 12 % on (a+b+c+d)				84795.75	
		f) Overheads @ 20 % on (a+b+c+d+e)				158285.40	
		g) Contractors profit @ 10 % on (a+b+		+f)		94971.24	
		h) Cess @1% on (a+b+c+d+e+f+g)	0 - 4 - 0	, ,		10446.84	
		Cost for 120 cum = a+b+c+d+e+f+g+h				1055130.46	
		Rate per cum = $(a+b+c+d+e+f+g+h)/1$	20			8792.75	
					say	<u>8793.00</u>	
12.8	D	PCC Grade M25					
		Unit = cum					
	Case I	Using concrete Mixer					
		Taking output = 15 cum					
		a) Material		F 00	0050.00	E 4000 0 :	
		Cement	MT	5.99	9053.98	54233.34	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		<b>b) Labour</b> Mate	dov	0.86	354.00	304.44	
		Mason	day day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery	uay	20.00	310.00	0200.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Per Cum Basic Cost of Labour,		6,150.00	.00.00		
		Material & Mechinery (a+b+c)		0,100100			
	Case II	With Batching Plant, Transit Mixer and					
		Conrete Pump					
		Unit: cum					
		Taking Output = 120 cum					
		a) Material Cement	МТ	47.0E	9053.98	434138.34	
		Coarse sand	cum	47.95 54.00	601.77	32495.58	
		40 mm Aggregate	cum	43.20	1393.81	60212.59	
		20 mm Aggregate	cum	43.20	1784.07	77071.82	
		10 mm Aggregate	cum	21.60	1951.33	42148.73	
		b) Labour	ouiii	21.00	1001.00	12110.10	
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery	,				
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00		5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1132.74	16991.10	
		Transit Mixer 4 cum capacity lead	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6	2576.11	15456.66	

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Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Per Cum Basic Cost of Labour,		5,967.00			•
		Material & Mechinery (a+b+c)					
		d) Formwork @ 3.75% of cost of				26847.40	
		concrete i.e.cost of material, labour					
		and machinery					
		e) GST @ 12 % on (a+b+c+d)				89133.36	
		f) Overheads @ 20 % on (a+b+c+d+e)	)			166382.27	
		g) Contractors profit @ 10 % on (a+b+	-c+d+e	+f)		99829.36	
		h) Cess @1% on (a+b+c+d+e+f+g)				10981.23	
		Cost for 120 cum = a+b+c+d+e+f+g+h				1109104.20	
		Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			9242.54	
					say	<u>9243.00</u>	
12.8	Е	RCC Grade M25					
	01	Unit = cum					
	Case I	Coming Contorotto Imptor					
		Taking output = 15 cum a) Material					
		Cement	МТ	6.05	9053.98	54776.58	
		Coarse sand	cum	6.75	601.77	4061.95	
		20 mm Aggregate	cum	8.10	1784.07	14450.97	
		10 mm Aggregate	cum	5.40	1951.33	10537.18	
		b) Labour					
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Per Cum Basic Cost of Labour,	Hour	6,356.00	400.00	2720.00	
		Material & Mechinery (a+b+c)		,,,,,,,,,,			
	Case II	With Batching Plant, Transit Mixer and Conrete Pump					
		Unit : cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	48.38	9053.98	438031.55	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		Admixer	Kg	193.52	61.06	11816.33	
		b) Labour					
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity 1 cum	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1132.74	16991.10	
		Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
40.0	F	Concrete Pump Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)	hour	6.00 <b>6,268.00</b>	2576.11	15456.66	
12.8	'	PCC Grade M30					

Unit = cum

Case I Using Concrete Mixer

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	, opec.	Taking output = 15 cum	ı İ		<u> </u>		1
		a) Material					
		Cement	MT	6.08	9053.98	55048.20	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		b) Labour					
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery	,				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Per Cum Basic Cost of Labour,	i i o a i	6,204.00	100.00	2,20.00	
		Material & Mechinery (a+b+c)		0,204.00			
	Case II	Using Batching Plant, Transit Mixer					
		and Conrete Pump					
		Unit : cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	48.60	9053.98	440023.43	
		Coarse sand	cum	54.00	601.77	32495.58	
		40 mm Aggregate	cum	43.20	1393.81	60212.59	
		20 mm Aggregate	cum	43.20	1784.07	77071.82	
		10 mm Aggregate	cum	21.60	1951.33	42148.73	
		b) Labour	oum	21.00	1001.00	12110110	
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery	aay	10.00	0.10.00	0000.00	
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto		15.00	1132.74	16991.10	
		1 km.	noui	13.00	1102.74	10331.10	
		Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
			hour	6.00	2576.11	15456.66	
		Concrete Pump  Per Cum Basic Cost of Labour,	hour	6.00 <b>6,016.00</b>	2376.11	15456.66	
		Material & Mechinery (a+b+c)		0,070.00			
12.8	G	RCC Grade M30					
12.0	Case I						
	Ouse i	Using Concrete Mixer  Unit = cum					
		Taking output = 15 cum					
		a) Material			00=0 = =		
		Cement	MT	6.10	9053.98	55229.28	
		Coarse sand	cum	6.75	601.77	4061.95	
		20 mm Aggregate	cum	8.10	1784.07	14450.97	
		10 mm Aggregate	cum	5.40	1951.33	10537.18	
		b) Labour					
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery	,			1_30.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		35.131313 1111/01 (Oup. 0.70/0.20 Guill)	Hour	5.00	200.01	1010.70	

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input re
	Spec.	Generator 33 KVA	hour	6.00	453.98	2723.88	I
		Per Cum Basic Cost of Labour,	11041	6,387.00	100.00	2.20.00	
		Material & Mechinery (a+b+c)		0,307.00			
	Case II	Using Batching Plant, Transit Mixer					
	040011	and Conrete Pump					
		Unit = cum					
		Taking output = 120 cum					
		a) Material	NAT	40.00	0050.00	444004.00	
		Cement	MT	48.80	9053.98	441834.22	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		b) Labour					
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto		15.00	1132.74	16991.10	
		1 km.	11041	10.00	1102.71		
		Transit Mixer 4 cum capacity lead beyond	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Per Cum Basic Cost of Labour,		6,201.00			
		Material & Mechinery (a+b+c)					
2.8	Н	RCC Grade M35					
	Case I	Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Cement	MT	6.33	9053.98	57311.69	
		Coarse sand	cum	6.75	601.77	4061.95	
		20 mm Aggregate	cum	8.10	1784.07	14450.97	
		10 mm Aggregate	cum	5.40	1951.33	10537.18	
			Culli	3.40	1951.55	10337.10	
		b) Labour	da.:	0.00	254.00	204 44	
		Mate	day	0.86	354.00	304.44	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery	_		_		
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Per Cum Basic Cost of Labour,		6,525.00			
		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	9053.98	458493.55	
		Coarse sand	cum	54.00	601.77	32495.58	
			ou m	64.80	1784.07	115607.74	
		20 mm Aggregate	cum				
		20 mm Aggregate 10 mm Aggregate	cum	43.20	1951.33	84297.46	
		20 mm Aggregate 10 mm Aggregate Admixer					
		20 mm Aggregate 10 mm Aggregate Admixer <b>b) Labour</b>	cum Kg	43.20 202.56	1951.33 61.06	84297.46 12368.31	
		20 mm Aggregate 10 mm Aggregate Admixer	cum	43.20	1951.33	84297.46	

Sr No	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH Spec.	·					Input ref.
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery	h = : :	0.00	0707.04	16705.00	
		Batching Plant @ 20 cum/hour Generator 100 KVA	hour hour	6.00 6.00	2787.61 849.56	16725.66 5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto		15.00	1132.74	16991.10	
		1 km.					
		Transit Mixer 4 cum capacity lead beyond1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Per Cum Basic Cost of Labour,		6,443.00			
		Material & Mechinery (a+b+c)					
		d) Formwork @ 3% on cost of concrete i.e.cost of material, labour and machinery				23193.78	
		e) GST @ 12 % on (a+b+c+d)				95558.39	
		f) Overheads @ 20 % on (a+b+c+d+e)				178375.67	
		g) Contractors profit @ 10 % on (a+b+c	+d+e+f	F)		107025.40	
		h) Cess @1% on (a+b+c+d+e+f+g)				11772.79	
		Cost for 120 cum = a+b+c+d+e+f+g+h				1189052.19	
		Rate per cum = $(a+b+c+d+e+f+g+h)/1$	20			9908.77	
					say	<u>9909.00</u>	
		Rate per cum (a+b+c+d)/120				<u>6636.00</u>	
	Note:	Excluding GST, OH,CP & Cess  Where ever concrete is carried out us transit mixer, concrete pump, admixers (cement may be added for achieving concrete.	D 0.4%	of weight of			
12.11	1200, 1500 & 1700	Plain/Reinforced cement concrete, in w	ell fou	ndation com	plete as per	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	9053.98	50249.59	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		Admixer	Kg	18.60	61.06	1135.72	
		b) Labour					
		Mate	day	0.90	354.00	318.60	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Light Crane 3 tonnes capacity for handling tremie pipe	hour	6.00	433.63	2601.78	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		6134.00			
	Noto	10% extra coment may be added where					

Note 10% extra cement may be added where under water concreting is involved.

		220121 0					
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input re
	Case II	Using Batching Plant, Transit Mixer					1
		and Crane/concrete pump					
		Unit; cum					
		Taking Output = 120 cum					
		a) Material					
		Cement	MT	44.40	9053.98	401996.71	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		Admixer	Kg	148.80	61.06	9085.73	
		b) Labour					
		Mate	day	0.88	354.00	311.52	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1132.74	16991.10	
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Per Cum Basic Cost of Labour,		5945.00			
		Material & Mechinery (a+b+c)					
	(ii)	PCC Grade M25					
	Case I	Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material		5.00	0050.00	E4000.04	
		Cement	MT	5.99	9053.98	54233.34	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		Admixer	Kg	21.60	61.06	1318.90	
		b) Labour	dov	0.00	254.00	240.60	
		Mate	day	0.90	354.00	318.60	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Light Crane of 3 tonnes capacity for	hour	6.00	433.63	2601.78	
		handling tremie pipe					
		Per Cum Basic Cost of Labour,		6412.00			
		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	47.88	9053.98	433504.56	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		Admixer	Kg	172.80	61.06	10551.17	
		MINING	ινg	112.00	01.00	10001.17	

Page : 50

Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.	h) Labour					
		b) Labour Mate	dov	0.00	254.00	311.52	
			day	0.88	354.00		
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery	_				
		Batching Plant @ 20 cum/hour	hour	6.00		16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1132.74	16991.10	
		Transit Mixer 4 cum capacity, lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)		6220.00			
	(iii)	PCC Grade M30					
	Case I						
		Unit = 1 cum					
		Taking output = 15 cum a) Material					
		Cement	MT	6.08	9053.98	55048.20	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		Admixer	Kg	21.60	61.06	1318.90	
		b) Labour		0.00	054.00	040.00	
		Mate	day	0.90	354.00 442.00	318.60	
		Mason Mazdoor	day day	1.50 20.00	310.00	663.00 6200.00	
		c) Machinery	uay	20.00	310.00	0200.00	
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Light Crane of 3 tonnes capacity for	hour	6.00	433.63	2601.78	
		handling tremie pipe					
		Per Cum Basic Cost of Labour,		6466.00			
		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	9053.98	440385.59	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		Admixer	Kg	172.80	61.06	10551.17	
		b) Labour					
		Mate	day	0.88	354.00	311.52	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery	,				
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto		15.00		16991.10	
		1 km.	noui	10.00	1102.17	10001.10	

		DIRECTET	<b>0</b>				
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	opec.	Transit Mixer 4 cum capacity, lead	T-Km	300L	18.94	0.00	L= 0
		beyond 1 Km, L - lead in Kilometer	1 13111	000L	10.54	0.00	
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Per Cum Basic Cost of Labour,		6277.00	_0.0		
		Material & Mechinery (a+b+c)		02.7.00			
	(iv)	PCC Grade M35					
	Case I	Using Concrete Mixer					
		Unit = 1 cum					
		Taking output = 15 cum					
		a) Material					
		Cement	MT	6.29	9053.98	56949.53	
		Coarse sand	cum	6.75	601.77	4061.95	
		40 mm Aggregate	cum	5.40	1393.81	7526.57	
		20 mm Aggregate	cum	5.40	1784.07	9633.98	
		10 mm Aggregate	cum	2.70	1951.33	5268.59	
		Admixer	Kg	21.60	61.06	1318.90	
		b) Labour					
		Mate	day	0.90	354.00	318.60	
		Mason	day	1.50	442.00	663.00	
		Mazdoor	day	20.00	310.00	6200.00	
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Light Crane of 3 tonnes capacity for	hour	6.00	433.63	2601.78	
		handling tremie pipe					
		Per Cum Basic Cost of Labour,		6593.00			
		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	50.28	9053.98	455234.11	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		Admixer	Kg	172.80	61.06	10551.17	
		b) Labour	ı vy	172.00	01.00	10001.17	
		-	dov	0.00	254.00	211 52	
		Mate	day	0.88	354.00	311.52	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery			0=0= ::	40707.5	
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader 1 cum capacity	hour	6.00	1398.23	8389.38	
		Transit Mixer 4 cum capacity for lead upto	hour	15.00	1132.74	16991.10	
		1 km.					
		Transit Mixer 4 cum capacity, lead	T-Km	300L	18.94	0.00	L= 0
		beyond 1 Km, L - lead in Kilometer					
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Per Cum Basic Cost of Labour,		6401.00			
		Material & Mechinery (a+b+c)					
		Add 5% of cost of material and labour				35270.18	
		towards cost of forming sump, protective				30270.10	
		bunds, chiselling and making					
		arrangements for under water					
		concreteing with tremie pipe					
		• 11					

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	орос.	d) GST @ 12 % on (a+b+c)			Į.	96400.07	1
		e) Overheads @ 20 % on (a+b+c+d)				179946.80	
		f) Contractors profit @ 10 % on (a+b+c	+d+e)			107968.08	
		g) Cess @1% on (a+b+c+d+e+f)	•			11876.49	
		Cost for 120 cum = a+b+c+d+e+f+g				1199525.36	
		Rate per cum = $(a+b+c+d+e+f+g)/120$				9996.04	
					Say	<u>9996.00</u>	
	F	Well cap					
	iv)	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	9053.98	458493.55	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		b) Labour					
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader(capacity 1 cum)	hour	6.00	1398.23	8389.38	
		Transit Mixer ( capacity 4.0 cu.m )					
		Transit Mixer 4 cum capacity for lead upto 1 km.		15.00	1132.74	16991.10	
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Formwork @ 3% of (a+b+c)				22822.74	
		d) GST @ 12 % on (a+b+c)				94029.67	
		e) Overheads @ 20 % on (a+b+c+d)				175522.05	
		f) Contractors profit @ 10 % on (a+b+	·c+d+e	)		105313.23	
		g) Cess @1% on (a+b+c+d+e+f)				11584.46	
		Cost for 120 cum = a+b+c+d+e+f+g				1170030.00	
		Rate per cum = $(a+b+c+d+e+f+g)/120$				9750.25	
					Say	<u>9750.00</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 of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, backfilling the excavation earth to the extent required and utilising the remaning earth locally for road work.

### I) Ordinary soil

Unit = cum

Taking output = 10 cum

#### A Manual Means

(i) Depth upto 3 m

Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.						
		a) Labour			0.54.00	440.00	1.40
		Mate	day	0.320	354.00	113.28	L-12
		Mazdoor	day	8.000	310.00	2480.00	L-13
		b) GST @ 12 % on (a)				311.19	
		c) Overheads @ 10 % on (a+b)	_			290.45	
		d) Contractors profit @ 10 % on (a+b+	·c)			319.49	
		e) Cess @1% on (a+b+c+d)				35.14	
		Cost for 10 cum = a+b+c+d+e				3549.55	
		Rate per cum = $(a+b+c+d+e)/10$				354.96	
	Note	Cost of dewatering may be added where re	oguirod	unto 10 %	say	<u>355.00</u>	
	Note	of labour cost Assessment for dewatering per site conditions					
	В	Mechanical Means					
		(i) Depth upto 3 m					
		Unit = cum					
		Taking output = 300 cum					
		a) Labour					
		Mate	day	0.32	354	113.28	
		Mazdoor	day	8.00	310	2480.00	
		b) Machinery	day	0.00	310	2400.00	
		Hydraulic excavator 1.0 cum bucket capac	hour	6.00	1751	10506.00	
		c) GST @ 12 % on (a+b)	noui	0.00	1701	1571.91	
		d) Overheads @ 10 % on (a+b+c)				1467.12	
		e) Contractors profit @ 10 % on (a+b+	·c+d)			1613.83	
		f) Cess @1% on (a+b+c+d+e)	<b>.</b>			177.52	
		Cost for 300 cum = $a+b+c+d+e+f$				17929.66	
		Rate per cum = $(a+b+c+d+e+f)/300$				59.77	
		. , ,			<u>say</u>	<u>60.00</u>	
	Note	Cost of dewatering upto 5% of (a+b) marequired. Assessment for dewatering sharite conditions					
		Site conditions					
3.6	Section 1600 & 2200	Supplying, fitting and placing HYSD ba per drawing and technical specification		orcement in s	sub-structur	e complete as	
3.6	1600 &	Supplying, fitting and placing HYSD ba		orcement in s	sub-structur	e complete as	
3.6	1600 &	Supplying, fitting and placing HYSD ba per drawing and technical specification		orcement in s	sub-structur	e complete as	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT		orcement in s	sub-structur	e complete as	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and		orcement in s	sub-structur 59823.01	re complete as 62814.16	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage	MT	1.05	59823.01	62814.16	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material HYSD bars including 5% overlaps and wastage Binding wire	IS			·	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in	MT	1.05	59823.01	62814.16	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material HYSD bars including 5% overlaps and wastage Binding wire  b) Labour for cutting, bending,	MT kg	1.05 6.00	59823.01 89.00	62814.16 534.00	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in position	MT kg day	1.05 6.00 0.34	59823.01 89.00 354.00	62814.16 534.00 120.36	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material HYSD bars including 5% overlaps and wastage Binding wire b) Labour for cutting, bending, shifting to site, tying and placing in position  Mate	MT kg	1.05 6.00	59823.01 89.00	62814.16 534.00	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in position  Mate  Blacksmith	MT kg day day	1.05 6.00 0.34 2.00	59823.01 89.00 354.00 442.00	62814.16 534.00 120.36 884.00	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in position  Mate  Blacksmith  Mazdoor	MT kg day day	1.05 6.00 0.34 2.00	59823.01 89.00 354.00 442.00	62814.16 534.00 120.36 884.00 2015.00	
3.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overheads @ 20 % on (a+b+c)	MT kg day day day	1.05 6.00 0.34 2.00	59823.01 89.00 354.00 442.00	62814.16 534.00 120.36 884.00 2015.00 7964.10	
13.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overheads @ 20 % on (a+b+c)  e) Contractors profit @ 10 % on (a+b+c)	MT kg day day day	1.05 6.00 0.34 2.00	59823.01 89.00 354.00 442.00	62814.16 534.00 120.36 884.00 2015.00 7964.10 14866.32	
13.6	1600 &	Supplying, fitting and placing HYSD baper drawing and technical specification  Output: MT  Taking output = 1 MT  a) Material  HYSD bars including 5% overlaps and wastage  Binding wire  b) Labour for cutting, bending, shifting to site, tying and placing in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overheads @ 20 % on (a+b+c)  e) Contractors profit @ 10 % on (a+b+c)	MT kg day day day	1.05 6.00 0.34 2.00	59823.01 89.00 354.00 442.00	62814.16 534.00 120.36 884.00 2015.00 7964.10 14866.32 8919.79	

Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure &1600 as per drawing and Technical Specification

**14.1** 1500

1700

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref
	Α	RCC Grade M20					
	Case II	Using Batching Plant, Transit Mixe and Concrete Pump	r				
		Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	40.92	9053.98	370488.86	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		b) Labour					
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	
		Generator 100 KVA	hour	6.00	849.56	5097.36	
		Loader	hour	6.00	1398.23	8389.38	
		Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead upto 1	hour	15.00	1132.74	16991.10	
		Km Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	hour	6.00	2576.11	15456.66	
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum		672754.00			
	(i)	For solid slab super-structure, 20-30%	<b>'</b> 0				
	(p)	of (a+b+c) Height upto 5m					
	(P)	Basic Cost of Labour, Material &	<u> </u>			672754.00	
		Mechinery (a+b+c) for 120 cum d) Formwork and staging 20 % o	f			134550.80	
		(a+b+c)	-				
		e) GST @ 12 % on (a+b+c+d)				96876.58	
		f) Overheads @ 20 % on (a+b+c+d+e	e)			180836.28	
		g) Contractors profit @ 10 % on (a+b	•	+f)		108501.77	
		h) Cess @1% on (a+b+c+d+e+f+g)		-,		11935.19	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$				1205454.62	
		Rate per cum (a+b+c+d+e+f+g+h)/120				10045.46	
		Kate per cuin (a+b+c+u+e+i+g+ii)/120			001/		
	В	RCC Grade M25			say	<u>10045.00</u>	
	Case II	Using Batching Plant, Transit Mixe and Concrete Pump	r				
		Unit = cum					
		Taking output = 120 cum					
		a) Material					
		Cement	MT	47.95	9053.98	434138.34	
		Coarse sand	cum	54.20	601.77	32615.93	
		20 mm Aggregate	cum	64.80	1784.07	115607.74	
		10 mm Aggregate	cum	43.20	1951.33	84297.46	
		b) Labour					
		Mate	day	0.84	354.00	297.36	
		Mason	day	3.00	442.00	1326.00	
		Mazdoor	day	18.00	310.00	5580.00	
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	

DIRECTLY USED HEMS								
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref.	
	т орес.	Generator 100 KVA	hour	6.00	849.56	5097.36	1	
		Loader	hour	6.00	1398.23	8389.38		
		Transit Mixer ( capacity 4.0 cu.m )						
		Transit Mixer 4 cum capacity lead upto 1	hour	15.00	1132.74	16991.10		
		Km						
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0	
		Concrete Pump	hour	6.00	2576.11	15456.66		
		Basic Cost of Labour, Material &		736523.00				
		Mechinery (a+b+c) for 120 cum						
		For formwork and staging add the						
	<i>(</i> :)	following:						
	(i)	For solid slab super-structure, 20-30%						
	(n)	of (a+b+c)						
	(p)	Height upto 5m				700500.00		
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum				736523.00		
		d) Formwork and staging 20 % of				147304.60		
		(a+b+c)				117001.00		
		e) GST @ 12 % on (a+b+c+d)				106059.31		
		f) Overheads @ 20 % on (a+b+c+d+e)	)			197977.38		
		g) Contractors profit @ 10 % on (a+b+		+f)		118786.43		
		h) Cess @1% on (a+b+c+d+e+f+g)		-,		13066.51		
		Cost for 120 cum= a+b+c+d+e+f+g+h				1319717.23		
		Rate per cum (a+b+c+d+e+f+g+h)/120				10997.64		
		. ,			say	10998.00		
		Unit = cum Taking output = 120 cum						
		a) Material						
		Cement	MT	48.79	9053.98	441743.68		
		Coarse sand	cum	54.60	601.77	32856.64		
		20 mm Aggregate 10 mm Aggregate	cum cum	64.80 43.20	1784.07 1951.33	115607.74 84297.46		
		b) Labour	Culli	43.20	1951.55	04297.40		
		Mate	day	0.88	354.00	311.52		
		Mason	day	3.00	442.00	1326.00		
		Mazdoor	day	19.00	310.00	5890.00		
		c) Machinery						
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66		
		Generator 100 KVA	hour	6.00	849.56	5097.36		
		Loader Transit Mixer ( capacity 4.0 cu.m )	hour	6.00	1398.23	8389.38		
		Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1132.74	16991.10		
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0	
		Concrete Pump	hour	6.00	2576.11	15456.66		
		Basic Cost of Labour, Material &		744694.00				
		Mechinery (a+b+c) for 120 cum For formwork and staging add the						
	(i)	following: For solid slab super-structure, 20-30% of (a+b+c)						
	(p)	Height upto 5m Basic Cost of Labour, Material &				744694.00		
		Mechinery (a+b+c) for 120 cum						

Mechinery (a+b+c) for 120 cum

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	, -,	d) Formwork and staging 20 % o (a+b+c)	f		,	148938.80	•
		e) GST @ 12 % on (a+b+c+d)				107235.94	
		f) Overheads @ 20 % on (a+b+c+d+e	<del>)</del> )			200173.75	
		g) Contractors profit @ 10 % on (a+b	+c+d+e	e+f)		120104.25	
		h) Cess @1% on (a+b+c+d+e+f+g)				13211.47	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$	1334358.21				
		Rate per cum (a+b+c+d+e+f+g+h)/120				11119.65	
		Rate per cum (a+b+c+d)/120 ( including GST, OH, CP & Cess)	g formv	vork and exc	say luding	<u>11120.00</u> <u>7447.00</u>	
		Rate per cum (a+b+c+d)/120 ( excludin GST, OH, CP & Cess)	cluding	<u>6206.00</u>			
	Е	PSC Grade M-40					
	Case 1	Using concret mixer.					
		Unit = 1 cum Taking output = 15 cum					
		a) Material					
		Cement	MT	6.45	9053.98	58398.17	
		Coarse sand	cum	6.75	601.77	4061.95	
		20 mm Aggregate	cum	8.10	1784.07	14450.97	
		10 mm Aggregate	cum	5.40	1951.33	10537.18	
		Admixture @ 0.4% of cement	kg	25.80	61.06	1575.35	
		b) Labour					
		Mate	day	0.96	354.00	339.84	
		Mason	day	2.00	442.00	884.00	
		Mazdoor	day	22.00	310.00	6820.00	
		c) Machinery Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	269.91	1619.46	
		Generator 33 KVA	hour	6.00	453.98	2723.88	
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 15 cum	nou.	101411.00	100.00	2720.00	
	Case II	Using Batching Plant, Transit Mixer and Concrete Pump  Unit = cum					
		Taking output = 120 cum					
		a) Material		<b>54.00</b>	0050.00	107105.07	
		Cement	MT	51.60	9053.98	467185.37	
		Coarse sand	cum	54.00	601.77	32495.58	
		20 mm Aggregate 10 mm Aggregate	cum	64.80 43.20	1784.07 1951.33	115607.74 84297.46	
		Admixture @ 0.4% of cement	cum	206.40	61.06	12602.78	
		Admixer	kg Kg	216.00	61.06	13188.96	
		b) Labour	itg	210.00	01.00	13 100.90	
		Mate	day	0.94	354.00	332.76	
		Mason	day	3.50	442.00	1547.00	
		Mazdoor	310.00	6200.00			
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00		16725.66	
		Generator 100 KVA	hour	6.00		5097.36	
		Loader Transit Mixer ( capacity 4.0 cu.m )	hour	6.00	1398.23	8389.38	

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Transit Mixer 4 cum capacity lead upto 1 Km	hour	15.00	1132.74	16991.10	
		Lead beyond 1 Km, L - lead in Kilometer	T-Km	300L	18.94	0.00	L= 0
		Concrete Pump	2576.11	15456.66			
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum For formwork and staging add the following:		796118.00			
	(i)	For solid slab super-structure, 18-28% of (a+b+c)					
	(p)	Height upto 5m					
		Basic Cost of Labour, Material & Mechinery (a+b+c) for 120 cum				796118.00	
		d) Formwork and staging 18 % of (a+b+c)				143301.24	
		e) GST @ 12 % on (a+b+c+d)				112730.31	
		f) Overheads @ 20 % on (a+b+c+d+e)				210429.91	
		g) Contractors profit @ 10 % on (a+b+	c+d+e	+f)		126257.95	
		h) Cess @1% on (a+b+c+d+e+f+g)		13888.37			
		Cost for 120 cum= a+b+c+d+e+f		1402725.78			
		Rate per cum (a+b+c+d+e+f)/120		11689.38			
	Noto	1 Where over concrete is carried out using h	a a tabin m	nlant transit	say	<u>11689.00</u>	

Note

- 1.Where ever concrete is carried out using batching plant, transit mixer, concrete pump, admixers conforming IS: 9103 @ 0.4% of weight of cement may be added for achieving desired slump of concrete.
- 2. Cement provided for various components of the super structure is for estimating purpose only. Actual quantity of cement will be as per approved mix design. Similarly, the provision for coarse and fine aggregates is for estimating purpose and the exact quantity shall be as per the mix design.
- 3. The items like needle and surface vibrators are part of minor T & P which is already covered under the overhead charges. As such these items have not been added seperately in the rate analysis.

# 14.2 1600 A) Supplying ,fitting and placing HYSD bar reinforcement in super-structure complete as per drawing and technical specifications

#### Unit = 1 MT

Taking output = 1 MT

#### a) Material

HYSD bars including 5% for laps and wast	MT	1.05	59823.01	62814.16
Binding wire	Kg	8.00	89.00	712.00
b) Labour for cutting, bending, tying and				
placing in position				
Mate	day	0.44	354.00	155.76
Blacksmith	day	3.00	442.00	1326.00
Mazdoor	day	8.00	310.00	2480.00
Per Cum Basic Cost of Labour,		67488.00		

Per Cum Basic Cost of Labour, Material & Mechinery (a+b+c)

### 803 Painting on Steel Surfaces with aluminium paint

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

8.9

Taking output = 10 sqm

Sr No	Ref. to MoRTH		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.	2) [	ahaur					
		Ma <sup>r</sup>	_abour	dov	0.03	354.00	10.62	I -12
				day				
		Pai	nter	day	0.45	442.00	198.90	
		Ma	zdoor	day	0.25	310.00	77.50	L-13
		b) I	<b>V</b> aterial					
		Pai	nt ready mixed approved brand	Litre	1.25	180.00	225.00	
		Add	d @ 1% on cost of material for				2.25	
		sca	ffolding					
		c)	GST @ 12 % on (a+b)				61.71	
		d)	Overheads @ 10 % on (a+b+c)				57.60	
		e)	Contractors profit @ 10 % on (a+b	)+c+d)			63.36	
		f)	Cess @1% on (a+b+c+d+e)				6.97	
		Cos	st for 10 sqm = a+b+c+d+e+f				703.91	
		Rat	te per sqm (a+b+c+d+e+f)/10				70.39	
						say	<u>70.00</u>	

#### **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.

Page : 60

<b>-</b> '				CARRIAGE OF MATER					In					
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.					
1.1				Loading and Unloading of Stone Boulder/ Stoneaggregates/Sand/Kanker/ Moorum.										
			Placing tipper at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip											
				it = cum	m aip									
				king output = 5.5 cum										
				me 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)	Manoeuvring, reversing, dumping and turning for return		2 Min								
			iv)	Waiting time, unforeseen contingencies etc		4 Min								
			v)	Extra Total		13 Min <b>33.000</b>								
			a)	Machinery										
				per 5.5 tonnes capacity	hour	0.330	779.65	257.28	P&M-048					
			cun	nt end-loader 1 cum bucket capacity @ 25 n/hour	hour	0.330	1398.23	461.42	P&M-017					
			b)	GST @ 14.05 % on (a)				86.24						
			c)	Overhead charges @ 10 % on (a+b)				80.49						
			d)	Contractor's profit @ 10 % on (a+b+c)	)			88.54						
			e)	Cess @ 1% on (a+b+c+d)				9.74						
			Cos	st for 5.5 cum = a+b+c+d+e				983.71						
				te per cum = (a+b+c+d+e)/ 5.5				178.86						
		Note		loading will be by tipping.			say	<u>179.00</u>						
1.2				ading and Unloading of Boulders by Mar	nual Me	ans								
				it = cum king output = 5.5 cum										
			a)	Labour										
			Mat		day	0.110	354.00	38.94	L-12					
			b)	zdoor for loading and unloading  Machinery	day	0.750	310.00	232.50	L-13 P&M-048					
			c)	per 5.5 tonne capacity GST @ 12 % on (a+b)	hour	0.750	779.65	584.74 102.74	Palvi-U40					
			d)	Overhead charges @ 10 % on (a+b+c)	)			95.89						
			e)	Contractor's profit @ 10 % on (a+b+c+	⊦d)			105.48						
			f)	Cess @ 1 % on (a+b+c+d+e)				11.60						
			•	st for5.5 cum = a+b+c+d+e+f				1171.89						
				te per cum = (a+b+c+d+e+f)/5.5				213.07						
		Note		oading will be by tipping.			say	<u>213.00</u>						
1.3			Loa	ading and Unloading of Cement or Steel	by Mar	ual Mean	s and Stac	king.						
				it = tonne king output = 10 tonnes										
			a)	Labour										
			Mat		day	0.080	354.00	28.32	L-12					
			b)	zdoor for loading and unloading  Machinery	day	2.000	310.00	620.00	L-13					
				ck 10 tonne capacity	hour	2.000	641.59	1283.18	P&M-057					
			c)	GST @ 12 % on (a+b)				231.78						
			۸۱	Overhead charges @ 10 % on (a+b+c)				246 22						
			d) e)	Contractor's profit @ 10 % on (a+b+c+				216.33 237.96						

				CARRIAGE OF MATER	IALS				
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref.
	- •		f)	Cess @ 1 % on (a+b+c+d+e)		l .	ļ	26.18	
			Cost	for10 tonnes = a+b+c+d+e+f				2643.75	
			Rate	e per tonnes = (a+b+c+d+e+f)/10				264.38	
							say	<u>264.00</u>	
1.4				t of Haulage Excluding Loading and Un lage of materials by tipper excluding cost of	_		ng and stac	king.	
			Unit	= t.km					
		<b>(1)</b>	km =	ing output 10 tonnes load and lead 10 = 100 t.km					
		(i)		aced Road					
			-	ed with load : 25 km / hour.					
			-	ed while Returning empty :35 km / hour.					
			•	Machinery.					
				per 10 tonne capacity		0.400	770.05	044.00	D8M 046
				e taken for onward haulage with load	hour	0.400	779.65	311.86	P&M-048 P&M-048
				e taken for empty return trip.	hour	0.290	779.65	226.10 64.56	F XIVI-040
			b)	GST @ 12 % on (a)				60.25	
			c)	Overhead charges @ 10 % on (a+b)				66.28	
			d)	Contractor's profit @ 10 % on (a+b+c)				7.29	
			e)	Cess @ 1 % on (a+b+c+d) for 100 t km = a+b+c+d+e				7.29	
				e per t.km = (a+b+c+d+e)/100				7.36	
			itate	s per t.Kiii – (a.b.c.a.e), 100			say	7.40	
1.4		(ii)	Uns	urfaced Graveled Road					
			Spee	ed with load: 20 km / hour					
			-	ed for empty return trip :30 km / hour					
				Machinery					
			-	per 10 tonnes capacity					
				e taken for onward haulage with load	hour	0.500	779.65	389.83	P&M-048
				e taken for empty return trip	hour	0.330	779.65	257.28	P&M-048
			b)	GST @ 12 % on (a)				77.65	
			c)	Overhead charges @ 10 % on (a+b)				72.48	
			d)	Contractor's profit @ 10 % on (a+b+c)				79.72	
			e)	Cess @ 1 % on (a+b+c+d)				8.77	
			•	t for 100 t .km = a+b+c+d+e				885.73	
				e per t.Km =( a+b+c+d+e)/100				8.86	
			rtato	, per t. (a · b · o · a · e), 100			say	<u>8.90</u>	
1.4		(iii)		cha Track and Track in River Bed/Nallah	Bed ar	nd Choe E	Bed.		
			Spe	ed with load :10 km / hour					
			Spe	ed while returning empty:15 km / hour					
			a)	Machinery					
			Tipp	er 10 tonnes capacity					
			Time	e taken for onward haulage	hour	1.000	779.65	779.65	P&M-048
			Time	e taken for empty return trip	hour	0.670	779.65	522.37	P&M-048
			b)	GST @ 12 % on (a)				156.24	
			c)	Overhead charges @ 10 % on (a+b)				145.83	
			d)	Contractor's profit @ 10 % on (a+b+c)				160.41	
			e)	Cess @ 1 % on (a+b+c+d)				17.65	
			•	t for 100 t .km = a+b+c+d+e				1782.15	
			Kate	e per t.Km = (a+b+c+d+e)/100				17.82 17.80	

Page : 62

<u>17.80</u>

say

		,	CARRIAGE OF MAT					
r No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref
	- Pro-	ļ	FOR HILL ROADS				1	
1.5			Loading and Unloading of Stone Boulde /Moorum / Lime / Shingle / Earth / Excavaroads.					
			Placing tipper at loading point, loading with	front end I	oader, dun	nping, turniı	ng for	
			return trip, excluding time for haulage and re		,	1 3,	J	
			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			Min		
			iii) Manoeuvring, reversing, dumping and turning for return		2	Min		
			iv) Waiting time, unforeseen contingencies etc		4	Min		
			v) Extra		6	Min		
			Total			Min		
			a) Machinery					
			Tipper 5.5 tonnes capacity	hour	0.210	779.65	163.73	P&M-04
			Front end-loader 1 cum bucket capacity @ cum/hour	25 hour	0.210	1398.23	293.63	P&M-0
			b) GST @ 12 % on (a)				54.88	
			c) Overhead charges @ 10 % on (a+b)				51.22	
			d) Contractor's profit @ 10 % on (a+b	+c)			56.35	
			e) Cess @ 1 % on (a+b+c+d)				6.20	
			Cost for 3.5 cum = a+b+c+d+e				626.01	
			Rate per cum = $(a+b+c+d+e)/3.5$				178.86	
		Note	Unloading will be by tipping.			say	<u>179.00</u>	
1.6			Loading and Unloading of Stone Boulde Kanker/Moorum / Lime / Shingle / Earth / Manual Means for hill roads.				ones by	
			Unit = cum Taking output = 3.5 cum					
			a) Labour					
			Mate	day	0.070	354.00	24.78	L-12
			Mazdoor for loading and unloading	day	0.480	310.00	148.80	L-13
			b) Machinery		0.400	770.05	074.00	DOMO
			Tipper 5.5 tonne capacity	hour	0.480	779.65	374.23	P&M-04
			c) GST @ 12 % on (a+b)				65.74	
			d) Overhead charges @ 10 % on				61.36	
			e) Contractor's profit @ 10 % on (a+b	+c+d)			67.49	
			f) Cess @ 1 % on (a+b+c+d+e)				7.42	
			Cost for 3.5 cum = a+b+c+d+e+f				749.82	
			Rate per cum = $(a+b+c+d+e+f)/3.5$				214.23	
		Note	Unloading will be by tipping.			say	<u>214.00</u>	
1.7			Loading and Unloading of Cement / Stee Logs / Bricks / Bitumen and Timber etc, roads.					
			Unit = tonne					
			Taking output = 7 tonnes					
			a) Labour					
			Mate	day	0.060	354.00	21.24	L-12
			Mazdoor for loading and unloading b) Machinery	day	1.400	310.00	434.00	L-13
			Truck 10 tonne capacity	hour	1.400	641.59	898.23	P&M-0

Page : 63

				CARRIAGE OF MATER	RIALS				
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			(c)	GST @ 12 % on (a+b)		!		162.42	ļ.
			d)	Overhead charges @ 10 % on				151.59	
			e)	Contractor's profit @ 10 % on (a+b+c	+d)			166.75	
			f)	Cess @ 1 % on (a+b+c+d+e)	,			18.34	
			,	for10 tonnes = a+b+c+d+e+f				1852.57	
			_	per tonnes = (a+b+c+d+e+f)/7				264.65	
				,			say	<u> 265.00</u>	
1.8			Cost	t of Haulage Excluding Loading and U	nloading	on hill ro	oads		
			Haul	age of materials by tipper excluding cost	of loadin	g, unloadiı	ng and stac	king.	
			Unit	= <i>t.km</i>					
				ng output 7 tonnes load and lead 10 = 70 t.km					
		(i)		aced Road					
		(-)	Spee	ed with load : 25 km / hour.					
			Spee	ed while Returning empty :35 km / hour.					
			•	Machinery. er 10 tonne capacity					
				taken for onward haulage with load	hour	0.400	779.65	311.86	P&M-048
				e taken for empty return trip.	hour	0.400	779.65	226.10	P&M-048
					Houl	0.290	119.03	64.56	
			b)	GST @ 12 % on (a)					
			c)	Overhead charges @ 10 % on (a+b)				60.25	
			d)	Contractor's profit @ 10 % on (a+b+c	)			66.28	
			e)	Cess @ 1 % on (a+b+c+d)				7.29	
				for 100 t km = a+b+c+d+e				736.34	
			Rate	per t.km = (a+b+c+d+e)/70			say	10.52 <u>10.50</u>	
1.8		(ii)	Unsi	urfaced Graveled Road			Say	10.00	
1.0		(,	Spee	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	779.65	389.83	P&M-048
				taken for empty return trip	hour	0.330	779.65	257.28	P&M-048
			b)	GST @ 12 % on (a)				77.65	
			c)	Overhead charges @ 10 % on (a+b)				72.48	
			d)	Contractor's profit @ 10 % on (a+b+c	)			79.72	
			e)	Cess @ 1 % on (a+b+c+d)	,			8.77	
			,	for 100 t .km = a+b+c+d+e				885.73	
				per t.Km = (a+b+c+d+e)/70				12.65	
				(a b c a c), . c			say	12.70	
1.8		(iii)	Kato	ha Track and Track in River Bed/Nallal	n Bed ar	nd Choe E	Bed.		
			Spee	ed with load :10 km / hour					
			Spee	ed while returning empty:15 km / hour					
			a)	Machinery					
				er 10 tonnes capacity					
				e taken for onward haulage	hour	1.000	779.65	779.65	P&M-048
				e taken for empty return trip	hour	0.670	779.65	522.37	P&M-048
			b)	GST @ 12 % on (a)				156.24	
			c)	Overhead charges @ 10 % on (a+b)				145.83	
			d)	Contractor's profit @ 10 % on (a+b+c	)			160.41	
			e)	Cess @ 1 % on (a+b+c+d)				17.65	
				for 100 t .km = a+b+c+d+e				1782.15	
			Rate	per t.Km = (a+b+c+d+e)/70				25.46	
							sav	25.50	

say <u>25.50</u>

Sr No			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH Spec.							Input ref.
1.9			Cost of Haulage of Bitumen Excluding Load	ling an	d Unloadi	ng on hill	roads.	
			Haulage of materials by truck excluding costacking.	t of loa	iding, unl	oading an	d	
			Unit = t.km					
			Taking output 5 tonnes load and lead 10					
		(i)	km = 50 t.km Surfaced Road Speed with load : 25 km / hour. Speed while Returning empty :35 km / hour.					
			a) Machinery.					
			Tipper 10 tonne capacity					
			Time taken for onward haulage with load	hour	0.400	641.59	256.64	P&M-057
			Time taken for empty return trip.	hour	0.290	641.59	186.06	P&M-057
			b) GST @ 12 % on (a)				53.12	
			c) Overhead charges @ 10 % on (a+b)				49.58	
			d) Contractor's profit @ 10 % on (a+b+c)				54.54	
			e) Cess @ 1 % on (a+b+c+d)				6.00	
			cost for 100 t km = a+b+c+d+e				605.94 12.12	
			Rate per t.km = $(a+b+c+d+e)/50$			say	12.12 12.10	
		(ii)	Unsurfaced Graveled Road			cuy	120	
		` ,	Speed with load: 20 km / hour					
			Speed for empty return trip :30 km / hour					
			a) Machinery					
			Tipper 10 tonnes capacity					
			Time taken for onward haulage with load	hour	0.500	641.59	320.80	P&M-057
			Time taken for empty return trip	hour	0.330	641.59	211.72	P&M-057
			b) GST @ 12 % on (a)				63.90	
			c) Overhead charges @ 10 % on (a+b)				59.64	
			d) Contractor's profit @ 10 % on (a+b+c)				65.61	
			e) Cess @ 1 % on (a+b+c+d)				7.22	
			Cost for 100 t .km = a+b+c				728.89	
			Rate per t.Km = $(a+b+c)/50$				14.58	
						say	<u>14.60</u>	
		(111)	Katcha Track and Track in River Bed/Nallah	Bed ar	id Choe E	sed.		
			Speed with load :10 km / hour Speed while returning empty:15 km / hour					
			a) Machinery					
			Tipper 10 tonnes capacity	hour	1 000	644 50	644 50	P&M-057
			Time taken for onward haulage Time taken for empty return trip	hour hour	1.000 0.670	641.59 641.59	641.59 429.87	P&M-057
			b) GST @ 12 % on (a)	Hour	0.070	041.00	128.58	
			c) Overhead charges @ 10 % on (a+b)				120.00	
			d) Contractor's profit @ 10 % on (a+b+c)				132.00	
			e) Cess @ 1 % on (a+b+c+d)				14.52	
			Cost for 100 t .km = a+b+c				1466.56	
			Rate per t.Km = (a+b+c)/50				29.33	
						say	<u>29.30</u>	

# Chapter - 2

### SITE CLEARANCE

### Preamble:

- 1 Unless otherwise stated, the rates include sorting and disposal of unserviceable materials and stacking of serviceable materials with all lifts and upto a lead of 1000 m.
- The rates include Tools & Plants (T&Ps) and scaffolding required for items of dismantling.
- 3 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 structure, which remain submerged in water, the cost may be enhanced by 50 percent. If site conditions warrant lowering of water level to facilitate dismantling, the cost may be enhanced by additional 25 percent.
- 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.
- All minor Tools & Plants (T&Ps) items required for dismantling have been considered to have been included in overhead charges.

Page : 66

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
2.1	201		Cutting of Trees, including cutting of Trun	ks, Bra	nches and	Removal		
			Cutting of trees, including cutting of trunks, stacking of serviceable material with all lifts a filling in the depression/pit.					
		/i\	Unit = Each					
		(i)	Girth from 300 mm to 600 mm a) Labour					
			Mate	day	0.020	354.00	7.08	L-12
			Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres lead by manual means.	day		310.00	186.00	L-13
			•					
			b) Machinery Tractor-trolley	hour	0.100	476.11	47.61	P&M-053
			c) GST @ 12 % on (a+b)	noui	0.100	170.11	28.88	
			d) Overhead charges @ 10 % on (a+b+c	1			26.96	
			e) Contractor's profit @ 10 % on (a+b+c	-			29.65	
			f) Cess @ 1% on (a+b+c+d+e)	· <b>u</b> ,			3.26	
			Rate for each tree = a+b+c+d+e+f				329.44	
			Trate for each free - a.b.e.a.e.i			say	<u>329.00</u>	
2.1		(ii)	Girth from 600 mm to 900 mm			J.,	<u> </u>	
			a) Labour					
			Mate	day		354.00	14.16	L-12
			Mazdoors for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means	day	0.900	310.00	279.00	L-13
			b) Machinery					
			Tractor-trolley	hour	0.300	476.11	142.83	P&M-053
			c) GST @ 12 % on (a+b)				52.32	
			d) Overhead charges @ 10 % on (a+b+c	)			48.83	
			e) Contractor's profit @ 10 % on (a+b+c	+d)			53.71	
			f) Cess @ 1% on (a+b+c+d+e)				5.91	
			Rate for each tree = a+b+c+d+e+f				596.76	
						say	<u>597.00</u>	
2.1		(iii)	Girth from 900 mm to 1800 mm					
			a) Labour Mate	day	0.080	354.00	28.32	L-12
			Mazdoors for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres	day		310.00	620.00	L-13
			b) Machinery					
			Tractor-trolley	hour	0.400	476.11	190.44	P&M-053
			c) GST @ 12 % on (a+b)				100.65	
			d) Overhead charges @ 10 % on (a+b+c	)			93.94	
			e) Contractor's profit @ 10 % on (a+b+c	+d)			103.34	
			f) Cess @ 1 % on (a+b+c+d+e)				11.37	
			Rate for each tree = a+b+c+d+e+f				1148.06	
2.2	201		Clearing Grass and Removal of Rubbish			say	<u>1148.00</u>	
2.2			Clearing grass and removal of rubbish up periphery of the area .	to a d	istance of	50 metres	outside the	
			By Manual Means					
			Unit = Hectare					

Taking output = 1 Hectare

-			SITE CLEARAI				_	-
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			a) Labour					
			Mate	day	2.000	354.00	708.00	L-12
			Mazdoor	day	50.000	310.00	15500.00	L-13
			b) GST @ 12 % on (a)				1944.96	
			c) Overhead charges @ 10 % on (a+b)				1815.30	
			d) Contractor's profit @ 10 % on (a+b+	c)			1996.83	
			e) Cess @ 1% on (a+b+c+d)	•			219.65	
			Rate per Hectare = a+b+c+d+e				22184.74	
						say	<u>22185.00</u>	
2.3	201		Clearing and Grubbing Road Land .					
			Clearing and grubbing road land including	uprooting	g rank veg	etation, gra	ss, bushes,	
			shrubs, saplings and trees girth up to 300 r		-	_		
			and disposal of unserviceable materials and			-		
			or auctioned, up to a lead of 1000 metres inc	luding re	emoval and	disposal of	top organic	
			soil not exceeding 150 mm in thickness.					
			Unit = Hectare					
			Taking output = 1 Hectare					
		(i)	By Manual Means:-					
		Α	In area of light jungle					
			a) Labour					
			Mate	day	6.000	354.00	2124.00	L-12
			Mazdoor	day	150.000	310.00	46500.00	L-13
			b) Machinery	hour	1 000	47C 11	47C 11	P&M-053
			Tractor-trolley	hour	1.000	476.11	476.11	1 (000-000
			c) GST @ 12 % on (a+b)				5892.01	
			d) Overhead charges @ 10 % on (a+b+c	<b>c)</b>			5499.21	
			e) Contractor's profit @ 10 % on (a+b+c	c+d)			6049.13	
			f) Cess @ 1 % on (a+b+c+d+e)				665.40	
			Rate for each tree = a+b+c+d+e+f				67205.86	
						say	<u>67206.00</u>	
2.3 (i)		В	In area of thorny jungle					
			a) Labour					
			Mate	day	8.000	354.00	2832.00	L-12
			Mazdoor	day	200.000	310.00	62000.00	L-13
			b) Machinery	hour	2.000	47C 11	052.22	P&M-053
			Tractor-trolley	hour	2.000	476.11	952.22	1 aw-000
			c) GST @ 12 % on (a+b)	•			7894.11	
			d) Overhead charges @ 10 % on (a+b+c	•			7367.83	
			e) Contractor's profit @ 10 % on (a+b+c	c+d)			8104.62	
			f) Cess @ 1 % on (a+b+c+d+e)				891.51	
			Rate for each tree = a+b+c+d+e+f				90042.29	
						say	<u>90042.00</u>	
2.3		(ii)	By Mechanical Means					
		Α	In area of light jungle					
			a) Labour	4	0.400	054.00	50.04	1 12
			Mate Mazdoor	day day	0.160 4.000	354.00 310.00	56.64 1240.00	L-12 L-13
			b) Machinery	uay	4.000	310.00	1240.00	
			Dozer 80 HP with attachment for removal of	hour	10.000	4237.17	42371.70	P&M-014
			trees & stumps	hour	1.000	476.11	A76 11	P&M-053
			Tractor-trolley	Houl	1.000	470.11	476.11	
			c) GST @ 12 % on (a+b)	- \			5297.33	
			d) Overhead charges @ 10 % on (a+b+c				4944.18	
			e) Contractor's profit @ 10 % on (a+b+c	c+d)			5438.60	
			f) Cess @ 1 % on (a+b+c+d+e)				598.25	

Rate for each tree = a+b+c+d+e+f				SITE CLEARAI	NCE				
Say   60423.00   Colora   Co	Sr No	MoRTH		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
(ii)  a) Labour  Mate  Mazdoor  Aday 0.240 354.00 84.96 L-12  Mate  Mazdoor  D) Machinery  Dozer 80 HP with attachment for removal of hour 12.000 4237.17 50846.04 PMLOT trees & stumps  Tractor-trollery  C) GST @ 12 % on (a+b)  d) Overhead charges @ 10 % on (a+b+c+d) 5992.55  e) Contractor's profit @ 10 % on (a+b+c+d) 5992.55  Rate for each tree = a+b+c+d+e+f 73235.31  7.25.10  Rate for each tree = a+b+c+d+e+f 73235.31  2.4 202  Dismantling of existing structures like culverts, bridges, retaining walls and other structure 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  A Lime Concrete, coment concrete grade M-10 and below  a) Labour  Mate  Mazdoor for dismantling and loading day 0.040 354.00 14.16  Mazdoor for dismantling and loading day 1.000 310.00 310.00  L'13  b) Machinery  Tractor-trolley hour 0.270 476.11 128.55 PMLOS  Cost for 1.25 cum = a+b+c-d+e+f 619.55  Rate per cum = (a+b+c-d+e+f) 1.25  Say 496.00  2.4 (i) B Cement Concrete Grade M-15 & M-20  a) Labour  Mate  Mazdoor for dismantling and loading day 0.050 354.00 17.70  P. Cess @ 1 % on (a+b+c-d+e+f) 1.25  Say 496.00  2.4 (ii) Cess @ 1 % on (a+b+c-d+e+f) 1.25  Say 496.00  2.5 (ST @ 12 % on (a+b)  d) Overhead charges @ 10 % on (a+b+c-d+e+f) 65.76  i) Cess @ 1 % on (a+b+c-d+e+f) 7.23  Say 496.00  2.4 (ii) Centractor's profit @ 10 % on (a+b+c-d+e+f) 7.23  Say 584.00  2.4 (ii) Centractor's profit @ 10 % on (a+b+c-d+f) 7.23  Say 584.00  2.4 (ii) Centractor's profit @ 10 % on (a+b+c-d+f) 7.23  Say 584.00  2.4 (ii) Centractor's profit @ 10 % on (a+b+c-d+f) 7.23  Say 584.00  2.4 (iii) Centractor's profit @ 10 % on (a+b+c-d+f) 7.23  Say 584.00  2.4 (iii) Centractor's profit @ 10 % on (a+b+c-d+f) 7.25  Say 584.00  2.4 (iii) Centractor's profit @ 10 % on (a+b+c-d+f) 7.25  Say				Rate for each tree = a+b+c+d+e+f				60422.81	
(ii)    A   Labour   Mate   day   0.240   354.00   84.96   L-12   Mazdoor   b)   Machinery   Dozer 80 HP with attachment for removal of   hour   12.000   4237.17   50846.04   P8M-01   trees & stumps   Tractor-trolley   hour   1.500   476.11   714.17   P8M-05   7235.31   7323							say	<u>60423.00</u>	
Mate   day 0.240 354.00 84.96   L-12   Mazdoor   Machinery   Dozer 80 HP with attachment for removal of   hour 12.000 4237.17   50846.04   P8M-01   F8M-02			В	In area of thorny jungle					
Mazdoor	(ii)			a) Labour					
D)   Machinery   Dozer 80 HP with attachment for removal of   hour   12.000   4237.17   50846.04   PAM-01   trees & stumps   Tractor-trolley   hour   1.500   476.11   714.17   PAM-05   PAM-0				Mate	day	0.240		84.96	
Dozer 80 HP with attachment for removal of tees & stumps   Tractor-trolley   hour   1.500   4237.17   50846.04   P&M-01   tees & stumps   Tractor-trolley   hour   1.500   476.11   714.17   P&M-05   6420.62   contractor's profit @ 10 % on (a+b+c+d)   5992.58   contractor's profit @ 10 % on (a+b+c+d)   6591.84   contractor's profit @ 10 % on (a+b+c+d)   6591.84   contractor's profit @ 10 % on (a+b+c+d)   72335.31   contractor's profit @ 10 % on (a+b+c+d)   72335.31   contractor's profit @ 10 % on (a+b+c+d+e)   c					day	6.000	310.00	1860.00	L-13
trees & stumps				,		40.000	4007.47	<b>5004004</b>	D0M 044
Tractor-trolley					hour	12.000	4237.17	50846.04	Palvi-U14
c) GST @ 12 % on (a+b) 6420.62 d) Overhead charges @ 10 % on (a+b+c) 5992.58 e) Contractor's profit @ 10 % on (a+b+c+d) 6591.84 f) Cess @ 1 % on (a+b+c+d+e) 725.10 Rate for each tree = a+b+c+d+e+f 73235.31  2.4 202 Dismantling of Structures Dismantling of Structures Dismantling of existing structures like culverts, bridges, retaining walls and other structure 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 I By Manual Means A Lime Concrete, cement concrete grade M-10 and below a) Labour Mate Mazdoor for dismantling and loading day 1.000 310.00 310.00 14.16 L-12 Mazdoor for dismantling and loading day 1.000 310.00 310.00 14.16 Cost for 1.25 cum = a+b+c+d+e+f) 1.25 Say 496.00  2.4 (i) B Cement Concrete Grade M-15 & M-20 a) Labour Mate Mazdoor for dismantling and loading day 1.250 310.00 387.50 1-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 Rate per cum = (a+b+c+d+e+f)/1.25 say 496.00 c) GST @ 12 % on (a+b+c+d+e) Cost for 1.25 cum = a+b+c+d+e+f Down (a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f Down (a+b+c+d+e+f Down					hour	1 500	476 11	714 17	P&M-053
d) Overhead charges @ 10 % on (a+b+c)   5992.58     e)   Contractor's profit @ 10 % on (a+b+c+d)   6591.84     f)   Cess @ 1 % on (a+b+c+d+e)   725.10     Rate for each tree = a+b+c+d+e+f   73235.31     73235.31     73235.31     73235.31     73235.31     73235.31     73235.30     73235.30     73235.30     73235.30     73235.31     73235.30     73235.31     73235.30				•	i ioui	1.000	11 0.11		
e) Contractor's profit @ 10 % on (a+b+c+d) 6591.84 f) Cess @ 1 % on (a+b+c+d+e) 725.10 Rate for each tree = a+b+c+d+e+f 73235.31  Dismantling of Structures  Dismantling of Structures like culverts, bridges, retaining walls and other structure 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)  1 By Manual Means  A Lime Concrete, cement concrete grade M-10 and below a) Labour  Mate  Mazdoor for dismantling and loading day 1.000 310.00 14.16 L-12  Mazdoor for dismantling and loading day 1.000 310.00 310.00 L-13 b) Machinery  Tractor-trolley hour 0.270 476.11 128.55 P&M-05  c) GST @ 12 % on (a+b) 54.33 d) Overhead charges @ 10 % on (a+b+c+d) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 50.70 e) Contractor's profit @ 10 % on (a+b+c+d) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 619.65 Rate per cum = (a+b+c+d+e+f) 1.25					c)				
f) Cess @ 1 % on (a+b+c+d+e) Rate for each tree = a+b+c+d+e+f 73235.31 73235.00  2.4 202 Dismantling of Structures Dismantling of existing structures like culverts, bridges, retaining walls and other structure 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 1 By Manual Means A Lime Concrete, cement concrete grade M-10 and below a) Labour Mate Mazdoor for dismantling and loading day 1.000 310.00 310.00 14.16 Dismantling and loading day 1.000 310.00 310.00 14.16 Dismantling and loading day 1.000 310.00 310.00 14.16 C=12 Square (Concrete, Concrete, Co					-				
Rate for each tree = +b+c+d+e+f   Say   73235.31					c·u,				
Dismantling of Structures   Dismantling of Structures   Dismantling of existing structures   Dismantling walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and lead of 1000 metres   Unit = cum Taking output = 1.25 cum   Dismantling and stacking the serviceable material with all lifts and lead of 1000 metres   Unit = cum Taking output = 1.25 cum   Dismantling and loading   Dismantling and loadi									
2.4   202   Dismantling of Structures   Dismantling of existing structures like culverts, bridges, retaining walls and other structure 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				Nate for each free - a.b.c.d.e.f			sav		
Dismantling of existing structures like culverts, bridges, retaining walls and other structure 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	2.4	202		Dismantling of Structures			Juy	. 0200.00	
A Lime Concrete, cement concrete grade M- 10 and below a) Labour Mate Mazdoor for dismantling and loading b) Machinery Tractor-trolley Cost for 1.25 cum = a+b+c+d+e+f) Maze per cum = (a+b+c+d+e) C) GST @ 12 % on (a+b) C) GST @ 12 % on (a+b+c) Cost for 1.25 cum = a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f) C) Mazdoor for dismantling and loading C) GST @ 12 % on (a+b+c) Cost for 1.25 cum = a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f) Aze per cum = (a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f Aze per cum = (a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f Aze per cum = (a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f Cost for 1.25 cum = a+b+c+d+e+f Aze per cum = (a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f Aze per cum = (a+b+c+d+e+f) Cost for 1.25 cum = a+b+c+d+e+f Aze per cum = (a+b+c+d+e+f) Aze per cum = (				T&P and scaffolding wherever necessary, s unserviceable material and stacking the set 1000 metres  Unit = cum  Taking output = 1.25 cum  Lime /Cement Concrete	orting th	e dismantle	ed material,	disposal of	
10 and below a) Labour  Mate Mazdoor for dismantling and loading day 1.000 310.00 310.00 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) Cost for 1.25 cum = a+b+c+d+e+f) Rate per cum = (a+b+c+d+e+f)/1.25 say Mazdoor for dismantling and loading day 0.050 354.00 17.70 L-12 Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 d) Overhead charges @ 10 % on (a+b+c+d) c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c) f) Cess @ 1 % on (a+b) d) Overhead charges @ 10 % on (a+b+c) e) Contractor's profit @ 10 % on (a+b+c) f) Cess @ 1 % on (a+b+c+d+e) Cost for 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/1.25 say Say 2.4 (i) Cerested / Reinforced cement concrete grade M-20 & above a) Labour									
Mate Mazdoor for dismantling and loading day 1.000 354.00 14.16 L-12 Mazdoor for dismantling and loading day 1.000 310.00 310.00 L-13 b) Machinery  Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % on (a+b) 54.33 d) Overhead charges @ 10 % on (a+b+c+d) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 619.65 Aate per cum = (a+b+c+d+e+f) 1.25 495.72 495.72 496.00  2.4 (i) B Cement Concrete Grade M-15 & M-20 a) Labour Mate day 0.050 354.00 17.70 L-12 Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % on (a+b) 64.05 d) Overhead charges @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 7.23 Cost for 1.25 cum = a+b+c+d+e+f 730.57 Rate per cum = (a+b+c+d+e+f) 1.25 say 584.00			Α	10 and below					
Mazdoor for dismantling and loading   day   1.000   310.00   310.00   310.00   310.00   310.00   b)   Machinery   Tractor-trolley   hour   0.270   476.11   128.55   P&M-05   54.33   d)   Overhead charges @ 10 % on (a+b+c)   55.77   f)   Cess @ 1 % on (a+b+c+d+e)   6.14   Cost for 1.25 cum = a+b+c+d+e+f   619.65   Rate per cum = (a+b+c+d+e+f) / 1.25   say   496.00   495.72   495.72   496.00   49				,		0.040	054.00	44.40	1 12
b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % on (a+b) 54.33 d) Overhead charges @ 10 % on (a+b+c+d) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 619.65 Rate per cum = (a+b+c+d+e+f)/1.25 5ay 496.00  2.4 (i) B Cement Concrete Grade M-15 & M-20 a) Labour Mate day 0.050 354.00 17.70 L-12 Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % 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+f) Cost for 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/1.25 5ay 584.40  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour					-				
c) GST @ 12 % on (a+b) 54.33  d) Overhead charges @ 10 % on (a+b+c) 50.70 e) Contractor's profit @ 10 % on (a+b+c+d) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 6.14  Cost for 1.25 cum = a+b+c+d+e+f 619.65  Rate per cum = (a+b+c+d+e+f)/1.25 5ay 495.72  2.4 (i) B Cement Concrete Grade M-15 & M-20 a) Labour  Mate day 0.050 354.00 17.70 17.70 17.70 Machinery  Tractor-trolley hour 0.270 476.11 128.55 P&M-05 d) Overhead charges @ 10 % on (a+b+c) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e+f) 7.25 584.46  Cost for 1.25 cum = a+b+c+d+e+f) 7.25 584.40  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour					uay	1.000	310.00	310.00	L-10
d) Overhead charges @ 10 % on (a+b+c)				Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
e) Contractor's profit @ 10 % on (a+b+c+d) 55.77 f) Cess @ 1 % on (a+b+c+d+e) 6.14 Cost for 1.25 cum = a+b+c+d+e+f 619.65 Rate per cum = (a+b+c+d+e+f) 1.25 495.72  2.4 (i) B Cement Concrete Grade M-15 & M-20 a) Labour Mate day 0.050 354.00 17.70 L-12 Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 d) Overhead charges @ 10 % on (a+b+c) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 7.23 Cost for 1.25 cum = a+b+c+d+e+f 730.57 Rate per cum = (a+b+c+d+e+f) 1.25 584.46  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour				c) GST @ 12 % on (a+b)				54.33	
f) Cess @ 1 % on (a+b+c+d+e) 6.14 Cost for 1.25 cum = a+b+c+d+e+f 619.65 Rate per cum = (a+b+c+d+e+f)/1.25 495.72 say 496.00  2.4 (i) B Cement Concrete Grade M-15 & M-20  a) Labour Mate day 0.050 354.00 17.70 L-12 Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % on (a+b) 64.05 d) Overhead charges @ 10 % on (a+b+c) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e+f) Rate per cum = (a+b+c+d+e+f)/1.25 584.46  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour				d) Overhead charges @ 10 % on (a+b+c	c)			50.70	
Cost for 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/ 1.25  2.4 (i)  B Cement Concrete Grade M-15 & M-20  a) Labour  Mate				e) Contractor's profit @ 10 % on (a+b+c	c+d)			55.77	
Cost for 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/ 1.25  2.4 (i)  B Cement Concrete Grade M-15 & M-20  a) Labour  Mate				f) Cess @ 1 % on (a+b+c+d+e)				6.14	
2.4 (i)  B Cement Concrete Grade M-15 & M-20  a) Labour  Mate								619.65	
2.4 (i)  B Cement Concrete Grade M-15 & M-20  a) Labour  Mate				Rate per cum = $(a+b+c+d+e+f)/1.25$				495.72	
a) Labour  Mate     Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery     Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % 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 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/1.25  2.4 (i)  C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour	_		_				say	<u>496.00</u>	
Mate Mazdoor for dismantling and loading b) Machinery Tractor-trolley c) GST @ 12 % 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 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/1.25  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour	2.4 (i)		В						
Mazdoor for dismantling and loading day 1.250 310.00 387.50 L-13 b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05 c) GST @ 12 % on (a+b) 64.05 d) Overhead charges @ 10 % on (a+b+c) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 7.23 Cost for 1.25 cum = a+b+c+d+e+f 730.57 Rate per cum = (a+b+c+d+e+f)/1.25 584.46  2.4 (i) CPrestressed / Reinforced cement concrete grade M-20 & above a) Labour				,		0.050	054.00	47.70	1.40
b) Machinery Tractor-trolley hour 0.270 476.11 128.55 P&M-05  c) GST @ 12 % on (a+b) 64.05  d) Overhead charges @ 10 % on (a+b+c) 59.78  e) Contractor's profit @ 10 % on (a+b+c+d) 65.76  f) Cess @ 1 % on (a+b+c+d+e) 7.23  Cost for 1.25 cum = a+b+c+d+e+f 730.57  Rate per cum = (a+b+c+d+e+f)/1.25 584.46  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above  a) Labour					-				
Tractor-trolley  c) GST @ 12 % 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 1.25 cum = a+b+c+d+e+f  Rate per cum = (a+b+c+d+e+f)/1.25  2.4 (i)  C Prestressed / Reinforced cement concrete grade M-20 & above  a) Labour					uay	1.200	310.00	307.30	0
c) GST @ 12 % on (a+b) 64.05 d) Overhead charges @ 10 % on (a+b+c) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 7.23 Cost for 1.25 cum = a+b+c+d+e+f 730.57 Rate per cum = (a+b+c+d+e+f)/1.25 584.46  say 584.00  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour				· ·	hour	0.270	476.11	128.55	P&M-053
d) Overhead charges @ 10 % on (a+b+c) 59.78 e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 7.23 Cost for 1.25 cum = a+b+c+d+e+f 730.57 Rate per cum = (a+b+c+d+e+f)/1.25 584.46  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour									
e) Contractor's profit @ 10 % on (a+b+c+d) 65.76 f) Cess @ 1 % on (a+b+c+d+e) 7.23  Cost for 1.25 cum = a+b+c+d+e+f 730.57  Rate per cum = (a+b+c+d+e+f)/1.25 584.46  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour					c)				
f) Cess @ 1 % on (a+b+c+d+e) 7.23  Cost for 1.25 cum = a+b+c+d+e+f 730.57  Rate per cum = (a+b+c+d+e+f)/1.25 584.46  say 584.00  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour					-				
Cost for 1.25 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/ 1.25  584.46  say  2.4 (i)  C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour					•				
Rate per cum = (a+b+c+d+e+f)/ 1.25 584.46  say 584.00  2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour									
2.4 (i) C Prestressed / Reinforced cement concrete grade M-20 & above a) Labour				Rate per cum = (a+b+c+d+e+f)/ 1.25					
a) Labour							•	<u>584.00</u>	
•	2.4 (i)		С	Prestressed / Reinforced cement concrete	grade I	VI-20 & abo	ove		
Mate day 0.150 354.00 53.10 L-12				•					
				Mate	day	0.150	354.00	53.10	L-12

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Blacksmith	day	0.250	442.00	110.50	L-02
			Mazdoor for dismantling, loading and unloading	day	3.500	310.00	1085.00	L-13
			b) Machinery		0.070	470.44	100.55	D9M 052
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)				165.26	
			d) Overhead charges @ 10 % on (a+b+	-			154.24	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			169.67	
			f) Cess @ 1% on (a+b+c+d+e)				18.66	
			Cost for 1.25 cum = $a+b+c+d+e+f$				1884.98	
			Rate per cum = (a+b+c+d+e+f)/ 1.25			say	1507.98 <u>1508.00</u>	
2.4		II	By Mechanical Means for items No. 202( b	)& ( c)				
		Α	Cement Concrete Grade M-15 & M-20					
			a) Labour	4	0.000	054.00	7.00	L-12
			Mate Mazdoor for loading and unloading	day day		354.00 310.00	7.08 77.50	L-12 L-13
			Mazdoor with Pneumatic breaker	day		354.00	88.50	L-14
			b) Machinery	ady	0.200	30 1.00	55.50	
			Air Compressor 250 cfm with 2 leads of pneumatic breaker @ 1.5 cum per hour	hour	0.670	575.22	385.40	P&M-001
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)				82.44	
			d) Overhead charges @ 10 % on (a+b+c	c)			76.95	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			84.64	
			f) Cess @ 1% on (a+b+c+d+e)	•			9.31	
			Cost for 1.25 cum = $a+b+c+d+e+f$				940.37	
			Rate per cum = (a+b+c+d+e+f)/ 1.25				752.30	
						say	<u>752.00</u>	
2.4 II		В	Prestressed / reinforced cement concrete	grade N	1-20 & abo	ve		
			a) Labour	•				
			Mate	day	0.050	354.00	17.70	L-12
			Mazdoor with Pneumatic breaker	day	0.660	354.00	233.64	L-14
			Blacksmith	day		442.00	110.50	L-02
			Mazdoor for loading and unloading b) Machinery	day	0.250	310.00	77.50	L-13
			Air Compressor 250 cfm with 2 leads of pneumatic breaker @ 1.00 cum per hour		1.000	575.22	575.22	P&M-001
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)				137.17	
			d) Overhead charges @ 10 % on (a+b+	c)			128.03	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			140.83	
			f) Cess @ 1% on (a+b+c+d+e)				15.49	
			Cost for 1.25 cum = $a+b+c+d+e+f$				1564.63	
			Rate per cum = (a+b+c+d+e+f)/ 1.25			say	1251.70 <u>1252.00</u>	
2.4		(ii) A	Dismantling Brick / Tile work In lime mortar					
			a) Labour					
			Mate	day		354.00	7.08	L-12
			Mazdoor for dismantling, loading and	day	0.500	310.00	155.00	L-13
			unloading					
			b) Machinery	haum	0.070	176 11	400 EF	P&M-053
			Tractor-trolley	hour	0.270	476.11	128.55	1 GIVI-000
			c) GST @ 12 % on (a+b)				34.88	

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
[			d) Overhead charges @ 10 % on (a+b+	·c)		I	32.55	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			35.81	
			f) Cess @ 1% on (a+b+c+d+e)				3.94	
			Cost for 1.25 cum = a+b+c+d+e+f				397.81	
			Rate per cum = (a+b+c+d+e+f)/ 1.25				318.25	
		_				say	<u>318.00</u>	
2.4 (ii)		В	In cement mortar					
			a) Labour Mate	day	0.030	354.00	10.62	L-12
			Mazdoor for dismantling, loading and	day	0.750	310.00	232.50	L-13
			unloading	•				
			b) Machinery					D014.050
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)				44.60	
			d) Overhead charges @ 10 % on (a+b+	-			41.63	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			45.79	
			f) Cess @ 1% on (a+b+c+d+e)				5.04	
			Cost for 1.25 cum = a+b+c+d+e+f				508.73	
			Rate per cum = (a+b+c+d+e+f)/ 1.25			cav	406.98 <b>407.00</b>	
2.4 (ii)	1	С	In mud mortar			say	407.00	
,			a) Labour					
			Mate	day	0.020	354.00	7.08	L-12
			Mazdoor for dismantling and loading	day	0.400	310.00	124.00	L-13
			b) Machinery					D014.050
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)				31.16	
			d) Overhead charges @ 10 % on (a+b+	-			29.08	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			31.99	
			f) Cess @ 1% on (a+b+c+d+e)				3.52	
			Cost for 1.25 cum = a+b+c+d+e+f				355.38 284.30	
			Rate per cum = (a+b+c+d+e+f)/ 1.25			say	<u>284.00</u>	
2.4 (ii)		D	Dry brick pitching or brick soling			Suy	204.00	
` '			a) Labour					
			Mate	day	0.014	354.00	4.96	L-12
			Mazdoor for Dismantling, loading and	day	0.350	310.00	108.50	L-13
			unloading					
			b) Machinery Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)	Hour	0.270	470.11	29.04	
			d) Overhead charges @ 10 % on (a+b+	·c)			27.11	
			e) Contractor's profit @ 10 % on (a+b+	-			29.82	
			f) Cess @ 1% on (a+b+c+d+e)	,			3.28	
			Cost for 1.25 cum = $a+b+c+d+e+f$				331.26	
			Rate per cum = (a+b+c+d+e+f)/ 1.25				265.01	
						say	<u>265.00</u>	
2.4			Dismantling Stone Masonry					
		Α	Rubble stone masonry in lime mortar					
			a) Labour Mate	day	0.024	354.00	8.50	L-12
			Mazdoor for dismantling, loading and	day	0.600	310.00	186.00	L-13
			unloading.	,				
			b) Machinery					D0M 050
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053

Sr No Ref. to		SITE CLEARAI		0	D-4: 1: D	0-511-7	Damas I
Sr No Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
,		c) GST @ 12 % on (a+b)				38.77	
		d) Overhead charges @ 10 % on (a+b+c	c)			36.18	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			39.80	
		f) Cess @ 1% on (a+b+c+d+e)	-			4.38	
		Cost for 1.25 cum = a+b+c+d+e+f				442.18	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				353.74	
		. ,			say	<u>354.00</u>	
2.4 (iii)	В	Rubble stone masonry in cement mortar.					
		a) Labour					
		Mate	day	0.030	354.00	10.62	L-12
		Mazdoor for dismantling, loading and	day	0.750	310.00	232.50	L-13
		unloading. b) Machinery					
		b) Machinery Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
		c) GST @ 12 % on (a+b)	Hour	0.270	470.11	44.60	
		d) Overhead charges @ 10 % on (a+b+c	~)			41.63	
		e) Contractor's profit @ 10 % on (a+b+c	•			45.79	
		f) Cess @ 1% on (a+b+c+d+e)	3 · u)			5.04	
		Cost for 1.25 cum = a+b+c+d+e+f				508.73	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				406.98	
		Nate per cam = (a·b·c·a·c·i)/ 1.20			say	<u>407.00</u>	
2.4 (iii)	С	Rubble Stone Masonry in mud mortar.					
		a) Labour					1.40
		Mate	day	0.020	354.00	7.08	L-12 L-13
		Mazdoor for dismantling, loading and unloading.	day	0.500	310.00	155.00	L-13
		b) Machinery					
		Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
		c) GST @ 12 % on (a+b)				34.88	
		d) Overhead charges @ 10 % on (a+b+c	c)			32.55	
		e) Contractor's profit @ 10 % on (a+b+c	•			35.81	
		f) Cess @ 1% on (a+b+c+d+e)	,			3.94	
		Cost for 1.25 cum = a+b+c+d+e+f				397.81	
		Rate per cum = (a+b+c+d+e+f)/ 1.25				318.25	
		(a b c a c ),c			say	318.00	
2.4 (iii)	D	Dry rubble masonry			•		
		a) Labour					
		Mate	day	0.018	354.00	6.37	L-12
		Mazdoor for dismantling, loading and	day	0.450	310.00	139.50	L-13
		unloading.					
		b) Machinery Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			Houl	0.270	470.11	32.93	
		c) GST @ 12 % on (a+b)	٠,			30.74	
		d) Overhead charges @ 10 % on (a+b+c	•			33.81	
		e) Contractor's profit @ 10 % on (a+b+	c+a)				
		f) Cess @ 1% on (a+b+c+d+e)				3.72	
		Cost for 1.25 cum = a+b+c+d+e+f				375.62	
		Rate per cum = (a+b+c+d+e+f)/ 1.25			621/	300.50 <u>301.00</u>	
2.4 (iii)	Е	Dismantling stone pitching/ dry stone spa	IIs.		say	301.00	
	-	a) Labour					
		Mate	day	0.020	354.00	7.08	L-12
		Mazdoor for dismantling, loading and	day	0.400	310.00	124.00	L-13
		unloading.	,				
		b) Machinery					
		Tractor-trolley	hour	0.270	476.11	128.55	P&M-053

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	<u> </u>		c) GST @ 12 % on (a+b)	<u> </u>			31.16	
			d) Overhead charges @ 10 % on (a+b+	c)			29.08	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			31.99	
			f) Cess @ 1% on (a+b+c+d+e)				3.52	
			Cost for 1.25 cum = a+b+c+d+e+f				355.38	
			Rate per cum = $(a+b+c+d+e+f)/1.25$				284.30	
						say	<u>284.00</u>	
2.4 (iii)		F	Dismantling boulders laid in wire crates i dismantled materials.  a) Labour	ncluding	g opening	of crates a	nd stacking	
			Mate	day	0.020	354.00	7.08	L-12
			Mazdoor for dismantling, loading and	day	0.500	310.00	155.00	L-13
			unloading					
			b) Machinery					
			Tractor-trolley	hour	0.270	476.11	128.55	P&M-053
			c) GST @ 12 % on (a+b)				34.88	
			d) Overhead charges @ 10 % on (a+b+	c)			32.55	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			35.81	
			f) Cess @ 1% on (a+b+c+d+e)				3.94	
			Cost for 1.25 cum = a+b+c+d+e+f				397.81	
			Rate per cum = $(a+b+c+d+e+f)/1.25$				318.25	
						say	<u>318.00</u>	
2.4		,	Wood Work wrought framed and fixed in above plinth level  a) Labour Mate Carpenter Mazdoor for dismantling, loading and unloading. b) Machinery Tractor-trolley c) GST @ 12 % on (a+b)	day day day hour	0.060 0.500 1.000	354.00 442.00 310.00 476.11	21.24 221.00 310.00 128.55 81.69	L-12 L-04 L-13 P&M-053
			d) Overhead charges @ 10 % on (a+b+	c)			76.25	
			e) Contractor's profit @ 10 % on (a+b+	c+d)			83.87	
			f) Cess @ 1% on (a+b+c+d+e)				9.23	
			Cost for 1.25 cum = a+b+c+d+e+f				931.83	
			Rate per cum = $(a+b+c+d+e+f)/1.25$				745.46	
						say	<u>745.00</u>	
2.4			Steel Work in all types of sections up excluding cutting of rivet.  Unit = tonne  Taking output = 1 tonne Including dismembering a) Labour	to a he	ight of 5	m above	plinth level	
			Mate	day	0.140	354.00	49.56	L-12
			Blacksmith	day	1.000	442.00	442.00	L-02
			Mazdoor for dismantling, loading and	day	2.500	310.00	775.00	L-13
			unloading Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc.				31.66	
			b) Machinery Tractor-trolley	hour	0.170	476.11	80.94	P&M-053
				HOUI	0.170	470.11	165.50	000
			c) GST @ 12 % on (a+b)	۵)				
			d) Overhead charges @ 10 % on (a+b+	C)			154.47	

e) Contractor's profit @ 10 % on (a+b+c+d+) f) Cess @ 1% on (a+b+c+d+e) Rate per tonne = a+b+c+d+ef Rate per tonne = a+b+c+d+ef  2.4 (v)  B Excluding dismembering. a) Labour Mate Mazdoor for dismantling, loading and day 0,200 354,00 620,00 L-13 unloading Blacksmith day 0,500 442,00 221,00 620,00 L-13 Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc. b) Machinary Tractor-trolley c) GST @ 12 % on (a+b) c) Gess @ 1% on (a+b+c+d+e) Rate per tonne = a+b+c+d+e+ Blacksmith day 0,130 442,00 221,00 L-22 3,000 130,00 620,00 L-13 3,000 142,00 221,00 L-22 3,000 142,00 147 3,000 147,000 147,000 114,55 a) Contractor's profit @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate per tonne = a+b+c+d+e+d+e  Blacksmith day 0,130 442,00 57,46 L-22 4,000 143,000 14	OI NO N	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
Rate per tonne = a+b+c+d+e+f   Say   188.7.73   188.60   2.4 (v)   B   Excluding dismembering.					:+d)				
2.4 (v) B Excluding dismembering.  a) Labour  Mate			f)	Cess @ 1% on (a+b+c+d+e)				18.69	
2.4 (v) B Excluding dismembering. a) Labour Mate Mazdoor for dismantling, loading and day 0.220 354.00 77.88 L-12 Mate Mazdoor for dismantling, loading and day 0.500 310.00 620.00 L-13 unloading Blacksmith Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc. b) Machinery Tractor-trolley hour 0.170 476.11 80.94 P&M-053 c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on (a+b+c+d) f) Cess @ 1% on (a+b+c+d+e) Rate per tonne = a+b+c+d+e+f Rate per tonne = a+b+c+d+e+f Blacksmith day 0.130 354.00 3.54 L-12 Mazdoor Cost @ 12 % on (a+b) c) OstT @ 12 % on (a+b) c) OstT @ 12 % on (a+b) c) OstT @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b+c) d) Contractor's profite @ 10 % on (a+b+c) e) Coss @ 1% on (a+b+c+d) f) Coss @ 1% on (a+b+c-d+e) f) Coss @ 1% on (a+b+c-d+e) f) Cost for 10 rivets a -a+b-c-d+e f) Cost for 10 rivets a -a+b-c-d			R	ate per tonne = a+b+c+d+e+f					
a) Labour   Mate		_	_				say	<u> 1888.00</u>	
Mate	2.4 (v)	E	3 E						
Mazdoor for dismantling, loading and unloading   Blacksmith   Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc.									1 40
unloading Blacksmith day 0.500 442.00 221.00 L02 Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc. b) Machinery Tractor-trolley hour 0.170 476.11 80.94 P&M-053 c) GST @12 % on (a+b) d) Overhead charges @ 10 % on (a+b+c) 114.55 e) Contractor's profit @ 10 % on (a+b+c+d) 126.01 f) Cess @1% on (a+b+c+d+e)f 1399.94  2.4 (v) C Extra over item No( v ) A and( v ) B for cutting rivets.  Unit = each Taking output = 10 rivets a) Labour Mate day 0.100 354.00 3.54 L12 Blacksmith day 0.130 442.00 57.46 L02 Mazdoor c) GST @12 % on (a+b) 313.87 Cost for 10 rivets = a+b+c+d+e day 0.130 310.00 40.30 L13 c) Overhead charges @ 10 % on (a+b+c) 12.48 e) Cess @ 1% on (a+b+c+d) 138.86 Rate for each rivet = (a+b+c+d+e)/10 138.86 Rate for each rivet = (a+b+c+d+e)/10 138.86 In lime/Cement mortar a) Labour Mate day 0.140 354.00 49.56 L12 Mazdoor day 0.140 354.00 185.00 L13 C) GST @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) lime/Cement mortar a) Labour Mate day 0.140 354.00 49.56 L12 Mazdoor day 3.500 310.00 1085.00 L13 c) GST @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per1000 Nos = a+b+c+d+e Rate per10					_				
Blacksmith					uay	2.000	310.00	020.00	L-10
Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc.				8	dav	0.500	442.00	221.00	L-02
b) Machinery   hour 0.170 476.11 80.94 P&M-053					,				
Tractor-trolley			CI	utting, ropes, pulleys etc.					
c) GST @ 12 % on (a+b)				·					
d)   Overhead charges @ 10 % on (a+b+c)   114.55     e)   Contractor's profit @ 10 % on (a+b+c+d)   126.01     f)   Cess @ 1% on (a+b+c+d+e)   13.86     Rate per tonne = a+b+c+d+e+f   1399.94     Say 1400.00     2.4 (v)   C   Extra over item No( v ) A and( v ) B for cutting rivets.				•	hour	0.170	476.11		P&M-053
e) Contractor's profit @ 10 % on (a+b+c+d)   126.01   f) Cess @ 1% on (a+b+c+d+e)   13.86   Rate per tonne = a+b+c+d+e+f   13.89.94    2.4 (v) C Extra over item No( v ) A and( v ) B for cutting rivets.  Unit = each  Taking output = 10 rivets a) Labour  Mate  Blacksmith day 0.130 354.00 3.54 1.12   Mazdoor day 0.130 310.00 40.30 1.13   C) GST @ 12 % on (a+b)   11.35   C) Overhead charges @ 10 % on (a+b+c)   12.48   e) Cess @ 1% on (a+b+c+d+e)   13.86   Rate for each rivet = (a+b+c+d+e)   13.87    Unit = numbers  Taking output = 1000 numbers  A In lime/Cement mortar a) Labour  Mate  Mazdoor  Mate  Mazdoor  C) GST @ 12 % on (a+b)   13.86   C) GST @ 12 % on (a+b)   13.86   C) GST @ 12 % on (a+b)   13.87    2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers  Taking output = 1000 numbers  A In lime/Cement mortar a) Labour  Mate  Mazdoor  Mate  Mazdoor  C) GST @ 12 % on (a+b)   127.07   C) GST @ 12 % on (a+b)   127.07   C) GST @ 12 % on (a+b+c+d)   127.07   C) GST @ 12 % on (a+b)   127.07   C) GST @ 12 % on (a+b+c+d)   127.07   C) Cortractor's profit @ 10 % on (a+b+c)   139.78   C) Cortractor's profit @ 10 % on (a+b+c)   139.78   C) Cortractor's profit @ 10 % on (a+b+c)   127.07   C) GST @ 12 % on (a)   48.62   C) Overhead charges @ 10 % on (a+b+c)   45.38   C) Cortractor's profit @ 10 % on (a+b+c)   45.38   C) Cortractor's profit @ 10 % on (a+b+c)   45.38   C) Cortractor's profit @ 10 % on (a+b+c)   45.38   C) Cortractor's profit @ 10 % on (a+b+c)   45.38   C) Cortractor's profit @ 10 % on (a+b+c)   45.48   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortractor's profit @ 10 % on (a+b+c)   49.92   C) Cortr									
13.86 Rate per tonne = a+b+c+d+e+f  Rate per tonne = a+b+c+d+e+f  2.4 (v)  C Extra over item No( v ) A and( v ) B for cutting rivets.  Unit = each  Taking output = 10 rivets a) Labour  Mate  day 0.010 354.00 354.00 3.54 1-12 Blacksmith day 0.130 442.00 57.46 1-02 Mazdoor c) GST @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d)  2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers  Taking output = 1000 numbers  In lime/Cement mortar a) Labour  Mate Mazdoor day 0.140 354.00 49.56 1-12 Mazdoor day 0.140 354.00 49.56 1-13 C) GST @ 12 % on (a+b) C) Overhead charges @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) 13.87  2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers  Taking output = 1000 numbers In lime/Cement mortar a) Labour  Mate Mazdoor day 0.140 354.00 49.56 1-12 C) GST @ 12 % on (a+b) C) Overhead charges @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per1000 Nos = a+b+c+d+e  1552.94 Rate per1000 Nos = a+b+c+d+e  1552.94  2.4 (iv)  B In mud mortar a) Labour  Mate Auzdoor day 0.050 354.00 17.70 1-12 Mazdoor e) Cess @ 1% on (a+b+c+d) Back Day 0.050 354.00 17.70 1-12 Mazdoor b) GST @ 12 % on (a) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a) Di Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a) Di Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) e) Cess @ 14 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			d	) Overhead charges @ 10 % on (a+b+	<b>c)</b>				
Rate per tonne = a+b+c+d+e+f   1399.94   say   1400.00			e	) Contractor's profit @ 10 % on (a+b+	:+d)			126.01	
2.4 (v) C Extra over item No( v ) A and( v ) B for cutting rivets:    Unit = each   Taking output = 10 rivets     a) Labour   Mate   day   0.010   354.00   3.54   1.12     Blacksmith   day   0.130   442.00   57.46   1.02     Mazdoor   c) GST @ 12 % on (a+b)   11.35     c) Overhead charges @ 10 % on (a+b+c)   12.48     e) Cess @ 1% on (a+b+c+d)   138.66     Rate for each rivet = (a+b+c+d+e)/10   138.66     Cost for 10 rivets = a+b+c+d+e   138.66     Rate for each rivet = (a+b+c+d+e)/10   138.66     Cost for 10 rivets = a+b+c+d+e   138.66     Cost @ 12 % on (a+b)   138.60     Cost @ 12 % on (a+b)   138.61     Cost @ 12 % on (a+b)   138.61     Cost @ 12 % on (a+b)   138.61     Cost @ 12 % on (a+b+c+d)   15.38     Rate per1000 Nos = a+b+c+d+e   1553.00     Cost @ 1% on (a+b+c+d)   1553.00     Cost @ 1% on (a+b+c+d+e   1553.00     Cost @ 12 % on (a+b)   1250   310.00   387.50     Cost @ 12 % on (a+b)   1250   310.00   387.50     Cost @ 12 % on (a+b)   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50     Cost @ 12 % on (a+b+c+d+e   1250   310.00   387.50			f)	Cess @ 1% on (a+b+c+d+e)				13.86	
2.4 (v)			R	ate per tonne = a+b+c+d+e+f					
Unit = each   Taking output = 10 rivets   a   Labour   Mate   day   0.010   354.00   3.54   L-12   Blacksmith   day   0.130   442.00   57.46   L-02   Mazdoor   day   0.130   310.00   40.30   L-13   11.35   C   Overhead charges @ 10 % on (a+b)   12.16   C   Overhead charges @ 10 % on (a+b+c)   13.37   C   Cost for 10 rivets = a+b+c+d+e   138.66   Rate for each rivet = (a+b+c+d+e)/10   13.87   Say   14.00		_					say	<u>1400.00</u>	
Taking output = 10 rivets a) Labour  Mate Blacksmith day 0.130 442.00 57.46 L-02  Mazdoor c) GST @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Cost for 10 rivets = a+b+c+d+e)/10  2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers Taking output = 1000 numbers A In lime/Cement mortar a) Labour Mate Mazdoor c) GST @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b+c) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) 13.87  2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers Taking output = 1000 numbers A In lime/Cement mortar a) Labour Mate day 0.140 354.00 49.56 L-12 Abour Macoor day 3.500 310.00 1085.00 L-13 C) GST @ 12 % on (a+b) C) Overhead charges @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) B In mud mortar a) Labour Mate Macoor day 0.050 354.00 17.70 L-12 Mazdoor day 1.250 310.00 387.50 L-13 Macoor day 45.38 Macoor day 45.40 Macoor day 45.4	2.4 (v)	(		* * * * * * * * * * * * * * * * * * * *	ting rive	ets.			
a) Labour  Mate  Mate  Blacksmith  day  0.130  354.00  3.54  L-12  Blacksmith  day  0.130  340.00  57.46  L-02  Mazdoor  day  0.130  310.00  40.30  L-13  c) GST @ 12 % on (a+b)  Cost for 10 rivets = a+b+c+d+e  Rate for each rivet = (a+b+c+d+e)/10  2.4  (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers  Taking output = 1000 numbers  A In lime/Cement mortar  a) Labour  Mate  Mazdoor  day  0.140  354.00  49.56  L-12  Mazdoor  day  3.500  310.00  1085.00  L-13  c) GST @ 12 % on (a+b)  c) Overhead charges @ 10 % on (a+b)  d) Contractor's profit @ 10 % on (a+b+c)  e) Cess @ 1% on (a+b+c+d)  f) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers  Taking output = 1000 numbers  A In lime/Cement mortar  a) Labour  Mate  day  0.140  354.00  49.56  L-12  130.76  L-13  c) Overhead charges @ 10 % on (a+b)  c) Overhead charges @ 10 % on (a+b+c)  e) Cess @ 1% on (a+b+c+d)  Rate per1000 Nos = a+b+c+d+e  1552.94  2.4 (iv)  B In mud mortar  a) Labour  Mate  day  0.050  354.00  17.70  L-12  Mazdoor  day  1.250  310.00  387.50  L-13  b) GST @ 12 % on (a)  c) Overhead charges @ 10 % on (a+b+c)  d) Contractor's profit @ 10 % on (a+b+c)  d) Contractor's profit @ 10 % on (a+b+c)  e) GST @ 12 % on (a)  c) Overhead charges @ 10 % on (a+b+c)  d) Contractor's profit @ 10 % on (a+b+c)  e) Cess @ 1% on (a+b+c+d)  5.49			_						
Mate day 0.010 354.00 3.54 L-12 Blacksmith day 0.130 442.00 57.46 L-02 Mazdoor day 0.130 310.00 40.30 L-13 c) GST @ 12 % on (a+b) (2 Cotractor's profit @ 10 % on (a+b+c) 11.35 d) Cotractor's profit @ 10 % on (a+b+c) 12.48 e) Cess @ 1% on (a+b+c+d+e) 138.66 Rate for each rivet = (a+b+c+d+e)/10 13.87 Say 14.00 2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers Taking output = 1000 numbers  A In lime/Cement mortar a) Labour Mate day 0.140 354.00 49.56 L-12 Mazdoor day 3.500 310.00 1085.00 L-13 (2 C) GST @ 12 % on (a+b) 136.15 c) Overhead charges @ 10 % on (a+b+c) 139.78 e) Cess @ 1% on (a+b+c+d) 153.88 Rate per1000 Nos = a+b+c+d+e day 0.050 354.00 17.70 L-12 Mazdoor day 0.050 354.00 17.70 L-12 Mazdoor day 1.250 310.00 387.50 L-13 h) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 48.62 c) Overhead charges @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 54.99				<del>-</del>					
Blacksmith   day   0.130   442.00   57.46   L-02   Mazdoor   day   0.130   310.00   40.30   L-13					dav	0.010	354.00	3.54	L-12
c) GST @ 12 % on (a+b)					_				L-02
c) Overhead charges @ 10 % on (a+b)			M	lazdoor	day	0.130	310.00	40.30	L-13
d) Contractor's profit @ 10 % on (a+b+c)			C	) GST @ 12 % on (a+b)				12.16	
e) Cess @ 1% on (a+b+c+d) 1.37			C	Overhead charges @ 10 % on (a+b)				11.35	
Cost for 10 rivets = a+b+c+d+e Rate for each rivet = (a+b+c+d+e)/10  2.4  (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers  Taking output = 1000 numbers  A In lime/Cement mortar  a) Labour  Mate  Mazdoor  C) GST @ 12 % on (a+b)  C) Overhead charges @ 10 % on (a+b)  e) Cess @ 1% on (a+b+c+d)  B In mud mortar  a) Labour  Mate  day 0.140 354.00 49.56 L-12  Mazdoor  day 3.500 310.00 1085.00 L-13  136.15  c) Overhead charges @ 10 % on (a+b)  127.07  d) Contractor's profit @ 10 % on (a+b+c)  e) Cess @ 1% on (a+b+c+d+e)  2.4 (iv)  B In mud mortar  a) Labour  Mate  day 0.050 354.00 17.70 L-12  Mazdoor  day 1.250 310.00 387.50 L-13  b) GST @ 12 % on (a)  c) Overhead charges @ 10 % on (a+b)  day 1.250 310.00 387.50 L-13  day 0.050 354.00 17.70 L-12  Mazdoor  day 1.250 310.00 387.50 L-13  day 0.050 354.00 17.70 L-12  Mazdoor  day 1.250 310.00 387.50 L-13  day 0.050 354.00 17.70 L-12  Mazdoor  day 1.250 310.00 387.50 L-13  day 0.050 354.00 17.70 L-12  Mazdoor  day 1.250 310.00 387.50 L-13  day 0.050 354.00 17.70 L-12  Mazdoor  day 1.250 310.00 387.50 L-13  b) GST @ 12 % on (a)  c) Overhead charges @ 10 % on (a+b)  day 1.250 310.00 387.50 L-13  day 0.050 354.00 17.70 L-12  Mazdoor  day 0.050 354.00 17.70			d	) Contractor's profit @ 10 % on (a+b+	<b>c</b> )			12.48	
2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers			e	) Cess @ 1% on (a+b+c+d)				1.37	
2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers			С	ost for 10 rivets = a+b+c+d+e				138.66	
2.4 (vi) Scraping of Bricks Dismantled from Brick Work including Stacking.  Unit = numbers			R	ate for each rivet = ( a+b+c+d+e)/10				13.87	
Unit = numbers							•	<u>14.00</u>	
Taking output = 1000 numbers  A In lime/Cement mortar  a) Labour  Mate     Mazdoor     C) GST @ 12 % on (a+b)     C) Overhead charges @ 10 % on (a+b+c)     e) Cess @ 1% on (a+b+c+d)  Rate per1000 Nos = a+b+c+d+e  2.4 (iv)  B In mud mortar     a) Labour  Mate     Mazdoor     day 0.140 354.00 49.56 L-12  day 3.500 310.00 1085.00 L-13  136.15  127.07  d) Contractor's profit @ 10 % on (a+b+c)     e) Cess @ 1% on (a+b+c+d)  Rate per1000 Nos = a+b+c+d+e  2.4 (iv)  B In mud mortar     a) Labour  Mate     day 0.050 354.00 17.70 L-12  Mazdoor     day 1.250 310.00 387.50 L-13  b) GST @ 12 % on (a)  c) Overhead charges @ 10 % on (a+b)     d) Contractor's profit @ 10 % on (a+b+c)     e) Cess @ 1% on (a+b+c+d)  Cess @ 1% on (a+b+c+d)  5.49	2.4	(v		· -	Work ir	ncluding S	tacking.		
A In lime/Cement mortar  a) Labour  Mate     Mazdoor     C) GST @ 12 % on (a+b)     C) Overhead charges @ 10 % on (a+b+c)     e) Cess @ 1% on (a+b+c+d)  Rate per1000 Nos = a+b+c+d+e  2.4 (iv)  B In mud mortar     a) Labour  Mate     Mazdoor     Mazdoor     A lo lime/Cement mortar     A lo lime/Cement mortar									
a) Labour  Mate									
Mate Mazdoor day 0.140 354.00 49.56 L-12 day 3.500 310.00 1085.00 L-13 c) GST @ 12 % on (a+b) 136.15 c) Overhead charges @ 10 % on (a+b) 127.07 d) Contractor's profit @ 10 % on (a+b+c) 139.78 e) Cess @ 1% on (a+b+c+d) 15.38 Rate per1000 Nos = a+b+c+d+e 1552.94 say 1553.00 2.4 (iv) B In mud mortar a) Labour Mate day 0.050 354.00 17.70 L-12 Mazdoor day 1.250 310.00 387.50 L-13 b) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b+c) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49		,							
Mazdoor c) GST @ 12 % on (a+b) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per1000 Nos = a+b+c+d+e  2.4 (iv) B In mud mortar a) Labour Mate Mazdoor Mate Mazdoor b) GST @ 12 % on (a) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b) d) GST @ 12 % on (a) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) 5.49					dav	0.140	354.00	49.56	L-12
c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per1000 Nos = a+b+c+d+e  2.4 (iv)  B In mud mortar a) Labour Mate Mazdoor Mazdoor b) GST @ 12 % on (a) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d)  152.94  2.4 (iv)  B In mud mortar a) Labour Mate Mazdoor day 0.050 354.00 17.70 L-12 day 1.250 310.00 387.50 L-13  48.62 c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d)  5.49					_				L-13
d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d) Rate per1000 Nos = a+b+c+d+e  2.4 (iv)  B In mud mortar a) Labour Mate Mazdoor b) GST @ 12 % on (a) c) Overhead charges @ 10 % on (a+b) d) Contractor's profit @ 10 % on (a+b+c) e) Cess @ 1% on (a+b+c+d)  15.38  1552.94  say 1553.00  2.4 (iv)  B In mud mortar a) Labour  Mate day 0.050 354.00 17.70 L-12  48.62 48.62 49.92  49.92  49.92  60 Cess @ 1% on (a+b+c+d)  5.49			C	) GST @ 12 % on (a+b)				136.15	
e) Cess @ 1% on (a+b+c+d) 15.38 Rate per1000 Nos = a+b+c+d+e 1552.94 say 1553.00  2.4 (iv) B In mud mortar a) Labour Mate day 0.050 354.00 17.70 L-12 Mazdoor day 1.250 310.00 387.50 L-13 b) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49			C	Overhead charges @ 10 % on (a+b)				127.07	
Rate per1000 Nos = a+b+c+d+e  2.4 (iv)  B In mud mortar a) Labour  Mate			d	) Contractor's profit @ 10 % on (a+b+	<b>c</b> )			139.78	
2.4 (iv)  B In mud mortar a) Labour  Mate day 0.050 354.00 17.70 L-12  Mazdoor day 1.250 310.00 387.50 L-13 b) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49			e	) Cess @ 1% on (a+b+c+d)				15.38	
2.4 (iv)  B In mud mortar a) Labour  Mate day 0.050 354.00 17.70 L-12  Mazdoor day 1.250 310.00 387.50 L-13 b) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49			R	ate per1000 Nos = a+b+c+d+e				1552.94	
a) Labour  Mate day 0.050 354.00 17.70 L-12  Mazdoor day 1.250 310.00 387.50 L-13  b) GST @ 12 % on (a) 48.62  c) Overhead charges @ 10 % on (a+b) 45.38  d) Contractor's profit @ 10 % on (a+b+c) 49.92  e) Cess @ 1% on (a+b+c+d) 5.49							say	<u>1553.00</u>	
Mate day 0.050 354.00 17.70 L-12  Mazdoor day 1.250 310.00 387.50 L-13  b) GST @ 12 % on (a) 48.62  c) Overhead charges @ 10 % on (a+b) 45.38  d) Contractor's profit @ 10 % on (a+b+c) 49.92  e) Cess @ 1% on (a+b+c+d) 5.49	2.4 (iv)	E	3 Ir						
Mazdoor day 1.250 310.00 387.50 L-13 b) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49							<b>.</b>		1.46
b) GST @ 12 % on (a) 48.62 c) Overhead charges @ 10 % on (a+b) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49					_				
c) Overhead charges @ 10 % on (a+b) 45.38 d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49					day	1.250	310.00		L-13
d) Contractor's profit @ 10 % on (a+b+c) 49.92 e) Cess @ 1% on (a+b+c+d) 5.49									
e) Cess @ 1% on (a+b+c+d) 5.49					-1				
					-)				
Rate per1000 Nos = a+b+c+d+e 554.61 say <u>555.00</u>			K	ale pel 1000 NOS - atutctute			691		

	T-		SITE CLEARANC					T
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
2.4		(vii)	Scraping of Stone from Dismantled Stone M	lasonr	у			
			Unit = cum					
			Taking output = 1 cum					
		Α	In cement and lime mortar					
			a) Labour Mate	day	0.060	354.00	21.24	L-12
			Mazdoor	day	1.400	310.00	434.00	L-13
			b) GST @ 12 % on (a)			2.0.00	54.63	
			c) Overhead charges @ 10 % on (a+b)				50.99	
			d) Contractor's profit @ 10 % on (a+b+c)				56.09	
			e) Cess @ 1% on (a+b+c+d)				6.17	
			Rate per cum = a+b+c+d+e				623.12	
			•			say	<u>623.00</u>	
2.4 (vi	i)	В	In Mud mortar			-		
			a) Labour					
			Mate	day	0.010	354.00	3.54	L-12
			Mazdoor	day	0.300	310.00	93.00	L-13
			b) GST @ 12 % on (a)				11.58	
			c) Overhead charges @ 10 % on (a+b)				10.81	
			d) Contractor's profit @ 10 % on (a+b+c)				11.89	
			e) Cess @ 1% on (a+b+c+d)				1.31	
			Rate per cum = a+b+c+d+e				132.13	
_		,		_		say	<u>132.00</u>	
2.4		(viii)	Scarping Plaster in Lime or Cement Mortar	from B	rick/ Ston	e Masonry		
			Unit = sqm					
			Taking output = 100 sqm					
			a) Labour Mate	day	0.160	354.00	56.64	L-12
			Mazdoor for scarping and loading	day	4.000	310.00	1240.00	L-13
			b) Machinery	,	555	3.0.00		
			Tractor-trolley	hour	0.320	476.11	152.36	P&M-053
			c) GST @ 12 % on (a+b)				173.88	
			d) Overhead charges @ 10 % on (a+b+c)				162.29	
			e) Contractor's profit @ 10 % on (a+b+c+	d)			178.52	
			f) Cess @ 1% on (a+b+c+d+e)				19.64	
			Cost for 100 sqm = a+b+c+d+e+f				1983.33	
			Rate per sqm = $(a+b+c+d+e+f)/100$				19.83	
						say	<u>20.00</u>	
2.4		(ix)	Removing all type of Hume Pipes and St including Earthwork and Dismantling of Ma <i>Unit</i> = metre	_	-	lead of 10	000 metres	
			Taking output = 1 metre					
		Α	Up to 600 mm dia					
			a) Labour					
			Mate	day	0.020	354.00	7.08	L-12
			Mazdoor	day	0.520	310.00	161.20	L-13
			b) GST @ 12 % on (a)				20.19	
			c) Overhead charges @ 10 % on (a+b)				18.85	
			d) Contractor's profit @ 10 % on (a+b+c)				20.73	
			e) Cess @ 1% on (a+b+c+d)				2.28	
			Rate per meter = a+b+c+d+e				230.33	
2.4/1-2	,	P	Abovo 600 mm to 000 mm dia			say	<u>230.00</u>	
2.4 (ix)	J	В	Above 600 mm to 900 mm dia					
			a) Labour	dov	0.030	354.00	10.60	L-12
			Mate	day	0.030	354.00	10.62	L-12

Sr No Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
орес.		Mazdoor	day	0.700	310.00	217.00	L-13
		b) GST @ 12 % on (a)	aay	0.100	010.00	27.31	
		c) Overhead charges @ 10 % on (a+b)				25.49	
		d) Contractor's profit @ 10 % on (a+b+	·c)			28.04	
		e) Cess @ 1% on (a+b+c+d)	,			3.08	
		Rate per meter = a+b+c+d+e				311.54	
		·			say	<u>312.00</u>	
2.4 (ix)	С	Above 900 mm					
		a) Labour	al a	0.050	254.00	47.70	L-12
		Mate Mazdoor	day day	0.050 1.200	354.00 310.00	17.70 372.00	L-12 L-13
		b) GST @ 12 % on (a)	uay	1.200	310.00	46.76	
		c) Overhead charges @ 10 % on (a+b)				43.65	
		d) Contractor's profit @ 10 % on (a+b+	·c)			48.01	
		e) Cess @ 1% on (a+b+c+d)	-,			5.28	
		Rate per meter = a+b+c+d+e				533.40	
					say	<u>533.00</u>	
	Note	1. The excavation of earth, dismantling of sto in head walls and protection works is not inc measured and paid separately.		-			
		2. Credit for retrieved stone from masonry was per actual availability.	ork may b	e taken			
2.5 202		Dismantling of Flexible Pavements					
		Dismantling of flexible pavements and disposit 1000 metres, stacking serviceable and unse			-	to a lead of	•
		Unit = cum	rrocabio	materiale e	oparatory		
		Taking output = 1 cum					
	I	By Manual Means					
	Α	Bituminous courses					
		a) Labour	-1	0.000	254.00	04.04	L-12
		Mate Mazdoor for dismantling, loading and	day day	0.060 1.500	354.00 310.00	21.24 465.00	L-12 L-13
		unloading	day	1.000	010.00	400.00	
		b) Machinery					
		Tractor-trolley	hour	0.380	476.11	180.92	P&M-053
		c) GST @ 12 % on (a+b)				80.06	
		d) Overhead charges @ 10 % on (a+b+	·c)			74.72	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			82.19	
		f) Cess @ 1% on (a+b+c+d+e)				9.04	
		Rate per cum = a+b+c+d+e+f				913.17	
0.51	ь	Output de la companie			say	<u>913.00</u>	
2.5 I	В	Granular courses					
		a) Labour Mate	day	0.040	354.00	14.16	L-12
		Mazdoor for dismantling, loading and	day	1.000	310.00	310.00	L-13
		unloading.	,				
		b) Machinery Tractor-trolley	hour	0.330	476.11	157.12	P&M-053
		c) GST @ 12 % on (a+b)		2.300		57.75	
		d) Overhead charges @ 10 % on (a+b+	·c)			53.90	
			-				
		e) Contractor's profit @ 10 % on (a+b+	c+u)			59.29	
		f) Cess @ 1% on (a+b+c+d+e)				6.52	
		Rate per cum = a+b+c+d+f			say	658.74 <u>659.00</u>	

				SITE CLEARA	NCE				
Sr No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
2.5	1	II	By N	Mechanical Means					
		Α	Bitur	minous course					
			,	Labour			05400	0.54	L-12
			Mate		day	0.010	354.00	3.54	L-12 L-13
			Mazo b)	Machinery	day	0.300	310.00	93.00	L-10
			-	cor-trolley	hour	0.380	476.11	180.92	P&M-053
				ractor with ripper @ 60 cum per hour	hour	0.020	420.35	8.41	P&M-055
				., .		0.020	0.00		
			c)	GST @ 12 % on (a+b)				34.30	
			d)	Overhead charges @ 10 % on (a+b+	-			32.02	
			e)	Contractor's profit @ 10 % on (a+b+	c+d)			35.22	
			f)	Cess @ 1% on (a+b+c+d+e)				3.84	
			Rate	per cum = a+b+c+d+f				391.25	
2.6	202		Diam	contline of Coment Concrete Devemo	<b>n</b> 4		say	<u>391.00</u>	
2.0	202			nantling of Cement Concrete Paveme antling of cement concrete pavement by				4: - 41 -	
			servio Unit Takii	ions and disposal of dismantled mater ceable and unserviceable materials sep = cum ng output = 1 cum	•	a lead of	1000 metr	es, stacking	
			a)	Labour					
			Mate		day	0.030	354.00	10.62	L-12
				skilled mazdoor for operating	day	0.500	354.00	177.00	L-14
			•	matic tools loors as helpers including loading and	day	0.500	310.00	155.00	L-13
			unloa	ading	uay	0.300	310.00	100.00	
			b)	Machinery		4.000	F7F 00	F7F 00	P&M-001
				ompressor 250 cfm with two leads for matic cutters/ hammers @ 1 cum per	hour	1.000	575.22	575.22	F XIVI-00 I
				cor-trolley	hour	0.400	476.11	190.44	P&M-053
				Cutting Machine with 2-3 blades	hour	1.000	125.66	125.66	P&M-083
			c)	GST @ 12 % on (a+b)	noui	1.000	120.00	148.07	
			d)	Overhead charges @ 10 % on (a+b+	c)			138.20	
			e)	Contractor's profit @ 10 % on (a+b+	-			152.02	
			f)	Cess @ 1% on (a+b+c+d+e)	C+u)			16.72	
			•	per cum = a+b+c+d+f				1688.95	
			Kale	per cuin - a-b-c-u-i			say	1689.00	
		Note	case disma	above analysis is for removal of com full depth repair work is required antling, provision of a concrete cutting a be added for 0.25 hours.	to be o	done after	•	1000.00	
2.7	202		•	nantling of Guard Rails					
			lifts a	antling guard rails by manual means a and up to a lead of 1000 metres, stacki rials separately. = running metre					
				ng output = 1 metre					
				Labour					
			Mate		day	0.010	354.00	3.54	L-12
			Mazo	door including loading and unloading	day	0.150	310.00	46.50	L-13
			b)	Machinery					
				or-trolley	hour	0.050	476.11	23.81	P&M-053
			Tract c) d)	or-trolley GST @ 12 % on (a+b) Overhead charges @ 10 % on (a+b+		0.050	476.11	23.81 8.86 8.27	P&M-053

Page : 77

		SITE CLEARA	NCE				
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)			9.10	
		f) Cess @ 1% on (a+b+c+d+e)				1.00	
		Rate per metre = a+b+c+d+e+f				101.08	
					say	<u>101.00</u>	
2.8	202	Dismantling of Kerb Stone Dismantling kerb stone by manual means ar lifts and up to a lead of 1000 metre	ıd disposa	al of dismar	ntled materia	al with all	
		Unit = running metre  Taking output = 10 metre  a) Labour					
		Mate	day	0.010	354.00	3.54	L-12
		Mazdoor including loading and unloading	day	0.010	310.00	46.50	L-13
			day	0.100	010.00	40.00	
		b) Machinery	L	0.000	470 44	05.00	D 0 M 0 E 2
		Tractor-trolley	hour	0.200	476.11	95.22	P&M-053
		c) GST @ 12 % on (a+b)				17.43	
		d) Overhead charges @ 10 % on (a+b+	•			16.27	
		e) Contractor's profit @ 10 % on (a+b+	·c+d)			17.90	
		f) Cess @ 1% on (a+b+c+d+e)				1.97	
		Cost for 10 m = $a+b+c+d+e+f$				198.83	
		Rate per metre = (a+b+c+d+e+f)/10				19.88	
		,			say	<u>20.00</u>	
2.9	202	Dismantling of Kerb Stone Channel			_		
		Dismantling kerb stone channel by manual with all lifts and up to a lead of 1000 metre  Unit = running metre	means ar	nd disposa	l of dismant	led material	
		Taking output = 10 metre a) Labour					
		Mate	day	0.015	354.00	5.31	L-12
		Mazdoor including loading and unloading	day	0.225	310.00	69.75	L-13
		b) Machinery Tractor-trolley	hour	0.300	476.11	142.83	P&M-053
		c) GST @ 12 % on (a+b)				26.15	
		d) Overhead charges @ 10 % on (a+b+	·c)			24.40	
			-				
		e) Contractor's profit @ 10 % on (a+b+	c+u)			26.84	
		f) Cess @ 1% on (a+b+c+d+e)				2.95	
		Cost for 10 m = $a+b+c+d+e+f$				298.23	
		Rate per metre = (a+b+c+d+e+f)/10				29.82	
0.40	202	Discussion of Kilona to Otana			say	<u>30.00</u>	
2.10	202	Dismantling of Kilometre Stone  Dismantling of kilometre stone including c dismantled material with all lifts and lead upt				disposal of	
		Unit = Each Taking output = one KM stone					
	Α	5th KM stone Quantity of cement concrete = 0.392 cum					
		a) Labour					
		Mate	day	0.130	354.00	46.02	L-12
		Mazdoor	day	0.750	310.00	232.50	L-13
		b) Machinery	•				
		Tractor-trolley	hour	0.150	476.11	71.42	P&M-053
		c) GST @ 12 % on (a+b)				41.99	
		d) Overhead charges @ 10 % on (a+b+	·c)			39.19	
		e) Contractor's profit @ 10 % on (a+b+	-			43.11	
		f) Cess @ 1% on (a+b+c+d+e)	J : 4,			4.74	
		Rate for one 5th KM stone =	i			478.97	

<u>479.00</u>

say

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	В	Ordinary KM Stone					
		Quantity of cement concrete = 0.269 cum					
		a) Labour			0=4.00		1.40
		Marte	day	0.020	354.00	7.08	L-12 L-13
		Mazdoor b) Machinery	day	0.500	310.00	155.00	L-13
		Tractor-trolley	hour	0.100	476.11	47.61	P&M-053
		c) GST @ 12 % on (a+b)		0.100		25.16	
		d) Overhead charges @ 10 % on (a+b+	c)			23.49	
		e) Contractor's profit @ 10 % on (a+b+	•			25.83	
		f) Cess @ 1% on (a+b+c+d+e)	,			2.84	
		Rate for one ordinary KM stone =				287.01	
		·			say	<u>287.00</u>	
	С	<b>Hectometre Stone</b> Quantity of cement concrete = 0.048 cum					
		a) Labour					
		Mate	day	0.004	354.00	1.42	L-12
		Mazdoor	day	0.100	310.00	31.00	L-13
		b) Machinery		0.000	470.44	0.50	D 9 M 0 E 2
		Tractor-trolley	hour	0.020	476.11	9.52	P&M-053
		c) GST @ 12 % on (a+b)	-1			5.03	
		d) Overhead charges @ 10 % on (a+b+	-			4.70	
		e) Contractor's profit @ 10 % on (a+b+	c+a)			5.17	
		f) Cess @ 1% on (a+b+c+d+e)  Rate for one Hectometre stone =				0.57 57.41	
		a+b+c+d+e+f				37.41	
2.11	202	Dismantling of Fencing			say	<u>57.00</u>	
		Dismantling of barbed wire fencing/ wire concrete, back filling of pit by manual mear with all lifts and up to a lead of 1000 runserviceable material separately.	ns includi	ng disposa	l of dismant	led material	l
		Unit = running metre					
		Taking output = 30 metres					
		a) Labour					
		Mate	day	0.150	354.00	53.10	L-12
		Mazdoor including loading and unloading	day	3.000	310.00	930.00	L-13
							L-02
		Blacksmith b) Machinery	day	0.750	442.00	331.50	L-02
		Tractor-trolley	hour	0.150	476.11	71.42	P&M-053
		c) GST @ 12 % on (a+b)				166.32	
		d) Overhead charges @ 10 % on (a+b+	c)			155.23	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			170.76	
		f) Cess @ 1% on (a+b+c+d+e)				18.78	
		Cost for 30 metres = a+b+c+d+e+f				1897.11	
		Rate per metre = $(a+b+c+d+e+f)/30$				63.24	
2.12	202	Dismantling of CI Water Pipe Line			say	<u>63.00</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	354.00	31.86	L-12
		Maz	zdoor	day	2.000	310.00	620.00	L-13
		Plur	mber	day	0.250	442.00	110.50	L-02
		b)	Machinery					
		Truc	ck 10 tonne capacity	hour	0.250	641.59	160.40	P&M-057
		Ligh	nt Crane 3 tonne capacity	hour	0.500	433.63	216.82	P&M-013
		c)	GST @ 12 % on (a+b+c)				136.75	
		d)	Overhead charges @ 10 % on	(a+b+c)			127.63	
		e)	e) Contractor's profit @ 10 % on (a+b+c+d)					
		f)	Cess @ 1% on (a+b+c+d+e)				15.44	
		Cos	t for 10 metres = a+b+c+d+e+f				1559.80	
		Rat	e per metre = (a+b+c+d+e+f)/10				155.98	
			make an about the days and brokeds as			say	<u>156.00</u>	

**Note** The rate analysis does not include any excavation in earth or dismantling of masonry works which are to be measured and paid separately.

# 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	e	day	0.100	354.00	35.40	L-12
Maz	door	day	2.500	310.00	775.00	L-13
b)	Machinery					
Crar	ne 5 tonne capacity	hour	0.300	742.48	222.74	P&M-070
Truc	k flat body 10 tonne	hour	1.000	641.59	641.59	P&M-057
c)	GST @ 12 % on (a+b+c)			200.97		
d)	Overhead charges @ 10 % on (a+	·b+c)			187.57	
e)	Contractor's profit @ 10 % on (a+	·b+c+d)			206.33	
f)	Cess @ 1% on (a+b+c+d+e)			22.70		
Cost	t for 10 metres = a+b+c+d+e+f			2292.30		
Rate	e per metre = (a+b+c+d+e+f)/10			229.23		
				sav	229 00	

**Note** The rate analysis does not include any excavation in earth or dismantling of masonry works which are to be measured and paid separately.

# 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

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	<u>'</u>	Uni	t = each	<u>'</u>				,
		Tak	ing output = 30 Nos					
		a)	Labour					
		Mat	e	day	0.480	354.00	169.92	L-12
		Maz	door	day	10.000	310.00	3100.00	L-13
		Elec	ctrician/Lineman	day	2.000	442.00	884.00	L-02
		b)	Machinery					
		Trac	ctor-trolley	hour	1.500	476.11	714.17	P&M-053
		c)	GST @ 12 % on (a+b+c)				584.17	
		d)	Overhead charges @ 10 % on (a+	·b+c)			545.23	
		e)	Contractor's profit @ 10 % on (a+	·b+c+d)			599.75	
		f)	Cess @ 1% on (a+b+c+d+e)				65.97	
		Cos	t for 30 poles = a+b+c+d				6663.21	
		Rate	e per pole = (a+b+c+d)/30				222.11	
						say	222.00	

### 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.
- 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 structure refer to Chapter 11 for items dealing with 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 provision has been made for additional requirement of electric detonators 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.

Page: 82

		EARTH WORK, EROOION CONTIN	OL AIN	יאוואוטט	<i>,</i> _		
Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.1	301	Excavation in Soil by Manual Means .					•
		Figure 4 and 4 and 5 and	1		and the second second		

Excavation for roadway in soil using manual means including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres.

### Unit = cum

Taking output = 120 cum

a)	Labour					
	Mate	day	1.800	354.00	637.20	L-12
	Mazdoor	day	45.000	310.00	13950.00	L-13
b)	Machinery					
	Truck 5.5 cum capacity	hour	10.000	641.59	6415.90	P&M-057
c)	GST @ 12 % on (a+b)				2520.37	
d)	Overhead charges @ 10 % on (a+b+c	c)			2352.35	
e)	Contractor's profit @ 10 % on (a+b+c	c+d)			2587.58	
f)	Cess @ 1% on (a+b+c+d+e)				284.63	
Co	st of 120 cum = a+b+c+d+e+f				28748.03	
Ra	te per cum = (a+b+c+d+e+f)/120				239.57	
				say	<u>240.00</u>	

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	354.00	991.20	L-12
	Mazdoor	day	70.000	310.00	21700.00	L-13
b)	Machinery					
	Truck 5.5 cum capacity	hour	10.000	641.59	6415.90	P&M-057
c)	GST @ 12 % on (a+b)				3492.85	
d)	Overhead charges @ 10 % on (a+b+c)				3260.00	
e)	Contractor's profit @ 10 % on (a+b+c+	d)			3586.00	
f)	Cess @ 1% on (a+b+c+d+e)				394.46	
Co	st of 120 cum = a+b+c+d+e+f				39840.41	
Ra	te per cum = (a+b+c+d+e+f)/120				332.00	
				say	<u>332.00</u>	

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 Secaretion 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

	9					
a)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor	day	2.000	310.00	620.00	L-13
b)	Machinery					
	Dozer, 80 HP @ 30 cum per hour	hour	6.000	4237.17	25423.02	P&M-014
c)	GST @ 12 % on (a+b)				3128.56	

_	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) Overhead charges @ 10 % on (a+b+	c)		•	2919.99	-
		e) Contractor's profit @ 10 % on (a+b+	c+d)			3211.99	
		f) Cess @ 1% on (a+b+c+d+e)				353.32	
		Cost for 180 cum = $a+b+c+d+e+f$				35685.20	
		Rate per cum = $(a+b+c+d+e+f)/180$				198.25	
3.4	301	Exceptation in Ordinant Book with Barrey	لمحما طائن		say	<u>198.00</u>	
0.4		Excavation in Ordinary Rock with Dozer was Excavation for roadway in ordinary rock by and pushing the cut earth to site of embasive average lead 50 metres ), trimming bottom requirements of lines, grades and cross sect Unit = cum  Taking output = 108 cum	deploying ankment n and sid	g a dozer, upto a dis	80 HP inclutance of 10	00 metres (	
		a) Labour		0.400	054.00	10.10	1 12
		Mazdoor	day	0.120	354.00	42.48	L-12 L-13
		Mazdoor b) Machinery	day	3.000	310.00	930.00	2-10
		Dozer, 80 HP @ 20 cum per hour	hour	6.000	4237.17	25423.02	P&M-014
		c) GST @ 12 % on (a+b)		2.300		3167.46	
		d) Overhead charges @ 10 % on (a+b+	c)			2956.30	
		e) Contractor's profit @ 10 % on (a+b+	-			3251.93	
		f) Cess @ 1% on (a+b+c+d+e)	,			357.71	
		Cost for 108 cum = a+b+c+d+e+f				36128.90	
		Rate per cum = (a+b+c+d+e+f)/108				334.53	
		( , , , , , , , , , , , , , , , , , , ,			say	335.00	
		Excavation for roadway in hard rock (re breaking, trimming of bottom and side slope grades and cross sections, loading and dis upto 1000 metres	s in acco	rdance wit	h requireme	ents of lines,	
		Unit = cum Taking 0utput = 180 cum a) Labour					
		Mate	day	0.220	354.00	77.88	L-12 L-13
		Mazdoor Driller	day day	3.000 2.000	310.00 354.00	930.00 708.00	L-06
		Blaster	day	0.250	354.00	88.50	L-03
		b) Machinery	20,	5.255	3000	23.00	
		Dozer, 80 HP @ 30 cum per hour	hour	6.000	4237.17	25423.02	P&M-014
		Air compressor, 250 cfm with 2 jack hammer	hour	6.000	575.22	3451.32	P&M-001
		Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
		Tipper10 tonne capacity c) Materials	hour	11.250	779.65	8771.06	P&M-048
		Gelatin 80 per cent	kg	63.000	164.60	10369.80	M-104
		Electric Detonators @ 1 detonator for 2 gelatin sticks of 125 gms each	each	252.000	11.04	2782.08	M-094 /100
		Credit for excavated rock found suitable for use @ 50 per cent quantity blasted	cum	90.000	(257.52)	(23176.80)	M-089
		d) GST @ 12 % on (a+b+c)				4537.71	
		e) Overhead charges @ 10 % on (a+b+	c+d)			4235.20	
		f) Contractor's profit @ 10 % on (a+b+	c+d+e)			4658.72	
		g) Cess @ 1% on (a+b+c+d+e+f)				512.46	

# **CHAPTER - 3**

			EARTH WORK, EROSION CONTR		DRAINAC	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				51758.33	
			Rate per cum = $(a+b+c+d+e+f+g)/180$				287.55	
						say	<u>288.00</u>	
		Note	1. The quality and availability of rock shall affording credit.	be chec	ked before			
			2. In case some rock is issued to the contracto carriage shall be reduced/restricted to that extent.		the item of			
.6	301		Excavation in Soil using Hydraulic Excavupto 1000 metres.	ator Ch	( 90 and 1	Tippers wit	th Disposal	
			Excavation for roadwork in soil with hydrau including cutting and loading in tippers, trimm with requirements of lines, grades and cembankment location within all lifts and lead up	ing botto cross se	om and side ections, ar	e slopes, in	accordance	:
			Unit = cum					
			Taking output = 360 cum					
			a) Labour Mate	day	0.080	354.00	28.32	L-12
			Mazdoor	day day	2.000	310.00	620.00	L-13
			b) Machinery	day	2.000	010.00	020.00	
			Hydraulic excavator 0.9 cum bucket	hour	6.000	1751.33	10507.98	P&M-026
			capacity @ 60 cum per hour Tipper 5.5 cum capacity, 4 trips per hour.	hour	16.000	779.65	12474.40	P&M-048
			c) GST @ 12 % on (a+b)				2835.68	
			d) Overhead charges @ 10 % on (a+b+c	)			2646.64	
			e) Contractor's profit @ 10 % on (a+b+c	-			2911.30	
			f) Cess @ 1% on (a+b+c+d+e)	,			320.24	
			Cost for 360 cum = a+b+c+d+e+f				32344.56	
			Rate per cum = (a+b+c+d+e+f)/360				89.85	
						say	<u>90.00</u>	
7	301		Excavation in Ordinary Rock using Hydra Disposal upto 1000 metres.	ulic Ex	cavator Ch	K-90 and T	ippers with	
			Excavation for roadway in ordinary rock wit capacity including cutting and loading in tippe all lifts and lead upto 1000 m, trimming bo requirements of lines, grades and cross section	ers, trans ttom an	sporting to	embankmer	nt site within	I
			Unit = cum					
			Taking output = 240 cum a) Labour					
			a) Labour Mate	day	0.080	354.00	28.32	L-12
			Mazdoor	day	2.000	310.00	620.00	L-13
			b) Machinery	uay	2.000	310.00	020.00	-
			Hydraulic Excavator 0.90 cum bucket capacity @ 36 cum per hour	hour	6.000	1751.33	10507.98	P&M-026
			Tipper 5.5 cum capacity, 4 trips per hour.	hour	11.000	779.65	8576.15	P&M-048
			c) GST @ 12 % on (a+b)				2367.89	
			d) Overhead charges @ 10 % on (a+b+c	)			2210.03	
			e) Contractor's profit @ 10 % on (a+b+c	-			2431.04	
			f) Cess @ 1% on (a+b+c+d+e)	,			267.41	
			Cost for 240 cum = a+b+c+d+e+f				27008.82	
			D ( )				440.54	

112.54 <u>113.00</u>

say

Rate per cum = (a+b+c+d+e+f)/240

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 prohib	ited)				
			Excavation for roadway in hard rock (blasting breaking rock, loading in tippers and dispos trimming bottom and side slopes in accordacross sections.	al within	all lifts and	lead upto 1		
		Α	Mechanised					
			Unit = cum					
			Taking output = 36 cum					
			a) Labour					
			Mate	day	0.400	354.00	141.60	L-12
			Mazdoor for trimming slopes including mannul loading in truck	day	10.000	310.00	3100.00	L-13
			b) Machinery					
			Hydraulic excavator with rock breaker	hour	6.000	1751.33	10507.98	P&M-026
			attachment @ 6 cum per hour	la	0.500	770.05	F007 70	P&M-048
			Tipper 5.5 cum capacity, 1 trip per hour.	hour		779.65	5067.73	
			Credit for excavated rock found suitable for use @ 50 per cent of excavated	cum	18.000	(257.52)	(4635.36)	M-089
			quantity c) GST @ 12 % on (a+b)				1701.83	
			d) Overhead charges @ 10 % on (a+b+	·c)			1588.38	
				•			1747.22	
			e) Contractor's profit @ 10 % on (a+b+	c+a)				
			f) Cess @ 1% on (a+b+c+d+e)				192.19	
			Cost for 36 cum = a+b+c+d+e+f				19411.57	
			Rate per cum = (a+b+c+d+e+f)/36			601/	539.21	
		Note	The quality and availability of rock shall affording credit.	be ched	cked before	say	<u>539.00</u>	
			<ol><li>In case some rock is issued to the contract carriage shall be restricted/reduced to that exter</li></ol>		the item of			
		_	<ol><li>Being small quantity, manual loading will be e and has been provided accordingly.</li></ol>	conomical	in this case			
3.8		В	Manual Method					
			Unit = cum					
			Taking output = 16 cum					
			a) Labour Mate	day	1.640	354.00	580.56	L-12
			Mazdoor including loading in truck	day		310.00	4960.00	L-13
			Chiseller	day		354.00	8496.00	L-05
			Blacksmith b) Machinery	day		442.00	442.00	L-02
			Tipper 5.5 cum capacity, 1 trip per hour.	hour	2.900	779.65	2260.99	P&M-048
			Credit for excavated rock found suitable for use @ 50 per cent of excavated	cum	8.000	(257.52)	(2060.16)	M-089
			c) GST @ 12 % on (a+b)				1761.53	
			d) Overhead charges @ 10 % on (a+b+	·c)			1644.09	
				-			1808.50	
			e) Contractor's profit @ 10 % on (a+b+	c+u)				
			f) Cess @ 1% on (a+b+c+d+e)				198.94	
			Cost for 16 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/16				20092.45 1255.78	
		Note	1. Credit is considered for 50 per cent of qua	antity of w	vork.	say	<u>1256.00</u>	

- 2. Loading for disposal will be done manually, being small
- 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.

				EARTH WORK, EROSION CONTR	OL AND	DIVAINA	<u> </u>		
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.9	301		Exc	cavation in Hard Rock (controlled blasti	ng) wit	h disposal	upto 1000	metres	!
			bre gra upt	cavation for roadway in hard rock with cont aking, trimming of bottom and side slopes des and cross sections, loading and dispos o 1000 metres	in accor	dance with	requiremen	ts of lines,	
				it = cum king output = 180 cum					
			a)	Labour					
			u,	Mate	day	0.220	354.00	77.88	L-12
				Mazdoor	day	3.000	310.00	930.00	L-13
				Driller	day	2.000	354.00	708.00	L-06
				Blaster	day	0.500	354.00	177.00	L-03
			b)	Machinery					
				Dozer 80 HP @ 30 cum per hour	hour	6.000	4237.17	25423.02	P&M-014
				Air compressor, 250 cfm with 2 jack hammers	hour	6.000	575.22	3451.32	P&M-001
				Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
				Tipper 5.5 cum capacity, 4 trips per hour.	hour	8.200	779.65	6393.13	P&M-048
			c)	Materials					
				Gelatin 80 per cent	kg	63.000	164.60	10369.80	M-104
				Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	each	1008.000	11.04	11128.32	M-094 /100
				Credit for excavated rock found suitable for use @ 50 per cent quantity blasted	cum	90.000	(257.52)	(23176.80)	M-089
				Add 5 per cent of cost of a+b+c towards muffling arrangements to guard against any rock fly off during blasting				3352.39	
			d)	GST @ 12 % on (a+b+c)				5666.81	
			e)	Overhead charges @ 10 % on (a+b+c	+d)			5289.03	
			f)	Contractor's profit @ 10 % on (a+b+c-	•			5817.93	
			g)	Cess @ 1% on (a+b+c+d+e+f)	-,			639.97	
				st for 180 cum = a+b+c+d+e+f+g				64637.18	
				te per cum = (a+b+c+d+e+f+g)/180				359.10	
				3,			say	359.00	
		Note	roc 2. I	Credit is considered for 50 per cent of quelon of k, if found suitable for construction  In case some rock is issued to the contractering shall be reduced to that extent.			•		
3.10	301			cavation in Marshy Soil	draulic o	veavator 0	9 cum buck	et canacity	

Excavation for roadway in marshy soil with hydraulic excavator 0.9 cum bucket capacity including cutting and loading in tippers and disposal with in all lifts and lead upto 1000 metres, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections.

## Unit = cum

Taking output = 300 cum

a)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor	day	2.000	310.00	620.00	L-13
b)	Machinery Hydraulic excavator 0.90 cum bucket capacity @ 50 cum per hour Tipper 5.5 cum capacity, 4 trips per hour.	hour	6.000 13.640	1751.33 779.65	10507.98 10634.43	P&M-026 P&M-048

c) GST @ 12 % on (a+b) 2614.89

d) Overhead charges @ 10 % on (a+b+c) 2440.56

	T	EARTH WORK, EROSION CONTR	ROL ANI	DRAINA	GE .		
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)			2684.62	
		f) Cess @ 1% on (a+b+c+d+e)				295.31	
		Cost for 300 cum = a+b+c+d+e+f				29826.11	
		Rate per cum = $(a+b+c+d+e+f)/300$				99.42	
	204				say	<u>99.00</u>	
3.11	301	Removal of Unserviceable Soil with Disponemental Removal of unserviceable soil including excametres lead but excluding replacement by suiper clause 305.  Unit = cum  Taking output = 360 cum	/ation, lo	ading and	disposal upt		
		a) Labour					
		Mate	day	0.080	354.00	28.32	L-12
		Mazdoor	day	2.000	310.00	620.00	L-13
		b) Machinery					
		Excavator0.90 cum bucket capacity @ 60 cum per hour	hour	6.000	1751.33	10507.98	P&M-026
		Tipper 5.5 cum capacity, 4 trips per hour.	hour	16.360	779.65	12755.07	P&M-048
		c) GST @ 12 % on (a+b)				2869.36	
		d) Overhead charges @ 10 % on (a+b+c	;)			2678.07	
		e) Contractor's profit @ 10 % on (a+b+c	:+d)			2945.88	
		f) Cess @ 1% on (a+b+c+d+e)				324.05	
		Cost for 360 cum = a+b+c+d+e+f				32728.73	
		Rate per cum = $(a+b+c+d+e+f)/360$				90.91	
3.12	303	suitable soil. Replacement, where required, and paid separately under clause 305.  Presplitting of Rock Excavation Slopes	is to b	e provided			
		Carrying out excavation in hard rock to achieve controlled use of explosives and blasting accelerates, collection of the excavated rock by a 80 loader and disposing of the material with all lit clause No. 303  *Unit = sqm**	essories O HP doz	in properly zer, loading	aligned and in tipper by	spaced drill a front end	
		Taking output = 400 sqm( 120 cum considering 300mm average depth of excavation over the existing rock face)					
		a) Labour					
		Mate	day		354.00	212.40	L-12
		Mazdoor	day	15.000	310.00	4650.00	L-13
		b) Machinery Air compressor 250 cfm with 2 leads @	hour	6.000	575.22	3451.32	P&M-001
		20 cum per hour	heu-	6.000	1007 47	25422.00	P&M-014
		Dozer, 80 HP	hour	6.000	4237.17	25423.02	P&M-017
		Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	•11
		c) Materials		40.000	404.00	0040.00	NA 404
		Gelatin 80 per cent Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each	kg each	42.000 672.000	164.60 11.04	6913.20 7418.88	M-104 M-094 /100
		_				6774.98	
		d) GST @ 12 % on (a+b+c)	۱۵۱)				
		e) Overhead charges @ 10 % on (a+b+c	-			6323.32	
		f) Contractor's profit @ 10 % on (a+b+c	+a+e)			6955.65	
		g) Cess @ 1% on (a+b+c+d+e+f)				765.12	
		Cost for $400 \text{ sam} = a+b+c+d+e+f+a$				77277 27	

Page : 88

77277.27

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

# **CHAPTER - 3**

	T	ı	EARTH WORK, EROSION CONTR	OL ANI	DRAINAC	SE		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
<b>L</b>		ı	Rate per sqm = (a+b+c+d+e+f+g)/400				193.19	
		Note	In case blasted rock is used to the contractor for constructed work, the cost of carriage s				<u>193.00</u>	
			that extent.					
3.13	304		Excavation for Structures					
			Earth work in excavation of foundation of structure specification, including setting out, construction stumps and other deleterious matter, dressing the structure of the struct	n of sho of sides	ring and brains and botton	acing, remo n, backfillin	val of g the	
			excavation earth to the extent required and uti work.	ilising th	e remaining	j earth local	ly for road	
		(i)	Ordinary soil					
			Unit = cum					
			Taking output = 10 cum					
		Α	Manual Means (Depth upto 3 m) a) Labour					
			Mate	day	0.320	354.00	113.28	L-12
			Mazdoor	day	8.000	310.00	2480.00	L-13
			b) GST @ 12 % on (a)				311.19	
			c) Overhead charges @ 10 % on (a+b)				290.45	
			d) Contractor's profit @ 10 % on (a+b+c	)			319.49	
			e) Cess @ 1% on (a+b+c+d)				35.14	
			Cost for 10 cum = $a+b+c+d+e$ Rate per cum = $(a+b+c+d+e)/10$				3549.55 354.96	
			Rate per cum – (a·b·c·u·e// io			say	<u>355.00</u>	
		Note	Cost of dewatering may be added where requ cent of labour cost Assessment for dewaterin per site conditions			·		
3.13 (i	i)	В	Mechanical Means (Depth upto 3 m)					
,	•		Unit = cum					
			Taking output = 300 cum					
			a) Labour	dov	0.320	254.00	112.00	L-12
			Mate Mazdoor	day day	0.320 8.000	354.00 310.00	113.28 2480.00	L-13
			b) Machinery	duy	0.000	010.00	2100.00	
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.000	1751.33	10507.98	P&M-026
			c) GST @ 12 % on (a+b)	`			1572.15 1467.34	
			<ul><li>d) Overhead charges @ 10 % on (a+b+c</li><li>e) Contractor's profit @ 10 % on (a+b+c</li></ul>				1614.08	
			f) Cess @ 1% on (a+b+c+d+e)	·uj			177.55	
			Cost for 300 cum = $a+b+c+d+e+f$				17932.38	
			Rate per cum = (a+b+c+d+e+f)/300				59.77	
						say	<u>60.00</u>	
		Note	Cost of dewatering upto 5 per cent of (a+b) where required. Assessment for dewatering	-	be added, e made as			
3.13		(ii)	per site conditions  Ordinary Rock (not requiring blasting)					
		Α	Manual Means (Depth upto 3 m)					
			Unit = cum					
			Taking output = 10 cum					
			a) Labour Mate	day	0.400	354.00	141.60	L-12
			Mazdoor	day	10.000	310.00	3100.00	L-13
			b) GST @ 12 % on (a)	201		2.0.00	388.99	
			c) Overhead charges @ 10 % on (a+b)				363.06	

		1	EARTH WORK, EROSION CON	ROL ANI	DRAINAC	7E		
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)			399.37	•
			e) Cess @ 1% on (a+b+c+d)				43.93	
			Cost for 10 cum = a+b+c+d+e				4436.95	
			Rate per cum = $(a+b+c+d+e)/10$				443.70	
			. ,			say	444.00	
		Note	Cost of dewatering upto 10 per cent of added, where required. Assessment for made as per site conditions			•		
3.13 (i	i)	В	Mechanical Means					
			Unit = cum					
			Taking output = 216 cum					
			a) Labour					
			Mate	day	0.240	354.00	84.96	L-12
			Mazdoor	day	6.000	310.00	1860.00	L-13
			b) Machinery	•				
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.000	1751.33	10507.98	P&M-026
			c) GST @ 12 % on (a+b)				1494.35	
			d) Overhead charges @ 10 % on (a+b-	+c)			1394.73	
			e) Contractor's profit @ 10 % on (a+b-	-			1534.20	
			f) Cess @ 1% on (a+b+c+d+e)	· C· u <sub>j</sub>			168.76	
			, , , , , , , , , , , , , , , , , , , ,					
			Cost for 216 cum = a+b+c+d+e+f				17044.98	
			Rate per cum = (a+b+c+d+e+f)/216			say	78.91 <u><b>79.00</b></u>	
		Note	1.Cost of dewatering upto 5 per cent of (a+ where required Assessment for dewatering site conditions.	shall be m	ade as per			
			2.In case of rock, foundation beyond3 m is r not included.	not dug an	d hence			
3.13		(iii)	Hard Rock ( requiring blasting )					
		Α	Manual Means					
			Unit = cum					
			Taking output = 10 cum					
			a) Labour					
			i) Mate	day	0.530	354.00	187.62	L-12
			ii) Driller	day		354.00	297.36	L-06
			iii) Blaster			354.00	141.60	L-03
			,	day				L-13
			iv) Mazdoor	day	12.000	310.00	3720.00	L-10
			b) Machinery					D011 004
			Air Compressor 250 cfm with 2 jack hammer @ 15 cum per hour	hour	0.667	575.22	383.67	P&M-001
			c) Material	_		4-4		N 404
			Blasting Material	kg	3.500	164.60	576.10	M-104
			Detonator electric	each	14.000	11.04	154.56	M-094 /100
			d) GST @ 12 % on (a+b+c)				655.31	
			e) Overhead charges @ 10 % on (a+b+	c+d)			611.62	
			f) Contractor's profit @ 10 % on (a+b+	-			672.78	
				J. u. ej			74.01	
			g) Cess @ 1% on (a+b+c+d+e+f)					
			Cost for 10 cum = a+b+c+d+e+f+g				7474.63	
			Rate per cum = $(a+b+c+d+e+f+g)/10$			0011	747.46	
		Note	Cost of dewatering @ 10 per cent of labour	r coet mov	he added	say	<u>747.00</u>	
			Oust of dewatering (by 10 per cent of labour	⊤ ∪∪ot IIIdy	be auded,			

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

	, ,		EARTH WORK	K, EROSION CONTR	KOL ANL	DRAINA	jE		1
Sr No	Ref. to MoRTH/D SR Spec.		Descripti	on	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
3.13		(iv)	Hard Rock ( blasting pro	ohibited )			•		
			Unit = cum						
		Α	Taking output = 10 cum						
			Mechanical Means a) Labour						
			Mate		day	0.200	354.00	70.80	L-12
			Mazdoor		day	5.000	310.00	1550.00	L-13
			b) Machinery						
			Air Compressor 250 of pneumatic breaker @		hour	10.000	575.22	5752.20	P&M-001
			c) GST @ 12 % on (	a+b)				884.76	
			d) Overhead charges	@ 10 % on (a+b+c	<b>;</b> )			825.78	
			e) Contractor's profit	: @ 10 % on (a+b+c	:+d)			908.35	
			f) Cess @ 1% on (a+	•				99.92	
			Cost for 10 cum = a+b+c					10091.81	
			Rate per cum = (a+b+c-	+a+e+t)/10				1009.18	
		Note	1. Cost of dewatering up	to 5 per cent_of (a-	⊦b). mav	be added	say	<u>1009.00</u>	
			where required Assessmostite conditions.						
			2.In case of rock, foundanot included.	tion beyond 3 m is	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	354.00	141.60	L-12
			Mazdoor		day	10.000	310.00	3100.00	L-13
			b) Machinery		h	0.070	470 44	4074.04	P&M-053
			Tractor-trolley  c) Material		hour	2.670	476.11	1271.21	1 GW-000
			<ul> <li>Material Selected earth for ref</li> </ul>	illina	cum	5.000	201.77	1008.85	M-163
			d) GST @ 12 % on (		Garri	0.000	201	662.60	
				@ 10 % on (a+b+c	+d)			618.43	
			f) Contractor's profit	@ 10 % on (a+b+c	+d+e)			680.27	
			g) Cess @ 1% on (a+l	o+c+d+e+f)				74.83	
			Cost for 10 cum = a+b+c	+d+e+f+g				7557.79	
			Rate per cum = ( a+b+c <sup>.</sup>	+d+e+f+g)/ 10				755.78	
		Noto	4. O t . f . l				say	<u>756.00</u>	
		Note	<ol> <li>Cost of dewatering @ where required Assessmoste conditions.</li> </ol>		,				
			2. Shoring & strutting 20 added	per cent of (a), whe	re requir	ed may be			
			3. It is assumed that M depth only. For deeper	excavation below		-			
0.40 (		P	analysis in item (i) to (iv)	or ordinary soil					
3.13 (v	<b>/</b> )	В	Mechanical Means						
			a) Labour		day	0.000	254.00	20.20	L-12
			<ul><li>i) Mate</li><li>ii) Mazdoor for dressi</li></ul>	na sides, bottom	day day	0.080 2.000	354.00 310.00	28.32 620.00	L-13
			and backfilling	5.400, 50110111	day	2.000	0.0.00	020.00	
			b) Machinery						
			Hydraulic excavator 1 capacity @ 60 cum p		hour	0.170	1751.33	297.73	P&M-026

Page : 91

	1		EARTH WORK, EROSION CONTR	OL ANI	DRAINA	jE T	ı	
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.	hour	0.450	779.65	350.84	P&M-048
			c) Material Selected earth for refilling	ou m	5.000	201.77	1008.85	M-163
			d) GST @ 12 % on (a+b+c)	cum	5.000	201.77	276.69	
			e) Overhead charges @ 10 % on (a+b+c-	+d)			258.24	
			f) Contractor's profit @ 10 % on (a+b+c	-			284.07	
			g) Cess @ 1% on (a+b+c+d+e+f)	u • 0,			31.25	
			Cost for 10 cum = $a+b+c+d+e+f+g$				3155.99	
			Rate per cum = $(a+b+c+d+e+f+g)/10$				315.60	
			3,			say	<u>316.00</u>	
		Note	1. Cost of dewatering @ 20 per cent of (a+where required	b) may	be added,	ouy	<u>010.00</u>	
			2. Shoring & strutting @ 10 per cent of (a+may be added	b), whe	re required			
3.14	305.4.3		3. It is assumed that Marshy Soil will be a depth only. For deeper excavation below analysis in item (i) to (iv) for ordinary soil Scarifying Existing Granular Surface to a D	3 m d	epth, refer		oane	
3.14	000.1.0		• •	-	-			
			Scarifying the existing granular road surface to scarified material within all lifts and leads upto	-		and dispos	ai Oi	
			Unit = sqm	1000 111	01100.			
			Taking output = 100 sqm					
			a) Labour					
			Mate	day	0.200	354.00	70.80	L-12
			Mazdoor including loading and unloading	day	5.000	310.00	1550.00	L-13
			b) Machinery					
			Tractor-trolley	hour	1.670	476.11	795.10	P&M-053
			c) GST @ 12 % on (a+b)				289.91	
			d) Overhead charges @ 10 % on (a+b+c	;)			270.58	
			e) Contractor's profit @ 10 % on (a+b+c	:+d)			297.64	
			f) Cess @ 1% on (a+b+c+d+e)				32.74	
			Cost for 100 sqm = a+b+c+d+e+f				3306.77	
			Rate per sqm = $(a+b+c+d+e+f)/100$				33.07	
		Note				say	<u>33.00</u>	
		Note	In case material is to be reused at site, t catered above for disposal shall be deleted.	ranspor	tation cost			
3.15	305.4.3		Scarifying Existing Bituminous Surface to	a depth	of 50 mm	by Mechar	nical Means	
			Scarifying the existing bituminous road surfa scarified material with in all lifts and lead upto		•	50 mm and	disposal of	:
			Unit = sqm					
			Taking output = 100 sqm					
			a) Labour Mate	day	0.010	354.00	3.54	L-12
			Mazdoor	day	0.010	310.00	77.50	L-13
			b) Machinery	auy	0.200	3.0.00		
			Tractor with ripper attachment @ 60 cum	hour	0.080	420.35	33.63	P&M-055
			per hour			4000		D014 04-
			Front end loader 1 cum bucket capacity	hour	0.200	1398.23	279.65	P&M-017
			@ 25 cum per hour Tipper 5.5 cum capacity, 4 trips per hour.	hour	0.230	779.65	179.32	P&M-048
			c) GST @ 12 % on (a+b)				68.84	
			d) Overhead charges @ 10 % on (a+b+c)	)			64.25	
			,	•				

Page : 92

			EARTH WORK, EROSION CONT	ROL AND	DRAINAG	E		
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
		1	e) Contractor's profit @ 10 % on (a+b+c	c+d)	-		70.67	
			f) Cess @ 1% on (a+b+c+d+e)				7.77	
			Cost for 100 sqm = a+b+c+d+e+f				785.17	
			Rate per sqm = $(a+b+c+d+e+f)/100$				7.85	
						say	<u>8.00</u>	
16	305		Construction of Embankment with Materi			-		
			Construction of embankment with approved					
			lifts and leads, transporting to site, spreading to meet requirement of table 300-2.	ı, grading	to required	d slope and	compacting	
			Unit = cum					
			Taking output = 100 cum					
			a) Labour					
			Mate	day	0.040	354.00	14.16	L-12
			Mazdoor	day	1.000	310.00	310.00	L-13
			b) Machinery		4.070	4==4.00	0004 70	P&M-026
			Hydraulic Excavator1 cum bucket	hour	1.670	1751.33	2924.72	P CAIVI-U20
			capacity @ 60 cum per hour Tipper 10 tonne capacity	tonne.	160 x L	7.65	3672.00	Lead =3
			ripper to torine capacity	km	100 X L	7.00	3072.00	km &
			Add 10 per cent of cost of carriage to				367.20	P&M-058
			cover cost of loading and unloading					
			Dozer 80 HP for spreading @ 200 cum	hour	0.500	4237.17	2118.59	P&M-014
			per hour					
			Motor grader for grading @ 100 cum per	hour	1.000	2917.70	2917.70	P&M-032
			hour Water tanker6 KL capacity	hour	4.000	544.25	2177.00	P&M-060
								P&M-059
			Three wheel 80-100 kN Statis Roller	hour	1.000	733.63	733.63	F & WI-033
			c) Material	121	04.000	07.00	4044.04	M-189
			Cost of water	KL	24.000 100.000	67.26	1614.24	M-092
			Compensation for earth taken from private land	cum	100.000	0.00	0.00	111-032
			d) GST @ 12 % on (a+b+c)				2021.91	
			e) Overhead charges @ 10 % on (a+b+c	+d)			1887.12	
			f) Contractor's profit @ 10 % on (a+b+c	-			2075.83	
			g) Cess @ 1% on (a+b+c+d+e+f)	,			228.34	
			Cost for 100 cum = a+b+c+d+e+f+g				23062.44	
			Rate per cum = (a+b+c+d+e+f+g)/100				230.62	
			rate per dam = (a.b.e.a.e.i.g), ioo			say	<u>231.00</u>	
		Note	Compensation for earth will vary from place have to be assessed realistically as per situation. In case earth is available compensation for earth will not be require required to be clearly stated in the cost estimate.	particul from G ed. The	lar ground ovt. land,	•		
17	305		Construction of Embankment with Materia				44!	

# 3.17 Construction of Embankment with Material Deposited from Roadway Cutting

Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.

## Unit = cum

Taking output = 100 cum

, u	ming output – 100 cum					
a)	Labour					
	Mate	day	0.020	354.00	7.08	L-12
	Mazdoor	day	0.500	310.00	155.00	L-13
b)	Machinery					
	Dozer 80 HP for spreading @ 200 cum	hour	0.500	4237.17	2118.59	P&M-014
	per hour					

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.
		•	Motor grader for grading @ 100 cum per hour	hour	1.000	2917.70	2917.70	P&M-032
			Water tanker6 KL capacity	hour	4.000	544.25	2177.00	P&M-060
			Three wheel 80-100 kN Statis Roller	hour	1.000	733.63	733.63	P&M-059
		c)	Material					
			Cost of water	KL	24.000	67.26	1614.24	M-189
		d)	GST @ 12 % on (a+b+c)				1166.79	
		e)	Overhead charges @ 10 % on (a+b+c+	⊦d)			1089.00	
		f)	Contractor's profit @ 10 % on (a+b+c-	+d+e)			1197.90	
		g)	Cess @ 1% on (a+b+c+d+e+f)				131.77	
		Ra	ate for 100 cum = a+b+c+d+e+f+g				13308.70	
		Ra	ate per cum = (a+b+c+d+e+f+g)/100				133.09	
						say	<u>133.00</u>	

Note In case the earth cutting is done by dozer and pushed for filling in the embankment, the input of dozer in the cost of embankment shall be deleted as the same is already provided in the cost of excavation. However, if the earth is dumped by tippers from roadway cutting, the input of dozer for spreading is required 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	354.00	14.16	L-12
	Mazdoor	day	1.000	310.00	310.00	L-13
b)	Machinery					
	Hydraulic excavator1 cum bucket capacity @ 60 cum per hour	hour	1.670	1751.33	2924.72	P&M-026
	Tipper 10 tonne capacity	tonne.k m	175xL	7.65	4016.25	Lead =3 km & P&M-058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				401.63	
	Dozer 80 HP for spreading @ 200 cum per hour	hour	0.500	4237.17	2118.59	P&M-014
	Motor grader for grading @ 50 cum per hour	hour	2.000	2917.70	5835.40	P&M-032
	Water tanker with 6 km lead	hour	4.000	544.25	2177.00	P&M-060
	Three wheel 80-100 kN Statis Roller	hour	1.250	733.63	917.04	P&M-059
c)	Material					
	Cost of water	KL	24.000	67.26	1614.24	M-189
	Compensation for earth taken from private land	cum	100.000	0.00	0.00	M-092
d)	GST @ 12 % on (a+b+c)				2439.48	
e)	Overhead charges @ 10 % on (a+b+c-	+d)			2276.85	
f)	Contractor's profit @ 10 % on (a+b+c	+d+e)			2504.54	
g)	Cess @ 1% on (a+b+c+d+e+f)				275.50	
Co	st for 100 cum = a+b+c+d+e+f+g				27825.40	
Ra	te per cum = (a+b+c+d+e+f+g)/100				278.25	
				say	<u>278.00</u>	

# **3.19** 305.3.4 Compacting Original Ground

Case- 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.
---

Loosening of the ground upto a level of 500 mm below the sub-grade level, watered, graded and compacted in layers to meet requirement of table 300-2 for sub-grade construction.

### Unit = cum

Taking output = 600 cum

I a	king output = 600 cum							
a)	Labour							
	Mate	day	0.120	354.00	42.48	L-12		
	Mazdoor	day	3.000	310.00	930.00	L-13		
b)	Machinery							
	Tractor with ripper attachment	hour	9.000	420.35	3783.15	P&M-055		
	Motor grader for grading	hour	6.000	2917.70	17506.20	P&M-032		
	Water tanker 6 KL capacity	hour	4.000	544.25	2177.00	P&M-060		
	Three wheel 80-100 kN Statis Roller	hour	7.500	733.63	5502.23	P&M-059		
c)	Material							
	Cost of water	KL	24.000	67.26	1614.24	M-189		
d)	GST @ 12 % on (a+b+c)				3786.64			
e)	Overhead charges @ 10 % on (a+b+c	:+d)			3534.19			
f)	Contractor's profit @ 10 % on (a+b+c	c+d+e)			3887.61			
g)	g) Cess @ 1% on (a+b+c+d+e+f) 427.64							
Со	st for 600 cum = a+b+c+d+e+f+g				43191.38			
Ra	te per cum = (a+b+c+d+e+f+g)/600				71.99			
	•			say	<b>72.00</b>			

# 3.19 Case- : Compacting original ground supporting embankment

Loosening, leveling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 for embankment construction.

### Unit = cum

Taking output = 600 cum

a)	Labour						
•	Mate	day	0.080	354.00	28.32	L-12	
	Mazdoor	day	2.000	310.00	620.00	L-13	
b)	Machinery						
	Tractor with ripper attachment	hour	6.000	420.35	2522.10	P&M-055	
	Three wheel 80-100 kN Statis Roller	hour	7.500	733.63	5502.23	P&M-059	
	Water tanker6 KL capacity	hour	4.000	544.25	2177.00	P&M-060	
c)	Material						
	Cost of water	KL	24.000	67.26	1614.24	M-189	
d)	GST @ 12 % on (a+b+c)				1495.67		
e)	Overhead charges @ 10 % on (a+b+c	;+d)			1395.96		
f)	Contractor's profit @ 10 % on (a+b+c	c+d+e)			1535.55		
g)	Cess @ 1% on (a+b+c+d+e+f)				168.91		
Cost for 600 cum = $(a+b+c+d+e+f+g)$ 17059.98							
Ra	te per sqm = (a+b+c+d+e+f+g)/600				28.43		
				say	28.00		

# 3.20 305 Stripping and Storing Top Soil

Stripping, storing of top soil by road side at 15 m internal and re-application on embankment slopes, cut slopes and other areas in localities where the available embankment material is not conducive to plant growth.

#### Unit = cum

Taking output = 10 cum

a)	Labour					
	Mate	day	0.200	354.00	70.80	L-12
	Mazdoor	day	5.000	310.00	1550.00	L-13
b)	Machinery					
	Dozer 80 HP @ 100 cum per hour	hour	0.100	4237.17	423.72	P&M-014

		EARTH WORK, EROSION CONT	ROL ANI	DRAINA	3E		
Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remarks/ Input ref.
		c) GST @ 12 % on (a+b)				245.34	•
		d) Overhead charges @ 10 % on (a+b+	•			228.99	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			251.89	
		f) Cess @ 1% on (a+b+c+d+e)				27.71	
		Cost for 10 cum = (a+b+c+d+e+f)				2798.45	
		Rate per cum = (a+b+c+d+e+f)/10				279.85	
3.21		Stripping, Storing and Re-laying Top S	Soil fron	n Borrow	say Areas in	280.00 Agriculture	
		Stripping of top soil from borrow areas locat place, spreading and re-laying after taking agricultural field, finishing it to the required le	the borro	w earth to	maintain fe	ertility of the	
		Unit = cum					
		Taking output = 300 cum					
		a) Labour					
		Mate	day	0.080	354.00	28.32	L-12
		Mazdoor	day	2.000	310.00	620.00	L-13
		b) Machinery					
		Dozer, 80 HP	hour	6.000	4237.17	25423.02	P&M-014
		c) GST @ 12 % on (a+b)				3128.56	
		d) Overhead charges @ 10 % on (a+b+	c)			2919.99	
		e) Contractor's profit @ 10 % on (a+b+	c+d)			3211.99	
		f) Cess @ 1% on (a+b+c+d+e)				353.32	
		Cost for 300 cum = $(a+b+c+d+e+f)$				35685.20	
		Rate per cum = $(a+b+c+d+e+f)/300$				118.95	
3.22	307	Turfing with Sods			say	<u>119.00</u>	
		Furnishing and laying of the live sods of person slope, verges or other locations shown on sincluding preparation of ground, fetching of start = sqm	he drawi	ng or as d	-		
		Taking output = 100 sqm					
		a) Labour	_		<b></b>		1 40
		Mate  Mazdoor for preparation of ground and	day		354.00 310.00	42.48 930.00	L-12 L-13
		fetching of sods	day	3.000	310.00	930.00	2.10
		<ul> <li>b) Machinery         Water tanker including watering for 3 months     </li> </ul>	hour	2.000	544.25	1088.50	P&M-060
		Tractor-trolley c) Material	hour	1.000	476.11	476.11	P&M-053
		Farm yard manure @ 0.18 cum per 100 sqm at site of work	cum	0.180	134.51	24.21	M-167
		Cost of water	KL	12.000	67.26	807.12	M-189
		d) GST @ 12 % on (a+b+c)				404.21	
		e) Overhead charges @ 10 % on (a+b+c	+d)			377.26	
		f) Contractor's profit @ 10 % on (a+b+c	-			414.99	
		g) Cess @ 1% on (a+b+c+d+e+f)	,			45.65	
		Cost for 100 sqm = a+b+c+d+e+f+g				4610.53	
		Rate per 100 sqm = (a+b+c+d+e+f+g)/100			2014	46.11	

say <u>46.00</u>

		EARTH WORK, EROSION CONTROL AND DRAINAGE						1
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					
			Preparation of seed bed on previously laid fertilizer, mulching material, applying bitumin sqm and laying and fixing jute netting, includi 308.  Unit = sqm  Taking output = 240 sqm	ous emu	ulsion at the	e rate of 0.	23 litres per	
			a) Labour		0.400	054.00	444.00	1.42
			Mate Mazdoor	day day	0.400 10.000	354.00 310.00	141.60 3100.00	L-12 L-13
			b) Machinery	uay	10.000	310.00	3100.00	
			Water tanker 6 KL capacity including watering for 3 months	hour	14.000	544.25	7619.50	P&M-060
			Tractor-trolley c) Material	hour	2.400	476.11	1142.66	P&M-053
			Seeds	kg	3.600	337.17	1213.81	M-162
			Sludge/Farm yard manure @ 0.18 cum per 100 sqm	cum	0.430	134.51	57.84	M-167
			Bitumen Emulsion	litre	55.200	47.12	2601.02	M-077
			Jute netting, open weave, 2.5 cm square opening	sqm	264.000	14.16	3738.24	M-121
			Cost of water for 3 months	KL	84.000	67.26	5649.84	M-189
			<ul> <li>d) GST @ 12 % on (a+b+c)</li> <li>e) Overhead charges @ 10 % on (a+b+c-f)</li> <li>f) Contractor's profit @ 10 % on (a+b+c-g)</li> <li>Cess @ 1% on (a+b+c+d+e+f)</li> <li>Cost for 240 sqm = a+b+c+d+e+f+g</li> <li>Rate per sqm = (a+b+c+d+e+f+g)/240</li> </ul>	-		say	3031.74 2829.63 3112.59 342.38 34580.85 144.09	
3.24	309		Surface Drains in Soil Construction of unlined surface drains of ave to specified lines, grades, levels and dimens 309. Excavated material to be used in embar lead 25 metres)	ions to t	he requirer	ment of clau	use 301 and	
			Unit = metre					
			Taking output = 10 metres					
		Α	Mechanical means					
			a) Labour	dov	0.010	254.00	2 54	L-12
			Mate  Mazdoor for dressing of bed and side of	day day	0.010 0.250	354.00 310.00	3.54 77.50	L-13
			drain b) Machinery	day	0.230	310.00	77.50	
			Hydraulic Excavator 0.3 cum bucket capacity @ 30 metres per hour	hour	0.330	1751.33	577.94	P&M-026
			c) GST @ 12 % on (a+b)				79.08	
			d) Overhead charges @ 10 % on (a+b+c				73.81	
			e) Contractor's profit @ 10 % on (a+b+c	:+a)			81.19 8.93	
			f) Cess @ 1% on (a+b+c+d+e) Cost for 10 metres = a+b+c+d+e+f				901.99	
			Rate per metre = $(a+b+c+d+e+f)/10$				901.99	
			(u. v. o. a. o. 1)/10			say	90.00	
3.24		В	Manual Means			•		
			a) Labour					,
			Mate Mazdoor	day day	0.080 2.000	354.00 310.00	28.32 620.00	L-12 L-13

Page : 97

**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
		b)	GST @ 12 % on (a)		!	!	77.80	
		c)	Overhead charges @ 10 % on (a+b)				72.61	
		d)	Contractor's profit @ 10 % on (a+b+c	:)			79.87	
		e)	Cess @ 1% on (a+b+c+d)				8.79	
		Cos	t for 10 metres = a+b+c+d+e				887.39	
		Rate	e per metre = (a+b+c+d+e)/10				88.74	
						say	<u>89.00</u>	
	No		ere lining of drain is provided, quantity s					

based on approved design and drawing and priced on rate of cement concrete of approved grade or stone/brick masonry as the case may be.

#### 309 3.25 **Surface Drains in Ordinary Rock**

Construction of unlined surface drain of average cross sectional area 0.4 sqm in ordinary rock to specified lines, grades, levels and dimensions as per approved design and to the requirement of clause 301 to 309. Excavated material to be used in embankment at site.

#### Unit = metre

Taking output = 10 metres

GST @ 12 % on (a+b)

#### Mechanical Means

INIE	Chamical Means					
a)	Labour					
	Mate	day	0.020	354.00	7.08	L-12
	Mazdoor for dressing of bed and side of drain	day	0.500	310.00	155.00	L-13
b)	Machinery					
	Hydraulic Excavator 0.3 cum bucket capacity @ 15 metres per hour	hour	0.670	1751.33	1173.39	P&M-026
c)	GST @ 12 % on (a+b)				160.26	

d) Overhead charges @ 10 % on (a+b+c)	149.57
e) Contractor's profit @ 10 % on (a+b+c+d)	164.53
f) Cess @ 1% on (a+b+c+d+e)	18.10
Cost for 10 metres = a+b+c+d+e+f	1827.93
Rate per metre = (a+b+c+d+e+f)/10	182.79

#### 3.25 Manual Means

c)

····	ilaai ilioailo					
a)	Labour					
	Mate	day	0.120	354.00	42.48	L-12
	Mazdoor	day	3.000	310.00	930.00	L-13
b)	GST @ 12 % on (a)				116.70	
c)	Overhead charges @ 10 % on (a+b)				108.92	
d)	Contractor's profit @ 10 % on (a+b+c)				119.81	
e)	Cess @ 1% on (a+b+c+d)				13.18	
Cost for 10 metres = $a+b+c+d+e$ 1331.09						

<u>183.00</u>

133.11 133.00

say

say

#### 309 3.26 **Surface Drains in Hard Rock**

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

Rate per metre = (a+b+c+d+e)/10

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

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate in Rs.	Cost in Rs.	Remark Input re
	L	<u> </u>	Taking output = 10 metres			I	l	<u> </u>
			a) Labour		0.040	054.00	44.40	1 40
			Mate	day	0.040	354.00	14.16	L-12 L-13
			Mazdoor for excavation and back filling	day	2.000	310.00	620.00	L-13
			b) Material	motro	10.000	04.60	046.00	M-13
			Perforated pipe of cement concrete, internal dia 100 mm	metre	10.000	94.69	946.90	10
			Crushed stone as per table 300-3	cum	2.400	1283.19	3079.66	M-01
			c) GST @ 12 % on (a+b)	Culli	2.400	1200.10	559.29	
			d) Overhead charges @ 10 % on (a+b+c	1			522.00	
			e) Contractor's profit @ 10 % on (a+b+c	+u)			574.20	
			f) Cess @ 1% on (a+b+c+d+e)				63.16	
			Cost for 10 metres = a+b+c+d+e+f				6379.37	
			Rate per metre = (a+b+c+d+e+f)/10				637.94	
		Nata	<b>—</b> 6			say	<u>638.00</u>	
		NOTE	Type of pipe may be modified depending upor	n provisio	on in			
3.28	309		design. Aggregate Sub-Surface Drains					
.20	500			in 200	mm v 451	) mm!41-	000000-1	
			Construction of aggregate sub surface dra				aggregates	
			conforming to table 300-4, excavated material <b>Unit = metre</b>	เบษแ	5 <del>c</del> u 1/1 108	auwdy.		
			Taking output = 10 metres					
			a) Labour					
			Mate	day	0.020	354.00	7.08	L-1
			Mazdoor for excavation and back filling	day	1.500	310.00	465.00	L-1
			with aggregates	aay	1.000	010.00	100.00	
			b) Material					
			Crushed stone as per table 300-3	cum	1.350	1283.19	1732.31	M-01
			c) GST @ 12 % on (a+b)				264.53	
			d) Overhead charges @ 10 % on (a+b+c	:)			246.89	
			e) Contractor's profit @ 10 % on (a+b+c	-			271.58	
			f) Cess @ 1% on (a+b+c+d+e)	•			29.87	
			Cost for 10 metres = a+b+c+d+e+f				3017.26	
			Rate per metre = $(a+b+c+d+e+f)/10$				301.73	
			(4 4 5 4 5 5)			say	302.00	
3.29	309		Underground Drain at Edge of Pavement					
			Construction of an underground drain 1 m x cm thick and covered with RCC slab10 cm in	•		,	vith RCC-20	
			Unit = Running metre					
			Taking output = one metre					
			a) Earthwork in soil	cum	1.500	60.00	90.00	Item I
			b) RCC work M-20	cum	0.500	8793.00	4396.50	3.13 Item 1
			,			2. 20.00		(C) R
			Rate per metre = (a+b) (Including GST,OH, Rates for these items may be taken from	CP &Ce	SS)	say	4486.50 <u>4487.00</u>	
			chapters on earth work and substructures			Juy	. 707100	
			respectively.					
3.30	310		Preparation and Surface Treatment of Forr	nation.				
			Preparation and surface treatment of formation		novina mu	d and slurry	watering to	
			the extent needed to maintain the desired r	-	-	-	_	
			line, grade, profile and rolling with 8-10 tonn			•	•	
			clause 310.			,	. , , ,	
			Unit = sqm					
			Taking output = 3500sqm					
			a) Labour					
			Mate	day	0.280	354.00	99.12	L-12
			Mazdoor	day	6,000	310.00	1860.00	L-13

Page : 99

Mazdoor

day

6.000

310.00

L-13

1860.00

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	442.00	442.00	L-15
		b)	Machinery					
			Smooth 3 wheeled steel roller 8-10	hour	3.000	561.95	1685.85	P&M-044
			tonnes					
			Water tanker 6 KL, one trip per hour	hour	3.000	544.25	1632.75	P&M-060
		c)	Material					
			Cost of water	KL	18.000	67.26	1210.68	M-189
		d)	GST @ 12 % on (a+b+c)				831.65	
		e)	Overhead charges @ 10 % on (a+b+	c+d)			776.21	
		f)	Contractor's profit @ 10 % on (a+b+	c+d+e)			853.83	
	g) Cess @ 1% on (a+b+c+d+e+f)					93.92		
	Cost for $3500 \text{ sqm} = a+b+c+d+e+f+g$					9486.01		
	Rate per sqm = $(a+b+c+d+e+f+g)/3500$						2.71	
						say	<u>3.00</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

	<b>-</b> .							
a)	Labour							
	Mate	day	0.040	354.00	14.16	L-12		
	Mazdoor	day	1.500	310.00	465.00	L-13		
b)	Machinery							
	Dozer 80 HP for spreading @ 200 cum per hour	hour	0.500	4237.17	2118.59	P&M-014		
	Three wheel 80-100 kN Statis Roller	hour	1.000	733.63	733.63	P&M-059		
	Water tanker 6 KL, one trip per hour	hour	2.000	544.25	1088.50	P&M-060		
c)	Material							
	Cost of water	KL	12.000	67.26	807.12	M-189		
d)	GST @ 12 % on (a+b+c)				627.24			
e)	Overhead charges @ 10 % on (a+b+c	c+d)			585.42			
f)	Contractor's profit @ 10 % on (a+b+	c+d+e)			643.97			
g)	g) Cess @ 1% on (a+b+c+d+e+f)							
Cost for 100 cum = $a+b+c+d+e+f+g$ 7154.47								
Ra	te per cum = (a+b+c+d+e+f+g)/100				71.54			
	-			say	<u>72.00</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 <sup>301</sup> (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

Taking output = 260 cum							
a)	Labour						
	Mate	day	0.240	354.00	84.96	L-12	
	Mazdoor for trimming slopes and helping in excavation etc.	day	6.000	310.00	1860.00	L-13	
b)	Machinery						
	Dozer D-50 @ 43.28 cum per hour	hour	6.000	2934.51	17607.06	P&M-014	
	Front end loader	hour	6.000	1398.23	8389.38	P&M-017	

Page: 100

# **CHAPTER - 3**

			EARTH WORK, EROSION CONTR	ROL ANI	DRAINA	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	779.65	9355.80	P&M-048
		c)	GST @ 12 % on (a+b)				4475.66	
		d)	d) Overhead charges @ 10 % on (a+b+c)				4177.29	
		e)	e) Contractor's profit @ 10 % on (a+b+c+d)				4595.02	
		f)	f) Cess @ 1% on (a+b+c+d+e)				505.45	
		Cos	Cost for 260 cum = a+b+c+d+e+f				51050.62	
		Rat	Rate per cum = $(a+b+c+d+e+f)/260$				196.35	
						say	<u>196.00</u>	
	(ii) Depositing of excavated earth on the barren valley side.							
		Excavation in soil in hilly area by mechanical means including cutting and trimming side slopes and disposing of excavated earth on the Barren Valley side.						:

side slopes and disposing of excavated earth on the Barren Valley side.

#### Unit = cum

Taking output = 260 cum

mig carpat 200 cam					
Labour					
Mate	day	0.240	354.00	84.96	L-12
Mazdoor for trimming slopes and helping	day	6.000	310.00	1860.00	L-13
in excavation etc.					
Machinery					
Dozer D-50 @ 43.28 cum per hour	hour	6.000	2934.51	17607.06	P&M-014
GST @ 12 % on (a+b)				2346.24	
Overhead charges @ 10 % on (a+b+c)			2189.83		
Contractor's profit @ 10 % on (a+b+c+			2408.81		
Cess @ 1% on (a+b+c+d+e)				264.97	
st for 260 cum = a+b+c+d+e+f			26761.87		
te per cum = (a+b+c+d+e+f)/260				102.93	
			say	<u>103.00</u>	
	Mate Mazdoor for trimming slopes and helping in excavation etc. Machinery Dozer D-50 @ 43.28 cum per hour GST @ 12 % on (a+b) Overhead charges @ 10 % on (a+b+c) Contractor's profit @ 10 % on (a+b+c+c+c+c)	Labour  Mate  Mazdoor for trimming slopes and helping day in excavation etc.  Machinery  Dozer D-50 @ 43.28 cum per hour hour  GST @ 12 % on (a+b)  Overhead charges @ 10 % on (a+b+c)  Contractor's profit @ 10 % on (a+b+c+d)  Cess @ 1% on (a+b+c+d+e)  set for 260 cum = a+b+c+d+e+f	Labour  Mate  Mazdoor for trimming slopes and helping day 6.000 in excavation etc.  Machinery  Dozer D-50 @ 43.28 cum per hour hour 6.000  GST @ 12 % on (a+b)  Overhead charges @ 10 % on (a+b+c)  Contractor's profit @ 10 % on (a+b+c+d)  Cess @ 1% on (a+b+c+d+e)  set for 260 cum = a+b+c+d+e+f	Labour  Mate day 0.240 354.00  Mazdoor for trimming slopes and helping day 6.000 310.00 in excavation etc.  Machinery  Dozer D-50 @ 43.28 cum per hour hour 6.000 2934.51  GST @ 12 % on (a+b)  Overhead charges @ 10 % on (a+b+c)  Contractor's profit @ 10 % on (a+b+c+d)  Cess @ 1% on (a+b+c+d+e)  ost for 260 cum = a+b+c+d+e+f  ite per cum = (a+b+c+d+e+f)/260	Labour       Mate       day       0.240       354.00       84.96         Mazdoor for trimming slopes and helping in excavation etc.       day       6.000       310.00       1860.00         Machinery       Dozer D-50 @ 43.28 cum per hour       hour       6.000       2934.51       17607.06         GST @ 12 % on (a+b)       2346.24         Overhead charges @ 10 % on (a+b+c)       2189.83         Contractor's profit @ 10 % on (a+b+c+d)       2408.81         Cess @ 1% on (a+b+c+d+e)       26761.87         est for 260 cum = a+b+c+d+e+f       26761.87         ite per cum = (a+b+c+d+e+f)/260       102.93

#### 3.33 301 (i) Excavation in Hilly Area in Ordinary Rock by Mechanical Means not Requiring Blasting (Disposal of cut material with all lift and lead upto 1000m)

Excavation in hilly area in ordinary rock not requiring blasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres.

### Unit = cum

Taking output = 170 cum

a)	Labour						
,	Mate	day	0.320	354.00	113.28	L-12	
	Mazdoor	day	8.000	310.00	2480.00	L-13	
b)	Machinery						
	Dozer D-50 @ 28.32 cum per hour	hour	6.000	2934.51	17607.06	P&M-014	
	Front end loader	hour	7.000	1398.23	9787.61	P&M-017	
	Tipper 5.5cum capacity, 4 trips per hour.	hour	7.000	779.65	5457.55	P&M-048	
c)	GST @ 12 % on (a+b)				4253.46		
d)	Overhead charges @ 10 % on (a+b+c)		3969.90				
e)	Contractor's profit @ 10 % on (a+b+c+		4366.89				
f)	Cess @ 1% on (a+b+c+d+e)		480.36				
Со	Cost for 170 cum = $a+b+c+d+e+f$ 48516.11						
Ra	te per cum = (a+b+c+d+e+f)/170				285.39		
				say	<u>285.00</u>		

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

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.
		а	) Labour	•				-
			Mate	day	0.320	354.00	113.28	L-12
			Mazdoor	day	8.000	310.00	2480.00	L-13
		b	) Machinery					
			Dozer D-50 @ 28.32 cum per hour	hour	6.000	2934.51	17607.06	P&M-014
		C	) GST @ 12 % on (a+b)				2424.04	
		d	) Overhead charges @ 10 % on (a+b+	-c)			2262.44	
		е	Contractor's profit @ 10 % on (a+b+	·c+d)			2488.68	
	f) Cess @ 1% on (a+b+c+d+e)					273.76		
		С	ost for 170 cum = a+b+c+d+e+f				27649.26	
		R	ate per cum = (a+b+c+d+e+f)/170				162.64	
						say	<u>163.00</u>	

#### 301 3.34 Excavation in Hilly Areas in Hard Rock Requiring Blasting (Disposal of cut material 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	354.00	173.46	L-12
	Mazdoor	day	10.000	310.00	3100.00	L-13
	Driller	day	2.000	354.00	708.00	L-06
	Blaster	day	0.250	354.00	88.50	L-03
b)	Machinery					
	Dozer D-50 @ 28.32 cum per hour	hour	6.000	2934.51	17607.06	P&M-014
	Air compressor 250 cfm with two jack	hour	5.000	575.22	2876.10	P&M-001
	hammer @ 20 cum per hour					
	Front end loader	hour	7.000	1398.23	9787.61	P&M-017
	Tipper 5.5cum capacity, 4 trips per hour.	hour	7.000	779.65	5457.55	P&M-048
c)	Materials					
	Gelatine 80 per cent	kg	35.000	164.60	5761.00	M-104
	Electric Detonators @ 1 Detonator for 2 Gelatine sticks of 125 gms each	each	140.000	11.04	1545.60	M-094 /100
d)	GST @ 12 % on (a+b+c)				5652.59	
e)	Overhead charges @ 10 % on (a+b+c	+d)			5275.75	
f)	Contractor's profit @ 10 % on (a+b+c	+d+e)			5803.32	
g)	Cess @ 1% on (a+b+c+d+e+f)				638.37	
	st for 170 cum = a+b+c+d+e+f+g				64474.91	
Ra	te per cum = (a+b+c+d+e+f+g)/170				379.26	
	•			sav	379.00	

## (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	354.00	173.46	L-12
	Mazdoor	day	10.000	310.00	3100.00	L-13
	Driller	day	2.000	354.00	708.00	L-06
	Blaster	day	0.250	354.00	88.50	L-03
b)	Machinery					
-	Dozer D-50 @ 28.32 cum per hour	hour	6.000	2934.51	17607.06	P&M-014

# 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.
		•	Air compressor 250 cfm with two jack	hour	5.000	575.22	2876.10	P&M-001
			hammer @ 20 cum per hour					
			c) Materials					
			Gelatine 80 per cent	kg	35.000	164.60	5761.00	M-104
			Electric Detonators @ 1 Detonator for 2	each	140.000	11.04	1545.60	M-094 /100
			Gelatine sticks of 125 gms each					7100
			d) GST @ 12 % on (a+b+c)				3823.17	
			e) Overhead charges @ 10 % on (a+b+c+	d)			3568.29	
			f) Contractor's profit @ 10 % on (a+b+c+	·d+e)			3925.12	
	g) Cess @ 1% on (a+b+c+d+e+f)						431.76	
			Cost for 170 cum = a+b+c+d+e+f+g				43608.06	
			Rate per cum = (a+b+c+d+e+f+g)/170				256.52	
			-			say	<u>257.00</u>	
3 35	1600 &	(i)	Excavation in Hilly Areas in Soil by Manual	Moane				

## 3.35 $_{300}^{1600~\&}$ (i) Excavation in Hilly Areas in Soil by Manual Means

(A) Excavation in soil in Hilly Area by Manual Means including cutting and trimming of side slopes and disposing of excavated earth with a lift upto 1.5 m and a lead upto 20 m as per drawing and Technical Specification Clause 1603.1

#### Unit = Cum

Taking output = 120 cum.

a) Labour

,						
	Mate	day	2.400	354.00	849.60	L-12
	Mazdoor (Unskilled)	day	60.000	310.00	18600.00	L-13
b)	GST @ 12 % on (a)				2333.95	
c)	Overhead charges @ 10 % on (a+b)				2178.36	
d)	Contractor's profit @ 10 % on (a+b+c)				2396.19	
e)	Cess @ 1% on (a+b+c+d)				263.58	
Со	st for 120 cum = a+b+c+d+e				26621.68	
Ra	te per cum = (a+b+c+d+e)/120				221.85	
				sav	222 00	

(B) Deduct for quantum of earthwork of all types disposal directly by throwing into the valley without involving any lead and lift.

Ordinary and Hard Soil/Hard Shale, Soil containing shingle or small size boulders.

#### Unit = Cum

Taking output = 1 cum.

ur	La	a)
ur	La	a)

	Mazdoor (Unskilled)	day	0.200	310.00	62.00	L-13
b)	GST @ 12 % on (a)				7.44	
c)	Overhead charges @ 10 % on (a+b)				6.94	
d)	Contractor's profit @ 10 % on (a+b+c)				7.64	
e)	Cess @ 1% on (a+b+c+d)				0.84	
Со	st for 1 cum = a+b+c+d+e				84.86	
Ra	Rate per cum = $(a+b+c+d+e)/1$				84.86	
				say	85.00	

#### (ii) Excavation in Hilly Area in Ordinary Rock by Manual Means

(A) Excavation in Ordinary Rock using Manual Means including loading in a truck and carrying of excavated material to embankment site with a lift upto 1.5 m and lead upto 20 m as per Clause 1603.2.

#### Unit = Cum

Taking output = 120 cum.

a) Labou
----------

,	Mate	day	5.280	354.00	1869.12	L-12
	Mazdoor (Unskilled)	day	132.000	310.00	40920.00	L-13
b)	GST @ 12 % on (a)				5134.69	
c)	Overhead charges @ 10 % on (a+b)				4792.38	

# 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	)			5271.62	-
			e) Cess @ 1% on (a+b+c+d)				579.88	
			Cost for 120 cum = a+b+c+d+e				58567.69	
			Rate per cum = $(a+b+c+d+e)/120$				488.06	
						say	<u>488.00</u>	
	(B) Deduct for quantum of earthwork of all types disposal directly by throwing into the valle						to the valley	
			without involving any lead and lift.					
			Ordinary and Hard Rock					
			Unit = Cum					
			Taking output = 1 cum.					
			a) Labour					
			Mazdoor (Unskilled)	day	0.320	310.00	99.20	L-13
			b) GST @ 12 % on (a)				11.90	
			c) Overhead charges @ 10 % on (a+b)				11.11	
			d) Contractor's profit @ 10 % on (a+b+c	)			12.22	
			e) Cess @ 1% on (a+b+c+d)				1.34	
			Cost for 1 cum = a+b+c+d+e				135.77	
			Rate per cum = $(a+b+c+d+e)/1$				135.77	
						say	136.00	

### 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.
- 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.

SI.	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
No	Spec.	Description	Oint	Quantity	itate iii its	0031111113	Input ref.

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

Taking output = 225 cum (450 tonne)

a)	Labour					
	Mate	day	0.400	354.00	141.60	L-12
	Mazdoor skilled	day	2.000	442.00	884.00	
b)	Mazdoor Machinery	day	8.000	310.00	2480.00	L-13
D)	Wet mix plant @ 75 tonne capacity	hour	6.000	1619.47	9716.82	P&M-093
	per hour					
	Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
	Water tanker 6 KL capacity 5 km	hour	4.500	544.25	2449.13	P&M-060
	lead with one trip per hour Front end loader 1 cum bucket	hour	6.000	1398.23	8389.38	P&M-017
	capacity	Houi	0.000	1390.23	0309.30	
	Tipper 10 tonne	tonne. km	450 x L	7.65	0.00	Lead =0 km & P&M-058
	Add 10 per cent of cost of carriage				0.00	
	to cover loading and unloading					
	Motor Grader 110 HP	hour	6.000	2917.70	17506.20	P&M-032
	Vibratory roller 8-10 t	hour	6.000	733.63	4401.78	P&M-059
c)	Material					
-	ose graded Granular sub-base	9				
Ma	aterial as per table 400-1					
Fo	r Grading-I Material					
	53 mm to 9.5 mm @ 50 per cent	cum	144.000	892.04	128453.76	M-013
	9.5 mm to 2.36 mm @ 20 per cent	cum	57.000	757.52	43178.64	M-017
	(graded)					
	2.36 mm below @ 30 per cent	cum	86.400	601.77	51992.93	M-020
	Cost of water	KL	27.000	67.26	1816.02	M-189
Г-	OR					
го	r Grading-II Material 26.5 mm to 9.5 mm @ 35 per cent	cum	100.800	724.78	73057.82	M-015
	9.5 mm to 2.36 mm @ 25 per cent	cum	72.000	757.52	54541.44	M-017
	(graded)	Culli	72.000	131.32	34341.44	
	2.36 mm below @ 40 per cent	cum	115.200	601.77	69323.90	M-020
	Cost of water	KL	27.000	67.26	1816.02	M-189
	OR					
Fo	r Grading-III Material					
	9.5 mm to 4.75 mm @ 35 per cent	cum	100.800	780.53	78677.42	M-016
	4.75 mm to 2.36 mm @ 12.5 per	cum	36.000	669.03	24085.08	M-018
	2.36 mm below @ 52.5 per cent	cum	151.200	601.77	90987.62	
·· –	Cost of water	KL	27.000	67.26	1816.02	M-189
	te per cum for grading-I Material				22204 70	
d) e)	GST @ 12 % on (a+b+c) Overhead charges @ 10 % on (a-	+h+c+d)			33291.78 31072.33	
f)	Contractor's profit @ 10 % on (a	·=	١,		34179.56	
g)	Cess @ 1% on (a+b+c+d+e+f)	- D - C - G - C	•1		3759.75	
	ost for 225 cum = a+b+c+d+e+f+g				379734.92	
	ite per cum = (a+b+c+d+e+f+g)/225				1687.71	
				say	<u>1688.00</u>	

			SUB-BASES, BASES ( NON- BITUM	INOUS)	AND SHOOL	DEKO		
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	•	•			
			d) GST @ 12 % on (a+b+c)				30087.52	
			e) Overhead charges @ 10 % on (a+	b+c+d)			28081.69	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	⊦e)		30889.85	
			g) Cess @ 1% on (a+b+c+d+e+f)				3397.88	
			Cost for 225 cum = a+b+c+d+e+f+g				343186.27	
			Rate per cum = $(a+b+c+d+e+f+g)/225$				1525.27	
						say	<u>1525.00</u>	
4.1A		(iii)	Rate per cum for grading-III Material					
			d) GST @ 12 % on (a+b+c)				29706.75	
			e) Overhead charges @ 10 % on (a+	b+c+d)			27726.30	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	⊦e)		30498.93	
			g) Cess @ 1% on (a+b+c+d+e+f)				3354.88	
			Cost for 225 cum = a+b+c+d+e+f+g				338843.15	
			Rate per cum = $(a+b+c+d+e+f+g)/225$				1505.97	
						say	<u>1506.00</u>	
		Note	Any one of the grading for material may					
4.1		В	be adopted as per design  By Mix in Place Method					
			Construction of granular sub-base by p	rovidino	n close grad	ded material	spreading in	1
			uniform layers with motor grader on pre	•				
			with rotavator at OMC, and compacting	-			-	
			density, complete as per clause 401	•	•			
			Unit = cum					
			Taking output = 300 cum					
			a) Labour					
			Mate	day		354.00	169.92	
			Mazdoor skilled	day		442.00	884.00	
			Mazdoor unskilled b) Machinery	day	10.000	310.00	3100.00	L-10
			Motor Grader 110 HP @ 50 cum	hour	6.000	2917.70	17506.20	P&M-032
			Three wheel 80-100 kN Static Roller	hour		733.63	4401.78	P&M-059
			Tractor - Rotavator	hour		407.96	4895.52	
			Water tanker 6 KL capacity	hour		544.25	1632.75	
			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	892.04	171271.68	M-013
			9.5 mm to 2.36 mm @ 20 per cent	cum				
				cum		757.52	57571.52	
			2.36 mm below @ 30 per cent	cum		601.77	69323.90	
			Cost of water  OR	KL	18.000	67.26	1210.68	WI- 103
			For Grading-II Material					
			26.5 mm to 9.5 mm @ 35 per cent	cum	134.400	724.78	97410.43	M-015
			9.5 mm to 2.36 mm @ 25 per cent	cum		757.52	72721.92	
			2.36 mm below @ 40 per cent	cum		601.77	92431.87	
			Cost of water	KL		67.26	1210.68	
			OR	IXL	10.000	01.20	12 10.00	
			For Grading-III Material					
			9.5 mm to 4.75 mm @ 35 per cent	cum	134.400	780.53	104903.23	M-016
			4.75 mm to 2.36 mm @ 12.5 per	cum	48.000	669.03	32113.44	M-018
			2.36 mm below @ 52.5 per cent	cum		601.77	121316.83	
			Cost of water	KL		67.26	1210.68	
4.1B		(i)	Pate per cum for grading ! Material					
4. ID		(1)	Rate per cum for grading-I Material				20020 45	

Page : 107

39836.15

GST @ 12 % on (a+b+c)

d)

			SUB-BASES, BASES ( NON- BITUM	NOUS)	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)			37180.41	•
			f) Contractor's profit @ 10 % on (a+	b+c+d+	·e)		40898.45	
			g) Cess @ 1% on (a+b+c+d+e+f)				4498.83	
			Cost for 300 cum = a+b+c+d+e+f+g				454381.79	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1514.61	
4.45		/::\	Data was a see face and the U. Matadadal			say	<u>1515.00</u>	
4.1B		(ii)	Rate per cum for grading-II Material				05500.04	
			d) GST @ 12 % on (a+b+c)				35563.81	
			e) Overhead charges @ 10 % on (a+	•	,		33192.89	
			f) Contractor's profit @ 10 % on (a+	p+c+a+	·e)		36512.18	
			g) Cess @ 1% on (a+b+c+d+e+f)				4016.34	
			Cost for 300 cum = $a+b+c+d+e+f+g$ Rate per cum = $(a+b+c+d+e+f+g)/300$				405650.29 1352.17	
			Kate per cuiii - (a+b+c+u+e+i+g)/300			say	1352.17 1352.00	
4.1B		(iii)	Rate per cum for grading-III Material			ouy	1002.00	
			d) GST @ 12 % on (a+b+c)				35056.12	
			e) Overhead charges @ 10 % on (a+	b+c+d)			32719.05	
			f) Contractor's profit @ 10 % on (a+	=	·e)		35990.95	
			g) Cess @ 1% on (a+b+c+d+e+f)		,		3959.00	
			Cost for 300 cum = $a+b+c+d+e+f+g$				399859.47	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1332.86	
						say	<u>1333.00</u>	
		Note	Any one of the grading for material may be adopted as per design					
4.2	401		Granular Sub-Base with Coarse Grade	d Mater	ial (Table:-	400- 2)		
			uniform layers with motor grader on prewith rotavator at OMC, and compacting density, complete as per clause 401.  Unit = cum  Taking output = 300 cum				•	
			a) Labour					
			Mate	day	0.400	354.00	141.60	
			Mazdoor skilled	day	2.000	442.00	884.00	
			Mazdoor b) Machinery	day	8.000	310.00	2480.00	L-13
			Mortar Grader 110 HP @ 50 cum	hour	6.000	2917.70	17506.20	P&M-032
			Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
			Water tanker 6 KL capacity	hour	3.000	544.25	1632.75	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	947.79	127382.98	M-029
			26.5 mm to 4.75 mm @ 45 per cent	cum	172.800	780.53	134875.58	
			2.36 mm below @ 20 per cent	cum	76.800	624.78	47983.10	
			(Coarse Sand)					
			Cost of water	KL	18.000	67.26	1210.68	M-189
			OR					
			For Grading-II Material 26.5 mm to 4.75 mm @ 75 per cent	cum	288.000	780.53	224792.64	M-026
			2.36 mm below @ 25 per cent	cum	96.000	624.78	59978.88	M-022
			Cost of water	KL	18.000	67.26	1210.68	
			OB OB	IXL	10.000	57.20	1210.00	

OR

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	724.78	184818.90	M-025
			2.36 mm below @ 34 per cent	cum	129.000	624.78	80596.62	M-022
			Cost of water	KL	18.000	67.26	1210.68	M-189
4.2		(i)	Rate per cum for grading-I Material					
			d) GST @ 12 % on (a+b+c)				40619.84	
			e) Overhead charges @ 10 % on (a+	_			37911.85	
			f) Contractor's profit @ 10 % on (a+	·b+c+d+	e)		41703.04	
			g) Cess @ 1% on (a+b+c+d+e+f)				4587.33	
			Cost for 300 cum = $a+b+c+d+e+f+g$				463320.73	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1544.40	
		4115				say	<u>1544.00</u>	
4.2		(ii)	Rate per cum for grading-II Material				0==00.40	
			d) GST @ 12 % on (a+b+c)				37563.42	
			e) Overhead charges @ 10 % on (a+	_			35059.20	
			f) Contractor's profit @ 10 % on (a+	·b+c+d+	e)		38565.12	
			g) Cess @ 1% on (a+b+c+d+e+f)				4242.16	
			Cost for 300 cum = $a+b+c+d+e+f+g$				428458.43	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1428.19	
		(:::)	<b></b>			say	<u>1428.00</u>	
4.2		(iii)	Rate per cum for grading-III Material				05040 70	
			d) GST @ 12 % on (a+b+c)				35240.70	
			e) Overhead charges @ 10 % on (a+				32891.32	
			f) Contractor's profit @ 10 % on (a+	·b+c+d+	e)		36180.46	
			g) Cess @ 1% on (a+b+c+d+e+f)				3979.85	
			Cost for 300 cum = $a+b+c+d+e+f+g$				401964.86	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1339.88	
		Na4:	Assessment of the control of a control of the			say	<u>1340.00</u>	
		Note	Any one of the grading for material may	,				

be adopted as per design

#### 402 Lime Stabilisation for Improving Sub-grade 4.3

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)

### By Mechanical Means

Dу	MECHAINCAI MEANS					
a)	Labour					
	Mate	day	0.360	354.00	127.44	L-12
	Skilled mazdoor for alignment and geometrics	day	1.000	442.00	442.00	L-15
	Mazdoor for spraying lime	day	8.000	310.00	2480.00	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	420.35	5044.20	P&M-055
	Motor Grader 110 HP @ 50 cum per hour	hour	6.000	2917.70	17506.20	P&M-032
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	733.63	2861.16	P&M-059
۵)	Water tanker 6 KL capacity  Material	hour	12.000	544.25	6531.00	P&M-060
c)	Lime at site	tonno	45.750	10070.76	202040 47	M-188
		tonne	15.750	12878.76	202840.47	M-189
d)	Cost of water GST @ 12 % on (a+b+c)	KL	72.000	67.26	4842.72 29121.02	IVI- 109
u,	33. (a.b.c)				20121.02	

SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			e) Overhead charges @ 10 % on (a+l	b+c+d)	<u> </u>		27179.62	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	-e)		29897.58	
			g) Cess @ 1% on (a+b+c+d+e+f)				3288.73	
			Cost for 300 cum = a+b+c+d+e+f+g				332162.14	
			Rate per cum = $(a+b+c+d+e+f+g)/300$				1107.21	
						say	<u>1107.00</u>	
		Note	* Though vibratory roller is required only norms, but the same has to be available as other machines for spreading and hours. The usage rates of roller have begactor of 0.65.	at site mixing	for 6 hours will take 6			
4.3		В	By Manual Means					
			Unit = cum					
			Taking output = 150 cum (263 tonnes)					
			a) Labour					
			Mate	day	1.440	354.00	509.76	L-12
			Mazdoor skilled	day	1.000	442.00	442.00	L-15
			Mazdoor	day	35.000	310.00	10850.00	L-13
			b) Machinery					
			Three wheel 80-100 kN Static Roller	hour	2.500	733.63	1834.08	P&M-059
			Water tanker 6 KL capacity	hour	6.000	544.25	3265.50	P&M-060
			c) Material Lime at site	tonne	8.000	12878.76	103030.08	M-188
			Cost of water	KL	36.000	67.26	2421.36	
			d) GST @ 12 % on (a+b+c)	IXL	30.000	07.20	14682.33	
			e) Overhead charges @ 10 % on (a+l	h+c+d)			13703.51	
			f) Contractor's profit @ 10 % on (a+	-	- <u>a</u> )		15073.86	
			g) Cess @ 1% on (a+b+c+d+e+f)	<b>5</b> · <b>C</b> · <b>G</b> ·	<b>C</b> )		1658.12	
			Cost for 150 cum= a+b+c+d+e+f+g				167470.60	
			Rate per cum = ( a+b+c+d+e+f+g)/150				1116.47	
			Tate per cam -( a.b.c.a.e.m.g)/100			say	1116.47 1116.00	
	400					Say	1110.00	

#### 4.4 402 **Lime Treated Soil for Sub- Base**

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.

#### Unit = cum

Taking output = 300 cum (525 tonnes)

a)	Labour					
	Mate	day	0.480	354.00	169.92	L-12
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
	Mazdoor	day	10.000	310.00	3100.00	L-13
b)	Machinery					
•	Excavator 1.00 cum bucket capacity	hour	6.000	1751.33	10507.98	P&M-026
	Tipper for carriage of soil	tonne. km	525 x L	7.65	12048.75	Lead =3 km & P&M-058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1204.88	
	Motor Grader 110 HP @ 50 cum per hour	hour	6.000	2917.70	17506.20	P&M-032
	Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
	Tractor with Rotavator and blade @ 25 cum per hour	hour	12.000	407.96	4895.52	P&M-054
	Water tanker 6 KL capacity	hour	12.000	544.25	6531.00	P&M-060

SI. No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		c) Material					
		Lime at site	tonne	15.750	12878.76	202840.47	M-188
		Cost of water	KL	72.000	67.26	4842.72	M-189
		d) GST @ 12 % on (a+b+c)				32271.99	
		e) Overhead charges @ 10 % on	(a+b+c+d)			30120.52	
		f) Contractor's profit @ 10 % on	(a+b+c+d+	-e)		33132.57	
		g) Cess @ 1% on (a+b+c+d+e+f)				3644.58	
		Cost for 300 cum = a+b+c+d+e+f+g				368102.88	
		Rate per cum= (a+b+c+d+e+f+g)/30	0			1227.01	
					say	<u>1227.00</u>	
	400				Suy	1227.00	

#### 403 4.5 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

ight of Joh					
Labour					
Mate	day	0.480	354.00	169.92	L-12
Mazdoor skilled	day	2.000	442.00	884.00	L-15
Mazdoor	day	10.000	310.00	3100.00	L-13
Machinery					
Excavator 1.00 cum bucket capacity	hour	6.000	1751.33	10507.98	P&M-026
Tipper for carriage of soil	tonne.km	525 x L	7.65	12048.75	Lead =3 km & P&M-058
Add 10 per cent of cost of carriage to cover cost of loading and unloading				1204.88	
10.75	hour	6.000	2917.70	17506.20	P&M-032
Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
Tractor with Rotavator and blade @	hour	12.000	407.96	4895.52	P&M-054
Water tanker 6 KL capacity	hour	12.000	544.25	6531.00	P&M-060
	tonno	24 000	0052.00	100122 50	M-081
tonne)	torine	21.000	9055.96	190133.36	
Cost of water	KL	72.000	67.26	4842.72	M-189
GST @ 12 % on (a+b+c)				30747.16	
Overhead charges @ 10 % on (a+	b+c+d)			28697.35	
Contractor's profit @ 10 % on (a+	b+c+d+e	<del>!</del> )		31567.08	
Cess @ 1% on (a+b+c+d+e+f)				3472.38	
st for 300 cum = a+b+c+d+e+f+g				350710.30	
te per cum= (a+b+c+d+e+f+g)/300				1169.03	
			say	<u>1169.00</u>	
	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 @ 12 % on (a+b+c) Overhead charges @ 10 % on (a+Contractor's profit @ 10 % on (a+	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 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 @ 12 % on (a+b+c) Overhead charges @ 10 % on (a+b+c+d) Contractor's profit @ 10 % on (a+b+c+d+e) st for 300 cum = a+b+c+d+e+f+g	Mate day 0.480  Mazdoor skilled day 2.000  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 @ 12 % on (a+b+c)  Overhead charges @ 10 % 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         354.00           Mazdoor skilled         day         2.000         442.00           Mazdoor         day         10.000         310.00           Machinery           Excavator 1.00 cum bucket capacity         hour         6.000         1751.33           Tipper for carriage of soil         tonne.km         525 x L         7.65           Add 10 per cent of cost of carriage to cover cost of loading and unloading         10.75         hour         6.000         2917.70           Three wheel 80-100 kN Static Roller         hour         6.000         733.63           Tractor with Rotavator and blade @         hour         12.000         407.96           25 cum per hour         Water tanker 6 KL capacity         hour         12.000         544.25           Material         Cement at site (@ 4 per cent of 525         tonne         21.000         9053.98           tonne)         Cost of water         KL         72.000         67.26           GST @ 12 % on (a+b+c)         Overhead charges @ 10 % on (a+b+c+d+e)         Cess @ 1% on (a+b+c+d+e+f)           ct for 300 cum = a+b+c+d+e+f+g         teper cum= (a+b+c+d+e+f+g)	Labour         Mate         day         0.480         354.00         169.92           Mazdoor skilled         day         2.000         442.00         884.00           Mazdoor         day         10.000         310.00         3100.00           Machinery         Excavator 1.00 cum bucket capacity         hour         6.000         1751.33         10507.98           Tipper for carriage of soil         tonne.km         525 x L         7.65         12048.75           Add 10 per cent of cost of carriage to cover cost of loading and unloading         10.75         hour         6.000         2917.70         17506.20           Three wheel 80-100 kN Static Roller         hour         6.000         733.63         4401.78           Tractor with Rotavator and blade @         hour         12.000         407.96         4895.52           25 cum per hour         Water tanker 6 KL capacity         hour         12.000         544.25         6531.00           Material         Cement at site (@ 4 per cent of 525         tonne         21.000         9053.98         190133.58           tonne)         Cost of water         KL         72.000         67.26         4842.72           GST @ 12 % on (a+b+c)         28697.35         28697.35         28697.35 </td

#### 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

Tal	king output = 600 cum					
a)	Labour					
	Mate	day	0.920	354.00	325.68	L-12
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
	Mazdoor	day	21.000	310.00	6510.00	L-13
b)	Machinery					
-	Motor Grader 110 HP	hour	6.000	2917.70	17506.20	P&M-032

SI. No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Three wheel 80-100 kN Static Rolle	r hour	6.000	733.63	4401.78	P&M-059
		Water tanker 6 KL capacity	hour	18.000	544.25	9796.50	P&M-060
		c) Material					
		Screening type 'B' or coarse sand	cum	720.000	601.77	433274.40	M-004
		Cost of water	KL	108.000	67.26	7264.08	M-189
		c) GST @ 12 % on (a+b)				57595.52	
		d) Overhead charges @ 10 % on (a	ı+b+c)			53755.82	
		e) Contractor's profit @ 10 % on (a	ı+b+c+d)			59131.40	
		f) Cess @ 1% on (a+b+c+d+e)				6504.45	
		Cost for 600 cum = $a+b+c+d+e$				656949.83	
		Rate per cum = ( a+b+c+d+e)/600				1094.92	
					say	<u>1095.00</u>	
49	404	Water Round Macadam					

#### 4.9 404 Water Bound Macadam

Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density.

			_	_			
	Α	By Manual Means					
		Unit = cum					
		Taking output = 360 cum					
		a) Labour					
		Mate	day	10.080	354.00	3568.32	L-12
		Mazdoor skilled	day	2.000	442.00	884.00	L-15
		Mazdoor	day	250.000	310.00	77500.00	L-13
		b) Machinery					
		Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
		or					
		Smooth 3 wheeled steel roller @	hour	12.000			
		30cum/hour					
		Water tanker 6 KL capacity	hour	24.000	544.25	13062.00	P&M-060
		c) Material ( Refer table 400 - 7, 8 & 9	)				
4.9A	(i)	Grading-I					
		Aggregate					
		Grading-I 90 mm to 45 mm@	cum	435.600	871.68	379703.81	M-039
		1.21cum per 10 sqm for compacted					
		thickness of 100 mm					
		Stone Screening					
		Type A 13.2 mm for grading-I @	cum	97.200	1895.58	184250.38	M-052
		0.27 cum per 10 sqm					
		OR					
		Crushable type such as Moorum or	cum	108.000	278.76	30106.08	M-007
		Gravel for <b>grading-l</b> @ 0.30 cum per					
		10 sqm					
		Binding material					
		Binding Material @ 0.08cum per 10	cum	28.800	278.76	8028.29	M-007
		sqm for grading I material	1.0	444.000			M 400
404 (1)	(-)	Cost of water	KL	144.000	67.26	9685.44	IVI-189
4.9A (i)	(a)	· · · · · · · · · · · · · · · · · · ·	Mooru	m or Gravel	l		
		d) GST @ 12 % on (a+b+c)				62269.37	
		e) Overhead charges @ 10 % on (a+b	)+c+d)			58118.08	
		f) Contractor's profit @ 10 % on (a+b	)+c+d+	e)		63929.89	
		g) Cess @ 1% on (a+b+c+d+e+f)				7032.29	
		Cost for 360 cum = $a+b+c+d+e+f+g$				710261.06	
		Rate per cum = $(a+b+c+d+e+f+g)/360$				1972.95	
		(3. 2. 2. 2. 3),000			say	<u>1973.00</u>	

OR

	· · ·		SUB-BASES, BASES ( NON- BITUM)	INOUS)	AND SHOUL	DEKO		
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 @ 12 % on (a+b+c)				81730.08	
			e) Overhead charges @ 10 % on (a+	b+c+d)			76281.41	
			f) Contractor's profit @ 10 % on (a+				83909.55	
			g) Cess @ 1% on (a+b+c+d+e+f)		-,		9230.05	
			Cost for 360 cum = $a+b+c+d+e+f+g$				932235.11	
			Rate per cum = (a+b+c+d+e+f+g)/360				2589.54	
			rate per cam (a a c a c a g, coc			say	<u>2590.00</u>	
4.9A		(ii)	Grading-II			cuy	<u> </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	896.46	390497.98	M-038
			b) Stone Screening					
			Type A 13.2 mm for grading-II@ 0.12 cum per 10 sqm	cum	57.600	1895.58	109185.41	M-052
			OR Crushable type such as Moorum or Gravel for grading II &III @ 0.22 cum per 10 sqm	cum	105.590	278.76	29434.27	M-007
			OR Type B11.2 mm for grading-III @ 0.18 cum per 10 sqm c) Binding material	cum	86.400	1951.33	168594.91	M-051
			Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	278.76	8028.29	M-007
			Cost of water	KL	144.000	67.26	9685.44	M-189
4.9A (	(ii)	(a)	Using Scrining Crushable type such a	s Moor	um or Grave	el		
			d) GST @ 12 % on (a+b+c)				63484.05	
			e) Overhead charges @ 10 % on (a+	b+c+d)			59251.78	
			f) Contractor's profit @ 10 % on (a+	-	-e)		65176.96	
			g) Cess @ 1% on (a+b+c+d+e+f)		,		7169.47	
			Cost for 360 cum = $a+b+c+d+e+f+g$				724116.05	
			Rate per cum = (a+b+c+d+e+f+g)/360				2011.43	
			(a a c a c : g), ccc			say	2011.00	
			OR					
4.9A (	(ii)	(b)	Using Scrining Type-A (13.2mm agg.)					
			d) GST @ 12 % on (a+b+c)				74017.59	
			e) Overhead charges @ 10 % on (a+	b+c+d)			69083.08	
			f) Contractor's profit @ 10 % on (a+	-			75991.39	
			g) Cess @ 1% on (a+b+c+d+e+f)		•		8359.05	
			Cost for 360 cum = $a+b+c+d+e+f+g$				844264.33	
			Rate per cum = (a+b+c+d+e+f+g)/360				2345.18	
4.9A (	'ii)	(c)				say	<u>2345.00</u>	
, (	,	. ,					04440 70	
			d) GST @ 12 % on (a+b+c)				81146.73	
			e) Overhead charges @ 10 % on (a+	-			75736.95	
			f) Contractor's profit @ 10 % on (a+	b+c+d+	-e)		83310.64	
			g) Cess @ 1% on (a+b+c+d+e+f)				9164.17	
			Cost for 360 cum = $a+b+c+d+e+f+g$				925581.21	
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2571.06	
						say	<u>2571.00</u>	

SI.	Ref. to MoRTH		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
No 4.9A	Spec.	(iii)	c)Grading-III					Input ref.
4.3A		(,	,					
			Aggregate  Grading-III 53 mm to 22.4 mm@  0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	921.24	401292.14	M-036
			Stone Screening Type B 11.2 mm for grading-III @ 0.18 cum per 10 sqm	cum	86.400	1951.33	168594.91	M-051
			OR Crushable type such as Moorum or Gravel for grading II &III @ 0.22 cum per 10 sqm	cum	105.590	278.76	29434.27	M-007
			Binding material  Binding Material @ 0.06cum per 10  sqm for grading II material	cum	28.800	278.76	8028.29	M-007
		(-)	Cost of water	. KL	144.000	67.26	9685.44	M-189
4.9A (	(111)	(a)	Using Scrining Crushable type such as	s Moor	um or Grave	el	0.4==0.0=	
			d) GST @ 12 % on (a+b+c)				64779.35	
			e) Overhead charges @ 10 % on (a+	•	-01		60460.73	
			f) Contractor's profit @ 10 % on (a+g) Cess @ 1% on (a+b+c+d+e+f)	DTCTUT	-е)		66506.80 7280.07	
			Cost for 360 cum = a+b+c+d+e+f+g				738854.90	
			Rate per cum = (a+b+c+d+e+f+g)/360				2052.37	
						say	<u>2052.00</u>	
			OR					
4.9A (	(iii)	(b)	Using Scrining Type-B (11.2mm agg.)				0044000	
			d) GST @ 12 % on (a+b+c)				82442.03	
			e) Overhead charges @ 10 % on (a+	-	- \		76945.89	
			f) Contractor's profit @ 10 % on (a+	p+c+a+	-e)		84640.48	
			g) Cess @ 1% on (a+b+c+d+e+f)				9310.45	
			Cost for 360 cum = $a+b+c+d+e+f+g$ Rate per cum = $(a+b+c+d+e+f+g)/360$				940355.73 2612.10	
			rate per cum = (a.b.c.u.e.r.g//300			say	<u>2612.10</u>	
4.9		В	( Anyone of the aggregate grading, screening and binding material may be used as per design)  By Mechanical Means:			•		
			Unit = cum					
			Taking output = 360 cum a) Labour					
			Mate	day	0.680	354.00	240.72	L-12
			Mazdoor skilled	day		442.00	884.00	L-15
			Mazdoor	day	15.000	310.00	4650.00	L-13
			b) Machinery Motor grader 110 HP @ 50cum/hr. for spreading	hour	7.200	2917.70	21007.44	P&M-032
			Three wheel 80-100 kN Static Roller or	hour	6.000	733.63	4401.78	P&M-059
			Smooth 3 wheeled steel roller @ 30cum/hr.	hour	12.000			
4.00		(IV	Water tanker 6 KL capacity c) Material ( Refer table 400 - 7, 8 & 9	hour <b>9</b> )	24.000	544.25	13062.00	P&M-060
4.9B		(i)	Grading-I					
			Aggregate Grading-I 90 mm to 45 mm@ 1.21cum per 10 sqm for compacted	cum	435.600	871.68	379703.81	M-039
			thickness of 100 mm					

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.
			Stone Screening Type A 13.2 mm for grading-I @ 0.27 cum per 10 sqm OR	cum	97.200	1895.58	184250.38	M-052
			Crushable type such as Moorum or Gravel for <b>grading-l</b> @ 0.30 cum per 10 sqm Binding material	cum	108.000	278.76	30106.08	M-007
			Binding Material @ 0.08cum per 10 sqm for grading I material	cum	28.800	278.76	8028.29	M-007
4.9B (	(i)	(a)	Cost of water Using Scrining Crushable type such a	KL Is Mooru	144.000 um or Grave	67.26 el	9685.44	M-189
			d) GST @ 12 % on (a+b+c)				55648.95	
			e) Overhead charges @ 10 % on (a+	b+c+d)			51939.02	
			f) Contractor's profit @ 10 % on (a-	=	۵۱		57132.92	
			•	b.c.u.	<b>G</b> )		6284.62	
			Cost for 360 cum = a+b+c+d+e+f+g				634746.78 1763.19	
			Rate per cum = $(a+b+c+d+e+f+g)/360$			say	1763.19 1763.00	
			OR			Say	1703.00	
4.9B (	(i)	(b)	Using Scrining Type-A (13.2mm agg.)					
	(-)	` ,					75109.66	
			d) GST @ 12 % on (a+b+c)	la 1 a 1 al\				
			e) Overhead charges @ 10 % on (a+	-	- \		70102.35	
			f) Contractor's profit @ 10 % on (a-	-p+c+a+	<b>e</b> )		77112.59	
			g) Cess @ 1% on (a+b+c+d+e+f)				8479.98	
			Cost for 360 cum = $a+b+c+d+e+f+g$				856718.44	
			Rate per cum = (a+b+c+d+e+f+g)/360				2379.77	
4.9B		(ii)	a) Gradina II			say	<u>2380.00</u>	
4.30		(")	c) Grading-II 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	896.46	390497.98	M-038
			Type A 13.2 mm for grading-II@ 0.12 cum per 10 sqm <b>OR</b>	cum	57.600	1895.58	109185.41	M-052
			Crushable type such as Moorum or Gravel for <b>grading II &amp;III</b> @ 0.22 cum per 10 sqm OR	cum	105.590	278.76	29434.27	M-007
			Type B11.2 mm for grading-III @ 0.18 cum per 10 sqm Binding material	cum	86.400	1951.33	168594.91	M-051
			Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	278.76	8028.29	M-007
			Cost of water	KL	144.000	67.26	9685.44	M-189
4.9B (	(ii)	(a)	Using Scrining Crushable type such a	s Mooru	ım or Grave	el		
			d) GST @ 12 % on (a+b+c)				56863.64	
			e) Overhead charges @ 10 % on (a+	b+c+d)			53072.73	
			f) Contractor's profit @ 10 % on (a-	-b+c+d+	e)		58380.00	
			g) Cess @ 1% on (a+b+c+d+e+f)				6421.80	
			Cost for 360 cum = a+b+c+d+e+f+g				648601.80	
			Rate per cum = (a+b+c+d+e+f+g)/360				1801.67	
			itate per cum - (a Dicitatetity//300					
						say	<u>1802.00</u>	

SI.	Ref. to				1			Remarks/
No	MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Input ref.
4.9B (		(b)	OR Using Scrining Type-A (13.2mm agg.)	•				•
			d) GST @ 12 % on (a+b+c)				67397.17	
			e) Overhead charges @ 10 % on (a+	h+c+d)			62904.02	
			f) Contractor's profit @ 10 % on (a+	-			69194.43	
			g) Cess @ 1% on (a+b+c+d+e+f)	D.C. G	. •,		7608.98	
			Cost for 360 cum = a+b+c+d+e+f+g				768747.66	
			Rate per cum = (a+b+c+d+e+f+g)/360				2135.41	
			Kate per cuin - (a+b+c+u+e+i+g)/300			001/		
4.9B (	(ii)	(c)	Using Scrining Type-B (11.2mm agg.)			say	<u>2135.00</u>	
			d) GST @ 12 % on (a+b+c)				74526.31	
			e) Overhead charges @ 10 % on (a+	b+c+d)			69557.89	
			f) Contractor's profit @ 10 % on (a+	b+c+d-	⊦e)		76513.68	
			g) Cess @ 1% on (a+b+c+d+e+f)				8416.50	
			Cost for 360 cum = a+b+c+d+e+f+g				850066.94	
			Rate per cum = $(a+b+c+d+e+f+g)/360$				2361.30	
						say	<u>2361.00</u>	
4.9B		(iii)	c)Grading-III					
			Aggregate					
			Grading-III 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted	cum	435.600	921.24	401292.14	M-036
			thickness of 75 mm					
			Stone Screening	oum	96 400	1051 22	160504.01	M-051
			Type B11.2 mm for grading-III @ 0.18 cum per 10 sqm OR	cum	86.400	1951.33	168594.91	
			Crushable type such as Moorum or Gravel for grading II &III @ 0.22 cum per 10 sqm Binding material	cum	105.590	278.76	29434.27	M-007
			Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	278.76	8028.29	M-007
			Cost of water	KL	144.000	67.26	9685.44	M-189
4.9B (	(iii)	(a)	Using Scrining Crushable type such a	s Moor	um or Grave	el		
			d) GST @ 12 % on (a+b+c)				58158.93	
			e) Overhead charges @ 10 % on (a+	b+c+d)			54281.67	
			f) Contractor's profit @ 10 % on (a+	b+c+d-	⊦e)		59709.84	
			g) Cess @ 1% on (a+b+c+d+e+f)				6568.08	
			Cost for 360 cum = a+b+c+d+e+f+g				663376.31	
			Rate per cum = $(a+b+c+d+e+f+g)/360$				1842.71	
						say	<u>1843.00</u>	
			OR					
4.9B (	(iii)	(b)	Using Scrining Type-B (11.2mm agg.)					
			d) GST @ 12 % on (a+b+c)				75821.61	
			e) Overhead charges @ 10 % on (a+	b+c+d)			70766.83	
			f) Contractor's profit @ 10 % on (a+	-			77843.52	
			g) Cess @ 1% on (a+b+c+d+e+f)				8562.79	
			Cost for 360 cum = a+b+c+d+e+f+g				864841.47	
			Rate per cum = (a+b+c+d+e+f+g)/360				2402.34	
						say	2402.00	
		Note	As three wheeled smooth rollers are a	len ven	, commonly	•		

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

		, , , , , , , , , , , , , , , , , , , ,					
SI.	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
No	Spec.	·		1			iliput rei.

#### 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.

#### Unit = cum

output =360 cum					
abour					
•	,				L-12
	-				L-15 L-13
ncrete pavement/slabs into	day	102.000	310.00	31620.00	L-13
* **					
	L	0.000	0047.70	47500.00	P&M-032
	nour				
ree wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
or					
ooth 3 wheeled steel roller @ cum/hr.	hour	12.000			
nt end loader 1 cum bucket pacity	hour	6.000	1398.23	8389.38	P&M-017
per 10 tonne capacity	tonne. km	720 x L	7.65	0.00	Lead =0 km & P&M-058
d 10 per cent of cost of carriage cover cost of loading and coading				0.00	
iter tanker 6 KL capacity with 5 lead @ 1 trip per hour	hour	12.000	544.25	6531.00	P&M-060
laterial					
nly carriage is required to be					
<del></del>	IZI.	72.000	67.06	4040.70	M-189
	KL	72.000	07.20		100
	p+o+q/				
	=	,			
	D+C+a+6	;)			
_					
•					
er cum = (a+b+c+d+e+f+g)/360				287.62	
	abour te zdoor skilled zdoor for crushing broken cement icrete pavement/slabs into gregate lachinery tor Grader,110 HP @ 50 cum/hr. tee wheel 80-100 kN Static Roller or ooth 3 wheeled steel roller @ cum/hr. int end loader 1 cum bucket tracity per 10 tonne capacity d 10 per cent of cost of carriage cover cost of loading and toading iter tanker 6 KL capacity with 5 lead @ 1 trip per hour laterial If available from dismantled te slab after crushing / breaking inly carriage is required to be d st of water iST @ 12 % on (a+b+c) verhead charges @ 10 % on (a+	te day aday aday aday aday aday aday acrete pavement/slabs into aregate alachinery and achinery are wheel 80-100 kN Static Roller are wheel 80-100 kN Static Roller are wheel 80-100 kN Static Roller are wheel steel roller are whose and	te day 4.160 ador skilled day 2.000 acdoor for crushing broken cement day 102.000 acrete pavement/slabs into aregate lachinery tor Grader,110 HP @ 50 cum/hr. hour 6.000 acrete wheel 80-100 kN Static Roller hour 6.000  or ooth 3 wheeled steel roller @ hour 12.000 acrity per 10 tonne capacity tonne. 720 x L km d 10 per cent of cost of carriage acover cost of loading and boading atter tanker 6 KL capacity with 5 hour 12.000 lead @ 1 trip per hour laterial all available from dismantled as slab after crushing / breaking ally carriage is required to be d ast of water KL 72.000 active the state of the s	te day 4.160 354.00 zdoor skilled day 2.000 442.00 zdoor for crushing broken cement day 102.000 310.00 corete pavement/slabs into gregate lachinery tor Grader,110 HP @ 50 cum/hr. hour 6.000 2917.70 ee wheel 80-100 kN Static Roller hour 6.000 733.63  or ooth 3 wheeled steel roller @ hour 12.000 cum/hr. nt end loader 1 cum bucket hour 6.000 1398.23 pacity per 10 tonne capacity tonne. 720 x L km d 10 per cent of cost of carriage cover cost of loading and coading atter tanker 6 KL capacity with 5 hour 12.000 544.25 lead @ 1 trip per hour laterial If available from dismantled the slab after crushing / breaking nly carriage is required to be d st of water KL 72.000 67.26 ST @ 12 % on (a+b+c) verhead charges @ 10 % on (a+b+c+d) ontractor's profit @ 10 % on (a+b+c+d+e) less @ 1% on (a+b+c+d+e+f) or 360 cum = a+b+c+d+e+f+g	the day 4.160 354.00 1472.64 zdoor skilled day 2.000 442.00 884.00 zdoor for crushing broken cement day 102.000 310.00 31620.00 gregate lachinery tor Grader,110 HP @ 50 cum/hr. hour 6.000 2917.70 17506.20 ee wheel 80-100 kN Static Roller hour 6.000 733.63 4401.78  or ooth 3 wheeled steel roller @ hour 12.000 zum/hr. nt end loader 1 cum bucket hour 6.000 1398.23 8389.38 vacity per 10 tonne capacity tonne. 720 x L 7.65 0.00 km d 10 per cent of cost of carriage zover cost of loading and loading teter tanker 6 KL capacity with 5 hour 12.000 544.25 6531.00 lead @ 1 trip per hour leaterial I available from dismantled leslab after crushing / breaking hly carriage is required to be dest of water KL 72.000 67.26 4842.72 ST @ 12 % on (a+b+c) verhead charges @ 10 % on (a+b+c+d) ontractor's profit @ 10 % on (a+b+c+d+e) ess @ 1% on (a+b+c+d+e+f) r 360 cum = a+b+c+d+e+fy  1025.18 r 360 cum = a+b+c+d+e+fy 1025.20 1175.0

288.00

say

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.

#### 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

SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Ta	king output = 7500 sqm			_		
		a)	Labour					
			Mate	day	0.560	354.00	198.24	L-12
			Mazdoor skilled	day	2.000	442.00	884.00	L-15
			Mazdoor	day	12.000	310.00	3720.00	L-13
		b)	Machinery					
		·	Mechanical broom hydraulic @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
			Hydraulic self propelled chips spreader	hour	6.000	3211.50	19269.00	P&M-025
			Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
			Tipper 10 tonne capacity	hour	6.000	779.65	4677.90	P&M-048
			Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	733.63	2861.16	P&M-059
			Bitumen pressure distributor @ 1750 sqm per hour	hour	4.280	1308.85	5601.88	P&M-004
		c)	Material					
			Crushed stone aggregate 11.2 mm size	cum	97.500	1951.33	190254.68	M-051
			Bitumen (80-100 grade)	tonne	0.250	57350.44	14337.61	M-074
		d)	GST @ 12 % on (a+b+c)				30335.48	
		e)	Overhead charges @ 10 % on (a+l	b+c+d)			28313.11	
		f)	Contractor's profit @ 10 % on (a+	b+c+d+	·e)		31144.42	
		g)	Cess @ 1% on (a+b+c+d+e+f)				3425.89	
		Co	st for 7500 sqm = a+b+c+d+e+f+g				346014.53	
		Ra	te per sqm = (a+b+c+d+e+f+g)/7500				46.14	
	Al - 4	- TI		h		say	<u>46.00</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)

a)	Labour					
	Mate	day	0.480	354.00	169.92	L-12
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
	Mazdoor	day	10.000	310.00	3100.00	L-13
b)	Machinery					
	Wet mix plant of 75 tonne hourly capacity	hour	9.000	1619.47	14575.23	P&M-094
	Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
	Front end loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
	Paver finisher	hour	6.000	1187.61	7125.66	P&M-035
	Three wheel 80-100 kN Static Roller	hour	6x0.65	733.63	2861.16	P&M-059
	or					
	Smooth 3 wheeled steel roller @ 8-10 tonnes.	hour	12.000			
	Water tanker 6 KL capacity	hour	3.000	544.25	1632.75	P&M-060
	Tipper	tonne. km	495 x L	7.65	0.00	Lead =0 km & P&M-058

SI. No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		-	Add 10 per cent of cost of carriage				0.00	_
			to cover cost of loading and					
		۵۱	unloading					
		c)	Material ( Table 400-11) 45 mm to 22.4 mm@ 30 per cent	cum	89.100	947.79	84448.09	M-034
			•		118.800	976.11	115961.87	M-031
			22.4 mm to 2.36 mm @ 40 per cent	cum	110.000	970.11	115901.07	001
			2.36 mm to 75 micron@ 30 per cent	cum	89.100	624.78	55667.90	M-022
			Cost of water	KL	18.000	67.26	1210.68	M-189
		d)	GST @ 12 % on (a+b+c)				36245.75	
		e)	Overhead charges @ 10 % on (a+b	o+c+d)			33829.36	
		f)	Contractor's profit @ 10 % on (a+l	b+c+d+	-e)		37212.30	
		g)	Cess @ 1% on (a+b+c+d+e+f)				4093.35	
		Co	ost for 225 cum = a+b+c+d+e+f+g				413428.64	
		Ra	ate per cum = (a+b+c+d+e+f+g)/225				1837.46	
						say	<u> 1837.00</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	354.00	84.96	L-12
	Mazdoor	day	6.000	310.00	1860.00	L-13
b)	Machinery					
	Water tanker 6 KL with 5 km lead and 1 trip per hour	hour	1.000	544.25	544.25	P&M-060
	Plate compactor @ 3.5 cum per hour	hour	6.000	338.05	2028.30	P&M-086
c)	Material					
	Cost of water	KL	6.000	67.26	403.56	M-189
d)	GST @ 12 % on (a+b+c)				590.53	
e)	Overhead charges @ 10 % on (a+b	+c+d)			551.16	
f)	Contractor's profit @ 10 % on (a+b	+c+d+e)	)		606.28	
g)	Cess @ 1% on (a+b+c+d+e+f)				66.69	
Co	st for 21 cum = a+b+c+d+e+f+g				6735.73	
Ra	te per cum = (a+b+c+d+e+f+g)/21				320.75	
				say	<u>321.00</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 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

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.
		Uni	it = cum					
		Tak	king output = 21 cum					
		a)	Labour					
			Mate	day	0.160	354.00	56.64	L-12
			Mazdoor	day	4.000	310.00	1240.00	L-13
		b)	Machinery					
			Water tanker with 5 km lead	hour	1.000	544.25	544.25	P&M-060
			Plate Compactor @ 3.5 cum per hour	hour	6.000	338.05	2028.30	P&M-086
			Hydraulic Excavator1.0 cum bucket capacity @60 cum per hour	hour	0.500	1751.33	875.67	P&M-026
			Tipper 10 tonne capacity	tonne. km	52.5 x L	7.65	1204.88	Lead =3 km & P&M-058
			Add 10 per cent of cost of transportation to cover cost of loading and unloading c) Material				120.49	
			Cost of water	KL	6.000	67.26	403.56	M-189
		d)	GST @ 12 % on (a+b+c)				776.85	
		e)	Overhead charges @ 10 % on (a+	b+c+d)			725.06	
		f)	Contractor's profit @ 10 % on (a+	b+c+d+	e)		797.57	
		g)	Cess @ 1% on (a+b+c+d+e+f)				87.73	
		Cos	st for 21 cum = a+b+c+d+e+f+g				8861.00	
		Rat	te per cum = (a+b+c+d+e+f+g)/ 21				421.95	
			. ,			say	<u>422.00</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 design.

#### 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

### Unit = cum

Taking output = 360 cum

#### A By Mix in Place Method

#### a) Labour

Mate	day	0.480	354.00	169.92 L-12
Mazdoor skilled	day	2.000	442.00	884.00 L-15
Mazdoor	dav	10.000	310.00	3100.00 L-13

SI. No	Ref. to MoRTH Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	орес.		b)	Machinery					
				Tractor attached with rotavator @ 25 cum per hour	hour	12.000	407.96	4895.52	P&M-054
				Motor grader 110 HP	hour	6.000	2917.70	17506.20	P&M-032
				Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
				Water tanker 6 KL capacity	hour	6.000	544.25	3265.50	P&M-060
			c)	Material					
			Ag	gregate at site					
			i) F	or 53 mm maximum size					
				63 mm to 45 mm @ 33 per cent	cum	157.460	896.46	141156.59	M-038
				22.5 mm to 5.6 mm@ 32 per cent	cum	151.060	1522.12	229931.45	M-032
				Below 5.6 mm @ 35 per cent	cum	166.680	1828.32	304744.38	M-030
				Cost of water	KL	36.000	67.26	2421.36	M-189
			ii) l	Or For 45 mm maximum size					
				45 mm to 22.5 mm@ 5 per cent	cum	24.120	947.79	22860.69	M-034
				22.4 mm to 5.6 mm@ 50 per cent	cum	237.600	1522.12	361655.71	M-032
				Below 5.6 mm@ 45 per cent	cum	213.480	1828.32	390309.75	M-030 M-189
4.17A		(i)	Eo	Cost of water r 53 mm maximum size	KL	36.000	67.26	2421.36	141-100
4.17A		(')	d)	GST @ 12 % on (a+b+c)				85497.20	
			e)	Overhead charges @ 10 % on (a+	b+c+d)			79797.39	
			f)	Contractor's profit @ 10 % on (a+		·e)		87777.13	
			g)	Cess @ 1% on (a+b+c+d+e+f)		•		9655.48	
				st for 360.0cum = a+b+c+d+e+f+g				975203.90	
			Ra	te per cum = (a+b+c+d+e+f+g)/360				2708.90	
4.17A		(ii)	Fo	or r 45 mm maximum size			say	<u>2709.00</u>	
			d)	GST @ 12 % on (a+b+c)				97376.45	
			e)	Overhead charges @ 10 % on (a+	b+c+d)			90884.69	
			f)	Contractor's profit @ 10 % on (a+	b+c+d+	·e)		99973.16	
			g)	Cess @ 1% on (a+b+c+d+e+f)				10997.05	
				st for 360.0cum = a+b+c+d+e+f+g				1110701.78	
			Ra	te per cum = (a+b+c+d+e+f+g)/360				3085.28	
							say	<u>3085.00</u>	
4.45				y one of the aggregate grading may be	adopte	d			
4.17		В	Ву	Mixing Plant :					
				it = cum					
			Tai	king output = 225 cum (450 tonnes)					
			a)	Labour					
				Mate	day	0.280	354.00	99.12	L-12
				Mazdoor skilled	day	1.000	442.00	442.00	L-15
				Mazdoor	day	6.000	310.00	1860.00	L-13
			b)	Machinery					
				Wet mix plant @ 75 tonne per hour	hour	6.000	1619.47	9716.82	P&M-094
				Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
				Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
				Motor grader 110 HP	hour	6.000	2917.70	17506.20	P&M-032

SUB-BASES, BASES ( NON- BITUMINOUS) AND SHOULDERS							
SI.   Ref. t MoRT No   Spec	н	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
		Water tanker 6 KL capacity	hour	3.000	544.25	1632.75	P&M-060
		Tipper 10 tonne capacity	tonne.km	450 x L	7.65	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	
		Aggregate at site					
		i) For 53 mm maximum size					
		63 mm to 45 mm @ 33 per cent	cum	98.400	896.46	88211.66	M-038
		22.5 mm to 5.6 mm@ 32 per cent	cum	94.410	1522.12	143703.35	M-032
		Below 5.6 mm @ 35 per cent	cum	104.180	1828.32	190474.38	M-030
		Or					
		ii) For 45 mm maximum size 45 mm to 22.5 mm@ 5 per cent	cum	15.060	947.79	14273.72	M-034
		22.4 mm to 5.6 mm@ 50 per cent	cum	148.500	1522.12	226034.82	M-032
		Below 5.6 mm@ 45 per cent	cum	133.430	1828.32	243952.74	M-030
		Cost of water	KL	18.000	67.26	1210.68	M-189
4.17 B	(i)	For 53 mm maximum size		. 0.000	01.20		
		d) GST @ 12 % on (a+b+c)				56695.04	
		e) Overhead charges @ 10 % on (a+	h+c+d)			52915.37	
		f) Contractor's profit @ 10 % on (a+	-	e)		58206.91	
		g) Cess @ 1% on (a+b+c+d+e+f)		-,		6402.76	
		Cost for 225cum = a+b+c+d+e+f+g				646678.76	
		Rate per cum = (a+b+c+d+e+f+g)/225				2874.13	
		(a b c c a c c c g),220			say	<u>2874.00</u>	
4.17 B	(ii)	For 45 mm maximum size					
		d) GST @ 12 % on (a+b+c)				64264.95	
		e) Overhead charges @ 10 % on (a+	b+c+d)			59980.62	
		f) Contractor's profit @ 10 % on (a+	b+c+d+			65978.68	
		g) Cess @ 1% on (a+b+c+d+e+f)				7257.66	
		Cost for 360.0cum = a+b+c+d+e+f+g				733023.16	
		Rate per cum = $(a+b+c+d+e+f+g)/360$				2036.18	
					say	<u>2036.00</u>	
4.18		Preparation of sub grade					
	(A)	Preparation of sub grade by excavating dressing to camber and consolidating with and disposal of surplus earth, lead upto 5	h road ro		•		
		Unit = Sq.m.  Taking output = 100 Sq.m.					
		a) Labour Mate	day	1.800	354.00	637.20	L-12
		Mazdoor	day	18.000	310.00	5580.00	
		Mazdoor for consolidation of sub-	day	0.270	310.00	83.70	
		Mazdoor for watch & ward	day	0.054	310.00	16.74	
		b) Machinery	ady	0.007	310.00	10.74	
		Three wheel 80-100 kN Static Roller	hour	0.430	733.63	315.46	M-189
		c) GST @ 12 % on (a+b)				795.97	
		d) Overhead charges @ 10 % on (a+	b+c)			742.91	

SI. No	Ref. to MoRTH Spec.		Description				Cost in Rs	Remarks/ Input ref.
		е	) Contractor's profit @ 10 % on (a+	b+c+d)	-		817.20	
	f) Cess @ 1% on (a+b+c+d+e)				89.89			
	Cost for 100 Sq.m. = a+b+c+d+e+f				9079.07			
	Rate per Sq.m. = (a+b+c+d+e+f)/ 100				90.79			
						sav	91.00	

(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							
b) Machinery							
Three wheel 80-100 kN Static Roller	hour	0.430	733.63	315.46	M-189		
c) GST @ 12 % on (a+b)				39.86			
d) Overhead charges @ 10 % on (a+l		37.21					
e) Contractor's profit @ 10 % on (a+l		40.93					
f) Cess @ 1% on (a+b+c+d+e)				4.50			
Cost for 100 Sq.m. = a+b+c+d+e+f				454.70			
Rate per Sq.m. = (a+b+c+d+e+f)/ 100				4.55			
			say	<u>4.55</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.
- 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.
- 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 gum boots, 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.
- 10 The Factor for usage of rollers has been taken as 0.65 in case of Bituminous Macadam only.

DSR Spec. ref.	SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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#### 502 5.1 **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	354.00	28.32	L-12
	Mazdoor	day	2.000	310.00	620.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm	hour	2.800	433.63	1214.16	P&M-031
	per hour					
	Air compressor 250 cfm	hour	2.800	575.22	1610.62	P&M-001
	Bitumen pressure distributor @	hour	2.000	1308.85	2617.70	P&M-004
	1750 sqm per hour					
	Water tanker 6 KL capacity @ 1	hour	1.000	544.25	544.25	P&M-060
	trip per hour					
c)	Material					
	Bitumen emulsion @ 0.6 kg per	tonne	2.100	47120.35	98952.74	M-077
	sqm					
	Cost of water	KL	6.000	67.26	403.56	M-189
d)	GST @ 12 % on (a+b+c)				12718.96	
e)	Overhead charges @ 10 % on	(a+b+c+d)			11871.03	
f)	Contractor's profit @ 10 % on	(a+b+c+d+e	<del>)</del> )		13058.13	
g)	Cess @ 1% on (a+b+c+d+e+f)			1436.39		
_	st for 3500 sqm = a+b+c+d+e+f+g				145075.86	
	te per sqm = (a+b+c+d+e+f+g)/35	00			41.45	
				say	<u>41.00</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.

#### 503 5.2 **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

3 - 4					
Labour					
Mate	day	0.080	354.00	28.32	L-12
Mazdoor	day	2.000	310.00	620.00	L-13
Machinery					
Mechanical broom @ 1250 sqm per hour	hour	2.800	433.63	1214.16	P&M-031
Air compressor 250 cfm	hour	2.800	575.22	1610.62	P&M-001
Emulsion pressure distributor @ 1750 sqm per hour	hour	2.000	1308.85	2617.70	P&M-004
Material					
Bitumen emulsion @ 0.2 kg per	tonne	0.700	47120.35	32984.25	M-077
sqm					
GST @ 12 % on (a+b+c)				4689.01	
Overhead charges @ 10 % on (	a+b+c+d)			4376.41	
Contractor's profit @ 10 % on (	a+b+c+d+e)			4814.05	
Cess @ 1% on (a+b+c+d+e+f)				529.55	
st for 3500 sqm = a+b+c+d+e+f+g			53484.07		
te per sqm = (a+b+c+d+e+f+g)/350	00			15.28	
			say	<u>15.00</u>	
	Mate Mazdoor  Machinery Mechanical broom @ 1250 sqm per hour Air compressor 250 cfm  Emulsion pressure distributor @ 1750 sqm per hour Material Bitumen emulsion @ 0.2 kg per sqm GST @ 12 % on (a+b+c) Overhead charges @ 10 % on ( Contractor's profit @ 10 % on ( Cess @ 1% on (a+b+c+d+e+f) st for 3500 sqm = a+b+c+d+e+f+g	Mate day  Mazdoor day  Machinery  Mechanical broom @ 1250 sqm hour per hour Air compressor 250 cfm hour  Emulsion pressure distributor @ hour 1750 sqm per hour  Material  Bitumen emulsion @ 0.2 kg per tonne sqm GST @ 12 % on (a+b+c)  Overhead charges @ 10 % on (a+b+c+d)  Contractor's profit @ 10 % on (a+b+c+d+e)  Cess @ 1% on (a+b+c+d+e+f)	Mate day 0.080  Mazdoor day 2.000  Machinery  Mechanical broom @ 1250 sqm hour 2.800 per hour Air compressor 250 cfm hour 2.800  Emulsion pressure distributor @ hour 2.000 1750 sqm per hour  Material  Bitumen emulsion @ 0.2 kg per tonne 0.700 sqm  GST @ 12 % on (a+b+c)  Overhead charges @ 10 % 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 3500 sqm = a+b+c+d+e+f+g	Mate day 0.080 354.00  Mazdoor day 2.000 310.00  Machinery  Mechanical broom @ 1250 sqm hour 2.800 433.63 per hour Air compressor 250 cfm hour 2.800 575.22  Emulsion pressure distributor @ hour 2.000 1308.85 1750 sqm per hour  Material  Bitumen emulsion @ 0.2 kg per tonne 0.700 47120.35 sqm  GST @ 12 % on (a+b+c)  Overhead charges @ 10 % on (a+b+c+d)  Contractor's profit @ 10 % on (a+b+c+d+e)  Cess @ 1% on (a+b+c+d+e+f+g)  te per sqm = (a+b+c+d+e+f+g)/3500	Mate       day       0.080       354.00       28.32         Mazdoor       day       2.000       310.00       620.00         Machinery       Mechanical broom @ 1250 sqm       hour       2.800       433.63       1214.16         per hour       Air compressor 250 cfm       hour       2.800       575.22       1610.62         Emulsion pressure distributor @       hour       2.000       1308.85       2617.70         1750 sqm per hour       Material         Bitumen emulsion @ 0.2 kg per       tonne       0.700       47120.35       32984.25         sqm       GST @ 12 % on (a+b+c)       4689.01       4376.41         Contractor's profit @ 10 % on (a+b+c+d+e)       4814.05       4814.05         Cess @ 1% on (a+b+c+d+e+f+g)       53484.07       53484.07         te per sqm = (a+b+c+d+e+f+g)/3500       15.28

	Ref. to MoRTH/						Remarks
SI. No	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	day	0.840	354.00	297.36	
	Mazdoor working with HMP, mechanical broom, paver, roller,	day	16.000	310.00	4960.00	L-13
	asphalt cutter and assistance for					
	setting out lines, levels and layout					
	of construction					
	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery					
D,	Batch mix HMP 100-120 TPH @	hour	6.000	28522.12	171132.72	P&M-021
	75 tonne per hour actual output					
	Mechanical broom hydraulic @	hour	2.200	433.63	953.99	P&M-031
	1250 sqm per hour					
	Air compressor 250 cfm	hour	2.200	575.22	1265.48	
	Paver finisher hydrostatic with	hour	6.000	3259.29	19555.74	P&M-034
	sensor control @ 75 cum per hour					
	Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket	hour	6.000	1398.23	8389.38	P&M-017
	capacity					
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	0.00	Lead =0 km &
		KIII				P&M-058
	d 10 per cent of cost of carriage to				0.00	
COV	ver cost of loading and unloading				0.01.01	D014 044
	Smooth wheeled roller 8-10 tonnes for initial break down	hour	6.00x0.65*	561.95	2191.61	P&M-044
	Three wheel 80-100 kN Static	hour	6.00x0.65*	733.63	2861.16	P&M_059
	Roller	Hour	0.0000.00	733.03	2001.10	1 WW 000
	Finish rolling with 6-8 tonnes	hour	6.00x0.65*	1393.81	5435.86	P&M-045
	smooth wheeled tandem roller.					
c)	Material		44.050	E70E0 44	054054.00	M 074
	i) Bitumen@ 3.3 per cent of mix	tonne	14.850	57350.44	851654.03	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

weight of mix =  $205 \times 2.2 = 450$  tonne

I. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remark / Input ref.
			Volume of aggregate = 290.1 cum					
			*Grading I ( 40 mm nominal size )					
			37.5 - 25 mm 15 per cent	cum	43.510	947.79	41238.34	M-049
			25 - 10 mm 45 per cent	cum	130.550	1505.31	196518.22	M-046
			10 - 5 mm 25 per cent	cum	72.530	1951.33	141529.96	
			5 mm and below15 per cent	cum	43.510	1828.32	79550.20	M-030
			or					
			GradingII(19 mm nominal size)					
			25 - 10 mm 40 per cent	cum	116.040	1505.31	174676.17	
			10 - 5 mm 40 per cent	cum	116.040	1951.33	226432.33	M-040
			5 mm and below 20 per cent	cum	58.020	1828.32	106079.13	M-030
			* Any one of the alternative may be adopted as per approved design	oe .				
		(i)	for Grading I ( 40 mm nominal size	<del>:</del> )				
			d) GST @ 12 % on (a+b+c)				184298.21	
			e) Overhead charges @ 10 % or	า (a+b+c+d	<b>)</b>		172011.66	
			f) Contractor's profit @ 10 % or				189212.83	
			g) Cess @ 1% on (a+b+c+d+e+f	•	,		20813.41	
			Cost for 205 cum = $a+b+c+d+e+f+g$	,			2102154.50	
			Rate per cum = $(a+b+c+d+e+f+g)/205$	(For Gradin	ng I)		10254.41	
						say	<u>10254.00</u>	
		(ii)	for GradingII(19 mm nominal size	)				
			d) GST @ 12 % on (a+b+c)				190100.32	
			e) Overhead charges @ 10 % or	า (a+b+c+d	<b>)</b>		177426.96	
			f) Contractor's profit @ 10 % or	n (a+b+c+d	l+e)		195169.66	
			g) Cess @ 1% on (a+b+c+d+e+f	)			21468.66	
			Cost for 205 cum = $a+b+c+d+e+f+g$	=			2168334.90	
			Rate per cum = $(a+b+c+d+e+f+g)/205$	(For Gradin	ng-II)		10577.24	
						say	<u>10577.00</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.
- 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 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)	- 1	al	hი	ur

Mate	day	0.320	354.00	113.28 L-12
Mazdoor including for brooming of key aggregates	day	6.000	310.00	1860.00 L-13

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 skilled	day	2.000	442.00	884.00	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	hour	6.000	3211.50	19269.00	P&M-025
				sqm Bitumen pressure distributor for @ 1750 sqm per hour	hour	2.570	1308.85	3363.74	P&M-004
				Tipper 5.5 cum capacity for carriage of aggregates from stockpile to chip spreader	hour	10.000	779.65	7796.50	P&M-048
				Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
				Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
			c)	Material					
				Bitumen@ 5 kg per sqm	tonne	22.500	57350.44	1290384.90	
				Crushed stone coarse aggregate passing 45 mm and retained on 2.8 mm sieve @ 0.06 cum per sqm	cum	270.000	713.27	192582.90	M-033
				Key aggregates passing 22.4 mm and retained on 2.8 mm sieve @ 0.015 cum per sqm	cum	67.500	976.11	65887.43	M-031
			d)	GST @ 12 % on (a+b+c)				191391.95	
			e)	Overhead charges @ 10 % on (				178632.49	
			f)	Contractor's profit @ 10 % on (	a+b+c+	d+e)		196495.74	
			g)	Cess @ 1% on (a+b+c+d+e+f)				21614.53	
				st for 4500 sqm = a+b+c+d+e+f+g <b>te per sqm = (a+b+c+d+e+f+g)/45</b> 0	10			2183067.62 485.13	
			IXu	te per 34m = (a·b·e·a·e·r·g)/400	,,,		say	<u>485.00</u>	
5.4		Note B	end	opers will be needed to match the capacity loader.  mm thick	of chip sp	reader and front			
				<mark>it = sqm</mark> king output = 4500 sqm (337.5 cur	п сотр	acted).			
			a)	Labour					
				Mate	day	0.400	354.00	141.60	
				Mazdoor including for brooming of key aggregates	day	8.000	310.00	2480.00	
			b)	Mazdoor skilled  Machinery	day	2.000	442.00	884.00	L-15
			IJ,	Hydraulic self propelled chip spreader both for aggregates and key aggregates@ 1500 sqm per hour for 4500 x 2 sqm	hour	6.000	3211.50	19269.00	P&M-025
				Bitumen pressure distributor for@ 1750 sqm per hour	hour	2.570	1308.85	3363.74	P&M-004
				Tipper 5.5 cum capacity for carriage of aggregates from stockpile to chip spreader	hour	10.000	779.65	7796.50	P&M-048
				Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
				Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	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.
		 c)	Material					
			Bitumen@ 6.8 kg per sqm	tonne	30.600	57350.44	1754923.46	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	753.10	305005.50	M-037
			Key aggregates passing 26.5 mm and retained on 2.8 mm sieve @ 0.018 cum per sqm	cum	81.000	780.53	63222.93	M-026
		d)	GST @ 12 % on (a+b+c)				260385.35	
		e)	Overhead charges @ 10 % on (	a+b+c+	d)		243026.32	
		f)	Contractor's profit @ 10 % on (	a+b+c+	d+e)		267328.96	
		g)	Cess @ 1% on (a+b+c+d+e+f)				29406.19	
		Co	st for 4500 sqm = a+b+c+d+e+f+g				2970024.71	
		Ra	te per sqm = (a+b+c+d+e+f+g)/450	0			660.01	
						say	<u>660.00</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

e)

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	354.00	141.60	L-12
	Mazdoor including for brooming of	day	8.000	310.00	2480.00	L-13
	key aggregates					
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
b)	Machinery					
	Hydraulic self propelled chip	hour	6.000	3211.50	19269.00	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	1308.85	4489.36	P&M-004
	3000 x 2 sqm @ 1750 sqm per					
	hour		40.000	770.05	7700 50	D014 040
	Tipper 5.5 cum capacity	hour	10.000	779.65	7796.50	P&M-048
	Three wheel 80-100 kN Static	hour	6.000	733.63	4401.78	P&M-059
	Roller					
	Front end loader 1 cum bucket	hour	6.000	1398.23	8389.38	P&M-017
	capacity					
c)	Material					
	Bitumen30 kg per 10 sqm @ 15	tonne	9.000	57350.44	516153.96	M-074
	kg per 10 sqm for each layer					
	Crushed stone coarse aggregate	cum	300.000	780.53	234159.00	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	976.11	38068.29	M-031
	and retained on 2.8 mm sieve @					
	0.13 cum per 10 sqm					
d)	GST @ 12 % on (a+b+c)				100347.94	

93658.08

Page: 129

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

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)		103023.89	
		g) Cess @ 1% on (a+b+c+d+e+f)				11332.63	
		Cost for 3000 sqm = a+b+c+d+e+f+g				1144595.41	
		Rate per sqm = $(a+b+c+d+e+f+g)/300$	0			381.53	
					say	<u>382.00</u>	

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

### 5.6 507 Dense Graded 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)

	mig carpar roo cam (roo tomico	•/				
a)	Labour					
	Mate	day	0.840	354.00	297.36	L-12
	Mazdoor working with HMP,	day	16.000	310.00	4960.00	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	442.00	2210.00	L-15
	& levels					
b)	Machinery					
	Batch mix HMP @ 75 tonne per	hour	6.000	16867.26	101203.56	P&M-022
	hour					
	Paver finisher hydrostatic with	hour	6.000	3259.29	19555.74	P&M-034
	sensor control @ 75 cum per hour					
	Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket	hour	6.000	1398.23	8389.38	P&M-017
	capacity					
	Tipper 10 tonne capacity	tonne.	450 x L	7.65	0.00	Lead =0
		km				km &
	140				0.00	P&M-058
	d 10 per cent of cost of carriage to				0.00	
CO	ver cost of loading and unloading					5011011
	smooth wheeled roller 8-10	hour	6.00x0.65*	561.95	2191.61	P&IVI-044
	tonnes for initial break down					
	rolling.					
	Three wheel 80-100 kN Static	hour	6.00x0.65*	733.63	2861.16	P&M-059
	Roller					
	Finish rolling with 6-8 tonnes	hour	6.00x0.65*	1393.81	5435.86	P&M-045
	smooth wheeled tandem roller.					
c)	Materials					
•	Bitumen @ 4.25 per cent of	tonne	19.130	57350.44	1097113.92	M-074
	weight of mix					
	Aggregate					
Tot	al weight of mix = 450 tonnes					
	eight of bitumen = 19.13 tonnes					
	eight of aggregate = 450 -19.13 =					
	0.87 tonnes					
	king density of aggregate = 1.5					
	n/cum					
	ume of aggregate = 287.25 cum					
	ading - I40 mm (Nominal Size)					
	37.5 - 25 mm 22 per cent	cum	63.190	947.79	59890.85	M-049
	* I					

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.
	•		25 - 10 mm 13 per cent	cum	37.340	1505.31	56208.28	M-046
			10 -4.75 mm 19 per cent	cum	54.580	1951.33	106503.59	M-040
			4.75 mm and below 44 per cent	cum	126.390	1828.32	231081.36	
			Filler @ 2 per cent of weight of	tonne	8.620	12878.76	111014.91	M-188
			aggregates.					
			or					
			Grading - II19 mm (Nominal Size)		00.400	4505.04	400007.54	M 046
			25 - 10 mm 30 per cent	cum	86.160	1505.31	129697.51	M-046 M-040
			10 - 5 mm 28 per cent	cum	80.430	1951.33	156945.47	
			5 mm and below 40 per cent	cum	114.900	1828.32	210073.97	
			Filler @ 2 per cent of weight of aggregates.	tonne	8.620	12878.76	111014.91	IVI- I 00
			* Any one of the alternative may be adopted as per approved design	Э				
		(i)	For Grading-I ( 40 mm nominal size	)				
			d) GST @ 12 % on (a+b+c)	,			217799.03	
			e) Overhead charges @ 10 % on	(a+b+c+c	d)		203279.10	
			f) Contractor's profit @ 10 % on	-	-		223607.01	
			g) Cess @ 1% on (a+b+c+d+e+f)		<b>,</b>		24596.77	
			Cost for 205 cum = $a+b+c+d+e+f+g$				2484273.83	
			Rate per cum = $(a+b+c+d+e+f+g)/19$	5 (For G	rading I)		12739.87	
						say	<u>12740.00</u>	
		(ii)	For Grading-II (19 mm nominal size	<del>)</del> )				
			d) GST @ 12 % on (a+b+c)				222962.97	
			e) Overhead charges @ 10 % on	(a+b+c+c	d)		208098.78	
			f) Contractor's profit @ 10 % on	(a+b+c+	d+e)		228908.65	
			g) Cess @ 1% on (a+b+c+d+e+f)				25179.95	
			Cost for 205 cum = $a+b+c+d+e+f+g$				2543175.14	
			Rate per cum = (a+b+c+d+e+f+g)/195 (	For Gradi	ng-II)		13041.92	
						say	<u>13042.00</u>	

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.
- 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 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.

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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5.7 508 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)

a)	Labour					
	Mate	day	0.840	354.00	297.36	
	Mazdoor working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout	day	16.000	310.00	4960.00	L-13
	of construction Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery		0.000	40007.00	404000 50	D8M 000
	Batch mix HMP @ 75 tonne per hour	hour	6.000	16867.26	101203.56	P&IVI-022
	Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3259.29	19555.74	P&M-034
	Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	
	Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	561.95	2191.61	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	733.63	2861.16	P&M-059
	Finish rolling with 6-8 tonnes smooth wheeled tandem roller	hour	6.00x0.65*	1393.81	5435.86	P&M-045
c)	Material					
* G	irading I: 13 mm (Nominal Size) i) Bitumen@ 4.5 per cent of	tonne	20.250	57350.44	1161346.41	M-074
	weight of mix	torine	20.230	37330.44	1101340.41	IVI-07-4
	Aggregate					
	tal weight of mix = 450 tonnes					
	eight of bitumen = 20.25 tonnes eight of aggregate = 450-20.25 =					
	9.75 tonnes					
	king density of aggregate = 1.5					
	/cum lume of aggregate = 286.5 cum					
V O	13.2 - 10 mm20 per cent	cum	57.300	1492.04	85493.89	M-044
	10 - 5 mm 38 per cent	cum	108.870	1951.33	212441.30	M-040
	5 mm and below 40 per cent	cum	114.600	1828.32	209525.47	M-030
	Filler @ 2 per cent of weight of aggregates.	tonne	8.620	12878.76	111014.91	M-188

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Grading II: 10 mm (Nominal Size)

SI. No	Ref. to MoRTH/ DSR Spec.		Description Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Bitumen@5 per cent of weight of	tonne	22.500	57350.44	1290384.90	M-074
			mix weight of mix = 450 tonne					
			Aggregate					
			Total 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	1951.33	316993.56	
			4.75 and below@ 41 per cent	cum	116.850	1828.32	213639.19	
			Filler @ 2 per cent of weight of aggregates.	tonne	8.620	12878.76	111014.91	M-188
			*Any one of the alternative may be adopted as per approved design					
		(i)	for Grading -I (13 mm nominal size	)				
			d) GST @ 12 % on (a+b+c)				231960.12	
			e) Overhead charges @ 10 % on (	a+b+c+d	)		216496.11	
			f) Contractor's profit @ 10 % on	(a+b+c+d	l+e)		238145.72	
			g) Cess @ 1% on (a+b+c+d+e+f)				26193.06	
			Cost for 205 cum = $a+b+c+d+e+f+g$				2645796.00	
			Rate per cum = $(a+b+c+d+e+f+g)/19$	5 (For Gr	ading I)		13568.18	
						say	<u>13568.00</u>	
5.7		(ii)	for Grading-II(10 mm nominal size)					
			d) GST @ 12 % on (a+b+c)				250225.39	
			e) Overhead charges @ 10 % on (		•		233543.70	
			f) Contractor's profit @ 10 % on	(a+b+c+d	l+e)		256898.07	
			g) Cess @ 1% on (a+b+c+d+e+f)				28258.79	
			Cost for 205 cum = a+b+c+d+e				2854137.52	
			Rate per cum = $(a+b+c+d+e)/195$ (Fo	r Gradin	g-II)		14636.60	
		Nete	*4 Although the well '		<b></b>	say	<u>14637.00</u>	
		NOTE	*1. Although the rollers are required o norms of output, but the same have t	•	•			

ote \*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.
- 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 SDBC is laid over freshly laid tack coat, provision of broom and 2 mazdoor shall be deleted as the same has been included in the cost of tack coat.
- 5. The quantity of Bitumen to be adjusted as per job mix formula.

### 5.8 509 Bituminous Concrete

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

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.
	Unit = cum					
	Taking output = 191 cum (450 tonn	es)				
	a) Labour Mate	day	0.840	354.00	297.36	L-12
	Mazdoor working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layou of construction	day t	16.000	310.00	4960.00	L-13
	Skilled mazdoor for checking line & levels b) Machinery	day	5.000	442.00	2210.00	L-15
	Batch mix HMP @ 75 tonne per hour	hour	6.000	16867.26	101203.56	P&M-022
	Paver finisher hydrostatic with sensor control @ 75 cum per hou	hour r	6.000	3259.29	19555.74	P&M-034
	Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	0.00	Lead =0 km & P&M-058
	Add 10 per cent of cost of carriage to cover cost of loading and unloading	0			0.00	1 AW-030
	Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	561.95	2191.61	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	733.63	2861.16	P&M-059
	Finish rolling with 6-8 tonnes smooth wheeled tandem roller.  c) Material	hour	6.00x0.65*	1393.81	5435.86	P&M-045
	<ul><li>i) Bitumen@ 5 per cent of weigh of mix</li></ul>	t tonne	22.500	57350.44	1290384.90	M-074
	ii) Aggregate  Total 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	5				
	ton/cum					
	Volume of aggregate = 285 cum  Grading - I-19 mm (Nominal Size)					
	20 - 10 mm 35 per cent	cum	99.750	1561.06	155715.74	M-045
	10 - 5 mm 23 per cent	cum	65.550	1951.33	127909.68	
	5 mm and below 40 per cent	cum	114.000	1828.32	208428.48	M-030
	Filler @ 2 per cent of weight of aggregates.	tonne	8.620	12878.76	111014.91	M-188
	or Grading - II-13 mm (Nominal Size)					
	13.2 - 10 mm30 per cent	cum	85.500	1492.04	127569.42	M-044
	10 - 5 mm 25 per cent	cum	71.250	1951.33	139032.26	
	5 mm and below43 per cent	cum	122.550	1828.32	224060.62	
	Filler @ 2 per cent of weight of aggregates.  *Any one of the alternative may be adopted as per approved design	tonne	8.620	12878.76	111014.91	M-188

adopted as per approved design

## **CHAPTER - 5**

			BASES AND SURFACE	COURSES	S (BITUMINOUS	S)			
SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in R	Rema / Inpu ref.	
		(i)	for Grading-I (13 mm nominal size)	)				•	
			d) GST @ 12 % on (a+b+c)				245	595.93	
			e) Overhead charges @ 10 % on (	a+b+c+c	d)		229	222.87	
			f) Contractor's profit @ 10 % on (	a+b+c+c	d+e)		252	145.15	
			g) Cess @ 1% on (a+b+c+d+e+f)				27	735.97	
			Cost for 205 cum = a+b+c+d+e+f+g				2801	332.64	
			Rate per cum = $(a+b+c+d+e+f+g)/191$ (F	or Gradi	ng I)		14	666.66	
						say	<u>140</u>	<u>667.00</u>	
5.8		(ii)	for Grading-II(10 mm nominal size)						
			d) GST @ 12 % on (a+b+c)				245	428.93	
			e) Overhead charges @ 10 % on (	a+b+c+c	d)		229	067.01	
			f) Contractor's profit @ 10 % on (	a+b+c+c	d+e)		251	973.71	
			g) Cess @ 1% on (a+b+c+d+e+f)				26	438.44	
			Cost for 205 cum = a+b+c+d+e+f+g				2798	149.21	
			Rate per cum = $(a+b+c+d+e+f+g)/191$ (F	or Gradi	ng-II)		14	650.00	
						say	<u>140</u>	<u> 650.00</u>	
		Note	*1. Although the rollers are required o norms of output, but the same have t for six hours as the hot mix plant ar hours for mixing and paving the o	o be ava id paver	ailable at site will take six				

- 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.
- 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.

#### 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 = sqm

Taking output = 9000 sqm

Case :-19 mm nominal chipping size -1

a)	Labour				
u,	Mate	day	0.440	354.00	155.76 L-12
	Mazdoor	day	9.000	310.00	2790.00 L-13
	Mazdoor skilled	day	2.000	442.00	884.00 L-15
b)	Machinery				
	Mechanical broom @ 1250 sqm per hour	hour	7.200	433.63	3122.14 P&M-031
	Air compressor 250 cfm	hour	7.200	575.22	4141.58 P&M-001

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.
	•	•	•	Hydraulic self propelled chip	hour	6.000	3211.50	19269.00	P&M-025
				spreader @ 1500 sqm per hour Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip	hour	6.000	779.65	4677.90	P&M-048
				spreader Front end loader 1 cum bucket	hour	6.000	1398.23	8389.38	P&M-017
				capacity Bitumen pressure distributor	hour	6.000	1308.85	7853 10	P&M-004
				Smooth wheeled roller 8-10 tonne weight	hour	6.000	561.95		P&M-044
			c)	Material					
			•	Bitumen@ 1.20 kg per sqm Crushed stone chipping,19 mm nominal size @ 0.015 cum per	tonne cum	10.800 135.000	57350.44 1784.07	619384.75 240849.45	
			d)	sqm GST @ 12 % on (a+b+c)				109786.65	
			e)	Overhead charges @ 10 % on (	a+b+c+d	)		102467.54	
			f)	Contractor's profit @ 10 % on (	a+b+c+d	+e)		112714.30	
			g)	Cess @ 1% on (a+b+c+d+e+f)				12397.01	
				st for 9000 sqm = $a+b+c+d+e+f+g$				1252254.26	
			Ra	te per sqm = (a+b+c+d+e+f+g)/900	10		say	139.14 <u>139.00</u>	
5.9		Case	13	mm nominal size chipping			Suy	<u>133.00</u>	
			a)	Labour	dov	0.440	254.00	1EE 7G	I 12
				Mate Mazdoor	day day	0.440 9.000	354.00 310.00	155.76 2790.00	
			b)	Mazdoor skilled Machinery	day	2.000	442.00	884.00	
			,	Mechanical broom @ 1250 sqm	hour	7.200	433.63	3122.14	P&M-031
				per hour Air compressor 250 cfm	hour	7.200	575.22	4141.58	P&M-001
				Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	3211.50	19269.00	
				Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip	hour	6.000	779.65	4677.90	P&M-048
				spreader Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
				Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1308.85	7853.10	P&M-004
			- •	Three wheel 80-100 kN Static Roller	hour	6.000	733.63	4401.78	P&M-059
			c)	Material Bitumen@ 1.00 kg per sqm	tonne	9.000	57350.44	516153.96	M-074
				Crushed stone chipping,13 mm	cum	90.000	1895.58	170602.20	
				nominal size @ 0.01 cum per sqm					
			d)	GST @ 12 % on (a+b+c)				89092.90	
			e)	Overhead charges @ 10 % on (	a+b+c+d	)		83153.37	
			f)	Contractor's profit @ 10 % on (				91468.71	
			g)	Cess @ 1% on (a+b+c+d+e+f)				10061.56	
				st for 9000 sqm = $a+b+c+d+e+f+g$				1016217.34	
			Ra	te per sqm = (a+b+c+d+e+f+g)/900	00			112.91	
							say	<u>113.00</u>	

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

**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.

162	s than 75 tollies/flour.					
a)	Labour					
	Mate	day	0.840	354.00	297.36	L-12
	Mazdoor working with HMP, road sweeper, paver and roller	day	16.000	310.00	4960.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	i) Batch type HMP 75 tonne per hour	hour	6.000	16867.26	101203.56	
	ii) Electric Generator Set 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	iii) Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	iv) Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	i divi-030
	v) Paver finisher hydrostatic with sensor attachment	hour	6.000	3259.29	19555.74	P&M-034
	iv) Smooth wheeled /tandem roller 8-10 tonnes weight	hour	6.000	1393.81	8362.86	P&M-045
c)	Material					
	Bitumen@ 14.60 kg per 10 sqm	tonne	14.970	57350.44	858536.09	M-074
	Crushed stone chipping,13.2 mm to 5.6 mm @ 0.27 cum per 10 sqm	cum	276.750	1672.57	462883.75	M-043
d)	GST @ 12 % on (a+b+c)	176696.77				
e)	Overhead charges @ 10 % on (a	164916.99				
f)	Contractor's profit @ 10 % on (	181408.68				
g)	Cess @ 1% on (a+b+c+d+e+f)	19954.96				
	st for 10250 sqm = a+b+c+d+e	2015450.48				
Ra	te per sqm = (a+b+c+d+e)/10250		196.63			
				say	<u>197.00</u>	

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

	Ref. to						Remarks
SI. No	MoRTH/ DSR	Description	Unit	Quantity	Rate in Rs	Cost in Rs	/ Input
•	ו אפע	*** <b>!</b> ** *					<u>-</u>
	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	354.00	283.20	L-12
	Mazdoor	day	18.000	310.00	5580.00	L-13
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
b)	Machinery					
	Concrete mixer 0.4/0.28 cum capacity	hour	6.000	269.91	1619.46	P&M-009
	Smooth wheeled steel roller 8-10 tonne	hour	6.000	561.95	3371.70	P&M-044
c)	Material					
	Cationic Bitumen Emulsion @	tonne	1.940	47120.35	91413.48	M-073
	21.50 kg per 10 sqm					
	Crushed stone aggregates 13.2 mm to 5.6 mm @ 0.27 cum per	cum	24.300	1672.57	40643.45	M-043
	10 sqm					
d)	GST @ 12 % on (a+b+c)				17255.43	
e)	Overhead charges @ 10 % on (	a+b+c+d)			16105.07	
f)	Contractor's profit @ 10 % on	(a+b+c+d+	<b>e</b> )		17715.58	
g)	Cess @ 1% on (a+b+c+d+e+f)	1948.71				
Co	st for 900 sqm = a+b+c+d+e+f+g				196820.08	
Ra	te per sqm = (a+b+c+d+e+f+g)/900	)			218.69	
	<del>-</del> -			sav	219.00	

# 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	354.00	297.36	L-12
	Mazdoor working with HMP, road sweeper, paver and roller	day	16.000	310.00	4960.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	i) HMP of appropicate capacity.	hour	6.000	28522.12	171132.72	P&M-021
	ii) Electric Generator Set 250 KVA	hour	6.000	1012.39	6074.34	P&M-081

**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.
			iii) Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
			iv) Tipper 10 tonne capacity	tonne. km	450 x L	7.65	0.00	Lead =0 km & P&M-058
			ld 10 per cent of cost of carriage to ver cost of loading and unloading				0.00	
			v) Paver finisher hydrostatic with sensor attachment	hour	6.000	3259.29	19555.74	P&M-034
			iv) Smooth wheeled8-10 tonnes weight	hour	6.000	561.95	3371.70	P&M-044
		c)	Material					
		Ту	rpe - A					
			* Bitumen@ 22 kg per 10 sqm	tonne	22.500	57350.44	1290384.90	M-074
			Stone crushed aggregates 11.2 mm to 0.09 @ 0.27 cum per 10 sqm	cum	276.750	1059.29	293158.51	M-041
			or					
		Ту	pe - B					
			Bitumen @ 19 kg per 10 sqm	tonne	19.480	57350.44	1117186.57	
			Stone crushed aggregates 13.2 mm to 0.09 mm @ 0.27 cum per 10 sqm	cum	276.750	908.85	251524.24	M-042
		d)					215944.16	
		e)	Overhead charges @ 10 % on (	a+b+c+d	I)		201547.88	
		f)	Contractor's profit @ 10 % on (		•		221702.67	
		g)	Cess @ 1% on (a+b+c+d+e+f)		•		24384.32	
		•	ost for 10250 sqm = a+b+c+d+e+f+g				2463113.68	
			ate per sqm =(a+b+c+d+e+f+g)/102	50			240.30	
			-			say	<u>240.00</u>	
		* /	Any one of the alternative may be add	opted				

Any one of the alternative may be adopted

#### 513 5.12

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

*Taking output = 10250 sqm (92.25 cum)* 

applied @ 0.09 cum per 10 sqm

# (i) Case - I: Type A

a)	Labour					
	Mate	day	0.240	354.00	84.96	L-12
	Mazdoor	day	6.000	310.00	1860.00	L-13
b)	Machinery					
	Hydraulic self propelled chip spreader	hour	6.000	3211.50	19269.00	P&M-025
	Tipper 5.5 cum capacity	hour	6.000	779.65	4677.90	P&M-048
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1308.85	7853.10	P&M-004
	Smooth wheeled roller 8 -10 tonne weight	hour	6.000	561.95	3371.70	P&M-044
c)	Material					
	Bitumen@ 9.80 kg per 10 sqm	tonne	10.050	57350.44	576371.92	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	1939.82	178948.40	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 @ 12 % on (a+b+c)				96099.16	
		e)	Overhead charges @ 10 % on (	a+b+c+	d)		89692.55	
		f)	Contractor's profit @ 10 % on (a+b+c+d+e)				98661.81	
		g)	Cess @ 1% on (a+b+c+d+e+f)				10852.80	
		Cost	t for 10250 sqm = a+b+c+d+e+f+g				1096132.68	
		Rate	e per sqm = (a+b+c+d+e+f+g)/102	50			106.94	
						say	<u>107.00</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	354.00	56.64	L-12
	Mazdoor	day	4.000	310.00	1240.00	L-13
b)	Machinery					
	HMP of 75 tonnes/hour.	hour	2.000	16867.26	33734.52	P&M-023
	Electric Generator Set 250 KVA	hour	2.000	1012.39	2024.78	P&M-081
	Front end loader 1 cum bucket capacity	hour	2.000	1398.23	2796.46	P&M-017
	Tipper 10 tonne capacity	tonne. km	104 x 'L'	7.65	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	3259.29	6518.58	P&M-034
	Smooth wheeled 8-10 tonnes capacity	hour	2.000	561.95	1123.90	P&M-044
c)	Material					
	Bitumen@ 6.80 kg per 10 sqm	tonne	5.340	57350.44	306251.35	
	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	1939.82	91481.91	M-050
d)	GST @ 12 % on (a+b+c)				53427.38	
e)	Overhead charges @ 10 % on	(a+b+c+d)			49865.55	
f)	Contractor's profit @ 10 % on	(a+b+c+d	te)		54852.11	
g)	Cess @ 1% on (a+b+c+d+e+f)				6033.73	
	st for 7858 sqm = a+b+c+d+e+f+g				609406.91	
Ra	te per sqm = (a+b+c+d+e+f+g)/78	58			77.55	
				say	<u>78.00</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.

	Ref. to						Remarks	
SI. No	MoRTH/ DSR	Description	Unit	Quantity	Rate in Rs	Cost in Rs	/ Input	
	Spec.	•		, and the second			ref.	

#### 515 5.14 **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

LUI	ines/cum-z tomies					
a)	Labour					
	Mate	day	0.440	354.00	155.76	L-12
	Mazdoor	day	10.000	310.00	3100.00	L-13
	Mazdoor skilled	day	1.000	442.00	442.00	L-15
b)	Machinery					
	Mechanical broom @ 1250 sqm per hour	hour	0.060	433.63	26.02	P&M-031
	Air compressor 250 cfm	hour	0.060	575.22	34.51	P&M-001
	Mastic cooker 1 tonne capacity	hour	6.000	104.42	626.52	P&M-030
	Bitumen boiler 1500 litres	hour	6.000	241.59	1449.54	P&M-005
	Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	476.11	476.11	P&M-053
c)	Material					

### Material

Base mastic (without coarse aggregates) = 60 per cent Coarse aggregate (6.3mm to 13.2 mm) = 40 per cent. Proportion of material required for

mastic asphalt with coarse aggregates (based on mix design done for a specific case)

ecific case)					
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	57350.44	11470.09	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	624.78	243.66	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	12878.76	4636.35	M-188
iv) Coarse aggregates 6.3 mm to 13.2 mm @ 40 per cent by weight of mix = 2 x 40/100 = 0.8 MT = 0.8/1.456 = 0.55	cum	0.550	1672.57	919.91	M-043
v) Pre-coated stone chips of 13.2 mm nominal size for skid resistance = 35 x 0.005/10 = 0.018	cum	0.020	2007.08	40.14	M-142

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) e)	` ,	kg a+b+c+e	0.500 d)	57.00	28.50 2837.89 2648.70	M-074
		f)	Contractor's profit @ 10 % on (		•		2913.57	
		g)	Cess @ 1% on (a+b+c+d+e+f)				320.49	
		Co	ost for 35.00 sqm = a+b+c+d+e+f+g				32369.76	
		Ra	ate per sqm = (a+b+c+d+e+f+g)/35				924.85	
						say	925.00	

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

	ight of mix					
a)	Labour					
	Mate	day	0.240	354.00	84.96	L-12
	Mazdoor	day	6.000	310.00	1860.00	L-13
b)	Machinery					
	Mechanical broom	hour	6.000	433.63	2601.78	P&M-031
	Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
	Mobile slurry seal equipment	hour	6.000	1227.43	7364.58	P&M-033
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	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	779.65	4677.90	P&M-048
	Pneumatic tyred roller with individual wheel load not exceeding 1.5 tonnes	hour	6.000	1515.04	9090.24	P&M-037
- \	Water tanker6 KL capacity	hour	2.000	544.25	1088.50	P&M-060
c)	Material Residual Binder @ 11 per cent of mix 80 x 2.2 x 0.11	tonne	19.360	47120.35	912249.98	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	1828.32	186634.91	M-030
	Filler @ 2 per cent of total mix = 80 x 2.2 x 0.02	tonne	3.520	12878.76	45333.24	M-188

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	`	Rate in Rs	Cost in Rs	Remarks / Input ref.
			Cost of water d) GST @ 12 % on (a+b+c) e) Overhead charges @ 10 % on f) Contractor's profit @ 10 % on g) Cess @ 1% on (a+b+c+d+e+f) Cost for 16000 sqm = a+b+c+d+e Rate per sqm = (a+b+c+d+e)/16000	-		67.26	807.12 142036.07 132567.00 145823.70 16040.61 1620101.29 101.26	M-189
5.15		(ii)	3 mm thickness <i>Unit</i> = sqm			say	<u>101.00</u>	
			Taking output = 20000 sqm (60 cum	1)				
			a) Labour Mate	day	0.200	354.00	70.80	I -12
				day	5.000		1550.00	
			Mazdoor b) Machinery	day	5.000	310.00	1550.00	L-13
			Mechanical broom	hour	6.000	433.63	2601.78	P&M-031
			Air compressor 250 cfm	hour	6.000	575.22		P&M-001
			Mobile slurry seal equipment	hour	6.000	1227.43		P&M-033
			Front end loader 1 cum bucket capacity	hour	6.000	1398.23		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	779.65	4677.90	P&M-048
			Water tanker6 KL capacity  c) Material	hour	2.000	544.25	1088.50	P&M-060
			Residual Binder @ 13 per cent of mix = 60 x 2.2 x 0.13	tonne	17.160	47120.35	808585.21	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	624.78	46733.54	M-022
			Filler @ 2 per cent of total mix = 60x 2.2 x 0.02	tonne	2.640	12878.76	33999.93	M-188
			Cost of water	KL	12.000	67.26	807.12	M-189
			<ul> <li>d) GST @ 12 % on (a+b+c)</li> <li>e) Overhead charges @ 10 % on</li> <li>f) Contractor's profit @ 10 % on</li> <li>g) Cess @ 1% on (a+b+c+d+e+f)</li> </ul>	-			110318.41 102963.85 113260.23 12458.63	
			Cost for 30000 sqm = $a+b+c+d+e+f+g$ Rate per sqm = $(a+b+c+d+e+f+g)/20$	•			1258321.18 62.92	
			Trate per squi = (a·b·c·a·c·i·g//20	.000		say	<u>63.00</u>	
5.15		(iii)	1.5 mm thickness  Unit = sqm  Taking output = 24000 sqm (36 cum)  a) Labour	i			<del></del>	
			Mate	day	0.200	354.00	70.80	L-12
			Mazdoor	day		310.00	1550.00	
			b) Machinery	,				
			Mechanical broom	hour	6.000	433.63	2601.78	P&M-031
			Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
			Mobile slurry seal equipment	hour	6.000	1227.43	7364.58	P&M-033
			Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017

				CHAP	TER - 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 5.5 cum capacity for carriage of aggregate from stockpile on road side to slurry equipment, bitumen emulsion and filler.	hour	6.000	779.65	4677.90	P&M-048
				Water tanker6 KL capacity	hour	2.000	544.25	1088.50	P&M-060
			c)	Material					
				Residual Binder @ 16 per cent of mix, 36 x 2.2 x 0.16	tonne	12.670	47120.35	597014.83	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	624.78	27052.97	M-022
				Filler @ 2 per cent of total mix = 36x 2.2 x 0.02	tonne	1.580	12878.76	20348.44	M-188
				Cost of water	KL	12.000	67.26	807.12	M-189
			d)	GST @ 12 % on (a+b+c)				80930.11	
			e)	Overhead charges @ 10 % on (	a+b+c+d	)		75534.77	
			f)	Contractor's profit @ 10 % on (	a+b+c+d	l+e)		83088.25	
			g)	Cess @ 1% on (a+b+c+d+e+f)				9139.71	
			Co	st for 24000 sqm = a+b+c+d+e+f+g				923110.46	
			Ra	te per sqm = (a+b+c+d+e+f+g)/240	000			38.46	
							say	<u>38.00</u>	
		Note		ack coat, if required to be provided, before lasured and paid separately	aying slurry	seal may be			
5.17	518		Fo	g Spray					
			Pro wid Un Tal	oviding and applying low viscosity by le or incipient fretting or disintegration it = sqm  king output = 10500 sqm					ı

Labour

Mazdoor for precoating of grit

Mate

a)	Labour					
	Mate	day	0.120	354.00	42.48	L-12
	Mazdoor	day	3.000	310.00	930.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
	Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
	Bitumen emulsion pressure distributor @ 1750 sqm per hour	tonne	6.000	1308.85	7853.10	P&M-004
c)	Material Bitumen emulsion @ 0.75 kg per sqm	tonne	7.880	47120.35	371308.36	M-077
d)	GST @ 12 % on (a+b+c)				46342.44	
e)	Overhead charges @ 10 % on (	a+b+c+d)			43252.95	
f)	Contractor's profit @ 10 % on (	-	·)		47578.24	
g)	Cess @ 1% on (a+b+c+d+e+f)		,		5233.61	
•	st for 10500 sqm = a+b+c+d+e+f+g				528594.28	
Ra	te per sqm = (a+b+c+d+e+f+g)/10	500			50.34	
	n case it is decided by the engineer fog spray, the following may be add			say	<u>50.00</u>	

56.64 L-12

1240.00 L-13

Page : 144

day

day

0.160

4.000

354.00

310.00

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.
		b)	) Material					
			Crushed stone grit 3 mm size @ 3.75 kg per sqm	cum	26.250	669.03	17562.04	M-024
			Bitumen emulsion for precoating grit @ 2 per cent of grit,39.38 x	tonne	0.790	47120.35	37225.08	M-077
							56083.76	
							5.34	
						say	<u>5.00</u>	
5 12	519	R	ituminous Cold Mix / Including Gra	wal Emi	ıleion)			

# 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

Filler (lime)@ 2 per cent

450 x 0.25 x 1/1.5

450 x 0.29 x 1/1.5

Aggregates size 19 to 9.5 mm -

Aggregates size 9.5 to 6 mm -

0.0	min to o minizo per cent					
6 m	nm to 0.075 mm 36 per cent					
a)	Labour					
	Mate	day	0.840	354.00	297.36	L-12
	Mazdoor	day	16.000	310.00	4960.00	L-13
	Mazdoor skilled	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	6.000	404.42	2426.52	P&M-077
	Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	hour	6.000	3259.29	19555.74	P&M-034
	Pneumatic tyred roller 12-15 tonnes	hour	6.00x0.65*	1515.04	5908.66	P&M-037
	Smooth wheeled steel tandem roller 6-8 tonnes	hour	6.00x0.65*	1393.81	5435.86	P&M-045
c)	Material					
	Bitumen emulsion @ 8 per cent	tonne	36.000	47120.35	1696332.60	M-077

115908.84 M-188

117079.50 M-045

169765.71 M-040

Page: 145

tonne

cum

cum

9.000

75.000

87.000

12878.76

1561.06

1951.33

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.
		Aggregates size 6 to 0.075 mm - 450 x 0.36 x 1/1.5	cum	108.000	1828.32	197458.56	M-030
		d) GST @ 12 % on (a+b+c)				282210.00	
		e) Overhead charges @ 10 % on	(a+b+c+c	d)		263396.00	
		f) Contractor's profit @ 10 % on	(a+b+c+	d+e)		289735.60	
		g) Cess @ 1% on (a+b+c+d+e+f)				31870.92	
		Cost for 205 cum = $a+b+c+d+e+f+g$				3218962.49	
		Rate per cum = (a+b+c+d+e+f+g)/20	5			15702.26	
					say	<u>15702.00</u>	

# (Applicable to cases I to IV)

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 (ii) Using bitumen emulsion and 19 mm or 26.5 mm nominal size aggregate

Composition of mix (450 tonne) is assumed 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

6 m	nm to 0.075 mm 35 per cent					
a)	Labour					
	Mate	day	0.840	354.00	297.36	
	Mazdoor	day	16.000	310.00	4960.00	L-13
	Mazdoor skilled	day	5.000	442.00	2210.00	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	404.42		P&M-077
	Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	T GIVI-000
	Paver finisher	hour	6.000	3259.29	19555.74	P&M-034
	Pneumatic tyred roller 12-15 tonnes	hour	6.00x0.65*	1515.04	5908.66	P&M-037
	Smooth wheeled steel tandom roller 6-8 tonnes	hour	6.00x0.65*	1393.81	5435.86	P&M-045
c)	Material					
	Bitumen emulsion @ 8 per cent	tonne	36.000	47120.35	1696332.60	M-077
	Filler (lime)@ 2 per cent	tonne	9.000	12878.76	115908.84	
	Aggregates size 37.5 to 19 mm - 450 x 0.25 x 1/1.5	cum	75.000	1059.29	79446.75	M-048
	Aggregates size 19 to 6 mm - 450	cum	90.000	1624.78	146230.20	M-047

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	1828.32	191973.60	M-030
		d	) GST @ 12 % on (a+b+c)				274211.61	
		е	Overhead charges @ 10 % on (	a+b+c+c	d)		255930.84	
		f)	Contractor's profit @ 10 % on (	a+b+c+c	d+e)		281523.92	
		g	) Cess @ 1% on (a+b+c+d+e+f)				30967.63	
		С	cost for 205 cum = a+b+c+d+e+f+g				3127730.75	
		R	ate per cum = (a+b+c+d+e+f+g)/20	5			15257.22	
						say	<u>15257.00</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 (iii) Using cutback bitumen and 9.5 mm or 13.2 mm nominal size aggregate

Composition of mix (450 tonne) is assumed 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 m	m to 0.075 mm 36 per cent					
a)	Labour					
	Mate	day	0.840	354.00	297.36	
	Mazdoor	day	16.000	310.00	4960.00	
1. \	Mazdoor skilled	day	5.000	442.00	2210.00	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	404.42		P&M-077
	Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	
	Paver finisher	hour	6.000	3259.29	19555.74	P&M-034
	Pneumatic tyred roller 12-15 tonnes	hour	6.00x0.65*	1515.04	5908.66	P&M-037
	Smooth wheeled steel tandem roller 6-8 tonnes	hour	6.00x0.65*	1393.81	5435.86	P&M-045
c)	Material					
	Cutback bitumen @ 5 per cent	tonne	22.500	60330.97	1357446.83	M-076
	Filler (lime)@ 2 per cent	tonne	9.000	12878.76	115908.84	M-188
	Aggregates size 19 to 9.5 mm - 450 x 0.26 x 1/1.5	cum	78.000	1561.06	121762.68	M-045
	Aggregates size 9.5 to 6 mm - 450 x 031 x 1/1.5	cum	93.000	1951.33	181473.69	M-040
	Aggregates size 6 to 0.075 mm - 450 x 0.36 x 1/1.5	cum	108.000	1828.32	197458.56	M-030

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		(	d) GST @ 12 % on (a+b+c)				243510.64	
			e) Overhead charges @ 10 % o	n (a+b+c+c	d)		227276.60	
		1	f) Contractor's profit @ 10 % o	n (a+b+c+	d+e)		250004.26	
		9	g) Cess @ 1% on (a+b+c+d+e+	·)			27500.47	
		(	Cost for 205 cum = a+b+c+d+e+f+g				2777547.33	
		ı	Rate per cum = (a+b+c+d+e+f+g)/	205			13549.01	
						sav	13549.00	

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

# 5.18 (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

Mate	day	0.840	354.00	297.36	L-12
Mazdoor	day	16.000	310.00	4960.00	
Mazdoor skilled	day	5.000	442.00	2210.00	L-15
o) Machinery					
Drum mix plant for cold mixes 60- 90 tonne per hour producing output of 75 tonnes per hour	hour	6.000	404.42	2426.52	
Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&IVI-018
Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	
Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	3259.29	19555.74	P&M-034
Pneumatic tyred roller 12-15 tonnes.	hour	6.00x0.65*	1515.04	5908.66	P&M-037
Smooth wheeled steel tandem roller 6-8 tonnes	hour	6.00x0.65*	1393.81	5435.86	
				0.100.00	P&M-045
Cutback bitumen on @ 5 per	tonne	22.500	60330.97	1357446.83	
Cutback bitumen on @ 5 per cent	tonne	22.500 9.000	60330.97 12878.76		M-076
Cutback bitumen on @ 5 per				1357446.83	M-076
Cutback bitumen on @ 5 per cent Filler (lime)@ 2 per cent Aggregates size 37.5 to 19 mm -	tonne	9.000	12878.76	1357446.83 115908.84	M-076 M-188
Cutback bitumen on @ 5 per cent Filler (lime)@ 2 per cent Aggregates size 37.5 to 19 mm - 450 x 0.25 x 1/1.5 Aggregates size 19 to 6 mm - 450	tonne cum	9.000 75.000	12878.76 1059.29	1357446.83 115908.84 79446.75	M-076 M-188 M-048 M-047
Cutback bitumen on @ 5 per cent Filler (lime)@ 2 per cent Aggregates size 37.5 to 19 mm - 450 x 0.25 x 1/1.5 Aggregates size 19 to 6 mm - 450 x 0.3 x 1/1.5 Aggregates size 6 to 0.075 mm -	tonne cum cum	9.000 75.000 90.000	12878.76 1059.29 1624.78	1357446.83 115908.84 79446.75 146230.20	M-076 M-188 M-048 M-047

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)		241800.43	
		g) Cess @ 1% on (a+b+c+d+e+f)		26598.05	
		Cost for 205 cum = a+b+c+d+e+f+g		2686402.82	
		Rate per cum = (a+b+c+d+e+f+g)/205		13104.40	
			sav	13104 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

#### 520 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.

Taking output = 205 cum (450 tonne)

a)	Labour					
	Mate	day	0.840	354.00	297.36	L-12
	Mazdoor	day	16.000	310.00	4960.00	L-13
	Mazdoor skilled	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	Hot Mix Plant of appropriate capacity but not less than 75 tonnes/hour	hour	6.000	16867.26	101203.56	P&M-023
	Electric generator set 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	1 GW-000
	Paver finisher	hour	6.000	3259.29	19555.74	P&M-034
	smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65	561.95	2191.61	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65	733.63	2861.16	P&M-059
c)	Finish rolling with 6-8 tonnes smooth wheeled tandem rollers.  Material	hour	6.00x0.65	1393.81	5435.86	P&M-045

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	57350.44	1290384.90	M-074
Filler (lime)@ 2 per cent	tonne	9.000	12878.76	115908.84	M-188
Sand of size 4.75 to 0.075 mm -	cum	288.620	601.77	173682.86	M-004
450 x 0.93 x 1/1.5					

SI. No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
			d)	GST @ 12 % on (a+b+c)				207978.67	
	e) Overhead charges @ 10 % on (a+b+c+d)				194113.43				
			f)	Contractor's profit @ 10 % on (	a+b+c+	d+e)		213524.77	
			g)	Cess @ 1% on (a+b+c+d+e+f)			23487.72 2372260.20		
			Cost	t for 205 cum = a+b+c+d+e+f+g					
			Rate per cum = (a+b+c+d+e+f+g)/205				11572.00		
							say	<u>11572.00</u>	

### 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 = sam

Taking output = 10500 sqm

a)	Labour					
	Mate	day	0.240	354.00	84.96	L-12
	Mazdoor	day	6.000	310.00	1860.00	L-13
b)	Machinery					
	Mechanical broom @ 1250 sqm	hour	6.000	433.63	2601.78	P&M-031
	per hour					
	Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
	Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1308.85	7853.10	P&M-004
	Hydraulic Chip spreader	hour	6.000	3211.50	19269.00	P&M-025
	Smooth wheeled road roller 8-10	hour	6.000	561.95	3371.70	P&M-044
	tonne					
c)	Material					
	Modified binder	tonne	9.450	52465.49	495798.88	M-078
	Crushed stone aggregates 5.6 mm size	cum	105.000	1939.82	203681.10	M-050
d)	GST @ 12 % on (a+b+c)				88556.62	
e)	Overhead charges @ 10 % on (	a+b+c+d)			82652.85	
f)	Contractor's profit @ 10 % on (	a+b+c+d+	⊦e)		90918.13	
g)	Cess @ 1% on (a+b+c+d+e+f)				10000.99	
Co	st for 10500 sqm = a+b+c+d+e+f+g				1010100.43	
Ra	te per sqm = (a+b+c+d+e+f+g)/10	500			96.20	
				say	<u>96.00</u>	

## 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 0.240 354.00 84.96 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	310.00	1860.00	L-13
			b)	Machinery					
				Mechanical broom @ 1250 sqm per hour	hour	6.000	433.63	2601.78	P&M-031
				Air compressor 250 cfm capacity	hour	6.000	575.22	3451.32	P&M-001
				Bitumen pressure distributor @ 1750 sqm per hour	hour	6.000	1308.85	7853.10	P&M-004
				Hydraulic Chip spreader	hour	6.000	3211.50	19269.00	P&M-025
				Smooth wheeled road roller 8-10 tonne	hour	6.000	561.95	3371.70	P&M-044
			c)	Material					
				Modified binder	tonne	11.550	52465.49	605976.41	M-078
				Crushed stone chipping 11.2 mm size	cum	105.000	1951.33	204889.65	M-051
			d)	GST @ 12 % on (a+b+c)				101922.95	
			e)	Overhead charges @ 10 % on (	(a+b+c+c	d)		95128.09	
			f)	Contractor's profit @ 10 % on	(a+b+c+	d+e)		104640.90	
			g)	Cess @ 1% on (a+b+c+d+e+f)				11510.50	
			Co	st for 10500 sqm = a+b+c+d+e+f+g				1162560.36	
			Rate per sqm = $(a+b+c+d+e+f+g)/10500$					110.72	
							say	<u>111.00</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

Taking output = 10500 sqm

a)	Labour					
	Mate	day	0.240	354.00	84.96	L-12
	Mazdoor	day	6.000	310.00	1860.00	L-13
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
b)	Machinery					
	Mechanical broom @ 1250 sqm	hour	6.000	433.63	2601.78	P&M-031
	per hour					
	Air compressor 250 cfm capacity	hour	6.000	575.22	3451.32	P&M-001
	Bitumen pressure distributor @	hour	6.000	1308.85	7853.10	P&M-004
	1750 sqm per hour					
	Hydraulic Chip spreader	hour	6.000	3211.50	19269.00	P&M-025
	Smooth wheeled road roller 8-10	hour	6.000	561.95	3371.70	P&M-044
	tonne					
c)	Material					
	Modified binder	tonne	15.750	52465.49	826331.47	M-078
	Crushed stone aggregates 11.2	cum	126.000	1951.33	245867.58	M-051
	mm size				400000 00	
d)	GST @ 12 % on (a+b+c)				133388.99	
e)	Overhead charges @ 10 % on (	(a+b+c+d)			124496.39	
f)	Contractor's profit @ 10 % on (	(a+b+c+d+	te)		136946.03	
g)	Cess @ 1% on (a+b+c+d+e+f)				15064.06	
Co	st for 10500 sqm = a+b+c+d+e+f+g				1521470.38	
Ra	te per sqm = (a+b+c+d+e+f+g)/10	500			144.90	
				say	<u>145.00</u>	

	Ref. to MoRTH/						Remarks
SI. No	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

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

Taking output = 205 cum (450 tonnes)

(i) 75	5 mm	thick	ness
--------	------	-------	------

2
3
5
M-064
M-018
M-017
M-034
nd =0 & M-058
M-037
M-044
M-060
M-060 077
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### 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.

<sup>\*4.</sup>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.

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	354.00	354.00	
				Mazdoor Mazdoor skilled	day day	12.000 5.000	310.00 442.00	3720.00 2210.00	
			b)	Machinery	uay	5.000	442.00	22 10.00	L-10
			5)	Batch type cold mixing plant100- 120 TPH capacity producing an average output of 75 tonne per hour	hour	6.000	20912.39	125474.34	P&M-064
				Electric generator 125 KVA	hour	6.000	1003.54	6021.24	
				Front end loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
				Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3259.29	19555.74	P&M-034
				Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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	
				Pneumatic tyred roller 12-15 tonnes.	hour	6.00x0.65*	1515.04	5908.66	P&M-037
				Smooth wheeled steel roller 6-8 tonnes.	hour	6.00x0.65*	561.95	2191.61	P&M-044
				Water tanker6 KL capacity	hour	1.000	544.25	544.25	P&M-060
			c)	Material	4	04 500	47400.05	4.40.4004.00	M 077
				Bitumen emulsion @ 70 litres per tonne	tonne	31.500	47120.35	1484291.03	IVI-U77
				Crushed stone aggregates 14 mm nominal size	cum	287.000	1895.58	544031.46	M-052
			d)	Cost of water GST @ 12 % on (a+b+c)	KL	6.000	67.26	403.56 264371.43	M-189
			e)	Overhead charges @ 10 % on (	a+b+c+	d)		246746.67	
			f)	Contractor's profit @ 10 % on (		•		271421.34	
			g)	Cess @ 1% on (a+b+c+d+e+f)		,		29856.35	
				st for 10500 sqm = a+b+c+d+e+f+g				3015491.06	
			Ra	te per sqm = (a+b+c+d+e+f+g)/205	5			14709.71	
				, , , , , , , , , , , , , , , , , , ,			say		
5.22		(iii)	25	mm thickness			ouy	14710.00	
			a)	Labour					
				Mate	day	1.000	354.00	354.00	
				Mazdoor	day	12.000	310.00	3720.00	
			ы	Mazdoor skilled  Machinery	day	5.000	442.00	2210.00	L-15
			b)	Batch type cold mixing plant 100- 120 TPH capacity producing an average output of 75 tonne per hour	hour	6.000	20912.39	125474.34	P&M-064
				Electric generator 125 KVA	hour	6.000	1003.54	6021.24	P&M-018
				Front end loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
				Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3259.29	19555.74	P&M-034
				Tipper 10 tonne capacity	tonne. km	450 x L	7.65	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.
			dd 10 per cent of cost of carriage to over cost of loading and unloading				0.00	
			Pneumatic tyred roller	hour	6.00x0.65*	1515.04	5908.66	P&M-037
			Smooth wheeled steel roller	hour	6.00x0.65*	561.95	2191.61	P&M-044
			Water tanker6 KL capacity	hour	1.000	544.25	544.25	P&M-060
		С	<ul> <li>Material         Bitumen emulsion @ 85 litres per tonne     </li> <li>Crushed stone aggregates 6 mm nominal size</li> </ul>	tonne	38.250 270.000	47120.35 1939.82	1802353.39 523751.40	
			Cost of water	KL	6.000	67.26	403.56	M-189
<ul> <li>d) GST @ 12 % on (a+b+c)</li> <li>e) Overhead charges @ 10 % on (a+b+c+d)</li> <li>f) Contractor's profit @ 10 % on (a+b+c+d+e)</li> <li>g) Cess @ 1% on (a+b+c+d+e+f)</li> <li>Cost for 10500 sqm = a+b+c+d+e+f+g</li> <li>Rate per sqm = (a+b+c+d+e+f+g)/205</li> </ul>						sav	300105.31 280098.29 308108.12 33891.89 3423081.18 16697.96	
5 23		0	nen - Graded Premix Surfacing			say	<u>16698.00</u>	

#### 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 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 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)

	,					
a)	Labour					
	Mate	day	0.800	354.00	283.20	L-12
	Mazdoor	day	18.000	310.00	5580.00	L-13
	Mazdoor skilled	day	2.000	442.00	884.00	L-15
b)	Machinery					
	Concrete mixer 0.4/0.28 cum capacity	hour	6.000	269.91	1619.46	P&M-009
	Smooth wheeled steel roller 8-10 tonne	hour	5.000	561.95	2809.75	P&M-044
c)	Material					
	Cold mix binder @ 2.0-2.3 kg per	tonne	1.940	63676.99	123533.36	M-197
	sqm					
	Crushed stone aggregates 13.2	cum	24.300	1672.57	40643.45	M-043
	mm to 5.6 mm @ 0.27 cum per					
	10 sqm					
d)	GST @ 12 % on (a+b+c)				21042.39	
e)	Overhead charges @ 10 % on (	a+b+c+d)	)		19639.56	
f)	Contractor's profit @ 10 % on (	a+b+c+d	+e)		21603.52	
g)	Cess @ 1% on (a+b+c+d+e+f)				2376.39	
Cos	st for 900 sqm = a+b+c+d+e+f+g				240015.08	
Rat	e per sqm = (a+b+c+d+e+f+g)/900	)			266.68	
				say	<u>267.00</u>	

SI. No Ref. MoR	TH/	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

- u	ooypo					
a)	Labour					
	Mate	day	0.240	354.00	84.96	L-12
	Mazdoor	day	6.000	310.00	1860.00	L-13
b)	Machinery					
	Hydraulic Self propelled chip spreader	hour	6.000	3211.50	19269.00	P&M-025
	Tipper 5.5 cum capacity	hour	6.000	779.65	4677.90	P&M-048
	Front end loader 1 cum bucket capacity		6.000	1398.23	8389.38	P&M-017
	Bitumen pressure distributor @ 1750 sqm per hour		6.000	1308.85	7853.10	P&M-004
	Smooth wheeled roller 8-10 tonne weight		6.000	561.95	3371.70	P&M-044
c)	Material					
	Cold mix binder @ 1.2-1.4 kg per sqm	tonne	13.330	63676.99	848814.28	M-197
	Crushed stone chip passing 6.3 mm sieve applied @ 0.09 cum per 10 sqm	cum	92.250	1939.82	178948.40	M-050
d)	GST @ 12 % on (a+b+c)				128792.25	
e)	Overhead charges @ 10 % on (	a+b+c+d)			120206.10	
f)	Contractor's profit @ 10 % on (				132226.71	
g)	Cess @ 1% on (a+b+c+d+e+f)		-,		14544.94	
_	st for 10250 sqm = a+b+c+d+e+f+g				1469038.72	
Ra	te per sqm = (a+b+c+d+e+f+g)/102	250			143.32	
				say	<u>143.00</u>	

### 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)

ou	•••,					
a)	Labour					
	Mate	day	0.160	354.00	56.64	L-12
	Mazdoor	day	4.000	310.00	1240.00	L-13
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	2.000	404.42	808.84	P&M-077
	Electric Generator set 250 KVA	hour	2.000	1012.39	2024.78	P&M-081
	Front end loader 1 cum bucket capacity	hour	2.000	1398.23	2796.46	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'	8.30	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	3259.29	6518.58	P&M-034
			Smooth wheeled 8-10 tonnes capacity	hour	2.000	561.95	1123.90	P&M-044
		c)	Material					
			Cold mix binder @ 1.0-1.2 kg per sqm	tonne	8.640	63676.99	550169.19	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	1939.82	91462.51	M-050
		d)	GST @ 12 % on (a+b+c)				78744.11	
		e)		a+b+c+c	I)		73494.50	
		f)	Contractor's profit @ 10 % on (	a+b+c+c	d+e)		80843.95	
		g)	Cess @ 1% on (a+b+c+d+e+f)		-		8892.83	
		C	ost for 7858 sqm = a+b+c+d+e+f+g				898176.29	
			ate per sqm = (a+b+c+d+e+f+g)/785	58			114.30	
						say	<u>114.00</u>	

# 5.25.1 Close Graded Premix Surfacing/Mixed Seal Surfacing

 $^{\mbox{\scriptsize Case}}$  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)* 

	• , , ,	,				
a)	Labour					
	Mate	day	0.840	354.00	297.36	L-12
	Mazdoor working with WMP, road sweeper, paver and roller	day	16.000	310.00	4960.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	5.000	404.42	2022.10	P&M-077
	Electric Generator set 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	104x'L'	8.30	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	3259.29	19555.74	P&M-034

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.
			Smooth wheeled 8-10 tonnes capacity	hour	6.000	561.95	3371.70	P&M-044
		c)						
		Ту	ype - A Cold mix binder @ 3.0 kg per sqm	tonne	30.750	63676.99	1958067.44	M-197
			Stone crushed aggregates 11.2 mm to 0.09 mm @ 0.27cum per 10 sqm	cum	276.750	1059.29	293158.51	M-041
		d)	GST @ 12 % on (a+b+c)				275772.79	
		e)	, ,	a+b+c+c	d)		257387.94	
		e)	,		•		283126.73	
		g)	Cess @ 1% on (a+b+c+d+e+f)		•		31143.94	
		•	Cost for 10250 sqm = a+b+c+d+e+f+g				3145537.97	
		R	ate per sqm = (a+b+c+d+e+f+g)/102	250			306.88	
						say	<u>307.00</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)* 

	• • • • • • • • • • • • • • • • • • • •	•				
a)	Labour Mate	dov	0.840	354.00	297.36	I 12
		day				
	Mazdoor working with WMP, road sweeper, paver and roller	day	16.000	310.00	4960.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	5.000	404.42	2022.10	P&M-077
	Electric Generator set 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
	Tipper 10 tonne capacity	tonne. km	104x'L'	8.30	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	3259.29	19555.74	P&M-034
	Smooth wheeled 8-10 tonnes capacity	hour	6.000	561.95	3371.70	P&M-044
c)	Material					
Tvi	ne - B					

33.830

63676.99

2154192.57 M-197

Page: 157

Cold mix binder @ 3.3 kg per sqm tonne

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Stone crushed aggregates 11.2 mm to 0.09 mm @ 0.27cum per 10 sqm	cum	276.750	908.85	251524.24	M-042
d) GST @ 12 % on (a+b+c)					294311.69		
		e) Overhead charges @ 10 % on (a+b+c+d)				274690.91	
		f) Contractor's profit @ 10 % on	(a+b+c+	d+e)		302160.00	
		g) Cess @ 1% on (a+b+c+d+e+f)				33237.60	
		Cost for 10250 sqm = $a+b+c+d+e+f+g$	J			3356997.63	
	Rate per sqm = (a+b+c+d+e+f+g)/10250				327.51		
					say	<u>328.00</u>	
5.26		MORTH - 504 IRC: SP: 100 - 2004, 6	hapter 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)

tor	ines)					
a)	Labour					
	Mate	day	0.840	354.00	297.36	L-12
	Mazdoor working with CMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction.	day	16.000	310.00	4960.00	L-13
	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
b)	Machinery					
	Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	6.000	404.42	2426.52	P&M-077
	Mechanical broom hydraulic @ 1250 sqm per hour	hour	2.200	433.63	953.99	P&M-031
	Air Compressor 250 cfm	hour	2.200	575.22	1265.48	P&M-001
	Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3259.29	19555.74	P&M-034
	Electric Generator set 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
	Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	
	Tipper 10 tonne capacity	tonne. km	104x'L'	6.85	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*	561.95	2191.61	P&M-044
	Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	733.63	2861.16	P&M-059
	Finish rolling with 6-8 tonnes smooth wheeled tandem rollers.	hour	6.00x0.65*	1393.81	5435.86	P&M-045
c) Ty <sub>l</sub>	Material oe - B					

24.750

63676.99

1576005.50 M-197

Page: 158

Cold mix binder @ 5.5% by Wt. of tonne

mix

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

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

ton/cum

Volume of aggregate=283.50 cum

Grading II (19 mm nominal size)

25-10 mm 40 per cent	cum	113.400	1505.31	170702.15	M-046
10-5 mm 40 per cent	cum	113.400	1951.33	221280.82	M-040
5m and below 20 per cent	cum	56.700	1828.32	103665.74	M-030

<sup>\*</sup> Any one of the alternative may be adopted as per approved design

(ii) For Grading II (19 mm nominal size)

d)	GST @ 12 % on (a+b+c)	255393.08			
e)	Overhead charges @ 10 % on (a+b+c+d)	238366.87			
f)	Contractor's profit @ 10 % on (a+b+c+d+e)	262203.56			
g)	Cess @ 1% on (a+b+c+d+e+f)	28842.39			
Cost	Cost for 205 cum = $a+b+c+d+e+f+g$ 2913081.55				
Rate	Rate per cum = (a+b+c+d+e+f+g)/205 (For Grading II) 14210.15				

14210.00

sav

- 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.
  - 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 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)

Labour

297.36 L-12 Mate day 0.840 354.00

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	310.00	4960.00	L-13
			<b>L</b> \	Skilled mazdoor for checking line & levels	day	5.000	442.00	2210.00	L-15
			b)	Machinery Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour.	hour	6.000	404.42	2426.52	P&M-077
				Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3259.29	19555.74	P&M-034
				Electric Generator set 250 KVA Front end loader 1 cum bucket capacity	hour hour	6.000 6.000	1012.39 1398.23	6074.34 8389.38	
				Tipper 10 tonne capacity	tonne. km	104x'L'	6.85	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*	561.95	2191.61	
				Three wheel 80-100 kN Static Roller	hour	6.00x0.65*	733.63	2861.16	
			c)	Finish rolling with 6-8 tonnes smooth wheeled tandom rollers.  Material	hour	6.00x0.65*	1393.81	5435.86	P&M-045
			٠,	Cold mix binder @ 7.5% by Wt. of mix	tonne	33.750	63676.99	2149098.41	M-197
				Weight of mix=450 tonne 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	1951.33	308651.62	M-040
				4.75 and below W 43 per cent	cum	119.325	1828.32	218164.28	
		(ii)	ado	ny one of the alternative may be opted as per approved design For Grading II (9.50 mm nominal					
			d)	size) GST @ 12 % on (a+b+c)				327637.95	
			u) e)	Overhead charges @ 10 % on (	a+b+c+c	d)		305795.42	
			f)	Contractor's profit @ 10 % on (		=		336374.97	
			g)	Cess @ 1% on (a+b+c+d+e+f)		÷		37001.25	
				st for 195 cum = a+b+c+d+e+f+g	on C===1.	na II)		3737125.87	
			ĸat	e per sqm = (a+b+c+d+e+f+g)/195 (F	or Gradi	ng II)	say	19164.75 <u>19165.00</u>	

SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
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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 24.750 39570.00 979357.50 M-198 tonne @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 40000.00 79200.00 M-199 81036.05 M-052 Stone Aggregate (Single size):12.5 cum 42.750 1895.58 mm nominal size ( Qty = 85.5 \* 50/100) Stone Aggregate (Single size) :10 mm 42.750 1951.33 83419.36 M-051 cum nominal size ( Qty = 85.5 \* 50 / 100) Stone Aggregate (Single size):10 mm cum 35.440 1951.33 69155.14 M-051 nominal size(Qty = 70.88 \* 50 / 100)

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

		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) :06 mm nominal size( Qty = 70.88 * 50 /100)	cum	35.440	1939.82	68747.22	M-050
		Stone chippings/ screenings 4.75 mm nominal size ( Qty = 283.5 * 40 /100)	cum	113.400	1059.29	120123.49	M-041
		Dry hydrated lime (factory made) b) Transport	quintal	127.600	290.00	37004.00	M-200
		Carriage of Tar bitumen	tonne	24.750	0.00	0.00	
		Carriage of Stone aggregate below 40 mm nominal size	cum	275.000	0.00	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	13000.00	39000.00	P&M-096
		Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.000	3259.29	19555.74	P&M-034
		Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
		Front end loader 1 cum bucket capacity (incl POL)	hour	6.000	1398.23	8389.38	P&M-017
		Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.900	561.95	2191.61	P&M-044
		Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.900	600.00	2340.00	P&M-062 ( A)
		Tandem Road Roller, Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.900	1393.81	5435.86	P&M-045
		d) Labour			0=4.00		
		Mate	each	0.840	354.00		
		Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	each	14.000	310.00	4340.00	L-13
		Skilled Beldar (for floor rubbing etc.) for checking line & levels	each	5.000	442.00	2210.00	L-15
		Other Costs				198345.25	
		e) GST @ 12 % on (a+b+c+d)	24b4044	4+0/		185122.23	
		f) Overhead charges @ 10 % on (				203634.45	
		g) Contractor's profit @ 10 % on (		u~e~1)			
		h) Cess @ 1% on (a+b+c+d+e+f+g		ıπtπαι ρ/		22399.79	
		Cost for 191 cum(450 Tonne) (a+ Cost per cum. (a+b		• ,		<b>2262378.77</b> 11844.92	
		oost per cuin. (a tu		g//101	Say		
					3		

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.

		BASES AND SURFACE	COURSE	S (BITUMINOUS	)		
SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		Details of cost for 191 cum (450 tonnes	5)	•			
		a) Material					
		Paving Asphalt VG-30 of approved quality, @5.50% (percentage by weight of total mix)	tonne	24.750	39570.00	979357.50	M-198
		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%		4.000	40000.00	70000 00	M 400
		Waste plastic additive Stone Aggregate (Single size) :12.5 mm nominal size ( Qty = 85.5 * 50 /100 )	tonne cum	1.980 42.750	40000.00 1895.58		
		Stone Aggregate (Single size) :10 mm nominal size (Qty = 85.5 * 50 /100)	cum	42.750	1951.33	83419.36	M-051
		Stone Aggregate (Single size) :10 mm nominal size (Qty = 70.88 * 50 /100 )	cum	35.440	1951.33	69155.14	M-051
		Stone Aggregate (Single size) :06 mm nominal size ( Qty = 70.88 * 50 /100)	cum	35.440	1939.82	68747.22	M-050
		Stone chippings/ screenings 4.75 mm nominal size ( Qty = 283.5 * 40 /100)	cum	113.400	1059.29	120123.49	M-041
		Dry hydrated lime (factory made)	quintal	127.600	290.00	37004.00	M-200
		<b>b) Transport</b> @5.50% (percentage by weight of total mix					
		Carriage of Tar bitumen	tonne	24.750	0.00		
		Carriage of Stone aggregate below 40 mm nominal size Lime Filler @ 2% (percentage by weight of aggregate)	cum	275.000	0.00	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) 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	

**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.
		c) MACHINERY/ HIRE CHARGES: Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.000	12000.00	72000.00	P&M-097
		Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.000	3259.29	19555.74	P&M-034
		Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
		Front end loader 1 cum bucket capacity (incl POL)	hour	6.000	1398.23	8389.38	P&M-017
		Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.900	561.95	2191.61	P&M-044
		Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.900	600.00	2340.00	P&M-062 ( A)
		Tandem Road Roller, Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.900	1393.81	5435.86	P&M-045
		d) Labour					
		Mate	each	0.840	354.00	297.36	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	310.00	4340.00	L-20
		Skilled Beldar (for floor rubbing etc.) for checking line & levels  Other Costs	each	5.000	442.00	2210.00	L-15
		e) GST @ 12 % on (a+b+c+d) f) Overhead charges @ 10 % on (a	a+b+c+d	+e)		196905.25 183778.23	
		<ul><li>g) Contractor's profit @ 10 % on (a)</li><li>h) Cess @ 1% on (a+b+c+d+e+f+g)</li></ul>		+e+f)		202156.05 22237.17	
		Cost for 191 cum(450 Tonne) (a+b+c+	-d+e+f+g	+h)		2245953.75	
		Cost per cum. (a+b+c+d+e+f+g+h)/1	91			11758.92	
		Cost per cum ( Per Tonne).			Say	11758.90	
E 20	16.57.3	Providing and Javing Rituminous cond	roto unir	a cruched of	one eggreg	aton of appoified	

**5.29** 16.57..3

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

796950.00 M-078 24.750 Bitumen grade PMB - 40, tonne 32200.00 (A) @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

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

		 BASES AND SURFACE	COURSE	2 (BLLOWINOUS	)		
SI. No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		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 /100 )	cum	42.750	1895.58	81036.05	M-052
		Stone Aggregate (Single size) :10 mm nominal size (Qty = 85.5 * 50 /100)	cum	42.750	1951.33	83419.36	M-051
		Stone Aggregate (Single size) :10 mm nominal size (Qty = 70.88 * 50 /100 )	cum	35.440	1951.33	69155.14	M-051
		Stone Aggregate (Single size) :06 mm nominal size ( Qty = 70.88 * 50 /100)	cum	35.440	1939.82	68747.22	M-050
		Stone chippings/ screenings 4.75 mm nominal size ( Qty = 283.5 * 40 /100)	cum	113.400	1059.29	120123.49	M-041
		Dry hydrated lime (factory made) b) Transport	quintal	127.600	290.00	37004.00	M-200
		Carriage of Tar 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 weight of aggregate)	ou m				
		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  c) MACHINERY/ HIRE CHARGES:		10 per cent of cost of carriage		0.00	
		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	13000.00	39000.00	
		Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.000	3259.29	19555.74	
		Generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-081
		Front end loader 1 cum bucket capacity (incl POL)	hour	6.000	1398.23	8389.38	P&M-017
		Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.900	561.95	2191.61	P&M-044
		Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.900	600.00	2340.00	P&M-062 ( A)
		Tandem Road Roller, Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65) d) Labour	hour	3.900	1393.81	5435.86	P&M-045
		Mate	each	0.840	400.00	336.00	L-12
		Beldar	each	14.000	310.00	4340.00	L-20

SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks / Input ref.
		p a	working with HMP, mechanical broom, baver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction					
		f	Skilled Beldar (for floor rubbing etc.) or checking line & levels  Other Costs	each	5.000	442.00	2210.00	) L-15
		6	e) GST @ 12 % on (a+b+c+d)				166956.98	
		f	Overhead charges @ 10 % on (a	+b+c+c	l+e)		155826.52	
		ç	g) Contractor's profit @ 10 % on (a	+b+c+c	l+e+f)		171409.17	
		ł	n) Cess @ 1% on (a+b+c+d+e+f+g)	1			18855.01	
			Cost for 191 cum(450 Tonne)				1904355.87	7
			Cost per cum ( Per Tonne).				9970.45	5
						Say	9970.50	)

**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	۱ ۱	И	а	te	ri	a	ı
u	, ,	V.	u	ıc		a	ı

Modified Bitumen Refinary produced CRMB - 60.	tonne	24.750	30536.00	755766.00 M-078 (B)
'@5.50% (percentage by weight of				
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) :	oum	42.750	1895.58	81036.05 M-052
12.5 mm nominal size	cum	42.750	1095.50	01030.03 W-032
( Qty = 85.5 * 50 /100 )				
Stone Aggregate (Single size):	cum	42.750	1951.33	83419.36 M-051
10 mm nominal size	oum	12.100	1001.00	00110.00
( Qty = 85.5 * 50 /100)				
Stone Aggregate (Single size) :	cum	35.440	1951.33	69155.14 M-051
10 mm nominal size				
(Qty = 70.88 * 50 /100 )				
Stone Aggregate (Single size):	cum	35.440	1939.82	68747.22 M-050
06 mm nominal size				
( Qty = 70.88 * 50 /100)				
Stone chippings/ screenings	cum	113.400	1059.29	120123.49 M-041
4.75 mm nominal size				
( Qty = 283.5 * 40 /100)				

CHAPTER - 5
BASES AND SURFACE COURSES (BITUMINOUS)

	BASES AND SURFACE COURSES (BITUMINOUS)					T-	
SI. No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs Remarks / Input ref.
			Dry hydrated lime (factory made)	quintal	127.600	290.00	37004.00 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 weight of aggregate)				
			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 of cost of		0.00
			cover cost of loading and unloading		carriage		
			c) MACHINERY/ HIRE CHARGES:		oarriago		
			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	13000.00	39000.00 P&M-096
			Paver finisher Hydrostatic with sensor	hour	6.000	3259.29	19555.74 P&M-034
			control 100 TPH				
			Generator 250 KVA	hour	6.000	1012.39	6074.34 P&M-081
			Front end loader 1 cum bucket	hour	6.000	1398.23	8389.38 P&M-017
			capacity (incl POL)		0.000	504.05	0404.04.0984.044
			Smooth Wheeled Roller 8 to 10 tonne	hour	3.900	561.95	2191.61 P&M-044
			for initial break down rolling.(6*0.65)				
			Vibratory roller 8 to 10 tonne for	hour	3.900	600.00	2340.00 P&M-062
			intermediate rolling.(6*0.65)				( A)
			Tandem Road Roller,	hour	3.900	1393.81	5435.86 P&M-045
			Finish rolling with 6-8 tonnes smooth				
			wheeled tandem roller.(6*0.65) <b>d) Labour</b>				
			Mate	each	0.840	354.00	297.36 L-12
			Beldar	each	14.000	310.00	
			working with HMP, mechanical broom,				
			paver, roller, asphalt cutter and				
			assistance for setting out lines, levels				
			and layout of construction		5.000	440.00	0040.00   45
			Skilled Beldar (for floor rubbing etc.) for checking line & levels	each	5.000	442.00	2210.00 L-15
			Other Costs				
			e) GST @ 12 % on (a+b+c+d)				162010.27
			f) Overhead charges @ 10 % on (a	a+b+c+c	d+e)		151209.58
			g) Contractor's profit @ 10 % on (		·=		166330.54
			h) Cess @ 1% on (a+b+c+d+e+f+g		,		18296.36
			Cost for 191 cum(450 Tonne)	-			1847932.30
			Cost per cum ( Per Tonne).				9675.04
						Say	9675.00

# Chapter - 6

### **CEMENT CONCRETE PAVEMENT**

### Preamble:

- 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 lean 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

	3r	Ref. to	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
		MoRTH						Input ref.
r	lo	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 - 430 cum (990 tollie)					
a) Labour					
Mate	day	1.120	354.00	396.48	L-12
Mazdoor skilled	day	6.000	442.00	2652.00	L-15
Mazdoor	day	22.000	310.00	6820.00	L-13
b) Machinery					D014.04=
Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017
Cement concrete batch mix plant @ 75 cum per hour	hour	6.000	4722.12	28332.72	P&M-068
Electric generator 100 KVA	hour	6.000	849.56	5097.36	P&M-080
Paver with electronic sensor	hour	6.000	3259.29	19555.74	P&M-034
Vibratory roller 8-10 t capacity	hour	8.000	733.63	5869.04	P&M-059
Water tanker6 KL capacity	hour	8.000	544.25	4354.00	P&M-060
Tipper	tonne.k m	990 x L	7.65	0.00	Lead =0 km & P&M-058
Add 10 per cent of cost of carriage cover cost of loading and unloading  c) Material	to			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	1812.00	733860.00	M-052 and M-054
Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	203.000	601.77	122159.31	M-004
Cement @ 150 kg/cum of concrete	tonne	67.500	9053.98	611143.65	M-081
Cost of water	KL	48.000	67.26	3228.48	M-189
d) GST @ 12 % on (a+b+c)				186222.98	
e) Overhead charges @ 10 % on (a+	·b+c+d)			173808.11	
f) Contractor's profit @ 10 % on (a+	b+c+d+e)			191188.93	
g) Cess @ 1% on (a+b+c+d+e+f)	,			21030.78	
Cost for 205 cum = $a+b+c+d+e+f+g$				2124108.96	
Rate per cum = $(a+b+c+d+e+f+g)/450$				4720.24	
			say	<u>4720.00</u>	
				<del></del>	

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

Sr No

	CEMENT CONCRETE PAVEMENTS							
	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	354.00	708.00	L-12		
	Mazdoor skilled	day	15.000	442.00	6630.00	L-15		
	Mazdoor	day	35.000	310.00	10850.00	L-13		
	b) Machinery	,	30.000	0.000	.0000.00			
	Road Sweeper @ 1250 sqm per hour	hour	2.800	433.63	1214.16	P&M-03		
	Front end loader 1 cum bucket capacity	hour	18.000	1398.23	25168.14	P&M-01		
	Cement concrete batch mix plant @ 175 cum per hour (effective output)	hour	6.000	3534.51	21207.06	P&M-06		
	Electric generator 250 KVA	hour	6.000	1012.39	6074.34	P&M-08		
	Slip form paver with electronic sensor	hour	6.000	3259.29	19555.74	P&M-00		
	Water tanker6 KL capacity	hour	36.000	544.25	19593.00	P&M-06		
	Transit truck agitator 5 cum capacity.	tonne.k	2415xL	7.65	0.00	Lead =0		
	Transit truck agitator 5 cum capacity.	m	24 15XL	7.05	0.00	km & P& 058		
	Add 10 per cent of cost of carriage to cover cost of loading and unloading	)			0.00			
	Concrete joint cutting machine .	hour	12.000	125.66	1507.92	P&M-08		
	Texturing machine .	hour	12.000	269.91	3238.92	P&M-08		
	c) Material							
	Crushed stone coarse aggregates of 25mm and 12.5mm nominal size @ 0.90	cum	945.000	1812.00	1712340.00	M-052 ar M-054		
	cum/cum of concrete conforming to clause 602.2.4		472.000	604.77	204627.24	M-004		
	Sand as per IS: 383 and conforming to clause 602.2.4 @ 0.45 cum/cum of concrete	cum	473.000	601.77	284637.21	IVI-004		
	Cement 43 grade @ 400 kg/cum of concrete	tonne	414.000	9053.98	3748347.72	M-081		
	32 mm mild steel dowel bars of grade S 240	tonne	9.450	59823.01	565327.44	M-126		
	16 mm deformed steel tie bars of grade S 415	tonne	1.170	59823.01	69992.92	M-082		
	Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	3675.000	30.09	110580.75	M-164		
	Pre moulded Joint filler, 25 mm thick for expansion joint.	sqm	16.330	613.27	10014.70	M-141		
	Joint sealant	kg	875.000	337.17	295023.75	M-120		
	Sealant primer	kg	116.670	278.76	32522.93	M-097		
	Plastic sheath,1.25 mm thick for dowel	sqm	46.670	0.97	45.27	M-138		
	bars	litan	1050 000	E4.60	101010 00	M-090		
	Curing compound	liter	1850.000	54.60	101010.00	M-180		
	Super plastisizer admixture IS marked as per 9103-1999 @ 0.5 per cent by weight of cement	kg	2070.000	61.06	126394.20	IVI- 100		
		IZI	040,000	07.00	4.4500.40	M-189		
	Cost of water	KL	216.000	67.26	14528.16	IVI- 109		
	Add 1 per cent of material for miscellaneous materials like tarpauline, cloth, metal cap, cotton / compressible spot cradle for dowel bars, work bridges for approach concrete surface without walking cutting blades and bites, minor equipmes cabbling machine, threads, ropes, guid and any other unforeseen items.	Hessian onge and men to g over it, ents like			70707.65			
	d) GST @ 12 % on (a+b+c)				870866.40			
	a) Overhead charges @ 10 % on (a+h	/TVT4/			912909 64			

Page : 170

812808.64

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

e)

# CHAPTER- 6 CEMENT CONCRETE PAVEMENTS

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	f) Contractor's profit @ 10 % on (a+b+c+d+e)					894089.50	
		g) Cess @ 1% on (a+b+c+d+e+f)				98349.85	
		Cost for 1050cum = a+b+c+d+e+f+g				9933334.37	
	Rate per cum = $(a+b+c+d+e+f+g)/1050$			9460.32			
					say	<u>9460.00</u>	

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

# 6.3 603 Rolled Cement Concrete Base

Construction of rolled cement concrete base course with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm with minimum, aggregate cement ratio15:1 and minimum cement content of 200 kg/cum, aggregate gradation to be as per table 600-4 after blending, mixing in batching plant at optimum moisture content, transporting to site, laying with a paver with electronic sensor, compacting with 8-10 tonnes smooth wheeled vibratory roller to achieve, the designed flexural strength, finishing and curing.

#### Unit = cum

Taking output = 450 oum (000 tonno)							
Taking output = 450 cum (990 tonne) a) Labour							
a) Labour Mate	day	1.200	354.00	424.80	L-12		
Mazdoor skilled	day	7.000	442.00	3094.00	L-15		
Mazdoor	day	23.000	310.00	7130.00	L-13		
b) Machinery	uay	23.000	310.00	7 130.00			
Front end loader 1 cum bucket capacity	hour	6.000	1398.23	8389.38	P&M-017		
Cement concrete batch mix plant @ 75	hour	6.000	4722.12	28332.72	P&M-068		
cum per hour		0.000	1122.12	20002.72			
Electric generator 100 KVA	hour	6.000	849.56	5097.36	P&M-080		
Paver with electronic sensor @ 75 cum/hr.	hour	6.000	3259.29	19555.74	P&M-034		
Vibratory roller 8-10 t capacity	hour	8.000	733.63	5869.04	P&M-059		
Water tanker with 5 km lead 6 KL capacity	hour	8.000	544.25	4354.00	P&M-060		
Trace tallico mar o mirroda o na capacity		0.000	0120				
Tipper	tonne.k	990xL	7.65	0.00	Lead =0		
11	m				km & P&M- 058		
Add 10 per cent of cost of carriage to cover cost of loading and unloading  c) Material	1			0.00			
Crushed stone coarse aggregates of 25mm and 12.5mm nominal size @ 0.90 cum/cum of concrete conforming to clause 602.2.3.	cum	405.000	1812.00	733860.00	M-052 and M-054		
Sand as per IS: 383 and conforming to clause 602.2.3 @ 0.45 cum/cum of concrete	cum	203.000	601.77	122159.31	M-004		
Cement @ 200 kg/cum of concrete	tonne	90.000	9053.98	814858.20	M-081		
Cost of water	KL	48.000	67.26	3228.48	M-189		
d) GST @ 12 % on (a+b+c)				210762.36			
e) Overhead charges @ 10 % on (a+b	+c+d)			196711.54			
,							
f) Contractor's profit @ 10 % on (a+bg) Cess @ 1% on (a+b+c+d+e+f)	. J. w. oj			23802.10			
Cost for 450cum = a+b+c+d+e+f+g 2404011.72							
2404011.72							

5342.25 **5342.00** 

sav

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

Rate per cum = (a+b+c+d+e+f+g)/450

### 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 fencing 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.
- 5 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 alumunium 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 barriers have been included.
- 12 Provision has been made for a crane 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 inlouded.
- 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.

#### TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Ţ	Sr No F		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	I N	/IoRTH						Input ref.
	1	/ DSR						1 1
		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**

Cement concrete of grade M20 = 12.60 cum

Cement concrete of grade M10 for base= 11.61 cum

Total Concrete = 24.21 cu.m

a) Labour					
Mate	day	0.720	354.00	254.88	L-12
Mason	day	2.000	442.00	884.00	L-11
Mazdoor	day	16.000	310.00	4960.00	L-13
b) Machinery					
Kerb casting machine @ 60 metres/hour	hour	6.000	377.88	2267.28	P&M-029
Concrete mixer 0.48/0.28 cum capacity	hour	12.000	269.91	3238.92	P&M-009
Water tanker6 KL capacity c) Material	hour	5.000	544.25	2721.25	P&M-060
Crushed stone aggregate 20 mm nominal size 59 per cent	cum	21.790	1784.07	38874.89	M-053
Coarse sand 30 per cent	cum	10.900	601.77	6559.29	M-005
Cement 11 per cent	tonne	5.700	9053.98	51607.69	M-081
Cost of water	KL	30.000	67.26	2017.80	M-189
d) GST @ 12 % on (a+b+c)				13606.32	
e) Overhead charges @ 10 % on (a+b	o+c+d)			12699.23	
f) Contractor's profit @ 10 % on (a+k	o+c+d+e)			13969.16	
g) Cess @ 1% on (a+b+c+d+e+f)			1536.61		
Cost for 360 meter = a+b+c+d+e+f+g			155197.32		
Rate per metre = (a+b+c+d+e+f+g)/360			431.10		
			say	<u>431.00</u>	

## **B** Using Concrete Batching and Mixing Plant

#### **Cement Concrete**

Cement concrete of grade M20 = 12.60 cum

Cement concrete of grade M10 for base = 11.61 cum

Total Concrete = 24.21 cu.m

a) Labour				
Mate	day	0.120	354.00	42.48 L-12
Mason	day	1.000	442.00	442.00 L-11
Mazdoor	day	2.000	310.00	620.00 L-13
b) Machinery				
Kerb casting machine @ 60 metres/hour	hour	6.000	377.88	2267.28 P&M-029

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	2787.61	4460.18	P&M-003
		Wat	er tanker6 KL capacity	hour	5.000	544.25	2721.25	P&M-060
		Tipp	per 5.5 cum capacity	hour	6.000	779.65	4677.90	P&M-048
		c)	Material					
			shed stone aggregate 20 mm ninal size 59 per cent	cum	21.790	1784.07	38874.89	M-053
		Coa	rse sand 30 per cent	cum	10.900	601.77	6559.29	M-004
		Cen	nent 11 per cent	tonne	5.700	9053.98	51607.69	M-081
		Cos	t of water	KL	30.000	67.26	2017.80	M-189
		d)	GST @ 12 % on (a+b+c)				13714.89	
		e)	Overhead charges @ 10 % on (a-	-b+c+d)			12800.57	
		f)	Contractor's profit @ 10 % on (a-	+b+c+d+e)	)		14080.62	
		g)	Cess @ 1% on (a+b+c+d+e+f)				1548.87	
		Cos	t for 360 meter = a+b+c+d+e+f+g				156435.71	
		Rate	e per metre = (a+b+c+d+e+f+g)/360				434.54	
						say	<u>435.00</u>	

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

Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in 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

Total Gollorete - 40.00 Cam									
a) Lab	our								
Mate		day	0.720	354.00	254.88	L-12			
Mason		day	2.000	442.00	884.00	L-11			
Mazdoor		day	16.000	310.00	4960.00	L-13			
b) Ma	chinery								
	ting machine @ 50 metres/hour kerb and channel	hour	6.000	377.88	2267.28	P&M-029			
Concrete	mixer 0.48/0.28	hour	16.000	269.91	4318.56	P&M-009			
Water tar	nker6 KL capacity	hour	6.000	544.25	3265.50	P&M-060			
c) Ma	terial								
	stone aggregate 20 mm size 60 per cent	cum	36.590	1784.07	65279.12	M-053			
Coarse s	and 30 per cent	cum	18.300	601.77	11012.39	M-005			
Cement 1	10 per cent	tonne	9.010	9053.98	81576.36	M-081			
Cost of w	rater	KL	36.000	67.26	2421.36	M-189			
d) GS	T @ 12 % on (a+b+c)				21148.73				
e) Ove	erhead charges @ 10 % on (a+b		19738.82						
f) Co	Contractor's profit @ 10 % on (a+b+c+d+e) 21712.70								
g) Ce	ss @ 1% on (a+b+c+d+e+f)			2388.40					

				CHAPT	ΓER-8				
				TRAFFIC SIGNS, MARKINGS & O	THER RO	AD APPUR	<b>TENANCES</b>		
Sr No	Ref. to MoRTH / DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks Input ref.
		<u> </u>	Cos	t for 300 meter = a+b+c+d+e+f+g				241228.10	II.
			Rate	e per metre = (a+b+c+d+e+f+g)/300				804.09	
							say	<u>804.00</u>	
8.2		В	Usiı	ng Concrete Batching and Mixing P	lant		•		
			Uni	t = Running metre					
			Tak	ing output = 300 metre length					
				nent Concrete					
				nent concrete of grade M20= 17.48 cu	ım				
				nent concrete of grade M10 for base 3.18 cum					
			Tota	al Concrete = 40.66 cum					
			a)	Labour					
			Mate		day	0.120	354.00	42.48	
			Mas		day	1.000	442.00	442.00	
			Maz b)	door Machinery	day	2.000	310.00	620.00	L-13
			Kerl	o casting machine @ 50 metres/hour aying kerb and channel	hour	6.000	377.88	2267.28	P&M-02
			Con	crete batching and mixing plant @	hour	2.700	2787.61	7526.55	P&M-00
			Wat	er tanker6 KL capacity	hour	6.000	544.25	3265.50	P&M-06
			Tipp	per of 5.5 cum capacity	hour	6.000	779.65	4677.90	P&M-04
			c)	Material					
				shed stone aggregate 20 mm iinal size 60 per cent	cum	36.590	1784.07	65279.12	M-053
				rse sand 30 per cent	cum	18.300	601.77	11012.39	
				nent 10 per cent	tonne	9.010	9053.98	81576.36	
			Cos d)	t of water GST @ 12 % on (a+b+c)	KL	36.000	67.26	2421.36 21495.71	M-189
			e)	Overhead charges @ 10 % on (a+	b+c+d)			20062.67	
			f)	Contractor's profit @ 10 % on (a+	b+c+d+e)			22068.93	
			g)	Cess @ 1% on (a+b+c+d+e+f)				2427.58	
				t for 300 meter = a+b+c+d+e+f+g				245185.83	
				e per metre = (a+b+c+d+e+f+g)/300				817.29	
8.3	801		Drin	iting New Letter and Figures of any	Shada		say	<u>817.00</u>	
0.3						المماليس مالاني		sint block o	_
				iting new letter and figures of any other approved colour to give an e		•	ic enamei pa	aint black of	ſ
		(i)		<b>di</b> (Matras commas and the like not nted as half)	to be me	asured and բ	oaid for Half l	etter shall be	)
			Det	ails for 100 letters of 16 cm height i.	.e. 1600 c	em .			
			Uni	t = per cm height per letter					
			a)	Labour					
			Mat		day	0.120	354.00	42.48	
			Pair		day	2.000	442.00	884.00	
				door	day	1.000	310.00	310.00	L-13
			b)	Material	Litro	0.700	202.04	226.11	M_121
			Pair		Litre	0.700	323.01	175.51	IVI-101
			c)	GST @ 12 % on (a+b)				1/0.01	

Page : 176

163.81

180.19

19.82

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

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

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

d)

e)

f)

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			Cost for 1600 cm = a+b+c+d+e+f				2001.92	
			Rate per cm height per letter = (a+b+c+	- d+e+f)/1	1600		1.25	
						say	<u>1.30</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	354.00	24.78	L-12
			Painter Ist class	day	1.250	442.00	552.50	L-18
			Mazdoor	day	0.500	310.00	155.00	L-13
			b) Material					
			Paint	Litre	0.500	323.01	161.51	M-131
			c) GST @ 12 % on (a+b)				107.25	
			d) Overhead charges @ 10 % on (a+	b+c)			100.10	
			e) Contractor's profit @ 10 % on (a+	b+c+d)			110.11	
			f) Cess @ 1% on (a+b+c+d+e)				12.11	
			Cost for 1600 cm = a+b+c+d+e+f				1223.36	
			Rate per cm height per letter = (a+b+c	+d+e+f)/1	1600		0.76	
						say	<u>0.80</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  $75 \times 75 \times 6$  mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete  $45 \times 45 \times 60$  cm, 60 cm below ground level as per approved drawing

Unit = sqm Taking output = 0.9 sqm						
i) Excavation for foundation	cum	0.220	355.00	78.10	Item No. 3.13	
ii) Cement concrete M15 grade	cum	0.120	7876.00	945.12	Item 12.8 (A)	
iii) Painting angle iron post two coats	sqm	0.430	95.00	40.85	Item 8.9	
(Including GST,OH,CP &Cess of i,ii & iii)						
a) Labour (For fixing at site)						
Mate	day	0.010	354.00	3.54	L-12	
Mazdoor	day	0.200	310.00	62.00	L-13	
b) Material						
Mild steel angle iron 75 mm x 75 mm x 6 mm,2.85 metres long	kg	19.000	48.31	917.89	M-179 /1000	
Aluminium sheeting fixed with encapsulated lens type reflective sheeting of size 0.9 sqm	sqm	0.900	161.95	145.76	M-061	
Add 2 per cent of cost of materials for drilling holes, nuts, bolts, fabrication etc.						
c) Machinery						
Tractor-trolley	hour	0.020	476.11	9.52	P&M-053	
d) GST @ 12 % on (a+b+c)				136.65		
e) Overhead charges @ 10 % on (a+b+c+d) 127.54						

Sr No	Ref. to MoRTH / DSR	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.	f) Contractor's profit @ 10 % on (a	a+b+c+d+e	<u> </u> }		140.29	
		g) Cess @ 1% on (a+b+c+d+e+f)		,		15.43	
		Cost for 0.9 sqm =i+ii+iii+ a+b+c+d+e+	2622.69				
		Rate per sqm (for sign having area u (I+ii+iii+a+b+c+d+e+f+g)/0.90		2914.10			
					say	<u>2914.00</u>	
	Note	I) Lettering and arrow marks on sig separately as per actual requirement have been analysed separately		•			
		ii) Rate for excavation, cement concret be taken from respective chapters	e M-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

Unit = sqm Taking output = 1.50 sqm							
i) Excavation for foundation	cum	0.430	355.00	152.65	Item No. 3.13		
ii) Cement concrete M15 grade	cum	0.240	7876.00	1890.24	Item 12.8 (A)		
iii) Painting angle iron post 2 coats	sqm	0.860	95.00	81.70	Item 8.9		
(Including GST,OH,CP &Cess of i,ii & iii)							
a) Labour (For fixing at site)							
Mate	day	0.010	354.00	3.54	L-12		
Mazdoor	day	0.300	310.00	93.00	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	48.31	1835.78	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	161.95	242.93	M-061		
c) Machinery							
Tractor-trolley	hour	0.020	476.11	9.52	P&M-053		
d) GST @ 12 % on (a+b+c)				262.17			
e) Overhead charges @ 10 % on (a+b-	+c+d)			244.69			
f) Contractor's profit @ 10 % on (a+b	+c+d+e)			269.16			
g) Cess @ 1% on (a+b+c+d+e+f)		29.61					
Cost for 1.5 sqm =I+ii+ii+ a+b+c+d+e+f+g				5114.99			
Rate per sqm (for sign having area more than 0.9 sqm) = 5683.32 i+ii+iii+a+b+c+d+e+f+g)/1.50							
<u>-</u> -			say	<u>5683.00</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

### 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.
8.8	803	Painting Two Coats on New Concrete S	urfaces				1
		Painting two coats after filling the surface plastered concrete surfaces	with synt	thetic enamel	paint in all s	hades on new	1
		Unit = sqm					
		Taking output = 40 sqm					
		a) Labour					
		Mate	day	0.120	354.00	42.48	L-12
		Painter	day	2.000	442.00	884.00	L-18
		Mazdoor	day	1.000	310.00	310.00	L-13
		b) Material					
		Paint conforming to requirement of clause 803.3.	Litre	6.000	267.26	1603.56	M-132
		Add for scaffolding @ 1 per cent of labour cost where required				16.04	
		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.				142.00	
		c) GST @ 12 % on (a+b)				359.77	
		d) Overhead charges @ 10 % on (a+b	+c)			335.79	
		e) Contractor's profit @ 10 % on (a+b	-			369.36	
		f) Cess @ 1% on (a+b+c+d+e)	,			40.63	
		Cost for 40 sqm = a+b+c+d+e+f				4103.63	
		Rate per sqm = (a+b+c+d+e+f)/40				102.59	
					say	103.00	
8.9	803	Painting on Steel Surfaces					
		Providing and applying two coats of a surface after through cleaning of surface	-	-		and on stee	I
		Unit = sqm					
		Taking output = 10 sqm					
		a) Labour Mate	day	0.030	354.00	10.62	L-12
		Painter	day	0.450	442.00	198.90	
		Mazdoor	day	0.250	310.00	77.50	
			uay	0.200	010.00	11.50	
		<ul><li>b) Material</li><li>Paint ready mixed approved brand.</li></ul>	Litre	1.250	323.01	403.76	M-131

•	ing the surface before laying 2 coats ainting.		
c)	GST @ 12 % on (a+b)		87.52
d)	Overhead charges @ 10 % on (a+b+c)		81.69
e)	Contractor's profit @ 10 % on (a+b+c+d)		89.86
f)	Cess @ 1% on (a+b+c+d+e)		9.88
Cost	for 10 sqm = a+b+c+d+e+f		998.31
Rate	per sqm= (a+b+c+d+e+f)/10		99.83
		say	<u>100.00</u>

4.04

34.54

Add @ 1 per cent on cost of material for

Add @ 5 per cent cost of labour and materials to prepare the surface by filling minuts roughness on the surface and

scaffolding

#### TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

	• • • • •	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	 Remarks/ Input ref.
- 1		/ DSR					
		Spec.					

8.10 803 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	354.00	10.62 L-1	12
Painter	day	0.500	442.00	221.00 L-1	18
Mazdoor	day	0.200	310.00	62.00 L-1	13
b) Material					
Paint ready mixed of approved brand.	Litre	1.500	323.01	484.52 M-	131
Add @ 1 per cent on cost of material for scaffolding				4.85	
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.				38.91	
c) GST @ 12 % on (a+b)				98.63	
d) Overhead charges @ 10 % on (a+	b+c)			92.05	
e) Contractor's profit @ 10 % on (a+	b+c+d)			101.26	
f) Cess @ 1% on (a+b+c+d+e)				11.14	
Cost for 10 sqm = a+b+c+d+e+f				1124.98	
Rate per sqm= (a+b+c+d+e+f)/10				112.50	
			say	113.00	

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

(ii)

Painter

8.11

Taking output = 10 sqm					
a) Labour					
Mate	day	0.090	354.00	31.86	L-12
Painter	day	0.550	442.00	243.10	L-18
Mazdoor	day	1.550	310.00	480.50	L-13
b) Material					
Road marking Paint as per IS :164	Litre	1.480	267.26	395.54	M-132
c) GST @ 12 % on (a+b)				138.12	
d) Overhead charges @ 10 % on (a-			128.91		
e) Contractor's profit @ 10 % on (a-	+b+c+d)			141.80	
f) Cess @ 1% on (a+b+c+d+e)				15.60	
Cost for 10 sqm = a+b+c+d+e+f				1575.43	
Rate per sqm= (a+b+c+d+e+f)/10				157.54	
			say	<u>158.00</u>	
Up to 10 cm in width					
Unit = sqm					
Taking output = 10 sqm					
a) Labour					
Mate	day	0.070	354.00	24.78	L-12

day

0.350

442.00

154.70 L-18

			Traditio didito, infattantoo a c	1				1
Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		l	Mazdoor	day	1.350	310.00	418.50	L-13
			b) Material					
			Road marking paint	Litre	1.480	267.26	395.54	M-132
			c) GST @ 12 % on (a+b)				119.22	
			d) Overhead charges @ 10 % on (a+	-b+c)			111.27	
			e) Contractor's profit @ 10 % on (a+	-b+c+d)			122.40	
			f) Cess @ 1% on (a+b+c+d+e)				13.46	
			Cost for 10 sqm = $a+b+c+d+e+f$				1359.87	
			Rate per sqm= (a+b+c+d+e+f)/10			621/	135.99	
8.12	803		Painting Lines, Dashes, Arrows etc on	Roads in	Two Coats	<b>say</b> on Old Work	<u>136.00</u>	
0.12			Painting lines, dashes, arrows etc or					,
			mixed road marking paint conforming cleaning the surface of all dirt, dust and traffic control	g to IS: 1	64 on bitum	inous surfac	ce, including	J
		(i)	Over 10 cm in width					
			Unit = sqm					
			Taking output = 10 sqm					
			a) Labour Mate	dov	0.060	354.00	21.24	I 12
			Painter Ist class	day	0.300	442.00	132.60	
			Mazdoor	day	1.250	310.00	387.50	
			b) Material	day	1.250	310.00	307.30	L-10
			Road marking paint	Litre	0.900	267.26	240.53	M-132
			c) GST @ 12 % on (a+b)		0.000		93.82	
			d) Overhead charges @ 10 % on (a+	-b+c)			87.57	
			e) Contractor's profit @ 10 % on (a+	-			96.33	
			f) Cess @ 1% on (a+b+c+d+e)	,			10.60	
			Cost for 10 sqm = a+b+c+d+e+f				1070.19	
			Rate per sqm= (a+b+c+d+e+f)/10				107.02	
						say	107.00	
8.12		(ii)	Up to 10 cm in width					
			Unit = sqm					
			Taking output = 10 sqm					
			a) Labour					
			Mate	day	0.070	354.00	24.78	
			Painter Ist class	day	0.350	442.00	154.70	
			Mazdoor	day	1.350	310.00	418.50	L-13
			b) Material	1.16	0.000	007.00	040.50	M 122
			Road marking Paint	Litre	0.900	267.26	240.53	IVI-132
			c) GST @ 12 % on (a+b)				100.62	
			d) Overhead charges @ 10 % on (a+	•			93.91	
			e) Contractor's profit @ 10 % on (a+	-b+c+d)			103.30	
			f) Cess @ 1% on (a+b+c+d+e)				11.36	
			Cost for 10 sqm = a+b+c+d+e+f				1147.70	
			Rate per sqm= (a+b+c+d+e+f)/10				114.77	
8.13	803		Road Marking with Hot Applied Therm	anlaatia .	Compound :	say	<u>115.00</u>	

8.13 Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface

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.
		Unit	t = sqm					
		Tak	ing output = 600 sqm					
		a) Mate	<b>Labour</b> e	day	0.030	354.00	10.62	L-12
		Maz	door	day	0.750	310.00	232.50	L-13
		<b>b)</b> Roa hour	Machinery d marking machine @ 60 sqm per	hour	10.000	112.39	1123.90	
		Trac	ctor-trolley	hour	0.500	476.11	238.06	P&M-053
		c) Hot	Material applied thermoplastic compound	Litre	1500.000	199.12	298680.00	M-118
		Refl	ectorising glass beads	kg	150.000	231.86	34779.00	M-152
		d)	GST @ 12 % on (a+b+c)				40207.69	
		e)	Overhead charges @ 10 % on (a+	·b+c+d)			37527.18	
		f)	Contractor's profit @ 10 % on (a-	+b+c+d+e)			41279.90	
		g)	Cess @ 1% on (a+b+c+d+e+f)				4540.79	
		Cos	t for 600 sqm = a+b+c+d+e+f+g				458619.64	
		Rate	e per sqm = a+b+c+d+e+f+g)/600				764.37	
						say	<u>764.00</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

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.

Iunii	ig output = 0 1103.											
a)	M-15 grade of concrete	cum	2.350	7876.00	18508.60	Item 12.8 (A)						
b) sqm	Steel reinforcement @ 5 kg per	kg	22.080	99.10	2188.13	Item 13.6/1000						
•	Excavation in soil for foundation	cum	1.680	355.00	596.40	Item No. 3.13						
d) surfa	Painting two coats on concrete ace	sqm	9.850	98.00	965.30	Item 8.8						
•	Lettering on km post (average 30 rs of 10 cm height each)	per cm per letter	1800.000	0.80	1440.00	Item 8.3						
(Incl	(Including GST,OH,CP &Cess of a,b,c,d & e)											
-	sportation and fixing	,										
	Labour											
Mate		day	0.260	354.00	92.04	L-12						
Masc	on	day	0.600	442.00	265.20	L-11						
Mazo	door including loading/unloading	day	6.000	310.00	1860.00	L-13						
g)	Machinery											
_	tor-trolley	hour	6.000	476.11	2856.66	P&M-053						
h)	GST @ 12 % on (f+g)				608.87							
i)	Overhead charges @ 10 % on (f+g	j+h)			568.28							
j) Contractor's profit @ 10 % on (f+g+h+i) 625.11												

			TRAFFIC SIGNS, MARKINGS & O					1_
Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.		k) Cess @ 1% on (f+g+h+i+j)				68.76	
			Cost for 6 Nos. 5th km stone = $a+b+c+d+$	+e +f+a+h	1 +i +i+k		30643.35	
			Rate for each 5th km stone = (a+b+c+d	Ü	•		5107.23	
			Nate for each still kill stolle - (a b c u	·e ·i·g·	11111j.K//O		3107.23	
						say	<u>5107.00</u>	
8.14		(ii)	Ordinary kilometer stone (precast)					
			Unit = Nos.					
			Taking output = 14 Nos.					
			a) M-15 grade of concrete	cum	3.770	7876.00	29692.52	
			b) Steel reinforcement @ 5 kg per sqm	kg	26.320	99.10	2608.31	(A) Item 13.6/1000
			c) Excavation in soil for foundation	cum	2.770	355.00	983.35	Item No. 3.13
			d) Painting two coats on concrete surface	sqm	11.410	98.00	1118.18	Item 8.8
			e) Lettering on km post ( average 12 letters of 10 cm height each)	per cm per letter	1680.000	0.80	1344.00	Item 8.3
			(Including GST,OH,CP &Cess of a,b,c,c	d & e)				
			Transportation and fixing					
			f) Labour					
			Mate	day	0.320	354.00	113.28	L-12
			Mason	day	1.000	442.00	442.00	
			Mazdoor	day	7.000	310.00	2170.00	L-13
			g) Machinery Tractor-trolley	hour	6.000	476.11		P&M-053
			h) GST @ 12 % on (f+g)				669.83	
			i) Overhead charges @ 10 % on (f+g	+h)			625.18	
			j) Contractor's profit @ 10 % on (f+g	+h+i)			687.70	
			k) Cess @ 1% on (f+g+h+i+j)				75.65	
			Cost for 14 Nos. ordinary km stone = (a+k+d+e+f+g+h+i+j+k)	o+ c			43386.66	
			Rate for each ordinary km stone = (a+b+d+e+f+g+h+i+j+k)/14	)+c			3099.05	
		,				say	<u>3099.00</u>	
8.14		(III)	Hectometer stone (precast)					
			Unit = Nos.					
			Taking output = 33 Nos.		4.500	7070.00	40444.00	Itom 10 0
			a) M-15 grade of concrete	cum	1.580	7876.00	12444.08	(A)
			b) Steel reinforcement @ 5 kg per sqm	kg	66.000	99.10	6540.60	Item 13.6/1000
			c) Excavation in soil for foundation	cum	1.390	355.00	493.45	Item No. 3.13
			d) Painting two coats on concrete surface	sqm	6.270	98.00	614.46	Item 8.8
			e) Lettering on km post (average 1 letter of 10 cm height each) (Including GST,OH,CP &Cess of a,b,c,d & e)	per cm per letter	330.000	0.80	264.00	Item 8.3

Sr No	Ref. to MoRTH / DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Transportation and fixing					
		f) Labour					
		Mate	day	0.340	354.00	120.36	L-12
		Mason	day	1.500	442.00	663.00	L-11
		Mazdoor	day	7.000	310.00	2170.00	L-13
		g) Machinery					
		Tractor-trolley	hour	6.000	476.11	2856.66	P&M-053
		h) GST @ 12 % on (f+g)				697.20	
		i) Overhead charges @ 10 % on (f	+g+h)			650.72	
		j) Contractor's profit @ 10 % on (f	+g+h+i)			715.79	
		k) Cess @ 1% on (f+g+h+i+j)				78.74	
		Cost for 33 Nos. Hectometer stone (a+b+c+d+e+f+g+h+i+j+k)	=			28309.06	
		Rate for each Hectometer stone (a+b+c+d+e+f+g+h+i+j+k) 33	=			857.85	
					say	<u>858.00</u>	

**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.

Rate for each boundary pillar =

(a+b+c+d+e+ f+g+h+i+j+k)/57

a) stor	M-15 grade of the boundary	cum	1.250	7876.00	9845.00	Item 12.8 (A)					
b)	Steel reinforcement	kg	79.800	99.10	7908.18	Item 13.6/1000					
c)	Excavation in soil	cum	10.720	355.00	3805.60	Item No. 3.13					
d)	Lettering, each 10 cm high	per letter per cm high	2280.000	0.80	1824.00	Item 8.3					
(Inc	(Including GST.OH.CP &Cess of a.b.c & d)										

	per cm high				
(Including GST,OH,CP &Cess of a,b	o,c & d)				
Transportation and fixing					
e) Labour Mate	day	0.570	354.00	201.78	L-12
Mazdoor	day	14.250	310.00	4417.50	L-13
f) Machinery					
Tractor-trolley	hour	6.000	476.11	2856.66	P&M-053
g) Material					
Stone spall	cum	11.970	446.02	5338.86	M-008
h) GST @ 12 % on (e+f+g)				1537.78	
i) Overhead charges @ 10 % on	(e+f+g+h)			1435.26	
j) Contractor's profit @ 10 % on	(e+f+g+h+i)			1578.78	
k) Cess @ 1% on (f+g+h+i+j)				173.67	
Cost for 57 Nos. boundary pillar = ( +c+d +e+ f+g+h+i+j+k)	a+b			40923.07	

say <u>718.00</u>

717.95

## TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

0	Ref. to MoRTH	 Unit	Quantity	Rate in Rs	 Remarks/ Input ref.
	/ DSR				iliput lei.
	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

	0 1							
a)	Labour							
Mate	<b>;</b>	day	0.090	354.00	31.86	L-12		
Blac	ksmith	day	0.250	442.00	110.50	L-02		
Maz	Mazdoor		2.000	310.00	620.00	L-13		
b)	Material							
	ed wire 335 metres length @ 9.38 er 100 metres	kg	31.420	100.00	3142.00	M-063		
	angle iron 40 mm x 40mm x 6 mm, netres in length @ 3.5 kg per metre	kg	80.500	48.31	3888.96	M-179 /1000		
	for GI staple binding wire, drilling s etc. @ 2 per cent of the cost of crial				140.62			
expo	Painting ying two coats of painting on used surface of angle iron posts ( use as per item no. 8.9)	sqm	2.110	95.00	200.45	Item 8.9		
d)	GST @ 12 % on (a+b)				952.07			
e)	Overhead charges @ 10 % on (a+b	o+d)			888.60			
f)	Contractor's profit @ 10 % on (a+l	b+d+e)			977.46			
g)	107.52							
Cost for 30 metres fencing = $a+b+c+d+e+f+g$ 11060.04								
Rate	per metre = (a+b+c+d+e+f+g)/30				368.67			
				say	<u>369.00</u>			

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

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		a)	Labour					•
		Mate	e	day	0.120	354.00	42.48	L-12
			ksmith	day	0.400	442.00	176.80	
			door	day	2.500	310.00	775.00	L-13
			Material ped wire 428 metres length @ 9.38 er 100 metres	kg	40.150	100.00	4015.00	M-063
			angle iron 50 mm x 50 mm x 6 33.8 metres in length @ 4.5 kg per re	kg	152.000	48.31	7343.12	M-179 /1000
			for GI staple, binding wire, drilling s etc. @ 2 per cent of the cost of erial				227.16	
		c)	Painting					
		expo	lying two coats of painting on osed surface of angle iron posts uding GST,OH,CP &Cess )	sqm	3.960	95.00	376.20	Item 8.9
		d)	GST @ 12 % on (a+b)				1509.55	
		e)	Overhead charges @ 10 % on (a+	-b+d)			1408.91	
		f)	Contractor's profit @ 10 % on (a-	+b+d+e)			1549.80	
		g)	Cess @ 1% on (a+b+d+e+f)	•			170.48	
		Cost	t for 30 metres fencing = a+b+c+d+e	+f+g			17594.50	
			e per metre fencing = (a+b+c +d+e-	•			586.48	
						say	<u>586.00</u>	

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

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

5 per cent wastage

Taking output = 30 m					
a) Labour					
Mate	day	0.120	354.00	42.48	L-12
Welder	day	1.000	442.00	442.00	L-02
Mazdoor	day	2.000	310.00	620.00	L-13
b) Material					
i) Angle iron for posts 50 x 50 x 6 mm	kg	106.000	48.31	5120.86	M-179 /1000
ii) Runner flat 50 x 5 mm	kg	26.000	48.31	1256.06	M-179 /1000
iii) Welded steel wire fabric 75x50 mm mesh @ 4 kg/sqm,4 x 30 x 1.2 + 5 per cent wastage	kg	151.000	67.26	10156.26	M-191
OR					
Welded steel wire fabric 75 x 25 mm mesh @ 7.75 kg/sqm, 7.75 x 30 x 1.2 +	kg	293.000			

Sr No	Ref. to MoRTH / DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Add 2.5 per cent of cost of material for drilling holes in angles, flats, splitting angle at bottom, nuts and bolts and welded consumables					
		c) Machinery Tractor-trolley	hour	0.100	476.11	47.61	P&M-053
		d) Painting Painting two coats including priming	sqm	8.000	95.00	760.00	Item 8.9
		e) GST @ 12 % on (a+b+c)				2122.23	
		f) Overhead charges @ 10 % on (a+b	+c+e)			1980.75	
		g) Contractor's profit @ 10 % on (a+b	+c+e+f)			2178.83	
		h) Cess @ 1% on (a+b+c+e+f+g)				239.25	
		Cost for 30 metre = a+b+c+d+e+f+g+h				24966.33	
		Rate per metre = (a+b+c+d+e+f+h)/30				832.21	
					say	<u>832.00</u>	

Note i) Adopt any one type of welded steel wire fabric 75 x 50 mm or  $75 \times 25 \text{ mm}$  as per approved design.

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

8.20 808 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  $\times$  50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings

#### Unit = Running metre

ome raming meac					
Taking output = 10metres					
i) Excavation for foundation (6 Nos)6	cum	1.300	355.00	461.50	
x 0.6 x 0.6 x 0.6					3.13
ii) Foundation concrete M-15 grade	cum	0.650	7876.00	5119.40	Item 12.8
PCC 6 x 0.6 x 0.6 x 0.3					(A)
iii) Painting of pipe	sqm	4.710	95.00	447.45	Item 8.9
iv) Painting of channel section 6	sqm	2.160	95.00	205.20	Item 8.9
nos,1.8 metres each 0.2 x 1.8 x 6 =					
2.16					
(Including GST,OH,CP &Cess of i,ii,iii &	iv)				
a) Labour (For fixing at site)					
Mate	day	0.010	354.00	3.54	L-12
Mazdoor	day	0.250	310.00	77.50	L-13
Plumber	day	0.010	442.00	4.42	L-02
b) Material					
Steel pipe 50 mm external dia as per	metre	30.000	429.20	12876.00	M-175
IS:1239				4000.00	
Medium weight steel channel (ISMC	kg	99.360	48.31	4800.08	M-179 /1000
series) 100 mm x 50 mm,10.8 metres length @ 9.2 kg per metre					,
Add for drilling holes @ 2 per cent of cost of channels				96.00	
c) Machinery					
Tractor-trolley	hour	0.040	476.11	10.04	P&M-053
•	Houl	0.040	470.11		000
d) GST @ 12 % on (a+b)				2145.19	
e) Overhead charges @ 10 % on (a+b	)+d)			2002.18	

2202.40

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

f)

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+d+e+f)	•			242.26	
		Cost for 10 metre =i+ii+iii+iv+ a+b+c+d+e	+f+g			30702.16	
		Rate per metre = (i+ii+iii+iv+a+b+c+d+e	+f+g)/10			3070.22	
					say	<u>3070.00</u>	

#### 8.21 808 Tubular Steel Railing on Precast RCC Posts, 1.2 m High Above Ground Level

Providing, fencing and erecting 50 mm dia painted steel pipe railing in 3 rows on precast M20 grade RCC vertical posts1.8 metres high (1.2 m above GL) with 3 holes 50 mm dia for pipe, fixed 2 metres centre to, complete as per approved drawing

### Unit = Punning motro

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	355.00	461.50	Item No. 3.13
ii) Foundation concrete M - 15 grade	cum	0.650	7876.00	5119.40	Item 12.8
PCC 6 x 0.6 x 0.6 x 0.3					(A)
iii) RCC M - 20 for pre cast posts 6	cum	0.320	10045.00	3214.40	Item 14.1(A)
nos of 1.8 metres each					14.1(///)
iv) Painting of pipe	sqm	4.710	95.00	447.45	Item 8.9
(Including GST,OH,CP &Cess of i,ii,iii &	& iv)				
a) Labour					
Mate	day	0.010	354.00	3.54	L-12
Mazdoor	day	0.350	310.00	108.50	L-13
Plumber	day	0.010	442.00	4.42	L-02
b) Material					
Steel pipe 50 mm dia as per IS:1239	metre	30.000	429.20	12876.00	M-175
c) Machinery					
Tractor-trolley	hour	0.250	476.11	119.03	P&M-053
d) GST @ 12 % on (a+b+c)				1573.38	
e) Overhead charges @ 10 % on (a+	·b+c+d)			1468.49	
f) Contractor's profit @ 10 % on (a+		1615.34			
g) Cess @ 1% on (a+b+c+d+e+f)		177.69			
Cost for 10 metre =i+ii+iii+iv+ a+b+c+d+e+f+g 27189.14					
Rate per metre = (i+ii+iii+iv+a+b+c+d+e	e+f+g)/10			2718.91	
			say	<u>2719.00</u>	

#### 809 **Reinforced Cement Concrete Crash Barrier** 8.22

Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with M-20 grade concrete with HYSD reinforcement conforming to IRC:21 and dowel bars 25 mm dia, 450 mm long at expansion joints filled with pre-moulded asphalt filler board, keyed to the structure on which it is built and installed as per design given in the enclosure to MOST circular No. RW/NH - 33022/1/94-DO III dated 24 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, all as specified

#### Unit = Linear metre

Taking output = 10 m

	(i)	a)	M 20 grade conc	rete
--	-----	----	-----------------	------

M 20 grade concrete (Including GST,OH,CP &Cess)	cum	3.000	10045.00	30135.00	Item 14.1(A)
b) Labour Mate	day	0.040	354.00	14.16	L-12
Mazdoor	dav	1.000	310.00	310.00	L-13

Sr No Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		Material  SD steel reinforcement including el bars	tonne	0.280	59823.01	16750.44	M-082
	Pre-	moulded asphalt filler board	sqm	0.320	67.26	21.52	M-144
	d)	GST @ 12 % on (b+c)				2051.53	
	e)	e) Overhead charges @ 10 % on (b+c+d)				1914.77	
	f)	Contractor's profit @ 10 % on (b+	·c+d+e)			2106.24	
	g) Cess @ 1% on (b+c+d+e+f)					231.69	
	Cost for 10 metre = a+b+c+d+e+f+g					53535.35	
		e per metre = (a+b+c+d+e+f+g)/10			say	5353.54 <u>5354.00</u>	

Note i) Excavation and backfilling are incidental to work and not to be measured separately.

### 8.23 810 Metal Beam Crash Barrier

### A 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 length

a) Labour				
Mate	day	0.060	354.00	21.24 L-12
Blacksmith	day	0.500	442.00	221.00 L-02
Mazdoor	day	1.000	310.00	310.00 L-13

DIACKSITIIII	uay	0.500	442.00	221.00	L-02
Mazdoor	day	1.000	310.00	310.00	L-13
b) Machinery					
Tractor-trolley	hour	0.100	476.11	47.61	P&M-053
c) Material					
Corrugated sheet,3 mm thick, "W" beam section railing,4.5 m in length	kg	41.210	48.31	1990.86	M-179 /1000
	lem.	00.500	40.04	4070.00	M-179
Channel post 150 x 75 x 5 mm,1.8 m long,3 Nos @ 16.4 kg per metre	kg	88.560	48.31	4278.33	/1000
Spacer 150 x 75 x 5 mm channel 0.33 m	kg	16.240	48.31	784.55	M-179
long,3 Nos @ 16.4 kg per metre					/1000
Nuts and bolts	kg	20.000	111.50	2230.00	M-130
Add 25 per cent of the cost of material				2320.94	
for fabrication, nuts, bolts and washers etc.)					
d) GST @ 12 % on (a+b+c)				1464.54	

d)	GST @ 12 % on (a+b+c)	1464.54
e)	Overhead charges @ 10 % on (a+b+c+d)	1366.91
f)	Contractor's profit @ 10 % on (a+b+c+d+e)	1503.60
g)	Cess @ 1% on (a+b+c+d+e+f)	165.40
Cos	t for 4.5 metre = a+b+c+d+e+f+g	16704.98
Rat	e per metre = (a+b+c+d+e+f+g)/4.5	3712.22

say <u>3712.00</u>

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

#### TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

	Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	 Remarks/ Input ref.
- 1		/ 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  $150 \times 75 \times 5$  mm, 546 mm long complete as per clause 810

#### Unit = Running metre

Taking output = 4.5 metre length

raking datpat 1.0 motio longti					
a) Labour					
Mate	day	0.060	354.00	21.24	L-12
Blacksmith	day	0.500	442.00	221.00	L-02
Mazdoor	day	1.000	310.00	310.00	L-13
b) Machinery					
Tractor-trolley	hour	0.100	476.11	47.61	P&M-053
c) Material					
Corrugated sheet,3 mm thick, "Thrie" beam section railing,4.5 m in length	kg	72.940	67.26	4905.94	M-088
Channel post 150 x 75 x 5 mm, 2 m long,3 Nos @ 16.4 kg per metre	kg	98.400	48.31	4753.70	M-179 /1000
Spacer 150 x 75 x 5 mm channel 0.546 m long,3 Nos	kg	26.860	48.31	1297.61	M-179 /1000
Nuts and bolts	kg	30.000	111.50	3345.00	M-130
Add 15 per cent of the cost of material for fabrication, nuts, bolts and washers etc.)				2145.34	
d) GST @ 12 % on (a+b+c)				2045.69	
e) Overhead charges @ 10 % on (a+b-	+c+d)			1909.31	
f) Contractor's profit @ 10 % on (a+b	+c+d+e)			2100.24	
g) Cess @ 1% on (a+b+c+d+e+f)				231.03	
Cost for 4.5 metre = a+b+c+d+e+f+g				23333.71	
Rate per metre= (a+b+c+d+e+f+g)/4.5				5185.27	
			say	<u>5185.00</u>	

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.

Sr No	Ref. to MoRTH			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	/ DSR Spec.								
		·	Unit	= Running metre	'				
		-	Takiı	ng output = 15 metre					
			•	Labour					
		ľ	Mate	•	day	0.120	354.00	42.48	L-12
		ľ	Mazo	door	day	2.000	310.00	620.00	L-13
		E	Blacl	ksmith	day	1.000	442.00	442.00	L-02
			b)	Material					
		ŀ	kg pe	3 Joist 100 x 75 mm - 16.5 m @ 11.5 er metre	kg	190.000	48.31	9178.90	M-179 /1000
			•	ruts - 2 Nos. for terminal posts,2 m each 2 x 2 x 11.50	kg	46.000	48.31	2222.26	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	48.31	9101.60	M-179 /1000
		ŗ	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	246.02	15991.30	M-177
		(	drillir	5 per cent of cost of material for ng, gripping, fixing, fabrication and ing consumables				1824.70	
		(	c)	Painting					
			Appl surfa	ying 2 coats of painting on exposed ace	sqm	16.500	95.00	1567.50	Item 8.9
		(	d)	Machinery					
		-	Trac	tor-trolley	hour	0.250	476.11	119.03	P&M-053
		•	e)	GST @ 12 % on (a+b+d)				4745.07	
		1	F)	Overhead charges @ 10 % on (a+h	o+d+e)			4428.73	
		g	g)	Contractor's profit @ 10 % on (a+l	b+d+e+f)			4871.61	
			h)	Cess @ 1% on (a+b+d+e+f+g)	-			535.88	
			-	for 15 m = $a+b+c+d+e+f+g+h$				55691.06	
				per m = (a+b+c+d+e+f+g+h)/15				3712.74	
							say	<u>3713.00</u>	
		Note -	The	items of excavations and cement co	oncrete \	works will be			

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

## 8.27 Suggest 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	354.00	10.62	L-12
Mazdoor	day	0.500	310.00	155.00	L-13
Electrician	day	0.250	442.00	110.50	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	10119.47	10119.47	M-171
ii) Sodium vapour lamp	each	1.000	2023.89	2023.89	M-168

			TRAFFIC SIGNS, MARKINGS & O	THER RO	DAD APPURT	TENANCES		
Sr No	Ref. to MoRTH / DSR		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	Spec.		Add 5 per cent of cost of material for holder, electric cable, insulation, ladder, scaffolding etc				607.17	
			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	95.00	546.25	Item 8.9
			For fixing in Footpath					
			Providing two coats of alluminium paint over steel circular hollow pipe with overhang on one side (Including GST,OH,CP &Cess of C)	sqm	4.630	95.00	439.85	Item 8.9
		(i)	For Fixing in Median					
			d) GST @ 12 % on (a+b)	5.4.d\			1563.20 1458.99	
			<ul><li>e) Overhead charges @ 10 % on (a+k)</li><li>f) Contractor's profit @ 10 % on (a+k)</li></ul>	-			1604.88	
			g) Cess @ 1% on (a+b+d+e+f)	,			176.54	
			Rate per light for fixing in Median= a+b-	+c+d+e+	f+g		18816.36	
		(ii)	For fixing in Footnath			say	<u>18816.00</u>	
		(11)	For fixing in Footpath Rate per light for Fixing in Footpath = a	+b+c+d+	-e	say	18270.11 <u>18270.00</u>	
		Note	The items of excavation and cement conc measured and included separately in approved design and drawing. The rate tanalysed in this chapter.	the estir	nate as per			
8.28	Suggest		Lighting on Bridges					
	ive		Providing and fixing lighting on bridge standard specifications, 5 m high fixe apart and fitted with sodium vapour lan	d on pa			=	
			Unit = Each					
			Taking output = one light					
			a) Labour Mate	day	0.020	354.00	7.08	L-12
			Mazdoor	day	0.400	310.00	124.00	
			Electrician	day	0.200	442.00	88.40	L-02
			b) Material i) Steel circular hollow pole of standard specification for street lighting to mount light at 5 m above deck level	each	1.000	6132.74	6132.74	M-170
			ii) Sodium vapour lamp 70 watt	each	1.000	2023.89	2023.89	M-168
			Add 1 per cent of cost of material for holder, electric cable, insulation, ladder, scaffolding etc				81.57	
			c) Painting					
			Providing two coats of alluminium paint over steel circular hollow pipe	sqm	2.760	95.00	262.20	Item 8.9

d)

GST @ 12 % on (a+b)

1014.92

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+	b+d)			947.26	
		f)	Contractor's profit @ 10 % on (a+	b+d+e)			1041.99	
		g)	Cess @ 1% on (a+b+d+e+f)				114.62	
		Rate	e per light = a+b+c+d+e+f+g				11838.67	
						say	<u>11839.00</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

#### **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 output = 20metres					
a) Random Rubble masonry/Brick	cum	2.360	4470.00	10549.20	Item 12.7
masonry in cement mortar 1:6 for					(Addl) B)
head wall both side					
(Including GST,OH,CP &Cess of a)					
b) Labour Mate	day	0.050	354.00	17.70	I -12
Mazdoor	day	1.000	310.00	310.00	
Mazdoor skilled	day	0.250	442.00	110.50	
c) Material					
Reinforced Cement Concrete pipe 300 mm dia	metre	20.000	471.68	9433.60	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	434.51	3128.47	M-009
Collar for joints 300 mm dia	each	9.000	140.71	1266.39	M-083
Cement mortar 1:2 for joints (Excluding GST,OH,CP &Cess)	cum	0.020	6919.00	138.38	Item 12.6 (B)
d) Machinery					
Tractor-trolley	hour	0.500	476.11	238.06	P&M-053
e) GST @ 12 % on (b+c+d)				1757.17	
f) Overhead charges @ 10 % on (b+c	:+d+e)			1640.03	
g) Contractor's profit @ 10 % on (b+c	:+d+e+f)			1804.03	
h) Cess @ 1% on (b+c+d+e+f+g)				198.44	
Cost for 20 metre = a+b+c+d+e+f+q+h				30591.97	
Rate per metre = (a+b+c+d+e+f+h)/20				1529.60	
			say	1530.00	
Double row for two utility services					

#### 8.29

### Unit = Running metre

GST,OH,CP &Cess)

Taking output = 20metres

4470.00 15063.90 Item 12.7 Random Rubble brick/Brick cum 3.370 (Addl) B) masonry in cement mortar 1:6 for head wall both sides. (Including

				TRAFFIC SIGNS, MARKINGS & OT					1_
Sr No	Ref. to MoRTH / DSR Spec.			Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
	орос.	ı	b)	Labour	l				
			Mate		day	0.050	354.00	17.70	L-12
			Maz	door	day	2.000	310.00	620.00	L-13
			Maz	door skilled	day	0.250	442.00	110.50	L-15
			c)	Material					
			mm (		metre	40.000	471.68	18867.20	
				nular soil with PI less than 6 for ling and sides of pipe (0.6 x 0.6 x 40	cum	14.400	434.51	6256.94	M-009
			Colla	ar for joints 300 mm dia	each	18.000	140.71	2532.78	M-083
				ent mortar 1:2 for joints (Excluding ,OH,CP &Cess)	cum	0.040	6919.00	276.76	Item 12.6 (B)
			d) Trac	Machinery tor-trolley	hour	1.000	476.11	476.11	P&M-053
			e)	GST @ 12 % on (b+c+d)				3498.96	
			f)	Overhead charges @ 10 % on (b+c	c+d+e)			3265.70	
			f)	Overhead charges @ 10 % on (b+c	c+d+e)			3592.27	
			h)	Cess @ 1% on (b+c+d+e+f+g)	•			395.15	
			•	for 20 metre = a+b+c+d+e+f+g+h				54973.97	
				per metre = (a+b+c+d+e+f+g+h)/20	ı			2748.70	
							say	<u>2749.00</u>	
8.29		(iii)	Trip	le rRow for three utility services					
				= Running metre					
			Takii	ng output = 20metres					
			head	Random Rubble brick/Brick onry in cement mortar 1:6 for a wall both sides. (Including OH,CP &Cess)	cum	4.380	4470.00	19578.60	(Addl) B)
			b)	Labour					
			Mate		day	0.160	354.00	56.64	
			Mazo		day	3.000	310.00	930.00	
			c)	door skilled <b>Material</b>	day	1.000	442.00	442.00	L-15
			•	forced Cement Concrete pipe 300	metre	60.000	471.68	28300.80	M-151
				nular soil with PI less than 6 for ling and sides of pipe (0.6 x 0.6 x 60	cum	21.600	434.51	9385.42	M-009
			,	ar for joints 300 mm dia	each	27.000	140.71	3799.17	M-083
			Cem	ent mortar 1:2 for joints (Excluding ,OH,CP &Cess)	cum	0.060	6919.00		Item 12.6 (B)
			d)	Machinery					
			,	tor-trolley	hour	1.500	476.11	714.17	P&M-053
			e)	GST @ 12 % on (b+c+d)				5285.20	
			f)	Overhead charges @ 10 % on (b+c	c+d+e)			4932.85	
			g)	Contractor's profit @ 10 % on (b+c	c+d+e+f)			5426.14	
			h)	Cess @ 1% on (b+c+d+e+f+g)				596.88	
			Cost	for 20 metre = a+b+c+d+e+f+g+h				79863.01	
				e per metre = (a+b+c+d+e+f+g+h)/20	l			3993.15	
				- ,			say	<u>3993.00</u>	
		Note	1 100	enaction chamber at both ends is the r		:1:4 4 4 4	-		

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

### TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

	Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
١		/ DSR						"
١		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	354.00	14.16	L-12
Mazdoor	day	1.000	310.00	310.00	L-13
b) Material Aluminium studs 100 x 100 mm fitted with lense reflectors	each	50.000	539.82	26991.00	M-062
Add 10 per cent of cost of material for fixing and installation	-			2699.10	
c) GST @ 12 % on (a+b)				3601.71	
d) Overhead charges @ 10 % on (a+	-b+c)			3361.60	
e) Contractor's profit @ 10 % on (a+	-b+c+d)			3697.76	
f) Cess @ 1% on (a+b+c+d+e)				406.75	
Cost for 50 studs = a+b+c+d+e+f				41082.08	
Rate per studs = (a+b+c+d+e+f)/50				821.64	
			say	<u>822.00</u>	

## 8.36 Suggest

### **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.

	9					
a)	Labour					
Mate	е	day	0.020	354.00	7.08	L-12
Maz	door	day	0.500	310.00	155.00	L-13
b)	Material					
Traf	fic cones with 150 mm reflective	each	68.000	1471.68	100074.24	M-186
slee	ve					
c)	Machinery					
Trac	ctor-trolley	hour	0.100	476.11	47.61	P&M-053
c)	GST @ 12 % on (a+b)				12034.07	
d)	Overhead charges @ 10 % on (a	+b+c)			11231.80	
e)	Contractor's profit @ 10 % on (a	+b+c+d)			12354.98	
f)	Cess @ 1% on (a+b+c+d+e)				1359.05	
Cos	t for 68 Nos. = a+b+c+d+e+f			137263.83		
Rate	e per metre = (a+b+c+d+e+f)/68			2018.59		
				say	<u>2019.00</u>	

## 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

	Ref. to MoRTH / DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
<u> </u>		Unit = each Taking output = one steel portable barricade					
		<ul> <li>a) Labour</li> <li>Mate</li> <li>Mazdoor</li> <li>Painter</li> <li>Welder</li> <li>b) Material</li> <li>Angle iron 45 x 45 x 5 mm</li> </ul>	day day day day	0.020 0.250 0.500 0.250	354.00 310.00 442.00 442.00	7.08 77.50 221.00 110.50	L-18 L-02 M-179
		MS sheet 300 mm wide,2.5 m long and 2.6 mm thick	kg	15.000	48.31	724.65	/1000 M-179 /1000
		Paint  Add 2 per cent of cost of steel for welding consumables, nuts & bolts and drilling holes  c) GST @ 12 % on (a+b)  d) Overhead charges @ 10 % on (a+b)  e) Contractor's profit @ 10 % on (a+b)	•	0.500	323.01	161.51 38.65 305.84 285.45 313.99	
		f) Cess @ 1% on (a+b+c+d+e) Rate per barricade = a+b+c+d+e+f			say	34.54 3488.46 <u>3488.00</u>	
8.44	suggest ive	Permanent Type Barricade in Construc	tion Zon	е			

#### A With steel components

Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of450, complete as per IRC:SP:55-2001

#### Unit = each

Taking output = one barricade

raking output - one barrioude					
a) Labour					
Mate	day	0.050	354.00	17.70	L-12
Mazdoor	day	0.300	310.00	93.00	L-13
Painter	day	0.600	442.00	265.20	L-18
Welder	day	0.300	442.00	132.60	L-02
b) Material					
Angle iron 50 x 50 x 5 mm,2 m long,2 Nos.	kg	15.000	48.31	724.65	M-179 /1000
MS sheet of 12 SWG,3 Nos of 200 mm width and 4 m length	kg	50.000	48.31	2415.50	M-179 /1000
Paint	litre	1.000	323.01	323.01	M-131
Add 1 per cent of cost of steel for welding consumables, nuts & bolts and drilling holes				62.80	
c) GST @ 12 % on (a+b)				484.14	
d) Overhead charges @ 10 % on (a+b-	+c)			451.86	
e) Contractor's profit @ 10 % on (a+b-		497.05			
f) Cess @ 1% on (a+b+c+d+e)		54.68			
Rate per barricade = a+b+c+d+e+f				5522.19	
•			sav	5522.00	

#### 8.44 **B** With wooden components

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 of450, complete as per IRC:SP:55-2001

Sr No	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		L	Init = each	<u> </u>				· •
		Т	aking output = one barricade					
		а	) Labour					
		N	late	day	0.050	354.00	17.70	L-12
		N	lazdoor	day	0.300	310.00	93.00	L-13
		P	ainter	day	0.600	442.00	265.20	L-18
		C	arpenter	day	0.600	442.00	265.20	L-04
		b	) Material					
		Т	imber	cum	0.180	27318.58	4917.34	M-185
			dd 1 per cent of cost of timber for no bolts, nails, etc.	uts			49.17	
		С	) GST @ 12 % on (a+b)				672.91	
		d	) Overhead charges @ 10 % on (	a+b+c)			628.05	
		е	) Contractor's profit @ 10 % on (	a+b+c+d)			690.86	
		f)	Cess @ 1% on (a+b+c+d+e)				75.99	
		R	ate per barricade = a+b+c+d+e+f				7675.42	
						say	<u>7675.00</u>	
8.44		c /	Vith bricks					

Construction of a permanent type barricade made with brick work in mud mortar, 1.5 m high, 4 m long, 600 mm thick, plastered with cement mortar 1:6, painted with yellow and white strips.

#### Unit = each

Taking output = one barricade

a) Labour					
Mate	day	0.240	354.00	84.96	L-12
Mazdoor	day	3.000	310.00	930.00	L-13
Painter	day	1.000	442.00	442.00	L-18
Mason	day	2.000	442.00	884.00	L-11
b) Material					
Brick	each	1800.000	9.73	17514.00	M-079
Cement	kg	22.000	9.05	199.10	M-081 /1000
Sand	cum	0.090	601.77	54.16	M-005
Paint	litre	1.250	323.01	403.76	M-131
c) GST @ 12 % on (a+b)				2461.44	
d) Overhead charges @ 10 % on	(a+b+c)			2297.34	
e) Contractor's profit @ 10 % on	(a+b+c+d)			2527.08	
f) Cess @ 1% on (a+b+c+d+e)		277.98			
Rate per barricade = a+b+c+d+e+f		28075.82			
			say	<u>28076.00</u>	

## 8.45 suggest

#### **Drum Delineator in Construction Zone**

Provision of metal drum/empty bitumen drum delineator, 300 mm in diameter, 800 mm high, filled with earth for stability, painted in circumferential strips of alternate black and white 100 mm wide fitted with reflectors 3 Nos of 7.5 cm dia, all as per IRC:SP:55-2001

#### Unit = each

Taking output = one drum delineator

a) Labour				
Mate	day	0.020	354.00	7.08 L-12
Mazdoor	day	0.250	310.00	77.50 L-13
Painter	dav	0.250	442.00	110.50 L-18

Sr No	Ref. to MoRTH / DSR Spec.	Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
		b) Material					
		Steel drum 300 mm dia 1.2 m high/empty bitumen drum	each	1.000	67.26	67.26	M-172
		Paint	litre	0.500	323.01	161.51	M-131
		c) GST @ 12 % on (a+b)				50.86	
		d) Overhead charges @ 10 % on	(a+b+c)			47.47	
		e) Contractor's profit @ 10 % on	(a+b+c+d)			52.22	
		f) Cess @ 1% on (a+b+c+d+e)				5.74	
		Rate per drum delineator = a+b+c+	d+e+f			580.14	
					say	<u>580.00</u>	
8.46	suggest ive	Flagman					
		Design of the second flat the second					

Positioning of a smart flagman with a yellow vest and a yellow cap and a red flag 600 x 600 mm securely fastened to a staff 1 m in length for guiding the traffic.

#### Unit = each

Taking output = one flagman

a) Labour					
Mate	day	0.040	354.00	14.16 L-12	
Mazdoor	day	1.000	310.00	310.00 L-13	
b) Material					
Flag of red color cloth 600 x 600 mm	each	1.000	67.26	67.26 M-099	
Wooden staff for fastening of flag 25 mm dia, one m long	each	1.000	67.26	67.26 M-196	
c) GST @ 12 % on (a+b)				55.04	
d) Overhead charges @ 10 % on (a+l	b+c)			51.37	
e) Contractor's profit @ 10 % on (a+l			56.51		
f) Cess @ 1% on (a+b+c+d+e)				6.22	
Rate per flagman = a+b+c+d				627.82	
-			say	<u>628.00</u>	
Cement mortar 1 : 4 (1 cement : 4 fine s	and)		•		
Details of cost for 1 Cu.m.					
a) Labour					
Belder	Each	0.600	310.00	186.00 L-20	
Bhisti	Each	0.300	310.00	93.00 L-21	
b) Material					
Cement	Tonne	0.380	9053.98	3440.51 M-081	
Fine Sand	Cu.m.	1.070	601.77	643.89 M-006	
c) Transport					
Carriage of Cement	Tonne	0.380	0.00	0.00	
Carriage of Fine Sand	Cu.m.	1.070	0.00	0.00	
d) Other Costs					
Sundries			LS	9.53 M-209	
Hire and running charges of mech mixer			LS	19.05	
		Cost	of 1 Cu.m.	4391.98	

8.48 16.68

8.47

3.9

Providing and laying 60mm thick faciory made cement concrete interlocking paver block of M - 30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.

Cost per Cu.m.

4391.98 **4392.00** 

Details of cost for 10.00 sqm

a) Material

Interlocking C.C. paver block sqm 10.000 400.00 4000.00 M-203 (60 mm thick, M-30)

"	Ref. to MoRTH / DSR Spec.		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/ Input ref.
			ding layer - 50mm thick rse sand =10x0.050=0.50 cum	cum	0.500	601.77	300.89	M-005
		Fine	e sand	cum	0.150	601.77	90.27	M-006
		b)	Transport					
		Car	riage of Coarse sand	cum	0.500	0.00	0.00	
		Car	riage of Fine sand	cum	0.150	0.00	0.00	
		,	ing charges (Bassed on actual ervation)					
		c) L	abour					
		Mas	son (1st Class)	day	0.500	442.00	221.00 L	L-11
		Mas	son (2nd Class)	day	0.500	354.00	177.00	L-10
		Belo	dar	day	1.000	310.00	310.00	L-20
		Coo <b>d)</b>	lie GST @ 12 % on (a+b+c)	day	0.500	310.00	155.00 630.50	L-21
		e)	Overhead charges @ 10 % on (a+	b+c+d)			588.47	
		f)	Contractor's profit @ 10 % on (a+	b+c+d+e)	)		647.31	
		g)	Cess @ 1% on (a+b+c+d+e+f)				71.20	
		Rate	e per 10 Sqm = (a+b+c+d+e+f+g)		Cost for 10.0	00 sqm	7191.64	
					Со	st per Sqm.	719.16	
						Sav	719.20	

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 sqm.

Waste $@5\% = 0.025 + 0.5 = 0.525 \text{ sqm}$ .						
Granite of any colour, 18 mm thick	sqm	0.525	1600.00	840.00 M-201		
(slab area upto 0.50 sqm)						
Mason (1st Class)	day	0.560	442.00	247.52 L-11		
Beldar	day	0.050	310.00	15.50 L-20		
Coolie	day	0.050	310.00	15.50 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	4392.00	52.70 Item 8.47		
Sundries			LS	44.70 M-209		
d) GST @ 12 % on (a+b+c)				145.91		
e) Overhead charges @ 10 % on (a+b	+c+d)			136.18		
f) Contractor's profit @ 10 % on (a+b	)+c+d+e)			149.80		
g) Cess @ 1% on (a+b+c+d+e+f)				16.48		
Rate per 0.50 sqm = (a+b+c+d+e+f+g)	(	Cost for 0.50	sqm	1664.29		

Cost per sqm. 3328.58 3328.60 Say

### TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

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

Gran	ite stone slab 30mm thick	sqm	0.525	1800.00	945.00 M-202
b) La	abour				
Maso	on (1st Class)	day	0.560	442.00	247.52 L-11
Belda	ar	day	0.050	310.00	15.50 L-20
Cool	ie	day	0.050	310.00	15.50 L-21
c) Of	ther 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	4392.00	52.70 Item 8.47
Sund	dries			LS	44.70 M-209
d)	GST @ 12 % on (a+b+c)				158.51
e)	Overhead charges @ 10 % on (a+b	+c+d)			147.94
f)	Contractor's profit @ 10 % on (a+b	+c+d+e)			162.74
g)	Cess @ 1% on (a+b+c+d+e+f)				17.90
Rate	per 0.50 sqm = (a+b+c+d+e+f+g)	Co	ost for 0.50	sqm	1808.01
			Cos	t per Sqm.	3616.02
				Sav	3616.00

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 1.000 1000.00 1000.00 M-204 sqm 100x100 x16mm 29.88 M-081 Cement tonne 0.0033 9053.98 b) Labour Mason (1st Class) day 0.200 442.00 88.40 L-11 Coolie 0.200 310.00 62.00 L-21 day c) Other Costs 105.41 Item 8.47 Base Cement mortar 1:4 (1 cement: 4 cum 0.024 4392.00 coarse sand) Rate as per item 8.47. SH: Cement Mortars (Excluding GST,OH,CP &Cess) 93.45 M-209 LS Sundries 165.50 GST @ 12 % on (a+b+c) d) 154.46 e) Overhead charges @ 10 % on (a+b+c+d)

169.91

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

## TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to		Description	Unit	Quantity	Rate in Rs	Cost in Rs	Remarks/
	MoRTH / DSR Spec.							Input ref.
		g)	Cess @ 1% on (a+b+c+d+e+f)				18.69	
		Rate	e per sqm = (a+b+c+d+e+f+g)		C	ost per sqm	1887.70	
0.50	16 80	D	rialization and larging most finished of		-f -! 200-	Say	1887.70	
8.52	16.89		viding and laying matt finished viter absorption less than 0.5% and				-	
			colours and shades in for outdoor		-			
			als location etc., laid on 20mm t					
			se sand) in all shapes & patter					
		cem Chai	ent mixed with matching pigment	s etc. coi	npiete as pei	airection o	τ Engineerin-	•
			ill of cost for 1 sqm.					
			•					
		•	aterial fied tile 300x300 x9.8mm	sqm	1.000	500.00	500.00	M-205
		Cem		tonne	0.0033	9053.98		M-081
		b) La	abour					
		•	on (1st Class)	day	0.200	442.00	88.40	L-11
		Cool	ie	day	0.200	310.00	62.00	L-21
		•	ther Costs		0.004	4000.00	105.11	lt 0 47
			e Cement mortar 1 : 4 (1 cement : 4 se sand) Rate as per item 8.47.	cum	0.024	4392.00	105.41	Item 8.47
			Cement Mortars (Excluding					
			,OH,CP &Cess)					
		Sund		LS	84.20 104.39	M-209		
		d)	GST @ 12 % on (a+b+c) Overhead charges @ 10 % on (a+			97.43		
		e) f)	Contractor's profit @ 10 % on (a-		۸		107.17	
		-	•	гртстите	7)		11.79	
		g) Boto	Cess @ 1% on (a+b+c+d+e+f)		C	ost per sqm	1190.67	
		Rate	e per sqm = (a+b+c+d+e+f+g)		O.	Say	1190.07	
8.53	16.90	Prov	viding and laying tactile tile (for v	ision im	paired perso	•		
			300x300 x 9.8 mm having with wa		-		_	
			3:15622 of approved make in all co					
			path, court yard, multi modals loc tar 1:4 (1 cement : 4 coarse sand)		•			
			s with white cement mixed wit					
		dire	ction of Engineer-in-Charge.					
		Deta	ill of cost for 1 sqm.					
		a) M	aterial					
		Tacti	ile tile 300x300 x9.8mm	sqm	1.000	1000.00	1000.00	M-206
		Cem		tonne	0.0033	9053.98	29.88	M-081
		•	abour on (1st Class)	day	0.200	442.00	88.40	I -11
		Cool	,	day day	0.200	310.00		
		c) Other Costs						
			e Cement mortar 1 : 4 (1 cement : 4	cum	0.024	4392.00	105.41	Item 8.47
		coarse sand) Rate as per item 8.47.						
		SH:	Cement Mortars (Excluding					
			,OH,CP &Cess) dries with Carrage			LS	77.60	M-209
		d)	GST @ 12 % on (a+b+c)				163.59	
		e)	Overhead charges @ 10 % on (a+	-b+c+d)			152.69	
		£\	Contractorio profit @ 40 % on (a)	, . la . a . al . a			167.06	

Page : 201

167.96

18.48

1866.01

1866.00

Cost per sqm

Say

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

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

f)

g)

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

8.54

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.

	- I					
a) N	laterial					
Cold	oured inter locking C.C. paver Block	sqm	10.000	450.00	4500.00 M	I-207
Fine	e sand	cum	0.500	601.77	300.89 N	<i>I</i> -006
b) T	ransport					
Carı	riage of Fine Sand	cum	0.500	0.00	0.00	
c) L	abour					
Mas	son (1st Class)	day	0.500	442.00	221.00 L	-11
Mas	son (2nd Class)	day	0.500	354.00	177.00 L	-10
Belo	dar	day	1.000	310.00	310.00 L	-20
Coo	lie	day	0.500	310.00	155.00 L	-21
c) 0	ther Costs					
Sun	dries			LS	63.50 M	-209
d)	GST @ 12 % on (a+b+c)				687.29	
e)	Overhead charges @ 10 % on (a+	b+c+d)			641.47	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e)			705.62	
g)	Cess @ 1% on (a+b+c+d+e+f)				77.62	
	Total	De	tails of cost fo	or 10 sqm	7839.39	
			Cost	per sqm	783.94	
				Say	783.90	

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

Detail of cost for 10 sqm.

Dela	iii oi cost ioi 10 sqiii.				
a) M	aterial				
Inter	locking C.C. paver block	sqm	10.000	470.00	4700.00 M-208
(80 r	mm thick, M-30)				
Fine	sand	cum	0.150	601.77	90.27 M-006
Coarse sand		cum	0.500	601.77	300.89 M-005
b) Tı	ransport				
Carriage of Fine Sand		cum	0.150	0.00	0.00
Carriage of Coarse Sand		cum	0.500	0.00	0.00
c) La	abour				
Mason (1st Class)		day	0.500	442.00	221.00 L-11
Mason (2nd Class)		day	0.500	354.00	177.00 L-10
Beld	ar	day	1.000	310.00	310.00 L-20
Cool	ie	day	0.500	310.00	155.00 L-21
d)	GST @ 12 % on (a+b+c)				714.50
e)	Overhead charges @ 10 % on (a	ı+b+c+d)			666.87
f)	Contractor's profit @ 10 % on (a	a+b+c+d+e)			733.55
g)	Cess @ 1% on (a+b+c+d+e+f)				80.69
- '	-	or 10 sqm	8149.77		
		t per sqm	814.98		
				Say	815.00

## 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 CULVERTS

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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## 9.1 408 PCC 1:3:6 in Foundation

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 days.

#### Unit = cum

Taking output = 15 cum

ı aı	king output = 15 cum						
a)	Labour						
	Mate	day	0.640	354.00	226.56	L-12	
	Mason	day	1.000	442.00	442.00	L-11	
	Mazdoor	day	15.000	310.00	4650.00	L-13	
b)	Material						
	40mm Aggregate at site	cum	13.800	1393.81	19234.58	M-055	
	Sand at site	cum	6.900	601.77	4152.21	M-005	
	Cement at site	tonne	3.300	9053.98	29878.13	M-081	
	Cost of water	KL	18.000	67.26	1210.68	M-189	
c)	Machinery						
	Concrete mixer0.4/ 0.28 cum	hour	6.000	269.91	1619.46	P&M-009	
	Generator set 33 KVA	hour	6.000	453.98	2723.88	P&M-079	
	Water tanker6 KL capacity	hour	3.000	544.25	1632.75	P&M-060	
d)	GST @ 12 % on (a+b+c)				7892.43		
e)	Overhead charges @ 10 % on (	a+b+c+d)			7366.27		
f)	Contractor's profit @ 10 % on (	a+b+c+d+e)			8102.90		
g)	Cess @ 1% on (a+b+c+d+e+f)			891.32			
Cost for 15 cum = $a+b+c+d+e+f+g$ 90023.17							
Ra	te per cum = $(a+b+c+d+e+f+g)/15$				6001.54		
	-			say	<u>6002.00</u>		

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 .

#### Unit = metre

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

#### A 1000 mm dia

a)	Labour					
•	Mate	day	0.180	354.00	63.72	L-12
	Mason	day	0.500	442.00	221.00	L-11
	Mazdoor	day	4.000	310.00	1240.00	L-13
b)	Material					
	Sand at site	cum	0.070	601.77	42.12	M-005
	Cement at site	tonne	0.050	9053.98	452.70	M-081
	RCC pipe NP-2/prestressed concrete pipe including collar at site	metre	12.500	1772.57	22157.13	M-149
	Granular material passing 5.6 mm sieve for bedding	cum	4.500	434.51	1955.30	M-009
c)	GST @ 12 % on (a+b)				3135.84	
d)	Overhead charges @ 10 % on (a+b	)+c)			2926.78	
e)	Contractor's profit @ 10 % on (a+b	)+c+d)			3219.46	
f)	Cess @ 1% on (a+b+c+d+e)			354.14		
Со	st for 12.5 metres = a+b+c+d+e+f				35768.19	
Ra	te per metre = (a+b+c+d+e+f)/12.5				2861.46	
				sav	2861.00	

## CHAPTER-9 PIPE CULVERTS

	Ref. to						Remarks/
Sr No	MoRTH	Description	Unit	Quantity	Rate Rs	Cost Rs	Input ref.
	Spec.	-		1			iliput rei.

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

120	70 mm dia					
a)	Labour					
	Mate	day	0.280	354.00	99.12	L-12
	Mason	day	1.000	442.00	442.00	L-11
	Mazdoor	day	6.000	310.00	1860.00	L-13
b)	Material					
	Sand at site	cum	0.090	601.77	54.16	M-005
	Cement at site	tonne	0.070	9053.98	633.78	M-081
	RCC pipe NP-2/prestressed concrete	metre	12.500	2146.90	26836.25	M-150
	pipe including collar at site					
	Granular material passing 5-6 mm	cum	5.000	434.51	2172.55	M-009
	sieve for class bedding					
c)	GST @ 12 % on (a+b)				3851.74	
d)	Overhead charges @ 10 % on (a+b	+c)			3594.96	
e)	Contractor's profit @ 10 % on (a+b	+c+d)			3954.46	
f)	Cess @ 1% on (a+b+c+d+e)				434.99	
Co	st for 12.5 metres = a+b+c+d+e+f				43934.01	
Ra	te per metre= (a+b+c+d+e+f)/12.5				3514.72	
	•			say	<u>3515.00</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	354.00	127.44	L-12
	Mason	day	1.000	442.00	442.00	L-11
	Mazdoor	day	8.000	310.00	2480.00	L-13
b)	Material					
	Sand at site	cum	0.140	601.77	84.25	M-005
	Cement at site	tonne	0.100	9053.98	905.40	M-081

## CHAPTER-9 PIPE CULVERTS

		1	1 II C 00L	VEIXIO	1				
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
	•		RCC pipe NP-2/prestressed concrete pipe including collar at site	metre	25.000	1772.57	44314.25	M-149	
			Granular material passing 5.6 mm sieve for bedding	cum	12.500	434.51	5431.38	M-009	
			c) GST @ 12 % on (a+b)				6454.17		
			d) Overhead charges @ 10 % on (a+l	b+c)			6023.89		
			e) Contractor's profit @ 10 % on (a+l	b+c+d)			6626.28		
			f) Cess @ 1% on (a+b+c+d+e)				728.89		
			Cost for 12.5 metres = a+b+c+d+e+f				73617.95		
			Rate per metre = $(a+b+c+d+e+f)/12.5$				5889.44		
		Note	In case of cement craddle bedding, quant be calculated as per design and priced separately.	say	<u>5889.00</u>				
		В	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	protectio ited as p	n works and er approved				
9.3		ь	1200 mm dia a) Labour						
			Mate	day	0.560	354.00	198.24	L-12	
			Mason	day	2.000	442.00	884.00	L-11	
			Mazdoor	day	12.000	310.00	3720.00	L-13	
			b) Material	•					
			Sand at site	cum	0.180	601.77	108.32	M-005	
			Cement at site	tonne	0.140	9053.98	1267.56	M-081	
			RCC pipe NP-2 /prestressed	metre	25.000	2146.90	53672.50	M-150	
			concrete pipe including collar at site						
			Granular material passing 5-6 mm sieve for class bedding	cum	13.750	434.51	5974.51	M-009	
			c) GST @ 12 % on (a+b)				7899.02		
			d) Overhead charges @ 10 % on (a+l	h+c)			7372.42		
			e) Contractor's profit @ 10 % on (a+1				8109.66		
			f) Cess @ 1% on (a+b+c+d+e)				892.06		
			Cost for 12.5 metres = a+b+c+d				90098.29		
			Rate per metre= (a+b+c+d)/12.5				7207.86		
		Note	1. In case of cement craddle bedding, qua	antity of	PCC M15 is	say	7208.00		
			to be calculated as per design and pri added.						
			2. The rate analysis does not include						
		/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						

### 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.
- 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, railings, 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

## **CHAPTER-10 MAINTENANCE OF ROADS**

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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#### 10.1 3002 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 cum

	3					
a)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor	day	2.000	310.00	620.00	L-13
b)	Machinery					
	Excavator1.0 cum bucket capacity @	hour	0.130	1751.33	227.67	P&M-026
	60 cum per hour					
	Tipper ( L is average lead in km for	tonne.	12 x L	7.65	275.40	Lead =3 km 8 P&M-058
	borrow earth)	km				
	d 10 per cent of cost of carriage				27.54	
tow	ards loading and unloading charges.					
	Plate compactor	hour	0.500	338.05	169.03	P&M-086
c)	GST @ 12 % on (a+b)				161.76	
d)	Overhead charges @ 10 % on (a+l	b+c)			150.97	
e)	Contractor's profit @ 10 % on (a+l	b+c+d)			166.07	
f)	Cess @ 1% on (a+b+c+d+e)		18.27			
Со	st for 10 cum = a+b+c+d+e+f				1845.03	
Ra	te per cum = (a+b+c+d+e+f)/10				184.50	
				say	<u>185.00</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.

#### Unit = sqm

Taking output = 100 sqm

Assuming average thickness of filling to

be 150 mm

Quantity of fresh material = 15 cum

Qu	antity of hear material – to oam							
a)	Labour							
	Mate	day	0.180	354.00	63.72	L-12		
	Mazdoor	day	4.500	310.00	1395.00	L-13		
b)	Machinery							
	Excavator1.0 cum bucket capacity @ 60 cum per hour	hour	0.250	1751.33	437.83	P&M-026		
	Tipper ( L is average lead in km for borrow earth)	tonne. km	24xL	7.65	550.80	Lead =3 km & P&M-058		
	d 10 per cent of cost of transportation cover cost of loading and unloading				55.08			
	Plate compactor @ 25 sqm per hour	hour	12.000	338.05	4056.60	P&M-086		
c)	GST @ 12 % on (a+b)				787.08			
d)	Overhead charges @ 10 % on (a+l	b+c)			734.61			
e)	Contractor's profit @ 10 % on (a+l	•			808.07			
f)	Cess @ 1% on (a+b+c+d+e)		88.89					
Cost for 100 sqm = $a+b+c+d+e+f$ 8977.68								
	te per sqm = (a+b+c+d+e+f)100				89.78			
				say	<u>90.00</u>			

## **CHAPTER-10 MAINTENANCE OF ROADS**

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

•	Mate	day	0.100	354.00	35.40	L-12	
	Mazdoor	day	2.500	310.00	775.00	L-13	
b)	Machinery						
	Plate compactor @ 25 sqm per hour	hour	4.000	338.05	1352.20	P&M-086	
	007.0.40.0/				050.54		
c)	GST @ 12 % on (a+b)				259.51		
d)	Overhead charges @ 10 % on (a+b+c)				242.21		
e)	Contractor's profit @ 10 % on (a+b+c+d)				266.43		
f)	Cess @ 1% on (a+b+c+d+e)				29.31		

2960.06

1331 04

2397516.38

say

233.90 <u>234.00</u>

1-12

say

354.00

29.60 30.00

Cost for 100 sgm = a+b+c+dRate per sqm on = (a+b+c+d)100Note The earth stripped from earthen shoulders to be

dumped on the side slopes locally for disposal.

#### 3004.2 10.4 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

Day

3 760

#### Unit = Sqm

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

Cost for 10250 sgm = a+b+c+d+e

Rate per sqm = (a+b+c+d+e)/10250

a)	Labour
	Mate

	Mate	Day	3.760	354.00	1331.04	L-12
	Mazdoor	Day	90.000	310.00	27900.00	L-13
	Mazdoor skilled	Day	4.000	442.00	1768.00	L-15
b)	Machinery					
	Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-001
	HMP 100-110 TPH Capacity	hour	6.000	28522.12	171132.72	P&M-021
	Tipper 10 tonnes capacity	hour	45.000	779.65	35084.25	P&M-048
	Smooth wheeled roller 8-10 tonnes	hour	12.000	561.95	6743.40	P&M-044
c)	Material					
	Crushed stone aggregates nominal	cum	184.500	1895.58	349734.51	M-052
	size 13.2mm					
	Crushed stone aggregates nominal size 11.2mm	cum	92.250	1951.33	180010.19	M-051
	Bitumen 80/100	tonne	14.970	57350.44	858536.09	M-075
	Bitumen emulsion for tack coat including vertical sides of pot hole.	tonne	2.460	47120.35	115916.06	M-077
d)	GST @ 12 % on (a+b+c)				210192.91	
e)	Overhead charges @ 10 % on (a+b+c+d) 196				196180.05	
f)	Contractor's profit @ 10 % on (a+b+c+d+e) 215798.05					
g)	) Cess @ 1% on (a+b+c+d+e+f) 23737.79					

## CHAPTER- 10

		MAINTENANCE		DS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
0.5	3004.2	Filling Pot-holes and Patch Repairs wi	th Bitum	inous con	crete, 40mm	1.	
		Removal of all failed material, trimming of faces, cleaning of surface, painting of tac per clause 503, back filling the pot hole 504, compacting, trimming and finishin surface, all as per clause 3004.2  Unit = Sqm  Taking out put = 4900 sqm (196 cum)(450 Tonnes)	ck coat or es with h g the su	n the sides ot bitumind	and base of ous material	excavation as as per clause	
		a) Labour					
		Mate	Day	2.920	354.00	1033.68	L-12
		Mazdoor	Day	70.000	310.00	21700.00	L-13
		Mazdoor skilled	Day	3.000	442.00	1326.00	L-15
		b) Machinery					
		Air compressor 250 cfm	hour	6.000	575.22	3451.32	P&M-0
		HMP 100-110 TPH Capacity	hour	6.000	21092.92	126557.52	P&M-0
		Tipper 10 tonnes capacity	hour	45.000	779.65	35084.25	P&M-04
		Smooth wheeled roller 8-10 tonnes c) Material	hour	12.000	561.95	6743.40	P&M-04
		I) Bitumen	tonne	22.500	57350.44	1290384.90	M-07
		ii) Bitumen emulsion for tack coat .	tonne	1.180	47120.35	55602.01	M-07
		iii) Aggregates					
		Grading I - 19mm(Nominal size)					
		20-10mm 35 per cent	cum	99.750	1840.00	183540.00	M-051, 052,M-0 and M-0
		10-5 mm 23 per cent	cum	65.550	724.78	47509.33	M-02
		5mm and below40 per cent	cum	114.000	863.00	98382.00	M-021, 022 ar M-024
		Add 5 per cent for wastage				16471.57	IVI-UZ-
		or					
		Grading-II 13mm (Nominal size)					
		13.2-10 mm 30 per cent	cum	85.500	1923.00	164416.50	M-051 a M-052
		10-5 mm 25 per cent	cum	71.250	724.78	51640.58	M-02
		5 mm and Below43 per cent	cum	122.550	863.00	105760.65	M-021, 022 ar M-024
		Filler 2 per cent	tonne	9.000	12878.76	115908.84	M-188
		Add 5 per cent for wastage				21886.33	
		Any one of the above alternatives of aggr nominal size may be adopted as per app			13mm		
0.5	(i)	for grading I Material					
		d) GST @ 12 % on (a+b+c)				226534.32	
		e) Overhead charges @ 10 % on (a+	b+c+d)			211432.03	
		f) Contractor's profit @ 10 % on (a-	-	∍)		232575.23	
		g) Cess @ 1% on (a+b+c+d+e+f)				25583.28	
		Cost for 4900 cum = $a+b+c+d+e+f+g$				2583910.84	
		Rate per cum = (a+b+c+d+e+f+g)/4900				527.33	
0.5	(ii	for grading II Material			say	<u>527.00</u>	
		d) GST @ 12 % on (a+b+c)				240179.52	
		a) Overhead shares @ 10 % on (a)				240179.52	

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

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

Cost for 4900 cum = a+b+c+d+e+f+g

Rate per cum = (a+b+c+d+e+f+g)/4900

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

e)

f)

224167.55

246584.31

27124.27

559.09 <u>559.00</u>

2739551.63

say

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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Note For detailed working of quantities of aggregates, refer item

5.8 of chapter 5

10.6 3004.3.3 Crack Filling

Filling of crack using slow - curing bitumen emulsion and applying crusher dust in case crack are wider than 3mm.

#### Unit = Running Meter

Taking out put = 500m

	mig car par coom					
a)	Labour					
	Mate	day	0.040	354.00	14.16	L-12
	Mazdoor	day	1.000	310.00	310.00	L-13
b)	Material					
	Slow-curing bitumen emulsion	Kg	33.000	47.00	1551.00	M-077
	Stone crusher dust	cum	0.020	624.78	12.50	M-021
c)	GST @ 12 % on (a+b)				226.52	
d)	Overhead charges @ 10 % on (a	a+b+c)			211.42	
e)	Contractor's profit @ 10 % on (a	a+b+c+d)			232.56	
f)	Cess @ 1% on (a+b+c+d+e)				25.58	
Co	st for 500sqm = a+b+c+d+e+f				2583.74	
Ra	te per meter = (a+b+c+d+e+f)/500				5.17	
				say	<u>5.00</u>	

### 10.7 3004.4 Dusting

Applying crusher dust to areas of road where bleeding of excess bitumen has occurred.

### Unit = Sqm

Taking output = 3500 sqm

a)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor	day	2.000	310.00	620.00	L-13
b)	Material					
	Stone crusher dust finer than 3mm	cum	6.250	624.78	3904.88	M-021
	with not more than 10 per cent					
	passing 0.075 sieve.					
c)	GST @ 12 % on (a+b)				546.38	
d)	Overhead charges @ 10 % on (a+b	+c)			509.96	
e)	Contractor's profit @ 10 % on (a+b	+c+d)			560.95	
f)	Cess @ 1% on (a+b+c+d+e)				61.70	
Со	st for 3500sqm = a+b+c+d+e+f				6232.19	
Ra	te per meter = (a+b+c+d+e+f)/3500				1.78	

say

1.78

10.8	(A)	Fog Seal
10.0	()	ruy seai

3004.3.2 (B) Crack Prevention courses.

(C) Slurry Seal 3004.5

 $^{(D)}_{3004.6}$  Surface Dressing for maintenance works.

The above mentioned items have already been included in Chapter 5.

### 10.9 3005.1 Repair of Joint Grooves with Epoxy Mortar

Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete

#### Unit = running metre

Taking output = 10 metres

a)	Labour
----	--------

Mate	day	0.040	354.00	14.16	L-12
Mazdoor	day	0.500	310.00	155.00	L-13
Chiseller	day	0.500	354.00	177.00	L-05

		MAINTENANCE	OF ROA	DS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	1 -1 -1	b) Material					
		Epoxy primer	kg	2.500	278.76	696.90	M-097
		Epoxy compound with accessories	kg	10.000	245.13	2451.30	M-095
		for preparing epoxy mortar					
		c) Machinery Air compressor 250 cfm for cleaning	hour	0.050	575.22	28.76	P&M-001
			Hour	0.030	373.22		1 4111 001
		d) GST @ 12 % on (a+b+c)				422.77	
		e) Overhead charges @ 10 % on (a+				394.59	
		f) Contractor's profit @ 10 % on (a+	b+c+d+	e)		434.05	
		g) Cess @ 1% on (a+b+c+d+e+f)				47.75	
		Cost for 10 metres = a+b+c+d+e+f+g				4822.28	
		Rate per metre = (a+b+c+d+e+f+g)/10				482.23	
					say	<u>482.00</u>	
10.10	3005.2	Repair of old Joints Sealant					
		Removal of existing sealant and re sea			, longitudinal	or expansion	
		joints in concrete pavement with fresh sea	alant mat	terial			
		Unit = running metre					
		Taking output = 10 metres					
		a) Labour	d	0.040	254.00	44.40	L-12
		Mate Mazdoor	day	0.040	354.00 310.00	14.16 155.00	L-12 L-13
		b) Material	day	0.500	310.00	155.00	2 10
		Primer	kg	0.250	189.38	47.35	M-146
		Sealant	kg	1.000	337.17	337.17	M-120
		c) Machinery	3				
		Air compressor 250 cfm for cleaning	hour	0.050	575.22	28.76	P&M-001
		d) GST @ 12 % on (a+b+c)				69.89	
		e) Overhead charges @ 10 % on (a+	b+c+d)			65.23	
		f) Contractor's profit @ 10 % on (a+	·=	e)		71.76	
		g) Cess @ 1% on (a+b+c+d+e+f)		-,		7.89	
		Cost for 10 metres = a+b+c+d+e+f+g				797.21	
		Rate per metre = $(a+b+c+d+e+f+g)/10$				79.72	
		(4.6.6.4.9)			say	<u>80.00</u>	
40.44	3000	Hill Cide Duein Cleaners			Suy	00.00	

### 10.11 3000 Hill Side Drain Clearance

Removal of earth from the choked hill side drain and disposing it on the valley side manually

### *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					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor	day	1.000	310.00	310.00	L-13
b)	GST @ 12 % on (a)				40.60	
c)	Overhead charges @ 10 % on				37.89	
d)	Contractor's profit @ 10 % on (a+l	o+c)			41.68	
e)	Cess @ 1% on (a+b+c+d)				4.58	
Cos	t for 10 metres = a+b+c+d+e				463.07	
Rate	e per metre = (a+b+c+d+e)/10				46.31	
				say	<u>46.00</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

		MAINTENANCE	OF ROA	פעו			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Unit = cum			<u>.</u>		
		Taking output = 100 cum					
		a) Labour					
		Mate	day	0.040	354.00	14.16	L-12
		Mazdoor	day	1.000	310.00	310.00	L-13
		b) Machinery					
		Dozer 180 HP @ 60 cum per hour	hour	1.670	4237.17	7076.07	P&M-014
		c) GST @ 12 % on (a+b)				888.03	
		d) Overhead charges @ 10 % on (a-	+b+c)			828.83	
		e) Contractor's profit @ 10 % on (a-	b+c+d)			911.71	
		f) Cess @ 1% on (a+b+c+d+e)	•			100.29	
		Cost for 100 cum = a+b+c+d+e+f				10129.09	
		Rate per cum = $(a+b+c+d+e+f)/100$				101.29	
		(a. b o a o i). i o			say	101.00	
	No	ote Land Slide clearance involves pushing of on the road surface from hill face on the			<b>,</b>		

ote 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	354.00	14.16	L-12
	Mazdoor	day	1.000	310.00	310.00	L-13
b)	Machinery					
	Dozer D 50 A-15	hour	1.670	2934.51	4900.63	P&M-014
c)	GST @ 12 % on (a+b)				626.97	
d)	Overhead charges @ 10 % on (a+	b+c)			585.18	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			643.69	
f)	Cess @ 1% on (a+b+c+d+e)				70.81	
Cos	st for 100 cum = a+b+c+d+e+f				7151.44	
Rat	e per cum = (a+b+c+d+e+f)/100				71.51	
				say	<u>72.00</u>	

## 10.13 3000 Landslide Clearance in Hard Rock Requiring Blasting

Clearing of land slide in hard rock requiring blasting for 50 per cent of the boulders and disposal of the same on the valley side (Boll Dozer D 50)

### Unit = cum

Taking output = 100 cum

	<b>5</b> ,					
a)	Labour					
	Mate	day	0.090	354.00	31.86	L-12
	Mazdoor	day	1.500	310.00	465.00	L-13
	Driller	day	0.750	354.00	265.50	L-06
	Blaster	day	0.070	354.00	24.78	L-03
b)	Machinery					
•	Dozer D 50 @ 60 cum per hour	hour	1.670	2934.51	4900.63	P&M-014
	Air compressor 250 cfm with two jack	hour	2.500	575.22	1438.05	P&M-001
	hammer					
c)	Materials					
•	Gelatine 80 per cent @ 35 kg per 100 cum	kg	17.500	164.60	2880.50	M-104

		MAINTENANCE	OF ROA	NDS			
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	11.04	772.80	M-094 /100
		d) GST @ 12 % on (a+b+c)				1293.49	
	e) Overhead charges @ 10 % on (a+b+c+d)					1207.26	
		f) Contractor's profit @ 10 % on (a+b+c+d+e)				1327.99	
		g) Cess @ 1% on (a+b+c+d+e+f)				146.08	
		Cost for 100 cum = a+b+c+d+e+f+g				14753.94	
		Rate per cum = $(a+b+c+d+e+f+g)/100$				147.54	
					say	<u>148.00</u>	
	N	Ore Credit for the rock if found acceptable as material shall be afforded	construc	tion			
10.14	3000	Snow Clearance on Roads with Dozer					

Snow clearance from road surface by a bull- dozer 165 Hp and disposing it on the valley side

#### Unit = cum

Taking output = 5000 cum

a)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor	day	2.000	310.00	620.00	L-13
b)	Machinery					
	Dozer D-50 @ 850 cum per hour	hour	5.880	2934.51	17254.92	P&M-014
c)	GST @ 12 % on (a+b)				2148.39	
d)	Overhead charges @ 10 % on (a-		2005.16			
e)	Contractor's profit @ 10 % on (a-	+b+c+d)			2205.68	
f)	Cess @ 1% on (a+b+c+d+e)				242.62	
Co	st for 5000 cum = a+b+c+d+e+f				24505.09	
Ra	te per cum = (a+b+c+d+e+f)/5000				4.90	
				say	<u>5.00</u>	

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

#### 10.15 1900 Maintenance of WBM Road

Maintenance of WBM road including filling up of pot holes, ruts and rectifying corrugated surface, damaged edges and ravelling as per technical specification clause 1906.

### Unit = Sqm.

Taking output = affected area @ 5% in  $1 \text{ km} = 1000 \times 3.75 \times 0.05 = 187.5 \text{ Sqm}$ .

#### Quantity = $187.5 \times 0.075 = 14.06 \text{ cum}$

a) Rate as per item No. 4.9 A (iii) (a)	cum	14.060	2052.00	28851.12
b) Add 50% for Extra efforts involved on maintenance to be done in small reaches				14425.56
Cost for 187.5 Sqm. = a+b				43276.68
Rate per Sqm = (a+b)/187.5				230.81
			say	<u>231.00</u>

Note The cost of 25% retrived material may

be deducted from rates.

## **CHAPTER-10**

## MAINTENANCE OF ROADS

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
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### 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	354.00	35.40	L-12
	Mazdoor (Unskilled)	day	1.000	310.00	310.00	L-13
	Mason 2nd Class	day	1.400	354.00	495.60	
b)	Material					
	Cement, Sand, Brick, Boulder etc.	L.S.			200.00	P&M-014
c)	GST @ 12 % on (a+b)				124.92	
d) Overhead charges @ 10 % on (a+b+c)						
e)	Contractor's profit @ 10 % on (a+	·b+c+d)			128.25	
f)	Cess @ 1% on (a+b+c+d+e)				14.11	
Co	st for one No., Hume Pipe Culvert = a-	+b+c+d+e+	-f		1424.87	
Ra	te per Hume Pipe Culvert = (a+b+c+	d+e+f)			1424.87	
				say	<u>1425.00</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	354.00	70.80	L-12
	Mazdoor (Unskilled)	day	4.000	310.00	1240.00	L-13
	Mason 2nd Class	day	1.000	354.00	354.00	
b)	Material					
	Cement, Sand, Brick, Boulder etc.	L.S.			500.00	P&M-014
c)	GST @ 12 % on (a+b)				259.78	
d)	Overhead charges @ 10 % on (a+b+c)				242.46	
e)	Contractor's profit @ 10 % on (a+	·b+c+d)			266.70	
f)	Cess @ 1% on (a+b+c+d+e)				29.34	
Со	st for one No., Slab Culvert = a+b+c+c	l+e+f			2963.08	
Ra	te per Slab Culvert = (a+b+c+d+e+f)				2963.08	
				say	<u>2963.00</u>	

### 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

Taking output = 50 metre causeway

Ia	king output – 30 metre causeway					
a)	Labour					
	Mate	day	0.800	354.00	283.20	L-12
	Mazdoor (Unskilled)	day	1.600	310.00	496.00	L-13
	Mason 1st Class/Painter 1st Class	day	4.000	442.00	1768.00	
b)	Material					
	Cement, Sand, Brick, Boulder etc.	L.S.			350.00	P&M-014
c)	GST @ 12 % on (a+b)				347.66	
d)	Overhead charges @ 10 % on				324.49	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			356.94	

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)				39.26	-
			Cost for 50 metre = a+b+c+d+e+f				3965.55	
			Rate per metre = (a+b+c+d+e+f)/50				79.31	
						say	<u>79.00</u>	
10.19			Maintenance of Road signs  Maintenance of Road signs by way /regulatory/cautionary/informatory and pla and technical specifications Clause 1910.	ce ident	-		•	
			Unit = 1 km Taking output = one km All types of signs in one km					
			a) Labour					
			Mate	day	0.090	354.00	31.86	L-12
			Mazdoor (Unskilled)	day	2.000	310.00	620.00	L-13
			Painter 1st Class	day	0.125	442.00	55.25	
			b) Material					
			Cement, Sand, Brick, Boulder etc.	L.S.			270.00	
			c) GST @ 12 % on (a+b)				117.25	
			d) Overhead charges @ 10 % on (a+	b+c)			109.44	
			e) Contractor's profit @ 10 % on (a+	b+c+d)			120.38	
			f) Cess @ 1% on (a+b+c+d+e)				13.24	
			Cost for one km = a+b+c+d+e+f				1337.42	
			Rate per km = (a+b+c+d+e+f)				1337.42	
10.20	1900					say	<u>1337.00</u>	
		(i)	Cutting of branches of tress and shrubs of disposal of wood and leaves to suitable 1914.  Unit = 1 tree  Taking output = 10 trees of 900 mm					
			average girth					
			a) Labour					
			Mate	day	0.120	354.00	42.48	L-12
			Mazdoor (Skilled)	day	1.000 2.000	442.00	442.00	L-15 L-13
			Mazdoor (Unskilled) c) GST @ 12 % on (a+b)	day	2.000	310.00	620.00 132.54	L-10
				h+o)			123.70	
				=			136.07	
			e) Contractor's profit @ 10 % on (a+l	D+C+u)				
			f) Cess @ 1% on (a+b+c+d+e)				14.97	
			Cost for 10 trees = a+b+c+d+e Rate per tree= (a+b+c)/10				1511.76 151.18	
			Nate per tree- (a+b+c)/10			say	<u>151.10</u>	
		(ii)	Cutting of abruba from the road way or wit	h in D O	VV and die			
		(11)	Cutting of shrubs from the road way or wit location as per technical specification Clarunit = Each			sposai oi siii	ups to suitable	
			Taking output = 100 nos. shrubs					
			a) Labour				_	, ,-
			Mate	day	0.080	354.00	28.32	L-12
			Mazdoor (Unskilled)	day	2.000	310.00	620.00	L-13
			b) GST @ 12 % on (a)				77.80	
			c) Overhead charges @ 10 % on	b+c\			72.61	
			d) Contractor's profit @ 10 % on (a+	u+C)			79.87	
			e) Cess @ 1% on (a+b+c+d)				8.79	
			Cost for 100 shrubs = a+b+c+d+e Rate per shrub= (a+b+c+d+e)/100			sav	887.39 8.87	

say

<u>9.00</u>

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	
	Mazdoor (Unskilled)	day	10.000	
b)	GST @ 12 % on (a)			
c)	Overhead charges @ 10 % on			

Contractor's profit @ 10 % on (a+b+c) 399.37 Cess @ 1% on (a+b+c+d) e) 43.93 Cost for 1500 sqm = a+b+c+d+e4436.95 L-12

L-13

141.60

3.00

3100.00 388.99 363.06

354.00

310.00

say

Rate per sqm = (a+b+c+d+e)/15002.96

#### 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	354.00	3.54	L-12
	Mazdoor (Unskilled)	day	0.143	310.00	44.33	L-13
	Mazdoor (White washer)	day	0.143	310.00	44.33	L-13
b)	Material					
	Lime	quintel	0.045	1287.88	57.95	
	Fevicol adhesive	kg	0.100	135.00	13.50	
	Indigo	kg	0.013	130.00	1.69	
c)	GST @ 12 % on (a+b)				19.84	
d)	Overhead charges @ 10 % or	า (a+b+c)			18.52	
e)	Contractor's profit @ 10 % or	า (a+b+c+d)			20.37	
f)	Cess @ 1% on (a+b+c+d+e)				2.24	
Со	st for 9 sqm = a+b+c+d				226.31	
Ra	te per sqm = (a+b+c+d)/9				25.15	
				say	<u>25.00</u>	

Note For analysis of rates for maintenance works bitumen grade

#### 3000 10.22 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	354.00	2.83	L-12
	Mazdoor	day	0.200	310.00	62.00	L-13
b)	Machinery					
	Hydraulic excavator 0.9 cum bucket capacity @ 60 cum per hour	hour	1.670	1751.33	2924.72	P&M-026
	Tipper 5.5 cum capacity,	hour	0.320	779.65	249.49	P&M-048
c)	GST @ 12 % on (a+b)				388.68	
d)	Overhead charges @ 10 % on (a+b	)+c)			362.77	
e)	Contractor's profit @ 10 % on (a+b	o+c+d)			399.05	
f)	Cess @ 1% on (a+b+c+d+e)				43.90	
Co	st for 100 cum = a+b+c+d+e+f				4433.44	
Ra	te per cum = (a+b+c+d+e+f)/100				44.33	
	,			sav	44.00	

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

## Chapter – 11 HORTICULTURE

#### Preamble:

- 1. The items of turfing with sods and 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.

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 Eart	h		
			Spreading of sludge farm yard manure or/sludge, farm yard manure or/and good ear Unit = cum				kness (cost of	•
			Taking output = 15 cum					
			a) Labour Mate	day	0.040	354.00	14.16	L-12
			Mazdoor	day		310.00	310.00	L-13
			b) GST @ 12 % on (a)				38.90	
			c) Overhead charges @ 10 % on (a+b	)			36.31	
			d) Contractor's profit @ 10 % on (a+b	o+c)			39.94	
			e) Cess @ 1% on (a+b+c+d)				4.39	
			Cost for 15 cum= a+b+c+d+e				443.70	
			Rate per cum = (a+b+c+d+e)/15			cav	29.58 <u><b>30.00</b></u>	
11.2	307		Grassing with ' Doobs' Grass			say	30.00	
			Grassing with 'Doobs' grass including wadays or more till the grass forms a thick including supplying good earth if needed	-				
			Unit = sqm Taking output = 100 sqm					
		(i)	In rows 15 cm apart in either direction					
		(1)	•					
			a) Labour Mate	day	0.170	354.00	60.18	L-12
			Mazdoor for grassing	day		310.00	232.50	L-13
			Mazdoor for maintenance for 30 days	day	1.000	310.00	310.00	L-13
			b) Machinery Water tanker6 KL capacity	hour	0.500	544.25	272.13	P&M-060
			c) Material		400.000	44.40	4440.00	
			Doob grass	kg	100.000	14.16	1416.00 274.90	M-112
			<ul><li>d) GST @ 12 % on (a+b+c)</li><li>e) Overhead charges @ 10 % on (a+b</li></ul>				256.57	
			f) Contractor's profit @ 10 % on (a+t)	-	`		282.23	
			g) Cess @ 1% on (a+b+c+d+e+f)	,.c.a.e	,		31.05	
			Cost for 100 sqm = $a+b+c+d+e+f+g$				3135.56	
			Rate per sqm= (a+b+c+d+e+f+g)/100				31.36	
						say	<u>31.00</u>	
11.2		(ii)	In rows 7.5 cm apart in either direction					
			a) Labour					
			Mate	day		354.00	77.88	L-12
			Mazdoor for grassing. for maintenance for 30 days	day day	1.250 1.000	310.00 310.00	387.50 310.00	L-13 L-13
			b) Machinery	uay	1.000	310.00	310.00	
			Water tanker6 KL capacity  c) Material	hour	0.750	544.25	408.19	P&M-060
			Doob grass d) GST @ 12 % on (a+b+c)	kg	200.000	14.16	2832.00 481.87	M-112
			e) Overhead charges @ 10 % on (a+b	+c+d)			449.74	
			f) Contractor's profit @ 10 % on (a+b	o+c+d+e	)		494.72	
			g) Cess @ 1% on (a+b+c+d+e+f)				54.42	
			Cost for 100 sqm = $a+b+c+d+e+f+g$				5496.32	
			Rate per sqm = $(a+b+c+d+e+f+g)/100$				54.96	
						say	<u>55.00</u>	

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

**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 sgm

· u	mig output – 100 sqiii					
a)	Labour					
	Mate	day	0.150	354.00	53.10	L-12
	Mazdoor for preparation of ground	day	0.500	310.00	155.00	L-13
	Mali for fetching doobs grass roots and grassing at 15 cm apart	day	1.000	354.00	354.00	L-09
b)	Machinery					
	Water tanker6 KL capacity	hour	0.500	544.25	272.13	P&M-060
	Tractor with tiller	hour	0.010	476.11	4.76	P&M-053
c)	Material					
	Supply of farm yard manure at site of	cum	0.180	134.51	24.21	M-167
	work					
	Fine grass	kg	100.000	14.16	1416.00	M-113
d)	GST @ 12 % on (a+b+c)				273.50	
e)	Overhead charges @ 10 % on (a+b+	+c+d)			255.27	
f)	Contractor's profit @ 10 % on (a+b-	+c+d+e	)		280.80	
g)	Cess @ 1% on (a+b+c+d+e+f)				30.89	
Со	st for 100 sqm = a+b+c+d+e+f+g				3119.66	
	te per sqm = (a+b+c+d+e+f+g)/100				31.20	
				say	<u>31.00</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	354.00	3540.00	L-09
b)	Machinery					
	Water tanker6 KL capacity	hour	15.000	544.25	8163.75	P&M-060
c)	Material					
	Cost of water	KL	90.000	67.26	6053.40	M-189
d)	GST @ 12 % on (a+b+c)				2130.86	
e)	Overhead charges @ 10 % on (a+	b+c+d)			1988.80	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e)			2187.68	
g)	Cess @ 1% on (a+b+c+d+e+f)				240.64	
Co	st for 100 sqm = a+b+c+d+e+f+g				24305.13	
Ra	te per sqm = (a+b+c+d+e+f+g)/100				243.05	
				say	<u>243.00</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

Mate day 0.250 354.00 88.50 L-12

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	310.00	310.00	L-13
			Mali for fetching doobs grass roots	day	1.500	354.00	531.00	L-09
			hedges and grassing at 10 cm apart b) Machinery					
			Water tanker6 KL capacity	hour	0.500	544.25	272.13	P&M-060
			Tractor with tiller	hour	0.010	476.11	4.76	P&M-053
			c) Material		0.000	404.54	00.74	N 407
			Supply of farm yard manure at site of work @ 0.6 cum per 100 sqm	cum	0.600	134.51	80.71	M-167
			Fine grass	kg	100.000	14.16	1416.00	M-113
			d) GST @ 12 % on (a+b+c)				324.37	
			e) Overhead charges @ 10 % on (a+b	-			302.75	
			f) Contractor's profit @ 10 % on (a+b	o+c+d+e	)		333.02	
			g) Cess @ 1% on (a+b+c+d+e+f)				36.63	
			Cost for 100 sqm = $a+b+c+d+e+f+g$				3699.87	
			Rate per sqm = $(a+b+c+d+e+f+g)/100$				37.00	
11.6	307		Maintenance of Lawns with Fine Grassi	na for th	ne First Ve	say ar	<u>37.00</u>	
11.0			Maintenance of Lawns with fine grassing fo	_			na etc	
			Unit = sqm	i tile ilist	year inclu	ung watern	ig etc	
			Taking output = 100 sqm					
			a) Labour					
			Mali	day	10.000	354.00	3540.00	L-09
			b) Machinery	To a const	00.000	E44.0E	40005.00	Dem oco
			Water tanker6 KL capacity  c) Material	hour	20.000	544.25	10885.00	P&M-060
			Cost of water	KL	60.000	67.26	4035.60	M-189
			d) GST @ 12 % on (a+b+c)		00.000	01.20	2215.27	
			e) Overhead charges @ 10 % on (a+b	+c+d)			2067.59	
			f) Contractor's profit @ 10 % on (a+b	o+c+d+e	)		2274.35	
			g) Cess @ 1% on (a+b+c+d+e+f)				250.18	
			Cost for 100 sqm = a+b+c+d+e+f+g				25267.99	
			Rate per sqm = $(a+b+c+d+e+f+g)/100$				252.68	
44 -	207		D			say	<u>253.00</u>	
11.7	307		Planting and Maintaining of Permanent					
		(a)	Planting permanent hedges including d	igging o	f trenches	6		
			Planting permanent hedges including diggi					
			refilling the excavated earth mixed with fa					
			cum per 100 metres and supplying and pla	nung ned	age piants	at ou ciii ap	ail	
			Unit = Running metre					
			Taking output = 100metre					
			a) Labour					
			Mate	day	1.400	354.00	495.60	L-12 L-13
			Mazdoor for digging of trench 60 cm wide and 45 cm deep	day	10.000	310.00	3100.00	L-13
			Mazdoor for refilling the excavated	day	4.000	310.00	1240.00	L-13
			earth mixed with cow dung,	,				
			preparation of ground and digging of					
			plant, from the nursery carriage to site					
			and planting in position					

Page : 221

hour

each

cum

0.500

2x340

4.670

544.25

8.58

134.51

272.13 P&M-060

5834.40

628.16

M-116

M-167

Machinery

Material

apart

work

Water tanker6 KL capacity

Cost of hedge plants 2 rows at 30 cm

Supply of farm yard manure at site of

b)

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•	•	Pesticide	kg	0.250	343.36	85.84	M-136
			Cost of water	KL	3.000	67.26	201.78	M-189
			d) GST @ 12 % on (a+b+c)				1422.95	
			e) Overhead charges @ 10 % on (a+l	b+c+d)			1328.09	
			f) Contractor's profit @ 10 % on (a+	b+c+d+e	)		1460.90	
			g) Cess @ 1% on (a+b+c+d+e+f)		•		160.70	
			Cost for 100 metres = a+b+c+d+e+f+g				16230.55	
			Rate per metre = $a+b+c+d+e+f+g)/100$				162.31	
						say	<u>162.00</u>	
		(b)	Maintenance of hedge for one year					
			Unit = Running metre					
			Taking output = 100 m a) Labour					
			Mate	day	3.000	354.00	1062.00	L-12
			Mazdoor	day		310.00	9300.00	L-13
			b) Machinery	,				
			Water tanker6 KL capacity	hour	5.000	544.25	2721.25	P&M-060
			c) Material Manure sludge/Farm yard manure	cum	2.000	134.51	269.02	M-167
			Pesticide	kg	0.500	343.36	171.68	M-136
			Cost of water	KĽ	30.000	67.26	2017.80	M-189
			Cost of hedge plants @ 10 per cent casualty	each	68.000	8.58	583.44	M-116
			d) GST @ 12 % on (a+b+c)				1935.02	
			e) Overhead charges @ 10 % on (a+l	b+c+d)			1806.02	
			f) Contractor's profit @ 10 % on (a+	b+c+d+e	)		1986.62	
			g) Cess @ 1% on (a+b+c+d+e+f)				218.53	
			Cost for 100 metres = a+b+c+d+e+f+g				22071.38	
			Rate per metre = $a+b+c+d+e+f+g)/100$				220.71	
						say	<u>221.00</u>	
11.8	307		Planting and Maintaining of Flowering					
		(a)	Planting flowering plants and shrubs in		-	_		
			Unit = Running metres 200 plants and of road where width of verge is 3m and		ıbs ın two	rows in on	e km length	
			Taking output = 1000 metres					
			a) Labour					
			Mate	day		354.00	424.80	L-12
			Mazdoor	day	12.000	310.00	3720.00	L-13
			b) Machinery Water tanker6 KL capacity	hour	6.000	544.25	3265.50	P&M-060
			c) Material	Hour	0.000	344.23	3203.30	
			Plants	each	200.000	14.16	2832.00	M-100
			Shrubs	each	800.000	12.39	9912.00	M-166
			Manure sludge/Farm yard manure	cum	63.640	134.51	8560.22	M-167
			Pesticide Cost of water	kg	0.500	343.36	171.68	M-136 M-189
			Cost of water d) GST @ 12 % on (a+b+c)	KL	36.000	67.26	2421.36 3756.91	141-102
				P <b>+</b> C+4/			3506.45	
			e) Overhead charges @ 10 % on (a+l	-	,			
			f) Contractor's profit @ 10 % on (a+	D+C+Q+6	)		3857.09	
			g) Cess @ 1% on (a+b+c+d+e+f)				424.28	
			Rate per Km = $(a+b+c+d+e+f+g)/1000$				42852.29	

11.8 (b) Maintenance of flowering plants and shrubs in central verge for one year

Unit = km

Taking output = one km

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		a) Labour					
		Mate	day	36.000	354.00	12744.00	L-12
		Mazdoor	day	365.000	310.00	113150.00	L-13
		b) Machinery					
		Water tanker6 KL capacity	hour	90.000	544.25	48982.50	P&M-060
		c) Material					
		Manure Sludge / farm yard manure a site	at cum	10.000	134.51	1345.10	M-167
		Cost of water	KL	180.000	67.26	12106.80	M-189
		Replacement of casualties @ 10 per cer	nt				
		Plants	each	20.000	14.16	283.20	M-100
		Shrubs	each	80.000	12.39	991.20	M-166
		Pesticides	kg	1.500	343.36	515.04	M-136
		d) GST @ 12 % on (a+b+c)				22814.14	
		e) Overhead charges @ 10 % on (a	+b+c+d)			21293.20	
		f) Contractor's profit @ 10 % on (a	+b+c+d+e	)		23422.52	
		g) Cess @ 1% on (a+b+c+d+e+f)				2576.48	
		Rate per Km for one year = (a+b+c+d+	-e+f+g)			260224.18	
					say	<u>260224.00</u>	
11.9	307	Planting of Trees and their Maintenan	ce for one	Year			

#### Planting of Trees and their Maintenance for one Year

Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year

### Unit = Each

Taking output = 10 trees

a)	Labour					
	Mate	day	1.700	354.00	601.80	L-12
	Mazdoor for planting	day	2.000	310.00	620.00	L-13
	Mazdoor for maintenance for one	day	15.000	310.00	4650.00	L-13
	year					
b)	Machinery					
	Water tanker6 KL capacity	hour	30.000	544.25	16327.50	P&M-060
c)	Material					
	Sapling 2 m high 25 mm dia	each	10.000	98.23	982.30	M-160
	Farm yard manure	cum	0.940	134.51	126.44	M-167
	Pesticide	kg	0.500	343.36	171.68	M-136
	Cost of water	KL	12.000	67.26	807.12	M-189
d)	GST @ 12 % on (a+b+c)				2914.42	
e)	Overhead charges @ 10 % on (a+	b+c+d)			2720.13	
f)	Contractor's profit @ 10 % on (a+	b+c+d+e)			2992.14	
g)	Cess @ 1% on (a+b+c+d+e+f)				329.14	
Co	st for 10 trees = a+b+c+d+e+f+g				33242.67	
Ra	te per trees = (a+b+c+d+e+f+g)/10				3324.27	
				say	3324.00	

#### Renovation Lawns including, Weeding, Forking the Ground, Top Dressing with 11.10 308 **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	354.00	42.48	L-12
	Mazdoor	dav	3.000	310.00	930.00	L-13

		HONHOULI	O. \_				
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	544.25	272.13	P&M-060
		c) Material					
		Cost of water	KL	3.000	67.26	201.78	M-189
		d) GST @ 12 % on (a+b+c)				173.57	
		e) Overhead charges @ 10 % on (a+b	•			162.00	
		f) Contractor's profit @ 10 % on (a+b	+c+d+e	<del>!</del> )		178.20	
		g) Cess @ 1% on (a+b+c+d+e+f)				19.60	
		Cost for 100 sqm = $a+b+c+d+e+f+g$				1979.76	
		Rate per sqm = (a+b+c+d+e+f+g)				19.80	
					say	<u>20.00</u>	
11.11	308.2	Supply at Site Well Decayed Farm Yard	Manure				
		Supply at site of work well decayed farm approved by the engineer in charge including	•	•	,	ilable source,	
		Unit = cum Taking output = one cum a) Material a) Cost of well decayed farm yard	cum	1.000	134.51	134.51	M-167
		manure duly screened, loading, carriage, unloading and stacking at site					
		b) GST @ 12 % on (a)				16.14	
		c) Overhead charges @ 10 % on (a+b	)			15.07	
		d) Contractor's profit @ 10 % on (a+b	•			16.57	
		e) Cess @ 1% on (a+b+c+d)	•			1.82	

## 11.14 New Half Brick Circular Tree Guard, in 2nd Class Brick, internal diametre 1.25 metres, and height 1.2 metres, above ground and 0.20 metre below ground

Half brick circular tree guard, in 2nd class brick, internal diametre 1.25 metres, and height 1.2 metres, above ground and 0.20 metre below ground, bottom two courses laid dry, and top three courses in cement mortar 1:6 (1 cement 6 sand) and the intermediate courses being in dry honey comb masonry, as per design complete

184.11 **184.00** 

### Unit = Each

Taking output = one tree quard

Rate per cum = (a+b+c)

I al	king output - one tree guard					
a)	Labour					
	Mate	day	0.050	354.00	17.70	L-12
	Mason	day	0.250	442.00	110.50	L-11
	Mazdoor	day	0.250	310.00	77.50	L-13
b)	Material					
	Brick 2nd class including carriage	each	230.000	9.73	2237.90	M-079
	Cement mortar 1:6 (Excluding GST.OH.CP &Cess)	cum	0.030	3641.00	109.23	Item 12.6 (D)
c)	GST @ 12 % on (a+b)				306.34	
d)	Overhead charges @ 10 % on (a+	b+c)			285.92	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			314.51	
f)	Cess @ 1% on (a+b+c+d+e)				34.60	
Ra	te per tree guard = a+b+c+d+e+f				3494.20	
	-			say	<u>3494.00</u>	

## 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.
		a) Labour			-		
		Mate	day	0.002	354.00	0.71	L-12
		Mason	day	0.050	442.00	22.10	L-11
		Mazdoor	day	0.050	310.00	15.50	L-13
		b) Material					
		Brick 2nd class including carriage	each	50.000	9.73	486.50	M-079
		c) GST @ 12 % on (a+b)				62.98	
		d) Overhead charges @ 10 % on (a+	b+c)			58.78	
		e) Contractor's profit @ 10 % on (a+	b+c+d)			64.66	
		f) Cess @ 1% on (a+b+c+d+e)				7.11	
		Cost for 10 metre = a+b+c+d+e+f				718.34	
		Rate per metre = (a+b+c+d+e+f)/10				71.83	
					say	<u>72.00</u>	

## 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

a)	Labour					
	Mate	day	0.020	354.00	7.08	L-12
	Blacksmith	day	0.150	442.00	66.30	L-02
	Mazdoor	day	0.070	310.00	21.70	L-13
b)	Material					
	Empty bitumen drum	each	1.000	67.26	67.26	M-172
	MS sheet 50 x 0.5 mm	kg	0.650	48.31	31.40	M-179 /1000
	Rivets 6 mm dia and 10 mm in length	each	22.000	0.97	21.34	M-158
c)	GST @ 12 % on (a+b)				25.81	
d)	Overhead charges @ 10 % on (a+b-	+c)			24.09	
e)	Contractor's profit @ 10 % on (a+b-	+c+d)			26.50	
f)	Cess @ 1% on (a+b+c+d+e)		2.91			
Ra	te for each tree guard = a+b+c+d+e+f				294.39	
				say	<u>294.00</u>	

## 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	354.00	14.16	L-12
	Blacksmith	day	0.200	442.00	88.40	L-02
	Mazdoor		0.200	310.00	62.00	L-13
b)	Material					
	Empty bitumen drum	each	1.500	67.26	100.89	M-172
	MS sheet50 x 0.5 mm	kg	0.650	48.31	31.40	M-179 /1000
	Rivets 6 mm dia and 10 mm in length	each	50.000	0.97	48.50	M-158
	MSplate30 x 3 mm	kg	1.300	48.31	62.80	M-179 /1000

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
•	-		c) GST @ 12 % on (a+b)		-		48.98	
	d) Overhead charges @ 10 % on (a+b+c)				45.71			
			e) Contractor's profit @ 10 % on (a	+b+c+d)			50.28	
	f) Cess @ 1% on (a+b+c+d+e)					5.53		
	Rate for each tree guard = a+b+c+d+e+f			558.65				
			-			say	<u>559.00</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

Takın	ig output = one quintal					
a) I	Labour					
M	late	day	0.450	354.00	159.30	L-12
	lacksmith/ welder for cutting to esign and shape and jointing	day	2.000	442.00	884.00	L-02
M	lazdoor for fixing and helper for lacksmith/welder	day	2.500	310.00	775.00	L-13
	Material					
- /	ngle, tees, channels etc	quintal	1.050	4831.20	5072.76	M-179 /10
D	educt the cost of scrap	quintal	0.050	(1610.40)	(80.52)	M- 179/10/3
weldir	· .				249.61	
	sories GST @ 12 % on (a+b)				847.22	
-	Overhead charges @ 10 % on (a+b	+c)			790.74	
-	Contractor's profit @ 10 % on (a+b	•			869.81	
-	· •		95.68			
-	Cess @ 1% on (a+b+c+d+e)					
Rate	per quintal = a+b+c+d				9663.60	
				say	<u>9664.00</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 ( $25 \times 6$  mm) and 8 Nos ( $25 \times 3$  mm) vertical MS riveted to 3 Nos ( $25 \times 6$  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	354.00	17.70	L-12
	Blacksmith	day	0.250	442.00	110.50	L-02
	Mazdoor	day	0.250	310.00	77.50	L-13
b)	Material					
	MS iron 25 x 6 mm	kg	19.200	48.31	927.55	M-179 /1000
	MS iron 25 x 3 mm	kg	9.600	48.31	463.78	M-179 /1000
	Add 5 per cent of cost of material for riveting, bolting and welding accessories					
c)	Machinery					
-	Tractor-trolley	hour	0.040	476.11	19.04	P&M-053
d)	Painting					
	Painting two coats including priming	sqm	1.770	95.00	168.15	Item 8.9

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		e)	GST @ 12 % on (a+b+c)		•		193.93	
		f)	Overhead charges @ 10 % on (a+b+c+e)				181.00	
		g)	Contractor's profit @ 10 % on (a+	b+c+e+f	)		199.10	
		h)	Cess @ 1% on (a+b+c+e+f+g)				21.90	
		Rate	ate per tree guard =a+b+c+d+e+f+g+h			2380.15		
			•			sav	2380 00	

**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	354.00	17.70	L-12
	Blacksmith	day	0.250	442.00	110.50	L-02
	Welder	day	0.250	442.00	110.50	L-02
	Mazdoor	day	0.250	310.00	77.50	L-13
b)	Material					
	MS angle 30 x 30 x 3 mm	kg	13.500	48.31	652.19	M-179 /1000
	MS iron 25 x 3 mm	kg	18.000	48.31	869.58	M-179 /1000
	Steel wire 3 mm dia	kg	6.000	161.95	971.70	M-192
	Add 5 per cent of cost of material for riveting, bolting and welding accessories				124.67	
c)	Machinery					
	Tractor-trolley	hour	0.040	476.11	19.04	P&M-053
d)	Painting					
	Painting two coats including priming	sqm	1.500	95.00	142.50	Item 8.9
e)	GST @ 12 % on (a+b+c)				354.41	
f)	Overhead charges @ 10 % on (a+b	+c+e)			330.78	
g)	Contractor's profit @ 10 % on (a+b	+c+e+f)			363.86	
h)	Cess @ 1% on (a+b+c+e+f+g)				40.02	
Ra	te per tree guard = a+b+c+d+e+f+g+h		4184.95			
	•			say	<u>4185.00</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

ii)

• • •					
Mate	day	2.500	354.00	885.00	L-12
Mazdoor	day	25.000	310.00	7750.00	L-13
For Maintenance for one year					
Mate	day	5.000	354.00	1770.00	L-12
Mazdoor	dav	50.000	310.00	15500.00	L-13

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	2934.51	29345.10	P&M-015
			Water tanker6 KL capacity (for planting)	hour	3.000	544.25	1632.75	P&M-060
			Water tanker6 KL capacity (for maintenance)	hour	25.000	544.25	13606.25	P&M-060
		c)	· · · · · · · · · · · · · · · · · · ·					
		•	Sapling 1 to 1.5 m high 2 cm dia stem	each	290.000	78.58	22788.20	M-160 x 0.8
			Add 10 per cent of sapling	each	29.000	78.58	2278.82	M-160 x 0.8
			Decayed farm yard/sludge manure (planting)	cum	60.900	134.51	8191.66	M-167
			Decayed farm yard/sludge manure (maintenance)	cum	4.000	134.51	538.04	M-167
			Pesticides for planting	kg	0.500	343.36	171.68	M-136
			Pesticides for maintenance	kg	1.500	343.36	515.04	M-136
			Cost of water	KĹ	18.000	67.26	1210.68	M-189
		d)	GST @ 12 % on (a+b+c)				12741.99	
		e)	Overhead charges @ 10 % on (a+b			11892.52		
		f)	f) Contractor's profit @ 10 % on (a+b+c+d+e)				13081.77	
		g)	Cess @ 1% on (a+b+c+d+e+f)				1439.00	
		R	ate per hectare = a+b+c+d+e				145338.50	
						say	<u>145339.00</u>	

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.
- 2 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.
- 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 about 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 foundation 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.
- 22 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 foundation 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.
- 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.
- 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.
- 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.

Sı	r No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
1	2.1	304	Excavation for Structures					

Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material (without de-watering)

I Ordinary soil

Unit = cum

Taking output = 10 cum

- A Manual Means
- (i) Depth upto 3 m

a)	Labour						
Mate		day	0.140	354.00	49.56	L-12	
Mazo	door	day	3.500	310.00	1085.00	L-13	
b)	GST @ 12 % on (a)				136.15		
c)	Overhead charges @ 20	% on (a+b)			254.14		
d)	Contractor's profit @ 10	% on (a+b)			152.49		
e)	Cess @ 1% on (a+b+c+d)	)			16.77		
Cost	for 10 cum = a+b+c+d+e		1694.11				
Rate per cum = $(a+b+c+d+e)/10$ 169.41							

 (i) b Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material (with de-watering)

I Ordinary soil

Unit = cum

Taking output = 10 cum

- A Manual Means
- (i) Depth upto 3 m a) Labour

Mate	day	0.150	354.00	53.10	L-12
Mazdoor	day	3.850	310.00	1193.50	L-13
b) GST @ 12 % on (a)	)			149.59	
c) Overhead charges (	② 20 % on (a+b)			279.24	
d) Contractor's profit (	@ 10 % on (a+b)			167.54	
e) Cess @ 1% on (a+b-	+c+d)			18.43	
Cost for 10 cum = a+b+c+c	d+e			1861.40	
Rate per cum = (a+b+c+d	+e)/10			186.14	

<u>186.00</u>

218.00

24.84

say

say

12.1 (I) A (ii) Depth 3 m to 6 m (without de-watering)

a) Labour					
Mate/Supervisor	day	0.180	354.00	63.72	L-12
Mazdoor	day	4.500	310.00	1395.00	L-13
b) GST @ 12 %	on (a)			175.05	
c) Overhead ch	arges @ 20 % on (a+b)			326.75	
d) Contractor's	profit @ 10 % on (a+b)			196.05	
e) Cess @ 1% c	on (a+b+c+d)			21.57	
Cost for 10 cum = a	a+b+c+d+e			2178.14	
Rate per cum = (a	+b+c+d+e)/10			217.81	

(ii) b Depth 3 m to 6 m (with de-watering)

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

a)	Labour					
Mate	e/Supervisor	day	0.210	354.00	74.34	L-12
Maz	door	day	5.180	310.00	1605.80	L-13
b)	GST @ 12 % on (a)				201.62	
c)	Overhead charges @ 20	% on (a+b)			376.35	
d)	Contractor's profit @ 10	% on (a+b)			225.81	

				FOL	NDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Cost	for 10 cum = a+b+c+d+e				2508.76	
			Rate	per cum = (a+b+c+d+e)/10				250.88	
				(			say	<u>251.00</u>	
12.1 (I) A		(iii)	Dept	th above 6 m (without de-wate	ring)				
			,	Labour					
				e/Supervisor	day	0.240	354.00	84.96	L-12
				door	day	6.000	310.00	1860.00	L-13
			b)	GST @ 12 % on (a)	- (- I b)			233.40	
			c)	Overhead charges @ 20 % o				435.67	
			d)	Contractor's profit @ 10 % o	n (a+b)			261.40	
			e)	Cess @ 1% on (a+b+c+d)				28.75	
				for 10 cum = a+b+c+d+e				2904.18 290.42	
			Rate	per cum = (a+b+c+d+e)/10			say	290.42 <b>290.00</b>	
		(iii) b		th above 6 m (with de-waterin	g)		Say	<u>230.00</u>	
			,	Labour e/Supervisor	day	0.290	354.00	102.66	L-12
				door	day	7.200	310.00	2232.00	L-13
			b)	GST @ 12 % on (a)				280.16	
			c)	Overhead charges @ 20 % o	n (a+b)			522.96	
			d)	Contractor's profit @ 10 % o	n (a+b)			313.78	
			e)	Cess @ 1% on (a+b+c+d)				34.52	
			Cost	for 10 cum = a+b+c+d+e				3486.08	
			Rate	per cum = (a+b+c+d+e)/10				348.61	
12.1 (I)		В	Meci	hanical Means			say	<u>349.00</u>	
12.1 (1)		(i)		th upto 3 m (without de-water	na)				
		( )	-	= cum	<b>J</b> ,				
			Taki	ng output = 240 cum					
				Labour					
			Mate		day	0.320	354.00	113.28	L-12
			Mazo		day	8.000	310.00	2480.00	L-13
			b) Hydr capa	Machinery aulic excavator 1.0 cum bucket	hour	6.000	1751.33	10507.98	P&M-026
			c)	GST @ 12 % on (a+b)				1572.15	
			d)	Overhead charges @ 20 % o	n (a+b+c)			2934.68	
			e)	Contractor's profit @ 10 % o				1760.81	
			f)	Cess @ 1% on (a+b+c+d+e)		•		193.69	
			•	for 240 cum = $a+b+c+d+e+f$				19562.59	
				per cum = (a+b+c+d+e+f)/240	1			81.51	
			Nate	per cum = (a+b+c+u+e+i)/240	,				
		(i) c	Dent	th upto 3 m (with de-watering)			say	<u>82.00</u>	
			БСР	· · · · · · · · · · · · · · · · · · ·	'				
		(1) C	Unit	= cum					
		(1) C		= cum ng outout = 240 cum					
		(1) C	Taki	ng output = 240 cum					
		(1) C	Taki	ng output = 240 cum Labour	day	0.336	354.00	118.94	L-12
		(1) C	Taki a)	ng output = 240 cum Labour	day day	0.336 8.400	354.00 310.00	118.94 2604.00	L-12 L-13
		(1) C	Takin a) Mate Maze b) Hydr	ng output = 240 cum  Labour  door  Machinery aulic excavator 1.0 cum bucket	day				
		(1) C	Takin a) Mate Maze b) Hydricapa	ng output = 240 cum  Labour  door  Machinery aulic excavator 1.0 cum bucket acity	day	8.400	310.00	2604.00 11033.38	L-13
		(1) C	Takina) Mate Maze b) Hydr capa c)	ng output = 240 cum Labour  door Machinery aulic excavator 1.0 cum bucket icity GST @ 12 % on (a+b)	day	8.400 6.300	310.00	2604.00 11033.38 1650.76	L-13
		(1) C	Takin a) Mate Maze b) Hydricapa	ng output = 240 cum Labour  door Machinery aulic excavator 1.0 cum bucket acity GST @ 12 % on (a+b) Overhead charges @ 20 % o	day hour n (a+b+c)	8.400 6.300	310.00	2604.00 11033.38 1650.76 3081.42	L-13
		(1) C	Takina) Mate Maze b) Hydr capa c)	ng output = 240 cum Labour  door Machinery aulic excavator 1.0 cum bucket icity GST @ 12 % on (a+b)	day hour n (a+b+c)	8.400 6.300	310.00	2604.00 11033.38 1650.76 3081.42 1848.85	L-13
		(1) C	Takina) Mate Mazo b) Hydr capa c) d) e)	ng output = 240 cum Labour  door Machinery aulic excavator 1.0 cum bucket icity GST @ 12 % on (a+b) Overhead charges @ 20 % o Contractor's profit @ 10 % o Cess @ 1% on (a+b+c+d+e)	day hour n (a+b+c)	8.400 6.300	310.00	2604.00 11033.38 1650.76 3081.42 1848.85 203.37	L-13
		(1) C	Takina) Mate Maze b) Hydr capa c) d) e) f) Cost	ng output = 240 cum Labour  door Machinery aulic excavator 1.0 cum bucket icity GST @ 12 % on (a+b) Overhead charges @ 20 % o Contractor's profit @ 10 % o	hour n (a+b+c) n (a+b+c+	8.400 6.300	310.00	2604.00 11033.38 1650.76 3081.42 1848.85	L-13

				FUL	JNDATION				
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
I2.1 (I) B		(ii)	Dep	th 3 m to 6 m (without de-wate	ering)				
			Unit	= cum					
			Taki	ng output = 210 cum					
			,	Labour		0.000	054.00	440.00	
			Mate Maze		day day	0.320 8.000	354.00 310.00	113.28 2480.00	L-12 L-13
			b)	Machinery	uay	8.000	310.00	2400.00	L-10
			,	aulic excavator 1.0 cum bucket	hour	6.000	1751.33	10507.98	P&M-026
			c)	GST @ 12 % on (a+b)				1572.15	
			d)	Overhead charges @ 20 % o	n (a+b+c)			2934.68	
			e)	Contractor's profit @ 10 % o	-	d)		1760.81	
			f)	Cess @ 1% on (a+b+c+d+e)	(0 - 5 - 6 -	ω,		193.69	
			•	for 210 cum = a+b+c+d+e+f				19562.59	
				e per cum = (a+b+c+d+e+f)/210	0			93.16	
			rtuto	(a : 5 · 6 · a · 6 · 1)/2 · (	•		say	93.00	
		(ii) c	Dep	th 3 m to 6 m (with de-waterin	ıq)		CLy	<u> </u>	
		. , -	_	= cum	٥,				
			Taki	= cum ing output = 210 cum Labour					
			Mate		day	0.344	354.00	121.78	L-12
			Maz	door	day	8.600	310.00	2666.00	L-13
			•	Machinery raulic excavator 1.0 cum bucket	hour	6.450	1751.33	11296.08	P&M-026
			capa						
			c)	GST @ 12 % on (a+b)				1690.06	
			d)	Overhead charges @ 20 % o				3154.78	
			e)	Contractor's profit @ 10 % o	n (a+b+c+	d)		1892.87	
			f)	Cess @ 1% on (a+b+c+d+e)				208.22	
			Cost	for 210 cum = a+b+c+d+e+f				21029.79	
			Rate	e per cum = (a+b+c+d+e+f)/210	0			100.14	
2.1 (I) B		(iii)	Don	th above 6m (without de-wate	rina)		say	<u>100.00</u>	
(., 5		(,		•	,, ,, ,,				
				= cum					
				ing output = 180 cum Labour					
			Mate		day	0.400	354.00	141.60	L-12
			Maz		day	10.000	310.00	3100.00	L-13
			b)	Machinery					
			Hydr capa	raulic excavator 1.0 cum bucket acity	hour	6.000	1751.33	10507.98	P&M-026
			c)	GST @ 12 % on (a+b)				1649.95	
			d)	Overhead charges @ 20 % o	n (a+b+c)			3079.91	
			e)	Contractor's profit @ 10 % o	n (a+b+c+	d)		1847.94	
			f)	Cess @ 1% on (a+b+c+d+e)	•	•		203.27	
			Cost	for 180 cum = a+b+c+d+e+f				20530.65	
			Rate	e per cum = (a+b+c+d+e+f)/180	0			114.06	
				,			say	<u>114.00</u>	
		(iii) c	_	th above 6m (with de-watering	g)				
			Taki	= cum ing output = 180 cum					
			•	Labour	. ـ ام	0.440	054.00	455.70	1 40
			Mate		day	0.440	354.00	155.76	L-12 L-13
			Mazo b)	Machinery	day	11.000	310.00	3410.00	L-13
			,	aulic excavator 1.0 cum bucket	hour	6.600	1751.33	11558.78	P&M-026
			c)	GST @ 12 % on (a+b)				1814.94	
			•	-	n (a±b±a\				
			d)	Overhead charges @ 20 % o	יוו (מדטדכ)			3387.90	

0.11	Ref. to			NDATIONS	0 - 111	D.1. D. I	0 - 1 0 -	Remarks/
Sr No	MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Input ref.
	DSR Spec.							-
			e) Contractor's profit @ 10 % on	(3+b+c+d)	<u> </u>		2032.74	
			f) Cess @ 1% on (a+b+c+d+e)	i (a·b·c·u)			223.60	
			, , , ,					
			Cost for 180 cum = a+b+c+d+e+f				22583.72 125.47	
			Rate per cum = $(a+b+c+d+e+f)/180$			say	125.47 <u>125.00</u>	
12.1		II	Ordinary Rock (not requiring blast	ing)		Suy	120.00	
		Α	Manual Means					
		(i)	Depth upto 3 m (without de-watering	ng)				
			Unit = cum					
			Taking output = 10 cum					
			a) Labour					
			Mate	day	0.200	354.00	70.80	L-12
			Mazdoor	day	5.000	310.00	1550.00 194.50	L-13
			b) GST @ 12 % on (a)	(a.l.b.)				
			c) Overhead charges @ 20 % on				363.06	
			d) Contractor's profit @ 10 % or	i (a+b+c)			217.84	
			e) Cess @ 1% on (a+b+c+d)				23.96	
			Cost for 10 cum = a+b+c+d+e				2420.16	
			Rate per cum = (a+b+c+d+e)/10				242.02	
						say	<u>242.00</u>	
		(ii)	Depth upto 3 m (with de-watering)					
			Unit = cum					
			Taking output = 10 cum					
			a) Labour	ala	0.000	254.00	77.00	L-12
			Mate Mazdoor	day day	0.220 5.500	354.00 310.00	77.88 1705.00	L-12 L-13
			b) GST @ 12 % on (a)	uay	3.300	310.00	213.95	
			c) Overhead charges @ 20 % on	(a+h)			399.37	
			d) Contractor's profit @ 10 % or	-			239.62	
			e) Cess @ 1% on (a+b+c+d)	i (a·b·c)			26.36	
			Cost for 10 cum = a+b+c+d+e				2662.18	
			Rate per cum = (a+b+c+d+e)/10				266.22	
			Rate per cum = (a+b+c+u+e)/10			cov	266.00	
12.1		В	Mechanical Means			say	200.00	
(II)			Depth upto 3 m (without de-watering	na)				
(,			Unit = cum	19)				
			Taking output = 180 cum					
			a) Labour					
			Mate	day	0.240	354.00	84.96	L-12
			Mazdoor	day	6.000	310.00	1860.00	L-13
			b) Machinery					
			Hydraulic excavator 1.0 cum bucket capacity	hour	6.000	1751.33	10507.98	P&M-026
			c) GST @ 12 % on (a+b)				1494.35	
			d) Overhead charges @ 20 % on	ı (a+b+c)			2789.46	
			e) Contractor's profit @ 10 % on	-	)		1673.68	
			f) Cess @ 1% on (a+b+c+d+e)	, o · w)			184.10	
			Cost for 180 cum = a+b+c+d+e+f				18594.53	
			Rate per cum = $(a+b+c+d+e+f)/180$			eav	103.30 <u>103.00</u>	
		С	Depth upto 3 m (with de-watering)			say	103.00	
		_	Unit = cum					
			Taking output = 180 cum					
			a) Labour					
			Mate	day	0.264	354.00	93.46	L-12
			Mazdoor	day	6.600	310.00	2046.00	L-13
			b) Machinery	,			,	
			Hydraulic excavator 1.0 cum bucket	hour	6.600	1751.33	11558.78	P&M-026
			capacity					
			c) GST @ 12 % on (a+b)				1643.79	
			d) Overhead charges @ 20 % on	ı (a+b+c)			3068.41	

	I Def to I			NDATION				l B
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	DSR Spec.							'
			e) Contractor's profit @ 10 % or	(a+h+c+c	1)		1841.04	
			f) Cess @ 1% on (a+b+c+d+e)	ι (α. Β. σ. ς	4)		202.51	
			Cost for 180 cum = a+b+c+d+e+f				20453.99	
			Rate per cum = (a+b+c+d+e+f)/180				113.63	
			Kate per cum = (a·b·c·u·e·i)/100			say	<u>114.00</u>	
12.1		Ш	Hard Rock ( requiring blasting )			Suy	114.00	
		A	Manual Means					
			Without de-watering					
			Unit = cum					
			Taking output = 10 cum					
			a) Labour					
			Mate	day	0.350	354.00	123.90	L-12
			Driller	day	0.500	354.00	177.00	L-06
			Blaster	day	0.250	354.00	88.50	L-03
			Mazdoor	day	8.000	310.00	2480.00	L-13
			b) Machinery	44,	0.000	0.0.00	2.00.00	
			Air Compressor 250 cfm with 2 jack	hour	1.000	575.22	575.22	P&M-001
			hammer for drilling.					
			c) Material					
			Blasting Material	kg	3.500	164.60	576.10	M-104
			Detonator electric	each	14.000	11.04	154.56	M-094/100
			d) CST @ 42 % on (albia)				F04 02	
			d) GST @ 12 % on (a+b+c)	. /	11		501.03 935.26	
			e) Overhead charges @ 20 % or	-	-			
			f) Contractor's profit @ 10 % on	•	+e)		561.16	
			g) Cess @ 1% on (a+b+c+d+e+f)				61.73	
			Cost for 10 cum = $a+b+c+d+e+f+g$	^			6234.46 623.45	
			Rate per cum = $(a+b+c+d+e+f+g)/1$	U		cav	623.45	
		В	With de-watering			say	023.00	
			Unit = cum					
			Taking output = 10 cum					
			a) Labour					
			Mate	day	0.385	354.00	136.29	L-12
			Driller	day	0.550	354.00	194.70	L-06
			Blaster	day	0.275	354.00	97.35	L-03
			Mazdoor	day	8.800	310.00	2728.00	L-13
			b) Machinery	•				
			Air Compressor 250 cfm with 2 jack	hour	1.100	575.22	632.74	P&M-001
			hammer for drilling.					
			c) Material					
			Blasting Material	kg	3.500	164.60	576.10	M-104
			Detonator electric	each	14.000	11.04	154.56	M-094/100
							=	
			d) GST @ 12 % on (a+b+c)				542.37	
			e) Overhead charges @ 20 % or	-	-		1012.42	
			f) Contractor's profit @ 10 % on	-	+e)		607.45	
			g) Cess @ 1% on (a+b+c+d+e+f)				66.82	
			Cost for 10 cum = $a+b+c+d+e+f+g$	•			6748.80	
			Rate per cum = $(a+b+c+d+e+f+g)/1$	0			674.88	
12.1		IV	Hard Rock ( blacting probibited )			say	<u>675.00</u>	
14.1		14	Hard Rock ( blasting prohibited )  Unit = cum					
			Taking output = 10 cum					
		Α	Mechanical Means (without de-wat	tering)				
			a) Labour	<b>.</b>				
			Mate	day	0.200	354.00	70.80	L-12
			Mazdoor	day	5.000	310.00	1550.00	L-13
			b) Machinery					
			Air Compressor 250 cfm with 2	hour	6.000	575.22	3451.32	P&M-001
			leads of pneumatic breaker					

0:: N =	Ref. to			NDATIO		Data Da	04 D-	Remarks/
Sr No	MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Input ref.
	DSK Spec.							
			c) GST @ 12 % on (a+b)			'	608.65	
			d) Overhead charges @ 20 % or	n (a+b+c)	)		1136.15	
			e) Contractor's profit @ 10 % or	n (a+b+c+	⊦d)		681.69	
			f) Cess @ 1% on (a+b+c+d+e)				74.99	
			Cost for 10 cum = a+b+c+d+e+f				7573.60	
			Rate per cum = $(a+b+c+d+e+f)/10$				757.36	
						say	<u>757.00</u>	
		В	Mechanical Means (with de-wateri	ng)				
			a) Labour					
			Mate	day	0.220	354.00	77.88	L-12
			Mazdoor	day	5.500	310.00	1705.00	L-13
			b) Machinery Air Compressor 250 cfm with 2	hour	6.600	575.22	3796.45	P&M-001
			leads of pneumatic breaker	noui	0.000	010.22		
			c) GST @ 12 % on (a+b)				669.52	
			d) Overhead charges @ 20 % or	-			1249.77	
			e) Contractor's profit @ 10 % or	n (a+b+c+	⊦d)		749.86	
			f) Cess @ 1% on (a+b+c+d+e)				82.48	
			Cost for 10 cum = a+b+c+d+e+f				8330.96	
			Rate per cum = (a+b+c+d+e+f)/10				833.10	
12.1		v	Marchy Sail			say	<u>833.00</u>	
12.1		•	Marshy Soil  Unit = cum					
			Taking output = 10 cum					
			Depth upto 3 m					
		Α	Manual means (without de-watering	ng)				
			a) Labour					
			Mate/Supervisor	day	0.400	354.00	141.60	L-12
			Mazdoor b) Machinery	day	10.000	310.00	3100.00	L-13
			Tractor-trolley for removal.	hour	2.670	476.11	1271.21	P&M-053
			c) GST @ 12 % on (a+b)		2.0.0		541.54	
			d) Overhead charges @ 20 % or	n (a+b+c)	1		1010.87	
			e) Contractor's profit @ 10 % or				606.52	
			f) Cess @ 1% on (a+b+c+d+e)	`	,		66.72	
			Cost for 10 cum = a+b+c+d+e+f				6738.46	
			Rate per cum = $(a+b+c+d+e+f)/10$				673.85	
						say	<u>674.00</u>	
		В	Manual means (with de-watering)					
			a) Labour					
			Mate/Supervisor	day	0.520	354.00	184.08	L-12
			Mazdoor	day	13.000	310.00	4030.00	L-13
			b) Machinery Tractor-trolley for removal.	hour	2.670	476.11	1271.21	P&M-053
			c) GST @ 12 % on (a+b)	Hour	2.010	470.11	658.23	
			d) Overhead charges @ 20 % or	n (a+b+c)	)		1228.70	
			e) Contractor's profit @ 10 % or				737.22	
			f) Cess @ 1% on (a+b+c+d+e)	-	-		81.09	
			Cost for 10 cum = a+b+c+d+e+f				8190.53	
			Rate per cum = $(a+b+c+d+e+f)/10$				819.05	
40 4 00			Machanical Macha (with and do	toris = \		say	<u>819.00</u>	
12.1 (V)		Α	Mechanical Means (without de-wa	itering)				
			a) Labour Mate	day	0.080	354.00	28.32	L-12
			Mazdoor for dressing sides, bottom	day	2.000	310.00	620.00	L-13
			and backfilling	<i>J</i>		2 : 0.00	220.00	
			b) Machinery					
			Hydraulic excavator 1.0 cum bucket	hour	0.170	1751.33	297.73	P&M-026
			capacity @ 60 cum per hour					
			Tipper 5.5 cum capacity, 4 trips per	hour	0.450	779.65	350.84	P&M-048
			hour.		3.100		230.04	

	l Def to 1			JNDATION				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			c) GST @ 12 % on (a+b)				155.63	
			d) Overhead charges @ 20 % o	n (a+h+c)			290.50	
			e) Contractor's profit @ 10 % o	. ,			174.30	
			f) Cess @ 1% on (a+b+c+d+e)		u,		19.17	
			Cost for 10 cum = $a+b+c+d+e+f$				1936.49	
			Rate per cum = $(a+b+c+d+e+f)/10$				193.65	
			. , ,			say	<u>194.00</u>	
		В	Mechanical Means (with de-water	ring)				
			a) Labour					
			Mate	day	0.096	354.00	33.98	L-12
			Mazdoor for dressing sides, bottom and backfilling	day	2.400	310.00	744.00	L-13
			b) Machinery					
			Hydraulic excavator 1.0 cum bucket capacity @ 60 cum per hour	t hour	0.204	1751.33	357.27	P&M-026
			Tipper 5.5 cum capacity, 4 trips per	hour	0.540	779.65	421.01	P&M-048
				Hour	0.040	773.00	186.75	
			c) GST @ 12 % on (a+b)	(a.lb.i.a\				
			d) Overhead charges @ 20 % o				348.60	
			e) Contractor's profit @ 10 % o	on (a+b+c+	·d)		209.16	
			f) Cess @ 1% on (a+b+c+d+e)				23.01	
			Cost for 10 cum = $a+b+c+d+e+f$				2323.78	
			Rate per cum = (a+b+c+d+e+f)/10				232.38	
		VI	Back Filling in Marshy Foundatio	n Pits		say	<u>232.00</u>	
			Unit : Cum					
			Taking Output : 6 cum					
			a) Labour					
			Mate	day	0.120	354.00	42.48	L-12
			Mazdoor for dressing sides, bottom and backfilling	day	3.000	310.00	930.00	L-13
			b) Machinery Tractor-trolley for transportation	hour	2.000	476.11	952.22	P&M-053
			c) GST @ 12 % on (a+b)				230.96	
			d) Overhead charges @ 20 % c	on (a+b+c)			431.13	
			e) Contractor's profit @ 10 % o	-	·d)		258.68	
			f) Cess @ 1% on (a+b+c+d+e)	•	u,		28.45	
			, , ,					
			Cost for 6 cum = $a+b+c+d+e+f$ Rate per cum = $(a+b+c+d+e+f)/6$				2873.92 478.99	
			Nate per cum = (a·b·c·u·e·i//o			say	479.00	
12.2	304		Filling Annular Space Around Foo	oting in Ro	ock	Suy	410.00	
			Unit = cum	•				
			Taking out put = 1 cum					
			Lean cement concrete 1:3:6					
			nominal mix. Rate may be taken as	3				
12.3	304		per item 12.4.	haa aa ma	· Duarrigue 9 Talah	minal Considia	.4i.a.u.	
12.3			Sand Filling in Foundation Trench	iles as pei	Drawing & reci	inicai Specifica	ition	
			Unit = cum Taking output = 1 cum					
			a) Labour					
			Mate	day	0.010	354.00	3.54	L-12
			Mazdoor	day	0.300	310.00	93.00	L-13
			b) Material	,	3.555			
			Sand (assuming 20 per cent voids)	cum	1.200	601.77	722.12	M-006
			c) GST @ 12 % on (a+b)				98.24	
			d) Overhead charges @ 20 % c	on (a+b+c)			183.38	
			e) Contractor's profit @ 10 % o				110.03	
			o, contractor a profit to 10 % 0	יוו (מיטדטי	~ <i>,</i>		110.03	

				NDATION				
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)				12.10	
			, , , , , ,					
			Rate per cum = a+b+c+d+e+f			601/	1222.41	
12.4	2100		PCC 1:3:6 in Foundation			say	<u>1222.00</u>	
			Plain cement concrete 1:3:6 nom					
			40 mm nominal size mechanical vibration including curing for 14 d	-	, placed in foui	ndation and c	ompacted by	
			Unit = cum Taking output = 15 cum					
			a) Labour		0.040	054.00	000 50	1.40
			Mate	day	0.640	354.00	226.56	L-12
			Mason	day	1.000	442.00	442.00	L-11
			Mazdoor	day	15.000	310.00	4650.00	L-13
			b) Material	ou m	12 500	1393.81	18816.44	M-055
			40 mm Aggregate	cum	13.500			M-005
			coarse Sand	cum	6.750	601.77	4061.95	M-081
			cement	tonne	3.450	9053.98	31236.23	
			Cost of water	KL	18.000	67.26	1210.68	M-189
			c) Machinery Concrete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
			cum)					P&M-079
			Generator 33 KVA	hour	6.000	453.98	2723.88	
			Water tanker 6 KL capacity	hour	2.000	544.25	1088.50	P&M-060
			d) GST @ 12 % on (a+b+c)				7929.08	
			e) Overhead charges @ 20 % o	-	-		14800.96	
			f) Contractor's profit @ 10 % on	(a+b+c+c	d+e)		8880.57	
			g) Cess @ 1% on (a+b+c+d+e+	⊦f)			976.86	
			Cost for 15 cum = a+b+c+d+e+f+g				98663.17	
			Rate per cum = (a+b+c+d+e+f+g)/1	15			6577.54	
						say	<u>6578.00</u>	
		Note	Vibrator is a part of minor T & P which overhead charges of the contractor.	h is alrea	dy included in			
12.5	1300		Brick Masonry Work in Cement M and Plastering, as per Drawing an			•	ding Pointing	
			Unit = cum Taking output = 5 cum					
			a) Material	ooob	2500.000	9.73	24325.00	M-079
			Bricks lst class Cement mortar 1:3 (Rate as in Item	each cum	1.200	9.73 5543.00	6651.60	Item 12.6
			12.6 A sub-analysis) (Excluding GST,OH,CP &Cess)	Cum	1.200	3343.00	0031.00	(A)
			b) Labour	3	0.400	054.00	400.00	1 40
			Mate	day	0.480	354.00	169.92	L-12
			Mason	day	4.000	442.00	1768.00	L-11
			Mazdoor	day	8.000	310.00	2480.00	L-13
			c) GST @ 12 % on (a+b)				4247.34	
			d) Overhead charges @ 20 % or	n (a+b+c)			7928.37	
			e) Contractor's profit @ 10 % or	n (a+b+c+	-d)		4757.02	
			f) Cess @ 1% on (a+b+c+d+e)				523.27	
			Cost for 5 cum = a+b+c+d+e+f				52850.52	
			Rate per cum (a+b+c+d+e+f)/5				10570.10	
12.6	Sub- analysis	(A)	Cement Mortar 1:3 (1 cement : 3 sa	and)		say	<u>10570.00</u>	
	•		Unit = 1 cum					
			Taking output = 1 cum					
			a) Materials					
			Cement	tonne	0.510	9053.98	4617.53	M-081
			Sand	cum	1.050	601.77	631.86	M-005
			b) Labour				2233	
			Mate	day	0.040	354.00	14.16	L-12
				•				

			FOL	INDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Mazdoor	day	0.900	310.00	279.00	L-13
			Total Material and Labour = (a+b)	,		say	5543.00	
	Sub- analysis (Addl.)	(B)	Cement Mortar1:2 (1cement :2 sar	nd)				
	,		Unit = 1 cum Taking output = 1 cum					
			a) Materials					
			Cement Sand	tonne cum	0.672 0.930	9053.98 601.77	6084.27 559.65	M-081 M-005
			b) Labour	Cum	0.930	001.77	339.03	000
			Mate	day	0.040	354.00	14.16	L-12
			Mazdoor Total Material and Labour = (a+b)	day	0.900	310.00	279.00 <b>6937.00</b>	L-13
	Sub- analysis (Addl.)	(C)		nd)		say	0937.00	
			Unit = 1 cum Taking output = 1 cum					
			a) Materials	4	0.400	0050.00	2040.75	M-081
			Cement Sand	tonne cum	0.403 1.120	9053.98 601.77	3648.75 673.98	M-005
			b) Labour	oum	1.120	001.77	070.00	
			Mate	day	0.040	354.00	14.16	L-12
			Mazdoor	day	0.900	310.00	279.00	L-13
	Sub- analysis (Addl.)	(D)	Total Material and Labour = (a+b)  Cement Mortar1:6 (1cement :6 sar	nd)		say	4616.00	
	(Addi.)		Unit = 1 cum Taking output = 1 cum					
			a) Materials					
			Cement	tonne	0.288	9053.98	2607.55	M-081
			Sand	cum	1.337	601.77	804.57	M-005
			b) Labour Mate	dov	0.040	354.00	14.16	L-12
			Mazdoor	day day	0.040	310.00	14.16 279.00	L-12
			Total Material and Labour = (a+b)	uay	0.900	\$10.00 <b>say</b>	3705.00	L-10
12.7	1400		Stone Masonry Work in Cement N Technical Specifications.	lortar 1:3	in Foundation c	_		
			Unit = cum Taking output = 5 cum					
	1405.4	(A)	Square Rubble Coursed Rubble N	lasonry (f	irst sort)			
			a) Material Stone	cum	5.500	576.11	3168.61	M-169
			Through and bond stone	each	35.000	14.16	495.60	M-182
			(35no.x0.24mx0.24mx0.39m = 0.79					
			cu.m)	oum	1.500	5543.00	8314.50	Item 12.6
			Cement mortar 1:3 (Rate as in Item 12.6 A sub-analysis) (Excluding GST,OH,CP &Cess)	cum	1.500	5545.00	6514.50	(A)
			b) Labour		0.000	05100	000.01	1 40
			Mate	day	0.660	354.00	233.64	L-12
			Mason Mazdoor	day day	7.500 9.000	442.00 310.00	3315.00 2790.00	L-11 L-13
			c) GST @ 12 % on (a+b)	uay	9.000	310.00	2198.08	L-10
			d) Overhead charges @ 20 % o	n (a+b+c)			4103.09	
			e) Contractor's profit @ 10 % o		d)		2461.85	
			f) Cess @ 1% on (a+b+c+d+e)	,	•		270.80	
			Cost for 5 cum = a+b+c+d+e+f				27351.17	
			Rate per cum (a+b+c+d+e+f)/5				5470.23	
						say	<u>5470.00</u>	
	1405.3	(B)						
			( coursed/uncoursed ) Unit = cum					
			omt – cum					

Page : 239

Unit = cum

				FOUNDATION				
J. 140   1	Ref. to MoRTH/ SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			Taking output = 5 cum					
			a) Material					
			Stone	cum	5.500	576.11	3168.61	M-148
			Through and bond stone	each	35.000	14.16	495.60	M-182
			(35nos.x0.24mx0.24mx0.39 0.79 cu.m)		33.000			
			Cement mortar 1:3 (Rate as 12.6 A sub-analysis) (Exclud		1.550	5543.00	8591.65	Item 12 (A)
			GST,OH,CP &Cess) b) Labour	g				
			Mate	dov	0.620	354.00	219.48	L-12
			Mason	day day	6.000	442.00	2652.00	L-11
			Mazdoor	day	9.000	310.00	2790.00	L-13
			c) GST @ 12 % on (a+b	•	9.000	310.00	2150.08	•
			· · · · · · · · · · · · · · · · · · ·	-				
			d) Overhead charges @				4013.48	
			e) Contractor's profit @	10 % on (a+b+c+	d)		2408.09	
			f) Cess @ 1% on (a+b+	c+d+e)			264.89	
			Cost for 5 cum = a+b+c+d+e	e+f			26753.88	
			Rate per cum (a+b+c+d+e+	⊦f)/5			5350.78	
			•	•		say	<u>5351.00</u>	
		Note	The labour already consider mortar has been taken into a proposing labour for masonr	account while				
12.8 1500, 1700 & 2100		Plain/Reinforced Cement Technical Specifications.	Concrete in Oper	n Foundation co	mplete as per	Drawing and		
		A (i)	PCC Grade M15					
			Unit = cum					
			Taking output = 15 cum					
			a) Material Cement	tonno	4.130	9053.98	37392.94	M-081
			Coarse sand	tonne cum	6.750	601.77	4061.95	M-005
			40 mm Aggregate	cum	8.100	1393.81	11289.86	M-055
			20 mm Aggregate	cum	4.050	1784.07	7225.48	M-053
			10 mm Aggregate	cum	1.350	1951.33	2634.30	M-051
			b) Labour					
			Mate	day	0.860	354.00	304.44	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	20.000	310.00	6200.00	L-13
			c) Machinery	•				
			Concrete mixer (cap. 0.40/0 cum)	28 hour	6.000	269.91	1619.46	P&M-00
			Generator 63 KVA	hour	6.000	780.53	4683.18	P&M-0
			Per Cum Basic Cost of La		5072.000	700.55	4003.10	
			<ul><li>Machinery (a+b+c)</li><li>d) Formwork @ 4 per ce</li></ul>	nt on			3042.98	
			cost of concrete i.e. cost of material, labour and machin	ery				
			e) GST @ 12 % on (a+b	o+c+d)			9494.11	
			f) Overhead charges @	-	-		17722.34	
			<ul><li>g) Contractor's profit @</li><li>h) Cess @ 1% on (a+b+)</li></ul>	-	u+e+1)		10633.40 1169.67	
			Cost for 15 cum = a+b+c+d+	C,			118137.11	
			Rate per cum = $(a+b+c+d+$	9			7875.81	
			. (************************************	<b>-</b> , -		say	<u>7876.00</u>	
12 Q		Note	Needle Vibrator is an item included in overhead cha analysis of cement concrete	rges. Hence not	•			

12.8 B PCC Grade M20

Unit: cum

Taking output = 15 cum

		г	-OUNDATION	<u> </u>			
Sr No	Ref. to MoRTH/	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	DSR Spec.						put ron
		a) Material					
		Cement	tonne	5.160	9053.98	46718.54	M-081
		Coarse sand	cum	6.750	601.77	4061.95	M-005
		40 mm Aggregate	cum	5.400	1393.81	7526.57	M-055
		20 mm Aggregate	cum	5.400	1784.07	9633.98	M-053
		10 mm Aggregate	cum	2.700	1951.33	5268.59	M-051
		b) Labour		0.000	054.00	004.44	1.40
		Mate	day	0.860	354.00	304.44	L-12
		Mason	day	1.500	442.00	663.00	L-11
		Mazdoor	day	20.000	310.00	6200.00	L-13
		c) Machinery Concrete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
		cum)	Houl	0.000	209.91	1019.40	
		Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
		Per Cum Basic Cost of Labour	, Material &	5649.000			
		Machinery (a+b+c)					
		d) Formwork @ 4 per cent				3388.82	
		cost of concrete i.e. cost material, labour and machinery	of				
		e) GST @ 12 % on (a+b+c+	·d)			10573.11	
		f) Overhead charges @ 20 9	-	d+e)		19736.47	
		g) Contractor's profit @ 10 °	-	-		11841.88	
		h) Cess @ 1% on (a+b+c+d+	-			1302.61	
		Cost for 15 cum = $a+b+c+d+e+f+$				131563.30	
		Rate per cum = (a+b+c+d+e+f+	· ·			8770.89	
		(4.4.2.4.2.4.2.4.2.4.2.4.2.4.2.4.2.4.2.4	3,		say	8771.00	
2.8	С	RCC Grade M20					
	Case I	Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material		5.040	0050.00	47474.04	
		Cement Coarse sand	tonne	5.210 6.750	9053.98 601.77	47171.24 4061.95	M-081 M-005
		20 mm Aggregate	cum cum	8.100	1784.07	14450.97	M-053
		10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
		b) Labour					
		Mate	day	0.860	354.00	304.44	L-12
		Mason Mazdoor	day day	1.500 20.000	442.00 310.00	663.00 6200.00	L-11 L-13
		c) Machinery	uay	20.000	010.00	0200.00	
		Concrete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
		cum)	E.	0.000	450.00	0700.00	D&M 070
		Generator 33 KVA  Per Cum Basic Cost of Labour	hour Material &	6.000 <b>5849.000</b>	453.98	2723.88	P&M-079
		Machinery (a+b+c)	, material G	0043.000			
		d) Formwork @ 4 per cent o	n			3509.28	
		(a+b+c)					
		e) GST @ 12 % on (a+b+c+	-			10948.97	
		f) Overhead charges @ 20 9	-	-		20438.07	
		g) Contractor's profit @ 10 9	-	d+e+f)		12262.84	
		h) Cess @ 1% on (a+b+c+d+				1348.91	
		Cost for 15 cum = $a+b+c+d+e+f+$	•			136240.19	
		Rate per cum = (a+b+c+d+e+f+	·g+h)/15			9082.68	
2.8 C	Case	With Batching Plant, Transit M	ixer and Conc	rete Pump	say	<u>9083.00</u>	
	II	<b>.</b>		p			
		Unit : cum					
		Taking Output = 120 cum  a) Material					
		Cement	tonne	41.660	9053.98	377188.81	M-081
		Coarse Sand	cum	54.000	601.77	32495.58	M-004
				2000	551.11	== .55.55	

		F	OUNDATIONS	j			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
		20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
		10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
		b) Labour					
		Mate	day	0.840	354.00	297.36	L-12
		Mason	day	3.000	442.00	1326.00	L-11
		Mazdoor	day	18.000	310.00	5580.00	L-13
		c) Machinery					
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-00
		Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-08
		Loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-01
		Transit Mixer 4 cum capacity for	hour	15.00	1132.74	16991.10	P&M-04
		lead upto 1 km. Lead beyond 1 km, L-lead in km	tonne.	300L	18.94	0.00	P&M-05 Lead= 0 k
			km				
		Concrete Pump	hour	6	2576.11	15456.66	P&M-00
		Per Cum Basic Cost of Labour Machinery (a+b+c)	, Material &	5663.000			
		d) Formwork @ 4 per cent o cost of concrete i.e. cost of material, labour and machinery	n			27178.12	
		e) GST @ 12 % on (a+b+c+	d)			84795.75	
		f) Overhead charges @ 20 %	% on (a+b+c+d	+e)		158285.40	
		g) Contractor's profit @ 10 %	% on (a+b+c+d	+e+f)		94971.24	
		h) Cess @ 1% on (a+b+c+d+	·e+f+g)			10446.84	
		Cost for 120 cum = a+b+c+d+e+	f+g+h			1055130.46	
		Rate per cum = ( a+b+c+d+e+f+	+g+h )/120			8792.75	
		•	,		say	<u>8793.00</u>	
12.8	[	PCC Grade M25					
	Cas	se I Using Concrete Mixer					
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Cement	tonne	5.990	9053.98	54233.34	M-081
		Coarse sand	cum	6.750	601.77	4061.95	M-005
		40 mm Aggregate	cum	5.400	1393.81	7526.57	M-055
		20 mm Aggregate	cum	5.400	1784.07	9633.98	M-053
		10 mm Aggregate	cum	2.700	1951.33	5268.59	M-051
		b) Labour					
		Mate	day	0.860	354.00	304.44	L-12
		Mason	day	1.500	442.00	663.00	L-11
		Mazdoor	day	20.000	310.00	6200.00	L-13
		c) Machinery	•				
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
		Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-07
		Per Cum Basic Cost of Labour	, Material &	6150.000			
		Machinery (a+b+c)	-			0450.00	
		d) Formwork @ 3.75 per cer	,			3458.82	
			d)			11483.28	
		e) GST @ 12 % on (a+b+c+	-	_			
		f) Overhead charges @ 20 %	% on (a+b+c+d	-		21435.46	
		f) Overhead charges @ 20 % g) Contractor's profit @ 10 %	% on (a+b+c+d % on (a+b+c+d	-		12861.28	
		f) Overhead charges @ 20 % g) Contractor's profit @ 10 % h) Cess @ 1% on (a+b+c+d+	% on (a+b+c+d % on (a+b+c+d -e+f+g)	-		12861.28 1414.74	
		f) Overhead charges @ 20 % g) Contractor's profit @ 10 %	% on (a+b+c+d % on (a+b+c+d -e+f+g)	-		12861.28	
		f) Overhead charges @ 20 % g) Contractor's profit @ 10 % h) Cess @ 1% on (a+b+c+d+	% on (a+b+c+d % on (a+b+c+d -e+f+g) -g+h	-		12861.28 1414.74	

			FOUNDATIONS						
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.8 D			With	Batching Plant, Transit Mixe	er and Cond	rete Pump			
		II	Unit	: cum					
				ng Output = 120 cum					
			a)	Material					
			Cem	ent	tonne	47.950	9053.98	434138.34	M-081
			Coar	rse sand	cum	54.000	601.77	32495.58	M-004
			40 m	nm Aggregate	cum	43.200	1393.81	60212.59	M-055
				nm Aggregate	cum	43.200	1784.07	77071.82	M-053
				nm Aggregate	cum	21.600	1951.33	42148.73	M-051
			b)	Labour	Outri	21.000	1001.00	42140.70	
			-		day	0.940	354.00	207.26	L-12
			Mate		day	0.840	354.00	297.36	
			Maso		day	3.000	442.00	1326.00	L-11
			Mazo		day	18.000	310.00	5580.00	L-13
			c)	Machinery					
				hing Plant @ 20 cum/hour	hour	6.000	2787.61	16725.66	P&M-002
				erator 100 KVA	hour	6.000	849.56	5097.36	P&M-080
				ler 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
				sit Mixer 4 cum capacity for upto 1 km.	hour	6.000	1132.74	6796.44	P&M-049
				sit Mixer 4 cum capacity lead and 1 Km, L - lead in Kilometer	tonne. km	300L	18.94	0.00	P&M-050 Lead= 0 km
			Cond	crete Pump	hour	6.000	2576.11	15456.66	P&M-007
				Cum Basic Cost of Labour, N hinery (a+b+c)	Material &	5882.000			
			d)	Formwork @ 3.75 per cent	of cost of			26465.10	
			conc	rete i.e. cost of material, labou				20400.10	
			e)	GST @ 12 % on (a+b+c+d)				87864.12	
			f)	Overhead charges @ 20 %		4+0)		164013.03	
			u) g)	Contractor's profit @ 10 %	-			98407.82	
			9) h)	Cess @ 1% on (a+b+c+d+e-	-	1.6.1)		10824.86	
			,	for 120 cum = a+b+c+d+e+f+				1093310.85	
				per cum = ( a+b+c+d+e+f+g	•			9110.92	
				por cam (arbiciarottig	· <i>,,</i> 0		say	<u>9111.00</u>	
12.8		E	RCC	Grade M25					
		Case I	Usin	ig Concrete Mixer					
			Unit	= cum					
			Taki	ng output = 15 cum					
			a)	Material					
			Cem	ent	tonne	6.050	9053.98	54776.58	M-081
				rse sand	cum	6.750	601.77	4061.95	M-005
				ım Aggregate	cum	8.100	1784.07	14450.97	M-053
				nm Aggregate	cum	5.400	1951.33	10537.18	M-051
			10 m						
			b)	Labour		0.000	05100	00111	
			b) Mate	<del>)</del>	day	0.860	354.00	304.44	L-12
			b) Mate	e on	day day	1.500	442.00	663.00	L-12 L-11
			b) Mate Mase	e on door	day				L-12
			b) Mate Mase Maze c)	e on	day day	1.500	442.00	663.00	L-12 L-11 L-13
			Maso Mazo C)	e on door Machinery	day day day	1.500 20.000	442.00 310.00	663.00 6200.00	L-12 L-11
			b) Mate Mase Maze C) Cone Gene Per	on door Machinery crete mixer (cap. 0.40/0.28	day day day hour hour	1.500 20.000 6.000	442.00 310.00 269.91	663.00 6200.00 1619.46	L-12 L-11 L-13 P&M-009
			b) Mate Mase Maze C) Cone Gene Per	on door Machinery crete mixer (cap. 0.40/0.28 erator 33 KVA Cum Basic Cost of Labour, N	day day day hour hour	1.500 20.000 6.000 6.000	442.00 310.00 269.91	663.00 6200.00 1619.46	L-12 L-11 L-13 P&M-009
			Maso Maso C) Cond Gene Per Mac	Machinery crete mixer (cap. 0.40/0.28 erator 33 KVA Cum Basic Cost of Labour, Mhinery (a+b+c)	day day day hour hour <b>Material &amp;</b> of a+b+c.	1.500 20.000 6.000 6.000	442.00 310.00 269.91	663.00 6200.00 1619.46 2723.88	L-12 L-11 L-13 P&M-009
			b) Mate Mase C) Cone Gene Per ( Mac d)	Machinery crete mixer (cap. 0.40/0.28 cerator 33 KVA Cum Basic Cost of Labour, Inhinery (a+b+c) Formwork @ 3.75 per cent	day day hour hour Material &	1.500 20.000 6.000 6.000 6356.000	442.00 310.00 269.91	663.00 6200.00 1619.46 2723.88	L-12 L-11 L-13 P&M-009

				FOUNDATION	<u> </u>			
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+g)			1462.32	
			Cost for 15 cum = $a+b+c+d+e$				147694.71	
			Rate per cum = (a+b+c+d+e				9846.31	
12.8 E		Case	With Batching Plant, Transi	t Mixer and Cond	rete Pump	say	<u>9846.00</u>	
		II	Unit: cum					
			Taking Output = 120 cum					
			a) Material					
			Cement	tonne	48.380	9053.98	438031.55	M-081
			Coarse sand	cum	54.000	601.77	32495.58	M-004
			20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			b) Labour	Cum	40.200	1001.00	04207.40	
			Mate	day	0.840	354.00	297.36	L-12
			Mason	day	3.000	442.00	1326.00	L-11
			Mazdoor	day	18.000	310.00	5580.00	L-13
			c) Machinery	uay	10.000	310.00	5500.00	
			Batching Plant @ 20 cum/hou	ır hour	6.00	2787.61	16725.66	P&M-002
			Generator 100 KVA	hour				P&M-080
					6.00	849.56	5097.36	P&M-01
			Loader 1 cum capacity 1 cum		6.000	1398.23	8389.38	
			Transit Mixer 4 cum capacity lead upto 1 km.		15.00	1132.74	16991.10	P&M-04
			Transit Mixer 4 cum capacity beyond 1 Km, L - lead in Kilor		300L	18.94	0.00	P&M-05 Lead= 0 I
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-00
			Per Cum Basic Cost of Labo Machinery (a+b+c)	our, Material &	6170.000			
			d) Formwork @ 3.75 per concrete i.e. cost of material,				27761.09	
			machinery	rotq/			92166.83	
			e) GST @ 12 % on (a+b+ f) Overhead charges @ 2	•	+0)		172044.75	
			g) Contractor's profit @ '	-	-		103226.85	
			h) Cess @ 1% on (a+b+c+	•	,		11354.95	
			Cost for 120 cum = a+b+c+d+				1146850.32	
			Rate per cum = ( a+b+c+d+e	•			9557.09	
				σ,		say	<u>9557.00</u>	
12.8		F	PCC Grade M30			_		
		г						
			Using Concrete Mixer					
			Using Concrete Mixer					
			Using Concrete Mixer  Unit = cum					
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum	tonne	6.080	9053.98	55048.20	M-081
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material	tonne cum	6.080 6.750	9053.98 601.77	55048.20 4061.95	M-081 M-005
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement					
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement Coarse sand	cum	6.750	601.77	4061.95	M-005
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement  Coarse sand 40 mm Aggregate	cum cum	6.750 5.400	601.77 1393.81	4061.95 7526.57	M-005 M-055
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement  Coarse sand  40 mm Aggregate  20 mm Aggregate	cum cum cum	6.750 5.400 5.400	601.77 1393.81 1784.07	4061.95 7526.57 9633.98	M-005 M-055 M-053
			Using Concrete Mixer Unit = cum Taking output = 15 cum a) Material Cement Coarse sand 40 mm Aggregate 20 mm Aggregate 10 mm Aggregate	cum cum cum	6.750 5.400 5.400	601.77 1393.81 1784.07	4061.95 7526.57 9633.98	M-055 M-053
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement  Coarse sand  40 mm Aggregate  20 mm Aggregate  10 mm Aggregate  b) Labour	cum cum cum	6.750 5.400 5.400 2.700	601.77 1393.81 1784.07 1951.33	4061.95 7526.57 9633.98 5268.59	M-005 M-055 M-053 M-051
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement Coarse sand 40 mm Aggregate 20 mm Aggregate 10 mm Aggregate b) Labour  Mate	cum cum cum cum	6.750 5.400 5.400 2.700	601.77 1393.81 1784.07 1951.33	4061.95 7526.57 9633.98 5268.59 304.44	M-005 M-055 M-053 M-051
			Using Concrete Mixer  Unit = cum  Taking output = 15 cum  a) Material Cement Coarse sand 40 mm Aggregate 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason	cum cum cum day	6.750 5.400 5.400 2.700 0.860 1.500	601.77 1393.81 1784.07 1951.33 354.00 442.00	4061.95 7526.57 9633.98 5268.59 304.44 663.00	M-005 M-055 M-053 M-051 L-12 L-11

				FOUNDATION	<u> </u>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-07
			Per Cum Basic Cost of Labo Machinery (a+b+c)	our, Material &	6204.000			
			d) Formwork @ 3.50 per of cost of concrete i.e. cost of material, labour and machiner				3256.75	
			e) GST @ 12 % on (a+b+	c+d)			11556.82	
			f) Overhead charges @ 20		21572.73			
			g) Contractor's profit @ 1	-	d+e+f)		12943.64	
			h) Cess @ 1% on (a+b+c+c				1423.80	
			Cost for 15 cum = a+b+c+d+e	J			143803.81	
			Rate per cum = (a+b+c+d+e+	+f+g+h)/15			9586.92	
12.8 F		Case II	Using Batching Plant, Trans	it Mixer and Co	ncrete Pump	say	<u>9587.00</u>	
		"	Unit : cum					
			Taking Output = 120 cum					
			a) Material					
			Cement	tonne	48.600	9053.98	440023.43	M-081
			Coarse sand	cum	54.000	601.77	32495.58	M-004
			40 mm Aggregate	cum	43.200	1393.81	60212.59	M-055
			20 mm Aggregate	cum	43.200	1784.07	77071.82	M-053
			10 mm Aggregate	cum	21.600	1951.33	42148.73	M-051
			b) Labour	Cum	21.000	1001.00	42140.70	
			Mate	day	0.840	354.00	297.36	L-12
			Mason	•	3.000	442.00	1326.00	L-11
				day				L-13
			Mazdoor	day	18.000	310.00	5580.00	L-10
			c) Machinery	r bour	6.00	2727.61	16705 66	P&M-00
			Batching Plant @ 20 cum/hou		6.00	2787.61	16725.66	
			Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-08
			Loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-01
			Transit Mixer 4 cum capacity for lead upto 1 km.	or hour	15.00	1132.74	16991.10	P&M-04
			Transit Mixer 4 cum capacity le beyond 1 Km, L - lead in Kilom		300L	18.94	0.00	P&M-05 Lead= 0
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-00
			Per Cum Basic Cost of Labo Machinery (a+b+c)	our, Material &	6016.000			
			d) Formwork @ 3.50 per of cost of concrete i.e. cost of material, labour and machiner	у			25263.55	
			e) GST @ 12 % on (a+b+	-			89649.51	
			f) Overhead charges @ 2	-	-		167345.75	
			g) Contractor's profit @ 1	•	d+e+f)		100407.45	
			h) Cess @ 1% on (a+b+c+				11044.82	
			Cost for 120 cum = $a+b+c+d+c$	•			1115526.75	
			Rate per cum = ( a+b+c+d+e		9296.06			
40.0		c	DCC Crade M20			say	<u>9296.00</u>	
12.8		G Case I	RCC Grade M30 Using Concrete Mixer					
12.0			<del>-</del>					
12.0			Unit = cum					
12.0			Unit = cum Taking output = 15 cum					
12.6			Unit = cum Taking output = 15 cum a) Material					
12.0			Taking output = 15 cum	tonne	6.100	9053.98	55229.28	M-081

			F	OUNDATION	<u>S</u>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.860	354.00	304.44	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	20.000	310.00	6200.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
			Per Cum Basic Cost of Labour Machinery (a+b+c)	, Material &	6387.000			
			d) Formwork @ 3.5 per cent concrete i.e. cost of material, laboration machinery				3352.66	
			e) GST @ 12 % on (a+b+c+	d)			11897.14	
			f) Overhead charges @ 20 %	% on (a+b+c+	d+e)		22207.99	
			g) Contractor's profit @ 10 9	-	-		13324.80	
			h) Cess @ 1% on (a+b+c+d+	-			1465.73	
			Cost for 15 cum = $a+b+c+d+e+f+$				148038.48	
				•				
			Rate per cum = (a+b+c+d+e+f+	g+n)/15			9869.23	
2.8 G		Caeo	Using Batching Plant, Transit I	Miyor and Ca	noroto Dumn	say	<u>9869.00</u>	
2.0 G		II	Unit = cum	WIIXEI AIIU COI	icrete Fullip			
			Taking output = 120 cum					
			a) Material					
			Cement	tonne	48.800	9053.98	441834.22	M-081
			Coarse sand	cum	54.000	601.77	32495.58	M-004
			20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			b) Labour					
			Mate	day	0.840	354.00	297.36	L-12
			Mason	day	3.000	442.00	1326.00	L-11
			Mazdoor	day	18.000	310.00	5580.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
			Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
			Loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.00	1132.74	16991.10	P&M-049
			Transit Mixer 4 cum capacity lead beyond 1 Km, L - lead in Kilomet		300L	18.94	0.00	P&M-050 Lead= 0 km
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
			Per Cum Basic Cost of Labour Machinery (a+b+c)	, Material &	6201.000			
			d) Formwork @ 3.5 per cent concrete i.e. cost of material, lab				26043.45	
			machinery e) GST @ 12 % on (a+b+c+	d)			92417.04	
			f) Overhead charges @ 20 %	-	i+e)		172511.80	
			·	-	-		103507.08	
			g) Contractor's profit @ 10 9	-	u <del>reti</del> j			
			h) Cess @ 1% on (a+b+c+d+				11385.78	
			Cost for 120 cum = a+b+c+d+e+	•			1149963.67	
			Rate per cum = ( a+b+c+d+e+f-	+g+h )/120		say	9583.03 <u>9583.00</u>	
		н	RCC Grade M35			Cuy	2 300,00	

12.8 H RCC Grade M35

Case I Using Concrete Mixer

Sr No	Ref. to						
	MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Cement	tonne	6.330	9053.98	57311.69	M-081
		Coarse sand	cum	6.750	601.77	4061.95	M-005
		20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
		10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
		b) Labour					
		Mate	day	0.860	354.00	304.44	L-12
		Mason	day	1.500	442.00	663.00	L-11
		Mazdoor	day	20.000	310.00	6200.00	L-13
		c) Machinery		0.000	000.04	1010.10	D0M 000
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
		Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
		Per Cum Basic Cost of Labour, I Machinery (a+b+c)	Vlaterial &	6525.000			
		d) Formwork @ 3 per cent on	a+b+c			2936.18	
		e) GST @ 12 % on (a+b+c+d)	)			12097.05	
		f) Overhead charges @ 20 % o		te)		22581.16	
		g) Contractor's profit @ 10 %	•	•		13548.70	
		h) Cess @ 1% on (a+b+c+d+e+	-	.,		1490.36	
		Cost for 15 cum = $a+b+c+d+e+f+g$				150526.02	
		· ·				10035.07	
		Rate per cum = (a+b+c+d+e+f+g-	TII)/ IO			10035.07	
		_	,		say	<u>10035.00</u>	
2.8 H		ase Using Batching Plant, Transit Mi	xer and Con	crete Pump	say	<u>10035.00</u>	
2.8 H		II Unit; cum	xer and Con	crete Pump	say	<u>10035.00</u>	
2.8 H		II  Unit; cum  Taking Output = 120 cum	xer and Con	crete Pump	say	<u>10035.00</u>	
2.8 H		II  Unit; cum  Taking Output = 120 cum  a) Material		•			M_084
2.8 H		Unit; cum  Taking Output = 120 cum  a) Material Cement	tonne	50.640	9053.98	458493.55	M-081
2.8 H		Unit; cum  Taking Output = 120 cum  a) Material  Cement  Coarse sand	tonne cum	50.640 54.000	9053.98 601.77	458493.55 32495.58	M-004
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate	tonne cum cum	50.640 54.000 64.800	9053.98 601.77 1784.07	458493.55 32495.58 115607.74	M-004 M-053
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate	tonne cum	50.640 54.000	9053.98 601.77	458493.55 32495.58	M-004
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour	tonne cum cum cum	50.640 54.000 64.800 43.200	9053.98 601.77 1784.07 1951.33	458493.55 32495.58 115607.74 84297.46	M-004 M-053 M-051
2.8 H		Unit; cum  Taking Output = 120 cum  a) Material  Cement  Coarse sand  20 mm Aggregate  10 mm Aggregate  b) Labour  Mate	tonne cum cum cum	50.640 54.000 64.800 43.200	9053.98 601.77 1784.07 1951.33	458493.55 32495.58 115607.74 84297.46 297.36	M-004 M-053 M-051
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason	tonne cum cum day day	50.640 54.000 64.800 43.200 0.840 3.000	9053.98 601.77 1784.07 1951.33 354.00 442.00	458493.55 32495.58 115607.74 84297.46 297.36 1326.00	M-004 M-053 M-051 L-12 L-11
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor	tonne cum cum cum	50.640 54.000 64.800 43.200	9053.98 601.77 1784.07 1951.33	458493.55 32495.58 115607.74 84297.46 297.36	M-004 M-053 M-051 L-12
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery	tonne cum cum day day	50.640 54.000 64.800 43.200 0.840 3.000	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00	458493.55 32495.58 115607.74 84297.46 297.36 1326.00	M-004 M-053 M-051 L-12 L-11 L-13
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor	tonne cum cum day day	50.640 54.000 64.800 43.200 0.840 3.000	9053.98 601.77 1784.07 1951.33 354.00 442.00	458493.55 32495.58 115607.74 84297.46 297.36 1326.00	M-004 M-053 M-051 L-12 L-11 L-13
2.8 H		Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate b) Labour Mate Mason Mazdoor c) Machinery	tonne cum cum day day day day	50.640 54.000 64.800 43.200 0.840 3.000 18.000	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00	M-004 M-053 M-051 L-12 L-11 L-13
2.8 H		Unit; cum  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	tonne cum cum day day day hour	50.640 54.000 64.800 43.200 0.840 3.000 18.000 6.00 6.000	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00 2787.61 849.56 1398.23	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00 16725.66 5097.36 8389.38	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017
2.8 H		Unit; cum 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	tonne cum cum day day day hour	50.640 54.000 64.800 43.200 0.840 3.000 18.000 6.00	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00 2787.61 849.56	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00 16725.66 5097.36	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017
2.8 H		Unit; cum  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	tonne cum cum day day day hour hour hour hour tonne.	50.640 54.000 64.800 43.200 0.840 3.000 18.000 6.00 6.000	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00 2787.61 849.56 1398.23	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00 16725.66 5097.36 8389.38	M-004 M-053 M-051  L-12 L-11 L-13  P&M-002 P&M-080 P&M-080 P&M-049
2.8 H		Unit; cum  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	tonne cum cum day day day hour hour hour hour hour hour	50.640 54.000 64.800 43.200 0.840 3.000 18.000 6.00 6.000 15.00	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00 2787.61 849.56 1398.23 1132.74	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00 16725.66 5097.36 8389.38 16991.10	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-049 P&M-050 Lead= 0 km
2.8 H		Unit; cum  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 beyond 1 Km, L - lead in Kilometer Concrete Pump Per Cum Basic Cost of Labour, I	tonne cum cum day day day hour hour hour hour hour	50.640 54.000 64.800 43.200 0.840 3.000 18.000 6.000 6.000 15.00 300L	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00 2787.61 849.56 1398.23 1132.74	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00 16725.66 5097.36 8389.38 16991.10	M-004 M-053 M-051 L-12 L-11 L-13 P&M-002 P&M-080 P&M-049 P&M-050 Lead= 0 km
2.8 H		Unit; cum  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 beyond 1 Km, L - lead in Kilometer  Concrete Pump Per Cum Basic Cost of Labour, I Machinery (a+b+c) d) Formwork @ 3 per cent of cost of concrete i.e. cost of	tonne cum cum day day day hour hour hour hour hour	50.640 54.000 64.800 43.200 0.840 3.000 18.000 6.000 6.000 15.00 300L	9053.98 601.77 1784.07 1951.33 354.00 442.00 310.00 2787.61 849.56 1398.23 1132.74	458493.55 32495.58 115607.74 84297.46 297.36 1326.00 5580.00 16725.66 5097.36 8389.38 16991.10 0.00	M-004 M-053 M-051 L-12 L-11

				FOI	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			g)	Contractor's profit @ 10 % o	n (a+h+c	 +d+a+f)		105313.23	
				Cess @ 1% on (a+b+c+d+e+	•			11584.46	
			,	for 120 cum = $a+b+c+d+e+f+c$	•			1170030.00	
				per cum = ( a+b+c+d+e+f+g-				9750.25	
			rtuto	por cam (a.b.o.a.o.i.g	,,0		say	<u>9750.00</u>	
		Note:	trans weig	re ever concrete is carried it mixer, concrete pump, Adm ht of cement may be added fo ncrete.	nixtures @	0.4 per cent of	·		
12.9	1200			L FOUNDATION viding and Constructing Ten	nporary Is	land 16 m diame	ter for Constru	ıction of Well	
			Four	ndation for 8m dia. Well.					
		Α	Assı	uming depth of water 1.0 m a	nd height	of island to be 1.	25 m.		
			Unit	= 1 No					
			Taki	ng output = 1 No.					
			a)	Material					
			Earth	n (compacted)	cum	251.200	0.00	0.00	M-092
			Sand	l bags	each	750.000	9.82	7365.00	M-159
			b)	Labour			<del>-</del>		
			Mate		day	0.400	354.00	141.60	L-12
				door for filling sand bags,	day	15.000	310.00	4650.00	L-13
				ning and placing  Machinery	Í				
			Cran	e with grab 1 cum capacity	hour	20.000	1038.94	20778.80	P&M-01
			Cons	sumables @ 2.5 per cent of (c)	)			519.47	
			<b>d)</b>	GST @ 12 % on (a+b+c)				4014.58	
			e)	Overhead charges @ 20 % c	on (a+b+c	+d)		7493.89	
			•	Contractor's profit @ 10 % o	-	-		4496.33	
			-	Cess @ 1% on (a+b+c+d+e+	-	,		494.60	
			Rate	per No. (a+b+c+d+e+f+g)				49954.27	
		Note		assumed that earth will be avail	lable withii	n the working	say	<u>49954.00</u>	
40.0		ь	-	e of crane with grab bucket.		afialand 4 F			
12.9		В	Unit Taki	uming depth of water 4.0 m a = 1No ng output = 1 No	na neignt	of Island 4.5 m.			
			,	Material n (compacted)	cum	904.320	0.00	0.00	M-092
				l bags	each	6000.000	9.82	58920.00	M-159
			Woo	den ballies 8" Dia and 9 m	each	95.000	552.21	52459.95	M-194
				den ballies 2" Dia for bracing	metre	190.000	42.48	8071.20	M-193
			b) Mate	Labour	day	5.600	354.00	1982.40	L-12
			Mazo	door for piling 8" dia ballies for g 8" dia ballies	day	18.000	310.00	5580.00	L-13
				door for bracing with 2" dia	day	12.000	310.00	3720.00	L-13
			Mazo stitch	door for filling sand bags, ning and placing	day	110.000	310.00	34100.00	L-13
				Machinery e with grab 1 cum capacity sumables and other arrangeme	hour ents for pili	50.000 ng ballies @ 2.5	1038.94	51947.00 5419.51	P&M-01

				DUNDATION				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
	1		d) GST @ 12 % on (a+b+c)				26664.01	
			e) Overhead charges @ 20 %	on (a+b+c+	·d)		49772.81	
			f) Contractor's profit @ 10 %	,	•		29863.69	
			g) Cess @ 1% on (a+b+c+d+e-	-	,		3285.01	
			Rate per No. (a+b+c+d+e+f+g)	-,			331785.58	
			, , , , , , , , , , , , , , , , , , ,			say	331786.00	
12.9		Note C	For other well diameters rate can of cross-sectional area of well. The be in the conformity with c specifications.  Providing and constructing one	e diameter o lause 1203	f the island shall 3.2 of MoRTH			
12.0			pier location to another pier loca		nee road to read	on island local	ion nom one	
			Assuming span length 30 m, width of service road 10m and depth of water 1m  Unit = 1 meter  Taking output = 30 metre					
			a) Material Earth	cum	450.000	0.00	0.00	M-09
			Sand bags	each	300.000	9.82	2946.00	M-15
			b) Labour					
			Mazdoor for filling cond bags	day	0.240	354.00	84.96	L-12 L-13
			Mazdoor for filling sand bags, stitching and placing	day	6.000	310.00	1860.00	L-1.
			c) Machinery	hour	27.000	1200.02	27752.04	P&M-
			Front end Loader 1 cum capacity	hour	27.000	1398.23	37752.21	
			Tipper 5.5 cum capacity	hour	28.000	779.65	21830.20	P&M-0
			d) GST @ 12 % on (a+b+c)				7736.80	
			e) Overhead charges @ 20 %	on (a+b+c+	·d)		14442.03	
			f) Contractor's profit @ 10 %	on (a+b+c+	-d+e)		8665.22	
			g) Cess @ 1% on (a+b+c+d+e	+f)			953.17	
			Cost for 30 m (a+b+c+d+e+f+g)				96270.59	
			Rate per m (a+b+c+d+e+f+g)/30				3209.02	
	1000.0					say	<u>3209.00</u>	
12.10	1200 & 1900		Providing and Laying Cutting I Foundation complete as per Dra  Unit = 1 MT	•	•	• • •	netre for Well	
			Taking output = 1 MT					
			a) Material					
			Structural steel in plates, angles, etc including 5 per cent wastage	tonne	1.050	48312.00	50727.60	M-17
			Nuts & bolts	Kg	20.000	111.50	2230.00	M-13
			b) Labour	3				
			(for cutting, bending, makin holes, joining, welding an erecting in position)	_				
			Mate	day	1.320	354.00	467.28	L-12
			Fitter	day	5.500	442.00	2431.00	L-08
			Blacksmith	day	5.500	442.00	2431.00	L-02
			Welder	day	5.500	442.00	2431.00	L-02
			Mazdoor	day	16.500	310.00	5115.00	L-13
			Electrodes, cutting gas and other consumables @ 10 per cent cost of (a) above				5295.76	
			c) GST @ 12 % on (a+b)				8535.44	
			d) Overhead charges @ 20 %				15032 82	

15932.82

Overhead charges @ 20 % on (a+b+c)

d)

			FOUNDATIONS				
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+d)			9559.69	
			f) Cess @ 1% on (a+b+c+d+e)			1051.57	
			Rate per MT (a+b+c+d+e+f)			106208.16	
					say	<u>106208.00</u>	
12.11	1200, 1500 & 1700	)	Plain/Reinforced Cement Concrete, in Well F Technical Specification.	oundation co	omplete as per	Drawing and	
			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 & Machin ( excluding GST, OH, CP & Cess)			5849.00	12.8 (C) Case I
			<ul><li>d) formwork @ 20 per cent of the cost of cone</li><li>e) GST @ 12 % on (a+b+c+d)</li></ul>	crete		1169.80 842.26	
			f)	۵۱		1572.21	
			g) Contractor's profit @ 10 % on (a+b+c+d+	-		943.33	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	<b>0</b> 1,		103.77	
			Rate perm (a+b+c+d+e+f+g+h)			10480.37	
12.11 A			With Batching Plant, Transit Mixer and Concre	ete Pump	say	<u>10480.00</u>	
(i)		II	Per Cum Basic Cost of Labour, Material & Machir ( excluding GST, OH, CP & Cess)	nery <b>(a+b+c)</b>		5663.00	12.8 (C) Case II
			d) formwork @ 20 per cent of the cost of cond	crete		1132.60	
			e) GST @ 12 % on (a+b+c+d)			815.47	
			f) Overhead charges @ 20 % on (a+b+c+d+	e)		1522.21	
			g) Contractor's profit @ 10 % on (a+b+c+d+	-		913.33	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			100.47	
			Rate perm (a+b+c+d+e+f+g+h)			10147.08	
12.11 A		(ii)	RCC M25 Grade		say	<u>10147.00</u>	
			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 & Machir ( excluding GST, OH, CP & Cess)	nery (a+b+c)		6356.00	Item 12.8 (E) I
			d) formwork @ 20 per cent of the cost of concrete			1271.20	
			e) GST @ 12 % on (a+b+c+d)			915.26	
			f) Overhead charges @ 20 % on (a+b+c+d+c	-		1708.49	
			g) Contractor's profit @ 10 % on (a+b+c+d+	e+f)		1025.10	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			112.76	
			Rate perm (a+b+c+d+e+f+g+h)			11388.81	
12.11 A (ii)		Case II	With Batching Plant, Transit Mixer and Concre	ete Pump	say	<u>11389.00</u>	
. ,			Per Cum Basic Cost of Labour, Material & Machir ( excluding GST, OH, CP & Cess)	nery (a+b+c)		6268.00	Item 12.8 (E) II
			d) formwork @ 20 per cent of the cost of concrete			1253.60	
			e) GST @ 12 % on (a+b+c+d)			902.59	

			FOUNDATIONS			
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)		1684.84	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1010.90	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		111.20	
			Rate perm (a+b+c+d+e+f+g+h)		11231.13	
				say	<u>11231.00</u>	
12.11 A		(iii)	RCC M35 Grade			
		Case I	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.  Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) ( excluding GST, OH, CP & Cess)		6525.00	Item 12.8 (H) I
			d) formwork @ 20 per cent of the cost of concrete		1305.00	
			e) GST @ 12 % on (a+b+c+d)		939.60	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1753.92	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1052.35	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		115.76	
			Rate perm (a+b+c+d+e+f+g+h)	say	11691.63 <u>11692.00</u>	
12.11 A (iii)		Case II	With Batching Plant, Transit Mixer and Concrete Pump	Suy	11032.00	
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) ( excluding GST, OH, CP & Cess)		6443.00	Item 12.8 (H) II (SA)
			d) formwork @ 20 per cent of the cost of concrete		1288.60	
			e) GST @ 12 % on (a+b+c+d)		927.79	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1731.88	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1039.13	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		114.30	
			Rate perm (a+b+c+d+e+f+g+h)		11544.70	
		Note.	If curb concrete is carried out within steel liner, cost of formwork shall be excluded.	say	<u>11545.00</u>	
12.11		В	Well steining			
		<b>(I)</b>	PCC M15 Grade			
			Same as for 12.8 (A) (SA) except for formwork which shall be @ 10 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)		5072.00	Item 12.8 A (SA)
			d) formwork @ 10 per cent of the cost of concrete		507.20	
			e) GST @ 12 % on (a+b+c+d)		669.50	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1249.74	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		749.84	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		82.48	
			Rate perm (a+b+c+d+e+f+g+h)		8330.76	
				say	<u>8331.00</u>	
12.11 B		(ii)	PCC M20 Grade		_	
			Same as for 12.8 (B) except for formwork			

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.

		FOUNDATIONS			
Sr No Ref. to MoRTH DSR Spe	1	Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	Case	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		5649.00	Item 12.8 (B)
		d) formwork @ 10 per cent of the cost of concrete		564.90	
		e) GST @ 12 % on (a+b+c+d)		745.67	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1391.91	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		835.15	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		91.87	
		Rate perm (a+b+c+d+e+f+g+h)		9278.50	
		Trate point (a b o a contiguit)	say	<u>9279.00</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.			
	Case I	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) ( excluding GST, OH, CP & Cess)		5849.00	Item 12.8 (C) I
		d) formwork @ 10 per cent of the cost of concrete		584.90	
		e) GST @ 12 % on (a+b+c+d)		772.07	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1441.19	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		864.72	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		95.12	
		Rate perm (a+b+c+d+e+f+g+h)		9607.00	
12.11 B (iii)		With Batching Plant, Transit Mixer and Concrete Pump	say	<u>9607.00</u>	
	II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5663.00	Item 12.8 (C) II (SA)
		d) formwork @ 10 per cent of the cost of concrete		566.30	
		e) GST @ 12 % on (a+b+c+d)		747.52	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1395.36	
				837.22	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f) h) Cess @ 1% on (a+b+c+d+e+f+g)		92.09	
		Rate perm (a+b+c+d+e+f+g+h)		9301.49	
		rate periii (a.b.c.a.e.i.g.ii)			
12.11 B	(iv)	PCC M25 Grade	say	<u>9301.00</u>	
	Case	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)		6150.00	Item 12.8 (D) I
		d) formwork @ 10 per cent of the cost of concrete		615.00	
		e) GST @ 12 % on (a+b+c+d)		811.80	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1515.36	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		909.22	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		100.01	
		Rate perm (a+b+c+d+e+f+g+h)		10101.39	
				10101.55	

			FOUNDATIONS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity Ra	ate Rs	Cost Rs	Remarks/ Input ref.
2.11 B	(iv)	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)		5967.00	Item 12.8 (D) II (SA)
			d) formwork @ 10 per cent of the cost of concrete		596.70	
			e) GST @ 12 % on (a+b+c+d)		787.64	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1470.27	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		882.16	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		97.04	
			Rate perm (a+b+c+d+e+f+g+h)		9800.81	
'12.11 B		(v)	DOC MOS Crede	say	<u>9801.00</u>	
12.11 B		(♥)	RCC M25 Grade 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) ( excluding GST, OH, CP & Cess)		6356.00	Item 12.8 (E) I
			d) formwork @ 10 per cent of the cost of concrete		635.60	
			e) GST @ 12 % on (a+b+c+d)		838.99	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1566.12	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		939.67	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		103.36	
			Rate perm (a+b+c+d+e+f+g+h)		10439.74	
I2.11 B	(v)		With Batching Plant, Transit Mixer and Concrete Pump	say	<u>10440.00</u>	
		II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6268.00	Item 12.8 (E) II
			d) formwork @ 10 per cent of the cost of concrete		626.80	
			e) GST @ 12 % on (a+b+c+d)		827.38	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1544.44	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		926.66	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		101.93	
			Rate perm (a+b+c+d+e+f+g+h)		10295.21	
				say	<u>10295.00</u>	
'12.11 B		(vi)	PCC M30 Grade  Same as for 12.8 (F) I except for formwork which shall be @ 10 per c	ent 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) (excluding GST, OH, CP & Cess)		6204.00	Item 12.8 (F) I
			d) formwork @ 10 per cent of the cost of concrete		620.40	
			e) GST @ 12 % on (a+b+c+d)		818.93	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1528.67	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		917.20	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		100.89	
			Rate perm (a+b+c+d+e+f+g+h)		10190.09	
12.11 B	(vi)	Case	With Batching Plant, Transit Mixer and Concrete Pump	say	<u>10190.00</u>	
		"	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6016.00	Item 12.8 (F) II

		FOUNDATIONS			
M M	tef. to oRTH/ R Spec.	Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		d) formwork @ 10 per cent of the cost of concrete		601.60	
		e) GST @ 12 % on (a+b+c+d)		794.11	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1482.34	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		889.41	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		97.83	
		Rate perm (a+b+c+d+e+f+g+h)		9881.29	
			say	<u>9881.00</u>	
'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.			
	Case	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6387.00	Item 12.8 (G) I
		d) formwork @ 10 per cent of the cost of concrete		638.70	
		e) GST @ 12 % on (a+b+c+d)		843.08	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1573.76	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		944.25	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		103.87	
		Rate perm (a+b+c+d+e+f+g+h)		10490.66	
12.11 B (vii)	Cas II	With Batching Plant, Transit Mixer and Concrete Pump	say	<u>10491.00</u>	
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) ( excluding GST, OH, CP & Cess)		6201.00	Item 12.8 (G) II
		d) formwork @ 10 per cent of the cost of concrete		620.10	
		e) GST @ 12 % on (a+b+c+d)		818.53	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1527.93	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		916.76	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		100.84	
		Rate perm (a+b+c+d+e+f+g+h)		10185.16	
'12.11 B	(viii	RCC M35 Grade	say	<u>10185.00</u>	
		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)		6525.00	12.8 (H)
		d) formwork @ 10 per cent of the cost of concrete		652.50	
		e) GST @ 12 % on (a+b+c+d)		861.30	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1607.76	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		964.66	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		106.11	
		Rate perm (a+b+c+d+e+f+g+h)		10717.33	
12.11 B (vi		With Batching Plant, Transit Mixer and Concrete Pump	say	<u>10717.00</u>	
	11	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6443.00	
		( excluding GST, OH, CP & Cess)			

			FO	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d) formwork @ 10 per cent of the cost of concrete	of			644.30	
			e) GST @ 12 % on (a+b+c+d)	)			850.48	
			f) Overhead charges @ 20 % o		d+e)		1587.56	
			g) Contractor's profit @ 10 %	-	•		952.53	
			h) Cess @ 1% on (a+b+c+d+e+	•	•		104.78	
			Rate perm (a+b+c+d+e+f+g+h)	-			10582.65	
'12.11 B		(iv)	RCC M40 Grade			say	<u>10583.00</u>	
12.11 B		(ix)	Using Batching Plant, Transit Mi	ixer and Co	ncrete Pumn			
			Unit = cum	.xo. aa o	moroto i ump			
			Taking output = 120 cum					
			a) Material Cement	tonne	51.600	9053.98	467185.37	M-081
			Coarse Sand	cum	54.000	601.77	32495.58	M-004
			20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			Admixture	kg	206.000	61.06	12578.36	M-180
			b) Labour	-				
			Mate	day	0.840	354.00	297.36	L-12
			Meson	day	3.000	442.00	1326.00	L-11
			Mazdoor	day	18.000	310.00	5580.00	L-13
			c) Machinery		0.00	0707.04	40705.00	D 0 M 002
			Batching Plant	hour	6.00	2787.61	16725.66	P&M-002
			Generator 100 KVA	hour	6.000	849.56	5097.36	P&M-080
			Loader 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017 P&M-049
			Transit Mixer 4 cum capacity for lead upto 1 km.	hour	15.000	1132.74	16991.10	
			Transit Mixer 4 cum capacity for lead beyond 1 km.	tonne. km	300xL	18.94	0.00	Lead= 0 , P&M-050
			Concrete Pump	hour	6.000	2576.11	15456.66	P&M-007
			Per Cum Basic Cost of Labour, I Machinery (a+b+c)	Material &	52136.000			
			d) Formwork @ 10 per cent or concrete i.e. cost of material, labou machinery				78202.80	
			e) GST @ 12 % on (a+b+c+d)	)			103227.70	
			f) Overhead charges @ 20 % o	on (a+b+c+	d+e)		192691.71	
			g) Contractor's profit @ 10 %	on (a+b+c	+d+e+f)		115615.02	
			h) Cess @ 1% on (a+b+c+d+e+	⊦f+g)			12717.65	
			cost of 120 cum = a+b+c+d+e+f+g	+h			1284482.91	
			Rate per cum = (a+b+c+d+e+f+g	+h)/120			10704.02	
40.44.0		C	Dattara Dive			say	<u>10704.00</u>	
12.11 C		С	Bottom Plug Concrete to be placed using tremie	e pipe				
			Note: 10% extra cement to be addeunder water concreting is involved	ed where				
		(i)	PCC Grade M20					
			Using Concrete Mixer					
			Unit = cum					
			Taking output = 15 cum					
			a) Material					
			Cement	tonne	5.550	9053.98	50249.59	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-005
			40 mm Aggregate	cum	5.400	1393.81	7526.57	M-055
			15 mm / tggrogato	Guili	J. <del>4</del> 00	1000.01	1020.01	

Sr No	Ref. to	December	Ha!4	Ougatite:	Date De	Cost Da	Remarks
	MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Input ref
[	Į.	20 mm Aggregate	cum	5.400	1784.07	9633.98	M-053
		10 mm Aggregate	cum	2.700	1951.33	5268.59	M-051
		Admixture	Kg	18.600	61.06	1135.72	M-180
		b) Labour					
		Mate	day	0.900	354.00	318.60	L-12
		Mason	day	1.500	442.00	663.00	L-11
		Mazdoor	day	20.000	310.00	6200.00	L-13
		c) Machinery					
		Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-00
		Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-07
		Light Crane 3 tonnes capacity for handling tremie pipe	hour	6.000	433.63	2601.78	P&M-01
		Per Cum Basic Cost of Labour Machinery (a+b+c)	, Material &	6134.000			
		Add 5 per cent of cost of materia towards cost of forming sump bunds, chiselling and making a for under water concreting with tr	o, protective rrangements			4252.90	
		d) GST @ 12 % on (a+b+c)				11550.72	
		e) Overhead charges @ 20 %	% on (a+b+c+d	i)		21561.35	
		f) Contractor's profit @ 10 %	-			12936.81	
		i) Continuotoi o pront @ 10 /	011 (a · b · 0 · a	- 0)		12000.01	
		a) Coop @ 40/ on /othtotel	o.1.6/			1422.05	
		g) Cess @ 1% on (a+b+c+d+				1423.05	
		cost of 15 cum = a+b+c+d+e+f+g	J			143727.95	
			J		eav	143727.95 9581.86	
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I	g)/15	ne/concrete pum	say p	143727.95	
I2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I	g)/15	ne/concrete pum	_	143727.95 9581.86	
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I Unit; cum	g)/15	ne/concrete pum	_	143727.95 9581.86	
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I	g)/15	ne/concrete pum	_	143727.95 9581.86	
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I Unit; cum Taking Output = 120 cum	g)/15	ne/concrete pum 44.400	_	143727.95 9581.86	M-081
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I Unit; cum Taking Output = 120 cum a) Material	g)/15 Mixer and Cra		p	143727.95 9581.86 <u>9582.00</u>	M-081 M-004
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I Unit; cum Taking Output = 120 cum a) Material Cement	g)/15 Mixer and Crai tonne	44.400	9053.98	143727.95 9581.86 <u>9582.00</u> 401996.71	
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case II Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand	g)/15 Mixer and Crai tonne cum	44.400 54.000	9053.98 601.77	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58	M-004
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case II Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate	g)/15 Mixer and Cran tonne cum cum	44.400 54.000 64.800	9053.98 601.77 1784.07	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74	M-004 M-053
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case II Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour	tonne cum cum	44.400 54.000 64.800 43.200 148.800	9053.98 601.77 1784.07 1951.33 61.06	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46 9085.73	M-004 M-053 M-051 M-180
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case Using Batching Plant, Transit I Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture	tonne cum cum	44.400 54.000 64.800 43.200	9053.98 601.77 1784.07 1951.33	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46	M-004 M-053 M-051
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case II Unit; cum Taking Output = 120 cum a) Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture b) Labour	tonne cum cum Kg	44.400 54.000 64.800 43.200 148.800	9053.98 601.77 1784.07 1951.33 61.06	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46 9085.73	M-004 M-053 M-051 M-180
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g Rate per cum = (a+b+c+f+g) Rate per cum = (a+b+	tonne cum cum Kg day	44.400 54.000 64.800 43.200 148.800	9053.98 601.77 1784.07 1951.33 61.06	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46 9085.73 311.52	M-004 M-053 M-051 M-180 L-12
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+ Case II 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	44.400 54.000 64.800 43.200 148.800 0.880 3.000	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00	M-004 M-053 M-051 M-180 L-12
2.11 C (i	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g Rate per cum = (a+b+c+f+g)	tonne cum cum Kg day day	44.400 54.000 64.800 43.200 148.800 0.880 3.000	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13
2.11 C (	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g	tonne cum cum Kg day day day	44.400 54.000 64.800 43.200 148.800 0.880 3.000 18.000	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00	143727.95 9581.86 <u>9582.00</u> 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00 5580.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13
2.11 C (	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g Rate	tonne cum cum cum Kg day day day hour	44.400 54.000 64.800 43.200 148.800 0.880 3.000 18.000	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00	143727.95 9581.86 9582.00 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00 5580.00	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-00 P&M-08
2.11 C (	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g Rate	tonne cum cum cum day day day hour hour hour	44.400 54.000 64.800 43.200 148.800 0.880 3.000 18.000 6.00 6.000 15.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23 1132.74	143727.95 9581.86 9582.00 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00 5580.00 16725.66 5097.36 8389.38 16991.10	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-00 P&M-08 P&M-01 P&M-04
2.11 C (	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g Rate per cum Rate Output = 120 cum Rate Admixture Rate per cum Aggregate Rate per cum Rate per cum Aggregate Rate per cum Rate	tonne cum cum Kg day day day hour hour hour hour d tonne.	44.400 54.000 64.800 43.200 148.800 0.880 3.000 18.000 6.00 6.000	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23	143727.95 9581.86 9582.00 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00 5580.00 16725.66 5097.36 8389.38	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-00 P&M-08 P&M-04 P&M-04
2.11 C (	i)	cost of 15 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g Rate	tonne cum cum Kg day day day hour hour hour hour d tonne.	44.400 54.000 64.800 43.200 148.800 0.880 3.000 18.000 6.00 6.000 15.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23 1132.74	143727.95 9581.86 9582.00 401996.71 32495.58 115607.74 84297.46 9085.73 311.52 1326.00 5580.00 16725.66 5097.36 8389.38 16991.10	M-004 M-053 M-051 M-180 L-12

				FOU	NDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Add	5 per cent of cost of material ar	nd labour			32535.04	
			towa	ards cost of forming sump, p	rotective				
				ds, chiselling and making arran under water concreting with tremi					
			d)	GST @ 12 % on (a+b+c)				89507.51	
			e)	Overhead charges @ 20 % or	ı (a+b+c+	d)		167080.69	
			f)	Contractor's profit @ 10 % on	(a+b+c+	d+e)		100248.41	
			g)	Cess @ 1% on (a+b+c+d+e+f)				11027.33	
			cost	of 120 cum = a+b+c+d+e+f+g				1113759.88	
			Rate	e per cum = (a+b+c+d+e+f+g)/1	20			9281.33	
							say	<u>9281.00</u>	
12.11 C		(ii)		Grade M25					
		Case		ng Concrete Mixer t = cum					
				ing output = 15 cum					
			a)	Material					
			Cen		tonne	5.990	9053.98	54233.34	M-081
			Coa	rse sand	cum	6.750	601.77	4061.95	M-005
			40 n	nm Aggregate	cum	5.400	1393.81	7526.57	M-055
			20 n	nm Aggregate	cum	5.400	1784.07	9633.98	M-053
				nm Aggregate	cum	2.700	1951.33	5268.59	M-051
				nixture	Kg	21.600	61.06	1318.90	M-180
			b) Mate	Labour	day	0.900	354.00	318.60	L-12
			Mas		day day	1.500	442.00	663.00	L-11
				door	day	20.000	310.00	6200.00	L-13
			c)	Machinery	,				
			•	crete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
			Gen	erator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
				t Crane of 3 tonnes capacity for dling tremie pipe	hour	6.000	433.63	2601.78	P&M-013
				Cum Basic Cost of Labour, Ma chinery (a+b+c)	terial &	6412.000			
			Add towa bund	5 per cent of cost of material ar ards cost of forming sump, p ds, chiselling and making arran under water concreting with tremi	rotective gements			4461.25	
			d)	GST @ 12 % on (a+b+c)				12075.76	
			e)	Overhead charges @ 20 % or	ı (a+b+c+	d)		22541.41	
			f)	Contractor's profit @ 10 % on	•	•		13524.85	
			g)	Cess @ 1% on (a+b+c+d+e+f)	-	,		1487.73	
			•	of 15 cum = a+b+c+d+e+f+g				150261.05	
				e per cum = (a+b+c+d+e+f+g)/1	5			10017.40	
				o por our (u o o o u o r r g), r			say	<u>10017.00</u>	
12.11 C (	(ii)	Case II	Usiı	ng Batching Plant, Transit Mixe	er and Cr	ane/concrete pur	•	<u></u>	
			Tak	t = cum ing output = 120 cum Material					
			a) Cen	nent	tonne	47.880	9053.98	433504.56	M-081
			Coa	rse sand	cum	54.000	601.77	32495.58	M-004
				nm Aggregate	cum	64.800	1784.07	115607.74	M-053 M-051
					cum	חווני ניוו	1951.33	84297.46	IVI-U51
				nm Aggregate		43.200 172.800			M-180
				nm Aggregate nixture Labour	Kg	172.800	61.06	10551.17	

			FOU	NDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Mas	on	day	3.000	442.00	1326.00	L-11
			door	day	18.000	310.00	5580.00	L-13
		c)	Machinery					D014 000
		Bato	hing Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
		Gen	erator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
		Load	der 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
			sit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1132.74	16991.10	P&M-049
			sit Mixer 4 cum capacity, lead and 1 Km, L - lead in Kilometer	tonne. km	300L	18.94	0.00	P&M-050 Lead= 0 km
		Con	crete Pump	hour	6.00	2576.11	15456.66	P&M-007
			Cum Basic Cost of Labour, Ma hinery (a+b+c)	aterial &	6220.000			
		towa bund	5 per cent of cost of material and airds cost of forming sump, puts, chiselling and making arrander water concreting with tremi	orotective agements			34183.70	
		d)	GST @ 12 % on (a+b+c)				93662.15	
		e)	Overhead charges @ 20 % or	n (a+b+c+	d)		174836.01	
		f)	Contractor's profit @ 10 % on				104901.61	
		g)	Cess @ 1% on (a+b+c+d+e+f)	-	•		11539.18	
		cost	of 120 cum = a+b+c+d+e+f+g+l	า			1165456.84	
		Rate	e per cum = (a+b+c+d+e+f+g)/1	120			9712.14	
						say	<u>9712.00</u>	
'12.11 C			Grade M30					
	Ca	se I Usir	ng Concrete Mixer					
			= 1 cum ing output = 15 cum					
		a)	Material			0050.00	55040.00	
		Cerr		tonne	6.080	9053.98	55048.20	M-081 M-005
			rse sand nm Aggregate	cum cum	6.750 5.400	601.77 1393.81	4061.95 7526.57	M-055
			ım Aggregate ım Aggregate	cum	5.400	1784.07	9633.98	M-053
			nm Aggregate	cum	2.700	1951.33	5268.59	M-051
			iixture	Kg	21.600	61.06	1318.90	M-180
		b)	Labour					
		Mate	e	day	0.900	354.00	318.60	L-12
		Mas	on	day	1.500	442.00	663.00	L-11
		Maz	door	day	20.000	310.00	6200.00	L-13
		c)	Machinery					
		Con cum	crete mixer (cap. 0.40/0.28 )	hour	6.000	269.91	1619.46	P&M-009
		Gen	erator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
		Ligh	t Crane of 3 tonnes capacity for	hour	6.000	433.63	2601.78	P&M-013
		Per	dling tremie pipe  Cum Basic Cost of Labour, Ma  hinery (a+b+c)	aterial &	6466.000			
		towa bund	5 per cent of cost of material and a cost of forming sump, put the cost of forming sump, put the cost of forming area of the concreting with treminating with treminating with treminating with treminating with treminating with treminating with the concretion of the concretion with the concretion with the concretion of the concretion with the concretion of the concretion	orotective agements			4501.99	
		d)	GST @ 12 % on (a+b+c)				12178.43	
		-	Overhead charges @ 20 % or	n (a+h+c+	d)		22733.07	
		e)	Overneau Charges @ 20 % Of	י (מדטדנד	u)		22133.01	

				FOL	INDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f)	Contractor's profit @ 10 % o	n (a+b+c+	 +d+e)		13639.84	
			g)	Cess @ 1% on (a+b+c+d+e+	-	,		1500.38	
			•	of 15 cum = $a+b+c+d+e+f+g$	•,			151538.62	
				•	15			10102.57	
			Rate	e per cum = (a+b+c+d+e+f+g)/	15				
12.11 C	(iii)	Case	Usir	ng Batching Plant, Transit Mix	er and Cr	ane/concrete pui	say no	<u>10103.00</u>	
• ,	(,	II				anorconorcio pai			
				! = cum					
				ing output = 120 cum					
			a) Cen	Material	tonne	48.640	9053.98	440385.59	M-081
				rse sand	cum	54.000	601.77	32495.58	M-004
				nm Aggregate	cum	64.800	1784.07	115607.74	M-053
				nm Aggregate nm Aggregate	cum	43.200	1951.33	84297.46	M-051
				nixture	Kg	172.800	61.06	10551.17	M-180
			b)	Labour	rtg	172.000	01.00	10001.17	
			Mate		day	0.880	354.00	311.52	L-12
			Mas		day	3.000	442.00	1326.00	L-11
				door	day	18.000	310.00	5580.00	L-13
			c)	Machinery	auy	10.000	010.00	0000.00	
			•	ching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
				erator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
				der 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
				nsit Mixer 4 cum capacity for	hour	15.00	1132.74	16991.10	P&M-049
				upto 1 km.	rioui	15.00	1102.74	10991.10	1 0.111 0-10
				sit Mixer 4 cum capacity, lead ond 1 Km, L - lead in Kilometer	tonne. km	300L	18.94	0.00	P&M-050 Lead= 0 ki
			Con	crete Pump	hour	6.00	2576.11	15456.66	P&M-007
				Cum Basic Cost of Labour, M hinery (a+b+c)	aterial &	6277.000			
			towa bund	5 per cent of cost of material a ards cost of forming sump, ds, chiselling and making arra- ander water concreting with trem	protective ngements			34527.75	
			d)	GST @ 12 % on (a+b+c)				94529.16	
			e)	Overhead charges @ 20 % o	n (a+b+c+	⊦d)		176454.43	
			f)	Contractor's profit @ 10 % o	-	-		105872.66	
			g)	Cess @ 1% on (a+b+c+d+e+f		u · 0)		11645.99	
			•	of 120 cum = a+b+c+d+e+f+g+				1176245.21	
				•				9802.04	
			Rate	e per cum = (a+b+c+d+e+f+g)/	120				
12.11 C		(iv)	PCC	Grade M35			say	<u>9802.00</u>	
12.11 6				ng Concrete Mixer					
		Ouse i		t = 1 cum					
			a)	ing output = 15 cum Material					
			•		tonno	6 200	0052.09	56040 F2	M-081
			Cen		tonne	6.290	9053.98	56949.53	
				rse sand	cum	6.750	601.77	4061.95	M-005
			40 n	nm Aggregate	cum	5.400	1393.81	7526.57	M-055
			20 n	nm Aggregate	cum	5.400	1784.07	9633.98	M-053
			10 n	nm Aggregate	cum	2.700	1951.33	5268.59	M-051
				nixture	Kg	21.600	61.06	1318.90	M-180
			b)	Labour	3				
			Mate		dov	0.900	354.00	318.60	L-12
			iviale	5	day	0.900	354.00	310.00	14

				INDATIONS	3			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
		Mas	on	day	1.500	442.00	663.00	L-11
			door	day	20.000	310.00	6200.00	L-13
		c)	Machinery	,				
		,	crete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
		Gen	erator 33 KVA	hour	6.000	453.98	2723.88	P&M-07
			t Crane of 3 tonnes capacity for dling tremie pipe	hour	6.000	433.63	2601.78	P&M-01
			Cum Basic Cost of Labour, Ma hinery (a+b+c)	aterial &	6593.000			
		Add towa bund	5 per cent of cost of material a ards cost of forming sump, p ds, chiselling and making arrar ander water concreting with trem	protective ngements			4597.06	
		d)	GST @ 12 % on (a+b+c)				12418.00	
		e)	Overhead charges @ 20 % o	n (a+b+c+d	l)		23180.26	
		f)	Contractor's profit @ 10 % or	า (a+b+c+d	+e)		13908.16	
		g)	Cess @ 1% on (a+b+c+d+e+f	)			1529.90	
		cost	of 15 cum = a+b+c+d+e+f+g				154519.62	
		Rate	e per cum = (a+b+c+d+e+f+g)/	15			10301.31	
2.11 C (i	i.a (	Saco Iloir	ng Batching Plant, Transit Mix	or and Cra	nalaanarata num	say	<u>10301.00</u>	
			t = <mark>cum</mark> ing output = 120 cum Material					
		Cen	nent	tonne	50.280	9053.98	455234.11	M-081
			rse sand	cum	54.000	601.77	32495.58	M-004
			nm Aggregate	cum	64.800	1784.07	115607.74	M-053
			nm Aggregate	cum	43.200	1951.33	84297.46	M-051
		b)	iixture Labour	Kg	172.800	61.06	10551.17	M-180
		Mate		day	0.880	354.00	311.52	L-12
		Mas		day	3.000	442.00	1326.00	L-11
			door	day	18.000	310.00	5580.00	L-13
		c)	Machinery	•				
		Bato	hing Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-00
		Gen	erator 100 KVA	hour	6.00	849.56	5097.36	P&M-08
		Load	der 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-01
		lead	nsit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1132.74	16991.10	P&M-04
			nsit Mixer 4 cum capacity, lead and 1 Km, L - lead in Kilometer	tonne. km	300L	18.94	0.00	P&M-05 Lead= 0 i
		Con	crete Pump	hour	6.00	2576.11	15456.66	P&M-00
		Per	Cum Basic Cost of Labour, Ma	aterial &	6401.000			
		Mac	hinery (a+b+c)					
		Add towa bund	5 per cent of cost of material a ards cost of forming sump, pds, chiselling and making arrared water concreting with trem	protective ngements			35270.18	
		Add towa bund for u	5 per cent of cost of material a ards cost of forming sump, pds, chiselling and making arrander water concreting with trem	protective ngements				
		Add towa bund	5 per cent of cost of material a ards cost of forming sump, pds, chiselling and making arrar	orotective ngements ie pipe.	n		35270.18 96400.07 179946.80	

		FOUNDATIONS			
Sr No Ref. MoR' DSR S	ГН/	Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		g) Cess @ 1% on (a+b+c+d+e+f)		11876.49	
		cost of 120 cum = a+b+c+d+e+f+g		1199525.36	
		Rate per cum = $(a+b+c+d+e+f+g)/120$		9996.04	
			say	<u>9996.00</u>	
12.11	D	Intermediate plug			
	(i)	Grade M20 PCC			
		Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.			
	Cas	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6134.00	Item 12.11 C (i ) I
		d) GST @ 12 % on (a+b+c)		736.08	
		e) Overhead charges @ 20 % on (a+b+c+d)		1374.02	
		f) Contractor's profit @ 10 % on (a+b+c+d+e)		824.41	
		g) Cess @ 1% on (a+b+c+d+e+f)		90.69	
		Rate per cum = (a+b+c+d+e+f+g)		9159.20	
			say	<u>9159.00</u>	
12.11 D (i)		<ul> <li>Using Batching Plant, Transit Mixer and Crane/concrete pump</li> </ul>			
	II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		5945.00	Item 12.11 C (i ) II
		d) GST @ 12 % on (a+b+c)		713.40	
		e) Overhead charges @ 20 % on (a+b+c+d)		1331.68	
		f) Contractor's profit @ 10 % on (a+b+c+d+e)		799.01	
		g) Cess @ 1% on (a+b+c+d+e+f)		87.89	
		Rate per cum = (a+b+c+d+e+f+g)		8876.98	
			say	<u>8877.00</u>	
12.11 D	(ii	Grade M25 PCC Same as in bottom plug concrete, excluding cost of forming sump,	protective b	unds chiseling	
		etc.			
	Cas	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6412.00	Item 12.11 C (ii ) I
		d) GST @ 12 % on (a+b+c)		769.44	
		e) Overhead charges @ 20 % on (a+b+c+d)		1436.29	
		f) Contractor's profit @ 10 % on (a+b+c+d+e)		861.77	
		g) Cess @ 1% on (a+b+c+d+e+f)		94.80	
		Rate per cum = (a+b+c+d+e+f+g)		9574.30	
12.11 D (ii)	Cas	Using Batching Plant, Transit Mixer and Crane/concrete pump	say	<u>9574.00</u>	
(,	II	Per Cum Basic Cost of Labour, Material &		6220.00	Item 12.11 C (ii ) II
		Machinery (a+b+c) d) GST @ 12 % on (a+b+c)		746.40	- ( ,
		e) Overhead charges @ 20 % on (a+b+c+d)		1393.28	
		f) Contractor's profit @ 10 % on (a+b+c+d+e)		835.97	
		g) Cess @ 1% on (a+b+c+d+e+f)		91.96	
		Rate per cum = (a+b+c+d+e+f+g)		9287.61	
		Table por carrie (a. w. o. a. c. 1. g)	say	9288.00	
12.11 D	(iii	Grade M30 PCC	cuy	<u>0200.00</u>	
		Same as in bottom plug concrete, excluding cost of forming sump, etc.	protective b	unds, chiseling	
	Cas	Using Concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		6466.00	Item 12.11 C ( iii) I

			FOUNDATIONS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		ļ	d) GST @ 12 % on (a+b+c)		775.92	
			e) Overhead charges @ 20 % on (a+b+c+d)		1448.38	
			f) Contractor's profit @ 10 % on (a+b+c+d+e)		869.03	
			g) Cess @ 1% on (a+b+c+d+e+f)		95.59	
			Rate per cum = (a+b+c+d+e+f+g)		9654.92	
			(, , , , , , , , , , , , , , , , , , ,	say	9655.00	
12.11 D	(iii)	Case II	Using Batching Plant, Transit Mixer and Crane/concrete pu			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) ( excluding GST, OH, CP & Cess)		6277.00	Item 12.11 C ( iii) II
			d) GST @ 12 % on (a+b+c)		753.24	
			e) Overhead charges @ 20 % on (a+b+c+d)		1406.05	
			f) Contractor's profit @ 10 % on (a+b+c+d+e)		843.63	
			g) Cess @ 1% on (a+b+c+d+e+f)		92.80	
			Rate per cum = (a+b+c+d+e+f+g)		9372.72	
12.11		Е	Top plug	say	<u>9373.00</u>	
12.11		(i)	Grade M15 PCC			
		(-)				
		Case	Same as Item 12.8(a) excluding formwork  Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) (excluding GST, OH, CP & Cess)		5072.00	Item 12.8 (a)
			d) GST @ 12 % on (a+b+c)		608.64	
			e) Overhead charges @ 20 % on (a+b+c+d)		1136.13	
			f) Contractor's profit @ 10 % on (a+b+c+d+e)		681.68	
			, , ,		74.98	
			g) Cess @ 1% on (a+b+c+d+e+f)			
			Rate per cum = (a+b+c+d+e+f+g)	say	7573.43 <u>7573.00</u>	
'12.11 E		(ii)	Grade M20 PCC			
		_	Same as Item 12.8(b) excluding formwork			
		Case	Using Concrete Mixer			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		5649.00	Item 12.8 (b)
			d) GST @ 12 % on (a+b+c)		677.88	
			e) Overhead charges @ 20 % on (a+b+c+d)		1265.38	
			f) Contractor's profit @ 10 % on (a+b+c+d+e)		759.23 83.51	
			g) Cess @ 1% on (a+b+c+d+e+f) Rate per cum = (a+b+c+d+e+f+g)		8435.00	
			Nate per cum = (arbiciure irig)	say	<u>8435.00</u>	
'12.11 E		(iii)	Grade M25 PCC	5,	<u> </u>	
			Same as Item 12.8 (d) excluding			
		C	formwork			
		Case	<sup>I</sup> Using Concrete Mixer Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)		6150.00	Item 12.8
			(excluding GST, OH, CP & Cess)		0130.00	(D) I
			d) GST @ 12 % on (a+b+c)		738.00	
			e) Overhead charges @ 20 % on (a+b+c+d)		1377.60	
			f) Contractor's profit @ 10 % on (a+b+c+d+e)		826.56	
			g) Cess @ 1% on (a+b+c+d+e+f)		90.92 9183.08	
			Rate per cum = (a+b+c+d+e+f+g)	say	9183.08 <u>9183.00</u>	
12.11 E (	(iii)	Case II	Using Batching Plant, Transit Mixer and Crane/concrete pu			
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) ( excluding GST, OH, CP & Cess)		5967.00	Item 12.8 (D) II (SA)
			d) GST @ 12 % on (a+b+c)		716.04	

				FO	UNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			e)	Overhead charges @ 20 %	on (a+b+c+	+d)		1336.61	
			-	Contractor's profit @ 10 %		-		801.97	
				Cess @ 1% on (a+b+c+d+e		,		88.22	
				per cum = (a+b+c+d+e+f+g)	•			8909.84	
				(* · · · · · · · · · · · · · · · · · · ·			say	<u>8910.00</u>	
'12.11 E		(iv)		e M30 PCC			•		
				e as Item 12.8(f) excluding for	mwork				
		Case		g Concrete Mixer		11. ()		0004.00	ltom 42 0
				cum Basic Cost of Labour, Ma uding GST, OH, CP & Cess)	iteriai & Ma	cninery (a+b+c)		6204.00	Item 12.8 (F) I
			d)	GST @ 12 % on (a+b+c)				744.48	
			e)	Overhead charges @ 20 %	on (a+b+c+	⊦d)		1389.70	
			f)	Contractor's profit @ 10 %	on (a+b+c·	+d+e)		833.82	
			g)	Cess @ 1% on (a+b+c+d+e-	+f)			91.72	
			Rate	per cum = (a+b+c+d+e+f+g)	)			9263.72	
		_					say	<u>9264.00</u>	
12.11 E (	(iv)	Case II	Using	g Batching Plant, Transit Mi	xer and Cr	ane/concrete pu	ımp		
				cum Basic Cost of Labour, Ma uding GST, OH, CP & Cess)	terial & Ma	chinery (a+b+c)		6016.00	Item 12.8 (F) II
			-	GST @ 12 % on (a+b+c)				721.92	
			•	Overhead charges @ 20 %	on (a+b+c+	⊦d)		1347.58	
			-	Contractor's profit @ 10 %	-	-		808.55	
			-	Cess @ 1% on (a+b+c+d+e-	-	•		88.94	
			Rate	per cum = (a+b+c+d+e+f+g)	)			8982.99	
							say	<u>8983.00</u>	
12.11		F	Well	сар					
		(i)	RCC	Grade M20					
		Case	l Using	g Concrete Mixer					
			Unit :	= cum					
			Takin	ng output = 15 cum					
				Material					
			Ceme		tonne	5.120	9053.98	46356.38	M-081
			Coars	se sand	cum	6.750	601.77	4061.95	M-005
				m Aggregate	cum	8.100	1784.07	14450.97	M-053
						5.400	1951.33	10537.18	M-051
				n Aggregate <b>Labour</b>	cum	5.400	1951.55	10337.10	551
			Mate		day	0.860	354.00	304.44	L-12
			Maso	n	day	1.500	442.00	663.00	L-11
			Mazd		day	20.000	310.00	6200.00	L-13
					duy	20.000	010.00	0200.00	
			•	Machinery rete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
			•	rator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
				Work @ 4 per cent of a+b+c		0.000	433.90	3476.69	1 0.11 0.10
					•				
				GST @ 12 % on (a+b+c)	on (others	Lal\		10847.27	
			-	Overhead charges @ 20 %	-	-		20248.24	
			•	Contractor's profit @ 10 % Cess @ 1% on (a+b+c+d+e	•	rute)		12148.95 1336.38	
				- ·	+1)				
				of 15	/15			134974.79 8998.32	
			·······	po. Jani (a.p. c.a.e.irg)	,		say	<u>8998.00</u>	
12.11 F (	(i)		Using	g Batching Plant, Transit Mi	xer and Co	oncrete Pump	· ·		
		II	Unit :	= cum					
				ng output = 120 cum					
			,	Material		40.00=	0050.00	070400.05	N 004
			Ceme	ent	tonne	40.920	9053.98	370488.86	M-081

	Ref. to	1	1	OUNDATION:				Remarks/
Sr No	MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Input ref.
			Coorse cond		54.000	601.77	32495.58	M-004
			Coarse sand 20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			b) Labour		.5.255	1001100	0.200	
			Mate	day	0.840	354.00	297.36	L-12
			Mason	day	3.000	442.00	1326.00	L-11
			Mazdoor	day	18.000	310.00	5580.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
			Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
			Loader (capacity 1 cum)	hour	6.000	1398.23	8389.38	P&M-017
			Transit Mixer ( capacity 4.0 cu.m	)				
			Transit Mixer 4 cum capacity for	hour	15.00	1132.74	16991.10	P&M-049
			lead upto 1 km.					
			Lead beyond 1 Km, L - lead in	tonne.	300L	18.94	0.00	P&M-050
			Kilometer	km	000L	10.54	0.00	Lead= 0 km
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
			•		0.00	2370.11		
			Formwork @ 4 per cent of (a+b-	FC)			26910.13	
			d) GST @ 12 % on (a+b+c)				83959.59	
			e) Overhead charges @ 20 %	‰ on (a+b+c+c	d)		156724.58	
			f) Contractor's profit @ 10 %	% on (a+b+c+c	d+e)		94034.75	
			g) Cess @ 1% on (a+b+c+d+	e+f)			10343.82	
			cost of 120 cum = a+b+c+d+e+f+	g			1044726.03	
			Rate per cum = (a+b+c+d+e+f+	g)/120			8706.05	
						say	<u>8706.00</u>	
12.11 F		(ii)	RCC Grade M25					
		Case	Using Concrete Mixer					
			Unit = cum Taking output = 15 cum					
			a) Material					
			Cement	tonne	6.050	9053.98	54776.58	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-005
					8.100	1784.07	14450.97	M-053
			20 mm Aggregate	cum				
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.860	354.00	304.44	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	20.000	310.00	6200.00	L-13
				day	20.000	010.00	0200.00	
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
			Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
			Form Work @ 3.75 per cent of a+b+c				3575.15	
			d) GST @ 12 % on (a+b+c)				11869.51	
			e) Overhead charges @ 20 %	6 on (a+b+o+o	4/		22156.42	
			·		•			
			f) Contractor's profit @ 10 %	-	u⊤e)		13293.85	
			g) Cess @ 1% on (a+b+c+d+	-			1462.32	
			cost of 15 cum = a+b+c+d+e+f+g				147694.71	
			Rate per cum = (a+b+c+d+e+f+	g)/15			9846.31	
12 11 E /	'ii\	Caso	Using Patching Plant Transit N	liver and Con	oroto Bumn	say	<u>9846.00</u>	
12.11 F (	,ii <i>)</i>	II	Using Batching Plant, Transit M	nikei allu Con	iciele Fullip			
			Unit = cum					
			Taking output = 120 cum					
			a) Material		40.400	0050.00	100010.05	N# 004
			Cement	tonne	48.400	9053.98	438212.63	M-081
			Coarse sand	cum	54.000 64.800	601.77 1784.07	32495.58	M-004 M-053
			20 mm Aggregate	cum	64.800 43.200	1784.07 1051.33	115607.74	M-051
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-001

				FU	UNDATION	15			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			b)	Labour					
			Mate		day	0.840	354.00	297.36	L-12
			Mas		day	3.000	442.00	1326.00	L-11 L-13
			c)	door Machinery	day	18.000	310.00	5580.00	L-13
				ching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
				erator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
			Load	der (capacity 1 cum)	hour	6.000	1398.23	8389.38	P&M-017
				nsit Mixer ( capacity 4.0 cu.m )					
			Tran	sit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1132.74	16991.10	P&M-049
				d beyond 1 Km, L - lead in meter	tonne. km	300L	18.94	0.00	P&M-050 Lead= 0 km
			Con	crete Pump	hour	6.00	2576.11	15456.66	P&M-007
			For a+b-	mwork @ 3.75 per cent of ( +c)				27767.88	
			d)	GST @ 12 % on (a+b+c)				92189.38	
			e)	Overhead charges @ 20 %	on (a+b+c+	d)		172086.84	
			f)	Contractor's profit @ 10 %	on (a+b+c+	·d+e)		103252.10	
			g)	Cess @ 1% on (a+b+c+d+e	+f)			11357.73	
			cost	of 120 cum = a+b+c+d+e+f+g				1147130.86	
			Rate	e per cum = (a+b+c+d+e+f+g)	/120			9559.42	
							say	<u>9559.00</u>	
2.11 F		(iii)		Grade M30					
		Case I	Usir	ng Concrete Mixer					
				t = cum					
				ing output = 15 cum					
			a) Cerr	Material	tonne	6.100	9053.98	55229.28	M-081
				rse sand	cum	6.750	601.77	4061.95	M-005
				nm Aggregate	cum	8.100	1784.07	14450.97	M-053
				nm Aggregate		5.400	1951.33	10537.18	M-051
			b)	Labour	cum	5.400	1951.55	10557.16	001
			Mate		day	0.860	354.00	304.44	L-12
			Mas		day	1.500	442.00	663.00	L-11
				door	day	20.000	310.00	6200.00	L-13
			c)	Machinery	uay	20.000	310.00	0200.00	
			•	crete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
				erator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
				mwork @ 3.5 per cent of	noui	0.000	400.00	3352.66	
			d) e)	GST @ 12 % on (a+b+c) Overhead charges @ 20 %	on (a+h+c+	d)		11897.14 22207.99	
			f)	Contractor's profit @ 10 %	-	-		13324.80	
			u) g)	Cess @ 1% on (a+b+c+d+e	-	u·e)		1465.73	
				of 15 cum = a+b+c+d+e+f+q	*1)			148038.48	
				e per cum = (a+b+c+d+e+f+g)	/15			9869.23	
				por cam (asbiciascing)	,, 10		say	9869.00	
2.11 F (i	ii)		Usir	ng Batching Plant, Transit Mi	xer and Co	ncrete Pump	•		
		II	Unit	t = cum					
			Taki a)	ing output = 120 cum Material					
			Cem		tonne	48.790	9053.98	441743.68	M-081
				rse sand	cum	54.000	601.77	32495.58	M-004
				nm Aggregate	cum	64.800	1784.07	115607.74	M-053
				nm Aggregate		43.200	1951.33	84297.46	M-051
					cum	43.200	1801.33	04231.40	001
			b)	Labour		0.046	054.00	007.00	1.40
			Mate	e	day	0.840	354.00	297.36	L-12

				JUNDATION				
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	DSR Spec.							.
		Mas	on	day	3.000	442.00	1326.00	L-11
			door	day	18.000	310.00	5580.00	L-13
		c)	Machinery	,				
		•	ching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
			erator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
				hour	6.000	1398.23	8389.38	P&M-017
			der (capacity 1 cum) nsit Mixer(capacity 4.0 cu.m)		0.000	1390.23	0309.30	. am on
		Trar	nsit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1132.74	16991.10	P&M-049
		Lead	d beyond 1 Km, L - lead in meter	tonne. km	300L	18.94	0.00	P&M-050 Lead= 0 km
			crete Pump	hour	6.00	2576.11	15456.66	P&M-007
		For (a+b	mwork @ 3.5 per cent of o+c)				26040.28	
		d)	GST @ 12 % on (a+b+c)				92405.79	
		e)	Overhead charges @ 20 %	-	-		172490.81	
		f)	Contractor's profit @ 10 %	-	d+e)		103494.49	
		g)	Cess @ 1% on (a+b+c+d+c	-			11384.39	
			of 120 cum = a+b+c+d+e+f+				1149823.74 9581.86	
		Rate	e per cum = (a+b+c+d+e+f+ç	3)/120		say	9582.00	
12.11 F		(iv) RCC	Grade M35				<u> </u>	
	C	Case I Usir	ng Concrete Mixer					
			t = cum					
			ing output = 15 cum					
		a)	Material					
		Cen		tonne	6.330	9053.98	57311.69	M-081
			rse sand	cum	6.750	601.77	4061.95	M-005
			nm Aggregate	cum	8.100	1784.07	14450.97	M-053
			nm Aggregate	cum	5.400	1951.33	10537.18	M-051
		b)	Labour	oum	0.400	1001.00	10007.10	
		Mate		day	0.860	354.00	304.44	L-12
		Mas		day	1.500	442.00	663.00	L-11
			door	day	20.000	310.00	6200.00	L-13
		c)	Machinery	uay	20.000	310.00	0200.00	
		-	crete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
		cum		Houl	0.000	209.91	1019.40	1 GIII 000
			erator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
		For	mwork @ 3 per cent of (a+b+	c)			2936.18	
		d)	GST @ 12 % on (a+b+c)				12097.05	
		e)	Overhead charges @ 20 %	on (a+b+c+	d)		22581.16	
		f)	Contractor's profit @ 10 %	-	-		13548.70	
		., g)	Cess @ 1% on (a+b+c+d+c	-	-,		1490.36	
		•	of 15 cum = $a+b+c+d+e+f+g$	•			150526.02	
			e per cum = (a+b+c+d+e+f+ç	g)/15			10035.07	
						say	<u>10035.00</u>	
12.11 F (i	iv)	II	ng Batching Plant, Transit M	lixer and Co	ncrete Pump			
			t = cum					
		<i>так</i> . а)	ing output = 120 cum Material					
		a) Cen		tonne	50.640	9053.98	458493.55	M-081
			rse sand	cum	54.000	601.77	32495.58	M-004
			nm Aggregate	cum	64.800	1784.07	115607.74	M-053
			nm Aggregate	cum	43.200	1951.33	84297.46	M-051

				FO	UNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		<u> </u>	b)	Labour					
			Mate		day	0.840	354.00	297.36	L-12
			Mas		day	3.000	442.00	1326.00	L-11
			Maz		day	18.000	310.00	5580.00	L-13
			c)	Machinery	,				
			Bato	hing Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
			Gen	erator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
			Load	der (capacity 1 cum)	hour	6.000	1398.23	8389.38	P&M-017
			Tran	sit Mixer ( capacity 4.0 cu.m )					
				sit Mixer 4 cum capacity for upto 1 km.	hour	15.00	1132.74	16991.10	P&M-049
				d beyond 1 Km, L - lead in meter	tonne. km	300L	18.94	0.00	P&M-050 Lead= 0 km
			Con	crete Pump	hour	6.00	2576.11	15456.66	P&M-007
				mwork @ 3 per cent of (a+b+c		0.00	2070.11	22822.74	
			d)	GST @ 12 % on (a+b+c)				94029.67	
			e)	Overhead charges @ 20 %	on (a+b+c+	+d)		175522.05	
			f)	Contractor's profit @ 10 %	-	-		105313.23	
			g)	Cess @ 1% on (a+b+c+d+e-	+f)			11584.46	
			cost	of 120 cum = a+b+c+d+e+f+g				1170030.00	
			Rate	e per cum = (a+b+c+d+e+f+g)	/120			9750.25	
				ere ever concrete is carried			say	<u>9750.00</u>	
'12.11 F		(v)	weig of co	sit mixer, concrete pump, Adn ht of cement may be added f oncrete. CM40 Grade					
				ng Batching Plant, Transit Mi	xer and Co	oncrete Pump			
				= cum ing output = 120 cum					
			a)	Material					
			Cem		tonne	52.200	9053.98	472617.76	M-081
			Coa	rse Sand	cum	54.000	601.77	32495.58	M-004
				nm Aggregate	cum	64.800	1784.07	115607.74	M-053
				nm Aggregate	cum	43.200	1951.33	84297.46	M-051
				ixture	kg	206.000	61.06	12578.36	M-180
			b)	Labour	3				
			Mate		day	0.840	354.00	297.36	L-12
			Mas		day	3.000	442.00	1326.00	L-11
			Maz	door	day	18.000	310.00	5580.00	L-13
			c)	Machinery	,				
			,	hing Plant	hour	6.00	2787.61	16725.66	P&M-002
				erator 100 KVA	hour	6.000	849.56	5097.36	P&M-080
				der 1 cum capacity	hour	6.000	1398.23	8389.38	P&M-017
				sit Mixer 4 cum capacity for	hour	15.00	1132.74	16991.10	P&M-049
				upto 1 km.	.1041	10.00	1102.17	.0001.10	
				sit Mixer 4 cum capacity for beyond 1 km.	tonne. km	300.L	18.94	0.00	P&M-050 Lead= 0 km
			Con	crete Pump	hour	6.000	2576.11	15456.66	P&M-007
			cond	nwork @ 3 per cent on cost of crete i.e. cost of material,				23623.81	
				ur and machinery					
			d)	GST @ 12 % on (a+b+c)				97330.11	
			e)	Overhead charges @ 20 % o	-	-		181682.87	
			f)	Contractor's profit @ 10 %	on (a+b+c	+d+e)		109009.72	

			FOI	JNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			g) Cess @ 1% on (a+b+c+d+e+ cost of 120 cum = a+b+c+d+e+f+g Rate per cum = (a+b+c+d+e+f+g)/	,		say	11991.07 1211098.00 10092.48 <u>10092.00</u>	
12.12	Section 1200		Sinking of 6 m external diame through all types of strata name each case, complete as per draw reckoned from bed level.	ly sandy	soil, clayey soil	and rock as s	hown against	
		A	Unit = Running Meter.  Taking output = 1 m  Diameter of well - 6 m.					
		(i)	Sandy Soil Depth below bed level upto 3.0 N	1				
			Rate of sinking = 0.50 m per hour.					
			a) Labour Mate	day	0.120	354.00	42.48	L-12 L-15
			Sinker ( skilled ) Sinking helper ( semi-skilled ) b) Machinery	day day	1.000 2.000	442.00 354.00	442.00 708.00	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	2.000	976.11	1952.22	P&M-075
			Consumables in sinking @10 per cent of (b)				195.22	
			c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % of	on (a+b+c	1		400.79 748.14	
			e) Contractor's profit @ 10 % c	-			448.89	
			f) Cess @ 1% on (a+b+c+d+e)	/II (u · D · C	- 4,		49.38	
			Rate per metre = $(a+b+c+d+e+f)$				4987.12	
			rate per metre (a b o a con)			say	<u>4987.00</u>	
12.12 A		(ii)	Beyond 3m upto 10m depth Rate of sinking = 0.33 m per hour.					
			a) Labour					
			Mate	day	0.150	354.00	53.10	L-12
			Sinker	day	1.250	442.00	552.50	L-15
			Sinking helper ( semi-skilled )	day	2.500	354.00	885.00	L-14
			b) Machinery					
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories	hour	3.000	976.11	2928.33	P&M-075
			Consumables in sinking @10 per cent of (b)				292.83	
			c) GST @ 12 % on (a+b)				565.41	
			d) Overhead charges @ 20 % c	on (a+b+c	)		1055.43	
			e) Contractor's profit @ 10 % o	on (a+b+c	+d)		633.26	
			f) Cess @ 1% on (a+b+c+d+e)				69.66	
			Rate per metre = (a+b+c+d+e+f)				7035.52	
12.12 A		(iii)	Beyond 10m upto 20m			say	<u>7036.00</u>	
12.112.74		a	Add 5 per cent for every additional	al meter o	lepth of sinking o	ver the rate of	sinking for the	
			previous meter	<b>5</b> 0/	7000 000			
			11th m 12th m	5% 5%	7388.000 7757.000			
			13th m	5% 5%	8145.000			
			14th m	5%	8552.000			
			15th m	5%	8980.000			
			16th m	5%	9429.000			
			17th m	5%	9900.000			
			18th m	5% 5%	10395.000			
			19th m	5%	10915.000			

Page : 268

			FOI	UNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			20th m Total Cost from 10m upto 20m	5%	11461.000 92922.000			
12.12 A		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>9292.000</u>			
		а	Add 7.5 per cent for every addition	nal meter d	epth of sinking	over the rate of	sinking for the	
		b	previous meter  Add 20 per cent of cost for	r		Including 20%		
		2	Kentledge including supports loading arrangement and Labour.			for Kentledge		
			21st m	7.5%	12321.000	14785.00		
			22nd m	7.5%	13245.000	15894.00		
			23rd m 24th m	7.5% 7.5%	14238.000 15306.000	17086.00 18367.00		
			25th m	7.5%	16454.000	19745.00		
			26th m	7.5%	17688.000	21226.00		
			27th m	7.5%	19015.000	22818.00		
			28th m	7.5%	20441.000	24529.00		
			29th m	7.5%	21974.000	26369.00		
			30th m	7.5%	23622.000	28346.00		
			Total Cost from 20m upto 30m		174304.000	209165.00		
12.12 A		(v)	Avg Rate per metre Beyond 30m upto 40 m		<u>17430.000</u>	<u>20917.00</u>		
		a	Add 10 per cent for every addition	nal meter d	epth of sinking o	over the rate of	sinking for the	
			previous meter				-	
		b	Add 20 per cent of cost for Kentledge including supports loading arrangement and Labour.			Including 20% for Kentledge		
			31st m	10%	25984.000	31181.00		
			32nd	10%	28582.000	34298.00		
			33rd m	10%	31440.000	37728.00		
			34th m	10%	34584.000	41501.00		
			35th m	10%	38042.000	45650.00		
			36th m	10%	41846.000	50215.00		
			37th m	10%	46031.000	55237.00		
			38th m	10% 10%	50634.000	60761.00		
			39th m 40th m	10%	55697.000 61267.000	66836.00 73520.00		
			Total Cost from 30m upto 40m	10 70	414107.000	496927.00		
			Avg Rate per metre		<u>41411.000</u>	<u>49693.00</u>		
12.12		В	Clayey Soil (6m dia. Well)					
			Unit = Running Meter.  Taking output = 1 meter					
		(i)	Depth below bed level upto 3.0 N					
		(1)	Rate of sinking = 0.33 m per hour.	•				
			a) Labour					
			Mate	day	0.150	354.00	53.10	L-12
			Sinker ( skilled ) Sinking helper ( semi-skilled )	day day	1.500 2.250	442.00 354.00	663.00 796.50	L-15 L-14
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum	hour	3.000	976.11	2928.33	P&M-075
			capacity and accessories  Consumables in sinking @ 10 per				292.83	
			cent of (b) c) GST @ 12 % on (a+b)				568.05	
			d) Overhead charges @ 20 % o	on (a+b+c)			1060.36	
			,	(3. 2. 0)				
			e) Contractor's profit @ 10 %	n (a+h+c+	d)		636 22	
			e) Contractor's profit @ 10 % of	-	d)		636.22	
			e) Contractor's profit @ 10 % of f) Cess @ 1% on (a+b+c+d+e) Rate per metre = (a+b+c+d+e+f)	-	d)		636.22 69.98 7068.37	

				FOUNDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
12.12 B		(ii)	Beyond 3m upto 10m depth					
		` ,	Rate of sinking = 0.17 m per he					
			a) Labour					
			Mate	day	0.300	354.00	106.20	L-12
			Sinker	day	3.000	442.00	1326.00	L-15
			Sinking helper ( semi-skilled ) b) Machinery	day	4.500	354.00	1593.00	L-14
			Hire & running charges of cran with grab bucket of 0.75 cum capacity and accessories.		6.000	976.11	5856.66	P&M-07
			Air compressor with pneumatic chisel attachment for cutting had clay.		2.000	634.51	1269.02	P&M-06
			Consumables in sinking @ 10 cent of (b)	per			712.57	
			c) GST @ 12 % on (a+b)				1303.61	
			d) Overhead charges @ 2	0 % on (a+b+c)			2433.41	
			e) Contractor's profit @ 10	0 % on (a+b+c+e	d)		1460.05	
			f) Cess @ 1% on (a+b+c+	d+e)			160.61	
			Rate per metre = (a+b+c+d+e	e+f)			16221.13	
12.12 B		/:::\	Payand 40 m unto 20 m			say	<u>16221.00</u>	
2.12 B		(iii)	Beyond 10 m upto 20 m					
		a	Add 5 per cent for every additi		n of sinking over		ng for the	
		b	Add for dewatering @ 5 per ce cost, if required.	ent of		Including for dewatering @ 5% of cost, if required		
			11th m	5%	17032.000	17884.00		
			12th m	5%	17884.000	18778.00		
			13th m 14th m	5% 5%	18778.000 19717.000	19717.00 20703.00		
			15th m	5%	20703.000	21738.00		
			16th m	5%	21738.000	22825.00		
			17th m	5%	22825.000	23966.00		
			18th m 19th m	5% 5%	23966.000 25164.000	25164.00 26422.00		
			20th m	5%	26422.000	27743.00		
			Total Cost from 10m upto 20m		214229.000	224940.00		
			Avg Rate per metre		<u>21423.000</u>	<u>22494.00</u>		
2.12 B		(iv)	Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every add depth of sinking over the rate of the previous meter					
		b	Add 5 per cent of cost for dew cost, if required	atering of the				
		С	Add 25 per cent of cost for Ke including supports, loading arrabour ).	-		Including 25% for Kentledge	Including 5% for dewatering, if	
			21st m	7.5%	28404.000	35505.00	required 37280.00	
			22nd m	7.5%	30534.000	38168.00	40076.00	
			23rd m	7.5%	32824.000	41030.00	43082.00	
			24th m	7.5%	35286.000	44108.00	46313.00	
			25th m	7.5%	37932.000	47415.00	49786.00	
			26th m 27th m	7.5% 7.5%	40777.000 43835.000	50971.00 54794.00	53520.00 57534.00	
			28th m	7.5%	47123.000	58904.00	61849.00	
			29th m	7.5%	50657.000	63321.00	66487.00	
			30th m	7 5%	54456 000	68070 00	71474 00	

Page : 270

7.5%

30th m

54456.000

68070.00

71474.00

				OUNDATIONS				
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	DSR Spec.							Input ref.
	-		Total Cost from 20m upto 30m		401828.000	502286.00	527401.00	
			Avg Rate per metre		40183.000	50229.00	52740.00	
12.12 B		(14)						
12.12 B		(v)	Beyond 30m upto 40 m					
		а	Add 10 per cent for every addition					
			depth of sinking over the rate of	sinking for				
			the previous meter					
		b	Add 5 per cent of cost for dewate	ering, if				
			required					
		С	Add 20 per cent of cost for Kentl	-		Including 20%	Including 5%	
			including supports, loading arran	gement and		for Kentledge	for	
			Labour).				dewatering, if	
							required	
			31st m	10%	59902.000	71882.00	75476.00	
			32nd	10%	65892.000	79070.00	83024.00	
			33rd m	10%	72481.000	86977.00	91326.00	
			34th m	10%	79729.000	95675.00	100459.00	
			35th m	10%	87702.000	105242.00	110504.00	
			36th m	10%	96472.000	115766.00	121554.00	
			37th m	10%	106119.000	127343.00	133710.00	
			38th m	10%	116731.000	140077.00	147081.00	
			39th m	10%	128404.000	154085.00	161789.00	
			40th m	10%	141244.000	169493.00	177968.00	
			Total Cost from 30m upto 40m		954676.000	1145610.00	1202891.00	
40.40		_	Avg Rate per metre		<u>95468.000</u>	<u>114561.00</u>	<u>120289.00</u>	
12.12		С	Soft Rock (6m dia well )					
			Unit = Running Meter.					
			Taking output = 1 m	2				
			Depth in Soft rock strata up to					
			Rate of sinking = 0.25 m per hou	I.				
			a) Labour		0.000	054.00	205.00	1.40
			Mate	day	0.920	354.00	325.68	L-12
			Sinker (skilled)	day	3.000	442.00	1326.00	L-15
			Sinking helper ( semi-skilled )	day	20.000	354.00	7080.00	L-14
			Diver	day	0.500	796.00	398.00	L-07
			b) Machinery	have	4.000	076 11	2004.44	P&M-075
			Hire & running charges of crane with grab bucket of 0.75 cum	hour	4.000	976.11	3904.44	1 GW-070
			· · · · · · · · · · · · · · · · · · ·					
			capacity and accessories.	In a con-	0.500	004.54	0000 70	P&M-063
			Air compressor with pneumatic breakers	hour	3.500	634.51	2220.79	r GIVI-003
			Consumables in sinking @ 10 pe	ar.			612.52	
			cent of (b)	•1			012.02	
			Add for dewatering @ of 5 per ce	ent			793.37	
			of (a+b), if required	arit.			190.01	
			c) GST @ 12 % on (a+b)				1999.30	
			- · · · · · · · · · · · · · · · · · · ·					
			d) Overhead charges @ 20 %	-			3732.02	
			e) Contractor's profit @ 10 %	% on (a+b+c+d)			2239.21	
			f) Cess @ 1% on (a+b+c+d+	·e)			246.31	
			Rate per metre = (a+b+c+d+e+f	7)			24877.64	
						say	<u>24878.00</u>	
12.12		D	Hard Rock (6m dia well )					
			Unit = Running Meter					
			Taking output = 1 m					
			Depth in hard rock strata upto					
			Rate of sinking = 0.17 m per hou	r.				
			a) Material					
			Gelatine 80 per cent	Kg	4.000	164.60	658.40	M-104
			Electric Detonators	each	18.000	11.04	198.72	M-094/100
			b) Labour		. 5.555		.552	
			Mate	day	1.560	354.00	552.24	L-12
			Driller	day	2.000	354.00	708.00	L-06
			Blaster	day	0.250	354.00	88.50	L-03
				•				

Sr No	Ref. to								
	MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Mazdoo	or	day	12.000	310.00	3720.00	L-13
				or (Skilled)	day	4.000	442.00	1768.00	L-15
			,	lachinery					
				running charges of crane	hour	6.000	976.11	5856.66	P&M-075
			_	ab bucket of 0.75 cum y and accessories.					
				running charges of	hour	2.000	634.51	1269.02	P&M-063
			compre	essor with pneumatic r/Jack hammer for drilling.			33.13.	.200.02	
			Dewate	ring @ 5 per cent of cost of required.	f			698.12	
			Consun	mables in sinking @ 10 per				712.57	
				cost of (b).				40.47.00	
			-	ST @ 12 % on (a+b+c)	(-1b.1-1.	-1\		1947.63	
				verhead charges @ 20 % ontractor's profit @ 10 %	-	-		3635.57 2181.34	
			•	ess @ 1% on (a+b+c+d+e	•	u+e)		239.95	
			•	er metre = (a+b+c+d+e+f+	•			24234.72	
				(	<b>3</b> /		say	24235.00	
12.13	Section 1200			g of 7 m external diame	•	•	matic method	l of sinking )	
			each c	h all types of strata name ase, complete as per dra ed from bed level.					
				Running Meter.					
				output = 1 m					
			_	er of well - 7 m.					
		Α	Sandy	Soil					
			•		M				
		A (i)	Depth	below bed level upto 3.0 I	М				
			<b>Depth</b> Rate of	below bed level upto 3.0 I sinking = 0.30 m per hour.	М				
			<b>Depth</b> Rate of	below bed level upto 3.0 I	<b>VI</b> day	0.150	354.00	53.10	L-12
			Depth Rate of a) La Mate	below bed level upto 3.0 I sinking = 0.30 m per hour.	day	0.150 1.250	354.00 442.00	53.10 552.50	L-12 L-15
			Depth Rate of a) La Mate Sinker (	below bed level upto 3.0 I sinking = 0.30 m per hour. abour					
			Depth Rate of a) La Mate Sinker ( Sinking	below bed level upto 3.0 It sinking = 0.30 m per hour. bour (skilled) helper (semi-skilled)	day day	1.250	442.00	552.50	L-15
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra	below bed level upto 3.0 It sinking = 0.30 m per hour. abour (skilled)	day day	1.250	442.00	552.50	L-15
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with grate capacity Consum	below bed level upto 3.0 It is inking = 0.30 m per hour.  abour  ( skilled ) helper ( semi-skilled ) lachinery running charges of crane ab bucket of 0.75 cum y and accessories.  mables in sinking @10 per	day day day	1.250 2.500	442.00 354.00	552.50 885.00	L-15 L-14
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consum cent of	below bed level upto 3.0 It is inking = 0.30 m per hour.  abour  ( skilled ) helper ( semi-skilled ) lachinery running charges of crane ab bucket of 0.75 cum y and accessories.  mables in sinking @10 per	day day day	1.250 2.500	442.00 354.00	552.50 885.00 3172.36	L-15 L-14
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consum cent of c) G	below bed level upto 3.0 It is sinking = 0.30 m per hour.  (skilled) helper (semi-skilled) lachinery running charges of crane ab bucket of 0.75 cum y and accessories.  mables in sinking @10 per in (b)	day day day hour	1.250 2.500	442.00 354.00	552.50 885.00 3172.36 317.24	L-15 L-14
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consumment of c) G d) O	below bed level upto 3.0 It is inking = 0.30 m per hour.  (skilled) helper (semi-skilled) lachinery running charges of crane ab bucket of 0.75 cum y and accessories.  mables in sinking @10 per if (b)  ST @ 12 % on (a+b)	day day day hour	1.250 2.500 3.250	442.00 354.00	552.50 885.00 3172.36 317.24 597.62	L-15 L-14
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consumment of c) G d) O e) C	below bed level upto 3.0 It is inking = 0.30 m per hour. Inbour  ( skilled ) Inhelper ( semi-skilled ) Itachinery Irunning charges of crane is bucket of 0.75 cum ity and accessories. Inables in sinking @10 per it (b)  ST @ 12 % on (a+b) Inverhead charges @ 20 % ity ontractor's profit @ 10 % its ontractor'	day day hour on (a+b+c) on (a+b+c+c	1.250 2.500 3.250	442.00 354.00	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34	L-15 L-14
			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consumment of c) G d) O e) C f) C	below bed level upto 3.0 It is inking = 0.30 m per hour. Inbour  ( skilled ) Inhelper ( semi-skilled ) Itachinery Trunning charges of crane ab bucket of 0.75 cum By and accessories. Inables in sinking @10 per (b)  ST @ 12 % on (a+b) Inverhead charges @ 20 %	day day hour on (a+b+c) on (a+b+c+c	1.250 2.500 3.250	442.00 354.00	552.50 885.00 3172.36 317.24 597.62 1115.56	L-15 L-14
		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consumment of c) G d) O e) C f) C Rate pe	below bed level upto 3.0 It is sinking = 0.30 m per hour. Indoor  ( skilled ) helper ( semi-skilled ) lachinery running charges of crane ab bucket of 0.75 cum y and accessories. mables in sinking @10 per if (b)  ST @ 12 % on (a+b) everhead charges @ 20 % ontractor's profit @ 10	day day hour on (a+b+c) on (a+b+c+c	1.250 2.500 3.250	442.00 354.00	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63	L-15 L-14
12.13 A			Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with grac capacity Consumment of c) G d) O e) C f) C Rate per Beyon	below bed level upto 3.0 It is sinking = 0.30 m per hour. Inbour  ( skilled ) helper ( semi-skilled ) lachinery running charges of crane ab bucket of 0.75 cum y and accessories. mables in sinking @10 per (b)  ST @ 12 % on (a+b) everhead charges @ 20 % ontractor's profit @ 10 % ess @ 1% on (a+b+c+d+e) er metre = (a+b+c+d+e+f) and 3m upto 10m depth	day day hour on (a+b+c) on (a+b+c+c	1.250 2.500 3.250	442.00 354.00 976.11	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35	L-15 L-14
12.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consum cent of c) G d) O e) C f) C Rate per Beyon Rate of	below bed level upto 3.0 It is sinking = 0.30 m per hour. Inbour  (skilled) helper (semi-skilled) lachinery running charges of crane ab bucket of 0.75 cum y and accessories. mables in sinking @10 per (b) ST @ 12 % on (a+b) everhead charges @ 20 % ontractor's profit @ 10 % ess @ 1% on (a+b+c+d+e) for metre = (a+b+c+d+e+f) and 3m upto 10m depth sinking = 0.22 m per hour.	day day hour on (a+b+c) on (a+b+c+c	1.250 2.500 3.250	442.00 354.00 976.11	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35	L-15 L-14
12.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consun cent of c) G d) O e) C f) C Rate pe Beyon Rate of a) La	below bed level upto 3.0 It is inking = 0.30 m per hour. Inbour  ( skilled ) Inhelper ( semi-skilled ) Itachinery Trunning charges of crane ab bucket of 0.75 cum y and accessories. Inables in sinking @10 per (b)  ST @ 12 % on (a+b) Inverhead charges @ 20 % ontractor's profit @ 10 % on (a+b+c+d+e) Iter metre = (a+b+c+d+e+f) Ind 3m upto 10m depth	day day hour on (a+b+c) on (a+b+c+c)	1.250 2.500 3.250	442.00 354.00 976.11	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35 7436.00	L-15 L-14 P&M-075
I2.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consuncent of c) G d) O e) C f) C Rate per Beyon Rate of a) La Mate	below bed level upto 3.0 It is sinking = 0.30 m per hour. Inbour  (skilled) helper (semi-skilled) lachinery running charges of crane ab bucket of 0.75 cum y and accessories. mables in sinking @10 per (b) ST @ 12 % on (a+b) everhead charges @ 20 % ontractor's profit @ 10 % ess @ 1% on (a+b+c+d+e) for metre = (a+b+c+d+e+f) and 3m upto 10m depth sinking = 0.22 m per hour.	day day hour  on (a+b+c) on (a+b+c+c)	1.250 2.500 3.250 d)	442.00 354.00 976.11 say	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35 7436.00	L-15 L-14
12.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consuncent of c) G d) O e) C f) C Rate per Beyon Rate of a) La Mate Sinker Sinking	below bed level upto 3.0 f sinking = 0.30 m per hour. abour  ( skilled ) helper ( semi-skilled ) lachinery running charges of crane ab bucket of 0.75 cum y and accessories. mables in sinking @10 per f (b) ST @ 12 % on (a+b) everhead charges @ 20 % ontractor's profit @ 10 % ess @ 1% on (a+b+c+d+e) er metre = (a+b+c+d+e+f) d 3m upto 10m depth sinking = 0.22 m per hour. abour	day day hour on (a+b+c) on (a+b+c+c)	1.250 2.500 3.250	442.00 354.00 976.11	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35 7436.00	L-15 L-14 P&M-075
12.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consuncent of c) G d) O e) C f) C Rate pe Beyon Rate of a) La Mate Sinker Sinking b) M	below bed level upto 3.0 It is inking = 0.30 m per hour. Inbour  ( skilled ) I helper ( semi-skilled ) I schinery	day day hour  on (a+b+c) on (a+b+c+c)  day day day day day	1.250 2.500 3.250 d) 0.180 1.500 3.000	442.00 354.00 976.11 say 354.00 442.00 354.00	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35 7436.00	L-15 L-14 P&M-075 L-12 L-15 L-14
12.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gra capacity Consuncent of c) G d) O e) C f) C Rate pe Beyon Rate of a) La Mate Sinker Sinking b) M Hire & r with gra	below bed level upto 3.0 It is inking = 0.30 m per hour. Inbour  ( skilled ) I helper ( semi-skilled )	day day hour  on (a+b+c) on (a+b+c+c) day day	1.250 2.500 3.250 d)	442.00 354.00 976.11 say 354.00 442.00	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35 7436.00	L-15 L-14 P&M-075
12.13 A		(i)	Depth Rate of a) La Mate Sinker ( Sinking b) M Hire & r with gracapacity Consumment of c) G d) O e) C f) C Rate po Beyon Rate of a) La Mate Sinker Sinking b) M Hire & r with gracapacity capacity	below bed level upto 3.0 It is inking = 0.30 m per hour. Inbour  ( skilled ) I helper ( semi-skilled ) I achinery I running charges of crane ab bucket of 0.75 cum I y and accessories. I hables in sinking @10 per ( b) I hables in sinking @10 per ( b) I have head charges @ 20 % I hables in sinking @10 mer ( b) I have head charges @ 20 % I hables in sinking @10 mer ( b) I hables @ 1% on (a+b+c+d+e) I had 3m upto 10m depth I sinking = 0.22 m per hour. I helper ( semi-skilled ) I hachinery I hables in sinking @10 mer hour. I helper ( semi-skilled ) I hachinery I trunning charges of crane	day day hour  on (a+b+c) on (a+b+c+c)  day day day day day	1.250 2.500 3.250 d) 0.180 1.500 3.000	442.00 354.00 976.11 say 354.00 442.00 354.00	552.50 885.00 3172.36 317.24 597.62 1115.56 669.34 73.63 7436.35 7436.00	L-15 L-14 P&M-075 L-12 L-15 L-14

				INDATIO				
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	DSR Spec.							Input ref.
			a) GST @ 12 % on (2+b)				704.46	
			c) GST @ 12 % on (a+b)	- /a.lb.la			794.46	
			d) Overhead charges @ 20 % o				1482.99	
			e) Contractor's profit @ 10 % o	n (a+b+c	+a)		889.79	
			f) Cess @ 1% on (a+b+c+d+e)				97.88	
			Rate per metre = (a+b+c+d+e+f)				9885.59	
40.40.4		/!!!\	B 4 40 4 00			say	<u>9886.00</u>	
12.13 A		(iii)	Beyond 10m upto 20m					
		а	Add 5 per cent for every additional previous meter	ıı meter d	lepth of sinking o	ver the rate of	sinking for the	
			previous meter					
			11th m	5%	10380.000			
			12th m	5%	10899.000			
			13th m	5%	11444.000			
	0.465		14th m	5%	12016.000			
	0.165		15th m	5%	12617.000			
			16th m	5%	13248.000			
			17th m 18th m	5% 5%	13910.000 14606.000			
			19th m	5%	15336.000			
			20th m	5%	16103.000			
			Total Cost from 10m upto 20m		130559.000			
			Avg Rate per metre		13056.000			
12.13 A		(iv)	Beyond 20m upto 30 m		13030.000			
12.10 A			-					
		а	Add 7.5 per cent for every addition	ial meter	depth of sinking of	over the rate of	sinking for the	
		<b>L</b>	previous meter  Add 20 per cent of cost for			Including 20%		
		b	Kentledge including supports,			Including 20% for Kentledge		
			loading arrangement and Labour).			ioi iteritieage		
			21st m	7.5%	17311.000	20773.00		
			22nd m	7.5%	18609.000	22331.00		
			23rd m	7.5%	20005.000	24006.00		
			24th m	7.5%	21505.000	25806.00		
			25th m	7.5%	23118.000	27742.00		
			26th m	7.5%	24852.000	29822.00		
			27th m	7.5%	26716.000	32059.00		
			28th m	7.5%	28720.000	34464.00		
			29th m	7.5%	30874.000	37049.00		
			30th m	7.5%	33190.000	39828.00		
			Total Cost from 20m upto 30m		244900.000	293880.00		
			Avg Rate per metre		<u>24490.000</u>	<u>29388.00</u>		
12.13 A		(v)	Beyond 30m upto 40 m					
		а	Add 10 per cent for every addition	al meter	depth of sinking o	over the rate of	sinking for the	
			previous meter					
		b	Add 20 per cent of cost for			Including 20%		
			Kentledge including supports,			for Kentledge		
			loading arrangement, and Labour etc.					
			31st m	100/	26500 000	12014 00		
			32nd	10% 10%	36509.000 40160.000	43811.00 48192.00		
			33rd m	10%	44176.000	53011.00		
			34th m	10%	48594.000	58313.00		
			35th m	10%	53453.000	64144.00		
			36th m	10%	58798.000	70558.00		
			37th m	10%	64678.000	77614.00		
			38th m	10%	71146.000	85375.00		
			39th m	10%	78261.000	93913.00		
			40th m	10%	86087.000	103304.00		
			Total Cost from 30m upto 40m		581862.000	698235.00		
			Avg Rate per metre		<u>58186.000</u>	<u>69824.00</u>		
12.13		В	Clayey Soil (7m dia. Well)					

B Clayey Soil (7m dia. Well)

Unit = Running Meter.

Taking output = 1 cum

Sr No	Ref. to		Description	Unit		Rate Rs	Cost Rs	Remarks
	MoRTH/ DSR Spec.		Description		Quantity	Rate RS	COST RS	Input ref
		(I)	Depth below bed level upto 3.0 Rate of sinking = 0.22 m per hour					
			•					
			a) Labour		0.400	054.00	00.70	1.42
			Mate	day	0.180	354.00	63.72	L-12
			Sinker (skilled)	day	1.500	442.00	663.00	L-15
			Sinking helper ( semi-skilled )	day	3.000	354.00	1062.00	L-14
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum	hour	4.500	976.11	4392.50	P&M-07
			capacity and accessories.  Consumables in sinking @ 10 pecent of (b)	r			439.25	
			c) GST @ 12 % on (a+b)				794.46	
			d) Overhead charges @ 20 %	% on (a+b+c)			1482.99	
			e) Contractor's profit @ 10 %				889.79	
			f) Cess @ 1% on (a+b+c+d+	•	,		97.88	
			Rate per metre = (a+b+c+d+e+f	-			9885.59	
			Rate per metre – (a.b.e.a.e.)	,		say	<u>9886.00</u>	
2.13 B		(ii)	Beyond 3m upto 10m depth			,		
		` ,	Rate of sinking = 0.17 m per hour	۲.				
			a) Labour Mate	day	0.260	354.00	92.04	L-12
			Sinker	day	2.000	442.00	884.00	L-15
			Sinking helper ( semi-skilled )	day	4.000	354.00	1416.00	L-14
			b) Machinery Hire & running charges of crane	hour	6.000	976.11	5856.66	P&M-0
			with grab bucket of 0.75 cum capacity and accessories.					
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.250	634.51	585.67	P&M-06
			Consumables in sinking @ 10 pe cent of (b)	r			644.23	
			c) GST @ 12 % on (a+b)				1137.43	
			d) Overhead charges @ 20 %	% on (a+b+c)			2123.21	
			e) Contractor's profit @ 10 %	ն on (a+b+c+	·d)		1273.92	
			f) Cess @ 1% on (a+b+c+d+	-	•		140.13	
			Rate per metre = (a+b+c+d+e+f	-			14153.29	
				,		say	<u>14153.00</u>	
12.13 B		(iii)	Beyond 10 m upto 20 m			_		
		а	Add 5 per cent for every additional previous meter		epth of sinking o	over the rate of	sinking for the	
		b	Add for dewatering @ 5 per cent cost, if required.	of		Including for dewatering @		
						5% of cost, if required		
			11th m	5%	14861.000	15604.00		
			12th m	5%	15604.000	16384.00		
			13th m	5%	16384.000	17203.00		
			14th m	5%	17203.000	18063.00		
			15th m	5%	18063.000	18966.00		
			16th m	5%	18966.000	19914.00		
			17th m	5%	19914.000	20910.00		
						04050.00		
			18th m	5%	20910.000	21956.00		
			18th m 19th m	5%	21956.000	23054.00		
			18th m 19th m 20th m		21956.000 23054.000	23054.00 24207.00		
			18th m 19th m	5%	21956.000	23054.00		

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

				FOUNDATIO	<u>vs</u>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b	Add 5 per cent of cos dewatering on the cost, if requ					
		С	Add 25 per cent of cos Kentledge including sup	st for ports,		Including 25% for Kentledge	Including 5% for	
			loading arrangement and Labo	•			dewatering, if required	
			31st m	7.5%	24783.000	30979.00	32528.00	
			32nd	7.5%	26642.000	33303.00	34968.00	
			33rd m	7.5%	28640.000	35800.00	37590.00	
			34th m	7.5%	30788.000	38485.00	40409.00	
			35th m	7.5%	33097.000	41371.00	43440.00	
			36th m	7.5%	35579.000	44474.00	46698.00	
			37th m	7.5%	38247.000	47809.00	50199.00	
			38th m	7.5%	41116.000	51395.00	53965.00	
			39th m	7.5%	44200.000	55250.00	58013.00	
			40th m	7.5%	47515.000	59394.00	62364.00	
			Total Cost from 30m upto 40m	1	350607.000	438260.00	460174.00	
12.13 B		(v)	Avg Rate per metre Beyond 30m upto 40 m		<u>35061.000</u>	<u>43826.00</u>	<u>46017.00</u>	
		а	Add 10 per cent for every ac previous meter	lditional meter	depth of sinking of	over the rate of	sinking for the	
		b	Add 5 per cent of cos dewatering, if required	t for				
		С	Add 20 per cent of cos	t for		Including 20%	Including 5%	
				ports,		for Kentledge	for	
			loading arrangement and Labo	our).			dewatering, if required	
			31st m	10%	52267.000	62720.00	65856.00	
			32nd	10%	57494.000	68993.00	72443.00	
			33rd m	10%	63243.000	75892.00	79687.00	
			34th m	10%	69567.000	83480.00	87654.00	
			35th m	10%	76524.000	91829.00	96420.00	
			36th m	10%	84176.000	101011.00	106062.00	
			37th m	10%	92594.000	111113.00	116669.00	
			38th m	10%	101853.000	122224.00	128335.00	
			39th m	10%	112038.000	134446.00	141168.00	
			40th m	10%	123242.000	147890.00	155285.00	
			Total Cost from 30m upto 40m	1	832998.000	999598.00	1049579.00	
			Avg Rate per metre		<u>83300.000</u>	<u>99960.00</u>	<u>104958.00</u>	
12.13		С	Soft Rock (7m dia well)  Unit = Running Meter.  Taking output = 1 m  Depth in soft rock strata upt	o 3m				
			Rate of sinking = 0.22 m per h					
			a) Labour					
			Mate	day	0.580	354.00	205.32	L-12
			Sinker ( skilled )	day	4.000	442.00	1768.00	L-15
			Sinking helper (semi-skilled)	day	10.000	354.00	3540.00	L-14
			Diver b) Machinery	day	0.750	796.00	597.00	L-07
			Hire & running charges of crar with grab bucket of 0.75 cum capacity and accessories.	ne hour	4.500	976.11	4392.50	P&M-075
			Air compressor with pneumatic breakers	c hour	3.750	634.51	2379.41	P&M-063
			Consumables in sinking @ 10 cent of (b)	per			677.19	
			Add for dewatering @ of 5 per of (a+b), if required	cent			677.97	
			c) GST @ 12 % on (a+b)				1708.49	
			c) Overhead charges @ 2	0 % on (a+b)			3189.18	

Electric Detonators					F	OUNDATION	S			
12.13   The permetre (a+b+c+d+e+f)   21259.0		MoRTH/			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.13   Take per mete = (a+b+c+d+e+f)   21259.0				4) C	'antractor's profit @ 10 9	2/ on (a+b+a)			1012 51	
Rate per metre = (a+b+c+d+e+f)   21289.0										
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				•	<del>-</del>	-				
Depth in Hard Rock (7 m dia well )   Unit = Running Meter   Taking output = 1 m				Rate p	er metre = (a+b+c+a+e+i	r)				
Depth in Hard rock strata up to 3 m	2.13		D	Hard R	lock ( 7m dia well )			say	<u>21259.00</u>	
Rate of sinking = 0.17 m per hour.  a) Material Gelatine 80 per cent Kg 7.000 164.60 1152.2 Electric Detonators each 30.000 111.04 331.2 b) Labour Mate day 1.600 354.00 566.4 Driller day 2.000 354.00 708.0 Blaster day 0.250 354.00 88.5 Mazdoor day 18.000 310.00 5580.0 Mazdoor day 18.000 310.00 5580.0 Diver day 0.500 796.00 398.0 Diver day 0.500 796.00 398.0 Diver day 0.500 796.00 398.0 C) Machinery Hire & running charges of crane hour 6.000 976.11 5866.6 with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of hour 2.000 634.51 1269.0 Dewatering @ 5 per cent of cost of (b+c), if required. Consumables in sinking @ 10 per cent of cost of (b+c), if required. Consumables in sinking @ 10 per cent of cost of (b) d) GST @ 12 % on (a+b+c) e) Overhead charges @ 20 % on (a+b+c+d) 2597.0 Rate per metre = (a+b+c+d+e+f) 2855.8 Rate per metre = (a+b+c+d+e+f) 2855.4 Rate per metre = (a+b+c+d+e+f) 2855.4 Sinking of 8 m external diameter well ( other than pneumatic method of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 63.7 Sinking helper (semi-skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.					•					
a) Material Gelatine 80 per cent Kg 7.000 164.60 1152.2 Electric Detonators each 30.000 11.04 331.2 b) Labour Mate day 1.600 354.00 566.4 Driller day 2.000 354.00 708.0 Blaster day 0.250 354.00 88.5 Mazdoor day 18.000 310.00 5580.0 Mazdoor (Skilled) day 4.000 442.00 1768.0 Diver day 0.500 796.00 398.0 c) Machinery Hire & running charges of crane hour 6.000 976.11 5856.6 with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of cost of (b+c), if required. Consumables in sinking @ 10 per cent of cost of (b+c), if required. Consumables in sinking @ 10 per cent of cost of (b+c), if required. Consumables in sinking @ 10 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per cent of cost of (b+c), if required.  Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 63.7 Sinking helper (semi-skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				Depth	in Hard rock strata up to	3 m				
Celatine 80 per cent   Kg   7,000   164,60   1152.2				Rate of	sinking = 0.17 m per hou	r.				
Celatine 80 per cent   Kg   7,000   164,60   1152.2				a) M	aterial					
Belectric Detonators   each   30.000   11.04   3311.2				,		Kg	7.000	164.60	1152.20	M-104
Mate							30.000	11.04	331.20	M-094/100
Mate				b) I	ahour					
Driller   day   2.000   354.00   708.0				,	aboui	dov	1 600	254.00	566.40	L-12
Blaster   day   0.250   354.00   88.5     Mazdoor   day   18.000   310.00   5580.0     Mazdoor (Skilled)   day   4.000   442.00   1768.0     Diver   day   0.500   796.00   398.0     C)   Machinery     Hire & running charges of crane   hour   6.000   976.11   5856.6     with grab bucket of 0.75 cum   capacity and accessories.     Hire & running charges of   hour   2.000   634.51   1269.0     compressor with pneumatic     breaker/Jack hammer for drilling.     Dewatering @ 5 per cent of cost of (b+c), if required.     Consumables in sinking @ 10 per   793.7     cent of cost of (b).   d) GST @ 12 % on (a+b+c)   2318.8     e) Overhead charges @ 20 % on (a+b+c+d+e)   2597.0     g) Cess @ 1% on (a+b+c+d+e+f)   285.6     g) Cess @ 1% on (a+b+c+d+e+f)   285.6     Rate per metre = (a+b+c+d+e+f+g)   3893.4     Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.     Unit = Running Meter, Taking output = 1 m     Diameter of well -8 m.     A Sandy Soil (i) Depth below bed level upto 3.0 M     Rate of sinking @ 0.25 m/hour   a) Labour     Mate										
Mazdoor (Skilled) day 18.000 310.00 5580.0  Mazdoor (Skilled) day 4.000 442.00 1768.0  Diver day 0.500 796.00 398.0  c) Machinery  Hire & running charges of crane hour 6.000 976.11 5856.6  with grab bucket of 0.75 cum capacity and accessories.  Hire & running charges of hour 2.000 634.51 1269.0  compressor with pneumatic breaker/Jack hammer for drilling.  Dewatering @ 5 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per 793.7  cent of cost of (b).  d) GST @ 12 % on (a+b+c)  e) Overhead charges @ 20 % on (a+b+c+d+e) 2597.0  g) Cess @ 1% on (a+b+c+d+e+f) 285.6  Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter.  Taking output = 1 m  Diameter of well -8 m.  A Sandy Soil  i) Depth below bed level upto 3.0 M  Rate of sinking @ 0.25 m/hour a) Labour  Mate dy 0.180 354.00 63.7  Sinker (skilled) day 1.500 442.00 663.0  Sinking helper (semi-skilled) day 3.000 354.00 1062.0  b) Machinery  Hire & running charges of crane hour 4.000 976.11 3904.4  with grab bucket of 0.75 cum capacity and accessories.										L-06
Mazdoor (Skilled)   day   4.000   442.00   1768.0									88.50	L-03
Diver   day   0.500   796.00   398.0   c)   Machinery					<del></del>	day			5580.00	L-13
c) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Hire & running charges of hour 2.000 634.51 1269.0 compressor with pneumatic breaker/Jack hammer for drilling.  Dewatering @ 5 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per cent of cost of (b).  d) GST @ 12 % on (a+b+c) 2318.8 f) Contractor's profit @ 10 % on (a+b+c+d) 4328.4 f) Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+f) 2855.0 g) C				Mazdo	or (Skilled)	day			1768.00	L-15
Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.  Hire & running charges of hour 2.000 634.51 1269.0 compressor with pneumatic breaker/Jack hammer for drilling.  Dewatering @ 5 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per 793.7 cent of cost of (b).  d) GST @ 12 % on (a+b+c) 2318.8 ft Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+ft) 285.6 g)  g) Cess @ 1% on (a+b+c+d+e+ft) 2885.6 g)  Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter.  Taking output = 1 m Diameter of well - 8 m.  A Sandy Soil  (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour  Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				Diver		day	0.500	796.00	398.00	L-07
Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.  Hire & running charges of hour 2.000 634.51 1269.0 compressor with pneumatic breaker/Jack hammer for drilling.  Dewatering @ 5 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per 793.7 cent of cost of (b).  d) GST @ 12 % on (a+b+c) 2318.8 ft) Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+ft) 285.6 g) Cess @ 1% on (a+b+c+d+e+ft) 2885.8 say 28853.0 say 28853.				c) M	lachinery					
compressor with pneumatic breaker/Jack hammer for drilling.  Dewatering @ 5 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per cent of cost of (b).  d) GST @ 12 % on (a+b+c) 2318.8 e) Overhead charges @ 20 % on (a+b+c+d) 4328.4 f) Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+f) 285.6 Rate per metre = (a+b+c+d+e+f) 285.6 Rate per metre = (a+b+c+d+e+f+g) 2885.3 y 28853.0 Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter.  Taking output = 1 m  Diameter of well - 8 m.  A Sandy Soil (i) Depth below bed level upto 3.0 M  Rate of sinking @ 0.25 m/hour a) Labour  Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery  Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				with gra	ab bucket of 0.75 cum	hour	6.000	976.11	5856.66	P&M-075
Dewatering @ 5 per cent of cost of (b+c), if required.  Consumables in sinking @ 10 per cent of cost of (b).  d) GST @ 12 % on (a+b+c) 2318.8 e) Overhead charges @ 20 % on (a+b+c+d) 4328.4 f) Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+f) 285.6 Rate per metre = (a+b+c+d+e+f+g) 2885.3 4 28853.4 Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m.  A Sandy Soil  (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 663.0 Sinker ( skilled ) day 1.500 442.00 663.0 Sinking helper ( semi-skilled ) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				compre	essor with pneumatic		2.000	634.51	1269.02	P&M-063
Consumables in sinking @ 10 per cent of cost of (b).  d) GST @ 12 % on (a+b+c) 2318.8 e) Overhead charges @ 20 % on (a+b+c+d) 4328.4 f) Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+f) 288.6 e) Cess @ 1% on (a+b+c+d+e+f) 28853.4 e) Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 63.7 e) Sinking helper ( semi-skilled ) day 1.500 442.00 663.0 e) Sinking helper ( semi-skilled ) day 3.000 354.00 1062.0 e) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				Dewate	ering @ 5 per cent of cost				811.73	
d) GST @ 12 % on (a+b+c) 2318.8 e) Overhead charges @ 20 % on (a+b+c+d) 4328.4 f) Contractor's profit @ 10 % on (a+b+c+d+e) 2597.0 g) Cess @ 1% on (a+b+c+d+e+f) 285.6 Rate per metre = (a+b+c+d+e+f+g) 28853.4  12.14 Section 1200  Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				Consur	nables in sinking @ 10 pe	er			793.74	
f) Contractor's profit @ 10 % on (a+b+c+d+e) g) Cess @ 1% on (a+b+c+d+e+f) 285.6 Rate per metre = (a+b+c+d+e+f) 28853.4  Sinking of 8 m external diameter well (other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m.  A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				d) G	SST @ 12 % on (a+b+c)				2318.81	
g) Cess @ 1% on (a+b+c+d+e+f) Rate per metre = (a+b+c+d+e+f+g) 28853.4  Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper ( semi-skilled ) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				•		•	•			
Rate per metre = (a+b+c+d+e+f+g)  28853.4  say  28853.0  Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter.  Taking output = 1 m  Diameter of well - 8 m.  A Sandy Soil  (i) Depth below bed level upto 3.0 M  Rate of sinking @ 0.25 m/hour  a) Labour  Mate day 0.180 354.00 63.7  Sinker (skilled) day 1.500 442.00 663.0  Sinking helper (semi-skilled) day 3.000 354.00 1062.0  b) Machinery  Hire & running charges of crane hour 4.000 976.11 3904.4  with grab bucket of 0.75 cum capacity and accessories.				-		-	d+e)		2597.07	
Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  **Unit = Running Meter.** Taking output = 1 m Diameter of well - 8 m.  **A Sandy Soil**  (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour  **Mate** Mate**  day** 0.180** 354.00** 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				•	•	•			285.68	
Sinking of 8 m external diameter well ( other than pneumatic method of sinking through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m. A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour  Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper ( semi-skilled ) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				Rate p	er metre = (a+b+c+d+e+f	f+g)			28853.46	
through all types of strata namely sandy soil, clayey soil and rock as shown again each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.  Unit = Running Meter. Taking output = 1 m Diameter of well - 8 m.  A Sandy Soil  (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour  Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.		<b>.</b>						•	<u>28853.00</u>	
Taking output = 1 m Diameter of well - 8 m.  A Sandy Soil (i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour  a) Labour  Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.	2.14			throug each c reckon	h all types of strata nat ase, complete as per d led from bed level.	mely sandy s	oil, clayey soil	and rock as s	hown against	
(i) Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour a) Labour  Mate day 0.180 354.00 63.7  Sinker (skilled) day 1.500 442.00 663.0  Sinking helper (semi-skilled) day 3.000 354.00 1062.0  b) Machinery  Hire & running charges of crane hour 4.000 976.11 3904.4  with grab bucket of 0.75 cum  capacity and accessories.				Taking	output = 1 m					
a) Labour         Mate       day       0.180       354.00       63.7         Sinker ( skilled )       day       1.500       442.00       663.0         Sinking helper ( semi-skilled )       day       3.000       354.00       1062.0         b) Machinery         Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.       hour       4.000       976.11       3904.4				Depth	below bed level upto 3.0	0 M				
Mate day 0.180 354.00 63.7 Sinker (skilled) day 1.500 442.00 663.0 Sinking helper (semi-skilled) day 3.000 354.00 1062.0 b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.										
Sinker ( skilled ) day 1.500 442.00 663.0 Sinking helper ( semi-skilled ) day 3.000 354.00 1062.0  b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				,	· <del></del>	day	0 180	354 00	63.72	L-12
Sinking helper (semi-skilled) day 3.000 354.00 1062.0  b) Machinery  Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.					( skilled )					L-15
b) Machinery Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.										L-13
Hire & running charges of crane hour 4.000 976.11 3904.4 with grab bucket of 0.75 cum capacity and accessories.				_		day	3.000	354.00	1062.00	L-14
				Hire & with gra	running charges of crane ab bucket of 0.75 cum	hour	4.000	976.11	3904.44	P&M-075
Consumables in sinking @10 per 390.4 cent of (b)						r			390.44	
c) GST @ 12 % on (a+b) 730.0				c) G	ST @ 12 % on (a+h)				730.03	
· · · · · · · · · · · · · · · · · · ·				-		% on (a+h)			1362.73	

				OUNDATION	5			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d)	( (			047.04	
			d) Contractor's profit @ 10 %				817.64	
			f) Cess @ 1% on (a+b+c+d+	•			89.94	
			Rate per metre = (a+b+c+d+e+f	)			9083.94	
40 44 4		/::\	Devend 2m unto 40m denth			say	<u>9084.00</u>	
12.14 A		(ii)	Beyond 3m upto 10m depth					
			Rate of sinking @ 0.20 m/hour					
			a) Labour					
			Mate	day	0.250	354.00	88.50	L-12
			Sinker	day	1.750	442.00	773.50	L-15
			Sinking helper ( semi-skilled )	day	3.500	354.00	1239.00	L-14
			b) Machinery					
			Hire & running charges of crane	hour	5.000	976.11	4880.55	P&M-075
			with grab bucket of 0.75 cum					
			capacity and accessories.					
			Consumables in sinking @10 per				488.06	
			cent of (b)				400.00	
			c) GST @ 12 % on (a+b)				896.35	
				on (ath)			1673.19	
			c) Overhead charges @ 20 %					
			d) Contractor's profit @ 10 %	-			1003.92	
			f) Cess @ 1% on (a+b+c+d+	-			110.43	
			Rate per metre = (a+b+c+d+e+f)	)			11153.50	
						say	<u>11154.00</u>	
12.14 A		(iii)	Beyond 10m upto 20m					
		а	Add 5 per cent for every addition	onal meter de	epth of sinking ov	ver the rate of s	sinking for the	
			previous meter	=0/	44744.000			
			11th m	5% 5%	11711.000			
			12th m	5% 5%	12297.000			
			13th m 14th m	5% 5%	12912.000 13558.000			
			15th m	5%	14236.000			
			16th m	5%	14948.000			
			17th m	5%	15695.000			
			18th m	5%	16480.000			
			19th m	5%	17304.000			
			20th m	5%	18169.000			
			Total Cost from 10m upto 20m		147310.000			
			Avg Rate per metre		<u>14731.000</u>			
12.14 A		(iv)	Beyond 20m upto 30 m		117011000			
		a	Add 7.5 per cent for every addit	tional meter d	lepth of sinking o	ver the rate of	sinkina for the	
			previous meter		1 3		3	
		b	Add 20 per cent of cost	for		Including 20%		
			Kentledge including suppor			for Kentledge		
			loading arrangement and Labour.	•				
			21st m	7.5%	19532.000	23438.00		
			22nd m	7.5%	20997.000	25196.00		
			23rd m	7.5%	22572.000	27086.00		
			24th m	7.5%	24265.000	29118.00		
			25th m	7.5%	26085.000	31302.00		
			26th m	7.5%	28041.000	33649.00		
			27th m	7.5%	30144.000	36173.00		
			28th m	7.5%	32405.000	38886.00		
			29th m	7.5%	34835.000	41802.00		
			30th m Total Cost from 20m upto 30m	7.5%	37448.000 276324.000	44938.00 331588.00		
			•					
40 44 4		<i>(.</i> )	Avg Rate per metre		<u>27632.000</u>	<u>33159.00</u>		
12.14 A		(v)	Beyond 30m upto 40 m					

12.14 A (v) Beyond 30m upto 40 m

**a** Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter

				FOU	NDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b	Add	20 per cent of cost for			Including 20%		
		-		tledge including supports,			for Kentledge		
			load	ing arrangement, and Labour					
			31st	m	10%	41193.000	49432.00		
			32n		10%	45312.000	54374.00		
			33rd		10%	49843.000	59812.00		
			34th 35th		10% 10%	54827.000 60310.000	65792.00 72372.00		
			36th		10%	66341.000	79609.00		
			37th		10%	72975.000	87570.00		
			38th	m	10%	80273.000	96328.00		
			39th		10%	88300.000	105960.00		
			40th		10%	97130.000	116556.00		
				Il Cost from 30m upto 40m		656504.000	787805.00		
		_		Rate per metre		<u>65650.000</u>	<u>78781.00</u>		
12.14		В	Unit	yey Soil(8m dia. Well) t = <i>Running Meter.</i>					
				ing output = 1 meter					
		(i)		oth from bed level upto 3.0 M					
			Rate a)	e of sinking @ 0.18 m/hour Labour					
			Mate	e	day	0.220	354.00	77.88	L-12
			Sink	er ( skilled )	day	2.000	442.00	884.00	L-15
			Sink b)	ing helper ( semi-skilled )  Machinery	hour	3.500	354.00	1239.00	L-14
			Hire with	& running charges of crane grab bucket of 0.75 cum acity and accessories.		5.500	976.11	5368.61	P&M-075
			Con	sumables in sinking @ 10 per of (b)				536.86	
			c)	GST @ 12 % on (a+b)				972.76	
			c)	Overhead charges @ 20 % or	n (a+b)			1815.82	
			d)	Contractor's profit @ 10 % or	` '			1089.49	
			f)	Cess @ 1% on (a+b+c+d+e)	(a - 5 - 6)			119.84	
			•						
			Rate	e per metre = (a+b+c+d+e+f)			601/	12104.26 <u>12104.00</u>	
12.14 B		(ii)	Bev	ond 3m upto 10m depth			say	12104.00	
.22		(,	Rate	e of sinking @ 0.17 m/hour Labour					
			Mate		day	0.320	354.00	113.28	L-12
			Sink	er	day	2.500	442.00	1105.00	L-15
				ing helper ( semi-skilled )	day	4.500	354.00	1593.00	L-14
			b)	Machinery			2233		
			Hire with	& running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	6.000	976.11	5856.66	P&M-075
			Air c	compressor with pneumatic el attachment for cutting hard	hour	3.500	634.51	2220.79	P&M-063
				sumables in sinking @ 10 per of (b)				807.75	
			c)	GST @ 12 % on (a+b)				1403.58	
			c)	Overhead charges @ 20 % or	n (a+b)			2620.01	
			ď)	Contractor's profit @ 10 % or				1572.01	
			f)	Cess @ 1% on (a+b+c+d+e)				172.92	
			Rate	e per metre = (a+b+c+d+e+f)				17465.00	
							say	<u>17465.00</u>	

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	
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#### 12.14 B (iii) Beyond 10 m upto 20 m

a Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter

b	previous meter Add for dewatering @ 5 per cent of cost, if required.			Including for dewatering @ 5% of cost, if required
	11th m	5%	18338.000	19255.00
	12th m	5%	19255.000	20218.00
	13th m	5%	20218.000	21229.00
	14th m	5%	21229.000	22290.00
	15th m	5%	22290.000	23405.00
	16th m	5%	23405.000	24575.00
	17th m	5%	24575.000	25804.00
	18th m	5%	25804.000	27094.00
	19th m	5%	27094.000	28449.00
	20th m	5%	28449.000	29871.00
	Total Cost from 10m upto 20m		230657.000	242190.00

### Avg Rate per metre 12.14 B (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

23066.000

24219.00

**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 required
	31st m	7.5%	30583.000	38229.00	40140.00
	32nd	7.5%	32877.000	41096.00	43151.00
	33rd m	7.5%	35343.000	44179.00	46388.00
	34th m	7.5%	37994.000	47493.00	49868.00
	35th m	7.5%	40844.000	51055.00	53608.00
	36th m	7.5%	43907.000	54884.00	57628.00
	37th m	7.5%	47200.000	59000.00	61950.00
	38th m	7.5%	50740.000	63425.00	66596.00
	39th m	7.5%	54546.000	68183.00	71592.00
	40th m	7.5%	58637.000	73296.00	76961.00
	Total Cost from 30m upto 40m		432671.000	540840.00	567882.00
	Avg Rate per metre		<u>43267.000</u>	<u>54084.00</u>	<u>56788.00</u>

#### 12.14 B (v) Beyond 30m upto 40 m

- a Add 10 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, if required

Avg Rate per metre

С	Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour).			Including 20% for Kentledge	Including 5% for dewatering, if required
	31st m	10%	64501.000	77401.00	81271.00
	32nd	10%	70951.000	85141.00	89398.00
	33rd m	10%	78046.000	93655.00	98338.00
	34th m	10%	85851.000	103021.00	108172.00
	35th m	10%	94436.000	113323.00	118989.00
	36th m	10%	103880.000	124656.00	130889.00
	37th m	10%	114268.000	137122.00	143978.00
	38th m	10%	125695.000	150834.00	158376.00
	39th m	10%	138265.000	165918.00	174214.00
	40th m	10%	152092.000	182510.00	191636.00
	Total Cost from 30m upto 40m		1027985.000	1233581.00	1295261.00

<u>102799.000</u>

<u>123358.00</u>

<u>129526.00</u>

				FU	UNDATIONS				
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.14		С	Sof	ft Rock ( 8m dia well )					
				t = Running Meter.					
				ing output = 1 m					
				th in soft rock strata upto 3m	า				
			_	e of sinking @ 0.20 m/hour					
			a) Mate	Labour	day	0.680	354.00	240.72	L-12
				e ker ( skilled )	day	4.000	442.00	1768.00	L-15
				king helper ( semi-skilled )	day	12.000	354.00	4248.00	L-14
			Dive	er	day	1.000	796.00	796.00	L-07
			b)	Machinery					
			with	& running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	5.000	976.11	4880.55	P&M-075
			Air c	compressor with pneumatic	hour	3.750	634.51	2379.41	P&M-063
			Con	akers sumables in sinking @ 10 per				726.00	
			Add	t of (b) for dewatering @ of 5 per cent a+b), if required	t			751.93	
			c)	GST @ 12 % on (a+b)				1894.87	
			d)	Overhead charges @ 20 %	on (athte)			3537.10	
			e)	Contractor's profit @ 10 %	-			2122.26	
			f)	Cess @ 1% on (a+b+c+d+e)				233.45	
			•	e per metre = (a+b+c+d+e+f)	,			23578.29	
				,			say	23578.00	
12.14		D	Har	d Rock ( 8m dia well )			_		
			Uni	t = Running Meter					
				ing output = 1 m					
				oth in hard rock strata upto 3	m				
			_	e of sinking @ 0.17 m/hour					
			a)	Material					
				atine 80 per cent	Kg	8.000	164.60	1316.80	M-104
				ctric Detonators	each	32.000	11.04	353.28	M-094/100
			Mate	Labour	day	1.090	354.00	385.86	L-12
			Drill		day	2.000	354.00	708.00	L-06
			Blas		day	0.250	354.00	88.50	L-03
			Maz	door	day	20.000	310.00	6200.00	L-13
			Maz	door (Skilled)	day	4.000	442.00	1768.00	L-15
				Machinery & running charges of crane grab bucket of 0.75 cum	hour	6.000	976.11	5856.66	P&M-075
				acity and accessories.					
			com	& running charges of pressor with pneumatic aker/Jack hammer for drilling.	hour	2.000	634.51	1269.02	P&M-063
			Dew	vatering @ 5 per cent of cost o	f			813.80	
			Con	c), if required. sumables in sinking @ 10 per				915.04	
				t of cost of (b).					
			d)	GST @ 12 % on (a+b+c)				2361.00	
			e)	Overhead charges @ 20 %				4407.19	
			f)	Contractor's profit @ 10 %	-	te)		2644.32	
			g)	Cess @ 1% on (a+b+c+d+e	-			290.87	
			Rate	e per metre = (a+b+c+d+e+f+	9)			29378.34	
							say	<u>29378.00</u>	

				UNDATION				_
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.15	Section		Sinking of 9 m external diame	tor well ( c	thar than and	umatic mathod	of sinking \	
12.15	1200		_		-			
	through all types of strata namely sandy soil, clayey soil and rock as shown age each case, complete as per drawing and technical specifications. Depth of sinking reckoned from bed level.							
			Unit = Running Meter.					
			Taking output = 1 m					
			Diameter of well - 9 m.					
		A (:)		N.A.				
		(i)	Depth below bed level upto 3.0 Rate of sinking @ 0.25 m/hour	IVI				
			a) Labour					
			Mate	day	0.190	354.00	67.26	L-12
			Sinker (skilled)	day	1.500	442.00	663.00	L-15 L-14
			Sinking helper ( semi-skilled )  b) Machinery	day	3.250	354.00	1150.50	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum	hour	4.000	976.11	3904.44	P&M-075
			capacity and accessories.					
			Consumables in sinking @10 per o	cent of (b)			390.44	
			c) GST @ 12 % on (a+b)				741.08	
			d) Overhead charges @ 20 %	on (a+b+c)			1383.34	
			e) Contractor's profit @ 10 %	on (a+b+c+	d)		830.01	
			f) Cess @ 1% on (a+b+c+d+e	)			91.30	
			Rate per metre = (a+b+c+d+e+f)				9221.37	
						say	<u>9221.00</u>	
12.15 A		(ii)	Beyond 3m upto 10m depth			•		
			Rate of sinking @ 0.18 m/hour					
			a) Labour					
			Mate	day	0.270	354.00	95.58	L-12
			Sinker	day	1.750	442.00	773.50	L-15
			Sinking helper ( semi-skilled )  b) Machinery	day	4.000	354.00	1416.00	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.500	976.11	5368.61	P&M-075
			Consumables in sinking @10 per of	cent of (b)			536.86	
			c) GST @ 12 % on (a+b)				982.87	
			d) Overhead charges @ 20 %	on (a+b+c)			1834.68	
			e) Contractor's profit @ 10 %		d)		1100.81	
			f) Cess @ 1% on (a+b+c+d+e	-	,		121.09	
			Rate per metre = (a+b+c+d+e+f)	,			12230.00	
			(			say	12230.00	
12.15 A		(iii)	Beyond 10m upto 20m			•		
		а	Add 5 per cent for every addition previous meter	nal meter de	pth of sinking o	ver the rate of	sinking for the	
			11th m	5%	12842.000			
			12th m	5%	13484.000			
			13th m	5%	14158.000			
			14th m	5%	14866.000			
			15th m	5% 5%	15609.000			
			16th m	5% 5%	16389.000			
			17th m	5% 5%	17208.000			
			18th m 19th m	5% 5%	18068.000 18971.000			
			20th m	5% 5%	19920.000			
			Total Cost from 10m upto 20m	J /0	161515.000			
			Avg Rate per metre					
12.15 A		(iv)	Beyond 20m upto 30 m		<u>16152.000</u>			

a Add 7.5 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	Remarks/ Input ref.
		b	Add 20 per cent of cost for			Including 20%		
		-	Kentledge including supports,			for Kentledge		
			loading arrangement and Labour.			9		
			21st m	7.5%	21414.000	25697.00		
			22nd m	7.5%	23020.000	27624.00		
			23rd m	7.5%	24747.000	29696.00		
			24th m 25th m	7.5% 7.5%	26603.000 28598.000	31924.00 34318.00		
			26th m	7.5% 7.5%	30743.000	36892.00		
			27th m	7.5%	33049.000	39659.00		
			28th m	7.5%	35528.000	42634.00		
			29th m	7.5%	38193.000	45832.00		
			30th m	7.5%	41057.000	49268.00		
			Total Cost from 20m upto 30m		302952.000	363544.00		
12.15 A		(v)	Avg Rate per metre Beyond 30m upto 40 m		<u>30295.000</u>	<u>36354.00</u>		
		a	Add 10 per cent for every additional	al meter o	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			Including 20% for Kentledge		
			31st m	10%	45162.700	54195.00		
			32nd	10%	49679.000	59615.00		
			33rd m	10%	54647.000	65576.00		
			34th m	10%	60112.000	72134.00		
			35th m	10%	66123.000	79348.00		
			36th m	10%	72735.000	87282.00		
			37th m	10% 10%	80009.000	96011.00		
			38th m 39th m	10%	88010.000 96811.000	105612.00 116173.00		
			40th m	10%	106492.000	127790.00		
			Total Cost from 30m upto 40m	1070	719780.700	863736.00		
			Avg Rate per metre		<u>71978.000</u>	<u>86374.00</u>		
12.15		В	Clayey Soil ( 9m dia. Well )					
			Unit = Running Meter.					
		(i)	Taking output = 1 cum  Depth below bed level upto 3.0 M  Rate of sinking 0.17 m / hour  a) Labour					
			Mate	day	0.240	354.00	84.96	L-12
			Sinker ( skilled )	day	2.250	442.00	994.50	L-15
			Sinking helper ( semi-skilled )  b) Machinery	day	3.750	354.00	1327.50	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.750	976.11	5612.63	P&M-075
			Consumables in sinking @ 10 per cent of (b)				561.26	
			c) GST @ 12 % on (a+b)				1029.70	
			d) Overhead charges @ 20 % or	n (a+b+c)	)		1922.11	
			e) Contractor's profit @ 10 % or	ı (a+b+c-	⊦d)		1153.27	
			f) Cess @ 1% on (a+b+c+d+e)	·	•		126.86	
			Rate per metre = (a+b+c+d+e+f)				12812.79	
			,			say	12813.00	
12.15 B		(ii)	Beyond 3m upto 10m depth					
		•	Rate of sinking 0.15 m / hour					
			a) Labour					
			Mate	day	0.340	354.00	120.36	L-12
			Sinker	day	2.500	442.00	1105.00	L-15
			Sinking helper ( semi-skilled )	day	5.000	354.00	1770.00	L-14
			•	-				

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	976.11	6344.72	P&M-075
		Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.750	634.51	2379.41	P&M-063
		Consumables in sinking @ 10 per cent of (b)				872.41	
		c) GST @ 12 % on (a+b)				1511.03	
		d) Overhead charges @ 20 % o	n (a+b+c)			2820.59	
		e) Contractor's profit @ 10 % o	n (a+b+c+	d)		1692.35	
		f) Cess @ 1% on (a+b+c+d+e)	-	•		186.16	
		Rate per metre = (a+b+c+d+e+f)				18802.03	
12.15 B	(iii	Beyond 10 m upto 20 m			say	<u>18802.00</u>	

b

Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter

Add for dewatering @ 5 per cent of			Including for
cost, if required.			dewatering @
			5% of cost, if
			required
11th m	5%	19742.000	20729.00
12th m	5%	20729.000	21765.00
13th m	5%	21765.000	22853.00
14th m	5%	22853.000	23996.00
15th m	5%	23996.000	25196.00
16th m	5%	25196.000	26456.00
17th m	5%	26456.000	27779.00
18th m	5%	27779.000	29168.00
19th m	5%	29168.000	30626.00
20th m	5%	30626.000	32157.00
Total Cost from 10m upto 20m		248310.000	260725.00
Avg Rate per metre		24831.000	26073.00

#### 12.15 B (iv) Beyond 20m upto 30 m

- Add 7.5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter
- Add 5 per cent of cost for dewatering on the cost, if required b

С	Add 25 per cent of cost for Kentledge including supports,			Including 25% for Kentledge	Including 5% for
	loading arrangement and Labour ).			_	dewatering, if
					required
	31st m	7.5%	32923.000	41154.00	43212.00
	32nd	7.5%	35392.000	44240.00	46452.00
	33rd m	7.5%	38046.000	47558.00	49936.00
	34th m	7.5%	40899.000	51124.00	53680.00
	35th m	7.5%	43966.000	54958.00	57706.00
	36th m	7.5%	47263.000	59079.00	62033.00
	37th m	7.5%	50808.000	63510.00	66686.00
	38th m	7.5%	54619.000	68274.00	71688.00
	39th m	7.5%	58715.000	73394.00	77064.00
	40th m	7.5%	63119.000	78899.00	82844.00
	Total Cost from 30m upto 40m		465750.000	582190.00	611301.00
	Ava Rate per metre		46575,000	58219.00	61130.00

#### 12.15 B (v) Beyond 30m upto 40 m

- Add 10 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter
- Add 5 per cent of cost for dewatering, if required

				FUL	JNDATION	8			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
		С	Add	20 per cent of cost for			Including 20%	Including 5%	
		·		ledge including supports,			for Kentledge	for	
				ing arrangement and Labour).				dewatering, if	
				g aagee aa _azea/.				required	
			31st	m	10%	69431.000	83317.00	87483.00	
			32nc		10%	76374.000	91649.00	96231.00	
					10%			105854.00	
			33rd			84011.000	100813.00		
			34th		10%	92412.000	110894.00	116439.00	
			35th		10%	101653.000	121984.00	128083.00	
			36th		10%	111818.000	134182.00	140891.00	
			37th		10%	123000.000	147600.00	154980.00	
			38th		10%	135300.000	162360.00	170478.00	
			39th		10%	148830.000	178596.00	187526.00	
			40th		10%	163713.000	196456.00	206279.00	
				I Cost from 30m upto 40m		1106542.000	1327851.00	1394244.00	
12.15		С		Rate per metre t Rock ( 9m dia well )		<u>110654.000</u>	<u>132785.00</u>	<u>139424.00</u>	
			Unit	= Running Meter.					
			Taki	ng output = 1 m					
			Dept	th in soft rock strata up to 3m					
			Rate	of sinking 0.15 m / hour					
				Labour					
			Mate		day	0.760	354.00	269.04	L-12
				er ( skilled )	day	4.000	442.00	1768.00	L-15
				•					L-14
				ing helper ( semi-skilled )	day	14.000	354.00	4956.00	
			Dive		day	1.200	796.00	955.20	L-07
				Machinery & running charges of crane grab bucket of 0.75 cum	hour	6.500	976.11	6344.72	P&M-07
			capa	ompressor with pneumatic	hour	4.000	634.51	2538.04	P&M-06
			brea	kers sumables in sinking @ 10 per				888.28	
			cent	of (b) for dewatering @ of 5 per cent				885.96	
				+b), if required				003.90	
			c)	GST @ 12 % on (a+b)				2232.63	
			d)	Overhead charges @ 20 % o	n (a+b+c)			4167.57	
			e)	Contractor's profit @ 10 % o		4)		2500.54	
			f)	Cess @ 1% on (a+b+c+d+e)	(a · b · c ·	-,		275.06	
			•	• , ,					
			Rate	e per metre = (a+b+c+d+e+f)				27781.04	
12.15		D	Harc	l Rock ( 9m dia well )			say	<u>27781.00</u>	
12.10				= Running Meter					
				ng output = 1 m					
				th in hard rock strata upto 3 n	n				
			_	of sinking 0.15 m / hour					
				=					
			a)	Material	IZ-	40.000	404.00	4040.00	M 404
				tine 80 per cent	Kg	10.000	164.60	1646.00	M-104
			Flec	tric Detonators	each	40.000	11.04	441.60	M-094/10
				Labour	_				
			b)			1.170	354.00	414.18	L-12
			Mate	)	day				
			Mate Drille	er	day day	2.000	354.00	708.00	L-06
			Mate	er	•		354.00 354.00		L-03
			Mate Drille	e er ter	day	2.000		708.00	
			Mate Drille Blass Maze	e er ter	day day	2.000 0.250	354.00	708.00 88.50	L-03
			Mate Drille Blass Maze	e er ter door door (Skilled)	day day day	2.000 0.250 22.000	354.00 310.00	708.00 88.50 6820.00	L-03 L-13
			Mate Drille Blass Maze Maze	e er ter door door (Skilled)	day day day day	2.000 0.250 22.000 4.000 1.000	354.00 310.00 442.00 796.00	708.00 88.50 6820.00 1768.00	L-03 L-13 L-15
			Mate Drille Blass Maze Maze Dive c) Hire	er er ter door door (Skilled) r	day day day day	2.000 0.250 22.000 4.000	354.00 310.00 442.00	708.00 88.50 6820.00 1768.00	L-03 L-13 L-15

				F	OUNDATION	<u>s</u>			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Hire	& running charges of	hour	2.500	634.51	1586.28	P&M-063
				pressor with pneumatic ker/Jack hammer for drilling.					
				vatering @ 5 per cent of cost c), if required.	of			950.69	
				sumables in sinking @ 10 pe t of cost of (b).	er			1059.47	
			d)	GST @ 12 % on (a+b+c)				2773.38	
			e)	Overhead charges @ 20 %	% on (a+b+c+c	d)		5176.97	
			f)	Contractor's profit @ 10 9	% on (a+b+c+c	d+e)		3106.18	
			g)	Cess @ 1% on (a+b+c+d+	-e+f)			341.68	
			Rate	e per metre = (a+b+c+d+e+f	f+g)			34509.70	
							say	<u>34510.00</u>	
12.16	1200		thro each	king of 10 m external dial ough all types of strata nat h case, complete as per d koned from bed level.	mely sandy s	oil, clayey soil	and rock as s	hown against	
			Unit	t = Running Meter					
			Taki	ing output = 1 m					
			Dian	meter of well - 10 m.					
		Α	San	ndy Soil					
		(i)	Dep	th below bed level upto 3.0	М				
			Rate	e of sinking 0.20 m / hour					
			a)	Labour					
			Mate	е	day	0.200	354.00	70.80	L-12
			Sink	xer ( skilled )	day	1.500	442.00	663.00	L-15
			Sink	king helper ( semi-skilled )	day	3.500	354.00	1239.00	L-14
			b)	Machinery	-				
			with	& running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	5.000	976.11	4880.55	P&M-075
			Con	sumables in sinking @10 per tof (b)	r			488.06	
			c)	GST @ 12 % on (a+b)				880.97	
			d)	Overhead charges @ 20 %	% on (a+b+c)			1644.48	
			e)	Contractor's profit @ 10 %		d)		986.69	
			f)	Cess @ 1% on (a+b+c+d+	-	•		108.54	
			-	e per metre = (a+b+c+d+e+i	ř)			10962.09	
							say	<u>10962.00</u>	
2.16 A		(ii)	Bey	ond 3m upto 10m depth					
			Rate	e of sinking 0.17 m / hour					
			a)	Labour					
			Mate		day	0.310	354.00	109.74	L-12
			Sink		day	2.000	442.00	884.00	L-15
				king helper ( semi-skilled )	day	4.250	354.00	1504.50	L-14
			with	Machinery & running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	5.750	976.11	5612.63	P&M-075
			Con	sumables in sinking @10 pe	r			561.26	
			c)	GST @ 12 % on (a+b)				1040.66	
			d)	Overhead charges @ 20 %	% on (a+b+c)			1942.56	
				O TOTTICAL OTTAL ACCURACE	·/				
			e)	Contractor's profit @ 10 %	% on (a+b+c+c	d)		1165.54	
			-	- <del>-</del>	-	d)		1165.54 128.21	
			e) f)	Contractor's profit @ 10 %	-е)	d)			

			F	OUNDATIO	NS			
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	DSR Spec.							Input ref.
	2 on open							
12.16 A		(iii)	Beyond 10m upto 20m					-
12.10 A		` '						
		а	Add 5 per cent for every additi	onal meter d	lepth of sinking o	ver the rate of	sinking for the	
			previous meter					
			11th m	5%	13597.000			
			12th m	5%	14277.000			
			13th m	5%	14991.000			
			14th m	5%	15741.000			
			15th m	5%	16528.000			
			16th m	5%	17354.000			
			17th m	5%	18222.000			
			18th m	5%	19133.000			
			19th m	5%	20090.000			
			20th m	5%	21095.000			
			Total Cost from 10m upto 20m		171028.000			
			·		47402 000			
			Avg Rate per metre		<u>17103.000</u>			
12.16 A		(iv)	Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every addi	tional meter	depth of sinking of	over the rate of	sinking for the	
			previous meter					
		_	Add 20 per cent of cost	for		Including 200/		
		b	Add 20 per cent of cost			Including 20%		
			Kentledge including suppo	•		for Kentledge		
			loading arrangement and Labour					
			21st m	7.5%	22677 000	27242.00		
					22677.000	27212.00		
			22nd m	7.5%	24378.000	29254.00		
			23rd m	7.5%	26206.000	31447.00		
			24th m	7.5%	28171.000	33805.00		
			25th m	7.5%	30284.000	36341.00		
			26th m	7.5%	32555.000	39066.00		
			27th m	7.5%	34997.000	41996.00		
			28th m	7.5%	37622.000	45146.00		
			29th m	7.5%				
					40444.000	48533.00		
			30th m	7.5%	43477.000	52172.00		
			Total Cost from 20m upto 30m		320811.000	384972.00		
			Avg Rate per metre		32081.000	<u>38497.00</u>		
12.16 A		(v)	Beyond 30m upto 40 m		<u> </u>	00 101100		
12.10 A		(٧)	Beyona 30m apto 40 m					
		а	Add 10 per cent for every addit	tional meter	depth of sinking o	over the rate of	sinking for the	
			previous meter					
		_	Add 20 per cent of cost	for		Including 200/		
		b	Add 20 per cent of cost			Including 20%		
			Kentledge including suppo			for Kentledge		
			loading arrangement, and Lab	our				
			etc.					
			31st m	10%	47825.000	57390.00		
			32nd	10%	52608.000	63130.00		
			33rd m	10%	57869.000	69443.00		
			34th m	10%	63656.000	76387.00		
			35th m	10%	70022.000	84026.00		
			36th m	10%	77024.000	92429.00		
			37th m	10%	84726.000	101671.00		
			38th m	10%	93199.000	111839.00		
			39th m	10%	102519.000	123023.00		
			40th m	10%	112771.000	135325.00		
			Total Cost from 30m upto 40m		762219.000	914663.00		
			Avg Rate per metre		<u>76222.000</u>	<u>91466.00</u>		
12.16		В	Clayey Soil (10m dia. Well )					
			Unit = Running Meter					
			Taking output = 1 cum					
		(i)	Depth below bed level upto 3.0	М				
		(-)	Rate of sinking 0.18m/hour.					
			_					
			a) Labour		0.055	05105	00.75	1.40
			Mate	day	0.250	354.00	88.50	L-12
			Sinker ( skilled )	day	2.500	442.00	1105.00	L-15
			Sinking helper ( semi-skilled )	day	5.500	354.00	1947.00	L-14

				FOL	JNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			b)	Machinery					
			Hire 8 with g	running charges of crane rab bucket of 0.75 cum rate and accessories.	hour	6.000	976.11	5856.66	P&M-075
			Consu	umables in sinking @ 10 per				585.67	
			cent o	GST @ 12 % on (a+b)				1149.94	
			•	• , ,	/a.lb.!a\				
			-	Overhead charges @ 20 % o	-			2146.55 1287.93	
			•	Contractor's profit @ 10 % o	n (a+b+c+	-a)			
			-	Cess @ 1% on (a+b+c+d+e)				141.67	
			Rate	per metre = (a+b+c+d+e+f)				14308.92	
12.16 B		/::\	Baya	nd 2m unto 10m donth			say	<u>14309.00</u>	
12.10 B		(ii)	-	nd 3m upto 10m depth					
				of sinking 0.15m/hour.					
			- /	_abour					
			Mate		day	0.400	354.00	141.60	L-12
			Sinke	r	day	3.000	442.00	1326.00	L-15
			Sinkin	ig helper ( semi-skilled )	day	5.500	354.00	1947.00	L-14
			b)	Machinery					
			with g	running charges of crane rab bucket of 0.75 cum ity and accessories.	hour	6.000	976.11	5856.66	P&M-075
			chisel	mpressor with pneumatic attachment for cutting hard	hour	4.000	634.51	2538.04	P&M-063
			Clay Consu	umables in sinking @ 10 per of (b)				839.47	
			c)	GST @ 12 % on (a+b)				1517.85	
				Overhead charges @ 20 % o	n (a+b+c)			2833.32	
			-	Contractor's profit @ 10 % o				1699.99	
			-	Cess @ 1% on (a+b+c+d+e)	•	• •		187.00	
				per metre = (a+b+c+d+e+f)				18886.93	
				(4 2 5 4 5 1)			say	18887.00	
12.16 B		(iii)	Beyo	nd 10 m upto 20 m			,		
		а	Add 5	per cent for every additionations ous meter	al meter d	epth of sinking o	ver the rate of	sinking for the	
		b	Add fo	or dewatering @ 5 per cent of frequired.			Including for dewatering @ 5% of cost, if required		
			11th	m	5%	19831.000	20823.00		
			12th		5%	20823.000	21864.00		
			13th		5%	21864.000	22957.00		
			14th	m	5%	22957.000	24105.00		
			15th		5%	24105.000	25310.00		
			16th		5%	25310.000	26576.00		
			17th		5%	26576.000	27905.00		
			18th		5% 5%	27905.000	29300.00		
			19th		5% 5%	29300.000	30765.00		
			20th	Ш	5%	30765.000	32303.00		

### 12.16 B (iv) Beyond 20m upto 30 m

Total Cost from 10m upto 20m

Avg Rate per metre

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

249436.000

<u>24944.000</u>

261908.00

26191.00

**b** Add 5 per cent of cost for dewatering on the cost, if required

			FOUI	NDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		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%	33072.000	41340.00	43407.00	
			32nd	7.5%	35552.000	44440.00	46662.00	
			33rd m	7.5%	38218.000	47773.00	50162.00	
			34th m	7.5%	41084.000	51355.00	53923.00	
			35th m	7.5%	44165.000	55206.00	57966.00	
			36th m	7.5%	47477.000	59346.00	62313.00	
			37th m	7.5%	51038.000	63798.00	66988.00	
			38th m	7.5%	54866.000	68583.00	72012.00	
			39th m	7.5%	58981.000	73726.00	77412.00	
			40th m	7.5%	63405.000	79256.00	83219.00	
			Total Cost from 30m upto 40m		467858.000	584823.00	614064.00	
			Avg Rate per metre		<u>46786.000</u>	<u>58482.00</u>	<u>61406.00</u>	
2.16 B		(v)	Beyond 30m upto 40 m					
		а	Add 10 per cent for every additional previous meter	meter dep	oth of sinking ove	er the rate of sink	king 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%	69746.000	83695.00	87880.00	
			32nd	10%	76721.000	92065.00	96668.00	
			33rd m	10%	84393.000	101272.00	106335.60	
			34th m	10%	92832.000	111398.00	116967.90	
			35th m	10%	102115.000	122538.00	128664.90	
			36th m	10%	112327.000	134792.00	141531.60	
			37th m	10%	123560.000	148272.00	155685.60	
			38th m	10%	135916.000	163099.00	171253.95	
			39th m	10%	149508.000	179410.00	188380.50	
			40th m	10%	164459.000	197351.00	207218.55	
			Total Cost from 30m upto 40m		1111577.000	1333892.00	1400586.60	
12.16		С	Avg Rate per metre Soft Rock (10m dia well)		<u>111158.000</u>	<u>133389.00</u>	<u>140059.00</u>	
0		Ū	Unit = Running Meter.					
			Taking output = 1 m  Depth in soft rock strata upto 3m  Rate of sinking 0.14m/hour.					
			a) Labour Mate	day	0.860	354.00	304.44	L-12
				•				L-15
			Sinker ( skilled )	day	4.000	442.00	1768.00	
			Sinking helper ( semi-skilled )	day	16.000	354.00	5664.00	L-14
			Diver b) Machinery	day	1.400	796.00	1114.40	L-07
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	7.000	976.11	6832.77	P&M-075
			Air compressor with pneumatic breakers	hour	4.250	634.51	2696.67	P&M-063
			Consumables in sinking @ 10 per cent of (b)				952.94	
			Add for dewatering @ 5 per cent of cost, if required				524.12	
			cost, ii required					
			c) GST @ 12 % on (a+b)				2382.88	
				ı (a+b+c)			2382.88 4448.04	

	I Def to I			UNDATIO				l
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	DSR Spec.							'
			f) Cess @ 1% on (a+b+c+d+e	\			293.57	
			· · · · · · · · · · · · · · · · · · ·	,			29650.66	
			Rate per metre = (a+b+c+d+e+f)			601/		
12.16		D	Hard Rock (10m dia well )			say	<u>29651.00</u>	
12.10			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	164.60	1810.60	M-104
			Electric Detonators	each.	44.000	11.04	485.76	M-094/100
			b) Labour					
			Mate	day	1.270	354.00	449.58	L-12
			Driller	day	2.000	354.00	708.00	L-06
			Blaster	day	0.250	354.00	88.50	L-03
			Mazdoor	day	24.000	310.00	7440.00	L-13
			Mazdoor (Skilled)	day	4.000	442.00	1768.00	L-15
			c) Machinery					
			Hire & running charges of crane	hour	8.500	976.11	8296.94	P&M-075
			with grab bucket of 0.75 cum					
			capacity and accessories.					
			Hire & running charges of	hour	3.000	634.51	1903.53	P&M-063
			compressor with pneumatic breaker/Jack hammer or drill					
							510.02	
			Dewatering @ 5 per cent of cost (c), if required.				510.02	
			Consumables in sinking @ 10 per				2116.46	
			cent of cost of (b+c).				2	
			d) GST @ 12 % on (a+b+c)				3069.29	
			e) Overhead charges @ 20 %	on (a+b+c+	⊦d)		5729.34	
			f) Contractor's profit @ 10 %	-	-		3437.60	
			g) Cess @ 1% on (a+b+c+d+e	-	,		378.14	
			Rate per metre = (a+b+c+d+e+f+	•			38191.76	
			(, , , , , , , , , , , , , , , , , , ,	<b>J</b> ,		say	38192.00	
12.17	1200		Sinking of 11 m external diame	eter well (	other than pner	•		
			through all types of strata name	ely sandy	soil, clayey soil	and rock as s	hown against	
			each case, complete as per dra	wing and	technical specific	cations. Depth	of sinking is	
			reckoned from bed level.					
			Unit = Running Meter					
			Taking output = 0.50 m					
			Diameter of well - 11 m.					
		A	•					
		(i)	Depth from bed level upto 3.0 M					
			Rate of sinking @ 0.15 m/hour					
			a) Labour Mate	day	0.240	254.00	74.24	L-12
			Sinker ( skilled )	day day	0.210 1.500	354.00 442.00	74.34 663.00	L-12
			Sinking helper (semi-skilled)	day	3.300	354.00	1168.20	L-14
			b) Machinery	day	0.000	004.00	1100.20	
			Hire & running charges of crane	hour	6.000	976.11	5856.66	P&M-075
			with grab bucket of 0.75 cum					
			capacity and accessories.					
			Consumables in sinking @10 per				585.67	
			cent of (b)				4004 74	
			c) GST @ 12 % on (a+b)				1001.74	
			d) Overhead charges @ 20 %				1869.92	
			e) Contractor's profit @ 10 %	•	+a)		1121.95	
			f) Cess @ 1% on (a+b+c+d+e	)			123.41	
			Cost for $0.5m = a+b+c+d+e+f$				12464.89	
			Rate per metre = (a+b+c+d+e+f)/	0.50			24929.78	
						say	<u>24930.00</u>	

				FOUNDATI	ONS			
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 dep					
			Rate of sinking @ 0.13 m/h	nour				
			a) Labour	4	0.200	254.00	440.00	1 12
			Mate Sinker	day day	0.320 2.000	354.00 442.00	113.28 884.00	L-12 L-15
			Sinking helper (semi-skilled	•	4.500	354.00	1593.00	L-14
			b) Machinery	-,,		3033	.000.00	
			Hire & running charges of c with grab bucket of 0.75 cu		4.000	976.11	3904.44	P&M-07
			capacity and accessories.  Consumables in sinking @	10 per			390.44	
			cent of (b) c) GST @ 12 % on (a+	-b)			826.22	
			d) Overhead charges (	-	·c)		1542.28	
			e) Contractor's profit (	•	•		925.37	
			f) Cess @ 1% on (a+b	•	C. u,		101.79	
			Cost for $0.5m = a+b+c+d+e$	,			10280.82	
			Rate per metre = (a+b+c+				20561.64	
			Trate per metre (a.b.o.	a · o · 1// 0.00		say	20562.00	
12.17 A		(iii)	Beyond 10m upto 20m					
		а	Add 5 per cent for every previous meter	additional meter	depth of sinking of	over the rate of	sinking for the	
			11th m	5%	21590.000			
			12th m	5%	22670.000			
			13th m	5%	23804.000			
			14th m	5%	24994.000			
			15th m	5%	26244.000			
			16th m	5%	27556.000			
			17th m 18th m	5% 5%	28934.000 30381.000			
			19th m	5% 5%	31900.000			
			20th m	5%	33495.000			
			Total Cost from 10m upto 2		271568.000			
			Avg Rate per metre		<u>27157.000</u>			
12.17 A			Beyond 20m upto 30 m					
		а	Add 7.5 per cent for every previous meter	•	r depth of sinking		sinking for the	
		b	Add 20 per cent of Kentledge including sloading arrangement and L	supports,		Including 20% for Kentledge		
			21st m	7.5%	36007.000	43208.00		
			22nd m	7.5%		46450.00		
			23rd m	7.5%		49933.00		
			24th m	7.5%		53678.00		
			25th m	7.5%		57704.00		
			26th m	7.5%		62033.00		
			27th m 28th m	7.5% 7.5%		66685.00 71687.00		
			29th m	7.5% 7.5%		77063.00		
			30th m	7.5%		82842.00		
			Total Cost from 20m upto 3		509403.000	611283.00		
			Avg Rate per metre		<u>50940.000</u>	<u>61128.00</u>		
12.17 A		(v)	Beyond 30m unto 40 m					
12.17 A		(v) a	Beyond 30m upto 40 m  Add 10 per cent for every	v additional mete	r depth of sinking	over the rate of	sinking for the	
12.17 A		а	Add 10 per cent for every previous meter		r depth of sinking		sinking for the	
12.17 A		• •	Add 10 per cent for every previous meter Add 20 per cent of	cost for supports,	r depth of sinking	over the rate of Including 20% for Kentledge	sinking for the	
12.17 A		а	Add 10 per cent for every previous meter  Add 20 per cent of Kentledge including soloading arrangement, and	cost for supports,	r depth of sinking of the results of	Including 20%	sinking for the	

			F	OUNDATION	IS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			33rd m	10%	91886.000	110263.00		
			34th m	10%	101075.000	121290.00		
			35th m	10%	111183.000	133420.00		
			36th m	10%	122301.000	146761.00		
			37th m	10%	134531.000	161437.00		
			38th m	10%	147984.000	177581.00		
			39th m	10%	162782.000	195338.00		
			40th m	10%	179060.000	214872.00		
			Total Cost from 30m upto 40m		1210274.000	1452329.00		
			Avg Rate per metre		121027.000	145233.00		
12.17		В	Clayey Soil (11 m dia. Well )					
			Unit = Running Meter					
			Taking output = 0.50 meter					
		/i\	Depth from bed level upto 3.0 M					
		(i)	•	И				
			Rate of sinking @ 0.10 m/hour					
			a) Labour Mate	dov	0.260	254.00	02.04	L-12
			Sinker ( skilled )	day day	0.260 2.500	354.00 442.00	92.04 1105.00	L-15
			Sinking helper (semi-skilled)	day	4.000	354.00	1416.00	L-14
			b) Machinery	uay	4.000	334.00	1410.00	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	976.11	4880.55	P&M-075
			Consumables in sinking @ 10 pe cent of (b)	r			488.06	
			c) GST @ 12 % on (a+b)				957.80	
			d) Overhead charges @ 20 %	6 on (a+b+c)			1787.89	
			e) Contractor's profit @ 10 %				1072.73	
			f) Cess @ 1% on (a+b+c+d+	-	u,		118.00	
			, ,	<del>e</del> )				
			Cost for $0.5m = a+b+c+d+e+f$	V0. F0			11918.07	
			Rate per metre = (a+b+c+d+e+f	)/0.50			23836.14	
2.17 B		/::\	Payand 2m unto 40m danth			say	<u>23836.00</u>	
2.17 B		(ii)	Beyond 3m upto 10m depth					
			Rate of sinking @ 0.08 m/hour					
			a) Labour	44	0.400	254.00	450.00	1.42
			Mate	day	0.430	354.00	152.22	L-12 L-15
			Sinker	day	3.500 5.750	442.00 354.00	1547.00	L-13 L-14
			Sinking helper (semi-skilled) b) Machinery	day	5.750	334.00	2035.50	E-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	976.11	5856.66	P&M-075
			Air compressor with pneumatic chisel attachment for cutting hard clay	hour	4.250	634.51	2696.67	P&M-063
			Consumables in sinking @ 10 pe cent of (b)	r			855.33	
			c) GST @ 12 % on (a+b)				1577.21	
			d) Overhead charges @ 20 %	6 on (a+b+c)			2944.12	
			e) Contractor's profit @ 10 %				1766.47	
			f) Cess @ 1% on (a+b+c+d+	-	-,		194.31	
			Cost for 0.5m = a+b+c+d+e+f	~,			19625.49	
				V0 E0			39250.98	
			Rate per metre = (a+b+c+d+e+f	ງເບ.ວບ		say	39250.98 39251.00	
						cal/		

**a** Add 5 per cent for every additional meter depth of sinking over the rate of sinking for the previous meter

			FOU	INDATIO	NS			
Sr No	Ref. to MoRTH/		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input re
	DSR Spec.							
		b	Add for dewatering @ 5 per cent of			Including for		
			cost, if required.			dewatering @ 5% of cost, if		
						required		
			11th m	5%	41214 000	43275.00		
			12th m	5% 5%	41214.000 43275.000	45439.00		
			13th m	5%	45439.000	47711.00		
			14th m	5%	47711.000	50097.00		
			15th m	5%	50097.000	52602.00		
			16th m	5%	52602.000	55232.00		
			17th m	5%	55232.000	57994.00		
			18th m	5%	57994.000	60894.00		
			19th m	5%	60894.000	63939.00		
			20th m	5%	63939.000	67136.00		
			Total Cost from 10m upto 20m		518397.000	544317.00		
0.47.0		<i>.</i> . \	Avg Rate per metre		<u>51840.000</u>	<u>54432.00</u>		
2.17 B			Beyond 20m upto 30 m	al motor	donth of sinking	over the rete of	ainking for the	
		а	Add 7.5 per cent for every addition previous meter	iai metei	depth of sinking	over the rate of	Sirking 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%	68734.000	85918.00	90214.00	
			32nd	7.5%	73889.000	92361.00	96979.00	
			33rd m	7.5%	79431.000	99289.00	104253.00	
			34th m	7.5%	85388.000	106735.00	112072.00	
			35th m	7.5%	91792.000	114740.00	120477.00	
			36th m	7.5%	98676.000	123345.00	129512.00	
			37th m 38th m	7.5%	106077.000	132596.00	139226.00 149668.00	
			39th m	7.5% 7.5%	114033.000 122585.000	142541.00 153231.00	160893.00	
			40th m	7.5% 7.5%	131779.000	164724.00	172960.00	
			Total Cost from 30m upto 40m	7.570	972384.000	1215480.00	1276254.00	
			Avg Rate per metre		97238.000	121548.00	127625.00	
2.17 B		(v)	Beyond 30m upto 40 m					
		а	Add 10 per cent for every additional	al meter	depth of sinking	over the rate of	sinking 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%	144957.000	173948.00	182645.00	
			32nd	10%	159453.000	191344.00	200911.00	
			33rd m	10%	175398.000	210478.00	221002.00	
			34th m	10% 10%	192938.000	231526.00	243102.00	
			35th m 36th m	10% 10%	212232.000 233455.000	254678.00 280146.00	267412.00 294153.00	
			37th m	10%	256801.000	308161.00	323569.00	
			38th m	10%	282481.000	338977.00	355926.00	
			39th m	10%	310729.000	372875.00	391519.00	
			40th m	10%	341802.000	410162.00	430670.00	
			Total Cost from 30m upto 40m		2310246.000	2772295	2910909	
12 17		_	Avg Rate per metre		<u>231025.000</u>	<u>277230.00</u>	<u>291091.00</u>	
12.17		C	Soft Rock (11m dia well )					
			Unit = Running Meter.					
			Laking output = 0 E0 m					

Page : 292

Taking output = 0.50 m

Sr No	1			OUNDATIONS		<u>.</u>		
	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
		D	epth in soft rock strata upto 3	Bm				
		R	ate of sinking @ 0.06 m/hour					
		a)	Labour					
			ate	day	0.950	354.00	336.30	L-12
			nker ( skilled )	day	4.250	442.00	1878.50	L-15
			nking helper (semi-skilled)	day	18.000	354.00	6372.00	L-14
			ver Machinery	day	1.500	796.00	1194.00	L-07
		wi	Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories.	hour	8.000	976.11	7808.88	P&M-0
		Ai	r compressor with pneumatic	hour	4.500	634.51	2855.30	P&M-0
			onsumables in sinking @ 10 pe ent_of (b)	r			1066.42	
		Ad	dd for dewatering @ 5 per cent ost, if required	of			586.53	
		c)					2651.75	
		d)		% on (a+b+c)			4949.94	
		e)			•		2969.96	
		f)	Cess @ 1% on (a+b+c+d+	-	,		326.70	
		,	ost for 0.5m = a+b+c+d+e+f	<b>C</b> )			32996.28	
			ate per metre = (a+b+c+d+e+f	3/0 50			65992.56	
		IX.	ate per metre - (arbrerdreri	<i>j</i> /0.50		eav	65993.00	
2.17		D H	ard Rock (11m dia well )			say	03993.00	
	'							
			nit = Running Meter.					
			aking output = 0.50 m					
		D	epth in hard rock upto 3 m					
		R	ate of sinking @ 0.05 m/hour					
		a)	Material					
		G						
		O.	elatine 80 per cent	Kg	12.000	164.60	1975.20	M-10
			elatine 80 per cent ectric Detonators	Kg each.	12.000 48.000	164.60 11.04	1975.20 529.92	
			ectric Detonators					
		EI b) M	ectric Detonators  Labour ate		48.000 1.350	11.04 354.00	529.92 477.90	M-094/
		EI b) M	ectric Detonators  Labour	each. day day	48.000 1.350 2.000	11.04 354.00 354.00	529.92 477.90 708.00	M-094/ L-12 L-06
		EI <b>b)</b> M Di BI	ectric Detonators  Labour  ate riller aster	each.  day day day	48.000 1.350 2.000 0.250	354.00 354.00 354.00	529.92 477.90 708.00 88.50	M-094/ L-12 L-06 L-03
		b) M Di BI	ectric Detonators  Labour  ate riller aster azdoor	each.  day day day day day	1.350 2.000 0.250 26.000	354.00 354.00 354.00 354.00 310.00	529.92 477.90 708.00 88.50 8060.00	M-094/ L-12 L-06 L-03 L-13
		b) M Di BI M	ectric Detonators  Labour  ate riller aster azdoor azdoor (Skilled)	each.  day day day	48.000 1.350 2.000 0.250	354.00 354.00 354.00	529.92 477.90 708.00 88.50	M-094/ L-12 L-06 L-03 L-13
		b) M Di BI M M	ectric Detonators  Labour  ate riller aster azdoor azdoor (Skilled)  Machinery	each.  day day day day day day	48.000 1.350 2.000 0.250 26.000 4.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00	M-094/ L-12 L-06 L-03 L-13
		EI b) M DI BI M M c) Hi	ectric Detonators  Labour  ate riller aster azdoor azdoor (Skilled)	each.  day day day day day	1.350 2.000 0.250 26.000	354.00 354.00 354.00 354.00 310.00	529.92 477.90 708.00 88.50 8060.00	M-094/ L-12 L-06 L-03 L-13
		EI b) M Di BI M M C) Hi wi ca	ectric Detonators  Labour  ate riller aster azdoor azdoor (Skilled)  Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of ompressor with pneumatic	each.  day day day day day day	48.000 1.350 2.000 0.250 26.000 4.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00	M-104 M-094/1 L-12 L-06 L-03 L-13 L-15 P&M-0
		EI b) M Di BI M C) Hi wi ca Hi co br	ectric Detonators  Labour  ate riller aster azdoor azdoor (Skilled)  Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of impressor with pneumatic reaker/Jack hammer or drill ewatering @ 5 per cent of cost	each.  day day day day hour	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10	M-094/1 L-12 L-06 L-03 L-13 L-15
		EI  b)  M  Di  BI  M  C)  Hi  co  br  C(c)	ectric Detonators  Labour  ate  riller aster azdoor azdoor (Skilled)  Machinery  ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories.  ire & running charges of ompressor with pneumatic eaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. onsumables in sinking @ 10 pe	each.  day day day day day hour	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10	M-094/* L-12 L-06 L-03 L-13 L-15
		EI  b)  M  Di  BI  M  C)  Hi  co  br  C  C  C  C  C	ectric Detonators  Labour  ate riller aster azdoor azdoor (Skilled)  Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of impressor with pneumatic reaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. consumables in sinking @ 10 pe ent of cost of (b+c).	each.  day day day day day hour	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10 2220.79 599.09 2308.43	M-094/* L-12 L-06 L-03 L-13 L-15
		EI b) M Di BI M C) Hi ca br Co ca ca d)	ectric Detonators  Labour ate riller aster azdoor azdoor (Skilled)  Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of ompressor with pneumatic eaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. consumables in sinking @ 10 pe ent of cost of (b+c).  GST @ 12 % on (a+b+c)	each.  day day day day hour	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10 2220.79 599.09 2308.43 3419.63	M-094/ L-12 L-06 L-03 L-13 L-15
		EI b) M DI BI M M c) Hi wi ca br C C C d d)	Labour ate riller aster azdoor azdoor (Skilled) Machinery are & running charges of crane th grab bucket of 0.75 cum apacity and accessories. are & running charges of apacity and accessories. are &	each.  day day day day hour  hour	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10 2220.79 599.09 2308.43 3419.63 6383.31	M-094/ L-12 L-06 L-03 L-13 L-15
		EI b) M DI BI M M c) Hi wi ca br CC CG CG d) e)	Labour ate riller aster azdoor azdoor (Skilled) Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of impressor with pneumatic eaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. insumables in sinking @ 10 per ent of cost of (b+c).  GST @ 12 % on (a+b+c) Overhead charges @ 20 % Contractor's profit @ 10 %	each.  day day day day hour  hour  or  on (a+b+c+d)	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10 2220.79 599.09 2308.43 3419.63 6383.31 3829.99	M-094/ L-12 L-06 L-03 L-13 L-15
		EI b) M Di BI M M c) Hi wi ca br Cc ca d) e) g)	Labour ate riller aster azdoor (Skilled) Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of impressor with pneumatic eaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. in gray and accessories in consumables in sinking @ 10 pe ent of cost of (b+c).  GST @ 12 % on (a+b+c)  Overhead charges @ 20 %  Contractor's profit @ 10 %  Cess @ 1% on (a+b+c+d+c)	each.  day day day day hour  hour  or  on (a+b+c+d)	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10 2220.79 599.09 2308.43 3419.63 6383.31 3829.99 421.30	M-094/ L-12 L-06 L-03 L-13 L-15
		EI b) M Di BI M M c) Hi wi ca br Cc ca d) e) g)	Labour ate riller aster azdoor azdoor (Skilled) Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of impressor with pneumatic eaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. insumables in sinking @ 10 per ent of cost of (b+c).  GST @ 12 % on (a+b+c) Overhead charges @ 20 % Contractor's profit @ 10 %	each.  day day day day hour  hour  or  on (a+b+c+d)	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92  477.90 708.00 88.50 8060.00 1768.00  9761.10  2220.79  599.09  2308.43  3419.63 6383.31 3829.99 421.30 42551.16	M-094/ L-12 L-06 L-03 L-13 L-15
		EI b) M Di BI M M c) Hi wi ca br Ca ca d) e) g)	Labour ate riller aster azdoor (Skilled) Machinery ire & running charges of crane th grab bucket of 0.75 cum apacity and accessories. ire & running charges of impressor with pneumatic eaker/Jack hammer or drill ewatering @ 5 per cent of cost ), if required. in gray and accessories in consumables in sinking @ 10 pe ent of cost of (b+c).  GST @ 12 % on (a+b+c)  Overhead charges @ 20 %  Contractor's profit @ 10 %  Cess @ 1% on (a+b+c+d+c)	each.  day day day day hour  hour  on (a+b+c+d) on (a+b+c+d+e+f)	48.000 1.350 2.000 0.250 26.000 4.000 10.000	354.00 354.00 354.00 310.00 442.00	529.92 477.90 708.00 88.50 8060.00 1768.00 9761.10 2220.79 599.09 2308.43 3419.63 6383.31 3829.99 421.30	M-094/ L-12 L-06 L-03 L-13 L-15

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.

			F	FOUNDATIONS	3			
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	3.0 M				
			Rate of sinking @ 0.05 m/hour					
			a) Labour					
			Mate	day	0.220	354.00	77.88	L-12
			Sinker ( skilled ) Sinking helper (semi-skilled)	day day	1.750 4.000	442.00 354.00	773.50 1416.00	L-15 L-14
			b) Machinery	uay	4.000	334.00	1410.00	
			Hire & running charges of crane with grab bucket of 0.75 cum	hour	6.000	976.11	5856.66	P&M-075
			capacity and accessories.  Consumables in sinking @10 pe cent of (b)	er			585.67	
			c) GST @ 12 % on (a+b)				1045.17	
			, , ,	0/ on (othto)			1950.98	
			d) Overhead charges @ 20 °					
			e) Contractor's profit @ 10 °	% on (a+b+c+d	)		1170.59	
			f) Cess @ 1% on (a+b+c+d-	+e)			128.76	
			Cost for $0.25m = a+b+c+d+e+f$				13005.21	
			Rate per metre = (a+b+c+d+e+	f)/0.25			52020.84	
2.18 A		(ii)	Beyond 3m upto 10m depth			say	<u>52021.00</u>	
		` '						
			Rate of sinking @ 0.038 m/hour					
			a) Labour Mate	day	0.370	354.00	130.98	L-12
			Sinker	day	2.500	442.00	1105.00	L-15
				•		354.00		L-14
			Sinking helper (semi-skilled)	day	4.750	354.00	1681.50	L-14
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	976.11	6344.72	P&M-075
			Consumables in sinking @10 pe cent of (b)	er			634.47	
			c) GST @ 12 % on (a+b)				1187.60	
			d) Overhead charges @ 20	% on (a+b+c)			2216.85	
			e) Contractor's profit @ 10 °		)		1330.11	
			f) Cess @ 1% on (a+b+c+d-	+e)			146.31	
			Cost for 0.25m = a+b+c+d+e+f				14777.54	
			Rate per metre = (a+b+c+d+e+	f)/0.25			59110.16	
2.18 A		(iii)	Beyond 10m upto 20m			say	<u>59110.00</u>	
		а	Add 5 per cent for every additional previous meter	ional meter dep	oth of sinking ov	ver the rate of	sinking for the	
			11th m	5%	62066.000			
			12th m	5%	65169.000			
			13th m	5%	68427.450			
			14th m	5%	71848.823			
			15th m	5% 5%	75441.264			
			16th m 17th m	5% 5%	79213.327 83173.993			
			18th m	5%	87332.693			
			19th m	5%	91699.328			
			20th m	5%	96284.294			
			Total Cost from 10m upto 20m		780656.172			
			Avg Rate per metre		<u>78066.000</u>			

			100	NUALIO	13			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.18 A		(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

Add 20 per cent of cost for Kentledge including supports, loading arrangement and Labour.			Including 20% for Kentledge
21st m	7.5%	103506.000	124207.00
22nd m	7.5%	111269.000	133523.00
23rd m	7.5%	119614.000	143537.00
24th m	7.5%	128585.000	154302.00
25th m	7.5%	138229.000	165875.00
26th m	7.5%	148596.000	178315.00
27th m	7.5%	159741.000	191689.00
28th m	7.5%	171722.000	206066.00
29th m	7.5%	184601.000	221521.00
30th m	7.5%	198446.000	238135.00
Total Cost from 20m upto 30m		1464309.000	1757170.00
Avg Rate per metre		146431.000	175717.00

#### 12.18 A (v) Beyond 30m upto 40 m

**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			Including 20% for Kentledge
	etc.			
	31st m	10%	218291.000	261949.00
	32nd	10%	240120.000	288144.00
	33rd m	10%	264132.000	316958.00
	34th m	10%	290545.000	348654.00
	35th m	10%	319600.000	383520.00
	36th m	10%	351560.000	421872.00
	37th m	10%	386716.000	464059.00
	38th m	10%	425388.000	510466.00
	39th m	10%	467927.000	561512.00
	40th m	10%	514720.000	617664.00
	Total Cost from 30m upto 40m		3478999.000	4174798
	Avg Rate per metre		<u>347900.000</u>	<u>417480.00</u>

#### 12.18 B Clayey Soil (12 m dia. Well)

Unit = Running Meter.

Taking output = 0.25 meter.

### (i) Depth below bed level upto 3.0 M

Rate of sinking @ 0.04 m/hour

Rate of sirking @ 0.04 m/nour					
a) Labour					
Mate	day	0.300	354.00	106.20	L-12
Sinker ( skilled )	day	3.000	442.00	1326.00	L-15
Sinking helper (semi-skilled)	day	4.500	354.00	1593.00	L-14
b) Machinery					
Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.250	976.11	6100.69	P&M-075
Consumables in sinking @ 10 per cent of (b)				610.07	
c) GST @ 12 % on (a+b)				1168.32	
d) Overhead charges @ 20 % c	on (a+b+c)			2180.86	
e) Contractor's profit @ 10 % o	n (a+b+c+d)			1308.51	
f) Cess @ 1% on (a+b+c+d+e)				143.94	
Cost for 0.25m = a+b+c+d+e+f				14537.59	
Rate per metre = (a+b+c+d+e+f)/0	.25			58150.36	
			say	<u>58150.00</u>	

			F(	DUNDATION	15			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
2.18 B		(ii)	Beyond 3m upto 10m depth					
		` ,	Rate of sinking @ 0.03 m/hour  a) Labour					
			Mate	day	0.480	354.00	169.92	L-12
			Sinker	day	3.750	442.00	1657.50	L-15
			Sinking helper (semi-skilled)	day	6.000	354.00	2124.00	L-14
			b) Machinery	•				
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.330	976.11	8131.00	P&M-07
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.500	634.51	2855.30	P&M-063
			Consumables in sinking @ 10 per cent of (b)				1098.63	
							1924.36	
			c) GST @ 12 % on (a+b)	on (athte)			3592.14	
			d) Overhead charges @ 20 %	-	.d\		2155.29	
			e) Contractor's profit @ 10 %	-	·u)			
			f) Cess @ 1% on (a+b+c+d+e Cost for 0.25m = a+b+c+d+e+f	<del>?</del> )			237.08	
			***************************************	/0.2E			23945.22 95780.88	
			Rate per metre = $(a+b+c+d+e+f)$	/0.25		601/	95781.00	
2.18 B		(iii)	Beyond 10 m upto 20 m			say	<del>93701.00</del>	
		a	Add 5 per cent for every additional previous meter	al meter dept	h of sinking over	the rate of sinki	ng for the	
		b	Add for dewatering @ 5 per cent	of		Including for		
		-	cost, if required.			dewatering @ 5% of cost, if required		
			11th m	5%	100570.000	105599.00		
			12th m	5%	105599.000	110879.00		
			13th m	5%	110879.000	116423.00		
			14th m	5% 5%	116423.000	122244.00		
			15th m	5%	122244.000	128356.00		
			16th m	5%	128356.000	134774.00		
			17th m	5%	134774.000	141513.00		
			18th m	5%	141513.000	148589.00		
			19th m 20th m	5% 5%	148589.000	156018.00 163819.00		
			Total Cost from 10m upto 20m	370	156018.000 1264965.000	1328214.00		
I2.18 B		(iv)	Avg Rate per metre Beyond 20m upto 30 m		<u>126497.000</u>	<u>132821.00</u>		
		a	Add 7.5 per cent for every additional previous meter	nal meter de	pth of sinking ov	er the rate of sin	king for the	
		b	Add 5 per cent of cost f dewatering on the cost, if required					
		С	Add 25 per cent of cost f Kentledge including support			Including 25% for Kentledge	Including 5% for	
			0	ιο,				
			loading arrangement and Labour				dewatering, if required	
			loading arrangement and Labour  31st m	7.5%	167719.000	209649.00	required 220131.00	
			loading arrangement and Labour  31st m  32nd	7.5% 7.5%	180298.000	225373.00	required 220131.00 236642.00	
			loading arrangement and Labour  31st m 32nd 33rd m	7.5% 7.5% 7.5%	180298.000 193820.000	225373.00 242275.00	required 220131.00 236642.00 254389.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m	7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000	225373.00 242275.00 260446.00	required 220131.00 236642.00 254389.00 273468.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m 35th m	7.5% 7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000 223984.000	225373.00 242275.00 260446.00 279980.00	required 220131.00 236642.00 254389.00 273468.00 293979.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m	7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000 223984.000 240783.000	225373.00 242275.00 260446.00	required 220131.00 236642.00 254389.00 273468.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m 35th m 36th m	7.5% 7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000 223984.000	225373.00 242275.00 260446.00 279980.00 300979.00	required 220131.00 236642.00 254389.00 273468.00 293979.00 316028.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m 35th m 36th m 37th m	7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000 223984.000 240783.000 258842.000	225373.00 242275.00 260446.00 279980.00 300979.00 323553.00	required 220131.00 236642.00 254389.00 273468.00 293979.00 316028.00 339731.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m 35th m 36th m 37th m 38th m 39th m 40th m	7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000 223984.000 240783.000 258842.000 278255.000 299124.000 321558.000	225373.00 242275.00 260446.00 279980.00 300979.00 323553.00 347819.00	required 220131.00 236642.00 254389.00 273468.00 293979.00 316028.00 339731.00 365210.00 392600.00 422045.00	
			loading arrangement and Labour  31st m 32nd 33rd m 34th m 35th m 36th m 37th m 38th m 39th m	7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5% 7.5%	180298.000 193820.000 208357.000 223984.000 240783.000 258842.000 278255.000 299124.000	225373.00 242275.00 260446.00 279980.00 300979.00 323553.00 347819.00 373905.00	required 220131.00 236642.00 254389.00 273468.00 293979.00 316028.00 339731.00 365210.00 392600.00	

Page : 296

			FOU	NDATION	S			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
12.18 B		(v)	Beyond 30m upto 40 m					
		a	Add 10 per cent for every additional previous meter	meter dep	th of sinking ove	er the rate of sink	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).	400/	050744 000	40.4457.00	dewatering, if required	
			31st m	10%	353714.000	424457.00	445680.00	
			32nd	10%	389085.000	466902.00	490247.00	
			33rd m	10%	427994.000	513593.00	539273.00	
			34th m	10% 10%	470793.000	564952.00	593200.00	
			35th m 36th m	10%	517872.000 569659.000	621446.00 683591.00	652518.00 717771.00	
			37th m	10%	626625.000	751950.00	789548.00	
			38th m	10%	689288.000	827146.00	868503.00	
			39th m	10%	758217.000	909860.00	955353.00	
			40th m	10%	834039.000	1000847.00	1050889.00	
			Total Cost from 30m upto 40m	1070	5637286.000	6764744	7102982	
12.18		С	Avg Rate per metre Soft Rock (12m dia well) Unit = Running Meter		<u>563729.000</u>	<u>676474.00</u>	710298.00	
			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	354.00	375.24	L-12
				•				
			Sinker ( skilled )	day	4.500	442.00	1989.00	L-15
			Sinking helper (semi-skilled)	day	20.000	354.00	7080.00	L-14
			Diver	day	1.750	796.00	1393.00	L-07
			b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	10.000	976.11	9761.10	P&M-075
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.750	634.51	3013.92	P&M-063
			Consumables in sinking @ 10 per cent of (b)				1277.50	
			Add for dewatering @ 5 per cent, if required				702.63	
			c) GST @ 12 % on (a+b)				3071.09	
			d) Overhead charges @ 20 % or	n (a+b+c)			5732.70	
			e) Contractor's profit @ 10 % or	n (a+b+c+c	d)		3439.62	
			f) Cess @ 1% on (a+b+c+d+e)	-			378.36	
			Cost for 0.25m = a+b+c+d+e+f				38214.16	
			Rate per metre = (a+b+c+d+e+f)/0.	25		say	152856.64 <u>152857.00</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	1				
			a) Material	V~	44.000	464.00	0004.40	M-104
			Gelatine80 per cent Electric detonator	Kg each.	14.000 56.000	164.60 11.04	2304.40 618.24	M-094/100
			b) Labour	Gauli.	30.000	11.04	010.24	
			Mate	day	1.440	354.00	509.76	L-12

			FO	UNDATIONS	<u> </u>			
M. M.	Ref. to IoRTH/ R Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		 Drill	or	dov	2.000	354.00	708.00	L-06
		Blas		day day	0.250	354.00	88.50	L-03
			door	day	28.000	310.00	8680.00	L-13
			door (Skilled)	day	4.500	442.00	1989.00	L-15
		c)	Machinery	uay	4.300	442.00	1909.00	•
		Hire with	& running charges of crane grab bucket of 0.75 cum	hour	12.500	976.11	12201.38	P&M-075
		Hire	acity and accessories.  Be & running charges of appressor with pneumatic	hour	4.000	634.51	2538.04	P&M-063
			aker/Jack hammer or drill				726.07	
			vatering @ 5 per cent, if				736.97	
			sumables in sinking @ 10 per t of (c).				1547.64	
		d)	GST @ 12 % on (a+b+c)				3830.63	
		e)	Overhead charges @ 20 %	on (a+b+c+d	1)		7150.51	
		f)	Contractor's profit @ 10 %	on (a+b+c+c	l+e)		4290.31	
		g)	Cess @ 1% on (a+b+c+d+e-	+f)			471.93	
		Cos	t for 0.25m = a+b+c+d+e+f+g				47665.31	
		Rat	e per metre = (a+b+c+d+e+f+g	g)/0.25			190661.24	
						say	<u>190661.00</u>	
12.19	1200		king of Twin D Type well (oth	-				
			trata namely sandy soil, clay per drawing and technical s el.	-		_	-	
		Uni	t = Running Meter					
		Tak	ing output = 1 m					
		Dim	ensions of well.					
		Ove	erall length = 12 m					
		Ove	erall width = 6 m					
		A San	dy Soil					
		(i) Dep	oth from bed level upto 3.0 M					
		Rate	e of sinking @ 0.18 m/hour					
		a)	Labour					
		Mat		day	0.200	354.00	70.80	L-12
		Sinl	ker ( skilled )	day	1.250	442.00	552.50	L-15
		Sinl	king helper (semi-skilled)	day	3.750	354.00	1327.50	L-14
		b)	Machinery					
		with	e & running charges of crane grab bucket of 0.75 cum acity and accessories.	hour	5.500	976.11	5368.61	P&M-075
		Cor	sumables in sinking @10 per t of (b)				536.86	
		c)	GST @ 12 % on (a+b)				942.75	
		d)	Overhead charges @ 20 %	on (a+b+c)			1759.80	
		e)	Contractor's profit @ 10 %		n		1055.88	
		f)	Cess @ 1% on (a+b+c+d+e)	-	1)		116.15	
		,	e per metre = (a+b+c+d+e+f)	1			11730.85	
		Rat	e per metre – (a.b.e.a.e.i)			cav	<u>11731.00</u>	
2.19 A		(ii) Bey	ond 3m upto 10m depth			say	11731.00	
			e of sinking @ 0.17 m/hour					
		_						
		a)	Labour	dov	0.300	354.00	106.20	L-12
		MACE				JJ-1.UU	100.20	- ·-
		Mat Sinl		day day		442 00	663.00	L-15
		Sinl	ker	day	1.500	442.00 354.00	663.00 1416.00	L-15 L-14
		Sinl Sinl <b>b)</b>		•		442.00 354.00 976.11	663.00 1416.00 5739.53	

### CHAPTER-12

				FOU	NDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		Description		Unit	Quantity	Rate Rs	Cost Rs	Remarks Input re
			Consumables in sinking @	10 per				573.95	
			cent of (b)	<b>L</b> .				1010.01	
			c) GST @ 12 % on (a+	-	n (a+b+a)			1019.84 1903.70	
			<ul><li>d) Overhead charges (</li><li>e) Contractor's profit (</li></ul>	_	-			1142.22	
			f) Cess @ 1% on (a+b-		1 (a · b · c	·u)		125.64	
			Rate per metre = (a+b+c+	•				12690.08	
				u · u · .,			say	12690.00	
2.19 A		(iii)	Beyond 10m upto 20m	dditional n	natar dan	th of ainking over	the rate of sink	ng for the	
		а	Add 5 per cent for every ac previous meter	uditionari		_	the rate of sink	ng for the	
			11th m		5%	13325.000			
			12th m		5% 5%	13991.000			
			13th m 14th m		5% 5%	14691.000 15426.000			
			15th m		5%	16197.000			
			16th m		5%	17007.000			
			17th m		5%	17857.000			
			18th m		5%	18750.000			
			19th m		5%	19688.000			
			20th m		5%	20672.000			
			Total Cost from 10m upto 2	20m		167604.000			
12.19 A		(iv)	Avg Rate per metre Beyond 20m upto 30 m			<u>16760.000</u>			
		a	Add 7.5 per cent for every previous meter	additiona	l meter de	epth of sinking ove	er the rate of sir	king for the	
		b	Add 20 per cent of	cost for			Including 20%		
		-	•	supports,			for Kentledge		
			loading arrangement and L	abour.					
			21st m		7.5%	22222.000	26666.00		
			22nd m		7.5%	23889.000	28667.00		
			23rd m 24th m		7.5% 7.5%	25681.000 27607.000	30817.00 33128.00		
			25th m		7.5%	29678.000	35614.00		
			26th m		7.5%	31904.000	38285.00		
			27th m		7.5%	34297.000	41156.00		
			28th m		7.5%	36869.000	44243.00		
			29th m		7.5%	39634.000	47561.00		
			30th m		7.5%	42607.000	51128.00		
			Total Cost from 20m upto 3	30m		314388.000	377265.00		
12.19 A		(v)	Avg Rate per metre Beyond 30m upto 40 m			<u>31439.000</u>	<u>37727.00</u>		
2.10 A		a	Add 10 per cent for every a	additional	meter de	pth of sinking ove	r the rate of sin	king for the	
		b	previous meter  Add 20 per cent of	cost for			Including 20%		
		D	Kentledge including solution loading arrangement, and	supports,			for Kentledge		
			etc. 31st m		10%	46868.000	56242.00		
			32nd		10%	51555.000	61866.00		
			33rd m		10%	56711.000	68053.00		
			34th m		10%	62382.000	74858.00		
			35th m		10%	68620.000	82344.00		
			36th m		10%	75482.000	90578.00		
			37th m		10%	83030.000	99636.00		
			38th m		10%	91333.000	109600.00		
			39th m		10%	100466.000	120559.00		
			40th m Total Cost from 30m upto 4	I0m	10%	110513.000 746960.000	132616.00 896352.00		
			Avg Rate per metre	FUIII		74696.000	896352.00 89635.00		
12.19		В	Clayey Soil (Twin D Type	Well \		. +000.000	<u> </u>		
14.13		ט	Clayey Son (Twill D Type	, ***CII )					

Unit = Running Meter Taking output = 1 meter

				-OUNDATION				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		(i)	Depth below bed level upto 3.0	) M				
			Rate of sinking @ 0.16 m/hour					
			a) Labour					
			Mate	day	0.260	354.00	92.04	L-12
			Sinker ( skilled )	day	2.500	442.00	1105.00	L-15
			Sinking helper (semi-skilled) b) Machinery	day	4.000	354.00	1416.00	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.250	976.11	6100.69	P&M-075
			Consumables in sinking @ 10 percent of (b)	er			610.07	
			c) GST @ 12 % on (a+b)				1118.86	
			d) Overhead charges @ 20 %	% on (a+b+c)			2088.53	
			e) Contractor's profit @ 10 %	, ,	d)		1253.12	
			f) Cess @ 1% on (a+b+c+d+	-	ω,		137.84	
			Rate per metre = (a+b+c+d+e+f	-			13922.15	
			Rate per metre – (a.b.e.a.e.)	''		say	13922.00	
12.19 B		(ii)	Beyond 3m upto 10m depth			Say	13922.00	
			Rate of sinking @ 0.15 m/hour  a) Labour					
			Mate	day	0.450	354.00	159.30	L-12
			Sinker	day	3.250	442.00	1436.50	L-15
			Sinking helper (semi-skilled) b) Machinery	day	6.000	354.00	2124.00	L-14
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.670	976.11	6510.65	P&M-075
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour d	4.500	634.51	2855.30	P&M-063
			Consumables in sinking @ 10 percent of (b)	er			936.60	
			c) GST @ 12 % on (a+b)				1682.68	
			d) Overhead charges @ 20 %	% on (a+b+c)			3141.01	
			e) Contractor's profit @ 10 %		d)		1884.60	
			f) Cess @ 1% on (a+b+c+d+		,		207.31	
			Rate per metre = (a+b+c+d+e+f	-			20937.95	
12.19 B		(iii)	Beyond 10 m upto 20 m	,		say	20938.00	
12.10 0		` ,		al mater dent	h of ainking aver	the rete of sinkin	a for the	
		а	Add 5 per cent for every addition previous meter	iai meter dept	n or sinking over	the rate of Sirikii	ig for the	
		b	Add for dewatering @ 5 per cent cost, if required.	of		Including for dewatering @ 5% of cost, if		
			11th m	5%	21985.000	required 23084.00		
			12th m	5%	23084.000	24238.00		
				5% 5%				
			13th m 14th m	5% 5%	24238.000 25450.000	25450.00 26723.00		
			15th m	5% 5%	26723.000	28059.00		
			16th m	5%	28059.000	29462.00		
				<del>-</del>				

Page : 300

5%

5%

5%

5%

29462.000

30935.000

32482.000

34106.000

276524.000

27652.000

30935.00

32482.00

34106.00

35811.00

290350.00

29035.00

17th m

18th m

19th m

20th m

Total Cost from 10m upto 20m

Avg Rate per metre

Sr No	Ref. to	l		Unit		Rate Rs	Cost Rs	Remarks/
31 NO	MoRTH/		Description	Oilit	Quantity	Rate KS	CUSI KS	Input ref.
	DSR Spec.							
12.19 B		(iv)	Beyond 20m upto 30 m					
		` ,		ditional motor				
		а	Add 7.5 per cent for every add depth of sinking over the rate					
			the previous meter	or siriking for				
		h	•	atoring on the				
		b	Add 5 per cent of cost for deward cost, if required	atening on the				
		_	•	or Kontladge		Including 25%	Including 5%	
		С	Add 25 per cent of cost for including supports, loading arra	_		Including 25% for Kentledge	for	
			Labour ).	ingomoni ana		ioi rioitticage	dewatering, if	
			,				required	
			31st m	7.5%	36664.000	45830.00	48122.00	
			32nd	7.5%	39414.000	49268.00	51731.00	
			33rd m	7.5%	42370.000	52963.00	55611.00	
			34th m	7.5%	45548.000	56935.00	59782.00	
			35th m	7.5%	48964.000	61205.00	64265.00	
			36th m	7.5%	52636.000	65795.00	69085.00	
			37th m	7.5%	56584.000	70730.00	74267.00	
			38th m 39th m	7.5% 7.5%	60828.000 65390.000	76035.00 81738.00	79837.00 85825.00	
			40th m	7.5%	70294.000	87868.00	92261.00	
			Total Cost from 30m upto 40m	7.070	518692.000	648367.00	680786.00	
			Avg Rate per metre		51869.000	64837.00	68079.00	
12.19 B		(v)	Beyond 30m upto 40 m					
		• •	Add 10 per cent for every additi	ional meter				
		а	depth of sinking over the rate of					
			the previous meter	on many ron				
		b	Add 5 per cent of cost for dewa	tering if				
		b	required	tering, ii				
			Add 20 per cent of cost for	or Kontladge		Including 200/	Including E0/	
		С	including supports, loading arra			Including 20% for Kentledge	Including 5% for	
			Labour).	ingement and		ioi iteriticage	dewatering, if	
			31st m	10%	77323.000	92788.00	97427.00	
			32nd	10%	85055.000	102066.00	107169.00	
			33rd m	10%	93561.000	112273.00	117887.00	
			34th m	10%	102917.000	123500.00	129675.00	
			35th m	10%	113209.000	135851.00	142644.00	
			36th m	10%	124530.000	149436.00	156908.00	
			37th m	10%	136983.000	164380.00	172599.00	
			38th m	10%	150681.000	180817.00	189858.00	
			39th m	10%	165749.000	198899.00	208844.00	
			40th m	10%	182324.000	218789.00	229728.00	
			Total Cost from 30m upto 40m		1232332.000	1478799.00	1552739.00 <b>155274.00</b>	
40.40		_	Avg Rate per metre		<u>123233.000</u>	<u>147880.00</u>	155274.00	
12.19		С	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					
			•	dov	0.860	254.00	304.44	L-12
			Mate	day		354.00		L-12
			Sinker (skilled)	day	4.500	442.00	1989.00	L-15 L-14
			Sinking helper (semi-skilled)	day	15.000	354.00	5310.00	
			Diver	day	1.500	796.00	1194.00	L-07
			b) Machinery					
			Hire & running charges of crane	hour	8.330	976.11	8131.00	P&M-075
			with grab bucket of 0.75 cum capacity and accessories.					
			Air compressor with pneumatic	hour	6.000	634.51	3807.06	P&M-063
			breakers					

#### **CHAPTER-12** ECHNIDATIONS

			F0	OUNDATIO	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)	-			1193.81	
			Add for dewatering @ 5 per cent,	if			656.59	
			required					
			c) GST @ 12 % on (a+b)				2710.31	
			d) Overhead charges @ 20 %				5059.24	
			e) Contractor's profit @ 10 %	-	⊦d)		3035.55	
			f) Cess @ 1% on (a+b+c+d+c+f)	-			333.91 33724.91	
			Rate per metre = (a+b+c+d+e+f)			say	33725.00	
12.19		D	Hard Rock (Twin D Type Well )			ouy	<u>557 25755</u>	
			Unit = Running Meter					
			Taking output = 1 m					
			Depth in hard rock strata upto 3	3 m				
			Rate of sinking @ 0.10 m/hour					
			a) Material					
			Geletine80 per cent	Kg	10.000	164.60	1646.00	M-104
			Electric detonators	each.	40.000	11.04	441.60	M-094/100
			b) Labour Mate	day	1.340	354.00	474.36	L-12
			Driller	day	2.000	354.00	708.00	L-06
			Blaster	day	0.250	354.00	88.50	L-03
			Mazdoor Mazdoor (Skilled)	day day	25.000 4.250	310.00 442.00	7750.00 1878.50	L-13 L-15
			c) Machinery	uay	4.230	442.00	1070.50	
			Hire & running charges of crane	hour	10.000	976.11	9761.10	P&M-075
			with grab bucket of 0.75 cum capacity and accessories.					
			Hire & running charges of	hour	3.000	634.51	1903.53	P&M-063
			compressor with pneumatic					
			breaker/Jack hammer or drill					
			Dewatering @ 5 per cent of cost (b+c), if required.	of			1128.20	
			Consumables in sinking @ 10 per cent of (b).	-			1279.28	
			d) GST @ 12 % on (a+b+c)				3247.09	
			e) Overhead charges @ 20 %	on (a+b+c	⊦d)		6061.23	
			f) Contractor's profit @ 10 %	on (a+b+c	+d+e)		3636.74	
			g) Cess @ 1% on (a+b+c+d+e	e+f)			400.04	
			Rate per metre = (a+b+c+d+e+f+	⊦g)			40404.17	
42.20	1200		Designation of well-	with and	cf	say	40404.00	
12.20	1200		Pneumatic sinking of wells	with equi	oment of appro	ovea aesign,	urawing and	

specifications worked by competent and trained personnel and comprising of compression and decompression chambers, reducers, two air locks separately for men and plant & materials, arrangement for supply of fresh air to working chambers, check valves, exhaust valves, shafts made from steel plates of riveted construction not less than 6 mm thick to withstand an air pressure of 0.50 MPa, controlled blasting of hard rock where required, staircases and 1 m wide landing plateforms with railing, arrangement for compression and decompression, electric lighting of 50 V maximum, proper rooms for rest and medical examinations and compliance with safety precautions as per IS:4138, all as per clause1207.6 of MoRTH Specifications.

Unit - 1 cum

Taking output = 5 cum

a) Material

M35 grade RCC corbel provided for Cum 8.000 supporting of equipment (Dimensions as per ground conditions). Rate may be adopted vide Item 12.8 (H)

9909.00

79272.00 Item 12.8 (H)

		F0	UNDATION	<u>S</u>			
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	59823.01	28715.04	M-082
			1010	51.155	00020.0	201 1010 1	
		Blasting material	Ka	1.500	164.60	246.90	M-104
		Gelatine 80 per cent Electric detonators	Kg each	6.000	104.60	66.24	M-094/100
		b) Labour	Cacii	0.000	11.04	00.24	
		Medical Officer	day	0.500	1327.00	663.50	L-16
		Para medical personnel	day	1.000	796.00	796.00	L-19
		Mate	day	1.860	354.00	658.44	L-12
		Driller	day	1.000	354.00	354.00	L-06
		Blaster	day	0.500	354.00	177.00	L-03
		Mazdoor (for cutting, blasting, cleaning, removal of Material etc.)	day	30.000	310.00	9300.00	L-13
		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	442.00	4420.00	L-15
		Diver	day	4.000	796.00	3184.00	L-07
		c) Machinery					
		<ul> <li>(i) Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.</li> </ul>	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	5081.42	30488.52	P&M-038
		Air compressor 250 cfm, 2 nos.	hour	2 x 6	575.22	6902.64	P&M-001
		Hire and running charges of crane of 15 tonne capacity	hour	6.000	809.73	4858.38	P&M-072
		Motorised barge of 20 tonne capacity	hour	6.000	2023.89	12143.34	P&M-066
		Boat to carry atleast 20 persons	hour	6.000	2023.89	12143.34	P&M-066
		Electric generating set 33 KVA	hour	6.000	453.98	2723.88	P&M-079
		Tipper 10 tonne capacity d) GST @ 12 % on (a+b+c)	hour	6.000	779.65	4677.90 43502.29	P&M-048
		e) Overhead charges @ 20 %	on (a+b+c+	d)		81204.28	
		f) Contractor's profit @ 10 %	-	-		48722.57	
		g) Cess @ 1% on (a+b+c+d+e-	•	,		5359.48	
		Cost for 5 cum = $a+b+c+d+e+f+q$ (	-	elow)		620579.74	
		Rate per cum = (a+b+c+d+e+f+q)		,		124115.95	
		.tato por cam - (a.b.c.a.errig)			cav	<u>124116.00</u>	
	Mai	to 4 The cost of industion delical cost			say	127110.00	

- 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.

			FOUNDATIO	NS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		6.Small equipments like welc	ding sets n	ımns vihrators			
		pneumatic tools, portable lamps					
		etc., have not been included					
		items of minor T&P under overh					
		7.Depth of sinking shall be restri	cted to 30 m.				
12.21	1207	Sand Filling in Wells complete	as per Draw	ing and Technica	ıl Specificatioı	ns.	
		Unit = 1 cum	•	J	•		
		Taking output = 1 cum					
		a) Material					
		Sand (assuming 20 per cent	cum	1.200	601.77	722.12	M-006
		voids)					
		b) Labour					
		Mate	day	0.010	354.00	3.54	L-12
		Mazdoor	day	0.300	310.00	93.00	L-13
		c) GST @ 12 % on (a+b)	0/ / -1 - >			98.24	
		d) Overhead charges @ 20				183.38	
		e) Contractor's profit @ 10	•	⊦d)		110.03	
		f) Cess @ 1% on (a+b+c+d-	+e)			12.10	
		Rate per cum (a+b+c+d+e+f)				1222.41	
					say	<u>1222.00</u>	
12.22	1200 & 1900	Providing Steel Liner 10 mm	thick for C	urbs and 6 mm	thick for Stei	ning of Wells	
	1900	including Fabricating and Sett	ting out as pe	er Detailed Drawii	ng.		
		Unit = 1 MT					
		Taking output = 1 MT					
		a) Material					
		i) Structural steel including 5 per	tonne	1.050	48312.00	50727.60	M-179
		cent wastage					
		b) Labour					
		Mate	day	1.240	354.00	438.96	L-12
		Fitter	day	6.000	442.00	2652.00	L-08
		Blacksmith	day	5.000	354.00	1770.00	L-01
		Welder	day	5.000	442.00	2210.00	L-02 L-13
		Mazdoor Electrodes, cutting gas and othe	day	10.000	310.00	3100.00 2536.38	L-13
		consumables @ 5 per cent on c				2000.00	
		a (a) above.	,031				
						7612.19	
		- · · · · · · · · · · · · · · · · · · ·	0/ an (athia)			14209.43	
		d) Overhead charges @ 20					
		e) Contractor's profit @ 10	-	Fa)		8525.66	
		f) Cess @ 1% on (a+b+c+d	-			937.82	
		Rate for per MT (a+b+c+d+e+f	)			94720.04	
					say	<u>94720.00</u>	
12.23	1100 & 1700	Bored cast-in-situ M35 grade		_			
		Drawing and Technical Specif	fications and	removal of exca	vated earth wi	ith all lifts and	
		lead upto 1000 m.					
		Pile diameter-750 mm					
		Unit = meter					
		Taking output = 15 m					
		a) Materials					
		PCC Grade M35	cum	6.620	9996.00	66173.52	Item 12.11
		FCC Grade MSS	cum	0.020	9990.00	00173.32	(C) iv
		Rate for concrete may be adop	oted				
		same as for bottom plug vide i	tem				
		no. 12.11( C ) (IV)	(				
		Including GST, OH, CP & Cess)					
		Concrete to be cast with a tremie	е				
		pipe 200mm dia.					
		h) Machinen/fewharing an					

b) Machinery( for boring and

construction)

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	6659.29	39955.74	P&M-036
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.500	433.63	216.82	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	1398.23	419.47	P&M-017
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.300	779.65	233.90	P&M-048
		Bentonite c) Labour	kg	300.000	3.45	1035.00	M-071
		Mate/Supervisor Mazdoor d) GST @ 12 % on (a+b+c)	day day	0.140 3.500	354.00 310.00	49.56 1085.00 5159.46	L-12 L-13
		e) Overhead charges @ 20 % on f) Contractor's profit @ 10 % or g) Cess @ 1% on (a+b+c+d+e+f; Cost for 15 m = a+b+c+d+d+e+f+g	(a+b+c+	-		9630.99 5778.59 635.65 130373.70	
		Rate per metre (a+b+c+d+e+f+g)/19	5		say	8691.58 <u>8692.00</u>	
		Pile diameter-1000 mm  Unit = meter  Taking output = 10 m					
		a) Materials					Item 12.11
		PCC Grade M35  Rate for concrete may be adopted same as for bottom plug vide item no. 12.11( C ) (IV) ( Including GST, OH, CP & Cess)	cum	7.850	9996.00	78468.60	(C) iv
		Concrete to be cast with a tremie pipe 200mm dia. b) Machinery( for boring and construction )					
		Hire and running charges of hydraulic piling rig with power unit and complete accessories including shifting from one bore location to another.	hour	6.000	6659.29	39955.74	P&M-036
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.500	433.63	216.82	P&M-013
		Hire and running charges of Bentonite pump	hour	6.000	Rate included in piling rig		
		Loader I cum bucket capacity.	hour	0.400	1398.23	559.29	P&M-017
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.400	779.65	311.86	P&M-048
		Bentonite c) Labour	kg	350.000	3.45	1207.50	M-071
		Mate/Supervisor	day	0.160	354.00	56.64	L-12

		FO	UNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref.
		Mazdoor d) GST @ 12 % on (a+b+c)	day	4.000	310.00	1240.00 5225.74	L-13
		e) Overhead charges @ 20 % o	on (athter	.d\		9754.72	
		f) Contractor's profit @ 10 % o	-	-		5852.83	
		g) Cess @ 1% on (a+b+c+d+e+	-	u·0,		643.81	
		Cost for 10 m = $a+b+c+d+d+e+f+g$	-,			143493.55	
		Rate per metre (a+b+c+d+e+f+g)/	10			14349.36	
12.25	1100 & 1700	Bored cast-in-situ M35 grade R Drawing and Technical Specifica lead upto 1000 m.		_			
		Pile diameter-1200 mm					
		Unit = meter					
		Taking output = 9 m a) Materials					
		PCC Grade M35	cum	10.170	9996.00	101659.32	Item 12.
		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	6659.29	39955.74	P&M-03
		Hire and running charges of light crane for lowering reinforcement cage	hour	0.500	433.63	216.82	P&M-01
		Hire and running charges of Bentonite pump	hour	6.000	Rate included in piling rig		
		Loader I cum bucket capacity.	hour	0.500	1398.23	699.12	P&M-01
		Tipper 5.5 cum capacity for disposal of muck from pile bore hole	hour	0.500	779.65	389.83	P&M-04
		Bentonite	kg	385.000	3.45	1328.25	M-071
		c) Labour					
		Mate/Supervisor	day	0.180	354.00	63.72	L-12
		Mazdoor	day	4.500	310.00	1395.00 5285.82	L-13
		d) GST @ 12 % on (a+b+c)	on (othtor	-d\		9866.86	
		e) Overhead charges @ 20 % o	-				
		f) Contractor's profit @ 10 % o	-	ru+e)		5920.12 651.21	
		g) Cess @ 1% on (a+b+c+d+e+	<b>F</b> T)				
		Cost for 9 m = a+b+c+d+d+e+f+g Rate per metre (a+b+c+d+e+f+g)/	9			167431.81 18603.53	
12.26	1100 & 1700	Driven cast-in-place vertical M35 as per Drawing and & Technical	-		say ing Reinforcem	18604.00 nent complete	
		Pile diameter - 750 mm					
		Unit = Running meter					
		Taking output = 40 metre					
		a) Materials					
		PCC Grade M35	cum	17.660	9996.00	176529.36	Item 12.1
		2	- 2		2300.00		(C) iv

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	Kg	160.000	61.06	9769.60	M-080
			ii) M.S. clamps for shoe @ 35 Kg	Kg	70.000	245.13	17159.10	M-124
			per pile of 15 m					
			<ul><li>iii) Steel helmet and cushion block on top of casing head during driving</li></ul>	Kg	50.000	201.77	10088.50	M-173
			c) Machinery					
			Hire and running charges of piling	hour	6.000	6659.29	39955.74	P&M-08
			rig Including double acting pile	noui	0.000	0000.20	00000.7 1	
			driving hammer complete with					
			power unit and accessories					
			Hiring and running charges for ligh	t hour	0.500	742.48	371.24	P&M-070
			crane 5 tonnes lifting capacity for					
			lowering reinforcement and handling steel casing.					
			d) Labour Mate/Supervisor	day	0.120	354.00	42.48	L-12
								L-13
			Mazdoor	day	3.000	310.00	930.00 9398.00	2.0
			e) GST @ 12 % on (a+b+c+d)		4+0/		17542.93	
			<ul><li>f) Overhead charges @ 20 %</li><li>g) Contractor's profit @ 10 %</li></ul>	-	-		10525.76	
			<ul><li>g) Contractor's profit @ 10 %</li><li>h) Cess @ 1% on (a+b+c+d+e</li></ul>	-	ureri)		1157.83	
			Cost for 40 m = $a+b+c+d+e+f+g+h$				293470.54	
			<del>-</del>					
			Rate per metre (a+b+c+d+e+f+g-	⊦h)/40			7336.76	
			Rate per metre (a+b+c+d+e+f+g-	⊦h)/40		say	7336.76 <b>7337.00</b>	
		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.	d to be rem		say	7336.76 <u>7337.00</u>	
		Note	1.The quantity of concrete require designed top level of concrete, if	ed to be rem any, will be	provided for in	say		
		Note	<ul><li>1.The quantity of concrete require designed top level of concrete, if the rate analysis.</li><li>2.In case steel lining is included in situ pile and is planned to be r</li></ul>	ed to be rem any, will be the design t etained, the	or driven cast-in-	say		
		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In	ed to be rem any, will be the design the etained, the case the	or driven cast-in- same may be temporary steel	say		
		Note	<ul><li>1.The quantity of concrete require designed top level of concrete, if the rate analysis.</li><li>2.In case steel lining is included in situ pile and is planned to be r</li></ul>	the design fetained, the case the lanned to be	or driven cast-in- same may be temporary steel be removed, an	say		
12.27	1100 & 1700	Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be r included in the rate analysis. In casing used during casting is p additional cost @ 0.50 per cent	the design the case the lanned to be of cost of c	or driven cast-in- same may be temporary steel be removed, an oncrete may be		<u>7337.00</u>	
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be r included in the rate analysis. In casing used during casting is p additional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3	the design the case the lanned to be of cost of c	or driven cast-in- same may be temporary steel be removed, an oncrete may be		<u>7337.00</u>	
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter	the design the case the lanned to be of cost of c	or driven cast-in- same may be temporary steel be removed, an oncrete may be		<u>7337.00</u>	
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre	the design the case the lanned to be of cost of c	or driven cast-in- same may be temporary steel be removed, an oncrete may be		<u>7337.00</u>	
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre  a) Materials	the design the tained, the case the lanned to be of cost of co	e provided for in for driven cast-in- same may be temporary steel be removed, an oncrete may be C.C. Pile excluding	ng Reinforcem	7337.00	
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre  a) Materials  PCC Grade M35  Rate for concrete may be	the design fetained, the case the lanned to be of cost	or driven cast-in- same may be temporary steel be removed, an oncrete may be		<u>7337.00</u>	
2.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre  a) Materials  PCC Grade M35	the design fetained, the case the lanned to be of cost	e provided for in for driven cast-in- same may be temporary steel be removed, an oncrete may be C.C. Pile excluding	ng Reinforcem	7337.00	Item 12.1
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre a) Materials  PCC Grade M35  Rate for concrete may be adopted same as for bottom pluvide item no. 12.11( C ) (IV)	the design fetained, the case the lanned to be of cost	e provided for in for driven cast-in- same may be temporary steel be removed, an oncrete may be C.C. Pile excluding	ng Reinforcem	7337.00	Item 12.1
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre a) Materials PCC Grade M35  Rate for concrete may be adopted same as for bottom pluvide item no. 12.11( C ) (IV) Including GST, OH, CP & Cess)	the design fetained, the case the lanned to be of cost	e provided for in for driven cast-in- same may be temporary steel be removed, an oncrete may be C.C. Pile excluding	ng Reinforcem	7337.00	Item 12.1
12.27		Note	1.The quantity of concrete require designed top level of concrete, if the rate analysis.  2.In case steel lining is included in situ pile and is planned to be rincluded in the rate analysis. In casing used during casting is padditional cost @ 0.50 per cent provided to cover its usage.  Driven cast-in-place vertical M3 as per Drawing and & Technical Pile diameter - 1000 mm  Unit = Running meter Taking output = 30 metre a) Materials PCC Grade M35  Rate for concrete may be adopted same as for bottom pluvide item no. 12.11( C ) (IV) Including GST, OH, CP & Cess)	the design fetained, the case the lanned to be of cost	e provided for in or driven cast-in- e same may be temporary steel be removed, an oncrete may be C.C. Pile excludion	ng Reinforcem	7337.00 nent complete 235405.80	Item 12.1 (C) iv

Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		c) Machinery			•		
		Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.000	6659.29	39955.74	P&M-085
		Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	hour	0.500	742.48	371.24	P&M-070
		Hire and running charges for light crane for lowering reinforcement cage.	hour	0.500	433.63	216.82	P&M-013
		d) Labour	alas r	0.460	254.00	FC C4	L-12
		Mate/Supervisor	day	0.160	354.00	56.64	
		Mazdoor	day	4.000	310.00	1240.00	L-13
		e) GST @ 12 % on (a+b+c+d)				9462.92	
		f) Overhead charges @ 20 % or	n (a+b+c	+d+e)		17664.11	
		g) Contractor's profit @ 10 % or	n (a+b+c	+d+e+f)		10598.47	
		h) Cess @ 1% on (a+b+c+d+e+f	+g)			1165.83	
		Cost for 30 m = $a+b+c+d+e+f+g+h$				353154.77	
		Rate per metre (a+b+c+d+e+f+g+h	)/30			11771.83	
					say	<u>11772.00</u>	

Note 1. The quantity of concrete required to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis.

2.In case steel lining is included in the design for driven cast-insitu 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 & 1700

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

22.610

9996.00

Item 12.11

(C) iv

226009.56

Pile diameter - 1200 mm

Unit = Running meter

a) Materials

PCC Grade M35

Taking output = 20 metre

Rate for concrete may be adopted same as for bottom plug vide item no. 12.11( C ) (IV) ( Including GST, OH, CP & Cess)

#### Materials Pile shoes b)

handling steel casing.

b) Materials i lie silves					
i) C.I. shoes for the pile	Kg	160.000	61.06	9769.60	M-080
ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	245.13	17159.10	M-124
iii) Steel helmet on top of casing head during driving	Kg	50.000	201.77	10088.50	M-173
c) Machinery					
Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.000	6659.29	39955.74	P&M-085
Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and	hour	0.500	742.48	371.24	P&M-070

				FOL	JNDATION	NS			
Sr No	Ref. to MoRTH/ DSR Spec.		De	scription	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			d) Labour						
			Mate/Supervis	or	day	0.180	354.00	63.72	L-12
			Mazdoor		day	4.500	310.00	1395.00	L-13
				12 % on (a+b+c+d)	,			9456.35	
				id charges @ 20 % c	n (a+b+c+	+d+e)		17651.85	
			•	tor's profit @ 10 % c	•	•		10591.11	
				1% on (a+b+c+d+e+	-	,		1165.02	
				= a+b+c+d+e+f+g+h	O,			343676.79	
			Rate per metr	e (a+b+c+d+e+f+g+l	h)/20			17183.84	
		Note	1 The quantity	of concrete required	l to he ren	noved above the	say	<u>17184.00</u>	
				level of concrete, if a					
				lining is included in t	-				
			•	is planned to be re		•			
				ie rate analysis. In during casting is pla					
			•	t @ 0.50 per cent o					
12.37	1100		Pile Load Tes	t on single Vertical	Pile in acc	ordance with IS:	2911(Part-IV)		
			Unit = 1 MT						
			Taking outpu	t = 1 MT					
			a) Initial and ro	outine load test	tonne	1.000	400.00		
			b) Lateral load	test	tonne	1.000	6300.00		
		Note	be included in added in the e	item is incidental to the BOQ of contract, the stimate to assess cos	he same is st of work.	s required to be			
12.38	1100 , 1500 & 1700		Technical Sp	crete for Reinforced ecification	I Concrete	e in Pile Cap co	mplete as per	Drawing and	
	1700	Α	RCC Grade M	20					
			Unit = cum						
			Taking outpu						
		(i)	Using Concre	te Mixer					
			a) Material Cement		tonne	5.120	9053.98	46356.38	M-081
			Coarse sand		cum	6.750	601.77	4061.95	M-005
			20 mm Aggreg		cum	8.100	1784.07	14450.97	M-053
			10 mm Aggreg b) Labour	jate	cum	5.400	1951.33	10537.18	M-051
			Mate		day	0.900	354.00	318.60	L-12
			Mason		day	1.500	354.00	531.00	L-10
			Mazdoor for co	U	day	20.000	310.00	6200.00	L-13
			bending bars,	eaking pile head, cleaning etc	day	1.000	310.00	310.00	L-13
			c) Machine						
			,	r (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
			Generator (cap	pacity 33 KVA)	hour	6.000	453.98	2723.88	P&M-079
			Formwork @ i.e. cost of a) Machinery	4 per cent on cost of Material, b) Labo	concrete our and c)			3484.38	
			d) GST @	12 % on (a+b+c)				10871.26	
			_	d charges @ 20 % o	n (a+b+c+	-d)		20293.01	
				tor's profit @ 10 % c				12175.81	
			•	1% on (a+b+c+d+e+	-	-,		1339.34	
				n = a+b+c+d+e+f+g	.,			135273.22	
				e (a+b+c+d+e+f+g)/	15			9018.21	
			. tate per meti	- (a : 2 : 0 : a : 0 : 1 : g)/	- •		say	<u>9018.00</u>	
							Suy	30.000	

				DUNDATION	<del></del>			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
2.38 A		(ii)	Using Batching Plant, Transit M	ixer and Co	ncrete Pump			
			a) Material					
			Cement	tonne	5.120	9053.98	46356.38	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-004
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.160	354.00	56.64	L-12
			Mason	day	0.380	354.00	134.52	L-10
			Mazdoor for concreting	day	2.500	310.00	775.00	L-13
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.000	310.00	310.00	L-13
			c) Machinery Batching Plant @ 20 cum/hour	hour	0.75	2787.61	2090.71	P&M-002
								P&M-080
			Generator 100 KVA	hour	0.75	849.56	637.17	
			Loader (capacity 1 cum)	hour	0.750	1398.23	1048.67	P&M-017
			Transit Mixer ( capacity 4.0 cu.m )					
			Lead upto 1 Km	hour	2.00	1132.74	2265.48	P&M-049
			Lead beyond 1 Km, L - lead in Kilometer	tonne. km	37.5L	18.94	0.00	Lead =0 kr & P&M-05
			Concrete Pump	hour	0.75	2576.11	1932.08	P&M-007
			Formwork @ 4 per cent on cost of i.e. cost of a) Material, b) Lab Machinery	of concrete cour and c)			3386.27	
			d) GST @ 12 % on (a+b+c)				10565.16	
			e) Overhead charges @ 20 %	on (a+b+c+	d)		19721.64	
			f) Contractor's profit @ 10 %	on (a+b+c+	d+e)		11832.98	
			g) Cess @ 1% on (a+b+c+d+e	+f)			1301.63	
			Cost for 15 cum = a+b+c+d+e+f+g	I			131464.43	
			Rate per metre (a+b+c+d+e+f+g)	/15			8764.30	
			-			say	<u>8764.00</u>	
		Note	The value of a, b and c may be tak		able i.e. either			
40.00		_	using concrete mixer or batching p	nant.				
12.38		В	RCC Grade M25					
			Unit = cum					
			Taking output = 15 cum					
		/i)						
		(i)	Using Concrete Mixer					
			a) Material					
			Cement	tonne	5.990	9053.98	54233.34	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-005
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour	<b>54</b>	000			
			Mate	day	0.900	354.00	318.60	L-12
			Mason	day	1.500	354.00	531.00	L-10
				•	20.000	310.00	6200.00	L-10
			Mazdoor for concreting	day				
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.000	310.00	310.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator (capacity 33 KVA)	hour	6.000	453.98	2723.88	P&M-079

				OUNDATIO	N3			
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Formwork @ 4 per cent on cost	of			3799.46	1
			concrete i.e. cost of a) Material					
			b) Labour and c) Machinery	/				
			d) GST @ 12 % on (a+b+c)				11854.30	
			e) Overhead charges @ 20 %	on (a+b+c-	+d)		22128.03	
			f) Contractor's profit @ 10 %	ն on (a+b+c <sup>.</sup>	+d+e)		13276.82	
			g) Cess @ 1% on (a+b+c+d+	e+f)			1460.45	
			Cost for 15 cum = $a+b+c+d+e+f+$	•			147505.44	
			Rate per metre (a+b+c+d+e+f+g	յ)/15			9833.70	
12.38B		(ii)	Using Batching Plant, Transit N	liver and Co	nnerete Pumn	say	<u>9834.00</u>	
12.500		(")		iixei aliu ot	oncrete i ump			
			a) Material Cement	tonne	5.990	9053.98	54233.34	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-004
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.160	354.00	56.64	L-12
			Mason	day	0.380	354.00	134.52	L-10
			Mazdoor for concreting	day	2.500	310.00	775.00	L-13 L-13
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.000	310.00	310.00	L-10
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	0.75	2787.61	2090.71	P&M-002
			Generator 125 KVA	hour	0.75	1003.54	752.66	P&M-018
			Loader (capacity 1 cum)	hour	0.750	1398.23	1048.67	P&M-017
			Transit Mixer ( capacity 4.0 cu.m )	•				
			Lead upto 1 Km	hour	2.00	1132.74	2265.48	P&M-049
			Lead beyond 1 Km, L - lead in Kilometer	tonne. km	37.5L	18.94	0.00	Lead =0 km & P&M-050
			Concrete Pump	hour	0.75	2576.11	1932.08	P&M-007
			Formwork @ 4 per cent on cost concrete i.e. cost of a) Material b) Labour and c) Machinery	of ,			3705.97	
							44500.00	
			<ul><li>d) GST @ 12 % on (a+b+c)</li><li>e) Overhead charges @ 20 %</li></ul>	on (athte	1. d\		11562.62 21583.56	
			<ul><li>e) Overhead charges @ 20 %</li><li>f) Contractor's profit @ 10 %</li></ul>	•	•		12950.14	
			g) Cess @ 1% on (a+b+c+d+		·u·e)		1424.51	
			Cost for 15 cum = a+b+c+d+e+f+				143876.00	
			Rate per metre (a+b+c+d+e+f+g	•			9591.73	
				••		say	<u>9592.00</u>	
		Note	The value of a, b and c may be t using concrete mixer or batching		olicable i.e. either	-		
12.38		С	RCC Grade M30					
			Unit = cum					
			Taking output = 15 cum					
		(i)	Using Concrete Mixer					
			a) Material					
			Cement	tonne	6.100	9053.98	55229.28	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-005
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour Mate	day	0.900	354.00	318.60	L-12
			Mason	day	1.500	354.00	531.00	L-10
				,	1.000	551.00	231.00	

	1 - 4 - 1			OUNDATIONS				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Mazdoor for concreting	llday	20.000	310.00	6200.00	L-13
			Mazdoor for breaking pile head,	day	1.000	310.00	310.00	L-13
			bending bars, cleaning etc.	day	1.000	310.00	010.00	
			c) Machinery Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator (capacity 33 KVA)  Formwork @ 4 per cent on cost concrete i.e. cost of a) Material b) Labour and c) Machinery	,	6.000	453.98	2723.88 3839.29	P&M-079
			d) GST @ 12 % on (a+b+c)				11978.59	
			e) Overhead charges @ 20 %	‰on (a+b+c+d	l)		22360.04	
			f) Contractor's profit @ 10 %	% on (a+b+c+d	i+e)		13416.02	
			g) Cess @ 1% on (a+b+c+d+	e+f)			1475.76	
			Cost for 15 cum = a+b+c+d+e+f+	g			149052.02	
			Rate per metre (a+b+c+d+e+f+g	g)/15			9936.80	
						say	<u>9937.00</u>	
12.38C		(ii)	Using Batching Plant, Transit M	lixer and Con	crete Pump			
			a) Material Cement	tonne	6.100	9053.98	55229.28	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-004
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.160	354.00	56.64	L-12
			Mason	day	0.380	354.00	134.52	L-10
			Mazdoor for concreting	day	2.500	310.00	775.00	L-13
			Mazdoor for breaking pile head, bending bars, cleaning etc.	day	1.000	310.00	310.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	0.75	2787.61	2090.71	P&M-002
			Generator 100 KVA	hour	0.75	849.56	637.17	P&M-080
			Loader (capacity 1 cum)	hour	0.750	1398.23	1048.67	P&M-017
			Transit Mixer ( capacity 4.0 cu.m		0.700	1000.20	1040.07	
				•	2.00	1122.74	2265 40	P&M-049
			Lead upto 1 Km Lead beyond 1 Km, L - lead in Kilometer	hour tonne. km	2.00 37.5L	1132.74 18.94	2265.48 0.00	Lead =0 km & P&M-050
			Concrete Pump	hour	0.75	2576.11	1932.08	P&M-007
			•		0.73	2070.11		
			Formwork @ 4 per cent on cost concrete i.e. cost of a) Material b) Labour and c) Machinery	,			3741.19	
			d) GST @ 12 % on (a+b+c)				11672.50	
			e) Overhead charges @ 20 %	6 on (a+b+c+d	1)		21788.67	
			f) Contractor's profit @ 10 %	-	-		13073.20	
			g) Cess @ 1% on (a+b+c+d+	-	- •,		1438.05	
			Cost for 15 cum = $a+b+c+d+e+f+$	-			145243.26	
			Rate per metre (a+b+c+d+e+f+g	•			9682.88	
			rato por mono (a a o a o a o re-	,,,		say	9683.00	
			The value of a, b and c may be t using concrete mixer or batching		cable i.e. either	,		
12.38		D	RCC Grade M35					
			Unit = cum					
		(i)	Taking output = 15 cum Using Concrete Mixer					
		(i)	a) Material					
			Cement	tonne	6.330	9053.98	57311.69	M-081
							2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

	L Bitti I		FOUNDATIONS  Description Unit Operatity					0	Domorko/
Sr No	Ref. to MoRTH/ DSR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Coar	rse sand	cum	6.750	601.77	4061.95	M-005
				m Aggregate	cum	8.100	1784.07	14450.97	M-053
				m Aggregate	cum	5.400	1951.33	10537.18	M-051
			b)	Labour					
			Mate		day	0.900	354.00	318.60	L-12
			Maso		day	1.500	354.00	531.00	L-10
			Mazo		day	20.000	310.00	6200.00	L-13
				door for breaking pile head,	day	1.000	310.00	310.00	L-13
			bend	ling bars, cleaning etc.	,		0.0.00	0.0.00	
			c)	Machinery crete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-009
						6.000	453.98		P&M-079
				erator (capacity 33 KVA)	hour	6.000	453.98	2723.88	POINI-013
				nwork @ 4 per cent on cost of rete i.e. cost of a) Material, Labour and c) Machinery				3922.59	
			d)	GST @ 12 % on (a+b+c)				12238.48	
			e)	Overhead charges @ 20 %	on (a+h+c+	d)		22845.16	
			f)	- <del>-</del>	-	-		13707.10	
			•	Contractor's profit @ 10 %	-	u+e)		1507.78	
			g)	Cess @ 1% on (a+b+c+d+e-	<del>-</del> 1)				
				for 15 cum = $a+b+c+d+e+f+g$				152285.84	
			Rate	per metre (a+b+c+d+e+f+g)/	/15			10152.39	
2.38D		(ii)	Usin	g Batching Plant, Transit Mi	xer and Co	ncrete Pump	say	<u>10152.00</u>	
			a)	Material					
			Cem	ent	tonne	6.330	9053.98	57311.69	M-081
			Coar	se sand	cum	6.750	601.77	4061.95	M-004
			20 m	m Aggregate	cum	8.100	1784.07	14450.97	M-053
				ım Aggregate	cum	5.400	1951.33	10537.18	M-051
			b)	Labour					
			Mate		day	0.160	354.00	56.64	L-12
			Maso	on	day	0.380	354.00	134.52	L-10
				door for concreting	day	2.500	310.00	775.00	L-13
				door for breaking pile head,	day	1.000	310.00	310.00	L-13
			bend	ling bars, cleaning etc.	uay	1.000	310.00	310.00	
			c)	Machinery hing Plant @ 20 cum/hour	hour	0.750	2787.61	2090.71	P&M-002
							1003.54		P&M-018
				erator 125 KVA	hour	0.750		752.66	
				ler (capacity 1 cum)	hour	0.750	1398.23	1048.67	P&M-017
				sit Mixer ( capacity 4.0 cu.m )					
			Lead	l upto 1 Km	hour	2.000	1132.74	2265.48	P&M-049
			Lead Kilon	l beyond 1 Km, L - lead in neter	tonne. km	37.5L	18.94	0.00	Lead =0 km & P&M-050
			Cond	crete Pump	hour	0.750	2576.11	1932.08	P&M-007
			conc	nwork @ 4 per cent on cost of rete i.e. cost of a) Material, b) our and c) Machinery	F			3829.10	
			d)	GST @ 12 % on (a+b+c)				11946.80	
					on (athte:	۹)			
			e)	Overhead charges @ 20 % o	-	-		22300.69	
			f)	Contractor's profit @ 10 %	-	a+e)		13380.41	
			g)	Cess @ 1% on (a+b+c+d+e-	<b>+</b> †)			1471.85	
			Cost	for 15 cum = $a+b+c+d+e+f+g$				148656.40	
			Rate	per metre (a+b+c+d+e+f+g)/	/15			9910.43	

Providing and laying of PCC M15 levelling course 100mm thick below the pile cap.

Unit = cum

Taking output = 15 cum

n Na							
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input re
		a) Material					
		Cement	tonne	4.130	9053.98	37392.94	M-081
		Coarse sand	cum	6.750	601.77	4061.95	M-005
		40 mm aggregate	cum	8.100	1393.81	11289.86	M-055 M-053
		20 mm Aggregate	cum	4.050	1784.07	7225.48	M-051
		10 mm Aggregate b) Labour	cum	1.350	1951.33	2634.30	IVI-05 I
		b) Labour Mate	day	0.860	354.00	304.44	L-12
		Mason	day	1.500	354.00	531.00	L-10
		Mazdoor	day	20.000	310.00	6200.00	L-13
		c) Machinery	•				
		Concrete mixer (cap. 0.40/0.28	hour	6.000	269.91	1619.46	P&M-0
		Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-0
		d) GST @ 12 % on (a+b+c	)			8878.00	
		e) Overhead charges @ 20	% on (a+b+c+d)	)		16572.26	
		f) Contractor's profit @ 10	% on (a+b+c+d	+e)		9943.36	
		g) Cess @ 1% on (a+b+c+d	l+e+f)			1093.77	
		Cost for 15 cum = a+b+c+d+e+1				110470.70	
		Rate per metre (a+b+c+d+e+f+	· ·			7364.71	
		rate per metre (as bases as est	9), 10		say	7365.00	
12.40	1600	Supplying, Fitting and Placi	ing un-coated	HYSD bar Re	•		
		complete as per Drawing and	•				
		Unit = 1 MT Taking output = 1 MT a) Material HYSD bars including5 per cent		1.050	50000.04	62814.16	M-08
			tonne	1.050	59823.01	02014.10	
		overlaps and wastage					M 07/
		overlaps and wastage Binding wire	Kg	6.000	89.38	536.28	M-072
		overlaps and wastage	Kg ing,				M-072
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and place	Kg ing,				
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and place in position	Kg ing, cing	6.000	89.38	536.28	L-12
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and placin position Mate	Kg ing, cing day	6.000 0.400	89.38 354.00	536.28	L-12 L-02
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and placin position Mate Blacksmith	Kg ing, cing day day	0.400 2.000	89.38 354.00 442.00	536.28 141.60 884.00	L-12 L-02
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and placin position Mate Blacksmith Mazdoor	Kg ing, cing day day day	0.400 2.000	89.38 354.00 442.00	536.28 141.60 884.00 1860.00	L-12 L-02
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and placin position Mate Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20	kg ing, cing day day day day day day	0.400 2.000 6.000	89.38 354.00 442.00	536.28 141.60 884.00 1860.00 7948.32	L-12 L-02
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and place in position  Mate Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 e) Contractor's profit @ 10	kg ing, cing day day day v day day % on (a+b+c) % on (a+b+c+d)	0.400 2.000 6.000	89.38 354.00 442.00	536.28 141.60 884.00 1860.00 7948.32 14836.87	L-12 L-02
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and place in position Mate Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 e) Contractor's profit @ 10 f) Cess @ 1% on (a+b+c+d)	kg ing, cing day day day v day day % on (a+b+c) % on (a+b+c+d)	0.400 2.000 6.000	89.38 354.00 442.00	536.28 141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23	L-12 L-02
		overlaps and wastage Binding wire b) Labour for cutting, bend shifting to site, tying and place in position  Mate Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 e) Contractor's profit @ 10	kg ing, cing day day day v day day % on (a+b+c) % on (a+b+c+d)	0.400 2.000 6.000	89.38 354.00 442.00 310.00	536.28 141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58	L-12 L-02
12 41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d+c+d+c+d+c+d+c+d+c+d+c+d+c+d+c+d+c	kg ing, cing day day day very day % on (a+b+c) % on (a+b+c+d) he)	0.400 2.000 6.000	89.38 354.00 442.00 310.00	536.28 141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58	L-12 L-02
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) (+e)	6.000 0.400 2.000 6.000	89.38 354.00 442.00 310.00	536.28 141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58	L-12 L-02
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) (+e)	6.000 0.400 2.000 6.000	89.38 354.00 442.00 310.00	536.28 141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58	L-12 L-02
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and Unit = 1 MT	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) (+e)	6.000 0.400 2.000 6.000	89.38 354.00 442.00 310.00	536.28 141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58	L-12 L-02
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) (+e)	6.000 0.400 2.000 6.000	89.38 354.00 442.00 310.00	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in	L-12 L-02
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d+c)  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and Unit = 1 MT  Taking output = 1 MT  a) Material  MS bars including 5 per cent overlaps and wastage	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) (+e) cing un-coated d technical spec	6.000 0.400 2.000 6.000 ) Mild steel cification	89.38 354.00 442.00 310.00 say reinforcement	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in	L-12 L-02 L-13
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d)  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and Unit = 1 MT  Taking output = 1 MT  a) Material  MS bars including 5 per cent overlaps and wastage  Binding wire	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) (+e) cing un-coated d technical spec	6.000 0.400 2.000 6.000 )	89.38 354.00 442.00 310.00 say	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in	L-12 L-02 L-13
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d+c)  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and Unit = 1 MT  Taking output = 1 MT  a) Material  MS bars including 5 per cent overlaps and wastage	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) he) sing un-coated d technical spec	6.000 0.400 2.000 6.000 ) Mild steel cification	89.38 354.00 442.00 310.00 say reinforcement	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in	L-12 L-02 L-13
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d)  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and foundation as per drawing and Unit = 1 MT  Taking output = 1 MT  a) Material  MS bars including 5 per cent overlaps and wastage  Binding wire  b) Labour for straighten cutting, bending, shifting to see	kg ing, cing day day day % on (a+b+c) % on (a+b+c+d) he) sing un-coated d technical spec	6.000 0.400 2.000 6.000 ) Mild steel cification	89.38 354.00 442.00 310.00 say reinforcement	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in	L-12 L-02
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and foundation as per drawing and Unit = 1 MT  Taking output = 1 MT  a) Material  MS bars including 5 per cent overlaps and wastage  Binding wire  b) Labour for straighten cutting, bending, shifting to stying and placing in position	kg ing, cing  day day day % on (a+b+c) % on (a+b+c+d) +e)  ting un-coated d technical spec	6.000  0.400 2.000 6.000  Mild steel cification  1.050 6.000	89.38 354.00 442.00 310.00 say reinforcement 59823.01 89.38	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in  62814.16 536.28	L-12 L-02 L-13 M-120 M-072
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and place in position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and foundation as per drawing and the standard output = 1 MT  Taking output = 1 MT  a) Material  MS bars including 5 per cent overlaps and wastage  Binding wire  b) Labour for straighten cutting, bending, shifting to stying and placing in position  Mate	kg ing, cing  day day day  % on (a+b+c) % on (a+b+c+d) (+e)  sing un-coated d technical spec  tonne  kg ing, site,  day day	0.400 2.000 6.000 )  Mild steel cification  1.050 6.000	89.38  354.00 442.00 310.00  say reinforcement  59823.01 89.38	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in  62814.16 536.28	L-12 L-02 L-13 M-07:
12.41	1600	overlaps and wastage  Binding wire  b) Labour for cutting, bend shifting to site, tying and placin position  Mate  Blacksmith  Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20  e) Contractor's profit @ 10  f) Cess @ 1% on (a+b+c+d  Cost per MT = a+b+c+d+e+f  Supplying, fitting and place foundation as per drawing and foundation as per drawing and wastage  Binding wire  b) Labour for straighten cutting, bending, shifting to stying and placing in position  Mate  Blacksmith	kg ing, cing  day day day  % on (a+b+c) % on (a+b+c+d) +e)  sing un-coated d technical specifications  tonne  kg ing, site, day	0.400 2.000 6.000 )  Mild steel recification  1.050 6.000	89.38  354.00 442.00 310.00  say reinforcement  59823.01 89.38	536.28  141.60 884.00 1860.00 7948.32 14836.87 8902.12 979.23 98902.58 98902.58 complete in  62814.16 536.28	L-12 L-02 L-13 M-120 M-07:

	FOUNDATIONS									
Sr No	Ref. to MoRTH/	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.			
	DSR Spec.						put rei.			
		e) Contractor's profit @ 10 % o	n (a+b+c+	l Hd)		8939.23				
		f) Cess @ 1% on (a+b+c+d+e)	(0 - 5 - 6 -	ω,		983.32				
		Rate for per MT (a+b+c+d+e+f)				99314.89				
		reaction per min (available)			say	<u>99315.00</u>				
12.42	1900	Providing and Installation of St	eel drive	n Piles with co	orrosion resist	ant / Treated	I			
		Structural Steel including welding								
		detailed drawing and specification charge	on compl	ete and as per	direction of th	e Engineer in	l			
		Unit= 1.00 MT								
		Analysis bas on ISWB 600, upto 40								
		metre depth								
		a) Material								
		Corrosion resistant structural steel Gusset plates welded for joints,	tonne	0.390	68017.70	26526.90	M-087			
		shoe / cap arrangement.								
		Fabrication and placing in position	tonne	0.390	57896.00	22579.44	Rate in item			
		charges for Corrosion resistant	torino	0.000	07000.00	22070.44	12.10 less			
		structural steel Gusset plates					Input M-179			
		welded for joints, shoe / cap arrangement at site of work.								
		Corrosion resistant structural steel ISWB 600	tonne	5.800	68017.70	394502.66	M-087			
			<b>.</b>	F 900	F7006 00	225706.00	Rate in item			
		Fabrication and placing in position charges for corrosion resistant	tonne	5.800	57896.00	335796.80	12.10 less			
		structural steel ISWB 600 at site of					Input M-179			
		work.								
		b) Materials for Pile shoes								
		Steel helmet and cushion block on	Kg	50.000	201.77	10088.50	M-173			
		top of casing head during driving.								
		c) Machinery								
		Hire and running charges of pilling	Hour	6.000	6659.29	39955.74	P&M-085			
		rig including double acting pile driving hammer complete with								
		power unit and accessories.								
		Hiring and running charges for light	Hour	0.500	742.48	371.24	P&M-070			
		crane 5 tonnes lifting capacity for								
		lowering reinforcement and handling steel casing.								
		5								
		d) Labour		0.190	354.00	62.70	L-12			
		Mate / Supervisor Mazdoor		0.180 4.500	354.00 310.00	63.72 1395.00	L-12 L-13			
		e) GST @ 12 % on (b+c+d)		4.500	010.00	6224.90	*			
		f) Overhead charges @ 20 % or	n (b+c+d+	+e)		11619.82				
		g) Overhead charges @ 20 % or	•	•		6971.89				
		h) Cess @ 1% on (b+c+d+e+f+g		,		8560.97				
		Cost for 40.00 metre (0.39 + 5.80 ) =		Г	Per 6.194 MT	864657.58				
		= a + b + c + d + e + f + g + h Rate per metre (a+b+c+d+e+f+g+h)/	/(n 30/1±5	80)	Per 1.00 MT	139595.99				
		rate per metre (arprorureritgtii)/	(0.394+3.	00)	FEI 1.00 IVII	139393.99				

Say

139596.00

#### Chapter - 13

#### **SUBSTRUCTURE**

#### Preamble:

- 1 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.
- 8 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 suitably designed RCC pedestals.

#### **CHAPTER-13 SUB-STRUCTURE**

		SUB-STRUC	TURE	1		T	<del>, ,</del>
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
13.1	1300 & 2200	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	9.73	4865.00	M-079
		Cement mortar 1:3 (Rate as in Item	cum	0.240	5543.00	1330.32	Item 12.6
		12.6 A sub-analysis) (Excluding GST,OH,CP &Cess)	Jam	0.210	0010.00	1000.02	(A)
		b) Labour					
		Mate	day	0.060	354.00	21.24	L-12
		Mason	day	0.800	442.00	353.60	L-11
		Mazdoor	day	0.800	310.00	248.00	L-13
		Add for scaffolding @ 5 per cent of cost of material and labour				340.91	
		c) GST @ 12 % on (a+b)				859.09	
		d) Overhead charges @ 20 % on (a+	b+c)			1603.63	
		e) Contractor's profit @ 10 % on (a+	b+c+d)			962.18	
		f) Cess @ 1% on (a+b+c+d+e)				105.84	
		Rate per cum (a+b+c+d+e+f)				10689.81	
					say	<u>10690.00</u>	
13.2	1300 & 2200	Pointing with cement mortar (1:3) on Specifications	brick wo	ork in subs	tructure as	per Technical	
		Unit = 10 sqm					
		Taking output = 10 sqm					
		a) Material		0.000	5540.00	400.00	Item 12.6
		Cement mortar 1:3 (Rate as in Item 12.6 )(Excluding GST,OH,CP &Cess)	cum	0.030	5543.00	166.29	(A)
		b) Labour					
		Mate	day	0.040	354.00	14.16	L-12
		Mason	day	0.500	442.00	221.00	L-11
		Mazdoor	day	0.500	310.00	155.00	L-13
		c) GST @ 12 % on (a+b)				66.77	
		d) Overhead charges @ 20 % on (a+	' <del>-</del> '			124.64	
		e) Contractor's profit @ 10 % on (a+	b+c+d)			74.79	
		f) Cess @ 1% on (a+b+c+d+e)				8.23	
		Rate per 10 sqm (a+b+c+d+e+f)				830.88	
	Note	Scaffolding is already included in item 13.	.1		say	<u>83.10</u>	
13.3	1300 & 2200	Plastering with cement mortar (1:3 Technical Specifications	) on b	rick work	in sub-stru	ıcture as per	
		Unit = 10 sqm Taking output = 10 sqm					
		a) Material Cement mortar 1:3 (Rate as in Item 12.6) (Excluding GST,OH,CP &Cess)	cum	0.144	5543.00	798.19	Item 12.6 (A)
		b) Labour					
		Mate	day	0.040	354.00	14.16	L-12
		Mason	day	0.500	442.00	221.00	L-11
		Mazdoor	day	0.500	310.00	155.00	L-13
		c) GST @ 12 % on (a+b)				142.60	
		d) Overhead charges @ 20 % on (a+	=			266.19	
		e) Contractor's profit @ 10 % on (a+	p+c+d)			159.71	
		f) Cess @ 1% on (a+b+c+d+e) Rate per 10 sqm (a+b+c+d+e+f)				17.57 1774.42	
		rate per 10 squi (a b c u e i)					
					say	<u>177.40</u>	

			SUB-STRUC	IUKE				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	Note		1.Scaffolding is already included in item r	o. 13.1				
			2. The number of masons and Mazdoors	already	catered in			
			the cement mortar have been taken					
			providing these categories in brick mas	sonry, po	ointing and			
40.4	4400.0		plastering.					
13.4	1400 & 2200		Stone masonry work in cement mo drawing and Technical Specifications	rtar 1:3	for subst	ructure com	plete as per	
		٨	Random Rubble Masonry					
		^	( coursed/uncoursed )					
			Unit = cum					
			Taking output = 1 cum					
			a) Material					
			Stone	cum	1.000	576.11	576.11	M-148
			Through and bond stone	No	7.000	14.16	99.12	M-182
			(7no.x0.24mx0.24mx0.39m = 0.16  cu.m)					
			Cement mortar 1:3 (Rate as in Item	cum	0.330	5543.00	1829.19	Item 12.6 (A)
			12.6) (Excluding GST,OH,CP					(A)
			&Cess)					
			b) Labour	4	0.400	254.00	25.40	L-12
			Mate Mason	day	0.100	354.00	35.40	L-12
			Mazdoor	day day	1.200 1.200	442.00 310.00	530.40 372.00	L-13
			Add for scaffolding @ 5 per cent of	uay	1.200	310.00	172.11	
			cost of a) Material and b) Labour				172.11	
			c) GST @ 12 % on (a+b)				433.72	
			d) Overhead charges @ 20 % on (a+	h+c)			809.61	
				-			485.77	
				ртстиј				
			f) Cess @ 1% on (a+b+c+d+e)				53.43	
			Rate per cum (a+b+c+d)				5396.86	
13.4		R	Coursed rubble masonry (first sort )			say	<u>5397.00</u>	
13.4			Unit = cum					
			Taking output = 1 cum a) Material					
			a) Material Stone	cum	1.100	576.11	633.72	M-148
			Through and bond stone	each	7.000	14.16	99.12	M-182
			(7no.x0.24mx0.24mx0.39m = 0.16  cu.m)	Guon	7.000		00.12	
			Cement mortar 1:3 (Rate as in Item	cum	0.300	5543.00	1662.90	Item 12.6
			12.6) (Excluding GST,OH,CP &Cess)	oum	0.000	00+0.00	1002.00	(A)
			b) Labour					
			Mate	day	0.120	354.00	42.48	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	1.500	310.00	465.00	L-13
			Add for scaffolding @ 5 per cent of	-			178.31	
			cost of material and labour c) GST @ 12 % on (a+b)				449.34	
			d) Overhead charges @ 20 % on (a+	h+c)			838.77	
				-				
			e) Contractor's profit @ 10 % on (a+	urcra)			503.26	
			f) Cess @ 1% on (a+b+c+d+e) Rate per cum (a+b+c+d+e+f)				55.36 5591.26	
13.4		^	Ashlar masonry ( first sort )			say	<u>5591.00</u>	
13.4		J	• • • •					
			Plain ashlar  Unit = cum					

Taking output = 1 cum

	1	_	SUB-STRUC	CIURE	<u> </u>	ı		
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	-	-	a) Material					
			Stone	cum	1.110	576.11	639.48	M-169
			Through and bond stone	each	7.000	14.16	99.12	M-182
			(7no.x0.24mx0.24mx0.39m = 0.16  cu.m)					
			Cement mortar 1:3 (Rate as in Item	cum	0.330	5543.00	1829.19	Item 12.6 (A)
			12.6) (Excluding GST,OH,CP &Cess)					( )
			b) Labour for masonry work					
			Mate	day	0.200	354.00	70.80	L-12
			Mason	day	2.500	442.00	1105.00	L-11
			Mazdoor	day	2.500	310.00	775.00	L-13
			Add for scaffolding @ 5 per cent of cost of a) Material and b) Labour	-			225.93	
			c) GST @ 12 % on (a+b)				569.34	
			d) Overhead charges @ 20 % on (a+	-b+c)			1062.77	
			e) Contractor's profit @ 10 % on (a+				637.66	
			f) Cess @ 1% on (a+b+c+d+e)	a cou,			70.14	
			Rate per cum (a+b+c+d+e+f)				7084.43	
			Kate per cuili (a+b+c+u+e+i)					
	Note		The labour already considered in the c	omont m	ortar havo	say	<u>7084.00</u>	
13.5	1500, 1700 & 2200		been taken into account while providing the stone masonry works. Plain/Reinforced cement concrete in Technical Specifications		-	olete as per	drawing and	
	2200		Unit = cum					
			Taking output = 1 cum					
		Α	PCC Grade M15					
			Height upto 5m					
		(P)	-	t avaamt				
			Same as Item 12.8 (A) upto 5 m height for formwork which shall be 10 per cent of 4 per cent of cost of material, lab machinery.	instead				
			Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (A) (E GST,OH,CP &Cess)				5072.00	Item 12.8 (A)
			d) formwork  Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		507.20	
			e) GST @ 12 % on (a+b+c+d)				669.50	
			f) Overhead charges @ 20 % on (a+	-h+c+d+4	2)		1249.74	
					-		749.84	
				vy+c+u+(	= (1)			
			h) Cess @ 1% on (a+b+c+d+e+f+g)				82.48	
			Rate perm (a+b+c+d+e+f+g+h)				8330.76	
13.5		В	PCC Grade M20			say	<u>8331.00</u>	

(p) Height upto 5m

Same as Item 12.8 (B) PCC upto 5 m height, except for formwork which shall be 10 per cent instead of 4 per cent of cost of material, labour and machinery.

Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (B) (Excluding GST,OH,CP &Cess) 5649.00 Item 12.8 (B) PCC

	SUB-STRUCTURE		
Sr No Ref. to MoRTH DSR Spe	Description Unit Quantity Rate R	s 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	564.90	
	e) GST @ 12 % on (a+b+c+d)	745.67	
	f) Overhead charges @ 20 % on (a+b+c+d+e)	1391.91	
	g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	835.15	
	h) Cess @ 1% on (a+b+c+d+e+f+g)	91.87	
	Rate perm (a+b+c+d+e+f+g+h)	9278.50	
		say <u>9279.00</u>	
13.5	PCC Grade M25	-, <u></u>	
	Height upto 5m		
	Same as Item 12.8 (D) upto 5 m height with the only change that the work shall be 10 per cent instead of 3.75 per cent of cost of ma machinery.  **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	6150.00	Item 12.8 (D) Case I
	Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork	615.00	
	e) GST @ 12 % on (a+b+c+d)	811.80	
	f) Overhead charges @ 20 % on (a+b+c+d+e)	1515.36	
	g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	909.22	
	h) Cess @ 1% on (a+b+c+d+e+f+g)	100.01	
	Rate perm (a+b+c+d+e+f+g+h)	10101.39	
		say <u>10101.00</u>	
13.5 C (p)	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)	5967.00	Item 12.8 (D) Case II
	d) formwork  Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork	596.70	
	e) GST @ 12 % on (a+b+c+d)	787.64	
	f) Overhead charges @ 20 % on (a+b+c+d+e)	1470.27	
	g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	882.16	
	h) Cess @ 1% on (a+b+c+d+e+f+g)	97.04	
	Rate perm (a+b+c+d+e+f+g+h)	9800.81	
		ay <u>9801.00</u>	
13.5 C	Height 5m to 10m Same as Item 12.8 (D) with the following changes: (i) Add 2 per cent of Labour and machinery excluding form work to cater for extra lift. (ii) The work shall be 12 per cent instead of 3.75 per cent of cost of ma machinery  *Using concrete Mixer*	provision of forn	n
	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	6150.00	Item 12.8 (D) Case I
	Add 12 per cent of cost of material, 12.000 labour and machinery (a+b+c) for Formwork	738.00	

		SUB-STRUC	TURE				
Sr No Ref. MoRT	TH/	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Add 2 per cent of cost of material,		2.000		123.00	
		Labour and machinery excluding					
		formwork to cater for extra lift					
		e) GST @ 12 % on (a+b+c+d)				841.32	
		f) Overhead charges @ 20 % on (a+		=		1570.46	
		g) Contractor's profit @ 10 % on (a+	b+c+d+e	∋+f)		942.28	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				103.65	
		Rate perm (a+b+c+d+e+f+g+h)				10468.71	
12.5.0 (**)	Case	Mith Detaking Digat Turneit Missagen and	0	ta D	say	<u>10469.00</u>	
13.5 C (q)	II	With Batching Plant, Transit Mixer and		te Pump			
		Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (D) (Excluding GST,OH,CP &Cess) d) formwork				5967.00	
		Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		716.04	
		Add 2 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		2.000		119.34	
		e) GST @ 12 % on (a+b+c+d)				816.29	
		f) Overhead charges @ 20 % on (a+b	o+c+d+e	)		1523.73	
		g) Contractor's profit @ 10 % on (a+l	o+c+d+e	+f)		914.24	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				100.57	
		Rate perm (a+b+c+d+e+f+g+h)				10157.21	
3.5 C		Height above 10m			say	<u>10157.00</u>	
	Case	labour and machinery excluding form work work shall be 15 per cent instead of machinery.  * Using concrete Mixer			. , .		
	1	•				0450.00	Itom 12.9
		Per Cum Basic Cost of Labour, Ma Machinery (a+b+c) of Item 12.8 (D) (Excluding GST,OH,CP &Cess) d) formwork				6150.00	Item 12.8 (D) Case I
		Add 15 per cent of cost of material, labour and machinery (a+b+c) for Formwork		15.000		922.50	
		Add 4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		4.000		246.00	
		e) GST @ 12 % on (a+b+c+d)				878.22	
		f) Overhead charges @ 20 % on (a+b	o+c+d+e	)		1639.34	
		g) Contractor's profit @ 10 % on (a+l	o+c+d+e	+f)		983.61	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				108.20	
		h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h)				108.20 10927.87	
		Rate perm (a+b+c+d+e+f+g+h)			say		
13.5 C (r)	Case II		Concre	te Pump	say	10927.87	
13.5 C (r)	Case II	Rate perm (a+b+c+d+e+f+g+h)	terial &	-	say	10927.87	Item 12.8 (D) Case II

	, ,		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		238.68	
			e) GST @ 12 % on (a+b+c+d)				852.09	
			f) Overhead charges @ 20 % on (a+b	+c+d+e	)		1590.56	
			g) Contractor's profit @ 10 % on (a+b		=		954.34	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		104.98	
			Rate perm (a+b+c+d+e+f+g+h)				10602.70	
			. (			say	10603.00	
13.5		D	PCC Grade M30			•		
		(p)	Height upto 5m					
			Same as Item 12.8 (F) upto 5 m height work shall be 10 per cent instead of 3 machinery.					
		Case I	Using concrete Mixer					
			Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess) d) formwork				6204.00	12.8 (F) Case I
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		620.40	
			e) GST @ 12 % on (a+b+c+d)				818.93	
			f) Overhead charges @ 20 % on (a+b	+c+d+e	)		1528.67	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		917.20	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				100.89	
			Rate perm (a+b+c+d+e+f+g+h)				10190.09	
						say	<u>10190.00</u>	
13.5 D	(p)	Case	With Batching Plant, Transit Mixer and	Concre	te Pump			
			Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess) d) formwork				6016.00	12.8 (F) Case II
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		601.60	
			e) GST @ 12 % on (a+b+c+d)				794.11	
			f) Overhead charges @ 20 % on (a+b	+c+d+e	)		1482.34	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		889.41	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				97.83	
			Rate perm (a+b+c+d+e+f+g+h)				9881.29	
40 F D		()	Hallahi Fin to 40 m			say	<u>9881.00</u>	
13.5 D		Case	Height 5m to 10m Same as Item 12.8 (F) with the following of Labour and machinery excluding form work shall be 12 per cent instead of 3 machinery.  Using concrete Mixer	k to cate	er for extra li	ft. (ii) The pro	vision of form	1
		I	Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess) d) formwork				6204.00	12.8 (F) Case I
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		744.48	

Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
ļ.			Add 2 per cent of cost of material,		2.000		124.08	
			Labour and machinery excluding					
			formwork to cater for extra lift				0.40 = 4	
			e) GST @ 12 % on (a+b+c+d)				848.71	
			f) Overhead charges @ 20 % on (a+b		=		1584.25	
			g) Contractor's profit @ 10 % on (a+b	+c+a+e	+1)		950.55	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				104.56	
			Rate perm (a+b+c+d+e+f+g+h)				10560.63	
13.5 D (q	<b>a</b> )	Case	With Batching Plant, Transit Mixer and	Concret	te Pump	say	<u>10561.00</u>	
		II	Per Cum Basic Cost of Labour, Mat	erial &			6016.00	Item 12.8 (F) Case II
			Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)	Case II				(i ) Case ii
			d) formwork		40.000		704.00	
			Add 12 per cent of cost of material, labour and machinery (a+b+c) for		12.000		721.92	
			Formwork					
			Add 2 per cent of cost of material, Labour and machinery excluding		2.000		120.32	
			formwork to cater for extra lift					
			e) GST @ 12 % on (a+b+c+d)				822.99	
			f) Overhead charges @ 20 % on (a+b		=		1536.25	
			g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		921.75	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				101.39	
							10010 60	
			Rate perm (a+b+c+d+e+f+g+h)				10240.62	
13.5 D		(r)	Height above 10m Same as Item 12.8 (F) with the following of				10241.00 st of material	
13.5 D		(r)	Height above 10m	to cate	r for extra l	per cent of co ift. (ii) The pro	10241.00 st of material vision of form	1
13.5 D			Height above 10m Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3	to cate	r for extra l	per cent of co ift. (ii) The pro	10241.00 st of material vision of form	1
13.5 D			Height above 10m Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery	to cate 3.50 per erial &	r for extra l	per cent of co ift. (ii) The pro	10241.00 st of material vision of form	1
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mathematical Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  d) formwork  Add 15 per cent of cost of material, labour and machinery (a+b+c) for	to cate 3.50 per erial &	r for extra l	per cent of co ift. (ii) The pro	10241.00 st of material vision of form II, labour and	n I
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mathematical Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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	to cate 3.50 per erial &	r for extra I	per cent of co ift. (ii) The pro	10241.00 st of material vision of form al, labour and 6204.00	n I
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mate Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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,	to cate 3.50 per erial &	r for extra I cent of co	per cent of co ift. (ii) The pro	st of material vision of formal, labour and 6204.00	1 12.8 (F)
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Math Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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	c to cate 3.50 per erial & Case I	15.000	per cent of co ift. (ii) The pro	st of material vision of formal, labour and 6204.00 930.60	1 12.8 (F)
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mathematical Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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  e) GST @ 12 % on (a+b+c+d)	c to cate 3.50 per erial & Case I	15.000 4.000	per cent of co ift. (ii) The pro	10241.00 st of material vision of formal, labour and 6204.00 930.60 248.16	1 12.8 (F)
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mate Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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  e) GST @ 12 % on (a+b+c+d)  f) Overhead charges @ 20 % on (a+b	c to cate 3.50 per erial & Case I	15.000 4.000	per cent of co ift. (ii) The pro	10241.00 st of material vision of formal, labour and 6204.00 930.60 248.16 885.93 1653.74	1 12.8 (F)
13.5 D			Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mate Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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  e) GST @ 12 % on (a+b+c+d)  f) Overhead charges @ 20 % on (a+b g) Contractor's profit @ 10 % on (a+b c)	c to cate 3.50 per erial & Case I	15.000 4.000	per cent of co ift. (ii) The pro	10241.00 st of material vision of formal, labour and 6204.00 930.60 248.16 885.93 1653.74 992.24	1 12.8 (F)
		Case	Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mathematical Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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  e) GST @ 12 % on (a+b+c+d)  f) Overhead charges @ 20 % on (a+b)  g) Contractor's profit @ 10 % on (a+b)  h) Cess @ 1% on (a+b+c+d+e+f+g)  Rate perm (a+b+c+d+e+f+g+h)	erial & Case I +c+d+e	15.000 4.000	per cent of co ift. (ii) The pro	10241.00 st of material vision of formal, labour and 6204.00 930.60 248.16 885.93 1653.74 992.24 109.15	1 12.8 (F)
13.5 D		Case	Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mathematical Machinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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  e) GST @ 12 % on (a+b+c+d)  f) Overhead charges @ 20 % on (a+b)  g) Contractor's profit @ 10 % on (a+b)  h) Cess @ 1% on (a+b+c+d+e+f+g)  Rate perm (a+b+c+d+e+f+g+h)  With Batching Plant, Transit Mixer and of the per Cum Basic Cost of Labour, Mathematical Machinery (a+b+c) of Item 12.8 (F)	c to cate 3.50 per erial & Case I +c+d+e +c+d+e concret erial &	15.000 4.000	per cent of co ift. (ii) The pro ost of materia	10241.00 st of material vision of formal, labour and 6204.00 930.60 248.16 885.93 1653.74 992.24 109.15 11023.82	12.8 (F)
		Case	Height above 10m  Same as Item 12.8 (F) with the following of labour and machinery excluding form work work shall be 15 per cent instead of 3 machinery  Using concrete Mixer  Per Cum Basic Cost of Labour, Mathachinery (a+b+c) of Item 12.8 (F) (Excluding GST,OH,CP &Cess)  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  e) GST @ 12 % on (a+b+c+d)  f) Overhead charges @ 20 % on (a+b)  g) Contractor's profit @ 10 % on (a+b)  h) Cess @ 1% on (a+b+c+d+e+f+g)  Rate perm (a+b+c+d+e+f+g+h)  With Batching Plant, Transit Mixer and of the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Transit Mixer and the Cum Basic Cost of Labour, Mathaching Plant, Tra	c to cate 3.50 per erial & Case I +c+d+e +c+d+e concret erial &	15.000 4.000	per cent of co ift. (ii) The pro ost of materia	10241.00 st of material vision of formal, labour and 6204.00 930.60 248.16 885.93 1653.74 992.24 109.15 11023.82 11024.00	12.8 (F)

Page : 323

		SUB-STRUC	TURE	1			
Sr No Ref. to MoRTH/		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	'	240.64	•
		e) GST @ 12 % on (a+b+c+d)				859.08	
		f) Overhead charges @ 20 % on (a+b	+c+d+e	)		1603.62	
		g) Contractor's profit @ 10 % on (a+b		=		962.17	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		,		105.84	
		Rate perm (a+b+c+d+e+f+g+h)				10689.75	
					say	10690.00	
13.5	Е	RCC Grade M20			•		
	(p)	Height upto 5m					
		Same as Item 12.8 (C) upto 5 m height, e instead of 4 per cent of cost of material, la	-			10 per cent	
	Case I	Using concrete Mixer					
		Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (C) (Excluding GST,OH,CP &Cess) d) formwork				5849.00	Item 12.8 (C) Case I
		Add 10 per cent of cost of material, labour and machinery (a+b+c) for		10.000		584.90	
		Formwork e) GST @ 12 % on (a+b+c+d)				772.07	
		f) Overhead charges @ 20 % on (a+b	+c+d+e	١		1441.19	
		g) Contractor's profit @ 10 % on (a+b	-	-		864.72	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		• • • •		95.12	
		Rate perm (a+b+c+d+e+f+g+h)				9607.00	
		rate perm (a · b · c · a · c · r · g · r)			say	9607.00	
13.5 E (p)	Case	With Batching Plant, Transit Mixer and	Concret	te Pump	ou,	0007700	
	"	Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (C) (Excluding GST,OH,CP &Cess) d) formwork				5663.00	Item 12.8 (C) Case II
		Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork		10.000		566.30	
		e) GST @ 12 % on (a+b+c+d)				747.52	
		f) Overhead charges @ 20 % on (a+b	+c+d+e	)		1395.36	
		g) Contractor's profit @ 10 % on (a+b	+c+d+e	+f)		837.22	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				92.09	
		Rate perm (a+b+c+d+e+f+g+h)				9301.49	
					say	<u>9301.00</u>	
13.5 E	(q)	Height 5m to 10m For height, upto 10m, add 2 per cent of			-		
	Case	formwork add 12 per cent of cost of mate . Using concrete Mixer	rial, labo	our and mac	ninery instead	of 4 per cent	I
	I	-				5040.00	Item 12.8
		Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (C) (Excluding GST,OH,CP &Cess) d) formwork				5849.00	(C) Case I
		Add 12 per cent of cost of material, labour and machinery (a+b+c) for Formwork		12.000		701.88	
		Add 2 per cent of cost of material,		2.000		116.98	

-	_	1			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity Rate Rs	Cost Rs	Remarks/ Input ref.
		-	e) GST @ 12 % on (a+b+c+d)	800.14	'
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1493.60	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	896.16	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	98.58	
			Rate perm (a+b+c+d+e+f+g+h)	9956.34	
			say	<u>9956.00</u>	
3.5 E (	(q)	Case II	With Batching Plant, Transit Mixer and Concrete Pump		
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (C) Case II (Excluding GST,OH,CP &Cess) d) formwork	5663.00	Item 12.8 (C) Case II
			Add 12 per cent of cost of material, 12.000 labour and machinery (a+b+c) for Formwork	679.56	
			Add 2 per cent of cost of material, 2.000 Labour and machinery excluding	113.26	
			formwork to cater for extra lift e) GST @ 12 % on (a+b+c+d)	774.70	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1446.10	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	867.66	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	95.44	
			Rate perm (a+b+c+d+e+f+g+h)	9639.72	
			say	9640.00	
3.5 E		(r)	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material	ost of material, ovision of form	)
3.5 E		Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material machinery.	ost of material, ovision of form	1
3.5 E			Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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)	ost of material, ovision of form	I     Item 12.8
3.5 E		Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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	ost of material, ovision of form al, labour and	I     Item 12.8
3.5 E		Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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	ost of material, ovision of form al, labour and 5849.00	I     Item 12.8
3.5 E		Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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	ost of material, ovision of form al, labour and 5849.00	I     Item 12.8
3.5 E		Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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	ost of material, by sision of formal, labour and 5849.00	I     Item 12.8
3.5 E		Case	Height above 10m  Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % on (a+b+c+d)	ost of material, ovision of formal, labour and 5849.00	I     Item 12.8
3.5 E		Case	Height above 10m  Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % 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)	5849.00 877.35 233.96 835.24 1559.11 935.47 102.90	I     Item 12.8
3.5 E		Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % 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)	5849.00 877.35 233.96 835.24 1559.11 935.47 102.90 10393.03	I     Item 12.8
		Case	Height above 10m  Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % 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)	5849.00 877.35 233.96 835.24 1559.11 935.47 102.90	I     Item 12.8
	(r)	Case	Height above 10m  Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % 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)	5849.00 877.35 233.96 835.24 1559.11 935.47 102.90 10393.03	I     Item 12.8
	(r)	Case	Height above 10m  Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % 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)	5849.00 877.35 233.96 835.24 1559.11 935.47 102.90 10393.03	Item 12.8 (C) Case
3.5 E	(r)	Case	Height above 10m Same as Item 12.8 (C) with the following changes: (i) Add 4 per cent of collabour and machinery excluding form work to cater for extra lift. (ii) The prowork shall be 15 per cent instead of 4 per cent of cost of material 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 @ 12 % 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)  Saay  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	5849.00 877.35 233.96 835.24 1559.11 935.47 102.90 10393.03 10393.00	Item 12.8 (C) Case I

		SUB-STRUCTURE			
Sr No M	ef. to DRTH/ R Spec.	Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		e) GST @ 12 % on (a+b+c+d)	L	808.68	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1509.53	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		905.72	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		99.63	
		Rate perm (a+b+c+d+e+f+g+h)		10062.53	
			say	<u>10063.00</u>	
13.5	F	RCC Grade M25			
	(p)	Height upto 5m			
		Same as Item 12.8 (E) upto 5m height, excluding formwork. Fo per cent of cost of material, labour and machinery instead of 3.		iwork, add 10	
	Case	Using concrete Mixer			
	ı	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case I (Excluding GST,OH,CP &Cess) d) formwork		6356.00	Item 12.8 (E) Case I
		Add 10 per cent of cost of material, 10.000		635.60	
		labour and machinery (a+b+c) for Formwork		033.00	
		e) GST @ 12 % on (a+b+c+d)		838.99	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1566.12	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		939.67	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		103.36	
		Rate perm (a+b+c+d+e+f+g+h)		10439.74	
			say	<u>10440.00</u>	
13.5 F (p)	Case II	With Batching Plant, Transit Mixer and Concrete Pump			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case II (Excluding GST,OH,CP &Cess) d) formwork		6268.00	Item 12.8 (E) Case II
		Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork		626.80	
		e) GST @ 12 % on (a+b+c+d)		827.38	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		1544.44	
		g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		926.66	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		101.93	
		Rate perm (a+b+c+d+e+f+g+h)		10295.21	
			say	<u>10295.00</u>	
13.5 F	(q)	Height 5m to 10m	r	L	
		For height, upto 10m, add 1.8 per cent of cost as above excluded formwork add 11.8 per cent of cost of material, labour and made	•	K. For cost of	•
	Case I	Using concrete Mixer			
		Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case I (Excluding GST,OH,CP &Cess) d) formwork		6356.00	Item 12.8 (E) Case I
		Add 11.8 per cent of cost of 11.800 material, labour and machinery (a+b+c) for Formwork		750.01	
		Add 1.8 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		114.41	
		e) GST @ 12 % on (a+b+c+d)		866.45	

			SUB-STRUCTURE			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	1		f) Overhead charges @ 20 % on (a+b+c+d+e)		1617.37	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		970.42	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		106.75	
			Rate perm (a+b+c+d+e+f+g+h)		10781.41	
				say	<u>10781.00</u>	
13.5 F	(q)	Case	With Batching Plant, Transit Mixer and Concrete Pump			
		II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case II (Excluding GST,OH,CP &Cess) d) formwork		6268.00	Item 12.8 (E) Case II
			Add 11.8 per cent of cost of 11.800 material, labour and machinery (a+b+c) for Formwork		739.62	
			Add 1.8 per cent of cost of material, 1.800 Labour and machinery excluding formwork to cater for extra lift		112.82	
			e) GST @ 12 % on (a+b+c+d)		854.45	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1594.98	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		956.99	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		105.27	
			Rate perm (a+b+c+d+e+f+g+h)		10632.13	
			3,	say	10632.00	
		Case I	formwork add 15 per cent of cost of material, labour and machi Using concrete Mixer  Per Cum Basic Cost of Labour, Material &	inery	6356.00	Item 12.8
			Machinery (a+b+c) of Item 12.8 (E) Case I (Excluding GST,OH,CP &Cess) d) formwork			(E) Case I
			Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork		953.40	
			Add 4 per cent of cost of material, 4.000  Labour and machinery excluding formwork to cater for extra lift		254.24	
			e) GST @ 12 % on (a+b+c+d)		907.64	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		1694.26	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		1016.55	
			h) Cess @ 1% on (a+b+c+d+e+f+g) Rate perm (a+b+c+d+e+f+g+h)		111.82 11293.91	
			Kate periii (a+b+c+u+e+i+g+ii)	say	11293.91 11294.00	
13.5 F	(r)	Case	With Batching Plant, Transit Mixer and Concrete Pump	cuy	1120 1100	
		"	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (E) Case II (Excluding GST,OH,CP &Cess) d) formwork		6268.00	Item 12.8 (E) Case II
			Add 15 per cent of cost of material, 15.000 labour and machinery (a+b+c) for Formwork		940.20	
			Add 4 per cent of cost of material, 4.000 Labour and machinery excluding formwork to cater for extra lift		250.72	

Page : 327

			SUB-STRUCTURE		
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity Rate Rs	Cost Rs	Remarks/ Input ref.
	'		e) GST @ 12 % on (a+b+c+d)	895.07	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1670.80	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	1002.48	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	110.27	
			Rate perm (a+b+c+d+e+f+g+h)	11137.54	
			say	<u>11138.00</u>	
13.5			RCC Grade M30		
		(p)	Height upto 5m		
			Same as Item 12.8 (G) upto 5m height, excluding formwork. For cost of for 10 per cent of cost of material, labour and machinery instead of 3.5 per cent		İ
		Case	Using concrete Mixer		
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case I (Excluding GST,OH,CP &Cess)	6387.00	Item 12.8 (G) Case I
			d) formwork		
			Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork	638.70	
			e) GST @ 12 % on (a+b+c+d)	843.08	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1573.76	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	944.25	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	103.87	
			Rate perm (a+b+c+d+e+f+g+h)	10490.66	
			say	10491.00	
13.5 G	6 (p)	Case II	With Batching Plant, Transit Mixer and Concrete Pump  Per Cum Basic Cost of Labour, Material &  Machinery (a+b+c) of Item 12.8 (G) Case II  (Excluding GST,OH,CP &Cess)  d) formwork	6201.00	Item 12.8 (G) Case II
			Add 10 per cent of cost of material, 10.000 labour and machinery (a+b+c) for Formwork	620.10	
			e) GST @ 12 % on (a+b+c+d)	818.53	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1527.93	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	916.76	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	100.84	
			Rate perm (a+b+c+d+e+f+g+h)	10185.16	
			say	<u>10185.00</u>	
13.5 G	;	(q)	Height 5m to 10m		
		Case	For height, upto 10m, add 1.6 per cent of cost as above excluding formwork formwork add 11.5 per cent of cost of material, labour and machinery  Using concrete Mixer	rk. For cost of	f
		I	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case I (Excluding GST,OH,CP	6387.00	Item 12.8 (G) Case I
			&Cess)		
			d) formwork  Add 11.5 per cent of cost of 11.500  material, labour and machinery (a+b+c) for Formwork	734.51	
			Add 1.6 per cent of cost of material,  Labour and machinery excluding formwork to cater for extra lift	102.19	
			e) GST @ 12 % on (a+b+c+d)	866.84	

			SUB-STRUCTURE		
Sr No	Ref. to MoRTH/ DSR Spec.		Description Unit Quantity Rate Rs	Cost Rs	Remarks/ Input ref.
	Description.	1	f) Overhead charges @ 20 % on (a+b+c+d+e)	1618.11	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	970.87	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	106.80	
			Rate perm (a+b+c+d+e+f+g+h)	10786.32	
			say	10786.00	
13.5 G	(a)	Case	With Batching Plant, Transit Mixer and Concrete Pump		
10.00	(4)	II		0004.00	Item 12.8
			Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case II (Excluding GST,OH,CP &Cess)	6201.00	(G) Case
			d) formwork	740.40	
			Add 11.5 per cent of cost of 11.500 material, labour and machinery (a+b+c) for Formwork	713.12	
			Add 1.6 per cent of cost of material, 1.600	99.22	
			Labour and machinery excluding formwork to cater for extra lift	00.22	
			e) GST @ 12 % on (a+b+c+d)	841.60	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1570.99	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	942.59	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	103.69	
			Rate perm (a+b+c+d+e+f+g+h) say	10472.21 <b>10472.00</b>	
13.5 G		(r)	Height above 10m	10472.00	
		( )	For height, above 10m, add 3.5 per cent of cost as above excluding form of formwork add 14 per cent of cost of material, labour and machinery	work. For cost	t
		Case	Using concrete Mixer		
		'	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case I (Excluding GST,OH,CP &Cess) d) formwork	6387.00	Item 12.8 (G) Case I
			Add 14 per cent of cost of material, 14.000 labour and machinery (a+b+c) for Formwork	894.18	
			Add 3.5 per cent of cost of material, 3.500 Labour and machinery excluding	223.55	
			formwork to cater for extra lift		
			e) GST @ 12 % on (a+b+c+d)	900.57	
			f) Overhead charges @ 20 % on (a+b+c+d+e)	1681.06	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)	1008.64	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	110.95	
			Rate perm (a+b+c+d+e+f+g+h)	11205.95	
13.5 G	(r)	Case	With Batching Plant, Transit Mixer and Concrete Pump	<u>11206.00</u>	
10.0	(.)	II	Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) of Item 12.8 (G) Case II (Excluding GST,OH,CP &Cess) d) formwork	6201.00	Item 12.8 (G) Case II
			Add 14 per cent of cost of material, 14.000 labour and machinery (a+b+c) for	868.14	
			Formwork Add 3.5 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift	217.04	

			SUB-STRUCTUF	RE			
Sr No	Ref. to MoRTH/ DSR Spec.		Description Ur		Rate Rs	Cost Rs	Remarks/ Input ref.
			e) GST @ 12 % on (a+b+c+d)	'		874.34	!
			f) Overhead charges @ 20 % on (a+b+c+	•		1632.10	
			g) Contractor's profit @ 10 % on (a+b+c+	d+e+f)		979.26	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			107.72	
			Rate perm (a+b+c+d+e+f+g+h)			10879.60	
2 E			RCC Grade M35		say	<u>10880.00</u>	
3.5			Height upto 5m				
		(P)	Same as Item 12.8 (H) upto 5m height, exclud 10 per cent of cost of material, labour and ma				
		Case	Using concrete Mixer	-	•		
		ı	Per Cum Basic Cost of Labour, Materia Machinery (a+b+c) of Item 12.8 (H) Cas (Excluding GST,OH,CP &Cess) d) formwork			6525.00	Item 12.8 (H) Case I
			Add 10 per cent of cost of material,	10.000		652.50	
			labour and machinery (a+b+c) for Formwork	10.000		032.30	
			e) GST @ 12 % on (a+b+c+d)			861.30	
			f) Overhead charges @ 20 % on (a+b+c+	+d+e)		1607.76	
			g) Contractor's profit @ 10 % on (a+b+c-	+d+e+f)		964.66	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			106.11	
			Rate perm (a+b+c+d+e+f+g+h)			10717.33	
		C			say	<u>10717.00</u>	
3.5 H	(p)	ll	With Batching Plant, Transit Mixer and Con	crete Pump			
			Per Cum Basic Cost of Labour, Materia Machinery (a+b+c) of Item 12.8 (H) Cas (Excluding GST,OH,CP &Cess) d) formwork	e II		6443.00	Item 12.8 (H) Case II
			Add 10 per cent of cost of material, labour and machinery (a+b+c) for Formwork	10.000		644.30	
			e) GST @ 12 % on (a+b+c+d)			850.48	
			f) Overhead charges @ 20 % on (a+b+c+	•		1587.56	
			g) Contractor's profit @ 10 % on (a+b+c-	+d+e+f)		952.53	
			h) Cess @ 1% on (a+b+c+d+e+f+g)			104.78	
			Rate perm (a+b+c+d+e+f+g+h)			10582.65	
					say	<u>10583.00</u>	
3.5 H		(q)	Height 5m to 10m				
		Case	For height, upto 10m, add 1.4 per cent of cost formwork add 11 per cent of cost of material, <b>Using concrete Mixer</b>		-	k. For cost of	•
		I	Per Cum Basic Cost of Labour, Materia Machinery (a+b+c) of Item 12.8 (H) Cas (Excluding GST,OH,CP &Cess)			6525.00	Item 12.8 (H) Case I
			d) formwork				
			Add 11 per cent of cost of material, labour and machinery (a+b+c) for Formwork	11.000		717.75	
			Add 1.4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift	1.400		91.35	
			e) GST @ 12 % on (a+b+c+d)			880.09	

		SUB-STRUC	IUKE				
Sr No Ref. to MoRTH/	<i>,</i>	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		f) Overhead charges @ 20 % on (a+l	o+c+d+e	<del>)</del>		1642.84	·
		g) Contractor's profit @ 10 % on (a+l	o+c+d+e	∍+f)		985.70	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				108.43	
		Rate perm (a+b+c+d+e+f+g+h)				10951.16	
					say	<u>10951.00</u>	
13.5 H (q)	Case	With Batching Plant, Transit Mixer and	Concret	te Pump	•		
(4)	II	Per Cum Basic Cost of Labour, Mat				6443.00	Item 12.8
		Machinery (a+b+c) of Item 12.8 (H) (Excluding GST,OH,CP &Cess) d) formwork				0443.00	(H) Case II
		Add 11 per cent of cost of material, labour and machinery (a+b+c) for Formwork		11.000		708.73	
		Add 1.4 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		1.400		90.20	
		e) GST @ 12 % on (a+b+c+d)				869.03	
		f) Overhead charges @ 20 % on (a+h	o+c+d+e	<b>e</b> )		1622.19	
		g) Contractor's profit @ 10 % on (a+l	o+c+d+e	⊋+f)		973.32	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				107.06	
		Rate perm (a+b+c+d+e+f+g+h)				10813.53	
					say	<u>10814.00</u>	
3.5 H		Height above 10m For height, above 10m, add 3 per cent of formwork add 13 per cent of cost of mate				rk. For cost of	•
	Case I	Using concrete Mixer					
		Per Cum Basic Cost of Labour, Mat Machinery (a+b+c) of Item 12.8 (H) (Excluding GST,OH,CP &Cess) d) formwork				6525.00	Item 12.8 (H) Case I
		Add 13 per cent of cost of material, labour and machinery (a+b+c) for Formwork		13.000		848.25	
		Add 3 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.000		195.75	
		e) GST @ 12 % on (a+b+c+d)				908.28	
		f) Overhead charges @ 20 % on (a+b		=		1695.46	
		g) Contractor's profit @ 10 % on (a+l	o+c+d+e	⊋+f)		1017.27	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				111.90	
		Rate perm (a+b+c+d+e+f+g+h)				11301.91	
3.5 H (r)	Case	With Batching Plant, Transit Mixer and	Concret	to Dumn	say	<u>11302.00</u>	
3.3 11 (1)	II	With Batching Flant, Transit Mixer and	Concre	le Fullip			
		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				6443.00	Item 12.8 (H) Case II
		Add 13 per cent of cost of material, labour and machinery (a+b+c) for Formwork		13.000		837.59	
		Add 3 per cent of cost of material, Labour and machinery excluding formwork to cater for extra lift		3.000		193.29	

# CHAPTER-13

Sr No		<u> </u>	<u>UCTURE</u>				
SI NO	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		e) GST @ 12 % on (a+b+c+d)				896.87	•
		f) Overhead charges @ 20 % on (a	+b+c+d+e)	)		1674.15	
		g) Contractor's profit @ 10 % on (a	+b+c+d+e	+f)		1004.49	
		h) Cess @ 1% on (a+b+c+d+e+f+g)				110.49	
		Rate perm (a+b+c+d+e+f+g+h)				11159.88	
	Nata	The best common of the			say	<u>11160.00</u>	
	Note	The basic components of this analysthose of items 13.8 (A to H). The only c					
		a) Ramps/Stairs: Extra expenditure are more than 5 m high @ 2 per cent of the property of the	of cost for h	eight upto			
		10 m and 4 per cent for heights above for approaching the work spot by provio case for use by the working parties.					
		b) The above mentioned percentage modified for different categories a categories varies, whereas effort for ac	s cost fo	r various			
		will be similar. As the cost of richer con- more, the percentage to be added h	crete is con	nparatively			
13.6	Section	maintain the same cost for extra efforts  Supplying, fitting and placing HYSD			n eub-etructi	ıra complete	
13.0	1600 & 2200	as per drawing and Technical Specific		ncement n	i sub-structi	ire complete	
		Output: MT					
		Taking output = 1 MT					
		a) Material	tonno	1.050	59823.01	62814.16	M-082
		HYSD bars including 5 per cent overlaps and wastage	tonne	1.030	39023.01	02014.10	
		Binding wire	kg	6.000	89.38	536.28	M-072
		b) Labour for cutting, bending					
		shifting to site, tying and placing	in				
		position					
				0.040	0 = 4 00	400.00	1 10
		Mate	day	0.340	354.00	120.36	L-12 L-02
		Blacksmith	day	2.000	442.00	884.00	L-02
		Blacksmith Mazdoor	•			884.00 2015.00	
		Blacksmith Mazdoor c) GST @ 12 % on (a+b)	day day	2.000	442.00	884.00 2015.00 7964.38	L-02
		Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a	day day a+b+c)	2.000	442.00	884.00 2015.00 7964.38 14866.84	L-02
		Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a	day day a+b+c)	2.000	442.00	884.00 2015.00 7964.38 14866.84 8920.10	L-02
		Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e)	day day a+b+c)	2.000	442.00	884.00 2015.00 7964.38 14866.84 8920.10 981.21	L-02
		Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a	day day a+b+c)	2.000	442.00 310.00	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33	L-02
13.7	1600 & 2200	Blacksmith Mazdoor  c) GST @ 12 % on (a+b)  d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e)  Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s	day day  a+b+c) a+b+c+d)	2.000 6.500	442.00 310.00	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u>	L-02 L-13
13.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specific  Unit = MT	day day  a+b+c) a+b+c+d)	2.000 6.500	442.00 310.00	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u>	L-02 L-13
13.7		Blacksmith Mazdoor c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specific	day day  a+b+c) a+b+c+d)	2.000 6.500	442.00 310.00	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u>	L-02 L-13
13.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specification Unit = MT Taking output = 1 MT	day day  a+b+c) a+b+c+d)	2.000 6.500	442.00 310.00	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u>	L-02 L-13
13.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specification Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire	day day a+b+c) a+b+c+d) steel reinfo ication tonne kg	2.000 6.500	442.00 310.00 say omplete in s	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure	L-02 L-13
13.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specifical Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting	day day a+b+c) a+b+c+d) steel reinfo ication tonne kg	2.000 6.500 preement c	442.00 310.00 say omplete in s	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure	L-02 L-13 M-126
13.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specific Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting bending, shifting to site, tying an	day day a+b+c) a+b+c+d) steel reinfo ication tonne kg	2.000 6.500 preement c	442.00 310.00 say omplete in s	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure	L-02 L-13 M-126
3.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specific Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting bending, shifting to site, tying an placing in position	day day  a+b+c) a+b+c+d)  steel reinfo ication  tonne kg g, id	2.000 6.500 ercement c 1.050 6.000	442.00 310.00 say omplete in s 59823.01 89.38	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure	L-02 L-13 M-126
3.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild as per drawing and Technical Specifical Unit = MT  Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting bending, shifting to site, tying an placing in position Mate	day day  a+b+c) a+b+c+d)  steel reinfo ication  tonne kg g, id day	2.000 6.500 <b>orcement c</b> 1.050 6.000	442.00 310.00 say omplete in s 59823.01 89.38	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure 62814.16 536.28	L-02 L-13 M-126 M-072
3.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specific Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting bending, shifting to site, tying an placing in position	day day day  a+b+c) a+b+c+d)  steel reinfo ication  tonne kg g, id day day day	2.000 6.500 0.280 1.500	442.00 310.00 say omplete in s 59823.01 89.38	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure 62814.16 536.28	L-02 L-13 M-126 M-072
3.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild s as per drawing and Technical Specification Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting bending, shifting to site, tying an placing in position Mate Blacksmith	day day  a+b+c) a+b+c+d)  steel reinfo ication  tonne kg g, id day	2.000 6.500 <b>orcement c</b> 1.050 6.000	442.00 310.00 say omplete in s 59823.01 89.38	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> ub-structure 62814.16 536.28	L-02 L-13 M-126 M-072 L-12 L-02
13.7		Blacksmith Mazdoor  c) GST @ 12 % on (a+b) d) Overhead charges @ 20 % on (a e) Contractor's profit @ 10 % on (a f) Cess @ 1% on (a+b+c+d+e) Rate for per MT (a+b+c+d)  Supplying, fitting and placing Mild as per drawing and Technical Specification Unit = MT Taking output = 1 MT a) Material MS bars including 5 per cent overlaps and wastage Binding wire b) Labour for straightening, cutting bending, shifting to site, tying an placing in position Mate Blacksmith Mazdoor	day day day  a+b+c) a+b+c+d)  steel reinfo ication  tonne kg g, id day day day day day	2.000 6.500 0.280 1.500	442.00 310.00 say omplete in s 59823.01 89.38	884.00 2015.00 7964.38 14866.84 8920.10 981.21 99102.33 <u>99102.00</u> rub-structure 62814.16 536.28 99.12 663.00 1705.00	L-02 L-13 M-126 M-072 L-12 L-02

			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)				973.05	
			Rate for per MT (a+b+c+d)				98277.73	
						say	<u>98278.00</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					
			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		24 500	24.54	1007.07	M-056
			AC pipe 100 mm dia. (including wastage @ 5 per cent )	metre	31.500	34.51	1087.07	111 000
			Average length of weep hole is taken as	2				
			one metre for the purpose of estimating.					
			2 2 2 2 1 1 1 1					
			MS clamp	each.	30.000	61.06	1831.80	M-123
			collar for AC pipe (average) taking	each.	10.000	3.45	34.50	M-056/10
			10% of above pipe rate		0.050	5540.00	077.45	Item 12.6
			Cement mortar 1:3 (Rate as in Item 12.6) (Excluding GST,OH,CP &Cess)	cum	0.050	5543.00	277.15	(A)
			b) Labour					
			Mate	day	0.030	354.00	10.62	L-12
			Mason	day	0.500	442.00	221.00	L-11
			Mazdoor	day	0.250	310.00	77.50	L-13
			c) GST @ 12 % on (a+b)				424.76	
			d) Overhead charges @ 20 % on (a	+b+c)			792.88	
			e) Contractor's profit @ 10 % on (a	+b+c+d)			475.73	
			f) Cess @ 1% on (a+b+c+d+e)				52.33	
			Cost for 30 m = $a+b+c+d+e+f$				5285.34	
			Rate per m (a+b+c+d+e+f)/30				176.18	
	Nata		A language of the control of the control of			say	<u>176.00</u>	
	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 stone	-				
			and shall not be paid separately.					
13.9	710.1.4. of		Back filling behind abutment, wing wand Technical Specification	vall and i	return wall	complete as	per drawing	l
	IRC:78 &		Unit = cum					
	2200		Taking output = 10 cum					
		Α	Granular material					
			a) Labour					
			Mate	day	0.280	354.00	99.12	L-12
			Mazdoor	day	7.000	310.00	2170.00	L-13
			b) Material					M 000
			Granular material	cum	12.000	434.51	5214.12	M-009
			c) Machinery Plate compactor/power rammer	hour	2.500	338.05	845.13	P&M-086
			Water Tanker	hour	0.050	544.25	27.21	P&M-060
			d) GST @ 12 % on (a+b+c)	noui	0.000	J <del>11</del> .2J	1002.67	
				.h+c+d\			1871.65	
				-	.1			
			f) Contractor's profit @ 10 % on (a+	-N-C-a+6	;)		1122.99	
			g) Cess @ 1% on (a+b+c+d+e+f)	h+o+d:c:	Lf±α		123.53	
			Cost for 10 cum of granular backfill = a+	DTCTUTE	ı∓g		12476.42	
			Rate per cum = (a+b+c+d+e+f+g)/10				1247.64	
						say	<u>1248.00</u>	

			СНАРТ	_				
Sr No	Ref. to MoRTH/ DSR Spec.		SUB-STRU Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
13.9		В	Sandy material		· · · · · ·			•
			a) Labour					
			Mate	day	0.280	354.00	99.12	L-12 L-13
			Mazdoor for filling, watering, ramming etc.	day	7.000	310.00	2170.00	L-13
			b) Material					
			Sand	cum	12.000	601.77	7221.24	M-006
			c) Machinery				- · - · -	P&M-086
			Plate compactor/power rammer	hour	2.500	338.05	845.13	P&M-060
			Water Tanker	hour	0.060	544.25	32.66	F QIVI-000
			d) GST @ 12 % on (a+b+c)				1244.18	
			e) Overhead charges @ 20 % on (a	·=			2322.47	
			f) Contractor's profit @ 10 % on (a	ı+b+c+d+e	<del>)</del>		1393.48	
			g) Cess @ 1% on (a+b+c+d+e+f)				153.28	
			Cost for 10 cum of sandy backfill = a+b+	+c+d+e			15481.56	
			Rate per cum = $(a+b+c+d+e)/10$				1548.16	
						say	<u>1548.00</u>	
			abutment, wing wall and return w condition complete as per drawing ar		_	-	u 10 a 111111	•
			Unit = cum					
			Taking output = 10 cum. a) Labour					
			Mate	day	0.320	354.00	113.28	L-12
			Mazdoor for filling, watering, ramming etc.	day	7.000	310.00	2170.00	L-13
			Mazdoor (Skilled)	day	1.000	442.00	442.00	L-15
			b) Material					
			Filter media of stone aggregate conforming to clause 2504.2.2. of MoRTH specifications.	cum	12.000	1283.19	15398.28	M-012
			c) Machinery					
			Water Tanker of 6 KL capacity	hour	0.060	544.25	32.66	P&M-060
			d) GST @ 12 % on (a+b+c)				2178.75	
			e) Overhead charges @ 20 % on (a	+b+c+d)			4066.99	
			f) Contractor's profit @ 10 % on (a		∍)		2440.20	
			g) Cess @ 1% on (a+b+c+d+e+f+g)				268.42	
			cost for 10 cum of Fiter Media = a+b+c+d+e+f+g				27110.58	
			Rate per cum = $(a+b+c+d+e+f+g)/10$	3			2711.06	
			(2.2.2.2.1.9)/10			631/	2711.00	

13.11 2000, 1000 & 2200 Supplying, fitting and fixing in position true to line and level cast steel rocker bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.

2711.00

Unit: one tonne capacity

Considering a 250 tonne capacity

bearing for this analysis

a)	Labour					
,	Mate	day	0.060	354.00	21.24	L-12
	Mazdoor (Skilled)	day	0.500	442.00	221.00	L-15
	Mazdoor	day	1.000	310.00	310.00	L-13

	<del></del>	SUB-STRU	CTURE				
Sr No	Ref. to MoRTH/ DSR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b) Material					
		Cast steel rocker bearing assembly	each.	1.000	337300.88	337300.88	M-065
		of 250 tonne design load capacity					
		duly painted complete with all its					
		components as per drawing and specifications					
		Add 1 per cent of cost of bearing				3373.01	
		assembly for foundation anchorage				30.3.3.	
		bolts, lifting arrangements, grease					
		and other consumables.					
		c) GST @ 12 % on (a+b)				40947.14	
		d) Overhead charges @ 20 % on (a+	·b+c)			76434.65	
		e) Contractor's profit @ 10 % on (a+	·b+c+d)			45860.79	
		f) Cess @ 1% on (a+b+c+d+e)				5044.69	
		Cost for 250 tonnes capacity bearing = a	+b+c+d+e	e+f		509513.40	
		Rate per tonne capacity = (a+b+c+d+e-				2038.05	
			,		say	2038.00	
3.12	2000,	Supplying, fitting and fixing in positi	on true	to line and	•		•
	1000 &	bearing conforming to IRC: 83(Pt	l) sectio	n IX and	clause 200	3 of MoRTH	l
	2200	specifications complete including all	accesso	ories as po	er drawing a	nd Technical	
		Specifications.					
		Unit: one tonne capacity					
		Considering a 250 tonne capacity					
		bearing for this analysis					
		a) Labour Mate	day	0.060	354.00	21.24	L-12
		Mazdoor	day	1.000	310.00	310.00	L-13
		Mazdoor (Skilled)	day	0.500	442.00	221.00	L-15
		b) Material	day	0.000	442.00	221.00	
		Forged steel roller bearing of 250	each.	1.000	296823.01	296823.01	M-067
		tonne design load capacity duly					
		painted complete with all its					
		components as per drawing and					
		specifications				2069.22	
		Add 1 per cent of cost of bearing assembly for foundation anchorage				2968.23	
		bolts, lifting arrangements, grease					
		and other consumables.					
		c) GST @ 12 % on (a+b)				36041.22	
		d) Overhead charges @ 20 % on (a+	·b+c)			67276.94	
		e) Contractor's profit @ 10 % on (a+	·=			40366.16	
		f) Cess @ 1% on (a+b+c+d+e)	,			4440.28	
		cost for 250 tonnes capacity bearing = a+	-h+c+d+e	+f		448468.08	
		Rate per tonne capacity = (a+b+c+d+e-				1793.87	
		rate per terme capacity (a.s.o.a.e	1,,,200		say	<u>1794.00</u>	
13.13	2000 &	Supplying, fitting and fixing in position	n true to	line and	•		ı
13.13	2200	with PTFE surface sliding on stainless			_		
		per drawing and Technical Specifica		-	-		
		PTFE) and clause 2004 of MoRTH Spec			,	( )	
		Unit: one tonne capacity					
		Considering a 80 tonne capacity bearing					
		for this analysis					
		a) Labour					
		Mate	day	0.060	354.00	21.24	L-12
		Mazdoor	day	1.000	310.00	310.00	L-13
			-				L-15
		Mazdoor (Skilled)	day	0.500	442.00	221.00	L-10

# **CHAPTER-13**

			CHAPTER SUB-STRUC					
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	202389.38	202389.38	M-069
			Add 1 per cent for foundation				2023.89	
		c)	anchorage bolts and consumables.  GST @ 12 % on (a+b)				24595.86	
		d)	Overhead charges @ 20 % on (a+	·b+c)			45912.27	
		e)	Contractor's profit @ 10 % on (a+	b+c+d)			27547.36	
		f)	Cess @ 1% on (a+b+c+d+e)				3030.21	
		СО	st for 80 tonnes capacity bearing = a+b	+c+d+e+	-f		306051.21	
			ate per tonne capacity = (a+b+c+d+e				3825.64	
				•		say	3826.00	
13.14	2000 &	Su	ipplying, fitting and fixing in positio	n true t	o line and	level elastor	neric bearing	l
	2200	co	informing to IRC: 83 (Part-II) section	IX and c	lause 200	of MoRTH s	specifications	;
		CO	mplete including all accessories as	per draw	ing and Te	echnical Spec	cifications.	
		Co	nit: one cubic centimetre onsidering an elastomeric bearing of siz 0 x 96 mm for this analysis.	ze 500 x				
		O۱	verall volume - 19200 cu.cm					
			olume of 6 nos. 488 x 388 x 4 n inforcing steel plates = 4545 cu.cm.	nm size				
		Не	ence volume of elastometer = 14655	cu.cm.				
		a)	Labour					
		,	Mate	day	0.060	354.00	21.24	L-12
			Mazdoor	day	1.000	310.00	310.00	L-13
			Mazdoor (Skilled)	day	0.500	442.00	221.00	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	16190.27	16190.27	M-066
			vulcanisation, complete with all components as per drawing and					
			Technical Specifications.					
			Add 1 per cent of cost of bearing				161.90	
			assembly for foundation anchorage					
			bolts and consumables.					
		c)	GST @ 12 % on (a+b)				2028.53	
		d)	Overhead charges @ 20 % on (a+	b+c)			3786.59	
		e)	Contractor's profit @ 10 % on (a+	=			2271.95	
		f)	Cess @ 1% on (a+b+c+d+e)	,			249.91	
		-,			_			

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.

25241.39

1.31

Unit: one tonne capacity

Cost for 19200cc of elastomeric bearing = a+b+c+d

Rate per cc of elastomeric bearing = (a+b+c+d)/19200

			CHAPTEI SUB-STRUG	_				
Sr No	Ref. to MoRTH/ DSR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			ng the sliding bearing of 80 sign capacity for this analysis.					
		a) Labo	our	44	0.040	254.00	44.40	L-12
		Mate		day	0.040	354.00	14.16	L-12
		Mazd	oor (Skilled)	day day	0.750 0.350	310.00 442.00	232.50 154.70	L-15
				uay	0.550	442.00	134.70	
		Suppl tonne per dr	erial y of sliding plate bearing of 80 design capacity complete as awings and Technical	each.	1.000	16190.27	16190.27	M-070
		Add 1 assen	fications.  per cent of cost of bearing  nbly for foundation anchorage  and consumables.				161.90	
		c) GS1					2010.42	
			rhead charges @ 20 % on (a+		3752.79			
		=	tractor's profit @ 10 % on (a+	-			2251.67	
		=	s @ 1% on (a+b+c+d+e)		247.68			
		•	0 tonnes of capacity bearing =	2+4+6+4	Lotf		25016.09	
			tonne capacity = (a+b+c+d+e-		11611		312.70	
		Rate per	топпе сараспу – (атртстите	F1)/OU		say	312.70 313.00	
13.16	2000 & 2200	consistin confined against steel/fabr part-I & I	g, fitting and fixing in position of a metal piston supportion within a metal cylinder, sea stainless steel mating surficated structural steel, metal respectively and other particle 2006 of MoRTH Specifications.	rted by ling ring face, co and elas s confor	a disc or s, dust secomplete as stomer elements	unreinforce als, PTFE su ssembly to nents to be as 6: 5400, secti	d elastomer rface sliding be of cast s per IRC: 83 ion 9.1 & 9.2	; ; ; ;
		Technica	Specifications.			<b>.</b>		
		Consideri	tonne capacity ng a Pot bearing assembly of capacity for this analysis.			387.20		
		Mate		day	0.080	354.00	28.32	L-12
		Mazd	oor	day	1.500	310.00	465.00	L-13
			oor (Skilled)	day	0.500	442.00	221.00	L-15
			erial	day	0.000	<del>1,1</del> ∠.00	221.00	
		consis suppo provio stainle	pe bearing assembly sting of a metal piston orted by a disc, PTFE pads ling sliding surfaces against ess steel mating together with	each.	1.000	67433.63	67433.63	M-068

drawings and Technical Specifications. Add 1 per cent of cost of bearing 674.34 assembly for foundation anchorage bolts and consumables. GST @ 12 % on (a+b) 8258.67 c) d) Overhead charges @ 20 % on (a+b+c) 15416.19 Contractor's profit @ 10 % on (a+b+c+d) 9249.72 e) Cess @ 1% on (a+b+c+d+e) 1017.47 cost for 250 tonnes capacity bearing = a+b+c+d+e+f 102764.34 Rate per tonne capacity = (a+b+c+d+e+f)/250411.06 411.00 say

Page: 337

cast steel assemblies/fabricated structural steel assemblies duly painted with all components as per clause 2006 and complete as per

# 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 MS 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 ready made 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.

Page : 338

			SUPER-S	TRUCTUR	E			
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 Spec		sed cement c	oncrete in su	per-structure	
		Α	RCC Grade M20					
		Case I	Using Concrete Mixer					
			Unit = 1 cum					
			Taking output = 15 cum					
			a) Material Cement	tonne	5.120	9053.98	46356.38	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-005
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour Mate	day	0.860	354.00	304.44	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	20.000	310.00	6200.00	L-13
			c) Machinery					
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
			Basic Cost of Labour, Material &		86918.000			
			Machinery (a+b+c) for 15 cum For formwork and staging add the					
			following:					
14.1A Case I		(i)	For solid slab super-structure, 20-3 per cent of (a+b+c)	0				
		(p)	Height upto 5m					
			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum	2.			86918.00	
			d) Formwork and staging 20 pe	r			17383.60	
			cent of (a+b+c)					
			e) GST @ 12 % on (a+b+c+d)				12516.19	
			f) Overhead charges @ 20 % on (		-		23363.56 14018.14	
			<ul><li>g) Contractor's profit @ 10 % on (</li><li>h) Cess @ 1% on (a+b+c+d+e+f+g</li></ul>		τ)		1541.99	
			Cost for 15 cum = a+b+c+d+e+f+h	3)			155741.48	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				10382.77	
			(4 4 2 4 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4			say	10383.00	
14.1A		(q)	Height 5m to 10m					
Case I (i)			Basic Cost of Labour, Material &	2.			86918.00	
(1)			Machinery (a+b+c) for 15 cum d) Formwork and staging 25 pe	r			21729.50	
			cent of (a+b+c)	•				
			e) GST @ 12 % on (a+b+c+d)				13037.70	
			f) Overhead charges @ 20 % on (		-		24337.04	
			g) Contractor's profit @ 10 % on (		t)		14602.22 1606.24	
			h) Cess @ 1% on (a+b+c+d+e+f+g Cost for 15 cum = a+b+c+d+e+f+h	3)			162230.70	
			Rate per cum = (a+b+c+d+e+f+h)/15				102230.70	
			Trate per cam (a b c a c a c a r a r a r a r a r a r a r a			say	10815.00	
14.1A		(r)	Height above 10m					
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum	2.			86918.00	
			d) Formwork and staging 30 percent of (a+b+c)	r			26075.40	
			e) GST @ 12 % on (a+b+c+d)				13559.21	
			f) Overhead charges @ 20 % on	-	=		25310.52	
			g) Contractor's profit @ 10 % on	-	+f)		15186.31	
			h) Cess @ 1% on (a+b+c+d+e+f+	9)			1670.49	
			Cost for 15 cum = $a+b+c+d+e+f+h$				168719.93	

	<del></del>		SUPER-S	TRUCTUR	<u> </u>			
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	1			11248.00	
						say	<u>11248.00</u>	
14.1A		(ii)	For T-beam & slab, 25-35 per cent					
Case I		()	of (a+b+c)					
		(p)	Height upto 5m				00040.00	
			Basic Cost of Labour, Material &	•			86918.00	
			Machinery (a+b+c) for 15 cum d) Formwork and staging 25 pe	r			21729.50	
			cent of (a+b+c)	1			21729.50	
			e) GST @ 12 % on (a+b+c+d)				13037.70	
			f) Overhead charges @ 20 % on	(a+b+c+d+	⊦e)		24337.04	
			g) Contractor's profit @ 10 % on	-	=		14602.22	
			h) Cess @ 1% on (a+b+c+d+e+f+	-	,		1606.24	
			Cost for 15 cum = a+b+c+d+e+f+h	<b>O</b> ,			162230.70	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				10815.38	
			. ,			say	10815.00	
14.1A		(q)	Height 5m to 10m					
Case I			Basic Cost of Labour, Material &	2.			86918.00	
(ii)			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 30 pe	r			26075.40	
			cent of (a+b+c)					
			e) GST @ 12 % on (a+b+c+d)				13559.21	
			f) Overhead charges @ 20 % on (	a+b+c+d+	e)		25310.52	
			g) Contractor's profit @ 10 % on (	a+b+c+d+	f)		15186.31	
			h) Cess @ 1% on (a+b+c+d+e+f+g	3)			1670.49	
			Cost for 15 cum = a+b+c+d+e+f+h				168719.93	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				11248.00	
						say	<u>11248.00</u>	
14.1A		(r)	Height above 10m				00040.00	
Case I (ii)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				86918.00	
			d) Formwork and staging 35 pe	r			30421.30	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				14080.72	
			f) Overhead charges @ 20 % on	(a+b+c+d+	te)		26284.00	
			g) Contractor's profit @ 10 % on	-	-		15770.40	
			h) Cess @ 1% on (a+b+c+d+e+f+	•	••,		1734.74	
			Cost for 15 cum = a+b+c+d+e+f+h	3/			175209.16	
			Rate per cum = $(a+b+c+d+e+f+h)/15$				11680.61	
			(, , , , , , , , , , , , , , , , , , ,			say	11681.00	
14.1A		Case II	Using Batching Plant, Transit Mixer	and Conc	rete Pump			
			Unit = cum					
			Taking output = 120 cum					
			a) Material	tonna	40.000	0052.00	270400 00	M-081
			Cement Coarse sand	tonne cum	40.920 54.000	9053.98 601.77	370488.86 32495.58	M-004
			20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			b) Labour					
			Mate	day	0.840	354.00	297.36	L-12
			Mason	day	3.000	442.00	1326.00	L-11
			Mazdoor	day	18.000	310.00	5580.00	L-13
			c) Machinery	hour	6.00	2727 64	16725 66	P&M-002
			Batching Plant @ 20 cum/hour Generator 100 KVA	hour hour	6.00 6.00	2787.61 849.56	16725.66 5097.36	P&M-080
			Loader	hour	6.00	1398.23	8389.38	P&M-017
			Transit Mixer ( capacity 4.0 cu.m )		0.00	.000.20	3000.00	
			Transit Mixer 4 cum capacity lead	hour	15.00	1132.74	16991.10	P&M-049
			upto1 Km	.1001	.0.00	. 102.14	. 333 1. 10	

	т т		301 ER-0	IRUCTUR	\ <u>L</u>			1
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Lead beyond 1 Km, L - lead in	tonne.k	300L	18.94	0.00	Lead =0 km & P&M
			Kilometer	m				050
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
			Basic Cost of Labour, Material &		672754.000			
			Machinery (a+b+c) for 120 cum For formwork and staging add the					
			following:					
4.1A		(i)	For solid slab super-structure, 20-30	כ				
Case			per cent of (a+b+c)					
II		(p)	Height upto 5m					
			Basic Cost of Labour, Material &	·			672754.00	
			Machinery (a+b+c) for 120 cum d) Formwork and staging 20 pe	r			134550.80	
			cent of (a+b+c)	•			10-1000.00	
			e) GST @ 12 % on (a+b+c+d)				96876.58	
			f) Overhead charges @ 20 % on (	a+b+c+d+	-e)		180836.28	
			g) Contractor's profit @ 10 % on (	a+b+c+d+	-f)		108501.77	
			h) Cess @ 1% on (a+b+c+d+e+f+ç	1)			11935.19	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1205454.62	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	120			10045.46	
4.1A		(q)	Height 5m to 10m			say	<u>10045.00</u>	
Case		(4)	Basic Cost of Labour, Material &	<u>.</u>			672754.00	
II			Machinery (a+b+c) for 120 cum	•			072704.00	
(i)			d) Formwork and staging 25 pe	r			168188.50	
			cent of (a+b+c)				100012 10	
			e) GST @ 12 % on (a+b+c+d) f) Overhead charges @ 20 % on (	01b101d1	-0)		100913.10 188371.12	
			g) Contractor's profit @ 10 % on (		=		113022.67	
			h) Cess @ 1% on (a+b+c+d+e+f+g		•,		12432.49	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$	-			1255681.88	
			Rate per cum = (a+b+c+d+e+f+g+h)/				10464.02	
						say	<u>10464.00</u>	
4.1A		(r)	Height above 10m					
Case			Basic Cost of Labour, Material &	•			672754.00	
 (i)			Machinery (a+b+c) for 120 cum d) Formwork and staging 30 pe	r			201826.20	
``			cent of (a+b+c)	•			201020.20	
			e) GST @ 12 % on (a+b+c+d)				104949.62	
			f) Overhead charges @ 20 % on (	a+b+c+d+	-e)		195905.96	
			g) Contractor's profit @ 10 % on (	a+b+c+d+	-f)		117543.58	
			h) Cess @ 1% on (a+b+c+d+e+f+g	ı)			12929.79	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1305909.15	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	120			10882.58	
4.1A		(ii	For T-beam & slab, 25-35 per cent o	of (a+h+c)		say	<u>10883.00</u>	
ase II	I	(p)	Height upto 5m	n (a · b · c)				
		(P)	Basic Cost of Labour, Material &	<u>.</u>			672754.00	
			Machinery (a+b+c) for 120 cum	•			072704.00	
			d) Formwork and staging 25 pe	r			168188.50	
			cent of (a+b+c)				100015 15	
			e) GST @ 12 % on (a+b+c+d)		-1		100913.10	
			f) Overhead charges @ 20 % on (		=		188371.12	
			g) Contractor's profit @ 10 % on (		T1)		113022.67 12432.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g Cost for 120 cum = a+b+c+d+e+f+g+h				12432.49	
			Rate per cum = $(a+b+c+d+e+f+g+h)$				10464.02	
			(a.b.o.a.o.i.g.ii)			say	<u>10464.00</u>	

			SUPER-S1	RUCTUR	<u>E</u>			, , , , , , , , , , , , , , , , , , , ,
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.1A		(q)	Height 5m to 10m					
Case			Basic Cost of Labour, Material &				672754.00	
II (ii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 30 per				201826.20	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				104949.62	
			f) Overhead charges @ 20 % on (	2+h+c+d+	<b>-6</b> )		195905.96	
			g) Contractor's profit @ 10 % on (		-		117543.58	
			h) Cess @ 1% on (a+b+c+d+e+f+c		•••		12929.79	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$	) <i>,</i>			1305909.15	
			Rate per cum = $(a+b+c+d+e+f+g+h)/f$	120			10882.58	
			(a 1 1 a 1 3 a)			say	10883.00	
14.1A		(r)	Height above 10m			•		
Case II			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				672754.00	
(ii)			d) Formwork and staging 35 per cent of (a+b+c)	•			235463.90	
			e) GST @ 12 % on (a+b+c+d)				108986.15	
			f) Overhead charges @ 20 % on (		-		203440.81	
			g) Contractor's profit @ 10 % on (		⊦f)		122064.49	
			h) Cess @ 1% on (a+b+c+d+e+f+g	<b>j</b> )			13427.09	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$	400			1356136.44	
			Rate per cum = $(a+b+c+d+e+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+f+g+h)/(a+b+c+h)/(a+b+b+h)/(a+b+b+h)/(a+b+b+h)/(a+b+b+h)/(a+b+b+h)/(a+b+b+h)/(a+b+h)/($	120		001/	11301.14	
14.1		В	RCC Grade M25			say	<u>11301.00</u>	
	C	ase I	Using Concrete Mixer					
			Unit = 1 cum					
			Taking output = 15 cum					
			a) Material					
			Cement	tonne	5.990	9053.98	54233.34	M-081
			Coarse sand	cum	6.750	601.77	4061.95	M-005
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.880	354.00	311.52	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	20.000	310.00	6200.00	L-13
			c) Machinery	,				
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator 33 KVA  Basic Cost of Labour, Material &	hour	6.000 <b>94802.000</b>	453.98	2723.88	P&M-079
			Machinery (a+b+c) for 15 cum					
			For formwork and staging add the following:					
14.1B Case I		(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)	)				
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &				94802.00	
			Machinery (a+b+c) for 15 cum d) Formwork and staging 20 per	•			18960.40	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				13651.49	
			f) Overhead charges @ 20 % on (a	a+b+c+d+	e)		25482.78	
			g) Contractor's profit @ 10 % on (a	a+b+c+d+	f)		15289.67	
			h) Cess @ 1% on (a+b+c+d+e+f+g				1681.86	
			,	,				

			SUPER-STI	RUCTURE	<b></b>			<u> </u>
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
<u> </u>		l	Cost for 15 cum = a+b+c+d+e+f+g+h				169868.20	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			11324.55	
4445		(~)	Halinha For As 40m			say	<u>11325.00</u>	
14.1B Case I (i)		(q)	Height 5m to 10m  Basic Cost of Labour, Material &				94802.00	
(•)			Machinery (a+b+c) for 15 cum d) Formwork and staging 25 per				23700.50	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				14220.30	
			f) Overhead charges @ 20 % on (a	+b+c+d+e	e)		26544.56	
			g) Contractor's profit @ 10 % on (a		-		15926.74	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,		1751.94	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				176946.04	
			Rate per cum = (a+b+c+d+e+f+g+h)/1	5			11796.40	
			. ,			say	<u>11796.00</u>	
14.1B		(r)	Height above 10m			_		
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				94802.00	
			d) Formwork and staging 30 per cent of (a+b+c)				28440.60	
			e) GST @ 12 % on (a+b+c+d)				14789.11	
			f) Overhead charges @ 20 % on (a	+b+c+d+e	e)		27606.34	
			g) Contractor's profit @ 10 % on (a	+b+c+d+f	f)		16563.81	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1822.02	
			Cost for 15 cum = a+b+c+d+e+f+g+h				184023.88	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			12268.26	
						say	<u>12268.00</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				94802.00	
			d) Formwork and staging 25 per cent of (a+b+c)				23700.50	
			e) GST @ 12 % on (a+b+c+d)				14220.30	
			f) Overhead charges @ 20 % on (a	+b+c+d+6	e)		26544.56	
			g) Contractor's profit @ 10 % on (a	+b+c+d+f	f)		15926.74	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1751.94	
			Cost for 15 cum = a+b+c+d+e+f+g+h				176946.04	
			Rate per cum = (a+b+c+d+e+f+g+h)/1	5			11796.40	
						say	<u>11796.00</u>	
14.1B Case I		(q)	Height 5m to 10m					
(ii)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				94802.00	
			d) Formwork and staging 30 per cent of (a+b+c)				28440.60	
			e) GST @ 12 % on (a+b+c+d)				14789.11	
			f) Overhead charges @ 20 % on (a	+b+c+d+e	e)		27606.34	
			g) Contractor's profit @ 10 % on (a		-		16563.81	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1822.02	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				184023.88	
			Rate per cum = (a+b+c+d+e+f+g+h)/1	5			12268.26	
			/a.a.a.a.a	-		say	12268.00	

			SUPER-	STRUCTUR	<u>E</u>			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.1B		(r)	Height above 10m					
Case I			Basic Cost of Labour, Material	&			94802.00	
(ii)			Machinery (a+b+c) for 15 cum d) Formwork and staging 35 µ	per			33180.70	
			cent of (a+b+c)					
			e) GST @ 12 % on (a+b+c+d)				15357.92	
			f) Overhead charges @ 20 % or	ո (a+b+c+d+	·e)		28668.12	
			g) Contractor's profit @ 10 % or	ո (a+b+c+d+	·f)		17200.87	
			h) Cess @ 1% on (a+b+c+d+e+f-	+g)			1892.10	
			Cost for 15 cum = a+b+c+d+e+f+g+l	h			191101.71	
			Rate per cum = (a+b+c+d+e+f+g+h	n)/15			12740.11	
						say	<u>12740.00</u>	
14.1B		Case II	Using Batching Plant, Transit Mixe	er and Cond	rete Pump			
			Unit = cum					
			Taking output = 120 cum					
			a) Material Cement	tonne	47.950	9053.98	434138.34	M-081
			Coarse sand	cum	54.200	601.77	32615.93	M-004
			20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			b) Labour				1.230	
			Mate	day	0.840	354.00	297.36	L-12
			Mason	day	3.000	442.00	1326.00	L-11
			Mazdoor	day	18.000	310.00	5580.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
			Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
			Loader	hour	6.00	1398.23	8389.38	P&M-017
			Transit Mixer ( capacity 4.0 cu.m Transit Mixer 4 cum capacity lea	•	15.00	1132.74	16991.10	P&M-049
			upto1 Km					
			Lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	18.94	0.00	Lead =0 km & P&M- 050
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		736523.000			
			For formwork and staging add the	•				
14.1B		(i)	following: For solid slab super-structure, 20-	·30 per cent	of (a+b+c)			
Case		(p)	Height upto 5m					
II		(P)	Basic Cost of Labour, Material Machinery (a+b+c) for 120 cum	&			736523.00	
			d) Formwork and staging 20 pcent of (a+b+c)	oer			147304.60	
			e) GST @ 12 % on (a+b+c+d)				106059.31	
			f) Overhead charges @ 20 % o	n (a+h+c+d	te)		197977.38	
				-	-		118786.43	
				-	•••			
			h) Cess @ 1% on (a+b+c+d+e+f				13066.51	
			Cost for 120 cum = $a+b+c+d+e+f+g$				1319717.23	
			Rate per cum = $(a+b+c+d+e+f)/120$	)			10997.64	
14.1B		(q)	Height 5m to 10m			say	<u>10998.00</u>	
Case II			Basic Cost of Labour, Material Machinery (a+b+c) for 120 cum	&			736523.00	
(i)			d) Formwork and staging 25 pcent of (a+b+c)	per			184130.75	
			e) GST @ 12 % on (a+b+c+d)				110478.45	

				SUPER	-STRUCTUR	E			
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			f) Ove	erhead charges @ 20 % o	n (a+b+c+d+	e)		206226.44	
			g) Cor	ntractor's profit @ 10 % o	n (a+b+c+d+	f)		123735.86	
			h) Ces	ss @ 1% on (a+b+c+d+e+	f+g)			13610.95	
				120 cum = a+b+c+d+e+f+ն				1374705.45	
			Rate per	r cum = (a+b+c+d+e+f)/12	0			11455.88	
4445		(m)	11-1	h 40			say	<u>11456.00</u>	
14.1B Case		(r)	Ū	bove 10m					
II			Machine	Cost of Labour, Materia ery (a+b+c) for 120 cum				736523.00	
(i)			d) Fo	rmwork and staging 30 (a+b+c)	per			220956.90	
			e) GS	T @ 12 % on (a+b+c+d)				114897.59	
			-	erhead charges @ 20 % o	-	-		214475.50	
				ntractor's profit @ 10 % o	-	f)		128685.30	
			•	ss @ 1% on (a+b+c+d+e+	•			14155.38	
				120 cum = a+b+c+d+e+f+g	•			1429693.67	
			Rate per	r cum = (a+b+c+d+e+f)/12	0			11914.11	
14.1B		(ii)	For T-be	eam & slab, 25-35 per cen	t of (a+b+c)		say	<u>11914.00</u>	
Case		(p)	Height u	•	( ,				
II			Basic C	Cost of Labour, Material ery (a+b+c) for 120 cum	1 &			736523.00	
				rmwork and staging 25	per			184130.75	
				T @ 12 % on (a+b+c+d)				110478.45	
			f) Ove	erhead charges @ 20 % o	n (a+b+c+d+	e)		206226.44	
			g) Cor	ntractor's profit @ 10 % o	n (a+b+c+d+	f)		123735.86	
			h) Ces	ss @ 1% on (a+b+c+d+e+	f+g)			13610.95	
			Cost for	120 cum = a+b+c+d+e+f+ն	j+h			1374705.45	
			Rate per	r cum = (a+b+c+d+e+f)/12	0			11455.88	
		()					say	<u>11456.00</u>	
14.1B Case		(q)	_	m to 10m				700500 00	
ll				cost of Labour, Materia erv (a+b+c) for 120 cum	I &			736523.00	
(ii)				rmwork and staging 30	per			220956.90	
			cent of					114897.59	
			-	erhead charges @ 20 % o	n (a+h+c+d+	۵۱		214475.50	
			-	ntractor's profit @ 10 % o	-	-		128685.30	
				ss @ 1% on (a+b+c+d+e+	-	',		14155.38	
			-	120 cum = a+b+c+d+e+f+c				1429693.67	
				r cum = (a+b+c+d+e+f)/12	•			11914.11	
			rtuto poi	(4.5.6.4.6.1).12			say	<u>11914.00</u>	
14.1B		(r)	Height a	bove 10m					
Case II			d) Fo	rmwork and staging 35	per			257783.05	
(ii)				T @ 12 % on (a+b+c+d)				119316.73	
			f) Ove	erhead charges @ 20 % o	n (a+b+c+d+	e)		222724.56	
			g) Cor	ntractor's profit @ 10 % o	n (a+b+c+d+	f)		133634.73	
			h) Ces	ss @ 1% on (a+b+c+d+e+	f+g)			14699.82	
			Cost for	120 cum = a+b+c+d+e+f+ն	ֈ+h			1484681.89	
			Rate per	r cum = (a+b+c+d+e+f)/12	0			12372.35	
14.1		С	RCC Gra	ade M 30			say	<u>12372.00</u>	
		Case I		oncrete Mixer					
			<i>Unit</i> = 1						
			Taking o	output = 15 cum terial					
			Cem	ent	tonne	6.100	9053.98	55229.28	M-081

Page : 345

			SUPER-STI	RUCTUR	E ,			1
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Coarse sand	cum	6.750	601.77	4061.95	M-005
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour Mate	day	0.900	354.00	318.60	L-12
			Mason	day	1.500	442.00	663.00	L-11
			Mazdoor	day	21.000	310.00	6510.00	L-13
			c) Machinery	aay	21.000	010.00	0010.00	
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
			Basic Cost of Labour, Material &		96115.000			
			Machinery (a+b+c) for 15 cum					
			For formwork and staging add the following:					
14.1C		(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 &				96115.00	
			Machinery (a+b+c) for 15 cum					
			d) Formwork and staging 20 per cent of (a+b+c)				19223.00	
			e) GST @ 12 % on (a+b+c+d)				13840.56	
			f) Overhead charges @ 20 % on (a		-		25835.71	
			g) Contractor's profit @ 10 % on (a		-f)		15501.43	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1705.16	
			Cost for 15 cum = a+b+c+d+e+f+g+h				172220.86	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			11481.39	
						say	<u>11481.00</u>	
14.1C Case I (i)		(q)	Height 5m to 10m  Basic Cost of Labour, Material &				96115.00	
(1)			Machinery (a+b+c) for 15 cum d) Formwork and staging 25 per				24028.75	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)		->		14417.25	
			f) Overhead charges @ 20 % on (a				26912.20	
			g) Contractor's profit @ 10 % on (a		-T)		16147.32	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1776.21	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$	_			179396.73	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			11959.78	
14.1C		(r)	Height above 10m			say	<u>11960.00</u>	
Case I (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				96115.00	
()			d) Formwork and staging 30 per cent of (a+b+c)				28834.50	
			e) GST @ 12 % on (a+b+c+d)				14993.94	
			f) Overhead charges @ 20 % on (a	+b+c+d+	-е)		27988.69	
			g) Contractor's profit @ 10 % on (a		-		16793.21	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				1847.25	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				186572.59	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	5			12438.17	
14.1C		(ii)	For T-beam & slab, 25-35 per cent of			say	<u>12438.00</u>	
Case I		(p)	Height upto 5m	. ,				
		\F/	Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum				96115.00	
			d) Formwork and staging 25 per cent of (a+b+c)				24028.75	
			e) GST @ 12 % on (a+b+c+d)				14417.25	

		ı		SUPER-ST	RUCTUR	E			
Sr No	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)		26912.20	
			g)	Contractor's profit @ 10 % on (a	ı+b+c+d+	·f)		16147.32	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)	)	,		1776.21	
			Cos	st for 15 cum = a+b+c+d+e+f+g+h				179396.73	
				te per cum = (a+b+c+d+e+f+g+h)/1	15			11959.78	
				( , , , , , , , , , , , , , , , , , , ,			say	11960.00	
14.1C		(q)	Hei	ight 5m to 10m					
Case I				sic Cost of Labour, Material &				96115.00	
(ii)				chinery (a+b+c) for 15 cum				00110.00	
			d)	Formwork and staging 30 per				28834.50	
			cer	nt of (a+b+c)					
			e)	GST @ 12 % on (a+b+c+d)				14993.94	
			f)	Overhead charges @ 20 % on (a	ı+b+c+d+	·e)		27988.69	
			g)	Contractor's profit @ 10 % on (a	+b+c+d+	·f)		16793.21	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)	)			1847.25	
			Cos	st for 15 cum = a+b+c+d+e+f+g+h				186572.59	
			Rat	te per cum = (a+b+c+d+e+f+g+h)/1	15			12438.17	
							say	<u>12438.00</u>	
14.1C		(r)	Hei	ght above 10m			•		
Case I			Bas	sic Cost of Labour, Material &				96115.00	
(ii)				chinery (a+b+c) for 15 cum					
			d)	Formwork and staging 35 per				33640.25	
			cer	nt of (a+b+c)					
			e)	GST @ 12 % on (a+b+c+d)				15570.63	
			f)	Overhead charges @ 20 % on (a		-		29065.18	
			g)	Contractor's profit @ 10 % on (a	ı+b+c+d+	·f)		17439.11	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)	)			1918.30	
				st for 15 cum = a+b+c+d+e+f+g+h				193748.47	
			Rat	te per cum = (a+b+c+d+e+f+g+h)/1	15			12916.56	
		0 !!					say	<u>12917.00</u>	
14.1C		Case II	USI	ing Batching Plant, Transit Mixer	and Cond	rete Pump.			
				it = cum					
			Tak	king output = 120 cum					
			a)	Material					
				Cement	tonne	48.790	9053.98	441743.68	M-081 M-004
				Coarse sand	cum	54.600	601.77	32856.64	M-053
				20 mm Aggregate 10 mm Aggregate	cum cum	64.800 43.200	1784.07 1951.33	115607.74 84297.46	M-051
			b)	Labour	Culli	45.200	1301.00	UHZJ1.40	•
			~)	Mate	day	0.880	354.00	311.52	L-12
				Mason	day	3.000	442.00	1326.00	L-11
				Mazdoor	day	19.000	310.00	5890.00	L-13
			c)	Machinery					
				Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
				Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
				Loader	hour	6.00	1398.23	8389.38	P&M-017
				Transit Mixer ( capacity 4.0 cu.m )		4= 00	4400 = 1	40001.15	P&M-049
				Transit Mixer 4 cum capacity lead	hour	15.00	1132.74	16991.10	P&IVI-049
				upto1 Km Lead beyond 1 Km, L - lead in	tonne.k	300L	18.94	0.00	Lead =0
				Kilometer	m	000L	10.04	0.00	km & P&M-
				Concrete Pump	hour	6.00	2576.11	15456.66	050 P&M-007
			Rag	sic Cost of Labour, Material &	Houl	744694,000	2010.11	10400.00	20.
				chinery (a+b+c) for 120 cum					
				formwork and staging add the					
				owing:					
14.1C		(i)		r solid slab super-structure, 20-30					
Case			per	cent of (a+b+c)					
II		(p)	Hei	ight upto 5m					

	, ,		SUPER-STR	UCTUR	<b>=</b>	1		1
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum	•			744694.00	•
			d) Formwork and staging 20 per cent of (a+b+c)				148938.80	
			e) GST @ 12 % on (a+b+c+d)				107235.94	
			f) Overhead charges @ 20 % on (a+	b+c+d+e	e)		200173.75	
			g) Contractor's profit @ 10 % on (a+	b+c+d+f	f)		120104.25	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				13211.47	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1334358.21	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			11119.65	
14.1C		(q)	Height 5m to 10m			say	<u>11120.00</u>	
Case			Basic Cost of Labour, Material &				744694.00	
II			Machinery (a+b+c) for 120 cum				7 1 100 1.00	
(i)			d) Formwork and staging 25 per cent of (a+b+c)				186173.50	
			e) GST @ 12 % on (a+b+c+d)				111704.10	
			f) Overhead charges @ 20 % on (a+	b+c+d+e	e)		208514.32	
			g) Contractor's profit @ 10 % on (a+	b+c+d+1	f)		125108.59	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				13761.95	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1389956.46	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			11582.97	
14.1C		(r)	Height above 10m			say	<u>11583.00</u>	
Case		(1)	Basic Cost of Labour, Material &				744694.00	
(i)			Machinery (a+b+c) for 120 cum d) Formwork and staging 30 per				223408.20	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				116172.26	
			f) Overhead charges @ 20 % on (a+	h+c+d+	۵)		216854.89	
			g) Contractor's profit @ 10 % on (a+		-		130112.94	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		-,		14312.42	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1445554.71	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			12046.29	
14.1C		(ii)	For Theom 9 clab 25 25 nor cent of	(a.lb.la)		say	<u>12046.00</u>	
Case		(ii) (p)	For T-beam & slab, 25-35 per cent of Height upto 5m	(атртс)				
II		(P)	Basic Cost of Labour, Material &				744694.00	
			Machinery (a+b+c) for 120 cum					
			d) Formwork and staging 25 per cent of (a+b+c)				186173.50	
			e) GST @ 12 % on (a+b+c+d)				111704.10	
			f) Overhead charges @ 20 % on (a+	b+c+d+e	e)		208514.32	
			g) Contractor's profit @ 10 % on (a+	b+c+d+f	f)		125108.59	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				13761.95	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1389956.46	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			11582.97	
						say	<u>11583.00</u>	
14.1C		(q)	Height 5m to 10m					
Case			Basic Cost of Labour, Material &				744694.00	
II (ii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 30 per cent of (a+b+c)				223408.20	
			e) GST @ 12 % on (a+b+c+d)				116172.26	
			f) Overhead charges @ 20 % on (a+	b+c+d+e	e)		216854.89	
			g) Contractor's profit @ 10 % on (a+		-		130112.94	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		-		14312.42	

			SUPER-S	TRUCTUR	E .			,
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Cost for 120 cum = $a+b+c+d+e+f+g+b$				1445554.71	
			Rate per cum = $(a+b+c+d+e+f+g+h)$	/120			12046.29	
4440		/-·\	Haimht ab ave 40			say	<u>12046.00</u>	
14.1C Case		(r)	Height above 10m	•			<b>-</b> 4	
Case II			Basic Cost of Labour, Material &	<u> </u>			744694.00	
(ii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 35 pe				260642.90	
( )			cent of (a+b+c)	ŧi			200042.90	
			e) GST @ 12 % on (a+b+c+d)				120640.43	
			f) Overhead charges @ 20 % on	(a+b+c+d+	·e)		225195.47	
			g) Contractor's profit @ 10 % on	=	-		135117.28	
			h) Cess @ 1% on (a+b+c+d+e+f+	=	-,		14862.90	
			Cost for 120 cum = $a+b+c+d+e+f+g+f$				1501152.98	
			Rate per cum = (a+b+c+d+e+f+g+h)				12509.61	
			(4 4 5 4 5 3 4)			say	12510.00	
14.1		D	RCC/PSC Grade M35			-		
		Case I	Using Concrete Mixer.					
			Unit = 1 cum					
			Taking output = 15 cum					
			a) Material Cement	tanna	6.330	9053.98	57311.69	M-081
			Coarse sand	tonne cum	6.750	601.77	4061.95	M-005
			20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
			10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
			b) Labour					
			Mate	day	0.900	354.00	318.60	L-12
			Mason	day	1.500	442.00	663.00	L-11 L-13
			Mazdoor c) Machinery	day	21.000	310.00	6510.00	L-13
			Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
			Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
			Basic Cost of Labour, Material &		98197.000			
			Machinery (a+b+c) for 15 cum For formwork and staging add the t	followina:				
14.1D		(i)	For solid slab super-structure, 18-2					
Case I		(1)	per cent of (a+b+c)	.0				
		(p)	Height upto 5m					
			Basic Cost of Labour, Material	&			98197.00	
			Machinery (a+b+c) for 15 cum				47075 40	
			<ul><li>d) Formwork and staging 18 percent of (a+b+c)</li></ul>	er			17675.46	
			e) GST @ 12 % on (a+b+c+d)				13904.70	
			f) Overhead charges @ 20 % on	(a+b+c+d+	·e)		25955.43	
			g) Contractor's profit @ 10 % on	(a+b+c+d+	·f)		15573.26	
			h) Cess @ 1% on (a+b+c+d+e+f+	g)			1713.06	
			Cost for 15 cum = $a+b+c+d+e+f+g+h$				173018.91	
			Rate per cum = (a+b+c+d+e+f+g+h)	/15			11534.59	
14.1D		(q)	Height 5m to 10m			say	<u>11535.00</u>	
Case I		(1)	Basic Cost of Labour, Material &	<u>s</u>			98197.00	
(1)			Machinery (a+b+c) for 15 cum d) Formwork and staging 23 percent of (a+b+c)	er			22585.31	
			e) GST @ 12 % on (a+b+c+d)				14493.88	
			f) Overhead charges @ 20 % on	(a+b+c+d+	·e)		27055.24	
			g) Contractor's profit @ 10 % on	•	•		16233.14	
			h) Cess @ 1% on (a+b+c+d+e+f+g	=			1785.65	
			Cost for 15 cum = a+b+c+d+e+f+g+h				180350.22	
			•					

		SUPER-STRUCTURE			
Sr No Ref. to MoRTH. SR Spe	/D	Description Unit Quan	tity Rate Rs	Cost Rs	Remarks/ Input ref.
	-	Rate per cum = (a+b+c+d+e+f+g+h)/15	'	12023.35	
			say	<u>12023.00</u>	
14.1D	(r)	Height above 10m			
Case I		Basic Cost of Labour, Material &		98197.00	
(i)		Machinery (a+b+c) for 15 cum d) Formwork and staging 28 per		27495.16	
		d) Formwork and staging 28 per cent of (a+b+c)		27495.10	
		e) GST @ 12 % on (a+b+c+d)		15083.06	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		28155.04	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		16893.03	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		1858.23	
		Cost for 15 cum = a+b+c+d+e+f+g+h		187681.52	
		Rate per cum = (a+b+c+d+e+f+g+h)/15		12512.10	
14.1D	(ii)	For T heam 2 clab 22 22 per cent	say	<u>12512.00</u>	
Case I	(11)	For T-beam & slab, 23-33 per cent of (a+b+c)			
	(p)	Height upto 5m			
		Basic Cost of Labour, Material &		98197.00	
		Machinery (a+b+c) for 15 cum			
		d) Formwork and staging 23 per		22585.31	
		cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)		14493.88	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		27055.24	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		16233.14	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		1785.65	
		Cost for 15 cum = a+b+c+d+e+f+g+h		180350.22	
		Rate per cum = (a+b+c+d+e+f+g+h)/15		12023.35	
			say	<u>12023.00</u>	
14.1D	(q)	Height 5m to 10m			
Case I (ii)		Basic Cost of Labour, Material &		98197.00	
(,		Machinery (a+b+c) for 15 cum d) Formwork and staging 28 per		27495.16	
		cent of (a+b+c)			
		e) GST @ 12 % on (a+b+c+d)		15083.06	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		28155.04	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		16893.03	
		h) Cess @ 1% on (a+b+c+d+e+f+g)		1858.23	
		Cost for 15 cum = a+b+c+d+e+f+g+h		187681.52	
		Rate per cum = (a+b+c+d+e+f+g+h)/15		12512.10	
14.1D	(r)	Height above 10m	say	<u>12512.00</u>	
Case I	(-)	-		98197.00	
(ii)		Basic Cost of Labour, Material & Machinery (a+b+c) for 15 cum		90 197 .00	
		d) Formwork and staging 33 per		32405.01	
		cent of (a+b+c)			
		e) GST @ 12 % on (a+b+c+d)		15672.24	
		f) Overhead charges @ 20 % on (a+b+c+d+e)		29254.85	
		g) Contractor's profit @ 10 % on (a+b+c+d+f)		17552.91 1930.82	
		h) Cess @ 1% on (a+b+c+d+e+f+g) Cost for 15 cum = a+b+c+d+e+f+g+h		195012.83	
		Rate per cum = (a+b+c+d+e+f+g+h)/15		13000.86	
		• • • • • • • • • • • • • • • • • • • •	say	13001.00	
14.1D	(iii)	For box girder and balanced			
Case I		cantilever, 38-58 per cent of cost of			
	(p)	concrete. Height upto 5m			
	\F <i>1</i>	Basic Cost of Labour, Material &		98197.00	
		Machinery (a+b+c) for 15 cum		55 157 .00	
		d) Formwork and staging 38 per		37314.86	
		cent of (a+b+c)			

				SUPER-ST	RUCTUR	<u>L</u>			
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	ok opec.		e)	GST @ 12 % on (a+b+c+d)	<u> </u>			16261.42	
			f)	Overhead charges @ 20 % on (a	+b+c+d+	⊦e)		30354.66	
			g)	Contractor's profit @ 10 % on (a		-		18212.79	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		,		2003.41	
			,	st for 15 cum = a+b+c+d+e+f+g+h	•			202344.14	
				e per cum = (a+b+c+d+e+f+g+h)/1	15			13489.61	
			ivai	e per cum – (a.b.c.u.e.r.g.m/r			631/	13490.00	
14.1D		(q)	Нοί	ght 5m to 10m			say	13490.00	
Case I		(4)		_				00407.00	
(iii)				sic Cost of Labour, Material & chinery (a+b+c) for 15 cum				98197.00	
` '			d)	Formwork and staging 48 per				47134.56	
			,	nt of (a+b+c)					
			e)	GST @ 12 % on (a+b+c+d)				17439.79	
			f)	Overhead charges @ 20 % on (a	+b+c+d+	⊦e)		32554.27	
			g)	Contractor's profit @ 10 % on (a		-		19532.56	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)		-,		2148.58	
			,	st for 15 cum = a+b+c+d+e+f+g+h	'			217006.76	
				e per cum = (a+b+c+d+e+f+g+h)/1	15			14467.12	
			· \al	po. odin (d.b.o.d.e.i.g.ii)/i	. •		say	<u>14467.00</u>	
4.1D		(r)	Hei	ght above 10m			Suy	. ++01.00	
Case I				sic Cost of Labour, Material &				98197.00	
(iii)			Ma	chinery (a+b+c) for 15 cum					
			d)	Formwork and staging 58 per				56954.26	
			cer	it of (a+b+c)					
			e)	GST @ 12 % on (a+b+c+d)				18618.15	
			f)	Overhead charges @ 20 % on (a	+b+c+d+	+e)		34753.88	
			g)	Contractor's profit @ 10 % on (a	+b+c+d+	⊦f)		20852.33	
			h)	Cess @ 1% on (a+b+c+d+e+f+g)	)			2293.76	
			Cos	st for 15 cum = a+b+c+d+e+f+g+h				231669.38	
			Rat	e per cum = (a+b+c+d+e+f+g+h)/1	15			15444.63	
	,	Caca II	11-:	Detabises Dieset Transit Misses		-u-t- Dum	say	<u>15445.00</u>	
	·	Case II		ng Batching Plant, Transit Mixer a	and Cond	crete Pump			
				it = cum king output = 120 cum					
			a)	Material					
			u,	Cement	tonne	50.640	9053.98	458493.55	M-081
				Coarse sand	cum	54.000	601.77	32495.58	M-004
				20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
				10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			b)	Labour					
				Mate	day	0.880	354.00	311.52	L-12
				Mason	day	3.000	442.00	1326.00	L-11
			٠,	Mazdoor	day	19.000	310.00	5890.00	L-13
			c)	Machinery	hour	6.00	2707.64	16705 60	P&M-002
				Batching Plant @ 20 cum/hour Generator 100 KVA	hour hour	6.00 6.00	2787.61 849.56	16725.66 5097.36	
				Loader	hour	6.00	1398.23	8389.38	
				Transit Mixer ( capacity 4.0 cu.m )	Hour	0.00	1000.20	0000.00	
				Transit Mixer 4 cum capacity lead	hour	15.00	1132.74	16991.10	P&M-049
				upto1 Km		.0.00			
				Lead beyond 1 Km, L - lead in	tonne.k	300L	18.94	0.00	Lead =0 km & P&M-
				Kilometer	m				050
				Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
				sic Cost of Labour, Material &		761083.000			
				chinery (a+b+c) for 120 cum	Hannin -				
4 4-		/!\		formwork and staging add the fo	_				
		(i)	For	solid slab super-structure, 18-28					
		• • •		- · · · · · · · · · · · · · · · · · · ·					
14.1D Case II		(p)	per	cent of (a+b+c) ght upto 5m					

			SUPER-STI	KUCTUR	<u>K</u> E				
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quan	itity F	Rate Rs	Cost Rs	Remarks/ Input ref.
	'		Basic Cost of Labour, Material &			'		761083.00	•
			Machinery (a+b+c) for 120 cum					400004.04	
			d) Formwork and staging 18 per cent of (a+b+c)					136994.94	
			e) GST @ 12 % on (a+b+c+d)					107769.35	
			f) Overhead charges @ 20 % on (a-	+b+c+d+	-e)			201169.46	
			g) Contractor's profit @ 10 % on (a-					120701.68	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		,			13277.18	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$					1340995.61	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	20				11174.96	
							say	<u>11175.00</u>	
14.1D		(q)	Height 5m to 10m						
Case II			Basic Cost of Labour, Material &					761083.00	
(i)			Machinery (a+b+c) for 120 cum d) Formwork and staging 23 per					175049.09	
(-)			d) Formwork and staging 23 per cent of (a+b+c)					173049.09	
			e) GST @ 12 % on (a+b+c+d)					112335.85	
			f) Overhead charges @ 20 % on (a-	+b+c+d+	-e)			209693.59	
			g) Contractor's profit @ 10 % on (a-					125816.15	
			h) Cess @ 1% on (a+b+c+d+e+f+g)					13839.78	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$					1397817.46	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	20				11648.48	
							say	<u>11648.00</u>	
14.1D		(r)	Height above 10m					704000 00	
Case II			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					761083.00	
(i)			d) Formwork and staging 28 per cent of (a+b+c)					213103.24	
			e) GST @ 12 % on (a+b+c+d)					116902.35	
			f) Overhead charges @ 20 % on (a	+b+c+d+	-e)			218217.72	
			g) Contractor's profit @ 10 % on (a-		-			130930.63	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		•			14402.37	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$					1454639.31	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	20				12121.99	
		<i>,</i> ,,,					say	<u>12122.00</u>	
14.1D Case		(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)						
ll		(p)	Height upto 5m						
			Basic Cost of Labour, Material &					761083.00	
			Machinery (a+b+c) for 120 cum						
			d) Formwork and staging 23 per					175049.09	
			cent of (a+b+c)						
			e) GST @ 12 % on (a+b+c+d)					112335.85	
			f) Overhead charges @ 20 % on (a-					209693.59	
			g) Contractor's profit @ 10 % on (a-	+b+c+d+	-†)			125816.15	
			h) Cess @ 1% on (a+b+c+d+e+f+g) Cost for 120 cum = a+b+c+d+e+f+g+h					13839.78 1397817.46	
			Rate per cum = $(a+b+c+d+e+f+g+h)/1$	20				11648.48	
			(a a o a o : g).				say		
14.1D		(q)	Height 5m to 10m					704000 00	
Case II			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					761083.00	
'i (ii)			d) Formwork and staging 28 per					213103.24	
\ ·7			cent of (a+b+c)						
			e) GST @ 12 % on (a+b+c+d)					116902.35	
			f) Overhead charges @ 20 % on (a	+b+c+d	+e)			218217.72	
			g) Contractor's profit @ 10 % on (a		+f)			130930.63	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	)				14402.37	

			SUPER-STRUC	TURE				
Sr No	Ref. to MoRTH/D SR Spec.		<b>Description</b> Un	it	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Cost for 120 cum = a+b+c+d+e+f+g+h		•		1454639.31	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				12121.99	
						say	<u>12122.00</u>	
14.1D		(r)	Height above 10m					
Case II			Basic Cost of Labour, Material &				761083.00	
 (ii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 33 per				251157.39	
			cent of (a+b+c)					
			e) GST @ 12 % on (a+b+c+d)				121468.85	
			f) Overhead charges @ 20 % on (a+b+c		-		226741.85	
			g) Contractor's profit @ 10 % on (a+b+c	c+d+f	7)		136045.11	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				14964.96	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1511461.16	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$			001/	12595.51	
14.1D		(iii)	For box girder and balanced			say	<u>12596.00</u>	
Case		` ,	cantilever, 38-58 per cent of cost of					
II			concrete.					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &				761083.00	
			Machinery (a+b+c) for 120 cum d) Formwork and staging 38 per				289211.54	
			cent of (a+b+c)				200211.01	
			e) GST @ 12 % on (a+b+c+d)				126035.34	
			f) Overhead charges @ 20 % on (a+b+c	c+d+e	∍)		235265.98	
			g) Contractor's profit @ 10 % on (a+b+c	c+d+f	7)		141159.59	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				15527.55	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1568283.00	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				13069.03	
14.1D		(q)	Height 5m to 10m			say	<u>13069.00</u>	
Case		(4)	Basic Cost of Labour, Material &				761083.00	
II			Machinery (a+b+c) for 120 cum					
(iii)			d) Formwork and staging 48 per				365319.84	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				135168.34	
			e) GST @ 12 % on (a+b+c+d) f) Overhead charges @ 20 % on (a+b+c	-+d+e	۱۵		252314.24	
			g) Contractor's profit @ 10 % on (a+b+c		•		151388.54	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	, · u · i	,		16652.74	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1681926.70	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				14016.06	
						say	<u>14016.00</u>	
14.1D		(r)	Height above 10m					
Case			Basic Cost of Labour, Material &				761083.00	
II (iii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 58 per				441428.14	
(,			cent of (a+b+c)				44 1420.14	
			e) GST @ 12 % on (a+b+c+d)				144301.34	
			f) Overhead charges @ 20 % on (a+b+c	+d+e)	)		269362.50	
			g) Contractor's profit @ 10 % on (a+b+c	+d+f	·)		161617.50	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				17777.92	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1795570.40	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				14963.09	
444		E	DSC Grado M 40			say	<u>14963.00</u>	
14.1	,		PSC Grade M-40 Using concrete mixer.					
		- 430 1	Unit = 1 cum					
			Taking output = 15 cum					
			a) Material					
			Cement toni	ne	6.450	9053.98	58398.17	M-081

Page : 353

			_	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	601.77	4061.95	M-005
				20 mm Aggregate	cum	8.100	1784.07	14450.97	M-053
				10 mm Aggregate	cum	5.400	1951.33	10537.18	M-051
				Admixture @ 0.4 per cent of cement	kg	25.800	61.06	1575.35	M-180
			b)	Labour	4	0.000	254.00	220.04	L-12
				Mate Mason	day day	0.960 2.000	354.00 442.00	339.84 884.00	L-12
				Mazdoor	day	22.000	310.00	6820.00	L-13
			c)	Machinery	,				
			,	Concrete mixer (cap. 0.40/0.28 cum)	hour	6.000	269.91	1619.46	P&M-009
				Generator 33 KVA	hour	6.000	453.98	2723.88	P&M-079
				sic Cost of Labour, Material &		101411.000			
				chinery (a+b+c) for 15 cum r formwork and staging add the					
				lowing:					
14.1E Case I		(i)	Fo	r solid slab super-structure, 20-30	per cen	t of (a+b+c)			
Case i		(p)		ight upto 5m					
				sic Cost of Labour, Material & chinery (a+b+c) for 15 cum	t			101411.00	
			d) cei	Formwork and staging 20 per of (a+b+c)	r			20282.20	
			e)	GST @ 12 % on (a+b+c+d)				14603.18	
			f)	Overhead charges @ 20 % on (a	a+b+c+d	+e)		27259.28	
			g)	Contractor's profit @ 10 % on (		-		16355.57	
			h)	Cess @ 1% on (a+b+c+d+e+f+g		,		1799.11	
			,	st for 15 cum = a+b+c+d+e+f+g+h	,			181710.34	
				te per cum = (a+b+c+d+e+f+g+h)/	15			12114.02	
14.1E		(q)	H۵	ight 5m to 10m			say	<u>12114.00</u>	
Case I		(4)		sic Cost of Labour, Material &				101411.00	
(i)			<i>Ma</i> d)	chinery (a+b+c) for 15 cum Formwork and staging 25 per	r			25352.75	
			cei e)	nt of (a+b+c) GST @ 12 % on (a+b+c+d)				15211.65	
			f)	Overhead charges @ 20 % on (	a+h+c+d	l+a)		28395.08	
			g)	Contractor's profit @ 10 % on (		•		17037.05	
			h)	Cess @ 1% on (a+b+c+d+e+f+g		,		1874.08	
			,	st for 15 cum = a+b+c+d+e+f+g+h	37			189281.61	
				te per cum = (a+b+c+d+e+f+g+h)/	15			12618.77	
=		(-)		- 1			say	<u>12619.00</u>	
14.1E Case I		(r)	Ba	ight above 10m sic  Cost  of  Labour,  Material  &				101411.00	
(i)			d)	chinery (a+b+c) for 15 cum Formwork and staging 30 per	r			30423.30	
			e)	nt of (a+b+c) GST @ 12 % on (a+b+c+d)				15820.12	
			f)	Overhead charges @ 20 % on (a	a+b+c+d	+e)		29530.88	
			g)	Contractor's profit @ 10 % on (		-		17718.53	
			h)	Cess @ 1% on (a+b+c+d+e+f+g		-		1949.04	
			Co	st for 15 cum = a+b+c+d+e+f+g+h				196852.87	
			Ra	te per cum = (a+b+c+d+e+f+g+h)/	15			13123.52	
							say	<u>13124.00</u>	
14.1E Case I		(ii)		r T-beam & slab, 25-35 per cent (a+b+c)					
Case I		(p)		a+b+c) ight upto 5m					
		,		sic Cost of Labour, Material &				101411.00	
				chinery (a+b+c) for 15 cum					

Sr No	l B.c.s. l			RUCTUR	ı			1
	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	ok opec.	d)	Formwork and staging 25 per	'			25352.75	<u> </u>
		cei	nt of (a+b+c)					
		e)	GST @ 12 % on (a+b+c+d)				15211.65	
		f)	Overhead charges @ 20 % on (	a+b+c+d	+e)		28395.08	
		g)	Contractor's profit @ 10 % on (	a+b+c+d	+f)		17037.05	
		h)	Cess @ 1% on (a+b+c+d+e+f+g	ı)			1874.08	
			st for 15 cum = a+b+c+d+e+f+g+h				189281.61	
		Ra	te per cum = (a+b+c+d+e+f+g+h)/	15			12618.77	
4445	1					say	<u>12619.00</u>	
14.1E Case I	(q		ight 5m to 10m					
(ii)			sic Cost of Labour, Material &				101411.00	
(,		d)	chinery (a+b+c) for 15 cum Formwork and staging 30 per	•			30423.30	
		,	nt of (a+b+c)				00120.00	
		e)	GST @ 12 % on (a+b+c+d)				15820.12	
		f)	Overhead charges @ 20 % on (a	a+b+c+d+	-e)		29530.88	
		g)	Contractor's profit @ 10 % on (		-		17718.53	
		h)	Cess @ 1% on (a+b+c+d+e+f+g		•		1949.04	
		,	st for 15 cum = a+b+c+d+e+f+g+h				196852.87	
			te per cum = (a+b+c+d+e+f+g+h)/	15			13123.52	
						say	<u>13124.00</u>	
14.1E	(r	He	ight above 10m					
Case I		Ва	sic Cost of Labour, Material &				101411.00	
(ii)			nchinery (a+b+c) for 15 cum					
		d)	Formwork and staging 35 per	•			35493.85	
			nt of (a+b+c)				16400 F0	
		e)	GST @ 12 % on (a+b+c+d)		-1		16428.58	
		f)	Overhead charges @ 20 % on (		-		30666.69	
		g)	Contractor's profit @ 10 % on (		<del>-</del> 1)		18400.01	
		h)	Cess @ 1% on (a+b+c+d+e+f+g	)			2024.00	
		Co	st for 15 cum = a+b+c+d+e+f+g+h				204424.13	
		Da		16			12620 20	
		Ra	te per cum = (a+b+c+d+e+f+g+h)/	15		2011	13628.28	
14.1E	Cas		te per cum = (a+b+c+d+e+f+g+h)/ ing Batching Plant, Transit Mixer		crete Pump	say	13628.28 <u>13628.00</u>	
14.1E	Cas	ell Us	ing Batching Plant, Transit Mixer		crete Pump	say		
14.1E	Cas	e II Us <i>Un</i>	ing Batching Plant, Transit Mixer		crete Pump	say		
14.1E	Cas	e II Us <i>Un</i>	ing Batching Plant, Transit Mixer		crete Pump	say		
14.1E	Cas	e II Us <i>Un</i> Ta	ing Batching Plant, Transit Mixer  it = cum  king output = 120 cum		crete Pump	<b>say</b> 9053.98		M-081
14.1E	Cas	e II Us <i>Un</i> Ta	ing Batching Plant, Transit Mixer  it = cum  king output = 120 cum  Material	and Cond	·		<u>13628.00</u>	M-081 M-004
14.1E	Cas	e II Us <i>Un</i> Ta	ing Batching Plant, Transit Mixer  it = cum  king output = 120 cum  Material  Cement	and Cond	51.600	9053.98	<u>13628.00</u> 467185.37	
14.1E	Cas	e II Us <i>Un</i> Ta	ing Batching Plant, Transit Mixer  it = cum king output = 120 cum Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate	tonne cum cum cum	51.600 54.000 64.800 43.200	9053.98 601.77 1784.07 1951.33	13628.00 467185.37 32495.58 115607.74 84297.46	M-004 M-053 M-051
14.1E	Cas	e II Us <i>Un</i> Ta	ing Batching Plant, Transit Mixer  it = cum king output = 120 cum Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of	tonne cum cum	51.600 54.000 64.800	9053.98 601.77 1784.07	13628.00 467185.37 32495.58 115607.74	M-004 M-053
14.1E	Cas	Un Un Tai a)	ing Batching Plant, Transit Mixer  it = cum king output = 120 cum Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement	tonne cum cum cum	51.600 54.000 64.800 43.200	9053.98 601.77 1784.07 1951.33	13628.00 467185.37 32495.58 115607.74 84297.46	M-004 M-053 M-051
14.1E	Cas	e II Us <i>Un</i> Ta	ing Batching Plant, Transit Mixer  it = cum  king output = 120 cum  Material  Cement  Coarse sand  20 mm Aggregate  10 mm Aggregate  Admixture @ 0.4 per cent of cement  Labour	tonne cum cum cum kg	51.600 54.000 64.800 43.200 206.400	9053.98 601.77 1784.07 1951.33 61.06	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78	M-004 M-053 M-051 M-180
14.1E	Cas	Un Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement  Coarse sand  20 mm Aggregate  10 mm Aggregate  Admixture @ 0.4 per cent of cement  Labour  Mate	tonne cum cum cum kg	51.600 54.000 64.800 43.200 206.400	9053.98 601.77 1784.07 1951.33 61.06	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78	M-004 M-053 M-051
14.1E	Cas	Un Un Tai a)	ing Batching Plant, Transit Mixer  if = cum king output = 120 cum Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement Labour Mate Mason	tonne cum cum kg	51.600 54.000 64.800 43.200 206.400 0.940 3.500	9053.98 601.77 1784.07 1951.33 61.06	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00	M-004 M-053 M-051 M-180
14.1E	Cas	Un Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement  Coarse sand  20 mm Aggregate  10 mm Aggregate  Admixture @ 0.4 per cent of cement  Labour  Mate	tonne cum cum cum kg	51.600 54.000 64.800 43.200 206.400	9053.98 601.77 1784.07 1951.33 61.06	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78	M-004 M-053 M-051 M-180 L-12 L-11
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum king output = 120 cum Material Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement Labour Mate Mason Mazdoor	tonne cum cum kg	51.600 54.000 64.800 43.200 206.400 0.940 3.500	9053.98 601.77 1784.07 1951.33 61.06	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00	M-004 M-053 M-051 M-180 L-12 L-11
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement  Coarse sand  20 mm Aggregate  10 mm Aggregate  4dmixture @ 0.4 per cent of cement  Labour  Mate  Mason  Mazdoor  Machinery  Batching Plant @ 20 cum/hour  Generator 100 KVA	tonne cum cum kg day day day hour hour	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement  Coarse sand  20 mm Aggregate  10 mm Aggregate  Admixture @ 0.4 per cent of cement  Labour  Mate  Mason  Mazdoor  Machinery  Batching Plant @ 20 cum/hour  Generator 100 KVA  Loader	tonne cum cum kg day day hour	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66	M-004 M-053 M-051 M-180 L-12 L-11 L-13
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  it = cum  king output = 120 cum  Material  Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement Labour Mate Mason Mazdoor Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader Transit Mixer ( capacity 4.0 cu.m )	tonne cum cum kg day day hour hour	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00 6.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36 8389.38	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080 P&M-017
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement  Labour  Mate Mason Mazdoor Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead	tonne cum cum kg day day day hour hour	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36	M-004 M-053 M-051 M-180 L-12 L-11 L-13 P&M-002 P&M-080
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement  Labour  Mate Mason Mazdoor Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead upto1 Km	tonne cum cum kg day day hour hour hour	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00 6.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36 8389.38 16991.10	M-004 M-053 M-051 M-180  L-12 L-11 L-13  P&M-002 P&M-080 P&M-017
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement  Labour  Mate Mason Mazdoor Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead upto1 Km Lead beyond 1 Km, L - lead in	tonne cum cum kg day day hour hour tonne.k	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00 6.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36 8389.38	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  Lead = 0 km & P&M-
14.1E	Cas	Un Tai a)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement Coarse sand 20 mm Aggregate 10 mm Aggregate 4dmixture @ 0.4 per cent of cement Labour Mate Mason Mazdoor Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead upto1 Km Lead beyond 1 Km, L - lead in Kilometer	tonne cum cum kg day day hour hour hour tonne.k m	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00 6.00 15.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23 1132.74 18.94	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36 8389.38 16991.10 0.00	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  Lead = 0 km & P&M-050
14.1E	Cas	b)	ing Batching Plant, Transit Mixer  if = cum  king output = 120 cum  Material  Cement Coarse sand 20 mm Aggregate 10 mm Aggregate Admixture @ 0.4 per cent of cement  Labour  Mate Mason Mazdoor Machinery Batching Plant @ 20 cum/hour Generator 100 KVA Loader Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead upto1 Km Lead beyond 1 Km, L - lead in	tonne cum cum kg day day hour hour tonne.k	51.600 54.000 64.800 43.200 206.400 0.940 3.500 20.000 6.00 6.00 6.00	9053.98 601.77 1784.07 1951.33 61.06 354.00 442.00 310.00 2787.61 849.56 1398.23	13628.00 467185.37 32495.58 115607.74 84297.46 12602.78 332.76 1547.00 6200.00 16725.66 5097.36 8389.38 16991.10	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  Lead = 0 km & P&M-

			SUPER-STRUCTURE		1	
Sr No	Ref. to MoRTH/D SR Spec.		Description Unit Quantity	y Rate Rs	Cost Rs	Remarks/ Input ref.
	<u>.                                      </u>		For formwork and staging add the following:	<u> </u>		
14.1E Case II		(i)	For solid/voided slab super- structure, 18-28 per cent of (a+b+c)			
		(p)	Height upto 5m  Basic Cost of Labour, Material &  Machinery (a+b+c) for 120 cum		782929.00	
			d) Formwork and staging 18 per cent of (a+b+c)		140927.22	
			e) GST @ 12 % on (a+b+c+d)		110862.75	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		206943.79	
			g) Contractor's profit @ 10 % on (a+b+c+d+e+f)		124166.28	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		13658.29	
			Cost for 120 cum = a+b+c+d+e+f+g+h		1379487.33	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$		11495.73	
4.4.		, .	Halaha Burutu 40	say	<u>11496.00</u>	
14.1E		(q)	Height 5m to 10m			
Case II (i)			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		782929.00	
\*· <i>1</i>			d) Formwork and staging 23 per cent of (a+b+c)		180073.67	
			e) GST @ 12 % on (a+b+c+d)		115560.32	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		215712.60	
			g) Contractor's profit @ 10 % on (a+b+c+d+f)		129427.56	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		14237.03	
			Cost for 120 cum = a+b+c+d+e+f+g+h		1437940.18	
			Rate per cum = (a+b+c+d+e+f+g+h)/120		11982.83	
14.1E		(r)	Height above 10m	say	<u>11983.00</u>	
14.1E Case II		(1)	Height above 10m  Basic Cost of Labour, Material &  Machinery (a+b+c) for 120 cum		782929.00	
(i)			d) Formwork and staging 28 per cent of (a+b+c)		219220.12	
			e) GST @ 12 % on (a+b+c+d)		120257.89	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		224481.40	
			g) Contractor's profit @ 10 % on (a+b+c+d+f)		134688.84	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		14815.77	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$		1496393.02	
			Rate per cum = (a+b+c+d+e+f+g+h)/120		12469.94	
		***		say	<u>12470.00</u>	
14.1E Case II		(ii) (p)	For T-beam & slab, 23-33 per cent of (a+b+c) Height upto 5m			
		-	Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		782929.00	
			d) Formwork and staging 23 per cent of (a+b+c)		180073.67	
			e) GST @ 12 % on (a+b+c+d)		115560.32	
			f) Overhead charges @ 20 % on (a+b+c+d+e)		215712.60	
			g) Contractor's profit @ 10 % on (a+b+c+d+f)		129427.56	
			h) Cess @ 1% on (a+b+c+d+e+f+g)		14237.03	
			Cost for 120 cum = a+b+c+d+e+f+g+h		1437940.18	
			Rate per cum = (a+b+c+d+e+f+g+h)/120		11982.83	
				say	<u>11983.00</u>	

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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					•
Case			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				782929.00	
(ii)			d) Formwork and staging 28 per cent of (a+b+c)				219220.12	
			e) GST @ 12 % on (a+b+c+d)				120257.89	
			f) Overhead charges @ 20 % on (a-	b+c+d+e	e)		224481.40	
			g) Contractor's profit @ 10 % on (a	+b+c+d+	·f)		134688.84	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				14815.77	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1496393.02	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			12469.94	
14.1E		(r)	Height above 10m			say	<u>12470.00</u>	
Case		(r)	Height above 10m  Basic Cost of Labour, Material &				782929.00	
'' (ii)			Machinery (a+b+c) for 120 cum				050066 F7	
(/			d) Formwork and staging 33 per cent of (a+b+c)				258366.57 124955.47	
			e) GST @ 12 % on (a+b+c+d)	Lb Lo Ld L	٥١		233250.21	
			f) Overhead charges @ 20 % on (a-		-			
			g) Contractor's profit @ 10 % on (a	TDTCTUT	1)		139950.13 15394.51	
			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 = $(a+b+c+d+e+f+g+h)/12$	20			1554845.89 12957.05	
			rate per cum – (a.b.c.u.e.m.g.m)/12	-0		say	<u>12957.00</u>	
14.1E Case II		(iii)	For cast-in-situ box girder, segment construction and balanced cantilever, 38-58 per cent of cost of concrete.					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				782929.00	
			d) Formwork and staging 38 per cent of (a+b+c)				297513.02	
			e) GST @ 12 % on (a+b+c+d)				129653.04	
			f) Overhead charges @ 20 % on (a-	b+c+d+e	e)		242019.01	
			g) Contractor's profit @ 10 % on (a	+b+c+d+	·f)		145211.41	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				15973.25	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1613298.73	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			13444.16	
4445		( <del></del> - \				say	<u>13444.00</u>	
14.1E Case II		(q)	Height 5m to 10m  Basic Cost of Labour, Material &				782929.00	
(iii)			Machinery (a+b+c) for 120 cum d) Formwork and staging 48 per				375805.92	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				139048.19	
			f) Overhead charges @ 20 % on (a-	-b+c+d+e	e)		259556.62	
			g) Contractor's profit @ 10 % on (a		-		155733.97	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				17130.74	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1730204.44	
			Rate per cum = $(a+b+c+d+e+f+g+h)/12$	20			14418.37	
14.1E		(r)	Height above 10m			say	<u>14418.00</u>	
Case		(1)	<u> </u>				782929.00	
II			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				102323.00	
(iii)			d) Formwork and staging 58 per cent of (a+b+c)				454098.82	

			SUPER-S	TRUCTUR	E.			
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
L			e) GST @ 12 % on (a+b+c+d)	l			148443.34	
			f) Overhead charges @ 20 % on	(a+b+c+d	+e)		277094.23	
			g) Contractor's profit @ 10 % on	•	•		166256.54	
			h) Cess @ 1% on (a+b+c+d+e+f+	-	-,		18288.22	
			Cost for 120 cum = $a+b+c+d+e+f+g+f$				1847110.15	
			9					
			Rate per cum = (a+b+c+d+e+f+g+h)	/120			15392.58	
14.1F		F	PSC Grade M-45			say	<u>15393.00</u>	
14.11		•						
			Unit = 1 cum					
			Taking output = 120 cum a) Material					
			Cement	tonne	55.800	9053.98	505212.08	M-081
			Coarse sand	cum	54.000	601.77	32495.58	M-004
			20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
			10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
			Admixture @ 0.4 per cent of	kg	223.200	61.06	13628.59	M-180
			cement	9		000	.0020.00	
			b) Labour					
			Mate	day	0.940	354.00	332.76	L-12
			Mason	day	3.500	442.00	1547.00	L-11
			Mazdoor	day	20.000	310.00	6200.00	L-13
			c) Machinery					
			Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
			Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
			Loader	hour	6.00	1398.23	8389.38	P&M-017
			Transit Mixer ( capacity 4.0 cu.m )	I	45.00	4400.74	40004.40	D9M 040
			Transit Mixer 4 cum capacity lead	hour	15.00	1132.74	16991.10	P&M-049
			upto1 Km Lead beyond 1 Km, L - lead in	tonne.k	300L	18.94	0.00	Lead =0
			Kilometer	m	300L	10.54	0.00	km & P&M-
					0.00	0570.44	45450.00	050
			Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		821982.000			
			For formwork and staging add the f	ollowina.				
14.1F		(i)	For solid slab/voided slab super					
			structure, 16-26 per cent of cost of					
			concrete (a+b+c)					
		(p)	Height upto 5m					
			Basic Cost of Labour, Material &	<u>ç</u>			821982.00	
			Machinery (a+b+c) for 120 cum					
			d) Formwork and staging 16 pe	er			131517.12	
			cent of (a+b+c)					
			e) GST @ 12 % on (a+b+c+d)				114419.89	
			f) Overhead charges @ 20 % on	(a+b+c+d	+e)		213583.80	
			g) Contractor's profit @ 10 % on	(a+b+c+d	+f)		128150.28	
			h) Cess @ 1% on (a+b+c+d+e+f+	g)			14096.53	
			Cost for 120 cum = a+b+c+d+e+f+g+h	า			1423749.62	
			Rate per cum = (a+b+c+d+e+f+g+h)	/120			11864.58	
			-			say	11865.00	
14.1F		(q)	Height 5m to 10m			_		
(i)			Basic Cost of Labour, Material &	<u>ç</u>			821982.00	
			Machinery (a+b+c) for 120 cum					
			d) Formwork and staging 21 pe	er			172616.22	
			cent of (a+b+c)					
			e) GST @ 12 % on (a+b+c+d)				119351.79	
			f) Overhead charges @ 20 % on	(a+b+c+d	+e)		222790.00	
			g) Contractor's profit @ 10 % on	(a+b+c+d	+f)		133674.00	
			h) Cess @ 1% on (a+b+c+d+e+f+	-	•		14704.14	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1485118.15	
			Rate per cum = $(a+b+c+d+e+f+g+h)$				12375.98	
			(4.2.0.4.0.1.9.11)			say	<u>12376.00</u>	
						Suy	. 20. 0.00	

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Sr No	Ref. to MoRTH/D SR Spec.		Description L	Init	Quantity	Rate Rs	Cost Rs	Remarks Input ref
14.1F		(r)	Height above 10m					
(i)			Basic Cost of Labour, Material &				821982.00	
			Machinery (a+b+c) for 120 cum d) Formwork and staging 26 per				213715.32	
			cent of (a+b+c) e) GST @ 12 % on (a+b+c+d)				124283.68	
			f) Overhead charges @ 20 % on (a+b	+c+d-	+o)		231996.20	
			g) Contractor's profit @ 10 % on (a+b		•		139197.72	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	. <b>.</b>	,		15311.75	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1546486.67	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				12887.39	
			. ,			say	<u>12887.00</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					
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				821982.00	
			d) Formwork and staging 21 per cent of (a+b+c)				172616.22	
			e) GST @ 12 % on (a+b+c+d)				119351.79	
			f) Overhead charges @ 20 % on (a+b		-		222790.00 133674.00	
			<ul><li>g) Contractor's profit @ 10 % on (a+b</li><li>h) Cess @ 1% on (a+b+c+d+e+f+g)</li></ul>	+C+a	<del>+</del> 1)		14704.14	
			Cost for 120 cum = a+b+c+d+e+f+g+h				1485118.15	
			Rate per cum = (a+b+c+d+e+f+g+h)/120				12375.98	
			( , , , , , , , , , , , , , , , , , , ,			say	<u>12376.00</u>	
14.1F		(q)	Height 5m to 10m			•		
(ii)			Basic Cost of Labour, Material &				821982.00	
			Machinery (a+b+c) for 120 cum d) Formwork and staging 26 per cent of (a+b+c)				213715.32	
			e) GST @ 12 % on (a+b+c+d)				124283.68	
			f) Overhead charges @ 20 % on (a+b	+c+d-	+e)		231996.20	
			g) Contractor's profit @ 10 % on (a+b		•		139197.72	
			h) Cess @ 1% on (a+b+c+d+e+f+g)	-	-,		15311.75	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1546486.67	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				12887.39	
						say	<u>12887.00</u>	
14.1F		(r)	Height above 10m					
(ii)			Basic Cost of Labour, Material &				821982.00	
			Machinery (a+b+c) for 120 cum d) Formwork and staging 31 per cent of (a+b+c)				254814.42	
			e) GST @ 12 % on (a+b+c+d)				129215.57	
			f) Overhead charges @ 20 % on (a+b	+c+d	+e)		241202.40	
			g) Contractor's profit @ 10 % on (a+b	+c+d	+f)		144721.44	
			h) Cess @ 1% on (a+b+c+d+e+f+g)				15919.36	
			Cost for 120 cum = $a+b+c+d+e+f+g+h$				1607855.19	
			Rate per cum = $(a+b+c+d+e+f+g+h)/120$				13398.79	
14.1F		(iii)	For cast-in-situ box girder, segmental construction and balanced cantilever, 36-56 per cent of cost of concrete.			say	<u>13399.00</u>	
		(p)	Height upto 5m				004000 00	
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				821982.00	

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Sr No Mo	tef. to RTH/D Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
I	· I	d) Formwork and staging 36 p	er			295913.52	
		cent of (a+b+c)				404447.40	
		e) GST @ 12 % on (a+b+c+d)				134147.46	
		f) Overhead charges @ 20 % or	-	=		250408.60	
		g) Contractor's profit @ 10 % or	-	<b>+</b> f)		150245.16	
		h) Cess @ 1% on (a+b+c+d+e+f				16526.97	
		Cost for 120 cum = a+b+c+d+e+f+g+				1669223.71	
		Rate per cum = (a+b+c+d+e+f+g+h	)/120			13910.20	
14.1F	(q)	Height Em to 10m			say	<u>13910.00</u>	
(iii)	(4)	Height 5m to 10m  Basic Cost of Labour, Material	&			821982.00	
		Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 46 p	er			378111.72	
		cent of (a+b+c)					
		e) GST @ 12 % on (a+b+c+d)				144011.25	
		f) Overhead charges @ 20 % on	=	-		268820.99	
		g) Contractor's profit @ 10 % or	(a+b+c+d	+f)		161292.60	
		h) Cess @ 1% on (a+b+c+d+e+f+	g)			17742.19	
		Cost for 120 cum = $a+b+c+d+e+f+g+$	h			1791960.75	
		Rate per cum = (a+b+c+d+e+f+g+h	)/120			14933.01	
					say	<u>14933.00</u>	
14.1F	(r)	Height above 10m					
(iii)		Basic Cost of Labour, Material	&			821982.00	
		Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 56 p	er			460309.92	
		cent of (a+b+c)				450075.00	
		e) GST @ 12 % on (a+b+c+d)				153875.03	
		f) Overhead charges @ 20 % or	-	=		287233.39	
		g) Contractor's profit @ 10 % or	-	+f)		172340.03	
		h) Cess @ 1% on (a+b+c+d+e+f				18957.40	
		Cost for 120 cum = $a+b+c+d+e+f+g+$				1914697.77	
		Rate per cum = (a+b+c+d+e+f+g+h	)/120			15955.81	
	•				say	<u>15956.00</u>	
14.1	G	PSC Grade M-50					
		Unit = 1 cum					
		Taking output = 120 cum  a) Material					
		Cement	tonne	58.800	9053.98	532374.02	M-081
		Coarse sand	cum	54.000	601.77	32495.58	M-004
		20 mm Aggregate	cum	64.800	1784.07	115607.74	M-053
		10 mm Aggregate	cum	43.200	1951.33	84297.46	M-051
		Admixture @ 0.4 per cent of	kg	235.200	61.06	14361.31	M-180
		cement					
		b) Labour		0.010	054.00	000 75	1 10
		Mate	day	0.940	354.00	332.76	L-12
		Mason	day	3.500	442.00	1547.00	L-11 L-13
		Mazdoor	day	20.000	310.00	6200.00	L-13
		c) Machinery	ha	0.00	2727.04	16705.00	P&M-002
		Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-080
		Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-017
		Loader Transit Miyer ( conseity 4.0 cu m )	hour	6.00	1398.23	8389.38	i divi-U1/
		Transit Mixer ( capacity 4.0 cu.m )	1 6.	45.00	4400 74	40004.40	D9 N4 O4O
		Transit Mixer 4 cum capacity lead	d hour	15.00	1132.74	16991.10	P&M-049
		upto1 Km Lead beyond 1 Km, L - lead in	tonno k	3001	18.94	0.00	Lead =0
		Kilometer	tonne.k m	300L	10.94	0.00	km & P&M-
					0==6 ::	48485.55	050 D&M 007
		Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
		Basic Cost of Labour, Material &		849877.000			
		Machinery (a+b+c) for 120 cum					

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Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			For	formwork and staging add the					•
			follo	owing:					
14.1G		(i)	For	• • • • • • • • • • • • • • • • • • • •	_				
			_	mental construction and					
				anced cantilever, 35-55 per cen	t				
		(p)		ost of concrete					
		(p)		ght upto 5m				040077.00	
				ic Cost of Labour, Material & chinery (a+b+c) for 120 cum	K.			849877.00	
			d)	Formwork and staging 35 pe	r			297456.95	
			,	it of (a+b+c)	-				
			e)	GST @ 12 % on (a+b+c+d)				137680.07	
			f)	Overhead charges @ 20 % on (	a+b+c+d+	+e)		257002.80	
			g)	Contractor's profit @ 10 % on (				154201.68	
			h)	Cess @ 1% on (a+b+c+d+e+f+g	g)			16962.19	
			Cos	st for 120 cum = a+b+c+d+e+f+g+h				1713180.69	
			Rat	e per cum = (a+b+c+d+e+f+g+h)/	120			14276.51	
							say	<u>14277.00</u>	
14.1G		(q)	Hei	ght 5m to 10m					
(i)				sic Cost of Labour, Material &				849877.00	
				chinery (a+b+c) for 120 cum					
			d)	Formwork and staging 45 per	r			382444.65	
				t of (a+b+c) GST @ 12 % on (a+b+c+d)				147878.60	
			e)	GST @ 12 % on (a+b+c+d)	a+b+c+d₁	<u>۱</u> ۵۱		276040.05	
			f)	Overhead charges @ 20 % on ( Contractor's profit @ 10 % on (		-		165624.03	
			g) h)	Cess @ 1% on (a+b+c+d+e+f+g		'')		18218.64	
			•	st for 120 cum = a+b+c+d+e+f+g+h				1840082.97	
				e per cum = (a+b+c+d+e+f+g+h)/				15334.02	
			· vat	o por our (u.b.o.u.e.r.gill)	.20		say	<u>15334.00</u>	
14.1G		(r)	Hei	ght above 10m					
(i)				sic Cost of Labour, Material &				849877.00	
				chinery (a+b+c) for 120 cum				5.0011.00	
			d)	Formwork and staging 55 per	r			467432.35	
				of (a+b+c)				450077.40	
			e)	GST @ 12 % on (a+b+c+d)	(a.b			158077.12	
			f)	Overhead charges @ 20 % on (		-		295077.29	
			g)	Contractor's profit @ 10 % on (		<b>-т</b> )		177046.38	
			h)	Cess @ 1% on (a+b+c+d+e+f+g				19475.10	
				st for 120 cum = a+b+c+d+e+f+g+h				1966985.24 16391.54	
			ĸat	e per cum = (a+b+c+d+e+f+g+h)/	120		691/	16391.54 <u>16392.00</u>	
14.1		Н	PSC	C Grade M- 55			say	10392.00	
				t = 1 cum					
			Tak	ring output = 120 cum					
			a)	Material					
				Cement	tonne	63.500	9053.98	574927.73	M-081
				Coarse sand 20 mm Aggregate	cum	54.000 64.800	601.77 1784.07	32495.58 115607.74	M-004 M-053
				10 mm Aggregate	cum cum	43.200	1764.07	84297.46	M-051
				Admixture @ 0.4 per cent of	kg	254.000	61.06	15509.24	M-180
				cement	J				
			b)	Labour		_			,
				Mate	day	0.940	354.00	332.76	L-12
				Mason Mazdoor	day	3.500 20.000	442.00 310.00	1547.00 6200.00	L-11 L-13
			c)	Machinery	day	20.000	310.00	0200.00	0
			٠,	Batching Plant @ 20 cum/hour	hour	6.00	2787.61	16725.66	P&M-002
				Generator 100 KVA	hour	6.00	849.56	5097.36	P&M-080
				Loader	hour	6.00	1398.23	8389.38	P&M-017

		SUPER-ST	RUCTUR	<u>.E</u>			
Sr No Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•	Transit Mixer ( capacity 4.0 cu.m ) Transit Mixer 4 cum capacity lead upto1 Km	hour	15.00	1132.74	16991.10	P&M-049
		Lead beyond 1 Km, L - lead in Kilometer	tonne.k m	300L	18.94	0.00	Lead =0 km & P&M- 050
		Concrete Pump	hour	6.00	2576.11	15456.66	P&M-007
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum		893578.000			
		For formwork and staging add the following:					
14.1H	(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete					
	(p)	Height upto 5m  Basic Cost of Labour, Material &  Machinery (a+b+c) for 120 cum				893578.00	
		d) Formwork and staging 35 per cent of (a+b+c)				312752.30	
		e) GST @ 12 % on (a+b+c+d)				144759.64	
		f) Overhead charges @ 20 % on (	a+b+c+d	+e)		270217.99	
		g) Contractor's profit @ 10 % on (	a+b+c+d	+f)		162130.79	
		h) Cess @ 1% on (a+b+c+d+e+f+g	1)			17834.39	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$				1801273.11	
		Rate per cum = (a+b+c+d+e+f+g+h)/1	120			15010.61	
					say	<u>15011.00</u>	
14.1H	(q)	Height 5m to 10m					
(i)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				893578.00	
		d) Formwork and staging 45 per cent of (a+b+c)				402110.10	
		e) GST @ 12 % on (a+b+c+d)		_		155482.57	
		f) Overhead charges @ 20 % on (		=		290234.13	
		g) Contractor's profit @ 10 % on (		+f)		174140.48	
		h) Cess @ 1% on (a+b+c+d+e+f+g	1)			19155.45	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$	120			1934700.73 16122.51	
		Rate per cum = $(a+b+c+d+e+f+g+h)/1$	120		say	16123.00	
14.1H	(r)	Height above 10m			Suy	10120.00	
(i)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum				893578.00	
		d) Formwork and staging 55 per cent of (a+b+c)				491467.90	
		e) GST @ 12 % on (a+b+c+d)				166205.51	
		f) Overhead charges @ 20 % on (	a+b+c+d	+e)		310250.28	
		g) Contractor's profit @ 10 % on (		+f)		186150.17	
		h) Cess @ 1% on (a+b+c+d+e+f+g	1)			20476.52	
		Cost for 120 cum = $a+b+c+d+e+f+g+h$				2068128.38	
		Rate per cum = $(a+b+c+d+e+f+g+h)/1$	120			17234.40	
	Note	1. Where ever concrete is carried out transit mixer, concrete pump, admixers 0.4 per cent of weight of cement may desired slump of concrete.	conformi	ng IS: 9103 @	say	<u>17234.00</u>	

			RUCTUR	<del>-</del> -	1		
Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remark Input re
		<ol> <li>Cement provided for various con structure is for estimating purpose of cement will be as per approved mix provision for coarse and fine aggreg purpose and the exact quantity shall be</li> </ol>	nly. Actu design. gates is	al quantity of Similarly, the for estimating			
		3. The items like needle and surfact minor T & P which is already covere charges. As such these items has	d under	the overhead			
14.2	1600	separately in the rate analysis.  Supplying, fitting and placing HYSI as per drawing and technical specifi		forcement in	super-struct	ure complete	
		Unit = 1 MT	outions				
		Taking output = 1 MT					
		a) Material					
		HYSD bars including 5 per cent for laps and wastage	tonne	1.050	59823.01	62814.16	M-082
		Binding wire	Kg	8.000	89.38	715.04	M-072
		b) Labour for cutting, bending					
		tying and placing in position		0.440	0=100	4====	1.40
		Mate	day	0.440	354.00	155.76	L-12
		Blacksmith	day	3.000	442.00	1326.00	L-02
		Mazdoor	day	8.000	310.00	2480.00	L-13
		Basic Cost of Labour & Material		67491.000			
		<i>(a+b)</i> c)  GST @ 12 % on (a+b)				8098.92	
		d) Overhead charges @ 20 % on (	a+h+c)			15117.98	
		e) Contractor's profit @ 10 % on (	-			9070.79	
			a·b·c·u <sub>j</sub>			997.79	
		f) Cess @ 1% on (a+b+c+d+e)					
		Determen MT - autore du auf					
		Rate per MT = a+b+c+d+e+f			sav	100776.44	
14.3	1800	High tensile steel wires/strands in				100776.44 <u>100776.00</u> ng, stressing	
14.3	1800	•			for stressi	100776.44 <u>100776.00</u> ng, stressing	
4.3	1800	High tensile steel wires/strands in			for stressi	100776.44 <u>100776.00</u> ng, stressing	
4.3	1800	High tensile steel wires/strands in operations and grouting complete as  Unit = 1 MT  Taking output = 0.377 MT			for stressi	100776.44 <u>100776.00</u> ng, stressing	
4.3	1800	High tensile steel wires/strands in operations and grouting complete as  Unit = 1 MT Taking output = 0.377 MT Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)			for stressi	100776.44 <u>100776.00</u> ng, stressing	
4.3	1800	High tensile steel wires/strands in operations and grouting complete as  Unit = 1 MT  Taking output = 0.377 MT  Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material	s per drav	ving and Tech	s for stressi nical Specifi	100776.44 <u>100776.00</u> ng, stressing cations	
4.3	1800	High tensile steel wires/strands in operations and grouting complete as  Unit = 1 MT Taking output = 0.377 MT Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)	s per drav		for stressi	100776.44 <u>100776.00</u> ng, stressing	
4.3	1800	High tensile steel wires/strands in operations and grouting complete as  Unit = 1 MT  Taking output = 0.377 MT  Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material  H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra	s per drav	ving and Tech	s for stressi nical Specifi	100776.44 <u>100776.00</u> ng, stressing cations	M-11
4.3	1800	High tensile steel wires/strands in operations and grouting complete as:  Unit = 1 MT Taking output = 0.377 MT Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking 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	tonne metre	ving and Tech  0.390	for stressi nical Specifi 71139.82	100776.44 <u>100776.00</u> ng, stressing cations	M-11 M-16
4.3	1800	High tensile steel wires/strands in operations and grouting complete as   Unit = 1 MT  Taking output = 0.377 MT  Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material  H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking  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, =	tonne metre	0.390 42.000	71139.82	100776.44 100776.00 ng, stressing cations 27744.53 4646.04	M-11 M-16 M-18
4.3	1800	High tensile steel wires/strands in operations and grouting complete as:  Unit = 1 MT Taking output = 0.377 MT Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking 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 =	tonne metre each	0.390 42.000 2.000	71139.82 110.62 4661.06	100776.44 100776.00 ng, stressing cations 27744.53 4646.04 9322.12	M-11 M-16 M-18
4.3	1800	High tensile steel wires/strands in operations and grouting complete as   Unit = 1 MT  Taking output = 0.377 MT  Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material  H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking  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 material for Spacers, Insulation tape and	tonne metre each tonne	0.390 42.000 2.000	71139.82 110.62 4661.06	100776.44 100776.00 ng, stressing cations 27744.53 4646.04 9322.12 1177.02	M-11 M-16 M-18
4.3	1800	High tensile steel wires/strands in operations and grouting complete as   Unit = 1 MT  Taking output = 0.377 MT  Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material  H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking  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 material for Spacers, Insulation tape and miscellaneous items  b) Labour  i) For making and fixing cables.	tonne metre each tonne	0.390 42.000 2.000	71139.82 110.62 4661.06	100776.44 100776.00 ng, stressing cations 27744.53 4646.04 9322.12 1177.02	M-16 M-18 M-08
4.3	1800	High tensile steel wires/strands in operations and grouting complete as   Unit = 1 MT  Taking output = 0.377 MT  Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)  a) Material  H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking  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 material for Spacers, Insulation tape and miscellaneous items  b) Labour  i) For making and fixing cables anchorages	tonne metre each tonne	0.390 42.000 2.000 0.130	71139.82 110.62 4661.06 9053.98	100776.44 100776.00 ng, stressing cations  27744.53 4646.04 9322.12 1177.02	M-11 M-16 M-18 M-08

	Ref. to		OOI ER-					Remarks/
Sr No	MoRTH/D SR Spec.	De	scription	Unit	Quantity	Rate Rs	Cost Rs	Input ref.
		ii) For prestress	ing		<u> </u>			
		Mate/Super	visor	day	0.050	354.00	17.70	L-12
		Prestressing	operator / Fitter	day	0.250	442.00	110.50	L-08
		Mazdoor		day	1.000	310.00	310.00	L-13
		iii) For grouting						
		Mate/Superv	risor	day	0.050	354.00	17.70	L-12
		Mason		day	0.250	442.00	110.50	L-11
		Mazdoor		day	1.000	310.00	310.00	L-13
		c) Machinery						
		Stressing jac	k with pump	hour	2.500	157.52	393.80	P&M-040
		Grouting pur	np with agitator	hour	1.000	184.07	184.07	M-111
		Generator 3	3 KVA.	hour	3.500	453.98	1588.93	P&M-079
		d) GST @ 12	% on (a+b+c)				5940.72	
		e) Overhead	charges @ 20 % or	n (a+b+c+d)			11089.35	
		f) Contracto	r's profit @ 10 % or	า (a+b+c+d+	-e)		6653.61	
		-	6 on (a+b+c+d+e+f	-	•		731.90	
		<b>U</b> ,	T (a+b+c+d+e+f+g)	•			73921.62	
			a+b+c+d+e+f+q)/0.3				196078.57	
						say	196079.00	
						Cuy		

Note Cost of HT steel has been taken for delivery at site. Hence carriage has not been considered.

14.4 <sup>2702</sup>

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

	9					
a)	Material Cement concrete M30 Grade Refer relevant item of concrete in Item 14.1 ( Excluding formwork and excluding GST, OH, CP & Cess)	cum	1.000	6206.00	6206.00	Item 14.1(C)
	HYSD bar reinforcement Rate as per item No 14.2( Excluding formwork and excluding GST, OH, CP & Cess)	tonne	0.080	67488.00	5399.04	Item 14.2 A
b)	Labour					
υ,	Mazdoor for cleaning deck slab concrete surface.	day	0.150	310.00	46.50	L-13
c)	GST @ 12 % on (a+b)				1398.18	
d)	Overhead charges @ 20 % on (a	a+b+c)			2609.94	
e)	Contractor's profit @ 10 % on (a	a+b+c+d)			1565.97	
f)	Cess @ 1% on (a+b+c+d+e)	,			172.26	
•	te per cum (a+b+c+d+e+f)				17397.89	
	·			say	<u>17398.00</u>	

# 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 0.490 354.00 173.46 L-12

SUPER-STRUCTURE								
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Mazdoor	day	11.000	310.00	3410.00	L-13
			Mazdoor (Skilled)	day	1.250	442.00	552.50	L-15
		b)	Machinery			400.00		D014 004
			Mechanical broom @ 1250 sqm	hour	0.060	433.63	26.02	P&M-031
			per hour	hour	0.060	575.22	34.51	P&M-001
			Air compressor 250 cfm  Mastic cooker 1 tonne capacity	hour	6.000	104.42	626.52	P&M-030
			Bitumen boiler 1500 litres capacity	hour	6.000	241.59	1449.54	P&M-005
			Eliamon solici 1000 lilico dapacity	noui	0.000	211.00	1110.01	
			Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	476.11	476.11	P&M-053
		c)	Material					
		Bas	`					
			gregates) = 60 per cent					
			arse aggregate(3.35mm to 9.5 mm e) = 40 per cent .					
		ma (ba	oportion of material required for stic asphalt with coarse aggregates sed on mix design done for a ecific 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	57350.44	11470.09	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	624.78	243.66	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	12878.76	4636.35	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	1951.33	1073.23	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	2007.08	80.28	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	57.35	60.22	M- 074/1000
		d)	GST @ 12 % on (a+b+c)				2917.50	
			Overhead charges @ 20 % on (a	+b+c+4/			5446.00	
		e)		-			3267.60	
		f)	Contractor's profit @ 10 % on (a	-n+c+a+	re)			
		g)	Cess @ 1% on (a+b+c+d+e+f)				359.44	
			st for 72.46 sqm = a+b+c+d+e+f+g	•			36303.03	
		Ra	te per sqm = (a+b+c+d+e+f+g)/72.4	6			501.01	
	Mata		he rates for 6 mm or any other thic	lena = = :-	av ha wadeed	say	<u>501.00</u>	

**Note 1.**The rates for 6 mm or any other thickness may be worked out on pro-rata basis.

- 2. Where tack coat is required to be provided before laying mastic asphalt, the same is required to be measured and paid separately.
- **3.**The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design.

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			<b>4.</b> This rate analysis is based on designates and is meant for estimating purpost is required to be done for each case.		•			•
			<b>5.</b> The quantity of bitumen works out 17 asphalt blocks without aggregates standards laid down by MoRTH Specific	and fal				
14.6	2703, 1500, 1600 &		Construction of precast RCC railing mm, true to line and grade, tolerance	e of ve	rtical RCC po	st not to exc	eed 1 in 500,	ı
	1700		centre to centre spacing between vadequate space between vertical pedrawings and technical specifications	ost for				
			Unit = 1 RM	<b>J.</b>				
			Taking output = $2 \times 24 \text{ m span} = 48$					
			m					
			a) Material					
			Cement concreteM30 Grade Refer relevant item of concrete in Item 14.1(C) by using batching plant,	cum	4.090	6206.00	25382.54	Item 14.1(C)
			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 post 0.25x0.275 = 0.069sqm,					
			Concrete in Vertical posts = 0.069 x 28 = 1.932 cum, Hand rail in 3					
			tiers = 3 x 24 = 72 m, External					
			area = 0.170 x 0.175 = 0.03 sqm, Concrete in hand rails = 0.03 x 72 = 2.16 cum, Total Concrete = 1.932 + 2.16 = 4.092 cum. (Refer					
			MoRTH SD / 202). Add 5 per cent of above cost for				1269.13	
			form work for casting in casting yard.					
			HYSD bar reinforcement Rate as per item No 14.2( Excluding formwork and excluding GST, OH, CP & Cess)	tonne	0.870	67488.00	58714.56	Item 14.2 A
			Refer MoRTH SD / 202.					
			Add 5 per cent of (a) for handling and fixing of precast panels in position				4268.31	
			b) GST @ 12 % on (a)				10756.14	
			c) Overhead charges @ 20 % on (a	+b)			20078.14	
			d) Contractor's profit @ 10 % on (a	-			12046.88	
			e) Cess @ 1% on (a+b+c+d)	,			1325.16	
			Rate for 48 m (a+b+c+d+e)				133840.86	
			Rate per metre (a+b+c+d+e)/48				2788.35	
						say	<u>2788.00</u>	
		Note	1.Quantities of material have been ad plans of MoRTH vide drawing no. SD/20	•	from standard			
			2.48 m length is the total linear length a m span.	dding bo	oth sides of 24			
14.7	2703, 1500, 1600 & 1700		Construction of RCC railing of M30 G true to line and grade, tolerance of ve centre spacing between vertical pospace between vertical post for expatechnical specifications.	rtical Rost	CC post not to to exceed 20	exceed 1 in 00 mm, leav	500, centre to ring adequate	) }

Page : 366

technical specifications.

*Unit* = 1 *RM* 

	, ,			SUPER-STI	RUCTUR	RE			1
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	on open		Tak m.	king output = 2 x 24 m span = 48					
			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	6206.00	25382.54	Item 14.1(C)
				No. of vertical posts = $(12 + 2)2 = 28$ Nos., External area of vertical post $0.25 \times 0.275 = 0.069 \text{sqm}$ , Concrete in vehicle posts = $0.069 \times 28 = 1.932$ cum, Hand rail in 3 tiers = $3 \times 24 = 72$ m, External area = $0.170 \times 0.175 = 0.03$ sqm, Concrete in hand rails = $0.03 \times 72 = 2.16$ cum, Total Concrete = $1.932 + 2.16 = 4.092$ cum. (Refer MoRTH SD / 202).					
				Add 12 per cent of above cost for form work.				3045.90	
			refe	HYSD bar reinforcement Rate as per item No 14.2(Excluding formwork and excluding GST, OH, CP & Cess) er MoRTH SD / 202.	tonne	0.870	67488.00	58714.56	Item 14.2 A
			b)	GST @ 12 % on (a)				10457.16	
			c)	Overhead charges @ 20 % on (a	ı+b)			19520.03	
			d)	Contractor's profit @ 10 % on (a	ı+b+c)			11712.02	
			e) Pat	Cess @ 1% on (a+b+c+d) e for 48 m (a+b+c+d+e)				1288.32 130120.53	
				e per metre (a+b+c+d+e)/48				2710.84	
							say	<u>2711.00</u>	
		Note		Quantities of material have been and sof MoRTH vide drawing no. SD/20	•	from standard			
14.8	2703.2 & 1900		m s <b>Pro</b>	8 m length is the total linear length a pan. viding, fitting and fixing mild stee			per drawing a	and Technical	
			Uni	ecification it = 1 RM					
			Tak 100	king output = 2 x 50 m span =					
			a)	Material:		0.050	40040.00	440500 40	M-179
				1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012	tonne	2.950 1.010	48312.00 48312.00	142520.40 48795.12	M-179
				MT	torine				
				3) MS bars = 0.17 x 1.05 = 0.180 MT	tonne	0.180	48312.00	8696.16	M-179
				4) MS bolts, nuts and washers	tonne	0.150	111500.00	16725.00	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 corrosion.				10836.83	
				Add for cost of concrete for fixing vertical posts in the performed recess @ 1 per cent of cost of material.				2167.37	

			SUPER-S1	RUCTUR	<u>E</u> ,			T
Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Add for electricity charges, welding and drilling equipment,				2167.37	•
			electrodes and other consumables  @ 1 per cent of cost of material.	i				
			b) Labour		0.000	054.00	004.00	I 10
			Mate Mazdoor (Skilled)	day day	2.800 30.000	354.00 442.00	991.20 13260.00	L-12 L-15
			Mazdoor	day	40.000	310.00	12400.00	L-13
			c) GST @ 12 % on (a+b)	,			31027.13	
			d) Overhead charges @ 20 % on	a+b+c)			57917.32	
			e) Contractor's profit @ 10 % on (	a+b+c+d)			34750.39	
			f) Cess @ 1% on (a+b+c+d+e)				3822.54	
			Cost for 100 m steel railing = a+b+c+d	+e+t			386076.83	
			Rate per metre (a+b+c+d+e+f)/100			say	3860.77 <b>3861.00</b>	
14.9	2705		Drainage Spouts complete as per dr	awing an	d Technical sp	-	3007.00	
			Unit = 1 No.	J				
			Taking output = 1 No.					
			a) Material	1.2	4.000	00.00	070.00	
			Corrosion resistant Structural stee including 5 per cent wastage	l Kg	4.000	68.02	272.08	M- 087/1000
			GI pipe 100mm dia	metre	6.000	34.51	207.06	M-056
			GI bolt 10 mm Dia	each	6.000	42.48	254.88	M-110
			Galvanised MS flat clamp	each	2.000	37.17	74.34	M-101
			b) Labour					
			For fabrication Mate	day	0.020	354.00	7.08	L-12
			Skilled (Blacksmith, welder etc.)	day	0.020	442.00	8.84	L-02
			Mazdoor	day	0.020	310.00	6.20	L-13
			For fixing in position					
			Mate	day	0.010	354.00	3.54	L-12 L-11
			Mason Mazdoor	day day	0.010 0.200	442.00 310.00	4.42 62.00	L-11
			Add @ 5 per cent of cost of	day	0.200	010.00	45.02	
			material and labour for electrodes,					
			cutting gas, sealant, anti-corrosive					
			bituminous paint, mild steel grating etc.	l				
			c) GST @ 12 % on (a+b)				113.46	
			d) Overhead charges @ 20 % on	a+b+c)			211.78	
			e) Contractor's profit @ 10 % on (	a+b+c+d)			127.07	
			f) Cess @ 1% on (a+b+c+d+e)				13.98	
			Rate per metre (a+b+c+d+e+f)				1411.75	
		Note	1. In case of viaducts in urban area	s the dra	inage spouts	say	<u>1412.00</u>	
			should be connected with suitably discharge the surface run-off to dra level.	located	pipelines to			
			2. In case of bridges, sufficient leng		-			
4440	2700		drainage spout on the structure.	_			aluanada a	
14.10	2100		PCC M15 Grade leveling course be Technical specification	iow appro	OACH SIAD COM	piete as per	urawing 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	1.000	7573.00	7573.00	Item 12.8 (A)

	I		1	SUPER-ST	RUCTUE	RE	Т		
Sr No	Ref. to MoRTH/D SR Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
14.11	1500, 1600,			nforced cement concrete approa nplete as per drawing and Techni		_	nforcement a	nd formwork	
	1700 &		Uni	t = 1 cum	-				
	2704			sing output = 1 cum					
			a)	Material					
			ŕ	Cement concreteM30 Grade Refer relevant item of concrete in item 12.8(G)by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c) (Excluding GST, OH, CP & Cess)	cum	1.000	6201.00	6201.00	Item 12.8 (G)
				(Refer relevant item of concrete in item No. 13.8 (G) except that form work may be added at the rate of 2 per cent of cost against 3.5 per cent provided in the foundation concrete.				124.02	
				HYSD bar reinforcement Rate as per item No 14.2(Excluding GST, OH, CP & Cess)	tonne	0.050	67488.00	3374.40	Item 14.2 A
			b)	GST @ 12 % on (a)				1163.93	
			c)	Overhead charges @ 20 % on (a	a+b)			2172.67	
			d)	Contractor's profit @ 10 % on (a	a+b+c)			1303.60	
			e)	Cess @ 1% on (a+b+c+d)				143.40	
			Rat	e per cum (a+b+c+d+e)				14483.02	
							say	14483.00	
		Note	The	grade of reinforced cement concre	ete may	be adopted as	_		
	000			) for severe conditions and M25 for	moderate	e conditions.			
14.15	800			sh Barriers	or in roin	forced coment			
				erate analysis for rigid crash barrie crete, semi-rigid crash barrier with r					
				sh barrier with wire ropes have been					
				pter-8 on Traffic and Transportation					
14.16	800			nting on concrete surface	-4 l				
			sur	viding and applying 2 coats of wa face after cleaning the surface olying paint @ of 1 litre for 2 sqm.					
				t = sqm					
				ring output = 10 sqm					
			a)	Labour					
				Mate	day	0.010	354.00	3.54	L-12
				Painter Mandage (Clailled)	day	0.250	442.00	110.50	L-18 L-15
			b)	Mazdoor (Skilled)  Material	day	0.250	442.00	110.50	L-13
			IJ,	Water based paint of approved quality for cement concrete surface	Litres	5.000	85.84	429.20	M-190
			c)	GST @ 12 % on (a+b)				78.45	
			d)	Overhead charges @ 20 % on (a	a+b+c)			146.44	
			e)	Contractor's profit @ 10 % on (a	-	)		87.86	
			f)	Cess @ 1% on (a+b+c+d+e)		-		9.66	
			•	st for 10 sqm (a+b+c+d+e+f)				976.15	
			Rat	e per sqm (a+b+c+d+e+f)/10				97.62	
14.17	2604		Bur	ried Joint			say	<u>98.00</u>	

Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised weldable structural steel plate as per IS: 2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300

mm c/c along the centre line of the plate, all as specified in clause 2604.

			,	SUPER-STI	RUCTUR	<u>'E</u>			1
Sr No M	Ref. to loRTH/D R Spec.			Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Unit =	Running meter	'	'	<u>'</u>		
			_	output = 12 m					
			,	abour	dov	0.000	254.00	7.00	L-12
			Ma Ma	azdoor	day day	0.020 0.400	354.00 310.00	7.08 124.00	L-12 L-13
				nzdoor nzdoor (Skilled)	day	0.200	442.00	88.40	L-15
				aterial		0.200		33	
			Ga	Ivanised M.S plate 200 mm	kg	237.500	60.14	14283.25	M-
				de,12 mm thick @ 94.20 kg/sqm					060/1000
				luding 5 per cent wastage				440.00	
				d 1 per cent of cost of steel te cutting, welding				142.83	
				nsumables and galvanised					
				SST @ 12 % on (a+b)				1757.47	
			-	Overhead charges @ 20 % on (a	a+b+c)			3280.61	
			•	ontractor's profit @ 10 % on (a	•	)		1968.36	
			•	ess @ 1% on (a+b+c+d+e)	,			216.52	
			-	r 12 m = (a+b+c+d+e+f)				21868.52	
				er m = (a+b+c+d+e+f)/12				1822.38	
							say	<u> 1822.00</u>	
		Note		nes laid down vide the MoRTH					
				1/96-S&R dated 30.11.2000		subsequent			
			joints.	ndum dated 25.01.2001 may be	renerea	for expansion			
4.18	2605		Filler je	oint					
		(i)	-	ing & fixing 2 mm thick corru	gated co	opper plate in	expansion jo	int complete	
				drawing & Technical Specifica	-			•	
			Unit =	Running meter					
			_	output = 12 m					
			a) La						
			Ma	, bending, carrying & fixing etc.	dov	0.040	254.00	14.16	L-12
				azdoor	day day	0.040 0.500	354.00 310.00	14.16 155.00	L-13
				zdoor (Skilled)	day	0.500	442.00	221.00	L-15
				aterial	•				
				pper plate - 12m long x 250 mm	kg	55.000	736.28	40495.40	M-086
			Wic						
				12 x 0.25 = 3 sqm					
			•	$x = 3 \times 0.002 \times 8900 = 53.4 \text{ kg}$					
				ge @ 2.5 per cent = 1.33					
			_	'3 kg say = 55 kg.				4000.07	
			•	SST @ 12 % on (a+b)				4906.27	
			•	Overhead charges @ 20 % on (a	•			9158.37	
			•	contractor's profit @ 10 % on (a	1+b+c+a)			5495.02	
			-	Sess @ 1% on (a+b+c+d+e)				604.45	
				r 12 m = (a+b+c+d+e+f) er m = (a+b+c+d+e+f)/12				61049.67 5087.47	
			Nate p	ei III – (a+b+C+u+e+i)/12			say	5087.47 5087.00	
4.18		(ii)	Provid	ing & fixing 20 mm thick comp	rossible	fibre board in	•		
7.10		1-7		drawing & Technical Specifica		nore beard III	oxpansion ju	complete	
				Running meter					
			_	output = 12 m abour					
			•	rying, placing & fixing.					
			Ma		day	0.010	354.00	3.54	L-12
				azdoor	day	0.100	310.00	31.00	L-13
			Ma	azdoor (Skilled)	day	0.100	442.00	44.20	L-15
			,	aterial					
				mm thick compressible fibre	sqm	3.000	760.18	2280.54	M-084
			bo	ard 12 m long x 25 cm deep.					

	, ,		SUPER	<u>-STRUCTURI</u>	<b>E</b>			1
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				1
			c) GST @ 12 % on (a+b)				283.11	
			d) Overhead charges @ 20 % o	n (a+b+c)			528.48	
			e) Contractor's profit @ 10 % o	n (a+b+c+d)			317.09	
			f) Cess @ 1% on (a+b+c+d+e)				34.88	
			Cost for 12 m = $(a+b+c+d+e+f)$				3522.84	
			Rate per m = $(a+b+c+d+e+f)/12$				293.57	
		<b>,,,,</b> ,				say	<u>294.00</u>	
14.18		(iii)	Providing and fixing in position 20 for fixed ends of simply supported movement upto 20 mm, covered specifications.	d spans not	exceeding 10	m to cater fo	or a horizontal	
			Unit = Running meter					
			Taking output = 12 m					
			a) Labour					
			Mate	day	0.010	354.00	3.54	L-12
			Mazdoor	day	0.200	310.00	62.00	L-13
			Mazdoor (Skilled)	day	0.100	442.00	44.20	L-15
			b) Material					
			Premoulded joint filler 12 m long,20 mm thick and 300 mm deep.	sqm	3.600	613.27	2207.77	M-141
			c) GST @ 12 % on (a+b)				278.10	
			d) Overhead charges @ 20 % o	n (a+b+c)			519.12	
			e) Contractor's profit @ 10 % o	n (a+b+c+d)			311.47	
			f) Cess @ 1% on (a+b+c+d+e)				34.26	
			Cost for 12 m = $(a+b+c+d+e+f)$				3460.46	
			Rate per m = $(a+b+c+d+e+f)/12$				288.37	
						say	<u>288.00</u>	
14.18		(iv)	Providing and filling joint sea	-	-	_	ind technical	
			specifications with coarse sand a	nd 6 per cen	it bitumen by	weight		
			Unit = Running meter					
			<b>Taking output = 12 m</b> 12m long x 100 mm wide x 10mm					
			deep recess					
			a) Labour					
			Mate	day	0.020	354.00	7.08	L-12
			Mazdoor (Skilled)	day	0.500 0.100	310.00 442.00	155.00 44.20	L-13 L-15
			Mazdoor (Skilled) b) Material	day	0.100	442.00	44.20	
			Sand	cum	0.010	601.77	6.02	M-005
			Volume 12 x 0.1 x 0.01 = 0.012 cum	1				
			Weight 0.012 x 1400 = 16.8kg					14.074
			Bitumen	cum	0.000	57350.44	0.00	M-074
			16.8 x 0.06 = 1 kg				05.40	
			<ul><li>c) GST @ 12 % on (a+b)</li><li>d) Overhead charges @ 20 % or</li></ul>	n (a+b+c)			25.48 47.56	
			e) Contractor's profit @ 10 % o	-			28.53	
			f) Cess @ 1% on (a+b+c+d+e)	. ,			3.14	
			Cost for 12 m = $(a+b+c+d+e+f)$				317.01	
			Rate per $m = (a+b+c+d+e+f)/12$				26.42	
						say	<u>26.00</u>	
		Note	For arriving at the final rate of filler journal compound, the					

cm depth of joint filling compound, the rates at Sl. No. i), ii), iii) & iv) shall be added

Sr No	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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14.19 <sup>2600</sup> 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.

		it = Running meter king output = 12 m					
	a)	Labour					
		Mate	day	0.050	354.00	17.70	L-12
		Mazdoor	day	1.000	310.00	310.00	L-13
		Mazdoor (Skilled)	day	0.300	442.00	132.60	L-15
	b)	Material					
		Crushed stone aggregate 12.5 mm nominal size	cum	0.750	1895.58	1421.69	M-052
		Polymer modified bitumen	kg	77.500	52.47	4066.43	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	221.24	25000.12	M-103
		Add 1 per cent for welding and foam caulking/backer rod and other incidentals.				309.49	
	c)	Machinery Mastic cooker 1 tonne capacity	hour	1.000	104.42	104.42	P&M-030
		Smooth 3-wheeled steel roller 8- 10 capacity	hour	0.500	561.95	280.98	P&M-044
	d)	GST @ 12 % on (a+b+c)				3797.21	
	e)	Overhead charges @ 20 % on (	a+b+c+d)			7088.13	
	f)	Contractor's profit @ 10 % on (	· · · · · ·	e)		4252.88	
	g)	Cess @ 1% on (a+b+c+d+e+f)	-,		467.82		
	•	st for 12 m asphalt plug joint = (a+b-	+c+d+a+f+	a)		47249.47	
		, , , , ,	·orarerry	9)			
	κά	te per m = (a+b+c+d+e+f+g)/12				3937.46	
ote	The	e nominal size of aggregates shall b	ne 12 5 mm	n for denth of	say	<u>3937.00</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

Mazdoor (Skilled)

a)	Labour				
	Mate	day	0.060	354.00	21.24
	Mazdoor	day	1.000	310.00	310.00

0.500

442.00

day

L-12 L-13 L-15

221.00

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	SK Spec.	b)	Material					<u>'</u>
		5,	Supply of elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II), complete as per approved drawings and standard specification conforming to clause 2606 of MoRT&H Specification	metre	12.000	11038.94	132467.28	M-093
			Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals.				6623.36	
		c)	GST @ 12 % on (a+b)				16757.15	
		d)	Overhead charges @ 20 % on (a	a+b+c)			31280.01	
		e)	Contractor's profit @ 10 % on (a	+b+c+d)	)		18768.00	
		f)	Cess @ 1% on (a+b+c+d+e)				2064.48	
		Cos	st for 12 m = (a+b+c+d+e+f)				208512.52	
		Rat	te per m = (a+b+c+d+e+f)/12				17376.04	
						say	<u>17376.00</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

Tal	king output = 12 m							
a)	Labour							
	Mate	day	0.040	354.00	14.16	L-12		
	Mazdoor	day	0.600	310.00	186.00	L-13		
	Mazdoor (Skilled)	day	0.300	442.00	132.60	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	221.24	98673.04	M-103		
	Add 5 per cent of cost of above for structural steel for anchorage, welding and other incidentals.				4950.29			
	Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness.	metre	12.000	4906.19	58874.28	M-143		
	Add 1 per cent of cost of sealing element for lubricant-cumadhesive and other consumables.				588.74			
c)	GST @ 12 % on (a+b)				19610.29			
d)	Overhead charges @ 20 % on (a	ı+b+c)			36605.88			
e)	Contractor's profit @ 10 % on (a	+b+c+d)			21963.53			
f)	Cess @ 1% on (a+b+c+d+e)			2415.99				
Cos	st for 12 m = (a+b+c+d+e+f)				244014.80			
Rate per m = $(a+b+c+d+e+f)/12$ 20334.57								

20335.00

say

	Ref. to MoRTH/D SR Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.	

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.

#### 14.22 2607 Strip Seal Expansion Joint

Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.

#### Unit = Running meter

Taking output = 12 m

I al	king output = 12 m					
a)	Labour					
	Mate	day	0.050	354.00	17.70	L-12
	Mazdoor	day	1.000	310.00	310.00	L-13
	Mazdoor (Skilled)	day	0.250	442.00	110.50	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	13492.04	161904.48	M-178
	Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals.				8117.13	
c)	GST @ 12 % on (a+b)				20455.18	
d)	Overhead charges @ 20 % on (	a+b+c)			38183.00	
e)	Contractor's profit @ 10 % on (a	a+b+c+d)			22909.80	
f)	Cess @ 1% on (a+b+c+d+e)	,			2520.08	
,	st for 12 m = (a+b+c+d+e+f)				254527.87	
Rat	te per m = (a+b+c+d+e+f)/12				21210.66	
	· ,			say	<u>21211.00</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.

#### 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

) Labour					
Mate	day	0.060	354.00	21.24	L-12
Mazdoor	day	1.000	310.00	310.00	L-13
Mazdoor (Skilled)	day	0.400	442.00	176.80	L-15

Sr No	Ref. to MoRTH/D SR Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	•	b)	Material	•				
		ass cen sea and prof	oply of a modular strip/box seal joint embly comprising of edge beams, tral beam,2 modules chloroprene II, anchorage elements, support II control system, all steel sections tected against corrosion and alled by the manufacturer or his horised representative.		12.000	233044.25	2796531.00	M-127
		c)	GST @ 12 % on (a+b)				335644.68	
		d)	Overhead charges @ 20 % on (a	a+b+c)			626536.74	
		e)	Contractor's profit @ 10 % on (a	+b+c+d	)		375922.05	
		f)	Cess @ 1% on (a+b+c+d+e)				41351.43	
		Cos	st for 12 m Modular strip/box seal joi	nt = (a+b	+c+d+e+f)		4176493.94	
		Rat	e per m = (a+b+c+d+e+f)/12				348041.16	
						sav	348041.00	

- 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.
  - 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.

#### Unit = Running meter

Taking output = 12 m

a)	Labour
	Mate

Mozdoor	dav	1 250	210 00	207 EN	1 - 1.3
Mate	day	0.070	354.00	24.78	L-12
Mazdoor		1.250	310.00	387.50	L-13

12.000

257575.22

# b) Material

Supply of a modular box/box seal joint metre 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 @ 12 % on (a+b)	370984.31
d)	Overhead charges @ 20 % on (a+b+c)	692504.05
e)	Contractor's profit @ 10 % on (a+b+c+d)	415502.43
f)	Cess @ 1% on (a+b+c+d+e)	45705.27
Cost	for 12 m Modular strip/box seal joint = (a+b+c+d+e+f)	4616231.98
Rate	per m = (a+b+c+d+e+f)/12	384686.00
		 204606.00

3090902.64

M-128

- 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 gabion structures comprising of stone boulders laid in wire crates have been included. Such structures are suited as retaining structures and for erosion control in river training works especially for situations where some settlement of foundation is anticipated. These structures can adjust in minor settlements, being flexible structures, without losing their functional requirement.

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.

#### A Boulder Laid Dry Without Wire Crates.

#### Unit = cum

Taking output = 1 cum

a)	Material					
	Stone	cum	1.000	484.96	484.96	M-003
	Stone Spalls	cum	0.200	446.02	89.20	M-008
b)	Labour					
	Mate	day	0.040	354.00	14.16	L-12
	Mason	day	0.350	442.00	154.70	L-11
	Mazdoor *	day	0.750	310.00	232.50	L-13
c)	GST @ 12 % on (a+b)				117.06	
d)	Overhead charges @ 20 % on (	(a+b+c)			218.52	
e)	Contractor's profit @ 10 % on (	(a+b+c+d)			131.11	
f)	Cess @ 1% on (a+b+c+d+e)	•			14.42	
Ra	te per cum = (a+b+c+d+e+f)				1456.63	
				say	<u>1457.00</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 =

5.6	33 cum					
a)	Material					
	4mm GI wire crates woven in mesh	sqm	22.000	189.38	4166.36	M-102
	size of 100 mm x 100 mm.					
	Stone	cum	5.630	484.96	2730.32	M-003
	Stone Spalls	cum	1.130	446.02	504.00	M-008
b)	Labour					
	Mate	day	0.180	354.00	63.72	L-12
	Mazdoor (Skilled)	day	1.500	442.00	663.00	L-15
	Mazdoor	day	*3.00	310.00	930.0	L-13
c)	GST @ 12 % on (a+b)				1086.89	
d)	Overhead charges @ 20 % on (a+	b+c)			2028.86	
e)	Contractor's profit @ 10 % on (a+	b+c+d)			1217.32	
f)	Cess @ 1% on (a+b+c+d+e)				133.90	
Со	st for 5.63 cum = a+b+c+d+e+f				13524.37	
Ra	te per cum = (a+b+c+d+e+f)/5.63				2402.20	
				sav	2402.00	

Including excavation for trimming for preparation of bed.

Note Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.

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	)			<u>,                                      </u>
			Providing and laying of apron with cen m cast in-situ and made with nominal minimum cement content of 250 kg/cum	nix 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	7876.00	7876.00	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.				157.52	
			Rate per cum				8033.52	
						say	8034.00	
15.4	2504		Providing and laying Pitching on si	opes	aid over	•		
			including boulder apron laid dry in fron	t of toe	of embar	nkment cor	nplete as per	
			drawing and Technical specifications					
		Α	Stone/Boulder					
			Unit = cum					
			Taking output = 1 cum					
			a) Material					
			Stone weighing not less than 40kg	cum	1.000	484.96	484.96	M-003
			Stone spalls of minimum 25 mm size	cum	0.200	446.02	89.20	M-008
			b) Labour					
			Mate	day	0.040	354.00	14.16	L-12
			Mason	day	0.350	442.00	154.70	L-11
			Mazdoor	day	0.750	310.00	232.50	L-13
			c) GST @ 12 % on (a+b)				117.06	
			d) Overhead charges @ 20 % on (a+b				218.52	
			e) Contractor's profit @ 10 % on (a+b	+c+d)			131.11	
			f) Cess @ 1% on (a+b+c+d+e)				14.42	
			Rate per cum = (a+b+c+d+e+f)				1456.63	
						say	<u>1457.00</u>	
15.4		В	Cement Concrete Blocks of size 0.3x0.3 Grade M15	3 x0.3 n	n cast in c	ement con	crete of	
			Unit = cum					
			Taking output = 1 cum					
			Concrete Grade M15 Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	7876.00	7876.00	Item 12.8 (A)
			Add 2 per cent of cost to account for				157.52	
			nominal surface reinforcement and filling of granular material in recesses between blocks.				107.02	
			Rate per cum				8033.52	
			.tate per cam			say	<u>8034.00</u>	
15.5	2504		Providing and laying Filter material unoper drawing and Technical specification		h pitchinç	•		
			Unit = cum					
			Taking output = 1 cum					
			a) Material					
			,	cum	1 200	1202 10	1520.02	M-012
			Graded stone aggregate of required size	cum	1.200	1283.19	1539.83	IVI=U 1∠

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		b) Labour					
		Mate	day	0.050	354.00	17.70	L-12
		Mazdoor (Skilled)	day	0.250	442.00	110.50	L-15
		Mazdoor *	day	1.000	310.00	310.00	L-13
		c) GST @ 12 % on (a+b)				237.36	
		d) Overhead charges @ 20 % on	(a+b+c)			443.08	
		e) Contractor's profit @ 10 % on	(a+b+c+d)			265.85	
		f) Cess @ 1% on (a+b+c+d+e)				29.24	
		Rate per cum = (a+b+c+d+e+f)				2953.56	
					say	<u>2954.00</u>	
		Includes Mazdoor required for trimmi profile and preparation of bed.	ng of slope	to proper			
15.7	2504.4	Toe protection					

#### 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.

Rubble stone laid in cement mortar

- 1	- 3

nı		um

Taking output = 1 cum	Takin	a outpi	ut = 1	cum
-----------------------	-------	---------	--------	-----

a) Cement mortor 1:3 (Rate as in Item 12.6 sub-analysis) excluding GST, OH, CP & Cess	cum	0.330	5543.00	1829.19	Item 12.6 (A)
b) Add for cement concrete bedding (M15 Nominal mix) vide Item 12.8 (A) excluding GST, OH, CP & Cess . Quantity shall be adopted as per design ( Assume Rubble stone Flooring thickness 300mm and cement concrete bedding thickness 100mm)	cum	0.330	5072.00	1673.76	Item 12.8 (A)
Add 1 per cent of cost to account for				35.03	

Add i per ce	ent of cost to account for
excavation f	or preparation of bed.

	excavation for preparation of bed.					
c)	Material					
	Stone	cum	1.000	484.96	484.96	M-003
	Stone Spalls	cum	0.200	446.02	89.20	M-008
d)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mason	day	0.500	442.00	221.00	L-11
	Mazdoor (for laying stones, filling of quarry spalls)	day	1.500	310.00	465.00	L-13
e)	GST @ 12 % on (a+b+c+d)				574.97	
f)	Overhead charges @ 20 % on (a+b	+c+d+e)			1073.28	
g)	Contractor's profit @ 10 % on (a+l	b+c+d+e	+f)		643.97	
h)	Cess @ 1% on (a+b+c+d+e+f+g)				70.84	
Ra	te per cum = (a+b+c+d+e+f+g+h)				7189.52	
				say	<u>7190.00</u>	

Includes cement mortar for laying and filling of joints.

Sr No	Ref. to MoRTH		RIVER TRAINING AND PRO  Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/
	Spec.	<u>В</u>	Cement Concrete blocks Grade M15	Jiii	Quantity	11410 113		Input ref.
15.8		ь						
			Concrete Grade M15 block. (Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	7876.00	7876.00	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	7876.00	2599.08	Item 12.8 (A)
			Add 1 per cent of cost to account for excavation for preparation of bed.				104.75	
	0500		Rate per cum			say	10579.83 <u>10580.00</u>	
15.9	2506		Dry Rubble Flooring					
			Construction of dry rubble flooring at important works.	cross	drainage w	orks for re	latively less	
			Unit = cum					
			Taking output = 1 cum a) Material					
			a) Material Stone	cum	1.000	484.96	484.96	M-003
			Stone Spalls	cum	0.200	446.02	89.20	M-008
			b) Labour					
			Mate	day	0.100	354.00	35.40	L-12
			Mason	day	0.500	442.00	221.00	L-11 L-13
			mazdoor  Add 1 per cent of (b) for trimming  and preparation of base.	day	1.500	310.00	465.00 7.21	L-10
			c) GST @ 12 % on (a+b)				156.33	
			d) Overhead charges @ 20 % on (a+b	+c)			291.82	
			e) Contractor's profit @ 10 % on (a+b	+c+d)			175.09	
			f) Cess @ 1% on (a+b+c+d+e)				19.26	
			Rate per cum = (a+b+c+d+e+f)				1945.27	
			(, , , , , , , , , , , , , , , , , , ,			say	1945.00	
15.10	2507.2		Curtain wall complete as per drawing ar	nd Tecl	nnical spec	cification		
		Α	Stone masonry in cement mortar (1:3)					
			Coursed rubble masonry (1st sort) (Rate as per item	cum	1.000	5470.00	5470.00	Item 12.7 (A)
			No. 12.7 (A) including GST, OH, CP & Cess.					
			Rate per cum			say	<u>5470.00</u>	
4E 40		В	Or Coment concrete Crede M45					
15.10			Cement concrete Grade M15		4.000	7070.00	7070.00	Item 12.8
			Concrete Grade M15 Rate as per item No. 12.8 (A) including GST, OH, CP & Cess.	cum	1.000	7876.00	7876.00	(A)
			Rate per cum			say	<u>7876.00</u>	
		Note	Other items like excavation for foundational, 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	-		_	ing of loose	

Unit = cum

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Та	king Output = 1 cum					
		a)	Material					
			Stone	cum	1.000	484.96	484.96	M-003
			Stone Spalls	cum	0.200	446.02	89.20	M-008
		b)	Labour					
			Mate	day	0.050	354.00	17.70	L-12
			Mason	day	0.250	442.00	110.50	L-11
			Mazdoor	day	1.000	310.00	310.00	L-13
			Add 1 per cent of cost of (a+b) trimming and preparation of bed.	for			10.12	
		c)	GST @ 12 % on (a+b)				122.70	
		d)	Overhead charges @ 20 % or	า (a+b+c)			229.04	
		e)	Contractor's profit @ 10 % or	n (a+b+c+d)			137.42	
		f)					15.12	
		Ra	te per cum = (a+b+c+d+e+f)				1526.76	
45 40	2502.2	_	bion Ctureture for Detaining For			say	<u>1527.00</u>	

### 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					
,	Mate	day	0.280	354.00	99.12	L-12
	Mazdoor	day	5.000	310.00	1550.00	L-13
	Mazdoor (Skilled)	day	2.000	442.00	884.00	L-15
b)	Material					
	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	61.000	189.38	11552.18	M-102
	Stone boulders with least dimension of 200 mm	cum	12.600	484.96	6110.50	M-003
	Stone spalls of minimum size 25 mm	cum	2.520	446.02	1123.97	M-008
c)	GST @ 12 % on (a+b)				2558.37	
d)	Overhead charges @ 20 % on (a+b	+c)			4775.63	
e)	Contractor's profit @ 10 % on (a+b	+c+d)			2865.38	
f)	Cess @ 1% on (a+b+c+d+e)				315.19	
Co	st for 12.60 cum (a+b+c+d+e+f)				31834.34	
Ra	te per cum (a+b+c+d+e+f)/12.60				2526.53	
				say	<u>2527.00</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.

15.13 <sup>2503.3</sup> 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

Taking output =  $2 \times 1 \times 0.3 \times 10 \text{ Nos.} = 6.00 \text{ cum}$ 

o cum							
Labour							
Mate	day	0.140	354.00	49.56	L-12		
Mazdoor	day	2.500	310.00	775.00	L-13		
Mazdoor (Skilled)	day	1.000	442.00	442.00	L-15		
Material							
Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.	sqm	65.000	189.38	12309.70	M-102		
Stone boulders with least dimension of 200 mm	cum	6.000	484.96	2909.76	M-003		
Stone spalls of minimum size 25 mm	cum	1.200	446.02	535.22	M-008		
GST @ 12 % on (a+b)				2042.55			
Overhead charges @ 20 % on (a+b	+c)			3812.76			
Contractor's profit @ 10 % on (a+b	+c+d)			2287.66			
F) Cess @ 1% on (a+b+c+d+e) 251.64							
st for 6.00 cum (a+b+c+d+e+f)				25415.85			
te per cum (a+b+c+d+e+f)/6.00				4235.98			
	Labour Mate Mazdoor Mazdoor (Skilled)  Material Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum. Stone boulders with least dimension of 200 mm Stone spalls of minimum size 25 mm  GST @ 12 % on (a+b) Overhead charges @ 20 % on (a+b) Contractor's profit @ 10 % on (a+b)	Labour  Mate day  Mazdoor day  Mazdoor (Skilled) day  Material  Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with  4mm dia. GI wire in rolls of required size to cover 6.00 cum.  Stone boulders with least dimension of 200 mm  Stone spalls of minimum size 25 mm cum  GST @ 12 % on (a+b)  Overhead charges @ 20 % on (a+b+c)  Contractor's profit @ 10 % on (a+b+c+d)  Cess @ 1% on (a+b+c+d+e)  st for 6.00 cum (a+b+c+d+e+f)	Labour  Mate day 0.140  Mazdoor day 2.500  Mazdoor (Skilled) day 1.000  Material  Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.  Stone boulders with least dimension cum 6.000 of 200 mm  Stone spalls of minimum size 25 mm cum 1.200  GST @ 12 % on (a+b)  Overhead charges @ 20 % on (a+b+c)  Contractor's profit @ 10 % on (a+b+c+d)  Cess @ 1% on (a+b+c+d+e)  st for 6.00 cum (a+b+c+d+e+f)	Labour  Mate day 0.140 354.00  Mazdoor day 2.500 310.00  Mazdoor (Skilled) day 1.000 442.00  Material  Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.  Stone boulders with least dimension cum 6.000 484.96 of 200 mm  Stone spalls of minimum size 25 mm cum 1.200 446.02  GST @ 12 % on (a+b)  Overhead charges @ 20 % on (a+b+c)  Contractor's profit @ 10 % on (a+b+c+d)  Cess @ 1% on (a+b+c+d+e)  st for 6.00 cum (a+b+c+d+e+f)	Labour       Mate       day       0.140       354.00       49.56         Mazdoor       day       2.500       310.00       775.00         Mazdoor (Skilled)       day       1.000       442.00       442.00         Material         Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.       189.38       12309.70         Stone boulders with least dimension of 200 mm       cum       6.000       484.96       2909.76         Stone spalls of minimum size 25 mm       cum       1.200       446.02       535.22         GST @ 12 % on (a+b)       2042.55         Overhead charges @ 20 % on (a+b+c)       3812.76         Contractor's profit @ 10 % on (a+b+c+d)       2287.66         Cess @ 1% on (a+b+c+d+e)       251.64         st for 6.00 cum (a+b+c+d+e+f)		

**4236.00** 

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

Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
16.1	2809	Removal of existing cement con-		-	_	<del>-</del>	<u> </u>
		complete as per Technical Specific					
		to any part of the bridge structure lifts and lead upto 1000 m	and remo	oval of disi	nantied mai	teriai with all	
		Unit = Sq m ( Thickness 75 mm)					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.060	354.00	21.24	L-12
		Mazdoor	day	1.000	310.00	310.00	L-13
		b) Machinery	la accom	4.000	F7F 00	F7F 00	P&M-001
		Air Compressor 250 cfm with pneumatic breaker/jack hammer	hour	1.000	575.22	575.22	F CANI-UUT
		along with accessories.  Tractor-trolley.	hour	0.500	476.11	238.06	P&M-053
		c) GST @ 12 % on (a+b)	Hour	0.500	470.11	137.34	
		d) Overhead charges @ 10 % on (	a+b+c)			128.19	
		e) Contractor's profit @ 10 % on (	•			141.01	
		f) Cess @ 1% on (a+b+c+d+e)	,			15.51	
		Cost for 10 sqm = $(a+d+c+d+e+f)$				1566.57	
		Rate per sqm = $(a+b+c+d+e+f)/10$				156.66	
					say	<u>157.00</u>	
16.2	2809	Removal of existing asphaltic weari					
		concert laid over 12 mm thick mast lead upto 1000 m.	ic aspnait	including	disposai wi	th all lift and	
		Unit = Sq m					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.030	354.00	10.62	L-12
		Mazdoor	day	0.750	310.00	232.50	L-13
		b) Machinery					
		Air Compressor 250 cfm with	hour	0.750	575.22	431.42	P&M-001
		pneumatic breaker. Tractor-trolley.	hour	0.400	476.11	190.44	P&M-053
		c) GST @ 12 % on (a+b)	noui	0.100	11 0.11	103.80	
		d) Overhead charges @ 10 % on (	a+b+c)			96.88	
		e) Contractor's profit @ 10 % on (	a+b+c+d)			106.57	
		f) Cess @ 1% on (a+b+c+d+e)				11.72	
		Cost for 10 sqm = $(a+d+c+d+e+f)$				1183.95	
		Rate per sqm = (a+b+c+d+e+f)/10				118.40	
16.3	2807	Guniting concrete surface with cer	ment mor	tar annlig	<b>say</b> Lwith com	<u>118.00</u> pressor after	
10.5	200.	cleaning surface and spraying Specification					
		Unit = Sq m					
		Taking output = 1 sqm					
		Assuming thickness 25 mm  a) Material					
		Cement	kg	16.000	9.05	144.80	M- 081/1000
		Graded sand	cum	0.040	601.77	24.07	M-005
		Wire mesh 50mm x 50mm size of 3mm wire	kg	2.000	161.95	323.90	M-192
		Ероху	kg	0.670	245.13	164.24	M-095
		Accelerator compound for guniting	kg	0.640	61.06	39.08	M-180
		@ 4 per cent of weight of cement	· ·				

	I = - :		REPAIR AND REHA	DILITA	ION		ı	
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks Input ref
			Add 2 per cent of cost of material for		'		13.92	
			miscellaneous consumables like nozzles, wire brush, cotton waste etc.					
			b) Labour					
			Mate	day	0.010	354.00	3.54	L-12
			Mason	day	0.040	442.00	17.68	L-11
			Mazdoor	day	0.140	310.00	43.40	L-13
			c) Machinery					
			Compressor with guniting equipment along with accessories	hour	0.100	809.73	80.97	P&M-07
			d) GST @ 12 % on (a+b+c)				102.67	
			e) Overhead charges @ 10 % on				95.83	
			f) Contractor's profit @ 10 % on				105.41	
			g) Cess @ 1% on (a+b+c+d+e+f)				11.60	
			Rate per sqm = (a+b+c+d+e+f+g)				1171.11	
						say	<u>1171.00</u>	
16.4	2800		Providing and inserting nipples with		•	•	_	
			holes for grouting as per Technic cutting/removal and sealing of the hol	_		_	-	
			of grouting with Cement/Epoxy	e as ne	cessary or	inppies aite	Completion	
			Unit = Number					
			Taking output = 1 No.					
			a) Material					
			Nipples	each	1.000	30.09	30.09	M-129
			Cement, fixing compound and				4.51	
			consumables @ 15 per cent of cost					
			of nipple					
			b) Labour					1.40
			Mate	day	0.010	354.00	3.54	L-12
			Mazdoor (Skilled) labour for drilling	day	0.080	442.00	35.36	L-15
			Mazdoor (Skilled) labour for fixing nipple and sealing inlets	day	0.080	442.00	35.36	L-15
			Mazdoor for cutting and removing of nipples	day	0.040	310.00	12.40	L-13
			Add 10 per cent of labour cost for drilling holes etc				8.67	
			c) GST @ 12 % on (a+b)				15.59	
			d) Overhead charges @ 10 % on (a+	b+c)			14.55	
			e) Contractor's profit @ 10 % on (a+	-			16.01	
			f) Cess @ 1% on (a+b+c+d+e)	,			1.76	
			Rate per No. = (a+b+c+d)				177.84	
						say	<u>178.00</u>	
16.5	2806		Sealing of cracks/porous concrete /Grouting complete as per Technical S	-	-	ocess thro	ugh nipples	
		Α	Cement Grout					
			Unit = kg					
			Taking output = 1 kg					
			a) Material					
			Cement including 10 per cent	kg	1.100	9.05	9.96	M-
			wastage			3.00	3.30	081/100
			Admixtures (anti shrinkage				1.99	
			compound) @ 20 per cent of cost					
			of cement					
			b) Labour			0=4.55	00.00	
			Mate	day	0.080	354.00	28.32	L-12
			•	day day day	0.080 0.100 0.100	354.00 442.00 310.00	28.32 44.20 31.00	L-12 L-15 L-13

	Dof 4a							
Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		c)	Machinery Grout pump with agitator and	hour	0.100	184.07	18.41	M-111
		d)	accessories GST @ 12 % on (a+b+c)				16.07	
		e)	Overhead charges @ 10 % on (a+	h+c+d)			15.00	
		f)	Contractor's profit @ 10 % on (a+	•	·e)		16.50	
		g)	Cess @ 1% on (a+b+c+d+e+f)		-,		1.81	
			te per kg = (a+b+c+d+e+f+g)				183.26	
						say	<u> 183.00</u>	
			ement Mortar (1:1) Grouting nit = kg					
		Та	king output = 1 kg					
		a)	Material					
			Cement including 10 per cent	kg	0.550	9.05	4.98	M- 081/1000
			wastage Sand including 10 per cent wastage	kg	0.550	0.40	0.22	M-
			Carla including to per cent wastage	Ng	0.000	0.40	0.22	005/1500
			Admixtures (anti shrinkage				1.00	
			compound) @ 20 per cent of cost of					
		1.3	cement					
		b)	Labour Mate	day	0.080	354.00	28.32	L-12
			Mazdoor (Skilled)	day	0.100	442.00	44.20	L-15
			Mazdoor	day	0.100	310.00	31.00	L-13
		c)	Machinery	•				
			Grout pump with agitator and accessories	hour	0.100	184.07	18.41	M-111
		d)	GST @ 12 % on (a+b+c)				15.38	
							.0.00	
		e)	Overhead charges @ 10 % on				14.35	
		e) f)	Contractor's profit @ 10 % on					
		f) g)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f)				14.35 15.79 1.74	
		f) g)	Contractor's profit @ 10 % on				14.35 15.79 1.74 175.39	
46.6	2900	f) g) Ra	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g)		idh mali ma	say	14.35 15.79 1.74 175.39 <u>175.00</u>	
16.6	2800	f) g) Ra Pa co	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) te per kg = (a+b+c+d+e+f+g) tching of damaged concrete sur mpounds, initiator and promoter,	availab	le in prese	r concrete ent formulat	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be	
16.6	2800	f) g) Ra Pa co ap	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Inplied as per instructions of manuface	availab	le in prese	r concrete ent formulat	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be	
16.6	2800	f) g) Ra Pa co ap <i>Un</i> <i>Ta</i>	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itching of promoter and promoter, Itching of damaged concrete sur Impounds, initiator and promoter, Itching of damaged concrete sur Initiation and promoter, Itching output = 10 sqm for an	availab	le in prese	r concrete ent formulat	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be	
16.6	2800	f) g) Ra Pa co ap <i>Un</i> Ta	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  Itching of damaged concrete sur Impounds, initiator and promoter, Inplied as per instructions of manuface Init = sqm Iking output = 10 sqm for an Iking output = 10 sqm for an Iking erage thickness of 25mm.	availab	le in prese	r concrete ent formulat	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be	
16.6	2800	f) g) Ra Pa co ap <i>Un</i> <i>Ta</i>	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itching of promoter and promoter, Itching of damaged concrete sur Impounds, initiator and promoter, Itching of damaged concrete sur Initiation and promoter, Itching output = 10 sqm for an	availab turer ar	le in prese	r concrete ent formulat	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be	
16.6	2800	f) g) Ra Pa co ap <i>Un</i> Ta	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itelial place as per instructions of manuface Itelial	availab turer ar day	le in prese nd as appro	r concrete ent formulat ved by the E	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be ngineer.	
16.6	2800	f) g) Ra Pa co ap <i>Un</i> Ta	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itching of damaged concrete sur Impounds, initiator and promoter, Itching of damaged concrete sur Impounds, initiator and promoter, Initiator and Initiator an	availab turer ar	le in presend as approv	r concrete ent formulat ved by the E 354.00	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer.	L-12
16.6	2800	f) g) Ra Pa co ap <i>Un</i> Ta	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itelial per instructions of manufactor Itelial per instructio	availab turer ar day day	0.060 0.750	r concrete ent formulat ved by the E 354.00 442.00	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50	L-12 L-15
16.6	2800	f) g) Ra co ap <i>Ur</i> <i>Ta</i> av a)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itelial promoter, Itelial promoter and promoter, Itelial promoter and promoter, Itelial promoter and promoter, Itelial promoter and promoter, Itelial promoter and promoter, Itelial promoter and promoter, Itelial promoter and promo	availab turer ar day day	0.060 0.750	r concrete ent formulat ved by the E 354.00 442.00	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50	L-12 L-15
16.6	2800	f) g) Ra co ap <i>Ur</i> <i>Ta</i> av a)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  tching of damaged concrete sur impounds, initiator and promoter, plied as per instructions of manufact init = 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	day day day day	0.060 0.750	r concrete ent formulat ved by the E 354.00 442.00 310.00	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50	L-12 L-15 L-13
16.6	2800	f) g) Ra Pa co ap Un Ta av a)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  tching of damaged concrete sur impounds, initiator and promoter, plied as per instructions of manufact int = 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.	day day day day	0.060 0.750	r concrete ent formulat ved by the E 354.00 442.00 310.00	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50	L-12 L-15 L-13
16.6	2800	f) g) Ra co ap <i>Ur</i> <i>Ta</i> av a)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itelia sper instructions of manufact Init = sqm Init = sq	day day day day	0.060 0.750	r concrete ent formulat ved by the E 354.00 442.00 310.00	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50	L-12 L-15 L-13
16.6	2800	f) g) Ra Pa co ap Un Ta av a)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  Itching of damaged concrete sur Impounds, initiator and promoter, Iteled as per instructions of manufact Iteled as per instruc	day day day day kg	0.060 0.750 0.750 315.000	354.00 442.00 37.17	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be ngineer. 21.24 331.50 232.50 11708.55	L-12 L-15 L-13 M-145
16.6	2800	f) g) Ra co ap Un Ta av a)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  tching of damaged concrete sur Impounds, initiator and promoter, plied as per instructions of manufact Init = sqm Iking output = 10 sqm for an Ierage 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	day day day kg	0.060 0.750 0.750 315.000	354.00 442.00 37.17	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50 11708.55	L-12 L-15 L-13 M-145
16.6	2800	f) g) Ra Pa co ap Un Ta av a) b)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  Itching of damaged concrete sur Impounds, initiator and promoter, Iteled as per instructions of manufact Iteled as per instruc	day day day kg	0.060 0.750 0.750 315.000	354.00 442.00 37.17	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50 11708.55	L-12 L-15 L-13 M-145
16.6	2800	f) g) Ra Pa co ap Un Ta av a) b)	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itelia per instructions of manufactor Init = sqm Init = s	day day day kg	0.060 0.750 0.750 315.000	354.00 442.00 37.17	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50 11708.55 368.14 1519.43 1418.14	L-12 L-15 L-13 M-145
16.6	2800	f) g) Ra  Pa co ap Un Ta av a) b) c) f) g) Co	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g) Itching of damaged concrete sur Impounds, initiator and promoter, Itelia sper instructions of manufact Init = sqm Init = sq	day day day kg	0.060 0.750 0.750 315.000	354.00 442.00 37.17	14.35 15.79 1.74 175.39 <u>175.00</u> and curing tions, to be ngineer. 21.24 331.50 232.50 11708.55 368.14 1519.43 1418.14 1559.95 171.59 17331.04	L-12 L-15 L-13 M-145
16.6	2800	f) g) Ra  Pa co ap Un Ta av a) b) c) f) g) Co	Contractor's profit @ 10 % on Cess @ 1% on (a+b+c+d+e+f) Ite per kg = (a+b+c+d+e+f+g)  tching of damaged concrete sur impounds, initiator and promoter, plied as per instructions of manufact int = 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 @ 12 % on (a+b+c) Overhead charges @ 10 % on (a+ Contractor's profit @ 10 % on (a+ Cess @ 1% on (a+b+c+d+e+f)	day day day kg	0.060 0.750 0.750 315.000	354.00 442.00 37.17	14.35 15.79 1.74 175.39 <u>175.00</u> and curing ions, to be ngineer. 21.24 331.50 232.50 11708.55 368.14 1519.43 1418.14 1559.95 171.59	L-12 L-15 L-13 M-145

Sr No	Ref. to MoRTH	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
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Note This item is a proprietory item available in market as prepacked polymer concrete and is required to be applied as per instructions of the manufacturer.

2803 16.7 Sealing of crack / porous concrete with Epoxy Grout by injection through nipples complete as per clause 2803.1.

#### Unit = kg

Taking output = 1 kg

a)	Material		4.400	0.15.40		M-095
	Epoxy including 10 per cent wastage	kg	1.100	245.13	269.64	IVI-U95
1. \						
b)	Labour					
	Mate	day	0.080	354.00	28.32	L-12
	Mazdoor (Skilled)	day	0.100	442.00	44.20	L-15
	Mazdoor	day	0.100	310.00	31.00	L-13
c)	Machinery					
	Epoxy Injection gun	hour	0.100	3373.45	337.35	P&M-078
d)	GST @ 12 % on (a+b+c)				85.26	
e)	Overhead charges @ 10 % on	(a+b+c+d)			79.58	
f)	Contractor's profit @ 10 % on	(a+b+c+d+e	)		87.54	
g)	Cess @ 1% on (a+b+c+d+e+f)				9.63	
Ra	te per kg = (a+b+c+d+e+f+g)				972.52	
				say	<u>973.00</u>	

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

2807

16.9

Taking output = 10 sqm, 40 mm

av	erage thickness.					
a)	Labour					
	Mate	day	0.040	354.00	14.16	L-12
	Mazdoor	day	0.500	310.00	155.00	L-13
	Mazdoor (Skilled)	day	0.500	442.00	221.00	L-15
b)	Machinery					
	Air compressor 250 cfm	hour	1.000	575.22	575.22	P&M-001
	Shotcreteing equipment	hour	1.000	809.73	809.73	P&M-076
	water tanker 6 KL capacity	hour	0.020	544.25	10.89	P&M-060
c)	Material					
	Cement	kg	120.000	9.05	1086.00	M- 081/1000
	Sand	cum	0.150	601.77	90.27	M-005
	Coarse aggregate of size 4.75mm	cum	0.150	669.03	100.35	M-024
	Quick setting compound	kg	2.500	55.75	139.38	M-147
	Water	KL	0.100	67.26	6.73	M-189
d)	GST @ 12 % on (a+b+c)				385.05	
e)	Overhead charges @ 10 % on (a-	+b+c+d)			359.38	
f)	Contractor's profit @ 10 % on (a-	+b+c+d+	e)		395.32	
g)	Cess @ 1% on (a+b+c+d+e+f)				43.48	
Со	st for 10 sqm = a+b+c+d+e+f+g				4391.96	
Ra	te per sqm = (a+b+c+d+e+f+g)/10				439.20	
				say	<u>439.00</u>	

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 for replacement of spalled concrete	lymer m	ortar of st	rength 45 M <sub>l</sub>	pa at 28 days	
		Unit = sqm					
		Taking output = 10 sqm					
		Assumed thickness - 10 mm					
		a) Material					
		Acrylic polymer bonding coat	Litre	1.400	278.76	390.26	M-057
		pre-packed cement based polymer	kg	12.000	37.17	446.04	M-145
		mortar of strength 45 Mpa at 28					
		days				05.00	
		Add 3 per cent of (a ) above for				25.09	
		wastage. b) Labour					
		Mate	day	0.040	354.00	14.16	L-12
		Mazdoor (Skilled)	day	0.500	442.00	221.00	L-15
		Mazdoor	day	0.500	310.00	155.00	L-13
		c) GST @ 12 % on (a+b)				150.19	
		d) Overhead charges @ 10 % on (a-	·b+c)			140.17	
		e) Contractor's profit @ 10 % on (a-	-b+c+d)			154.19	
		f) Cess @ 1% on (a+b+c+d+e)				16.96	
		Cost for 10 sqm = a+b+c+d+e+f				1713.06	
		Rate per sqm = $(a+b+c+d+e+f)/10$				171.31	
					say	<u>171.00</u>	
16.11	2805	Eproxy bonding of new concrete to old	d concre	te			
		Unit = sqm					
		Taking output = 10 sqm a) Material					
		Epoxy resin with pot life not less than 60-90 minutes and satisfying	kg	8.000	167.26	1338.08	M-098
		testing as per clause 2803.9 Add 3 per cent of (a ) above for wastage.				40.14	
		b) Labour					
		Mate	day	0.040	354.00	14.16	L-12
		Mazdoor (Skilled)	day	0.500	442.00	221.00	L-15
		Mazdoor	day	0.500	310.00	155.00	L-13
		c) GST @ 12 % on (a+b)				212.21	
		d) Overhead charges @ 10 % on (a-	•			198.06	
		e) Contractor's profit @ 10 % on (a-	-b+c+d)			217.87	
		f) Cess @ 1% on (a+b+c+d+e)				23.97	
		Cost for 10 sqm = a+b+c+d+e+f				2420.49	
		Rate per sqm = (a+b+c+d+e+f)/10				242.05	
16.17		Danissement of Evnancian Jointa com	nalete ee	nor droud	say	<u>242.00</u>	
16.17		Replacement of Expansion Joints com	ipiete as	per arawi	ngs		
		Unit -1 RM					
		Taking output = 12 RM a) Material					
		Epoxy for bonding new concrete to old concrete @ 0.8 kg/sqm	kg	9.600	245.13	2353.25	M-095
		M-30 grade cement concrete excluding GST,OH, CP & Cess	cum	3.600	7447.00	26809.20	Item 14.1(C)
		(Rate as per items 14.1 C (i)  b) Labour  Removal of old expansion joint including breaking of concrete, cutting of lugs and					
		shifting of broken material etc.					
		Mate	day	0.260	354.00	92.04	L-12
		Mazdoor	day	6.000	310.00	1860.00	L-13

Sr No	Ref. to MoRTH Spec.		Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
			Mazdoor (Skilled) c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on (a+e) e) Contractor's profit @ 10 % on (a+f) Cess @ 1% on (a+b+c+d+e) Cost for replacement of 12 RM = a+b+c+d Rate per RM = (a+b+c+d+e+f)/12	b+c+d)	0.500	442.00	221.00 3760.26 3509.58 3860.53 424.66 42890.52 3574.21	L-15
		Note	The rate for the installation of new expartaken from the chapter on superstructure will have to be replaced which has been analysis.	e. Broke en includ	n concrete	Say	3374.00	
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.					
			Mate Mazdoor b) Machinery	day day	0.200 5.000	354.00 310.00	70.80 1550.00	L-12 L-13
			Tractor-trolley for disposal of dismantled material	hour	1.000	476.11	476.11	P&M-053
			c) GST @ 12 % on (a+b)				251.63	
			d) Overhead charges @ 10 % on				234.85	
			e) Contractor's profit @ 10 % on				258.34	
			f) Cess @ 1% on (a+b+c+d+e)				28.42	
			Cost for 10 m = a+b+c+d+e+f				2870.15	
			Rate per metre = (a+b+c+d+e+f)/10			201	287.02	
40.40		Note	The rate for the provision of new railing from the chapter on superstructure.	g may b	e adopted	say	<u>287.00</u>	
16.19			Replacement of Crash Barrier.  Unit = RM  Taking output = 10 M					
			<ul><li>a) Labour</li><li>Labour for dismantling old railing and</li></ul>					
			disposal of dismantled material.  Mate	day	0.400	354.00	141.60	L-12
			Mazdoor	day	10.000	310.00	3100.00	L-13
			b) Machinery	,				
			Tractor-trolley for disposal of dismantled material	hour	1.000	476.11	476.11	P&M-053
			c) GST @ 12 % on (a+b)				446.13	
			d) Overhead charges @ 10 % on				416.38	
			e) Contractor's profit @ 10 % on				458.02	
			f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f				50.38 5088.62	
			Rate per metre = (a+b+c+d+e+f)/10				508.86	
			(a.b.o.a.o.i)			say	<u>509.00</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 Railing

Unit = RM

Taking output = 10 M

a) Labour

Labour for dismantling old railing and disposal of dismantled material.

# **CHAPTER-16**

Sr No M	Ref. to MoRTH Spec.	Mate Mazdoor b) Machinery Tractor-trolley for disposal of dismantled material c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of Unit = Running meter.	a regu	lar shape,	_	56.64 1240.00 476.11 212.73 198.55 218.40 24.02 2426.45 242.65 243.00	
6.21		Mazdoor b) Machinery Tractor-trolley for disposal of dismantled material c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	hour cement	4.000 1.000	310.00 476.11 say	1240.00 476.11 212.73 198.55 218.40 24.02 2426.45 242.65 243.00	L-13
6.21		b) Machinery Tractor-trolley for disposal of dismantled material c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	hour cement a regu	1.000 t concert o	476.11 say of M-30 grade	476.11 212.73 198.55 218.40 24.02 2426.45 242.65 243.00	P&M-053
6.21		Tractor-trolley for disposal of dismantled material c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	cement a regu	t concert o lar shape,	say f M-30 grade	212.73 198.55 218.40 24.02 2426.45 242.65 <u>243.00</u>	
6.21		dismantled material c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	cement a regu	t concert o lar shape,	say f M-30 grade	212.73 198.55 218.40 24.02 2426.45 242.65 <u>243.00</u>	
6.21		c) GST @ 12 % on (a+b) d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	198.55 218.40 24.02 2426.45 242.65 <u>243.00</u>	
6.21		d) Overhead charges @ 10 % on e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier  Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	198.55 218.40 24.02 2426.45 242.65 <u>243.00</u>	
6.21		e) Contractor's profit @ 10 % on f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier  Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	218.40 24.02 2426.45 242.65 243.00	
6.21		f) Cess @ 1% on (a+b+c+d+e) Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	24.02 2426.45 242.65 <u>243.00</u>	
6.21		Cost for 10 m = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier  Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	2426.45 242.65 <u>243.00</u>	
6.21		Rate per metre = (a+b+c+d+e+f)/10  Repair of Crash Barrier  Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	242.65 <b>243.00</b>	
6.21		Repair of Crash Barrier  Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade	<u>243.00</u>	
6.21		Repair of concrete crash barrier with and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	f M-30 grade		
		and trimming the damaged portion to repaired thoroughly, applying cement of	a regu	lar shape,	_	by cutting	
		Taking output = 10 M.  It is assumed that damage is to the extent of 10 per cent of the volume of concrete .This		aner erech	on or proper	Tomi work.	
		will require 0.30 cum of concrete.					
		a) Manpower*			0=400		1.40
		Mate Mazdoor	day day	0.040 1.000	354.00 310.00	14.16 310.00	L-12 L-13
		* For dismantling and trimming the surface to a regular shape and removal of damaged material.  b) Material	·				
		M-30 grade cement concrete 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.	cum	0.300	7447.00	2234.10	Item 14.1(C
		c) GST @ 12 % on (a+b)				306.99	
		d) Overhead charges @ 10 % on				286.53	
		e) Contractor's profit @ 10 % on				315.18	
		f) Cess @ 1% on (a+b+c+d+e)				34.67	
		Cost for 10 m = a+b+c+d+e+f					
						3501.63	
		Rate per metre = (a+b+c+d+e+f)/10				350.16	
6.22		Repair of RCC Railing			say	<u>350.00</u>	
0.22		Carrying out repair of RCC M30 railing	to brino	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					
		M-30 grade cement concrete excluding GST,OH, CP & Cess	cum	0.100	7447.00	744.70	Item 14.1(C)
		(Rate as per items 14.1 C (i) HYSD bar reinforcement Rate as per item No 14.2(Excluding GST,OH, CP	tonne	0.010	67488.00	674.88	Item 14. A

day

day

354.00 310.00

7.08 62.00

L-12

L-13

0.020 0.200

Labour\*

mazdoor

Mate

b)

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		* For dismantling and trimming the surface to a regular shape and removal of damaged material.					•
		c) GST @ 12 % on (a+b)				178.64	
		c) Overhead charges @ 10 % on (b)				166.73	
		d) Contractor's profit @ 10 % on				183.40	
		f) Cess @ 1% on (a+b+c+d+e)				20.17	
		Cost for 10 m = $a+b+c+d$				2037.60	
		Rate per $m = (a+b+c+d)/10$				203.76	
					say	<u>204.00</u>	
16.23		Repair of Steel Railing					

Repair of steel railing to bring it to the original shape It is assumed that the damage to the steel railing is to the extent of 10 per cent .

Unit = Running meter.

Taking output = 10 M.

a)	Material					
,	Mild steel ISMC series	kg	29.000	48.31	1400.99	M- 179/1000
	Flat iron	kg	10.000	48.31	483.10	M- 179/1000
	MS Bolt and nuts	kg	1.000	111.50	111.50	M-130
	Add 5 per cent of cost of material				99.78	
	for painting.					
b)	Labour					
	Mate	day	0.016	354.00	5.66	L-12
	Mazdoor (Skilled)	day	0.200	442.00	88.40	L-15
	Mazdoor	day	0.200	310.00	62.00	L-13
c)	GST @ 12 % on (a+b)				270.17	
c)	Overhead charges @ 10 % on (b)				252.16	
d)	Contractor's profit @ 10 % on (b-	+c)			277.38	
f)	Cess @ 1% on (a+b+c+d+e)				30.51	
Co	st for 10 m = a+b+c+d				3081.65	
Ra	te per m = (a+b+c+d)/10				308.17	
	•			sav	308.00	

### Chapter – 17 B. Bridge Works

#### Preamble:

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 -

- 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
- 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

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

Unit = 1 MT					
Taking output = 425.472 MT					
a) Material					
Structural steel in plates, angles, etc	cum	446.750	48312.00	21583386.00	M-179
including 5 per cent wastage Nuts & Bolts	Kg	12764.200	111.50	1423208.30	M-130
b) Labour					
(for cutting, bending, making holes, joining, welding and erecting in position)					
Mate	day	421.220	354.00	149111.88	L-12
Fitter		2340.100	442.00	1034324.20	L-08
Blacksmith		2340.100	442.00	1034324.20	L-02
Welder		2340.100	442.00	1034324.20	L-02
Mazdoor	day	3510.140	310.00	1088143.40	L-13
primer painting at the shop conforming to IS:102 before shifting to site as per section 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	sqm	4995.040	95.00	474528.80 230065.94	Item 8.9
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)				2300659.43	
d) GST @ 12 % on (a+b)				3281618.66	
e) Overhead charges @ 20 % on (a+b+d)				6125688.17	
f) Contractor's profit @ 10 % on (a+b+d+f)				2734682.22	
g) Cess @ 1% on (a+b+d+e+f)				273468.22	
Rate for 425.472 MT (a+b+c+d+e+f+g)			42767533.62		
Rate per MT = $(a+b+c+d+e+f+g)/425.472$				100517.86	
			say	<u>100518.00</u>	

## **CHAPTER - 17** STEEL BRIDGES

1900 17.2

Taking delivery of fabricated steel work from stacks at site as necessary, 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)					
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	21401.23	21401.23	Item 17.1
2/5 part considered for one coat of primer after cleaning as specified under 1906 of section 1900	sqm	11.740	95.00	1115.30	Item 8.9
Two coat of aluminium paint over steel primer after cleaning as specified under 1906 of section 1900	sqm	11.740	95.00	1115.30	Item 8.9
(Including GST,OH,CP &Cess of b)					
c) GST @ 12 % on (a+b)				2568.15	
d) Overhead charges @ 20 % on (a+	4793.88				
e) Contractor's profit @ 10 % on (a+	2876.33				
f) Cess @ 1% on (a+b+d+e)	316.40				
Rate per MT = $(a + b + c + d + e + f)$				34186.59	

34187.00

say