

MINISTRY OF ROAD TRANSPORT & HIGHWAYS

STANDARD DATA BOOK FOR ANALYSIS OF RATES

(Second Revision-2019)



Volume-II: For Hilly Terrain

Published by:

Indian Roads Congress (IRC) on behalf of the Govt. of india Ministry of Road Transport & Highways New Delhi

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FOREWORD TO THE SECOND REVISION

I have great pleasure to present the second revised edition of MoRT&H's Standard Data Book for Analysis of Rates for Road, Bridge and Tunnel Works.

MoRT&H's Standard Data Book (SDB) for Analysis of Rates for Road and Bridge Works published by Indian Roads Congress (IRC), was first brought out by MoRT&H in 1994 and then revised in June 2003 based on Ministry's specification for Road & Bridge Works (Fourth Revision - 2001) and relevant IRC codes/guidelines/circulars. Since then analysis of rates and estimates for National Highway Works are prepared on the basis of the Data Book. This scientific approach provides for uniformity in inputs for various items of works, besides standardization in nomenclature. Further, its compatibility with the specifications of work is ensured, which had been changed to equipment intensive construction in around 1985 from labour-intensive construction methods. The later still forms the basis for analysis of rates adapted by State PWDs. Owing to its merits; Ministry's Standard Data Book is being adopted by various agencies for projects other than National Highways.

However, a need had been felt for revision and updation of the Standard Data Book on account of the following:

- a) Technological upgradation as per currently revised MoRT&H Specification for Road and Bridge Works in 2013.
- b) Increased level of mechanization.
- c) Changes in size, capacity and types of equipment since 2003.
- d) Rationalisation in overheads and contractor's profit, based on use of machineries at various project sizes.
- e) Inclusion of new Chapter 15 for Box Cell Structure, Chapter 18 for Road Tunnel Works and Chapter 19 for Environmental & Safety Management and Bio Engineering.
- f) Other new items pertaining to new technology and material for construction of Roads, Bridges and Tunnel works have been added in the existing chapters.
- g) Output efficiency of machineries and labour has been considered depending upon the type of terrain like plain, rolling and hilly. Accordingly two volume i.e. Vol.-I for plain/rolling terrain and Vol.-II for hilly terrain of Standard Data Book are published.
- h) Keeping in view the size of the project and type of machineries being used for various works, rate analysis will be worked out under three category of projects classified as Small Project (Civil Works Cost less than INR 200 Cr.), Medium Project (Civil Works Cost Greater than INR 200 Cr. and less than INR 500 Cr.) and Large Project (Civil Works Cost greater than INR 500 Cr.).

This second revised edition of Standard Data Book has been finalized in record time with proper research, analysis and validation, along with a user-friendly web based software for efficient application use. This would not have been possible without untiring efforts of concerned officers and other officials of Ministry of Road Transport & Highways, Indian Roads Congress (IRC), NHAI, NHIDCL and LEA Associates South Asia Pvt. Ltd. New Delhi consultant engaged for this work. I would like to express my appreciation to Committee comprising of Mr. I.K Pandey, DG(RD) & SS, MoRT&H - Chairman, Mr. B.K. Sinha, C.E. MoRT&H, Mr. V.K. Rajavat, Director NHIDCL, Mr. Sanjeev Kumar, C.E. MoRT&H, Mr. Khushal Chand, C.E. MoRT&H, Mr. S.K. Nirmal, Secretary General IRC and Mr. Anil

Khare, GM (Tech.) NHAI. This Standard Data Book along with facility to create Schedule of Rates at District level of each State & UTs and preparation of Cost Estimates is available at MORT&H web site as well at web portal www.sdb.morth.gov.in. I also like to give special thanks to Mr. B.N Singh, Former DG(RD)&SS, MoRT&H, and Mr. R.K Pandey Member (Projects) NHAI for their contribution in finalization of this Standard Data Book.

I am sure this Standard Data Book, in its present form, would prove to be very useful to all practicing Highway Engineers. The Standard Data Book, however, needs to be updated periodically with changes of technology and environment. The Ministry of Road Transport & Highway would, therefore welcome the feedback/suggestions from users, so that any further amplification/modification/updating may be attempted in due course.

(I.K. Pandey)

New Delhi October, 2019 Director General (Road Development) & Special Secretary to the Govt. of India

ABBREVIATIONS

Abbreviations of unit wherever occurring in the 'Standard Data Book' are as under

ATMS ADVANCED TRAFFIC MANAGEMENT SYSTEMS

BC BITUMINOUS CONCRETE

BM BITUMINOUS MACADAM

CP CONTRACTOR'S PROFIT

CM CENTIMETER

DBM DENSE BITUMINOUS MACADAM

DIA DIAMETER

EG FOR EXAMPLE

ETC. ET CETERA

FE LOADER FRONT END LOADER

GI GALVANISED IRON

GL GROUND LEVEL

GM GRAM

HA HECTARE

HTMS HIGHWAY TRAFFIC MANAGEMENT SYSTEMS

HMP HOT MIX PLANT

HR HOUR

HYSD HIGH YIELDING STRENGTH DEFORMED

I.E. / IE THAT IS

IRC INDIAN ROADS CONGRESS

IS INDIAN STANDARD

KG KILOGRAM

KL KILOLITER

KM KILOMETER

KMPH KILOMETER PER HOUR

L LITER

L1 TO L10 LEAD IN KILOMETER

M METER

MG MILIGRAM

MIN MINIMUM

MAX MAXIMUM

MM MILLIMETER

MORT&H MINISTRY OF ROAD TRANSPORTATION & HIGHWAYS

MS MILD STEEL

MT METRIC TONNE

NO./NR. NUMBER

OH OVERHEAD

OMC OPTIMUM MOISTURE CONTENT

PCC / P.C.C. PLAIN CEMENT CONCRETE

Q QUINTAL

RCC / R.C.C. REINFORCED CEMENT CONCRETE

REF. TO M REFERENCE TO MORT&H SPECIFICATION

RM RUNNING METER

RR ROAD ROLLER

RS RUPEES

SMA STONE MATRIX ASPHALT

SL./SR. NO. SERIAL NUMBER

SQM. KM SQUARE KILOMETER

SQM/M2 SQUARE METER

T TONNE

T & P TOOLS & PLANT

T.KM TONNE KILOMETER

TM TRANSIT MIXTURE

TPH TONNE PER HOUR

WBM WATER BOUND MACADAM

WMM WET MIX MACADAM

Note:- i). The all abbreviations signify both singular as well as plural number.

ii). The all abbreviations signify both small letter as well as capital letter.

BASIC INPUT PARAMETER

Overhead and Contractor Profit

		Percentage		
SI. No.	Description	Large Project	Medium Project	Small Project
1	Overheads for Road Works	10%	12%	15%
2	Contractors profit for Road Works	10%	10%	10%
3	Overheads for Bridge Works	25%	25%	25%
4	Overheads for Bridge Works (Rehabilitation)	30%	30%	30%
5	Contractors profit for Bridge Works	10%	10%	10%
6	Overheads for Road Tunnel Works	25%	25%	25%
7	Contractors profit for Tunnel Works	10%	10%	10%

Lead Details

SI. No.	Description	Represent lead
1	Lead from Mixing Plant to working site	L1
2	Lead for Earthwork borrow area to site	L2
3	Lead for Moorum/ Natural Granular material borrow area to site	L3
4	Lead for fly ash from source to site	L4
5	Lead for Sand from source to site	L5
6	Lead for Sand from source to Plant	L6
7	Lead for Aggregate from Quarry to working site	L7
8	Lead for Aggregate from Quarry to Plant	L8
9	Lead for Bitumen from source to Plant	L9
10	Lead for HT Strands from source to Plant	L10

Note: All lead in km (one way).

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PART –AROAD WORKS

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

The basic approach for the preparation of Standard Data Book for Road Works is indicated as under:

Description of items

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

2 Mechanical Means

Due to intensive mechanization with higher size/capacity of machines in construction work, rate analysis for various items has been prepared using mechanical means. However, manual inputs have been enhanced for certain cases, where areas may be inaccessible for large size machines or quantum of work may not be large enough to justify use of large machines.

3 Overhead Charges

The overhead charges include the following elements:

- Site office & accommodation, setting up plant, access road, water supply, electricity and general site arrangements.
- ii. Office furniture, equipment and communications
- iii. Expenditure on

Corporate office of contractor

Site supervision

Documentation and "as built" drawings

- iv. Mobilisation / de-mobilisation of resources
- v. Labour camps with basic 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. Temporary Diversion with Safety measures
- x. Watch and ward
- xi. Traffic management & Safety during construction
- xii. Expenditure on 'safeguarding environment
- xiii. Sundries
- xiv. Financing Expenditure
- xv. Insurance/compensation
- 3.1 Overhead Charges are considered depending upon the size of the projects as under:

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

(i) Civil Works Cost up to Rs. 200 crores 15 percent (ii) Civil Works Cost > Rs. 200 crores and ≤ Rs.500 Crores 12 percent (iii) Civil Works Cost > Rs. 500 crores 10 percent

Civil works cost is excluding GST.

4 Contractor Profit:

10 percent of cost of works

Contractor profit is added on total cost i.e. after adding overhead charges.

5 **Basic Inputs**

Basic inputs are only given in the standard data book. The rates for material and labour have to be updated by concerned State/UT govt. Officials like E-in-C, CE(NH), State PWDs.

6 Plants and Equipment

- 6.1 A dozer is proposed for excavation where cutting and filling for the roadway is within 100 m. For longer leads, a combination of hydraulic excavator and tipper is proposed.
- 6.2 Keeping in view, the managerial factors and the age factor of machines as per their utilization in various project sizes, the output of plant & equipment has been considered, however the output of plants is considered approximately 70 Percent of the rated capacity given by manufacture under ideal conditions.
- 6.3 The water tanker speed @ 10 km/hr., return speed @ 15 km/hr., spreading speed @ 2.5 km/hr. in soil & 3.00 km/hr. in granular material is considered for analysis. 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 charge which includes depreciation, interest charge, Insurance, road tax, 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 analysis are approximate for the purpose of estimation and include normal wastage. Actual consumption would have to be based on mix design.
- 7.2 The rates of material should include basic cost (including royalty) at locations of quarry/stone crushers, loading, unloading, cost of carriage and stacking at plant/sites as the case may be.
- 7.3 The alternative proposal for crushing own aggregate by installing crusher should be compared with procurement of crushed aggregates from the market and proposal found economical may be adopted.
- 7.4 The specifications of materials shall be governed by section 1000 of MoRT&H Specifications for Road and Bridge Works.
- 7.5 Material rates are excluding GST.

8 Labour

- 8.1 The labour wages should be as per rates fixed by state government.
- 8.2 One mate has been provided for 25 labours.

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

8.3 Highly Skilled labour include mason (1st class), carpenter, Blacksmith (1st class)/ Welder/ Plumber/ Electrician, (1st class), mechanics and other trades.

9 Carriage of Materials

- 9.1 The unit for carriage has been taken as under:
 - a) In hours where lead is defined including time required for loading and unloading
 - b) In tonne km where lead is variable. The loading and unloading for such cases have been provided separately.
- 9.2 Where the quantity of material to be transported is small such as dismantled material, which requires being 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 Bridge Works.
- 10.2 Assumptions made have been indicated in respective chapters in the form of notes, where required.
- 10.3 Sundries to cater for unforeseen contingency and miscellaneous items have been added in the overhead charges.
- 10.4 Arrangement for traffic during construction shall be as per Clause 112 of MoRT&H Specifications for Road and Bridge Works.
- 10.5 The supply of materials will be taken either at the location of mixing plant or at the work site as the case may be.
- 10.6 Contractor will make his own arrangements for borrowing earth. However, compensation for earth taken from private land has been included in the rate analysis for construction of embankment with borrowed earth
- 10.7 The requirement of machinery has been worked out assuming effective working period of 6 hours per shift of 8 hours.

10.8 Credit for Dismantled "-Material

- The dismantled materials should be examined and a realistic assessment made for the credit for such materials, which can be utilized for works or auctioned.
- 10.9 In rate analysis of some items, the quantities of sub-items involved in that analyses like excavation for foundation, foundation concrete, painting, lettering etc. have been given. The rates for such items may be taken from relevant chapters where the same have already been analyzed.
- 10.10 The source of material and samples are required to be approved by the Engineer before start of any work.
- 10.11 The rates of items include cost of testing of soil, materials and works.
- 10.12 The use of surface by construction vehicles shall be governed by Clause 119 of MoRT&H Specifications.
- 10.13 The contractor shall arrange to provide and maintain an adequate equipped field laboratory as per Clause 120.
- 10.14 Quality Control of works shall be governed by Section 900 of MoRT&H Specifications.

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

- 10.15 The various activities of works shall also be documented by photographs and video cassettes/CDs as per Clauses 121 of MoRT&H Specifications.
 10.16 The classification of excavated material shall be as per Clause 301.2 of MoRT&H Specifications.
- 10.17 The earth excavated from foundations has been considered to be backfilled and balance utilized locally
- 10.17 The earth excavated from foundations has been considered to be backfilled and balance utilized locally for road work except in the case of marshy soil.
- 10.18 The rate analysis for removal of unsuitable soil does not provide for replacement by suitable soil which will have to be paid separately.
- 10.19 Items for hilly terrain have been analysed separately.
- 10.20 The hire charges for machinery and equipment are applicable for the year 2019-2020. It should be updated for subsequent years depending upon the market situation.
- 10.21 10 percent extra cement may be provided for concreting underwater, where required.
- 10.22 Grade of cement may be adopted as per mix design
- 10.23 Quantities of cement in various grades of cement concrete have been taken as per IRC: 112 & Clause 1703.3 of MoRT&H Specifications.
- 10.24 The rates for rigid, semi-rigid and flexible crash barriers have 'been analysed in Chapter-8.
- 10.25 The coarse and fine aggregates shall conform to IS: 383.
- 10.26 Wherever electric generator has not been considered to run a plant or equipment, it is assumed that it is fitted with a diesel engine
- 10.27 Some of the firms in the field of construction chemicals have evolved new brands of chemicals for water proofing, sealing of cracks, curing compound, admixture, cementing compounds etc.. The market can be explored to meet such requirements.
- 10.28 Some of major steel producing firms have evolved thermo-mechanically treated steel which has enhanced strength, better corrosion resistance, ductility, weld ability and high temperature thermal resistance. Enquiries from these firms can be made on technical specifications and use of such products considered in works based on performance in works where these have already been used.
- 10.29 Provision of fly ash has been made in embankment, sub-base, cement concrete pavement and in structural concrete.
- 10.30 The Standard Data Book is for Departmental use only. It cannot be produced in Court of Law as reference/authority and thus is a privilege document.

CHAPTER - 1

CARRIAGE OF MATERIALS

PREAMBLES:

- 1 Analysis for loading has been done both for manual and mechanical means for adoption as per actual situations.
- The provision of tipper has been made in hours where lead is known like disposal of the materials upto 1 Km In case where lead is variable like carriage of hot mix or concrete mix from plants or earth from borrows areas, provision has been made in terms of tone-kilometer (tonne-km), which can be adopted as per actual conditions.
- The cost of carriage will vary depending upon riding surface of the road. Provision has accordingly been made considering surface road, unsurfaced gravelled road and kutcha track.
 - i) The speed of loaded vehicle on black top surface road is taken as 25 kmph and empty vehicle is considered as 35 kmph in plain area and in hilly area the speed of loaded vehicle on black top surface road is considered as 20 kmph and empty vehicle speed is taken as 25 kmph.
 - ii) The speed of loaded vehicle on gravelled surface road is considered as 10 kmph and empty vehicle speed is considered as 15 kmph in plain area
 - iii) The speed of loaded vehicle on kutcha road is considered as 10 kmph and empty vehicle speed is considered as 15 kmph and in hilly.
 - iv) The speed of loaded Transit Mixture is considered as 10 kmph and empty Transit Mixture speed is considered as 15 kmph.
- 4 Provision has been made for a tractor trolley instead of tipper where dismantled materials or material having more volume as compared with weight are required to be transported. This arrangement is more economical.
- Where loading is done by mechanical plant like HMP or batching plant and there is automatic loading in tippers, provision of loading and un-loading time has been taken by the tipper for getting loaded at the plant and un-loading in the paver or otherwise at site.
- 6 Aggregate shall be crushed at contractor's own crushing plant.

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
1.01	А	Loading and unloading of stone boulder / stone aggregates / 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 Unit = cum Taking output = 5.5 cum			
		Time required for i) Positioning of tipper at loading point	Min	1.50	
		ii) Loading by front end loader 1 cum bucket capacity	Min	7.90	
		iii) Maneuvering, reversing, dumping and	Min	3.00	
		turning for return iv) Waiting time, unforeseen contingencies etc.	Min	5.00	
		Total a) Machinery	Min	17.40	
		Tipper 5.5 cum capacity	hour	0.29	
		Front end-loader 1 cum bucket capacity	hour	0.29	
		b) Overheads @ on (a) c) Contractors profit @ on (a+b)			
		Cost for 5.5 cum = a+b+c			
		Rate per cum = $(a+b+c)/5.5$			
	Note	Unloading will be by tipping.			
1.01	В	Loading and unloading of stone boulder / stone aggregates / 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 Unit = cum			
		Taking output = 10 cum			
		Time required for			
		i) Positioning of tipper at loading pointii) Loading by front end loader 1 cum	Min Min	1.50 14.37	
		bucket capacity iii) Maneuvering, reversing, dumping and	Min	3.00	
		turning for return iv) Waiting time, unforeseen	Min	5.00	
		contingencies etc. Total	Min	23.87	
		a) Machinery	IVIIII	23.07	
		Tipper 10 cum capacity	hour	0.40	
		Front end-loader 1 cum bucket capacity	hour	0.40	
		b) Overheads @ on (a)			
		c) Contractors profit @ on (a+b) Cost for 10 cum = a+b+c			
		Rate per cum = (a+b+c)/10			
	81. •	Unloading will be by tinning			

Note Unloading will be by tipping.

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
1.01	c	Loading and unloading of stone boulder / stone aggregates / 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 Unit = cum			
		Taking output = 14.00 cum			
		Time required for		4.50	
		 i) Positioning of tipper at loading point ii) Loading by front end loader 2.1 cum bucket capacity 	Min Min	1.50 9.56	
		iii) Maneuvering, reversing, dumping and turning for return	Min	3.00	
		iv) Waiting time, unforeseen contingencies etc.	Min	5.00	
		Total	Min	19.06	
		a) Machinery	hour	0.32	
		Tipper 14 cum capacity Front end-loader 2.1 cum bucket capacity	hour	0.32	
		b) Overheads @ on (a)	11041	0.32	
		c) Contractors profit @ on (a+b)			
		Cost for 14 cum = a+b+c			
		Rate per cum = (a+b+c)/14			
	Note	Unloading will be by tipping.			
1.01	D	Loading and unloading of stone boulder / stone aggregates / 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			
		Unit = cum			
		Taking output = 18 cum			
		Time required for i) Positioning of tipper at loading point	Min	1.50	
		 i) Positioning of tipper at loading point ii) Loading by front end loader 3.1 cum bucket capacity 	Min	8.32	
		iii) Maneuvering, reversing, dumping and turning for return	Min	3.00	
		iv) Waiting time, unforeseen contingencies etc.	Min	5.00	
		Total	Min	17.82	
		a) Machinery Tipper 18 cum capacity	hour	0.30	
		Front end-loader 3.1 cum bucket capacity	hour	0.30	
		b) Overheads @ on (a)		-	
		c) Contractors profit @ on (a+b)			
		Cost for 18 cum = a+b+c			
		Rate per cum = (a+b+c)/18			
	Note	Unloading will be by tipping.			

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
1.02		Loading and Unloading of Boulders by Manual Means Unit = cum Taking output = 10 cum			
		a) Labour	d	0.073	
		Mate Mazdoor for loading and unloading	day day	0.073 1.814	
		b) Machinery	uay	1.014	
		Tipper 10 Cum capacity	hour	1.814	
		c) Overheads @ on (a+b)			
		d) Contractors profit @ on (a+b+c)			
		Cost for 10 cum = a+b+c+d			
		Rate per cum = (a+b+c+d)/10			
	Note	Unloading will be by tipping.			
1.03		Loading and Unloading of Cement or Steel by Manual Means and Stacking. Unit = tonne			
		Taking output = 18 tonne			
		a) Labour			
		Mate	day	0.192	
		Mazdoor for loading and unloading	day	4.788	
		b) Machinery	aay	, 66	
		Truck 18 tonne capacity c) Overheads @ on (a+b)	hour	4.788	
		d) Contractors profit @ on (a+b+c)			
		Cost for 18 tonnes = a+b+c+d			
		Rate per tonnes = (a+b+c+d)/18			
1.04	(i) A	Cost of Haulage Excluding Loading and Unloading Case-I: Surfaced Road (Plain)			
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.			
		Unit = t.km			
		Taking output 10 tonnes load and lead 10 km = 100 Speed with load : 25 km / hour. Speed while Returning empty: 35 km / hour.	0 t.km		
		speed wille keturning empty. 33 km/ flour.			
		a) Machinery.			
		i) Tipper 10 tonne capacity			
		Time taken for onward haulage with load	hour	0.400	
		Time taken for empty return trip.	hour	0.286	
		b) Overheads @ on (a)			
		c) Contractors profit @ on (a+b)			
		cost for 100 t. km = $a+b+c$			
		Rate per $t.km = (a+b+c)/100$			

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)	
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B Case-I: Surfaced Road (Plain)

Haulage of materials by tipper excluding cost of loading, unloading and stacking.

Unit = t.km

Taking output 18 tonnes load and lead 10 km = 180 t.km

Speed with load : 25 km / hour.

Speed while Returning empty: 35 km / hour.

a) Machinery.

i) Tipper 18 tonne capacity

Time taken for onward haulage with load hour 0.400 Time taken for empty return trip. hour 0.286

b) Overheads @ on (a)

c) Contractors profit @ on (a+b)

cost for 180 t km = a+b+c

Rate per t.km = (a+b+c)/180

C Case-I: Surfaced Road (Plain)

Haulage of materials by tipper excluding cost of loading, unloading and stacking.

Unit = t.km

Taking output 25 tonnes load and lead 10 km = 250 t.km

Speed with load : 25 km / hour.

Speed while Returning empty: 35 km / hour.

a) Machinery.

i) Tipper 25 tonne capacity

Time taken for onward haulage with load hour 0.400 Time taken for empty return trip. hour 0.286

b) Overheads @ on (a)

c) Contractors profit @ on (a+b)

cost for 250 t km = a+b+c

Rate per t.km = (a+b+c)/250

D Case-I: Surfaced Road (Plain)

Haulage of materials by tipper excluding cost of loading, unloading and stacking.

Unit: t.km

Taking output 32 tonnes load and lead 10 km = 320 t.km

Speed with load : 25 km / hour.

Speed while Returning empty: 35 km / hour.

a) Machinery.

i) Tipper 32 tonne capacity

Time taken for onward haulage with load hour 0.400 Time taken for empty return trip. hour 0.286

b) Overheads @ on (a)

c) Contractors profit @ on (a+b)

cost for 320 t km = a+b+c

Rate per t.km = (a+b+c)/320

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)	
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E Case-I: Surfaced Road (Hilly)

Haulage of materials by tipper excluding cost of loading, unloading and stacking.

Unit = t.km

Taking output 10 tonnes load and lead 10 km = 100 t.km

Speed with load : 20 km / hour.

Speed while Returning empty: 25 km / hour.

a) Machinery.

i) Tipper 10 tonne capacity

Time taken for onward haulage with load hour 0.500
Time taken for empty return trip. hour 0.400

b) Overheads @ on (a)

c) Contractors profit @ on (a+b)

cost for 100 t km = a+b+c

Rate per t.km = (a+b+c)/100

F Case-I: Surfaced Road (Hilly)

Haulage of materials by tipper excluding cost of loading, unloading and stacking.

Unit = t.km

Taking output 18 tonnes load and lead 10 km = 180 t.km

Speed with load : 20 km / hour.

Speed while Returning empty: 25 km / hour.

a) Machinery.

i) Tipper 18 tonne capacity

Time taken for onward haulage with load hour 0.500
Time taken for empty return trip. hour 0.400

b) Overheads @ on (a)

c) Contractors profit @ on (a+b)

cost for 180 t km = a+b+c

Rate per t.km = (a+b+c)/180

G Case-I: Surfaced Road (Hilly)

Haulage of materials by tipper excluding cost of loading, unloading and stacking.

Unit = t.km

Taking output 25 tonnes load and lead 10 km = 250 t.km

Speed with load : 20 km / hour.

Speed while Returning empty: 25 km / hour.

a) Machinery.

i) Tipper 25 tonne capacity

Time taken for onward haulage with load hour 0.500
Time taken for empty return trip. hour 0.400

b) Overheads @ on (a)

c) Contractors profit @ on (a+b)

cost for 250 t km = a+b+c

Rate per t.km = (a+b+c)/250

(Rs.)

Sr No	Ref. to M	Description	Unit	Quantity
	Н	Case-I: Surfaced Road (Hilly) Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 32 tonnes load and lead 10 km = 32 Speed with load : 20 km / hour. Speed while Returning empty: 25 km / hour. a) Machinery. i) Tipper 32 tonne capacity Time taken for onward haulage with load Time taken for empty return trip. b) Overheads @ on (a) c) Contractors profit @ on (a+b) cost for 320 t km = a+b+c Rate per t.km = (a+b+c)/320	hour	0.500 0.400
1.04	(ii) A	Case-II: Unsurfaced Gravelled Road Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 tonnes load and lead 10 km = 10 speed with load: 10 km / hour Speed for empty return trip: 15 km / hour a) Machinery i) Tipper 10 tonnes capacity Time taken for onward haulage with load Time taken for empty return trip b) Overheads @ on (a) c) Contractors profit @ on (a+b) Cost for 100 t .km = a+b+c Rate per t.Km = (a+b+c)/100	00 t.km hour hour	1.000 0.667
	С	Case-II: Unsurfaced Gravelled Road Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 18 tonnes load and lead 10 km = 18 Speed with load: 10 km / hour Speed for empty return trip: 15 km / hour a) Machinery i) Tipper 18 tonnes capacity Time taken for onward haulagewith load Time taken for empty return trip b) Overheads @ on (a) c) Contractors profit @ on (a+b) Cost for 180 t .km = a+b+c Rate per t.Km = (a+b+c)/180 Case-II: Unsurfaced Gravelled Road Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km	hour hour	1.000 0.667

Rate (Rs.)

Sr No	Ref. to M	Description	Unit	Quantity
		Taking output 25 tonnes load and lead 10 km = 25. Speed with load : 10 km / hour Speed for empty return trip : 15 km / hour a) Machinery Tipper 25 tonnes capacity Time taken for onward haulage with load Time taken for empty return trip b) Overheads @ on (a) c) Contractors profit @ on (a+b) Cost for 250 t .km = a+b+c Rate per t.Km = (a+b+c)/250	0 t.km hour hour	1.000 0.667
	D	Case-II: Unsurfaced Gravelled Road Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 32 tonnes load and lead 10 km = 32 speed with load: 10 km / hour Speed for empty return trip: 15 km / hour a) Machinery Tipper 32 tonnes capacity Time taken for onward haulage with load Time taken for empty return trip b) Overheads @ on (a) c) Contractors profit @ on (a+b) Cost for 320 t.km = a+b+c Rate per t.Km = (a+b+c)/320	0 t.km hour hour	1.000 0.667
1.04	(iii) A	Case-III: Katcha Track and Track in river bed / nallah bed and choe bed. Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 tonnes load and lead 10 km = 10 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 Time taken for empty return trip b) Overheads @ on (a) c) Contractors profit @ on (a+b) Cost for 100 t.km = a+b+c Rate per t.Km = (a+b+c)/100	0 t.km hour hour	1.000 0.667
	В	Case-III: Katcha Track and Track in river bed / nallah bed and choe bed. Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 18 tonnes load and lead 10 km = 18 Speed with load : 10 km / hour	0 t.km	

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		Speed while returning empty : 15 km / hour a) Machinery			
		I) Tipper 18 tonnes capacity			
		Time taken for onward haulage	hour	1.000	
		Time taken for empty return trip	hour	0.667	
		b) Overheads @ on (a)			
		c) Contractors profit @ on (a+b) Cost for 180 t.km = a+b+c			
		Rate per t.Km = $(a+b+c)/180$			
		rate per t.riii = (a+b+c)/100			
	С	Case-III: Katcha Track and Track in river bed / nallah bed and choe bed.			
		Haulage of materials by tipper excluding cost of			
		loading, unloading and stacking.			
		Unit = t.km			
		Taking output 25 tonnes load and lead 10 km = 250	t.km		
		Speed with load : 10 km / hour			
		Speed while returning empty : 15 km / hour			
		a) Machinery I) Tipper 18 tonnes capacity			
		Time taken for onward haulage	hour	1.000	
		Time taken for empty return trip	hour	0.667	
		b) Overheads @ on (a)	noui	0.007	
		c) Contractors profit @ on (a+b)			
		Cost for 250 t.km = $a+b+c$			
		Rate per t.Km = $(a+b+c)/250$			
	D	Case-III: Katcha Track and Track in river bed /			
		nallah bed and choe bed.			
		Haulage of materials by tipper excluding cost of			
		loading, unloading and stacking.			
		Unit = t.km	\ 4		
		Taking output 32 tonnes load and lead 10 km = 320 Speed with load : 10 km / hour	, t.KIII		
		Speed while returning empty : 15 km / hour			
		a) Machinery			
		I) Tipper 32 tonnes capacity			
		Time taken for onward haulage	hour	1.000	
		Time taken for empty return trip	hour	0.667	
		b) Overheads @ on (a)			
		c) Contractors profit @ on (a+b)			
		Cost for 320 t.km = $a+b+c$			
		Rate per t.Km = (a+b+c)/320			
1.04	(iv)	Case-V : Transit Mixture			
		Haulage of concrete by Transit mixture excluding			
		cost of loading, unloading and stacking.			
		Unit = t.km			
		Taking output 15 tonnes load and lead 10 km = 150	t.km		
		Speed with load : 10 km / hour			
		Speed while returning empty : 15 km / hour			
		a) Machinery			
		Transit Mixture 6 cum capacity			

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
140					(113.)
		Time taken for onward haulage with load	hour	1.000	
		Time taken for empty return trip	hour	0.667	
		b) Overheads @ on (a)			
		c) Contractors profit @ on (a+b) Cost for 150 t .km = a+b+c			
		Rate per t.Km = $(a+b+c)/150$			
		rate per t.km – (a+b+c)/150			
1.05		Hand Broken Stone Aggregates 63 mm nominal			
		size			
		Supply of quarried stone, hand breaking into			
		coarse aggregate 63 mm nominal size (passing			
		80 mm and retained on 50 mm sieve) and stacking as directed			
		Unit = Cum			
		Taking output = 1.0 cum a) Labour			
		Mate	day	0.080	
		Mazdoor	day	1.995	
		b) Material	,	2.555	
		Supply of quarried stone 150 - 200 mm size	cum	1.100	
		c) Overheads @ on (a+b)			
		d) Contractors profit @ on (a+b+c)			
		Rate per cum = a+b+c+d			
1.06		Crushing of stone aggregates (Nominal size)			
		Crushing of stone boulders of 150 mm size in an			
		integrated stone crushing unit of 250 tonnes per			
		hour capacity comprising of primary and			
		secondary crushing units, belt conveyor and			
		vibrating screens to obtain stone aggregates of different nominal size.			
		Unit = Cum			
		Taking Output = 750 Cum a) Labour			
		, Mate	day	0.426	
		Mazdoor Skilled	day	2.660	
		Mazdoor	day	7.980	
		b) Material	-		
		Stone Boulder of size 150 mm and below	cum	750.000	
		c) Machinery			
		Integrated stone crusher of 250 TPH	Hour	6.429	
		including belt conveyor and vibrating screens		0.423	
		Generator 725 KVA	Hour	6.429	
		Front end loader 3.1 cum bucket capacity at	Hour	6.560	
		quarry and crusher		3.300	
		Tipper 14 cum capacity for loading at quarry site	Hour	6.560	
		Tipper 14 cum capacity for transportation		440=	
		within 1 km	t.km	1125.000	
		d) Cost for 750 cum = (a+b+c)			
		e) Crushing Pattern	22 744		
		40 mm (tonne)	22.71%	255.488	
		20 mm (tonne)	23.00%	258.750	

CHAPTER: 1- CARRIAGE OF MATERIALS

Sr No	Ref. to M		Description	Unit	Quantity	Rate (Rs.)
			10 mm (tonne)	25.86%	290.925	
			Dust (tonne)	28.43%	319.838	
		f)	% Cost distribution { (d) x (f) / (e) x 1.5}			
			40 mm	Cum	28.98%	
			20 mm	Cum	31.95%	
			10 mm	Cum	30.75%	
			Dust	Cum	8.32%	
		g)	Overheads @ on (f)			
			40 mm			
			20 mm			
			10 mm			
			Dust			
		h)	Contractors profit @ on (f) and (g)			
			40 mm			
			20 mm			
			10 mm			
			Dust			
		i)	Rate per cum = (f+g+h)			
			40 mm			
			20 mm			
			10 mm			
			Dust			
	Note	: The	e average density of 1.5 tonne/cum is only a refe	rence density ir	n this Data Book	ζ.

Note: The average density of 1.5 tonne/cum is only a reference density in this Data Book.

1.07 **Crushing of stone aggregates (GSB Crusher** Run)

Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 250 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain crusher run (all in aggregate) for GSB.

Unit = Cum

Taking Output = 750 Cum

a)	Labour		
	Mate	day	0.426
	Mazdoor Skilled	day	2.660
	Mazdoor	day	7.980
b)	Material		
	Stone Boulder of size 150 mm and below	cum	750.000
c)	Machinery		
	Integrated stone crusher of 250 TPH including belt conveyor and vibrating screens (for producing crusher run production capacity will increase by 30%)	Hour	4.945
	Generator 725 KVA	Hour	4.945
	Front end loader 3.1 cum bucket capacity at quarry and crusher	Hour	6.560
	Tipper 14 cum capacity for loading at quarry site	Hour	6.560

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		Tipper 14 cum capacity for transportation within 1 km d) Overheads @ on (a+b+c) e) Contractors profit @ on (a+b+c+d)	t.km	1125.000	

Cost for 900 cum = (a+b+c+d+e)

Rate per cum = (a+b+c+d+e)/900

Note: Considering Crushed volume will be 1.2 times the volume of boulder

CHAPTER - 2

SITE CLEARANCE

PREAMBLES:

- 1 Carriage of dismantled materials, bushes, branches of tree etc., has been catered with a tipper mechanical loading and unloading within a lead of 1000 meter.
- 2 Unless otherwise stated the rates include sorting and disposal of unserviceable material and stacking of serviceable material with all lifts and upto a lead of 1000 meter.
- The Clearing and Grubbing road land has been considered both by manual and mechanical means (by use of Dozer & by use of Motor Grader). The rates include sorting and disposal of unserviceable material and stacking of serviceable material with all lifts and upto a lead of 1000 meter. The estimator can use his discretion depending upon quantum of work and particular site conditions for mechanical means (by using Dozer or by using Motor Grader).
- 4 The dismantling of structures has been considered both by manual and mechanical means .The rates include sorting and disposal of unserviceable material and stacking of serviceable material with all lifts and upto a lead of 1000 meter. The estimator can use his discretion depending upon quantum of work and particular site conditions for mechanical means.
- 5 The rates include T&P and scaffolding required for items of dismantling.
- Where only grass/wild growth is met, item No. 2.02 i.e. clearing grass and removal of rubbish can be applied. As regards wild growth disposal of grass, the same can be disposed.
- 7 The dismantling of structures has been catered both by manual and mechanical means. The estimator can use his discretion depending upon quantum of work and particular site conditions.
- 8 Cutting of rivets has been provided separately.
- 9 Dismantling of Hume pipes has been catered mechanical means as pipes can be easily rolled by men to a suitable stacking place within the right of way.
- 10 For dismantling of structures, which remain submerged in water, the cost may be enhanced by 50 Percent.
- Dismantling of utilities is required to be done under the supervision of concerned departments with prior information to the users.
- In certain items of dismantling, like, pipe culverts, utilities, etc., excavation in earth and dismantling of masonry works is not included in this analysis for which suitable notes have been inserted. 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 made after due process for the credit for such materials, which can be utilized for works or auction.
- 14 In case where lead for disposal is more than 1000 m, extra cost of carriage is required to be added based on tonne kilometerage.
- 15 All minor T&P items required for dismantling are already included in overhead charges.
- Provision has been made for a tractor trolley / 10 tonne capacity tipper for transport of utility removal like telephone/electrical poles & lines, water pipe lines, and dismantling materials of sorts or material having more volume as compared with weight are required to be transported. This arrangement is more economical.
- For dismantling of utility services like water pipe lines, electric and telephone lines, prior intimation should be given to users.

Sr No	Dof	. to M		Description	Unit	Quantity as per project category			Rate
31 110	Kei.	. to ivi		Description	Onit	Large	Medium	Small	(Rs.
2.01	201	A		ting of trees, excluding noval of stumps and roots of					
				ting of trees stacking o					
				viceable material with all lift	ts				
		40		up to a lead of 1000 metres.					
		(i)		th from 300 mm to 600 mm					
			_	t = Each ing output = 40 nos					
			a)	Labour					
			•	Mate	day	1.277	1.277	1.277	
				Mazdoors	day	31.920	31.920	31.920	
			b)	Machinery					
				Tipper					
				(i) 18 cum capacity	hour	1.600			
				(ii) 14 cum capacity	hour		2.000		
				(iii) 10 cum capacity	hour			2.667	
				Sundries @ 1% of lobour					
			c)	cost (a) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			d)	Contractor's profit			(a+b) ه ها (a+b) ه (a+b)		
				e for each tree = (a+b+c+d)/4	0	@ On (a+b+c)	on (a+b+c)	w Unitarbition	-,
					•				
		(ii)		th from 600 mm to 900 mm					
			_	t = Each					
				ing output = 30 nos					
			a)	Labour	-1	4.426	4.426	4.426	
				Mate	day	1.436	1.436	1.436	
			b)	Mazdoors Machinery	day	35.910	35.910	35.910	
			IJ,	Tipper					
				(i) 18 cum capacity	hour	1.500			
				(ii) 14 cum capacity	hour	1.500	2.000		
				(iii) 10 cum capacity	hour			3.750	
				Sundries @ 1% of lobour cost (a)					
			c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b))
			d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
			Rat	e for each tree = (a+b+c+d)/3	0				
		(iii)	Girt	th from 900 mm to 1800 mm					
				t = Each					
				ing output = 25 nos					
			a)	Labour					
				Mate	day	2.660	2.660	2.660	
				Mazdoors	day	66.500	66.500	66.500	
			b)	Machinery					
				Tipper	l	4.350			
				(i) 18 cum capacity	hour	1.250	1 667		
				(ii) 14 cum capacity	hour		1.667	2 125	
				(iii) 10 cum capacity	hour			3.125	
				Sundries @ 1% of lobour					

C., 3.	D-f :		Dett	11*	Quantity	as per project	category	Rate
Sr No	Ref. to I	VI	Description	Unit	Large	Medium	Small	(Rs.)
			cost (a)					
		c)	_		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	•		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
		Ra	ate for each tree = (a+b+c+d)/25					
		(iv) G	iirth above 1800 mm					
		U	nit = Each					
		Ta	aking output = 20 nos					
		a)	Labour					
			Mate	day	4.256	4.256	4.256	
			Mazdoors	day	106.400	106.400	106.400	
		b)	Machinery					
			Tipper					
			(i) 18 cum capacity	hour	1.667			
			(ii) 14 cum capacity	hour		2.500		
			(iii) 10 cum capacity	hour			5.000	
			Sundries @ 1% of lobour cost (a)					
		c)			@ on (a+b)	@ on (a+b)	@ on (a+b)	1
		d)	_			@ on (a+b+c)		
			ate for each tree = (a+b+c+d)/20		C = (= = =,	C 1 (1 1 1,		,
2.01	201	in m	emoval of stumps and roots cluding backfilling with suitable aterial to required compaction emoval of stumps, roots					
		w 10	acking of serviceable materia ith all lifts and up to a lead of 200 metres and earth filling in	:				
			e depression/pit.					
			irth from 300 mm to 600 mm					
			ni+ – Each					
			nit = Each					
		Ta	aking output = 40 nos					
			aking output = 40 nos Labour	day	0.053	0.053	0.053	
		Ta	aking output = 40 nos Labour Mate	day	0.053	0.053	0.053	
		Ta a)	aking output = 40 nos Labour Mate Mazdoors	day day	0.053 1.330	0.053 1.330	0.053 1.330	
		Ta	aking output = 40 nos Labour Mate Mazdoors Machinery	-				
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator	day	1.330			
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity	day		1.330		
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity	hour hour	1.330		1.330	
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity	hour hour hour	1.330 5.000	1.330		
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper (i) 18 cum capacity	hour hour hour	1.330	1.330	1.330	
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper (i) 18 cum capacity (ii) 14 cum capacity	hour hour hour	1.330 5.000	1.330	1.330 6.500	
		Ta a)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity	hour hour hour	1.330 5.000	1.330 5.500	1.330	
		Ta a) b)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity Overhead charges	hour hour hour	1.330 5.000	1.330 5.500	1.330 6.500	
		Ta a) b) c) d)	Aking output = 40 nos Labour Mate Mazdoors Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity Overhead charges	hour hour hour hour hour	1.330 5.000 0.727 @ on (a+b)	1.330 5.500 1.000	1.330 6.500 1.333 @ on (a+b)	

Cr No	Pof to M		Description	11:0:4	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
	<i>(</i>)	C:	sh fuara 600 mara ta 000 mara					
	(ii)		th from 600 mm to 900 mm					
		_	t = Each					
			ing output = 30 nos					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mazdoors	day	1.330	1.330	1.330	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	5.000			
			(ii) 1.1 cum bucket capacity	hour		5.500		
			(iii) 0.9 cum bucket capacity	hour			6.500	
			Tipper					
			(i) 18 cum capacity	hour	0.750			
			(ii) 14 cum capacity	hour		1.000		
			(iii) 10 cum capacity	hour			1.500	
		c)	Overhead charges		@ on (a+b)		@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c	c)
		Rat	e for each tree = (a+b+c+d)/30					
	(iii)	Girt	th from 900 mm to 1800 mm					
		Uni	t = Each					
		Tak	ing output = 25 nos					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mazdoors	day	1.330	1.330	1.330	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	5.000			
			(ii) 1.1 cum bucket capacity	hour		5.500		
			(iii) 0.9 cum bucket capacity	hour			6.500	
			Tipper					
			(i) 18 cum capacity	hour	0.758			
			(ii) 14 cum capacity	hour		1.000		
			(iii) 10 cum capacity	hour			1.471	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c) @ on (a+b+c)	@ on (a+b+c	c)
		Rat	e for each tree = (a+b+c+d)/25					
	/:\	C:	sh ahawa 1000 mm					
	(iv)		th above 1800 mm t = Each					
			ing output =20 nos					
			= -					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mazdoors	day	1.330	1.330	1.330	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	5.000			
			(ii) 1.1 cum bucket capacity	hour		5.500		
			(iii) 0.9 cum bucket capacity	hour			6.500	
			Tipper				-	
			(i) 18 cum capacity	hour	0.714			
			(ii) 14 cum capacity	hour	0.714	1.000		
			(III) 14 CUIII CADACILV	HOUL		1.000		
			(iii) 10 cum capacity	hour			1.429	

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category	Ra
31 140	Rei. to ivi	Description	Offic	Large	Medium	Small	(R
		\ 0		-	.	.	
		c) Overhead charges		@ on (a+b)	@ on (a+b)		
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
		Rate for each tree = (a+b+c+d)/2	20				
	Note:	All the serviceable material resu employer for the all above items	_	n girth removal	would be hand	ded over to th	ie
2.02	201	Clearing Grass and Removal	of				
		Clearing grass and removal	of				
		rubbish up to a distance of !					
		metres outside the periphery					
		the area.					
		By Manual Means					
		Unit = Hectare					
		Taking output = 1 Hectare					
		a) Labour					
		Mate	day	2.660	2.660	2.660	
		Mazdoor	day	66.500	66.500	66.500	
		b) Overhead charges	aay	@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	١
		Rate per Hectare = a+b+c		e on (arb)	e on (arb)	e on (arb)	
2.03	201	Clearing and Grubbing Bood Lan	اء.				
2.03	201	Clearing and Grubbing Road Lan					
		Clearing and grubbing road land including uprooting rails					
		vegetation, grass, bushes, shruk					
		saplings and trees girth up to 30					
		mm, removal of stumps of tre					
		cut earlier and disposal					
			nd				
		stacking of serviceable material					
		be used or auctioned, up to a lea					
		of 1000 metres including remov					
		and disposal of top organic se					
		not exceeding 150 mm	in				
		thickness.					
		Unit = Hectare					
	(i)	Taking output = 1 Hectare By Manual Means:-					
	(·) A	In area of light jungle					
	Α	a) Labour					
		Mate	day	7.980	7.980	7.980	
		Mazdoor	day	199.500	199.500	199.500	
		b) Machinery	uay	199.500	199.500	199.500	
		Tractor-trolley	hour	122.222	122.222	122.222	
		c) Overhead charges @ on	Hour	144.444	144.444	144.444	
		(a+b)					
		d) Contractor's profit @ on (a Rate per Hectare = a+b+c+d	ı+b+c)				
	В	In area of thorny jungle					
	D	a) Labour					

a) Labour

No	Ref. to M		Description	Unit	Quantity	as per project	category	Ra
NU	nei. tu ivi		Description	Unit	Large	Medium	Small	(R
								_
			Mate	day	10.640	10.640	10.640	
			Mazdoor	day	266.000	266.000	266.000	
		b)	Machinery					
			Tractor-trolley	hour	122.222	122.222	122.222	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b))
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	c)
		Rate	e per Hectare = a+b+c+d					
.03	(ii)	By Doz	Mechanical Means using					
	Α	_	rea of light jungle					
		a)	Labour					
		-,	Mate	day	0.106	0.106	0.106	
			Mazdoor	day	2.660	2.660	2.660	
		b)	Machinery	auy	2.000	2.000	2.000	
		~,	Dozer					
			(i) Dozer (240HP)	hour	7.519			
			(ii) Dozer (175 HP)	hour		9.709		
			(iii) Dozer (90 HP)	hour			17.544	
			Tipper					
			For transportation to					
			dumping yard considering					
			lead @ 1km					
			(i) 18 cum capacity	t.km	1500.000			
			(ii) 14 cum capacity	t.km		1500.000		
			(iii) 10 cum capacity	t.km			1500.000	
			Loading & unloading charges					
			for disposed of grabbed					
			material					
			(i) Using by 14 cum	cum	1000.000			
			capacity Tipper & 2.1					
			Cum capacity Loader					
			(ii) Using by 14 cum	cum		1000.000		
			capacity Tipper & 2.1					
			Cum capacity Loader				1000 000	
			(iii) Using by 10 cum	cum			1000.000	
			capacity Tipper & 1 Cum capacity Loader					
		دا	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	١
		c) d)	Contractor's profit			@ on (a+b) @ on (a+b+c)		
			e per Hectare = a+b+c+d		w on (atute)	w on (atute)	w UII (aTD+0	٠,
03	В	In a	rea of thorny jungle					
		a)	Labour					
			Mate	day	0.106	0.106	0.106	
			Mazdoor	day	2.660	2.660	2.660	
		b)	Machinery					
			Dozer					
			(i) Dozer (240HP)	hour	9.398			
			(ii) Dozer (175 HP)	hour		12.136		
			(iii) Dozer (90 HP)	hour			21.930	
			Tipper					
			For transportation to					
			dumping yard considering					

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
31 110	Rei. to ivi		Description	Oilit	Large	Medium	Small	(Rs
			1 104					
			lead @ 1km		4500 000			
			(i) 18 cum capacity	t.km	1500.000	4500.000		
			(ii) 14 cum capacity	t.km		1500.000		
			(iii) 10 cum capacity	t.km			1500.000	
			Loading & unloading charges					
			for disposed of grabbed					
			material	61100	1000 000			
			(i) Using by 14 cum capacity Tipper & 2.1	cum	1000.000			
			Cum capacity Loader					
			(ii) Using by 14 cum	cum		1000.000		
			capacity Tipper & 2.1	cum		1000.000		
			Cum capacity Loader					
			(iii) Using by 10 cum	cum			1000.000	
			capacity Tipper & 1 Cum					
			capacity Loader					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit			@ on (a+b+c))
		Rate	per Hectare = a+b+c+d					-
2.03	(iii)	•	Mechanical Means using					
	_		or Grader					
	Α		ea of light jungle					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	4.608			
			(ii) Motor grader 3.70 metre blade	hour		5.559		
			(iii) Motor grader 3.35	hour			6.198	
			metre blade					
			Tipper					
			For transportation to					
			dumping yard considering					
			lead @ 1km	4 L	1500.000			
			(i) 18 cum capacity	t.km	1500.000	1500.000		
			(ii) 14 cum capacity	t.km		1500.000	1500 000	
			(iii) 10 cum capacity	t.km			1500.000	
			Loading & unloading charges					
			for disposed of grabbed material					
			(i) Using by 14 cum capacity	cum	1000.000			
			Tipper & 2.1 Cum capacity Loader	Cuiii	1000.000			
			(ii) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum		1000.000		
			(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			1000.000	

					Quantity	as per project	category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
		c) d) Rat	Overhead charges Contractor's profit e per Hectare = a+b+c+d		@ on (a+b) @ on (a+b+c)	@ on (a+b)) @ on (a+b+c))
2.03	В	In a	rea of thorny jungle					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	5.760			
			(ii) Motor grader 3.70 metre blade	hour		6.948		
			(iii) Motor grader 3.35 metre blade	hour			7.748	
			Tipper For transportation to dumping yard considering lead @ 1km					
			(i) 18 cum capacity	t.km	1500.000			
			(ii) 14 cum capacity	t.km	1300.000	1500.000		
			(iii) 10 cum capacity	t.km		1300.000	1500.000	
			Loading & unloading charges for disposed of grabbed material					
			(i) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum	1000.000			
			(ii) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum		1000.000		
			(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			1000.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Rat	Contractor's profit e per Hectare = a+b+c+d		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
2.04	202		mantling of Structures					
			mantling of existing structures					
		like wal	culverts, bridges, retaining ls and other structure					
			nprising of masonry, cement					
			crete, wood work, steel work,					
		incl	uding T&P and scaffolding					
			erever necessary, sorting the					
			mantled material, disposal of					
			erviceable material and cking the serviceable material					
		with	h all lifts and lead of 1000 tres					

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
31 140	Kei. to ivi		Description	Oilit	Large	Medium	Small	(Rs
			. C.					
		_	t = Cum					
	<i>(</i> :)		ing output = 1.25 cum					
	(i)		ne /Cement Concrete					
	1	-	Manual Means					
	Α	grad	e Concrete, cement concrete de M-10 and below					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
		b)	Mazdoor for dismantling and loading Machinery	day	1.330	1.330	1.330	
		υ,	Tractor-trolley (considering 15 min loading time)	hour	0.299	0.299	0.299	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b	١
		d)	Contractor's profit			@ on (a+b+c)	-	-
			t for 1.25 cum = a+b+c+d		C 011 (41210)	C 011 (41510)	C 011 (41101	-,
			e per cum = (a+b+c+d)/ 1.25					
2.04	В	Cen M-2	nent Concrete Grade M-15 &					
		a)	Labour					
		•	Mate	day	0.067	0.067	0.067	
			Mazdoor for dismantling and loading	day	1.663	1.663	1.663	
		b)	Machinery					
			Tractor-trolley (considering 15 min loading time)	hour	0.299	0.299	0.299	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
			t for 1.25 cum = a+b+c+d					
		Rate	e per cum = (a+b+c+d)/ 1.25					
2.04	С		-stressed / Reinforced cement crete grade M-20 & above					
		a)	Labour					
		u,	Mate	day	0.200	0.200	0.200	
			Blacksmith	day	0.333	0.333	0.333	
			Mazdoor for dismantling,	day	4.655	4.655	4.655	
		b)	loading and unloading Machinery	uuy			033	
		·	Tractor-trolley (considering 15 min loading time)	hour	0.257	0.257	0.257	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
			t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25					
2.04	II .	-	Mechanical Means					
	Α	Cen	nent Concrete Grade M-15 & N	1-20				
		Uni	t = Cum					

Sr No	Dof to M		Description	l lni+	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		۵۱	Labour					
		a)	Labour Mate	day	0.027	0.027	0.027	
				day	0.665	0.665	0.665	
			Mazdoor for loading and unloading & Pneumatic	uay	0.003	0.003	0.003	
			breaker					
		b)	Machinery					
		•	Air Compressor 250 cfm	hour	0.625	0.625	0.625	
			Pneumatic breaker @ 1 cum	hour	1.250	1.250	1.250	
			per hour					
			Tipper					
			For transportation to dumping	3				
			yard considering lead @ 1 km					
			(i) 18 cum capacity	t.km	1.875			
			(ii) 14 cum capacity	t.km		1.875		
			(iii) 10 cum capacity	t.km			1.875	
			Loading & unloading charges					
			for disposed of material	011100	1 250			
			(i) Using by 14 cum capacity Tipper & 2.1	cum	1.250			
			Cum capacity Loader					
			(ii) Using by 14 cum	cum		1.250		
			capacity Tipper & 2.1					
			Cum capacity Loader					
			(iii) Using by 10 cum	cum			1.250	
			capacity Tipper & 1 Cum capacity Loader					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b))
		-	Contractor's profit					
		d)	Contractor 3 profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	C)
		•	t for 1.25 cum = a+b+c+d		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
		Cost			@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
2.04	В	Cost Rate	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
2.04	В	Rate Pre-	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
2.04	В	Pre- cond	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	с)
2.04	В	Pre- cond	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	с)
2.04	В	Pre- con- Unit	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum	day	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	с)
2.04	В	Pre- con- Unit	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour	day day				с)
2.04	В	Pre- con- Unit	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate	-	0.048	0.048	0.048	с)
2.04	В	Pre- con- Unit	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading	day	0.048 1.210	0.048 1.210	0.048 1.210	с)
2.04	В	Pre- con- Unit	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and	-	0.048	0.048	0.048	с)
2.04	В	Pre- con- Unit	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading	day	0.048 1.210 0.333	0.048 1.210 0.333	0.048 1.210 0.333	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith	day	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith Machinery	day	0.048 1.210 0.333	0.048 1.210 0.333	0.048 1.210 0.333	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith Machinery Air Compressor 250 cfm Pneumatic breaker @ 1 cum	day day hour	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith Machinery Air Compressor 250 cfm Pneumatic breaker @ 1 cum per hour	day day hour hour	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith Machinery Air Compressor 250 cfm Pneumatic breaker @ 1 cum per hour Tipper For transportation to dumping	day day hour hour	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625 1.250	0.048 1.210 0.333 0.625	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith Machinery Air Compressor 250 cfm Pneumatic breaker @ 1 cum per hour Tipper For transportation to dumping yard considering lead @ 1 km	day day hour hour	0.048 1.210 0.333 0.625 1.250	0.048 1.210 0.333 0.625	0.048 1.210 0.333 0.625	с)
2.04	В	Pre- cond Unit Taki a)	t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25 estressed / reinforced cement crete grade M-20 & above t = Cum ing output = 1.25 cum Labour Mate Mazdoor with Pneumatic breaker and for loading and unloading Blacksmith Machinery Air Compressor 250 cfm Pneumatic breaker @ 1 cum per hour Tipper For transportation to dumping yard considering lead @ 1 km (i) 18 cum capacity	day hour hour	0.048 1.210 0.333 0.625 1.250	0.048 1.210 0.333 0.625 1.250	0.048 1.210 0.333 0.625	с)

Cr No	Pof to M	Docerintic	110:4	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		(i) Using by 14 cum capacity Tipper & 2.1 Cum	cum	1.250			
		capacity Loader (ii) Using by 14 cum capacity Tipper & 2.1	cum		1.250		
		Cum capacity Loader (iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			1.250	
		c) Overhead charges d) Contractor's profit Cost for 1.25 cum = a+b+c+d Rate per cum = (a+b+c+d)/ 1.25		@ on (a+b) @ on (a+b+c	@ on (a+b)) @ on (a+b+c)	@ on (a+b @ on (a+b+	-
2.04	(ii)	Dismantling Brick / Tile work By Manual Means					
	Α	In lime mortar					
		a) Labour					
		Mate	day	0.027	0.027	0.027	
		Mazdoor for dismantling, loading and unloading	day	0.665	0.665	0.665	
		b) Machinery	h	0.257	0.357	0.257	
		Tractor-trolley	hour	0.257 @ on (a+b)	0.257 @ on (a+b)	0.257 @ on (a+b)	١
		c) Overhead charges) @ on (a+b+c)	-	
		d) Contractor's profit Cost for 1.25 cum = a+b+c+d		@ on (a bic	, w on (arbic)	w on (arb)	۷,
		Rate per cum = $(a+b+c+d)/1.25$					
2.04	В	In cement mortar					
		a) Labour					
		Mate	day	0.040	0.040	0.040	
		Mazdoor for dismantling, loading and unloading	day	0.998	0.998	0.998	
		b) Machinery			0.057		
		Tractor-trolley	hour		0.257	0.257	
		c) Overhead charges		@ on (a+b)		@ on (a+b)	-
		d) Contractor's profit Cost for 1.25 cum = a+b+c+d		@ on (a+b+c)	@ on (a+b+	cj
		Rate per cum = (a+b+c+d)/ 1.25					
2.04	С	In mud mortar					
		a) Labour		0.004	0.004	0.004	
		Mate	day	0.021	0.021	0.021	
		Mazdoor for dismantling and loading	day	0.532	0.532	0.532	
		b) Machinery	hour	0.257	0.257	0.257	
		Tractor-trolley	hour		0.257	0.257	`
		c) Overhead chargesd) Contractor's profit		@ on (a+b)	@ on (a+b)) @ on (a+b+c)	@ on (a+b)	
		Cost for 1.25 cum = a+b+c+d		ש טוו פידט+ני	, שי טוו (מדטדנ)	+עדש) ווט ש	٠,
		Rate per cum = $(a+b+c+d)/1.25$					
		nate per cuiti - (atutctu)/ 1.25					

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category	Rate
SI NO	Kei. to ivi	Description	Oilit	Large	Medium	Small	(Rs.)
2.04	D	Dry brick pitching or brick soling	,				
2.04	D	a) Labour	•				
		Mate	day	0.019	0.019	0.019	
		Mazdoor for Dismantling,	day	0.466	0.466	0.466	
		loading and unloading	auy	0.400	0.400	0.400	
		b) Machinery					
		Tractor-trolley	hour	0.257	0.257	0.257	
		c) Overhead charges		@ on (a+b)		@ on (a+b)	
		d) Contractor's profit			c) @ on (a+b+c)		
		Cost for 1.25 cum = a+b+c+d		•			•
		Rate per cum = (a+b+c+d)/ 1.25					
2.04	(iii)	Dismantling Stone Masonry					
	ì	By Manual Means					
	Α	Rubble stone masonry in lim	ne				
		mortar					
		a) Labour					
		Mate	day	0.032	0.032	0.032	
		Mazdoor for dismantling,	day	0.798	0.798	0.798	
		loading and unloading.					
		b) Machinery					
		Tractor-trolley	hour	0.257	0.257	0.257	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c	:) @ on (a+b+c)	@ on (a+b+c	:)
		Cost for 1.25 cum = $a+b+c+d$					
		Rate per cum = $(a+b+c+d)/1.25$					
2.04	В	Rubble stone masonry in ceme	nt				
		mortar.					
		a) Labour					
		Mate	day	0.040	0.040	0.040	
		Mazdoor for dismantling,	day	0.998	0.998	0.998	
		loading and unloading.					
		b) Machinery					
		Tractor-trolley	hour		0.257	0.257	
		c) Overhead charges		@ on (a+b)		@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c	:) @ on (a+b+c)	@ on (a+b+c	:)
		Cost for 1.25 cum = $a+b+c+d$					
		Rate per cum = (a+b+c+d)/ 1.25					
2.04	С	Rubble Stone Masonry in mu	ıd				
		mortar.					
		a) Labour					
		Mate	day	0.027	0.027	0.027	
		Mazdoor for dismantling,	day	0.665	0.665	0.665	
		loading and unloading.					
		b) Machinery			0.057		
		Tractor-trolley	hour		0.257	0.257	
		c) Overhead charges		@ on (a+b)		@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c	:) @ on (a+b+c)	യ on (a+b+c)
		Cost for 1.25 cum = $a+b+c+d$					
		Rate per cum = $(a+b+c+d)/1.25$					

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category	Rate
31 140	Kei. to ivi	Description	Onit	Large	Medium	Small	(Rs.
2.04	D	Dry rubble masonry					
		 a) Labour Mate Mazdoor for dismantling, loading and unloading. b) Machinery 	day day	0.024 0.599	0.024 0.599	0.024 0.599	
		Tractor-trolley c) Overhead charges	hour	0.257 @ on (a+b)	0.257 @ on (a+b)	0.257 @ on (a+b)	١
		d) Contractor's profit Cost for 1.25 cum = a+b+c+d Rate per cum = (a+b+c+d)/ 1.25		@ on (a+b+c)) @ on (a+b+c) @ on (a+b+o	c)
2.04	E	Dismantling stone pitching/ dry stone spalls.	1				
		 a) Labour Mate Mazdoor for dismantling, loading and unloading. b) Machinery 	day day	0.021 0.532	0.021 0.532	0.021 0.532	
		Tractor-trolley c) Overhead charges	hour	0.257 @ on (a+b)	0.257 @ on (a+b)	0.257 @ on (a+b)	١
		d) Contractor's profit Cost for 1.25 cum = a+b+c+d Rate per cum = (a+b+c+d)/ 1.25		@ on (a+b+c)) @ on (a+b+c) @ on (a+b+	c)
2.04	F	Dismantling boulders laid in wire crates including opening of crates and stacking dismantled materials. a) Labour					
		Mate Mazdoor for dismantling, loading and unloading b) Machinery	day day	0.027 0.665	0.027 0.665	0.027 0.665	
		Tractor-trolley c) Overhead charges	hour	0.257 @ on (a+b)	0.257 @ on (a+b)	0.257 @ on (a+b)	1
		d) Contractor's profit Cost for 1.25 cum = a+b+c+d Rate per cum = (a+b+c+d)/ 1.25		@ on (a+b+c)) @ on (a+b+c) @ on (a+b+o	c)
2.04	II A	By Mechanical Means Dismantling Brick / Tile work, rubble masonry/ pitching/ et by mechanical means Unit = cum Taking output = 20 cum a) Labour					
		Mate Mazdoor	day day	0.011 0.266	0.011 0.266	0.011 0.266	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
31 110	Kei. to ivi		Description	Onit	Large	Medium	Small	(Rs.)
		b)	Machinery Hydraulic Excavator					
			(ii) 1.2 cum bucket capacity (iii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity	hour hour hour	0.623	0.718	1.003	
			Tipper For transportation to dumping yard considering lead @ 1km					
			(i) 18 cum capacity(ii) 14 cum capacity(iii) 10 cum capacityLoading & unloading time	t.km t.km t.km	30.000	30.000	30.000	
			(i) 18 cum capacity (ii) 14 cum capacity	hour hour	0.623	0.718		
		c) d)	(iii) 10 cum capacity Overhead charges Contractor's profit	hour	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	1.003 @ on (a+b) @ on (a+b+c	
2.04	(iv)	fixe heig Uni	od Work wrought framed and d in frames of trusses upto a ght of 5 m above plinth level t = Cum ing output = 1.25 Cum					
		a)	Labour					
			Mate	day	0.080	0.080	0.080	
			Carpenter	day	0.665	0.665	0.665	
		b)	Mazdoor for dismantling, loading and unloading. Machinery	day	1.330	1.330	1.330	
		ω,	Tractor-trolley	hour	0.257	0.257	0.257	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			Contractor's profit t for 1.25 cum = a+b+c+d e per cum = (a+b+c+d)/ 1.25		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	c)
2.04	(v)	upt leve	el Work in all types of sections o a height of 5 m above plinth el excluding cutting of rivet. t = tonne					
	Α	Incl	ing output = 1 tonne uding dismembering					
		a)	Labour Mate	day	0.186	0.186	0.186	
			Blacksmith	day	1.330	1.330	1.330	
			Mazdoor for dismantling, loading and unloading	day	3.325	3.325	3.325	
		Add	l 2.5 Percent of cost of labour					
		for b)	gas cutting, ropes, pulleys etc. Machinery					

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category	Rate
Sr NO	Ket. to IVI	Description	Unit	Large	Medium	Small	(Rs.
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit			اره اله اله اله اله اله اله اله اله اله ال		
		Rate per tonne = a+b+c+d		e on (a.s.c)	, @ on (a . 5 . c)	@ 011 (u . b . c	••
2.04	В	Excluding dismembering.					
		a) Labour					
		Mate	day	0.133	0.133	0.133	
		Mazdoor for dismantling,	day	2.660	2.660	2.660	
		loading and unloading					
		Blacksmith	day	0.665	0.665	0.665	
		Add 2.5 Percent of cost of					
		labour for gas cutting, ropes,					
		pulleys etc.					
		b) Machinery					
		Tractor-trolley	hour	0.123	0.123	0.123	
		c) Overhead charges		@ on (a+b)		@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	·)
		Rate per tonne = a+b+c+d					
2.04		Extra over item No (v) A and (v) B					
		for cutting rivets. Unit = each					
		Taking output = 10 rivets					
		a) Labour					
		Mate	day	0.014	0.014	0.014	
		Blacksmith	day	0.173	0.173	0.173	
		Mazdoor	day	0.173	0.173	0.173	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Cost for 10 rivets = a+b+c					
		Rate for each rivet = (a+b+c)/10					
2.04	(vi)	Scraping of Bricks Dismantled					
		from Brick Work including					
		Stacking.					
		Unit = numbers Taking output = 1000 numbers					
	Α	In lime/Cement mortar					
		a) Labour					
		Mate	day	0.186	0.186	0.186	
		Mazdoor	day	4.655	4.655	4.655	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per 1000 Nos = a+b+c					
2.04	В	In mud mortar					
		a) Labour					
		Mate	day	0.067	0.067	0.067	
		Mazdoor	day	1.663	1.663	1.663	
		b) Overhead charges	1	@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per 1000 Nos = a+b+c		_ , ,	_ , , ,	- , , ,	
		per a.a.					

Sr No	Ref. to M	Description	Unit		as per project		Rate (Rs.)
				Large	Medium	Small	(NS.)
2.04	(vii)	Scraping of Stone from					
		Dismantled Stone Masonry					
		Unit = Cum					
	_	Taking output	= 1	cum			
	Α	In cement and lime mortar					
		a) Labour	-1	0.074	0.074	0.074	
		Mate	day	0.074 1.862	0.074 1.862	0.074 1.862	
		Mazdoor b) Overhead charges	day	0 on (a)	0 on (a)	21.802 @ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per cum = a+b+c		e on (a.b)	e on (a · b)	@ On (a . b)	
2.04	В	In Mud mortar					
		a) Labour					
		Mate	day	0.016	0.016	0.016	
		Mazdoor	day	0.399	0.399	0.399	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per cum = a+b+c					
2.04	(viii)	Scarping Plaster in Lime or					
		Cement Mortar from Brick/ Stor	ie				
		Masonry					
		Unit = sqm					
		Taking output = 100 sqm a) Labour					
		Mate	day	0.213	0.213	0.213	
		Mazdoor for scarping and	day	5.320	5.320	5.320	
		loading	auy	3.320	3.320	3.320	
		b) Machinery Tractor-trolley	hour	0.308	0.308	0.308	
		c) Overhead charges	hour		@ on (a+b)		
		d) Contractor's profit			@ on (a+b+c)		
		Cost for 100 sqm = a+b+c+d		@ 011 (a . 5 . c)	e on (a.s.c)	e on (a.b.c	•,
		Rate per sqm = (a+b+c+d)/100					
2.04	(ix)	Removing all type of Hume Pipe	es				
		and Stacking within a lead	of				
		1000 metres including Earthwo					
		and Dismantling of Mason	ry				
	•	Works.					
	Α	Up to 600 mm dia Unit = metre					
		Taking output = 15 metre					
		a) Labour					
		Mate	day	0.112	0.126	0.140	
		Mazdoor	day	2.799	3.145	3.512	
		b) Machinery	uuy	, 55	3.1.13	3.312	
		Hydraulic Excavator					
		(i) 1.2 cum bucket capacity	hour	2.209			
		(ii) 1.1 cum bucket capacity	hour		2.729		

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Ra
Sr NO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs
		c) d) Rate	Tipper For loading & Unloading Time & For transportation of excess material to dumping yard considering lead @ 1km (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity Overhead charges Contractor's profit e for 15 metre = a+b+c+d	hour hour hour	2.259 @ on (a+b) @ on (a+b+c)	2.779 @ on (a+b) @ on (a+b+c)	3.331 @ on (a+b) @ on (a+b+	
		Rate	e per metre = (a+b+c+d)/15					
	В	Unit Taki	ve 600 mm to 900 mm dia = metre ng output = 15 metre Labour Mate	day	0.125	0.139	0.154	
			Mazdoor	day	3.132	3.477	3.845	
		b)	Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity	hour	2.709			
			(iii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper for Loading & unloading For loading & Unloading Time & For transportation of excess material to dumping	hour	2.709	3.229	3.781	
			yard considering lead @ 1km (i) 18 cum capacity	hour	2.759			
			(ii) 14 cum capacity (iii) 10 cum capacity	hour hour		3.279	3.831	
			Overhead charges Contractor's profit for 15 metre = a+b+c+d per metre = (a+b+c+d)/15		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+	
	С		ve 900 mm := metre					
			ng output =15 metre					
		a)	Labour					
			Mate	day	0.139	0.152	0.180	
			Mazdoor	day	3.464	3.810	4.510	
		b)	Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity	hour	3.209			
			(ii) 1.1 cum bucket capacity	hour	3.203	3.729		
			(iii) 0.9 cum bucket capacity Tipper for Loading & unloading	hour			4.781	

Cu Ni	Dof to M	Description	Llm!t	Quantity as per project cat		category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	Note	For loading & Unloading Time & For transportation o excess material to dumping yard considering lead @ 1km (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity c) Overhead charges d) Contractor's profit Rate for 15 metre = a+b+c+d Rate per metre = (a+b+c+d)/15 1. The excavation of earth, dism protectionworks is not includ 2. Credit for retrieved stone from	n hour hour hour	of stone masor h is to be meas	ured and paid	d walls and separately.	c)
2.05	202	Dismantling of Flexible	iii iiiaso	in y work may k	re taken as per	actual availar	,,,,cy.
2.03	202	Pavements					
		Dismantling of flexible pavement and disposal of dismantle materials up to a lead of 100 metres, stacking serviceable an unserviceable material separately Unit = Cum	d 0 d				
		Taking output = 1 cum					
	(i)	By Manual Means					
	Α	Bituminous courses					
		a) Labour					
		Mate	day	0.080	0.080	0.080	
		Mazdoor for dismantling, loading and unloading	day	1.995	1.995	1.995	
		b) Machinery	la	0.467	0.467	0.467	
		Tractor-trolley	hour	0.167	0.167	0.167	
		c) Overhead charges		@ on (a+b)	on (a+b)	@ on (a+b)	
		d) Contractor's profit Rate per cum = a+b+c+d		ש טוו (מדטדט) @ on (a+b+c	e on (a+b+c	-)
		nate per cam - arbitera					
2.05	В	Granular courses					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor for dismantling, loading and unloading.	day	1.330	1.330	1.330	
		b) Machinery					
		Tractor-trolley	hour		0.167	0.167	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b))
		d) Contractor's profit		@ on (a+b+c) @ on (a+b+c) @ on (a+b+c	:)
		Rate per cum = a+b+c+d					

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
31 140	Nei. to Wi		Description	Oiiit	Large	Medium	Small	(Rs
2.05		Diam	pantling of flouible navements					
2.05		and	nantling of flexible pavements disposal of dismantled					
			erials up to a lead of 1000					
			res, stacking serviceable and					
			erviceable materials					
			rately					
	(ii)	-	Mechanical Means					
	Α	-	minous courses					
			= Cum					
			ng output = 20 cum					
		a)	Labour					
		u,	Mate	day	0.031	0.035	0.044	
			Mazdoor for dismantling,	day	0.782	0.887	1.108	
			loading and unloading	aay	0.702	0.007	1.100	
		b)	Machinery					
		υ,	Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	2.353			
			considering output 85	noui	2.333			
			sqm/8.5 cum per hour					
			(ii) 1.1 cum bucket capacity	hour		2.667		
			considering output 75					
			sqm/7.5 cum per hour					
			(iii) 0.9 cum bucket	hour			3.333	
			capacity considering					
			output 60 sqm/6 cum					
			per hour					
			Tipper for transportation					
			(i) 18 cum capacity	t.km	46.000	46.000		
			(ii) 14 cum capacity	t.km		46.000	46.000	
		۵)	(iii) 10 cum capacity	t.km	@ on (oub)	@ on (oub)	46.000	
		c) d)	Overhead charges Contractor's profit		@ on (a+b)	@ on (a+b) (@ on (a+b+c)	@ on (a+b)	
		•	for 20 metre = a+b+c+d		@ On (a+b+c)	i @ Oii (a+b+c)	w on (a-b-c)	,
			per metre = (a+b+c+d)/20					
	В	Gran	nular courses					
	ь		= Cum					
		0						
		Taki	ng outbut = 250 cum					
			ng output = 250 cum					
			Labour	dav	0.045	0.052	0.073	
			Labour Mate	day	0.045	0.052	0.073	
			Labour Mate Mazdoor for dismantling,	day day	0.045 1.137	0.052 1.310	0.073 1.831	
		a)	Labour Mate Mazdoor for dismantling, loading and unloading	-				
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery	-				
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator	day	1.137			
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity	day		1.310		
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity	day hour hour	1.137		1.831	
		a)	Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity	day	1.137	1.310		
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity	hour hour hour	1.137 3.420	1.310	1.831	
		a)	Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity	day hour hour	1.137	1.310	1.831	
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity	hour hour hour	1.137 3.420	1.310	1.831	
		a)	Labour Mate Mazdoor for dismantling, loading and unloading Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity Tipper for transportation (i) 18 cum capacity	hour hour hour	1.137 3.420	1.310 3.938	1.831	

Quantity as per project category

Rate

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Kate
JI 140	1/E1. (U IVI		Description	Jill	Large	Medium	Small	(Rs.)
			Contractor's profit e for 250 metre = a+b+c+d e per metre = (a+b+c+d)/250		@ on (a+b+c)	@ on (a+b+c)) @ on (a+b+	c)
2.06	202	Dis	mantling of Cement Concrete	<u>:</u>				
		Pav	rement					
			mantling of cement concrete					
		-	rement by mechanical means					
			ng pneumatic tools, breaking					
		-	pieces not exceeding 0.02 cum					
			volume and stock piling at					
			ignated locations and disposal dismantled materials up to a					
			d of 1000 metres, stacking					
			viceable and unserviceable					
			terials separately					
			t = cum					
		Tak	ing output = 60 cum					
		a)	Labour					
			Mate	day	0.160	0.160	0.160	
			Mazdoor	day	3.990	3.990	3.990	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	7.818	0.400		
			(ii) 1.1 cum bucket capacity	hour		9.198	10.424	
			(iii) 0.9 cum bucket capacity Jack Hammer	hour hour	7.818	10.452	13.899	
			Air Compressor 250 cfm	hour	2.880	2.880	2.880	
			with 2 leads of pneumatic	nou.	2.000	2.000	2.000	
			breaker @ 1 cum per hour					
			Pneumatic breaker	hour	5.760	5.760	5.760	
			Concrete Joint Cutting	hour	8.000	8.000	8.000	
			Machine					
			Tipper					
			For transportation to					
			dumping yard considering					
			lead @ 1km	+ 1,000	190 000			
			(i) 18 cum capacity	t.km t.km	180.000	100 000		
			(ii) 14 cum capacity	t.km		180.000	180.000	
			(iii) 10 cum capacity	t.KIII			180.000	
			For Loading & unloading charges for disposed of					
			grabbed material					
			(i) Using by 14 cum	cum	72.000			
			capacity Tipper & 2.1					
			Cum capacity Loader			_		
			(ii) Using by 14 cum capacity Tipper & 2.1	cum		72.000		
			Cum capacity Loader	G: -:			72.000	
			(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			72.000	
		_						
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b))

Sr No	Ref. to M	Description	Unit	Quantity as per project cat		category	Ra
31 140	iver. to ivi	Description	Oilit	Large	Medium	Small	(R
						_ , ,	
		d) Contractor's profit Cost for 60 cum = a+b+c+d		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	C)
		Rate per cum = $(a+b+c+d)/60$					
		Rate per cuiti – (a+b+c+u)/ oo					
2.07	202	Dismantling of Guard Rails					
		Dismantling guard rails by manua					
		means and disposal of dismantled					
		material with all lifts and up to a					
		lead of 1000 metres, stacking	_				
		serviceable materials and					
		unserviceable material	S				
		separately.					
		Unit = running metre Taking output = 1 metre					
		a) Labour					
		Mate	day	0.008	0.008	0.008	
		Mazdoor including loading	day	0.200	0.200	0.200	
		and unloading	aay	0.200	0.200	0.200	
		b) Machinery					
		Tractor-trolley	hour	0.006	0.006	0.006	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b))
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	c)
		Rate per metre = a+b+c+d					
2.08	202	Dismantling of Kerb Stone Dismantling kerb stone by manua					
		means and disposal of dismantled material with all lifts and up to a lead of 1000 metre					
		Unit = running metre					
		Taking output = 10 metre					
		a) Labour					
		, Mate	day	0.008	0.008	0.008	
		Mazdoor including loading	day	0.200	0.200	0.200	
		and unloading	,				
		b) Machinery	hour	0.120	0.120	0.120	
		Tractor-trolley	nour	0.139	0.139	0.139	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+	C)
		Cost for 10 m = $a+b+c+d$					
		Rate per metre = (a+b+c+d)/10					
2.09	202	Dismantling of Kerb Stone Channel					
		Dismantling kerb stone channe					
		by manual means and disposal o					
		dismantled material with all lift	S				
		and up to a lead of 1000 metre					
		Unit = running metre					
		Taking output = 10 metre					
		a) Labour					
		Mate	day	0.012	0.012	0.012	
		Mazdoor including loading	day	0.299	0.299	0.299	

Sr No	Ref. to M	Des	cription U	nit	Quantity	as per project	category	Rate
31 140	Nei. to Wi	Des	cription		Large	Medium	Small	(Rs.)
		and unloa b) Machinery Tractor-tro c) Overhead d) Contractor	nolley ho charges	our	0.170 @ on (a+b) @ on (a+b+c)	0.170 @ on (a+b) @ on (a+b+c)	0.170 @ on (a+b) @ on (a+b+c)	•
		Cost for 10 m =	= = = = = = = = = = = = = = = = = = =		e on (a.b.c)	e on (a.s.c)	@ on (a.b.c)	,
			= (a+b+c+d)/10					
2.10	202	Dismantling of including cut foundation a dismantled ma	Kilometre Stone f kilometre stone cting of earth, nd disposal of terial with all lifts 1000 m and back					
		Unit = Each						
			one KM stone					
	Α	5th KM stone	nent concrete =					
		0.392 cum	ient concrete –					
		a) Labour						
		Mate	da	ay	0.040	0.040	0.040	
		Mazdoor	da	ay	0.998	0.998	0.998	
		b) Machinery	1					
		Tractor-tro		our	0.150	0.150	0.150	
		c) Overhead	=		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contracto	r's profit h KM stone = a+b+c+d	ı	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
				ı				
	В	0.269 cum	c one nent concrete =					
		a) Labour			0.027	0.027	0.027	
		Mate Mazdoor		ay ay	0.027 0.665	0.027 0.665	0.027 0.665	
		b) Machinery		ау	0.003	0.003	0.003	
		Tractor-tro		our	0.100	0.100	0.100	
		c) Overhead	·		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contracto	r's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		Rate for one or	dinary KM stone = a+b	o+c+	d			
	С	•	one nent concrete =					
		0.048 cum						
		a) Labour Mate	d:	ay	0.005	0.005	0.005	
		Mazdoor		ay ay	0.003	0.003	0.133	
		b) Machinery		ω,	0.133	0.133	0.133	
		Tractor-tro		our	0.020	0.020	0.020	
		c) Overhead	·		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contracto			@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		Rate for one He	ectometre stone = a+b	+C+(d			

Sr No	Ref. to M	Description	Unit	Unit Quantity as per pr		ject category	
31 110	Rei. to W	Description	Offic	Large	Medium	Small	(Rs
2.11	202	Dismantling of Fencing					
		Dismantling of barb fencing/ wire mesh					
		G,	fencing oundation				
		concrete, back filling					
		manual means including	•				
		of dismantled material	with all				
		lifts and up to a lead					
		•	erviceable erviceable				
		material separately.	erviceable				
		Unit = running metre					
		Taking output = 30 metr	es				
		a) Labour					
		Mate	day	0.160	0.160	0.160	
		Mazdoor including		3.990	3.990	3.990	
		and unloading	,				
		Blacksmith	day	0.998	0.998	0.998	
		b) Machinery					
		Tractor-trolley	hour	0.150	0.150	0.150	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	:)
		Cost for 30 metres = a+b	+c+d				
		Rate per metre = (a+b+c	+d)/30				
2.12	202	Dismantling of CI Water	Pipe Line				
		Dismantling of CI water	pipe line				
		600 mm dia including	•				
		with all lifts and lead u	•				
		metres and stacking of some	erviceable erviceable				
		material separately	under				
		• • • • • • • • • • • • • • • • • • • •	concerned				
		department					
		Unit = running metre					
		Taking output = 10 metr	es				
		a) Labour					
		Mate	day	0.106	0.106	0.106	
		Mazdoor	day	2.660	2.660	2.660	
		Plumber	day	0.333	0.333	0.333	
		b) Machinery					
		Truck 10 tonne capa	· ·	0.250	0.250	0.250	
		Light Crane 3 tonne	capacity hour	0.500	0.500	0.500	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	:)
		Cost for 10 metres = a+b					
		Rate per metre = (a+b+c	+d)/10				

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

C:: No	D-6 +- M	D	I I mile	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

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 concerned department including disposal with all lifts and up to a lead of 1000 metres and stacking of serviceable and unserviceable material separately but excluding earth excavation and dismantling of masonry works.

Unit = running metre

Taking output = 10 metres

a)	Labour				
	Mate	day	0.133	0.133	0.133
	Mazdoor	day	3.325	3.325	3.325
b)	Machinery				
	Crane 5 tonne capacity	hour	0.300	0.300	0.300

Truck flat body 10 tonne hour 1.000 1.000 1.000 Overhead charges @ on (a+b) @ on (a+b) @ on (a+b) c) Contractor's profit @ on (a+b+c) @ on (a+b+c) @ on (a+b+c)

0.638 13.300 2.660

1.500

Cost for 10 metres = a+b+c+d

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

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

Unit = each

a) Labour

Taking output = 30 Nos

•				
	Mate	day	0.638	0.638
	Mazdoor	day	13.300	13.300
	Electrician/Lineman	day	2.660	2.660
b)	Machinery			
	Tractor-trolley	hour	1.500	1.500
-1	Overtheed above		@ / h\	@ /- · I

@ on (a+b) @ on (a+b) c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) @ on (a+b+c) @ on (a+b+c)

Cost for 30 poles = a+b+c+d

Rate per pole = (a+b+c+d)/30

All the serviceable material resulting from removal of Telephone / Electric Poles and Lines would be handed over to the employer.

Note:

CHAPTER - 3

EARTHWORK, EROSION CONTROL AND DRAINAGE

PREAMBLES:

- 1 The rates have been analyzed using mechanical means. Manual means for certain items have also been provided which can be used for areas inaccessible to machines and for small jobs.
- 2 In the rate analyses of earthwork, only compacted volume of earth has been considered.
- 3 Rates have been analyzed for average working conditions.
- 4 Average achievable outputs of machines have been considered taking into account job and management factors.
- A water tanker of 6, 12, & 16 KL capacity which is commonly used at construction sites has been considered.
- 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-kilometer.
- 7 The replacement of unsuitable soil by suitable soil shall be included separately in the estimate. The rate analyses 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.
- 9 For narrow and restricted areas, plate compactor has been proposed for compaction to achieve the desired density.
- For small jobs where loading and unloading is required to be done manually, tractor trolley has been proposed for carriage instead of a tipper.
- In case excavated rock is found suitable for incorporation in works, suitable credit for the available rock shall be given.
- 12 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.
- In case of hill roads, the cut earth can be pushed down the valley in case there is no objection. In that case, cost of disposal is not required to be provided.
- 'L2' (Lead for Earthwork borrow area to site) in the analysis represents lead in km one way. This will vary from project to project and is required to be ascertained at site at the time of estimation.
- For inhabited areas, controlled blasting with limited charges of explosives has been provided. This involves smaller drill holes and additional requirement of electric detonators. Provision has accordingly been made
- Any work involved for water courses at culverts (Clause 312) will be priced under respective items like excavation, grubbing, clearing etc. for which rate analyses have separately been made.
- 17 Earth excavated from drains can be used in roadway berms. Hence, carriage for disposal of same is not provided.
- In rate analysis of some items, the quantities of sub-items involved in that analyses, like, excavation for foundation, foundation concrete, painting, lettering etc. has been given. The rates for such item shall be taken from relevant chapters where the same have already been analyzed.

CHAPTER - 3

EARTHWORK, EROSION CONTROL AND DRAINAGE

- 19 In case of rock fill embankment, it is assumed that material is available at site from rock cutting.
- 20 5 kilometer lead has been considered for rock fill embankment from roadway excavation.
- 21 The item of preparation and surface treatment of formation (Clause 310) is required to be added in the cost estimate only if there is substantial time lag between completion of sub-grade and lying of sub-base. As this item is incidental to works, it is not required to be included in BOQ.
- 22 Excavation for structures beyond the depth of 3 m has been included in Chapter-12.

CHAPTER: 3- EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr	56. 14		Description	Unit	Quantity	as per project	category	Rate			
No	Ref. to M		Description		Large	Medium	Small	(Rs.			
3.01	301	Exc	cavation in Soil by Manual Means.								
			cavation for roadway in soil using								
			nual means including loading in truck								
			carrying of cut earth to embankmen								
			e with all lifts and lead upto1000)							
			tres.								
			Unit = Cum								
		Tal	king output = 120 cum								
		a)	Labour								
			Mate	day	2.394	2.394	2.394				
			Mazdoor	day	59.850	59.850	59.850				
		b)	Machinery								
			Truck 5.5 cum capacity	hour	9.236	9.236	9.236				
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)				
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)			
		Cos	st of 120 cum = a+b+c+d								
		Rat	te per cum = (a+b+c+d)/120								

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.

3.02 301 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

_	. (420				
d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
	Truck 5.5 cum capacity	hour	9.236	9.236	9.236
b)	Machinery				
	Mazdoor	day	93.100	93.100	93.100
	Mate	day	3.724	3.724	3.724
a)	Labour				
	•				

Cost for 120 cum = a+b+c+d

Rate per cum = (a+b+c+d)/120

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.

3.03 301 Excavation in Soil with Dozer with lead upto 1000 metres

Excavation for road way in soil by mechanical means including cutting and transporting the earth to site of embankment/dumping area with lead upto 1000 metres, including trimming bottom and side slopes in accordance with

requirements of lines, grades and cross sections.

CHAPTER: 3- EARTH WORK, EROSION CONTROL AND DRAINAGE

	Ref. to M	Description	Unit	Quantity as per project category		
No			Oiiit	Large	Medium	Small
		Unit = Cum				
		Taking output = 500 cum				
		a) Labour		0.050	0.050	0.050
		Mate	day	0.053	0.053	0.053
		Mazdoor	day	1.330	1.330	1.330
		b) Machinery				
		Dozer				
		Dozer (240HP)	hour	4.717		
		Dozer (175 HP)	hour		6.693	
		Dozer (90 HP)	hour			10.870
		Tipper				
		(i) 14 cum capacity	t.km	800.000		
		(ii) 14 cum capacity	t.km		800.000	
		(iii) 10 cum capacity	t.km			800.000
		Loading & unloading charges				
		(i) Using by 14 cum capacity Tipper &2.1 Cum capacity Loader	cum	500.000		
		(ii) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum		500.000	
		(iii) Using by 10 cum capacity Tipper 8 1 Cum capacity Loader	& cum			500.000
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		Cost for 500 cum = a+b+c+d				
		Rate per cum = $(a+b+c+d)/500$				
3.04	301	Excavation in Ordinary Rock with Doze	er			
		with lead upto 1000 metres				
		Excavation for roadway in ordinary roo	k			
		by deploying a dozer, including cuttin	g			
		and transporting the earth to site of	of			
		embankment/dumping area with lea				
		upto 1000 metres, trimming bottom an				
		side slopes in accordance with th				
		requirements of lines, grades and cros	S			
		sections.				
		Unit = cum				
		Unit = cum Taking output = 300 cum				
		Unit = cum Taking output = 300 cum a) Labour		0.055	0.055	0.055
		Unit = cum Taking output = 300 cum a) Labour Mate	day	0.053	0.053	0.053
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor	day day	0.053 1.330	0.053 1.330	0.053 1.330
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery	-			
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer	day	1.330		
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP)	day		1.330	
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP) Dozer (175 HP)	day hour hour	1.330		1.330
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP) Dozer (175 HP) Dozer (90 HP)	day	1.330	1.330	
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP) Dozer (175 HP) Dozer (90 HP) Tipper	day hour hour	1.330	1.330	1.330
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP) Dozer (175 HP) Dozer (90 HP)	day hour hour	1.330	1.330	1.330
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP) Dozer (175 HP) Dozer (90 HP) Tipper For transportation considering lead @ 1km	hour hour hour	1.330	1.330	1.330
		Unit = cum Taking output = 300 cum a) Labour Mate Mazdoor b) Machinery Dozer Dozer (240HP) Dozer (175 HP) Dozer (90 HP) Tipper For transportation considering lead	day hour hour	1.330 5.882	1.330	1.330

Sr	Ref. to M	Description	Unit	Quantity	as per project	category	R
No	itel. to ivi	Description	Oilit	Large	Medium	Small	(F
		For Loading & unloading charges		260.000			
		(i) Using by 14 cum capacity Tipper	cum	360.000			
		& 2.1 Cum capacity Loader (ii) Using by 14 cum capacity Tipper	cum		360.000		
		& 2.1 Cum capacity Loader	Culli		300.000		
		(iii) Using by 10 cum capacity Tipper	cum			360.000	
		& 1 Cum capacity Loader					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		Cost for 300 cum = $a+b+c+d$					
		Rate per cum = $(a+b+c+d)/300$					
05	301	Excavation in Hard Rock (requiring	<u>.</u>				
		blasting) with disposal upto 1000 metres					
		Excavation for roadway in hard rock	(
		(requiring blasting) by drilling, blasting	5				
		and breaking, trimming of bottom and	l				
		side slopes in accordance with					
		requirements of lines, grades and cross					
		sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres					
		Unit = cum	,				
		Taking output = 180 cum					
		a) Labour					
		Mate	day	0.279	0.279	0.279	
		Mazdoor	day	3.990	3.990	3.990	
		Driller	day	2.660	2.660	2.660	
		Blaster	day	0.333	0.333	0.333	
		b) Machinery					
		Air Compressor 250 cfm	hour	27.500	27.500	27.500	
		Pneumatic breaker for drilling holes	hour	55.000	55.000	55.000	
		(@ 4.5 m per hour)					
		Dozer	h a	4.225			
		Dozer (240HP) Dozer (175 HP)	hour hour	4.235	6.000		
		Dozer (175 HP)	hour		0.000	9.818	
		Tipper				3.323	
		For transportation considering lead					
		@ 1km					
		(i) 14 cum capacity	t.km	360.000			
		(ii) 14 cum capacity	t.km		360.000	260.000	
		(iii) 10 cum capacityFor loading & unloading charges	t.km			360.000	
		(i) Using by 14 cum capacity Tipper	cum	216.000			
		& 2.1 Cum capacity Loader	Cum	210.000			
		(ii) Using by 14 cum capacity Tipper	cum		216.000		
		& 2.1 Cum capacity Loader					
		(iii) Using by 10 cum capacity Tipper	cum			216.000	
		& 1 Cum capacity Loader					
		c) Materials		72.000	72.000	70.000	
		Small dia Explosive at 0.40 kg / cum	_	73.800	73.800	73.800	
		for 180 cum (180 x 0.40) Explosive at 0.20 kg / cum for secondary blast @					
		5% of the total volume (180 x 0.2x5%)					

Sr	Ref. to M	Description.		Quantity as per project category			
No	Ket. to M	Description	Unit	Large	Medium	Small	(Rs.
		Electric detonators at 1 per hole for main blast holes (21x3+20*2)=103 nos.	no	103.000	103.000	103.000	
		Ordinary detonators @ 1 per hole for 10 secondary holes (required for 5% of the total quantity @ 0.6 m per hole for 1 cum)		10.000	10.000	10.000	
		Detonating fuse coil	m	320.000	320.000	320.000	
		Credit for excavated rock found suitable for use @ 50 Percent quantity blasted	cum	90.000	90.000	90.000	
		d) Overhead charges e) Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c	

Cost for 180 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/180

Note

- 1. The quality and availability of rock shall be checked before affording credit.
- 2. In case some rock is issued to the contractor at site, the item of carriage shall be reduced/restricted to that extent.

3.06 301 Excavation in Soil using Hydraulic **Excavator and Tippers with Disposal upto** 1000 metres.

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

Unit = cum

Tak	ing output = 350 cum				
a)	Labour				
	Mate	day	0.053	0.053	0.053
	Mazdoor	day	1.330	1.330	1.330
b)	Machinery				
	Hydraulic Excavator				
	(i) 1.2 cum bucket capacity	hour	4.674		
	(ii) 1.1 cum bucket capacity	hour		5.981	
	(iii) 0.9 cum bucket capacity	hour			7.525
	Tipper				
	For transportation considering lead				
	@ 1 km				
	(i) 14 cum capacity	t.km	525.000		
	(ii) 14 cum capacity	t.km		525.000	
	(iii) 10 cum capacity	t.km			525.000
	For loading & unloading time				
	(i) 14 cum capacity	hour	4.674		
	(ii) 14 cum capacity	hour		5.981	
	(iii) 10 cum capacity	hour			7.525

Sr	- C				Quantity	as per project	category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	t for 350 cum = a+b+c+d					
		Rat	e per cum = (a+b+c+d)/350					
3.07	301	Нус	avation in Ordinary Rock using Iraulic Excavator and Tippers with posal upto 1000 metres.					
		with and and req sect emi	avation for roadwork in Ordinary Rock hydraulic excavator including cutting loading in tippers, trimming bottom side slopes, in accordance with uirements of lines, grades and cross tions, and transporting to the bankment location within all lifts and dupto 1000m					
		Uni	t = cum					
		Tak	ing output = 60 cum					
		a)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Hydraulic Excavator for Jack Hammer					
			(i) 1.2 cum bucket capacity	hour	8.312			
			(ii) 1.1 cum bucket capacity	hour		9.778		
			(iii) 0.9 cum bucket capacity	hour			10.390	
			Jack Hammer	hour	8.312	9.778	10.390	
			Tipper					
			For transportation considering lead @ 1km					
			(i) 14 cum capacity	t.km	120.000			
			(ii) 14 cum capacity	t.km		120.000		
			(iii) 10 cum capacity	t.km			120.000	
			For loading & unloading charges for disposed of grabbed material					
			(i) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum	72.000			
			(ii) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum		72.000		
			(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			72.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	t for 60 cum = a+b+c+d					
		Rat	e per cum = (a+b+c+d)/60					

Sr	D-f / D4	D		Quantit	y as per project	category	Rat
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
3.08	301	Excavation in Hard Rock (blasting prohibited) Excavation for roadwork in Hard Ro (blasting prohibited) with hydrau excavator including cutting and loading tippers, trimming bottom and side slope in accordance with requirements of line grades and cross sections, and	lic in es,				
		transporting to the embankment location within all lifts and lead upto 1000m	on				
	Α	Mechanical Method					
		Unit = cum					
		Taking output = 50 cum					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	1.330	1.330	1.330	
		b) Machinery	aay	1.330	1.550	1.550	
		Hydraulic Excavator for Jack Hammer					
		(i) 1.2 cum bucket capacity	hour	10.159			
		(ii) 1.1 cum bucket capacity	hour	10.133	11.951		
		(iii) 0.9 cum bucket capacity	hour		11.551	13.545	
		Jack Hammer	hour	10.159	11.951	13.545	
		Tipper		10.100	11.501	20.0.0	
		For transportation considering lead	ı				
		@ 1km	-				
		(i) 14 cum capacity	t.km	100.000			
		(ii) 14 cum capacity	t.km		100.000		
		(iii) 10 cum capacity	t.km			100.000	
		For loading & unloading charges for					
		disposed of grabbed material					
		(i) Using by 14 cum capacity Tippe & 2.1 Cum capacity Loader		60.000			
		(ii) Using by 14 cum capacity Tippe	er cum		60.000		
		& 2.1 Cum capacity Loader (iii) Using by 10 cum capacity Tippe	er cum			60.000	
		& 1 Cum capacity Loader	ei cuiii			00.000	
		Credit for excavated rock found suitable for use @ 50 Percent of	cum	25.000	25.000	25.000	
		excavated quantity c) Overhead charges d) Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b)) @ on (a+b+c)	@ on (a+b) @ on (a+b+c))
		Cost for 50 cum = a+b+c+d					
		Rate per cum = (a+b+c+d)/50					
.08	В	Manual Method Unit = cum					
		Taking output = 16 cum					
		a) Labour					
		Mate	day	2.181	2.181	2.181	
		Mazdoor including loading in truck	day	21.280	21.280	21.280	
		Chiseller	day	31.920	31.920	31.920	
		Blacksmith (IInd class)	day	1.330	1.330	1.330	
			,		2.000	2.000	

Sr	D-f +- N4		Description	11	Quantity as per project category			
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery					
			Tipper 5.5 cum capacity, 1 trip per hour.	hour	2.900	2.900	2.900	
			Credit for excavated rock found suitable for use @ 50 Percent of excavated	cum	8.000	8.000	8.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			Contractor's profit at for 16 cum = a+b+c+d te per cum = (a+b+c+d)/16		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

Note

- 1. Credit is considered for 50 Percent of quantity of work.
- 2. Loading for disposal will be done manually, being small quantity.
- 3. In case some rock is issued to contractor at site, the item of carriage shall be omitted to the extent of quantity issued to the contractor.

3.09 301 Excavation in Hard Rock (controlled blasting) with disposal upto 1000 metres

Excavation for roadway in hard rock (requiring blasting) by drilling, blasting and breaking, trimming of bottom and slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres

Unit = cum

Taleka

Tak	ing output = 180 cum				
a)	Labour				
	Mate	day	0.279	0.279	0.279
	Mazdoor	day	3.990	3.990	3.990
	Driller	day	2.660	2.660	2.660
	Blaster	day	0.333	0.333	0.333
b)	Machinery				
	Air Compressor 250 cfm	hour	27.500	27.500	27.500
	Pneumatic breaker for drilling holes	hour	55.000	55.000	55.000
	(@ 4.5 m per hour)				
	Dozer				
	Dozer (240HP)	hour	4.235		
	Dozer (175 HP)	hour		5.400	
	Dozer (90 HP)	hour			9.818
	Tipper				
	For transportation considering lead				
	@ 1km				
	(i) 14 cum capacity	t.km	360.000		
	(ii) 14 cum capacity	t.km		360.000	
	(iii) 10 cum capacity	t.km			360.000
	For loading & unloading charges				
	(i) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum	216.000		
	(ii) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum		216.000	

Sr	Ref. to M		Doseriation	11414	Quantity as per project category			
No	ket. to IVI		Description	Unit	Large	Medium	Small	(Rs
			(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			216.000	
		c)	Materials					
			Small dia Explosive at 0.40 kg / cum for 180 cum (180 x 0.40) Explosive at 0.20 kg / cum for secondary blast @ 5%of the total volume (180 x 0.2x5%)	kg	73.800	73.800	73.800	
			Electric detonators at 1 per hole for main blast holes (21x3+20*2)=103 nos	no	103.000	103.000	103.000	
			Ordinary detonators @ 1 per hole for 10 secondary holes(required for 5% of the total quantity @ 0.6 m per hole for I cum)	no	10.000	10.000	10.000	
			Detonating fuse coil	m	320.000	320.000	320.000	
			Credit for excavated rock found suitable for use @ 50 Percent quantity blasted Add 5 Percent of cost of a+b+c towards muffling arrangements to guard against any rock fly off during blasting	cum	90.000	90.000	90.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	:)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 180 cum = a+b+c+d+e					
		_						

Rate per cum = (a+b+c+d+e)/180

Note 1. The quality and availability of rock shall be checked before affording credit.

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

3.10 301 **Excavation in Marshy Soil using Hydraulic Excavator and Tippers with Disposal upto** 1000 metres.

Excavation for roadwork in Marshy Soil with hydraulic excavator including cutting and loading in tippers, trimming bottom and

with side slopes, in accordance requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m

Unit = cum

Taking output = 325 cum

a)	Labour				
	Mate	day	0.053	0.053	0.053
	Mazdoor	day	1.330	1.330	1.330
b)	Machinery				
	Hydraulic Excavator				
	(i) 1.2 cum bucket capacity	hour	10.126		
	(ii) 1.1 cum bucket capacity	hour		11.662	

Sr	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
No	Rei. to ivi		Description	Oilit	Large	Medium	Small	(Rs
			(iii) 0.9 cum bucket capacity Tipper	hour			16.304	
			For transportation to dumping yard considering lead @ 1km					
			(i) 14 cum capacity	t.km	487.500			
			(ii) 14 cum capacity	t.km		487.500		
			(iii) 10 cum capacity	t.km			487.500	
			For loading & unloading time					
			(i) 14 cum capacity	hour	10.126			
			(ii) 14 cum capacity	hour		11.662		
			(iii) 10 cum capacity	hour			16.304	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			st for 325 cum = a+b+c+d					
			te per cum = (a+b+c+d)/325					
3.11	301		noval of Unserviceable Soil with posal upto 1000 metres					
			moval of unserviceable soil including					
		100	avation, loading and disposal upto 00 metres lead but excluding					
			lacement by suitable soil which shall					
		be	paid separately as per clause 305.					
			it = cum					
			king output = 415 cum					
		a)	Labour	day	0.053	0.053	0.053	
			Mate	day				
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	5.677			
			(ii) 1.1 cum bucket capacity	hour		6.538		
			(iii) 0.9 cum bucket capacity	hour			9.140	
			Tipper					
			For transportation to dumping yard considering lead @ 1km					
			(i) 14 cum capacity	t.km	622.500			
			(ii) 14 cum capacity	t.km		622.500		
			(iii) 10 cum capacity	t.km			622.500	
			For loading & unloading time					
			(i) 14 cum capacity	hour	5.677			
				hour		6.538		
			(ii) 14 cum capacity	hour			9.140	
			(iii) 10 cum capacity		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		c)	Overhead charges			@ on (a+b)		
			Contractor's profit at for 415 cum = a+b+c+d are per cum = (a+b+c+d)/415		ש טוו (מדטדנ)	e on (arbit)	w on (ατυτί)	•

Sr	Dof to MA		Description	l lmit	Quantity	y as per project	category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
2 42	202	_	cultation of Dock Francist' Cl					
3.12	303		splitting of Rock Excavation Slopes					
			rying out excavation in hard rock to ieve a specified slope of the rock face					
			controlled use of explosives and					
		•	sting accessories in properly aligned					
			I spaced drill holes, collection of the					
			avated rock by a dozer, loading in					
		tipp	per by a front end loader and disposing					
		of t	he material with all lifts and lead upto					
		100	00 m, all as specified in clause No. 303					
			t = Sqm.					
		Tak	ing output = 400 Sqm.					
		(12	0 cum considering 300 mm					
		ave	erage depth of excavation					
		ove	r the existing rock face)					
		a)	Labour					
			Mate	day	0.279	0.279	0.279	
			Mazdoor	day	3.990	3.990	3.990	
			Driller	day	2.660	2.660	2.660	
			Blaster	day	0.333	0.333	0.333	
		b)	Machinery					
			Air Compressor 250 cfm	hour	17.000	17.000	17.000	
			Pneumatic breaker for drilling holes	hour	34.000	34.000	34.000	
			(@ 4.5 m per hour)					
			Dozer					
			(i) Dozer (240HP)	hour	2.353			
			(ii) Dozer (175 HP)	hour		3.000		
			(iii) Dozer (90 HP)	hour			5.455	
			Tipper					
			For transportation considering lead					
			@ 1km	+ 1400	240,000			
			(i) 14 cum capacity	t.km	240.000	240,000		
			(ii) 14 cum capacity	t.km		240.000	240,000	
			(iii) 10 cum capacity	t.km			240.000	
			For Loading & unloading charges (i) Using by 14 cum capacity Tipper	cum	144.000			
			(i) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum	144.000			
			(ii) Using by 14 cum capacity Tipper	cum		144.000		
			& 2.1 Cum capacity Loader	Cuill		144.000		
			(iii) Using by 10 cum capacity Tipper	cum			144.000	
			& 1 Cum capacity Loader					
		c)	Materials					
			Small dia Explosive at 0.40 kg / cum	kg	49.200	49.200	49.200	
			for 400 cum (400 x 0.40) Explosive at					
			0.20 kg / cum for secondary blast @					
			5% of the total volume (400 x 0.2x5%					
)	-	60.000	60,000	CO 000	
			Electric detonators at 1 per hole for	no	69.000	69.000	69.000	
			main blast holes (21x3+20*2)=103 nos.					
			Ordinary detonators @ 1 per hole for	no	7.000	7.000	7.000	
			10 secondary holes(required for 5%	110	7.000	7.000	7.000	

Sr	Ref. to M		Description		Quantity as per project category			
No			Description	Unit	Large	Medium	Small	(Rs.)
			hole for I cum)					
			Detonating fuse coil	m	213.000	213.000	213.000	
			Credit for excavated rock found	cum	60.000	60.000	60.000	
			suitable for use @ 50 Percent					
			quantity blasted					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 400 Sqm = a+b+c+d+e					
		Rat	e ner cum = (a+b+c+d+e)/400					

Rate per cum = (a+b+c+d+e)/400

- **Note** 1. The quality and availability of rock shall be checked before affording credit.
 - In case some rock is issued to the contractor at site, the item of carriage shall be reduced/ restricted to that extent.

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 remaining earth locally for road work.

(i) Ordinary soil

Unit = cum

Taking output = 10 cum

A Manual Means (Depth upto 3 m)

a) Labour

	Mate	day	0.426	0.426	0.426
	Mazdoor	day	10.640	10.640	10.640
b)	Overhead charges		@ on (a)	@ on (a)	@ on (a)
c)	Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)

Cost for 10 cum = a+b+cRate per cum = (a+b+c)/10

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

3.13 B Mechanical Means (Depth upto 3 m)

Unit = cum

Taking output = 330 cum

a) Labour

Mate	day	0.426	0.426	0.426
Mazdoor	day	10.640	10.640	10.640

b) Machinery

Hydraulic Excavator

For excavation & Backfill

(i) 1.2 cum bucket capacity	hour	5.508	
(ii) 1.1 cum bucket capacity	hour		6.344

(iii) 0.9 cum bucket capacity hour 8.869

	Ref. to M	Description	Unit	Quantity	as per project	category
lo	Nei. to ivi	Description	Oilit	Large	Medium	Small
		_				
		Tipper				
		For transportation of excess material to dumping yard				
		considering lead @ 1km				
		_	t.km	198.000		
		(i) 14 cum capacity	t.km	196.000	198.000	
		(ii) 14 cum capacity			196.000	100.000
		(iii) 10 cum capacity	t.km			198.000
		For loading & Unloading Time	haur	2 202		
		(i) 14 cum capacity	hour hour	2.203	2 527	
		(ii) 14 cum capacity			2.537	2 547
		(iii) 10 cum capacity	hour	@ an (a.b)	@ an /auh)	3.547
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit Cost for 330 cum = a+b+c+d		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		Rate per cum = $(a+b+c+d)/330$				
3.13	(ii)	Ordinary Rock (not requiring blasting)				
	Α	Manual Means (Depth upto 3 m)				
		Unit = cum				
		Taking output = 10 cum				
		a) Labour				
		Mate	day	0.532	0.532	0.532
		Mazdoor	day	13.300	13.300	13.300
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)
		Cost for 10 cum = $a+b+c$				
		Rate per cum = (a+b+c)/10				
	Note	Cost of dewatering upto 10 Percent of lab		habbe ad vem	where required	A Assessment f
	Note		our cost	. Illay be added,	where required	a. A33C33111C11C1
	Note	dewatering shall be made as per site con-		. may be added,	where required	2. A33C33IIICIIC I
3.13		dewatering shall be made as per site con-		. may be added,	where required	2. A3563311161161
3.13	B	dewatering shall be made as per site con-		. may be added,	where required	a. Assessment i
.13		dewatering shall be made as per site cond Mechanical Means Unit = cum		. may be added,	where required	2. A33C33IIICIIC I
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum		. may be auded,	where required	2. A33C33IIICIIC I
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour	ditions.			
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate	ditions. day	0.160	0.160	0.160
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor	ditions.			
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery	ditions. day	0.160	0.160	0.160
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor	ditions. day	0.160	0.160	0.160
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator	ditions. day	0.160	0.160	0.160
3.13		Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation , backfilling & loading (i) 1.2 cum bucket capacity	ditions. day	0.160	0.160	0.160
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation, backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity	day day day hour hour	0.160 3.990	0.160	0.160 3.990
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation , backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity	day day day hour hour hour	0.160 3.990 8.484	0.160 3.990 9.943	0.160 3.990 11.166
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation , backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Jack Hammer	day day day hour hour	0.160 3.990	0.160 3.990	0.160 3.990
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation, backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Jack Hammer Tipper	day day day hour hour hour	0.160 3.990 8.484	0.160 3.990 9.943	0.160 3.990 11.166
.13		Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation, backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Jack Hammer Tipper For transportation to dumping yard	day day day hour hour hour	0.160 3.990 8.484	0.160 3.990 9.943	0.160 3.990 11.166
.13		Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation, backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Jack Hammer Tipper For transportation to dumping yard considering lead @ 1km	day day day hour hour hour	0.160 3.990 8.484 6.926	0.160 3.990 9.943	0.160 3.990 11.166
3.13		dewatering shall be made as per site cond Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation , backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Jack Hammer Tipper For transportation to dumping yard considering lead @ 1km (i) 14 cum capacity	day day day hour hour hour	0.160 3.990 8.484	0.160 3.990 9.943 8.149	0.160 3.990 11.166
3.13		Mechanical Means Unit = cum Taking output = 50 cum a) Labour Mate Mazdoor b) Machinery Hydraulic Excavator For excavation, backfilling & loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Jack Hammer Tipper For transportation to dumping yard considering lead @ 1km	day day day hour hour hour	0.160 3.990 8.484 6.926	0.160 3.990 9.943	0.160 3.990 11.166

No	Sr	Sr				Quantity as per project category Rate			
(i) 14 cum capacity		Ref. to M		Description	Unit	_			= 1
(i) 14 cum capacity									
(ii) 14 cum capacity (iii) 10 cum capacity (iii) (iiii) (iii) (iiii) (iii) (iiii) (iiii) (iiii) (iiii) (iiii) (iiii) (iiii) (iiii) (iiii)				For loading & unloading time					
(iii) 10 cum capacity hour c) Overhead charges @ on (a+b) @ on (a+b+c) @				(i) 14 cum capacity	hour	0.623			
Co Overhead charges @ on (a+b) @ on (a+b) @ on (a+b)				(ii) 14 cum capacity	hour		0.718		
d Contractor's profit Cost for 50 cum = a+b+c+d Rate per cum = (a+b+c+d)/50 3.13				(iii) 10 cum capacity	hour			1.003	
Cost for 50 cum = a+b+c+d Rate per cum = (a+b+c+d)/50 3.13 (iii) Hard Rock (requiring blasting) A Mechanical Means Carrying out excavation in hard rock to achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holte, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 19 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 96.000			c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
Sale Per cum = (a+b+c+d)/50			d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
1.33									
A Mechanical Means Carrying out excavation in hard rock to achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 96.000			Rat	e per cum = (a+b+c+d)/50					
Carrying out excavation in hard rock to achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 4.969 Tipper For transportation consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.378	3.13	(iii)	Har	d Rock (requiring blasting)					
achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (iii) 0.9 cum bucket capacity hour 4.969 (iiii) 0.9 cum bucket capacity hour 4.969 Tipper For transportation consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.378		Α							
by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 1.219 1.524 1.625 volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 96.000									
blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate Mazdoor Driller Mazdoor Driller Master Air Compressor 250 cfm Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling, loading (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity Lkm Gill 10 cum capacity Lkm For loading & unloading time (i) 14 cum capacity hour L.196 Hour 1.196 Hour 1.196 Hour 1.378									
and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 0.00 1000 m, all as specified in clause No. 303 0.333 0.			-						
excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mate Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 [iii) 0.9 cum bucket capacity hour 4.969 [iiii) 0.9 cum bucket capacity hour 5.24 1.625 volume for dressing) Tipper For transportation considering lead @ 1km [i) 14 cum capacity t.km 96.000 [iii) 10 cum capacity t.km 96.000 [iii) 14 cum capacity hour 1.196 [iii) 14 cum capacity hour 1.196 [iii) 14 cum capacity hour 1.378									
of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (iii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 96.000 For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.196				-					
1000 m, all as specified in clause No. 303 Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (ii) 1.2 cum bucket capacity hour 4.210 (iii) 0.9 cum bucket capacity hour 4.969 (iiii) 0.9 cum bucket capacity hour 4.969 (iii) 1.4 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 1.196 (ii) 14 cum capacity t.km 1.196 (ii) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.196				· -					
Unit = cum Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (iii) 0.9 cum bucket capacity hour 4.969 (iiii) 0.9 cum bucket capacity hour 5.24 1.625 volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (ii) 14 cum capacity hour 1.378				•					
Taking output = 120 cum a) Labour Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling, loading (i) 1.2 cum bucket capacity hour 4.969 (iii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 1.219 1.524 1.625 volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (i) 14 cum capacity hour 1.196 For loading & unloading time (ii) 14 cum capacity hour 1.196				-					
Labour Mate May 0.279 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 3.990 Driller day 2.660 2.600			_						
Mate day 0.279 0.279 0.279 Mazdoor day 3.990 3.990 3.990 Driller day 2.660 2.660 2.660 Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (iii) 0.9 cum bucket capacity hour 4.969 (iiii) 0.9 cum bucket capacity hour 1.219 1.524 1.625 volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				= -					
Driller Blaster day 2.660 2.660 2.660 3.33 0.333 0.333 b) Machinery Air Compressor 250 cfm Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity (ii) 0.9 cum bucket capacity Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity (ii) 1.0 cum capacity (iii) 10 cum capacity (iii) 10 cum capacity (iii) 10 cum capacity (iii) 14 cum capacity (iii) 15 cum capacity (iii) 15 cum capacity (iii) 15 cum capacity (iii) 15 cum capacity (iiii) 15 cum capacity (iiiii) 15 cum capacity (iiii) 16 cum capacity (iiii) 17 cum capacity (iiii) 17 cum capacity (iiii) 17 cum capacity (iiiii) 17 cum capacity (iiiii			•	Mate	day	0.279	0.279	0.279	
Blaster day 0.333 0.333 0.333 b) Machinery Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 5.219 1.524 1.625 volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				Mazdoor	day	3.990	3.990	3.990	
Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling, loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				Driller	day	2.660	2.660	2.660	
Air Compressor 250 cfm hour 17.000 17.000 17.000 Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 5.24 1.625 volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				Blaster	day	0.333	0.333	0.333	
Pneumatic breaker for drilling holes (@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 5% of the volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.196 (iii) 14 cum capacity hour 1.196			b)	Machinery					
(@ 4.5 m per hour) Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 5.24 hour 5.24 1.625 volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity t.km 96.000 (iii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				Air Compressor 250 cfm	hour	17.000	17.000	17.000	
Hydraulic Excavator for Jack Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				Pneumatic breaker for drilling holes	hour	34.000	34.000	34.000	
Hammer & backfilling , loading (i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead				(@ 4.5 m per hour)					
(i) 1.2 cum bucket capacity hour 4.210 (ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378									
(ii) 1.1 cum bucket capacity hour 4.969 (iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378					L	4.24.0			
(iii) 0.9 cum bucket capacity hour 6.441 Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 (iiii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378						4.210	4.000		
Jack Hammer (consider 5% of the volume for dressing) Tipper For transportation considering lead ② 1km (i) 14 cum capacity (ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.219 1.524 1.625 1.625							4.969	C 444	
volume for dressing) Tipper For transportation considering lead @ 1km (i) 14 cum capacity						1 210	4.524		
Tipper For transportation considering lead @ 1km (i) 14 cum capacity t.km 96.000 (ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				•	nour	1.219	1.524	1.625	
For transportation considering lead @ 1km (i) 14 cum capacity									
@ 1km (i) 14 cum capacity									
(ii) 14 cum capacity t.km 96.000 (iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				-					
(iii) 10 cum capacity t.km 96.000 For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				(i) 14 cum capacity	t.km	96.000			
For loading & unloading time (i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				(ii) 14 cum capacity	t.km		96.000		
(i) 14 cum capacity hour 1.196 (ii) 14 cum capacity hour 1.378				(iii) 10 cum capacity	t.km			96.000	
(ii) 14 cum capacity hour 1.378				For loading & unloading time					
()				(i) 14 cum capacity	hour	1.196			
(iii) 10 cum capacity hour 1.926				(ii) 14 cum capacity	hour		1.378		
				(iii) 10 cum capacity	hour			1.926	

Sr	Ref. to M		Description	Unit	Quantity	as per project	category	Ra
No	Ker. to ivi		Description	Unit	Large	Medium	Small	(Rs
		c)	Materials	l	40.200	40.200	40.200	
			Small dia Explosive at 0.40 kg / cum for 120 cum (120 x 0.40) Explosive	kg	49.200	49.200	49.200	
			at 0.20 kg / cum for secondary blast					
			@ 5%of the total volume (120 x					
			0.2x5%)					
			Electric detonators at 1 per hole for	no	69.000	69.000	69.000	
			main blast holes (21x3+20*2)=103					
			nos		7.000	7.000	7.000	
			Ordinary detonators @ 1 per hole for 10 secondary holes (required for 5%	no	7.000	7.000	7.000	
			of the total quantity @ 0.6 m per					
			hole for I cum)					
			Detonating fuse coil	m	213.000	213.000	213.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 120 cum = a+b+c+d+e					
		Rate	e per cum = (a+b+c+d+e)/120					
3.13	(iv)		d Rock (blasting prohibited)					
		_	t = cum					
			ing output = 35 cum					
		a)	Labour Mate	day	0.106	0.106	0.106	
			Mazdoor	day day	2.660	2.660	2.660	
		b)	Machinery	uay	2.000	2.000	2.000	
		٠,	Hydraulic Excavator used for Jack					
			hammer & loading					
			(i) 1.2 cum bucket capacity	hour	11.394			
			(ii) 1.1 cum bucket capacity	hour		13.386		
			(iii) 0.9 cum bucket capacity	hour			16.409	
			Jack Hammer	hour	10.667	12.549	15.238	
			For transportation to dumping yard					
			Tconsidering lead @ 1km					
			(i) 14 cum capacity		28.000	20.000		
			(ii) 14 cum capacity			28.000	38,000	
			(iii) 10 cum capacity For loading & unloading				28.000	
			(i) 14 cum capacity	hour	0.291			
			(ii) 14 cum capacity	hour	0.291	0.335		
			(iii) 10 cum capacity	hour		0.333	0.468	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit			@ on (a+b+c))
		Cost	t for 35 cum = a+b+c+d				-	
		Rate	e per cum = (a+b+c+d)/35					
2 12	1.0	N A =	rshy soil					
3.13	(v)		shy soil t = cum					
			ing output = 10 cum					
			O Harrier and a					

Sr	56.44				Quantity	as per project	category	Rate (Rs.)
No	Ref. to M		Description	Unit	Large	Medium	Small	
	Δ.	N/1-	unual maana (umta 2 ma danth)					
	Α		inual means (upto 3 m depth)					
		a)	Labour					
			Mate/Supervisor	day	0.532	0.532	0.532	
			Mazdoor	day	13.300	13.300	13.300	
		b)	Machinery					
			Tractor-trolley	hour	2.670	2.670	2.670	
		c)	Material					
			Selected earth for refilling	cum	5.000	5.000	5.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		e)	Contractor's profit		@ on	@ on	@ on	
		•	·		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	st for 10 cum = a+b+c+d+e					
		_						

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

- Note 1. Cost of dewatering @ 30 Percent of (a), may be added, where required Assessment for dewatering shall be made as per site conditions.
 - 2. Shoring & strutting 20 Percent of (a), where required may be added
 - It is assumed that Marshy Soil will be available upto 3 m depth only. For deeper excavationbelow 3 m depth, refer analysis in item (i) to (iv) for ordinary soil

3.13 B Mechanical Means Unit = cum	
Unit = cum	
Taking output = 260 cum	
a) Labour	
Mate day 0.053 0.053	0.053
Mazdoor day 1.330 1.330	1.330
b) Machinery	
Hydraulic Excavator	
(i) 1.2 cum bucket capacity hour 12.210	
(ii) 1.1 cum bucket capacity hour 14.061	
(iii) 0.9 cum bucket capacity hour	19.658
Tipper	
For transportation to dumping yard	
considering lead @ 1km	
(i) 14 cum capacity t.km 639.600	
(ii) 14 cum capacity t.km 639.600	
(iii) 10 cum capacity t.km	639.600
For loading & unloading	
(i) 14 cum capacity hour 12.210	
(ii) 14 cum capacity hour 14.061	
(iii) 10 cum capacity hour	19.658
c) Material	
Selected earth for refilling cum 156.000 156.000	156.000
d) Overhead charges @ on (a+b+c) @ on (a+b+c)	@ on (a+b+c)
e) Contractor's profit @ on @ on	
(a+b+c+d) (a+b+c+d)	(a+b+c+d)
Cost for 260 cum = $a+b+c+d+e$	•

Rate per cum = (a+b+c+d+e)/260

Sr	Dof to M	Description U	Unit	Quantity	as per project	category	Rate
No	Ref. to M	Description		Large	Medium	Small	(Rs.)
3.14	305.4.3	Scarifying the existing granular road surface to a depth of 50 mm and disposal of scarified material within all lifts and leads upto 1000 metres.					
	(i)	Scarifying Existing Granular Surface to a Depth of 50 mm by Manual Means Unit = sqm Taking output = 100 sqm					
		a) Labour Mate	day	0.266	0.266	0.266	
		Mazdoor including loading and unloading	day	6.650	6.650	6.650	
		b) Machinery					
		Tractor-trolley	hour	1.670	1.670	1.670	
		c) Overhead charges d) Contractor's profit Cost for 100 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/100		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)		

Note In case material is to be reused at site, transportation cost catered above for disposal shall be deleted.

3.14 305.4.3 (ii) By Mechanical Means using Hydraulic excavator Unit = sqm

Cost for 6000 sqm = a+b+c+dRate per sqm = (a+b+c+d)/6000

Uni	t = sqm				
Tak	ing output = 6000 sqm				
a)	Labour				
	Mate	day	0.053	0.053	0.053
	Mazdoor	day	1.330	1.330	1.330
b)	Machinery				
	Hydraulic Excavator				
	(i) 1.2 cum bucket capacity	hour	5.130		
	(ii) 1.1 cum bucket capacity	hour		5.908	
	(iii) 0.9 cum bucket capacity	hour			8.259
	Tipper				
	For transportation to dumping yard				
	considering lead @ 1km				
	(i) 14 cum capacity	t.km	600.000		
	(ii) 14 cum capacity	t.km		600.000	
	(iii) 10 cum capacity	t.km			600.000
	For loading & unloading				
	(i) 14 cum capacity	hour	5.130		
	(ii) 14 cum capacity	hour		5.908	
	(iii) 10 cum capacity	hour			8.259
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

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Sr		• • •				Quantity	, as per project	category	Rat
No	Ref. to	M		Description	Unit	Large	Medium	Small	(Rs
3.14	305.4.3	(iii)	Rv	Mechanical Means using Mo	ntor				
3.14	303.4.3	(111)	Grad	G	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
				= sqm					
				ng output = 12500 sqm					
				Labour					
			•	Mate	day	0.053	0.053	0.053	
				Mazdoor	day	1.330	1.330	1.330	
			b)	Machinery	,				
			•	Motor Grader					
				(i) Motor grader 4.30 metre blad	de hour	3.501			
				(ii) Motor grader 3.70 metre blad			4.202		
				(iii) Motor grader 3.35 metre blad				4.252	
				Tipper					
				For transportation to dumping yar	·d				
				considering lead @ 1km					
				(i) 14 cum capacity	t.km	1250.000			
				(ii) 14 cum capacity	t.km		1250.000		
				(iii) 10 cum capacity	t.km			1250.000	
				For Loading & unloading charges					
				(i) Using by 14 cum capacity Tipp &	oer cum	625.000			
				2.1 Cum capacity Loader					
				(ii) Using by 14 cum capacity Tippe & 2.1 Cum capacity Loader	er cum		625.000		
				(iii) Using by 10 cum capacity Tipp & 1 Cum capacity Loader	er cum			625.000	
			c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c	:)
			Cost	for 12500 sqm = a+b+c+d					
			Rate	per sqm = (a+b+c+d)/12500					
		Note	In cas	se material is to be reused at site, t red.	transporta	tion cost catere	d above for disp	oosal shall be	
3.15	305.4.3			fying the existing bituminous surfa	ce				
				depth of 50 mm and disposal of					
				fied material within all lifts and lead	ds				
		<i>(</i> •\	-	1000 metres.					
		(i)	-	Mechanical Means using Hydra vator	ulic				
			Unit	= sqm					
			Takir	ng output = 6000 sqm					
			•	Labour					
				Mate	day	0.053	0.053	0.053	
				Mazdoor	day	1.330	1.330	1.330	
			-	Machinery					
				Hydraulic Excavator (i) 1.2 cum bucket capacity	hour	6.186			
				(ii) 1.2 cum bucket capacity	hour hour	0.100	7.124		
				(iii) 0.9 cum bucket capacity	hour		7.124	9.960	
				Tipper	Hour			5.500	
				For transportation to dumping yar	·d				
				as a side wine lead @ 1 km					

considering lead @ 1km

Sr				Quantity	as per project	category	Rat
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
		(i) 14 cum canacity	+ lem	600,000			
		(i) 14 cum capacity (ii) 14 cum capacity	t.km t.km	690.000	690.000		
		(iii) 10 cum capacity	t.km		690.000	690.000	
		For loading & unloading	L.KIII			090.000	
		(i) 14 cum capacity	hour	6.186			
		(ii) 14 cum capacity	hour	0.100	7.124		
		(iii) 10 cum capacity	hour			9.960	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		Cost for $6000 \text{ sqm} = a+b+c+d$					
		Rate per sqm = (a+b+c+d)/6000					
3.15	305.4.3 (ii)	By Mechanical Means using Motor					
		Grader					
		Unit = sqm					
		Taking output = 12500 sqm					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor b) Machinery	day	1.330	1.330	1.330	
		b) Machinery Motor Grader					
		(i) Motor grader 4.30 metre blade	hour	3.501			
		(ii) Motor grader 3.70 metre blade	hour	3.301	4.202		
		(iii) Motor grader 3.35 metre blade	hour		4.202	4.252	
		Tipper	noui			4.232	
		For transportation to dumping yard					
		considering lead @ 1km					
		(i) 14 cum capacity	t.km	1437.500			
		(ii) 14 cum capacity	t.km	2.07.000	1437.500		
		(iii) 10 cum capacity	t.km		1.07.000	1437.500	
		For Loading & unloading charges	•••••			21071000	
		(i) Using by 14 cum capacity Tipper	cum	625.000			
		& 2.1 Cum capacity Loader	00	020.000			
		(ii) Using by 14 cum capacity Tipper	cum		625.000		
		& 2.1 Cum capacity Loader					
		(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			625.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)		
		Cost for 12500 sqm = a+b+c+d					
		Rate per sqm = $(a+b+c+d)/12500$					
3.16	305	Construction of Embankment with					
5.10	J J	Material obtained from Borrow pits					
		Construction of embankment with					
		approved material obtained from borrow					
		pits with all lifts and leads, transporting to					
		site, spreading, grading to required slope					
		and compacting to meet requirement of					
		table 300-2.					

CHAPTER: 3- EARTH WORK, EROSION CONTROL AND DRAINAGE

r	Ref. to M		Description	tion Unit	Quantity	as per project	category	Rate	
lo	nei. LU IVI		Description	Uill	Large	Medium	Small	(1	
			t = cum						
			ing output = 450 cum						
		a)	Labour						
			Mate	day	0.106	0.106	0.106		
			Mazdoor	day	2.660	2.660	2.660		
		b)	Machinery						
			Hydraulic Excavator						
			(i) 1.2 cum bucket capacity	hour	6.009				
			(ii) 1.1 cum bucket capacity	hour		6.920			
			(iii) 0.9 cum bucket capacity	hour			9.675		
			Tipper						
			For Transportation						
			(i) 14 cum capacity	t.km	450x1.6 x L2				
			(ii) 14 cum capacity	t.km		450x1.6 x L2			
			(iii) 10 cum capacity	t.km			450x1.6 x L2		
			For Loading & unloading time						
			(i) 14 cum capacity	hour	6.009				
			(ii) 14 cum capacity	hour		6.920			
			(iii) 10 cum capacity	hour			9.675		
			Motor grader for grading						
			(i) Motor grader 4.30 metre blade	hour	2.488				
			(ii) Motor grader 3.70 metre blade	hour		3.002			
			(iii) Motor grader 3.35 metre blade	hour			3.347		
			Water tanker (speed @ Water tanker						
			speed km/hr and return speed @ 10						
			km/hr and spreading speed @ 2.5						
			Km/hr.)						
			(i) 16 KL capacity	hour	0.5 x L1 +				
					0.864				
			(ii) 12 KL capacity	hour		0.667 x L1 +			
						1.152			
			(iii) 6 KL capacity	hour			1.333 x L1 +		
							2.304		
			Vibratory roller	hour	2.601	2.601	2.601		
		c)	Material						
			Cost of water (considering 5%	KL	36.000	36.000	36.000		
			additional moisture required)						
			Compensation for earth taken from	cum	450.000	450.000	450.000		
			private land						
		d)	Overhead charges			@ on (a+b+c))	
		e)	Contractor's profit		@ on	@ on	@ on		
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)		
		Cos	t for 450 cum = a+b+c+d+e						

Note Compensation for earth will vary from place to place and will have to be assessed realistically as per particular ground situation. In case earth is available from Govt. land, compensation for earth will not be required. The position is required to be clearly stated in the cost estimate.

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

No		Description	11	Quantity	as per project	category	Rat
	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
3.17	305	Construction of Embankment with Material Deposited from Roadway Cutting					
		Construction of embankment wit approved materials deposited at site from					
		roadway cutting and excavation from					
		drain and foundation of other structure					
		graded and compacted to med requirement of table 300-2.	et				
		Unit = cum					
		Taking output = 450 cum					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	1.330	1.330	1.330	
		b) Machinery Motor grader for grading					
		(i) Motor grader 4.30 metre blade	hour	2.488			
		(ii) Motor grader 3.70 metre blade	hour	2.400	3.002		
		(iii) Motor grader 3.35 metre blade	hour			3.347	
		Water tanker (speed @ Water tank	er				
		speed km/ hr and return speed @ 1 km/hr and spreading speed @ 2 Km/hr.)					
		(i) 16 KL capacity	hour	0.5 x L1 + 0.864			
		(ii) 12 KL capacity	hour		0.667 x L1 + 1.152		
		(iii) 6 KL capacity	hour			1.333 x L1 + 2.304	
		Vibratory roller	hour	2.601	2.601	2.601	
		c) Material Cost of water (considering 5%	KL	36.000	36.000	36.000	
		additional moisture required) d) Overhead charges		@ on (a+h+c)	@ on (a+b+c)	@ on (a+h+c)	1
		e) Contractor's profit		@ on	@ on	@ on	
		Cost for 450 cum = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per cum = (a+b+c+d+e)/450					
.18	305	Construction of Subgrade and Earthe Shoulders					
		Construction of sub-grade and earthe shoulders with approved materi obtained from borrow pits with all lifts	al				
		leads, transporting to site, spreading grading to required slope and compacted to meet requirement of table No. 300-2	_				
		Unit = cum					
		Taking output = 450 cum					
		a) Labour					
		Mate	day	0.106	0.106	0.106	
		Mazdoor	day	2.660	2.660	2.660	

Sr	D. C	2		Quantity as per project category			
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
!			L				
		Hydraulic Excavator					
		(i) 1.2 cum bucket capacity	hour	6.009			
		(ii) 1.1 cum bucket capacity	hour		6.920		
		(iii) 0.9 cum bucket capacity	hour			9.675	
		Tipper					
		For Transportation					
		(i) 14 cum capacity	t.km	450x1.75 x L2			
		(ii) 14 cum capacity	t.km		450x1.75 x L2		
		(iii) 10 cum capacity	t.km			450x1.75 x L2	
		For Loading & unloading time	•				
		(i) 14 cum capacity	hour	6.009			
		(ii) 14 cum capacity	hour	0.000	6.920		
		(iii) 10 cum capacity	hour		0.0_0	9.675	
		Motor grader for grading	11041			3.073	
		(i) Motor grader 4.30 metre blade	hour	2.488			
		(ii) Motor grader 3.70 metre blad		2.700	3.002		
		(iii) Motor grader 3.35 metre blad			3.002	3.347	
		Water tanker (speed @ Water tan				3.347	
		speed km/hr. and return speed @					
		km/hr. and spreading speed @					
		Km/hr.)					
		(i) 16 KL capacity	hour	0.547 x L1 +			
		(.) 10 111 supusity		0.945			
		(ii) 12 KL capacity	hour		0.729 x L1 +		
		()			1.26		
		(iii) 6 KL capacity	hour			1.458 x L1 +	
		, , ,				2.52	
		Vibratory roller 12 tonne	hour	2.601	2.601	2.601	
		c) Material					
		Cost of water (considering 5%	KL	39.375	39.375	39.375	
		additional moisture required)					
		Compensation for earth taken from	m cum	450.000	450.000	450.000	
		private land					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for $450 \text{ cum} = a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/450$					
3.19	305	Construction of Subgrade and Earthen					
		Shoulders with Material Deposited fro	m				
		Roadway Cutting					
			vith				
		approved materials deposited at site fr					
		roadway cutting and excavation fr					
		drain and foundation of other structu					
		9	eet				
		requirement of table 300-2.					
		Unit = cum					
		Taking output = 450 cum					
		a) Labour	_				
		Mate	day	0.053	0.053	0.053	

	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
No	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Motor grader for grading	l	2.400			
			(i) Motor grader 4.30 metre blade	hour	2.488	2.002		
			(ii) Motor grader 3.70 metre blade	hour		3.002	2 247	
			(iii) Motor grader 3.35 metre blade Water tanker (speed @ Water tanker	hour			3.347	
			speedkm/hr and return speed @ 10					
			km/hr and spreading speed @ 2.5					
			Km/hr.)					
			(i) 16 KL capacity	hour	0.547 x L1 +			
					0.945			
			(ii) 12 KL capacity	hour		0.729 x L1 + 1.26		
			(iii) 6 KL capacity	hour			1.458 x L1 +	
			• •				2.52	
			Vibratory roller	hour	2.601	2.601	2.601	
		c)	Material					
			Cost of water (considering 5%	KL	39.375	39.375	39.375	
		ال.	additional moisture required)		@ an (aubua)	@ an (a.b.a)	@ (b)	
		d)	Overhead charges Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		e)	Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 450 cum = a+b+c+d+e					
		Rate	e per cum = (a+b+c+d+e)/450					
3.20	305.3.4	Con	npacting Original Ground					
	Case-I		npacting original ground supporting -grade					
			sening of the ground upto a level of					
			sering of the ground upto a level of					
		Loo 500	mm below the sub-grade level,					
		Loo 500 wat	mm below the sub-grade level, ered, graded and compacted in layers					
		Loo 500 wat to 1	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for					
		Loo 500 wat to r	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction.					
		Loo 500 wat to r sub	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum					
		Loo 500 wat to r sub Uni Tak	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum					
		Loo 500 wat to r sub	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum	day	0.053	0.053	0.053	
		Loo 500 wat to r sub Uni Tak	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour	day day	0.053 1.330	0.053 1.330	0.053 1.330	
		Loo 500 wat to r sub Uni Tak	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate	-				
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor	-				
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading	-				
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade	-		1.330		
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade	day hour hour	1.330		1.330	
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade	day	1.330	1.330		
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade Water tanker (speed @ Water tanker	day hour hour	1.330	1.330	1.330	
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade Water tanker (speed @ Water tanker speed km/hr. and return speed @ 10	day hour hour	1.330	1.330	1.330	
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade Water tanker (speed @ Water tanker speed km/hr. and return speed @ 10 km/hr. and spreading speed @ 2.5	day hour hour	1.330	1.330	1.330	
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade Water tanker (speed @ Water tanker speed km/hr. and return speed @ 10 km/hr. and spreading speed @ 2.5 Km/hr.)	day hour hour	1.330	1.330	1.330	
		Loo 500 wat to r sub- Uni Tak a)	mm below the sub-grade level, ered, graded and compacted in layers meet requirement of table 300-2 for grade construction. t = cum ing output = 225 cum Labour Mate Mazdoor Machinery Motor grader for ripping (in two layers) & grading (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade Water tanker (speed @ Water tanker speed km/hr. and return speed @ 10 km/hr. and spreading speed @ 2.5	hour hour hour	1.330 2.505	1.330	1.330	

Ref. to M		Description	Unit	Quantity	as per project	category	Ra
ivei. to ivi		Description	Oiiit	Large	Medium	Small	(R
					0.24=		
		(iii) 6 KL canacity	hour		0.315	0.729 x L1 +	
		(iii) 6 KL capacity	nour			0.729 X L1 + 0.63	
		Vibratory rollor	hour	1.301	1.301	1.301	
	c)	Vibratory roller Material	Hour	1.501	1.501	1.501	
	c,	Cost of water (considering 5%	KL	19.688	19.688	19.688	
		additional moisture required)		13.000	13.000	13.000	
	d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
	e)	Contractor's profit		@ on	@ on	@ on	,
	•	·		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	Cos	t for 225 cum = a+b+c+d+e					
	Rat	e per cum = (a+b+c+d+e)/225					
Cons. II	6						
Case-II	eml	npacting original ground supporting bankment					
		osening, leveling and Compacting					
	_	inal ground supporting embankment					
		facilitate placement of first layer of pankment, scarified to a depth of 150					
		, mixed with water at OMC and then					
		ppacted by rolling so as to achieve					
		imum dry density as given in Table					
		-2 for embankment construction.					
	Uni	t = cum					
	Tak	ing output = 300 cum					
	a)	Labour					
	•	Mate	day	0.053	0.053	0.053	
		Mazdoor	day	1.330	1.330	1.330	
	b)	Machinery	•				
	•	Motor grader for ripping & grading					
		(i) Motor grader 4.30 metre blade	hour	3.985			
		(ii) Motor grader 3.70 metre blade	hour		4.796		
		(iii) Motor grader 3.35 metre blade	hour			5.140	
		Water tanker (speed @ Water				0.1.0	
		tanker speed km/hr. and return					
		speed @ 10 km/hr. and spreading					
		speed @ 2.5 Km/hr.)					
		(i) 16 KL capacity	hour	0.333 x L1 + 0.64			
		(ii) 12 KL capacity	hour	J.U-7	0.444 x L1 +		
					0.853		
		(iii) 6 KL capacity	hour			0.889 x L1 +	
						1.707	
	_	Vibratory roller	hour	1.734	1.734	1.734	
	c)	Material	,				
		Cost of water (considering 5%	KL	24.000	24.000	24.000	
		additional moisture required)				_ ,	
	d)	Overhead charges			@ on (a+b+c))
	e)	Contractor's profit		@ on	@ on	@ on	
	C -	t for 300 cum = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	

Ref. to M Description Unit Large Medium 3.21 305 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 = 250 cum a) Labour Mate Mate day 0.053 Mazdoor day 1.330 1.330 Machinery	n Small (F
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 = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
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 = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
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 = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
embankment slopes, cut slopes and other areas in localities where the available embankment material is not conducive to plant growth. Unit = cum Taking output = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
areas in localities where the available embankment material is not conducive to plant growth. Unit = cum Taking output = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
embankment material is not conducive to plant growth. Unit = cum Taking output = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
plant growth. Unit = cum Taking output = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
Unit = cum Taking output = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
Taking output = 250 cum a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
a) Labour Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
Mate day 0.053 0.053 Mazdoor day 1.330 1.330 b) Machinery	
Mazdoor day 1.330 1.330 b) Machinery	
b) Machinery	0.053
·	1.330
Motor grader	
(i) Motor grader 4.30 metre blade hour 1.920	
(ii) Motor grader 3.70 metre blade hour 2.316	
(iii) Motor grader 3.35 metre blade hour	2.583
Hydraulic Excavator for	2.555
reapplication	
(ii) 1.1 cum bucket capacity hour 3.845	F 27F
(iii) 0.9 cum bucket capacity hour	5.375
Tipper	
For transportation considering lead	
@ 1 km (20% of the material needs	
to be transported)	
(i) 14 cum capacity t.km 75.000	
(ii) 14 cum capacity t.km 75.000	
(iii) 10 cum capacity t.km	75.000
For loading (20% of the material	
needs to be transported)	
(i) Using by 14 cum capacity Tipper cum 50.000	
& 2.1 Cum capacity Loader	
(ii) Using by 14 cum capacity Tipper cum 50.000 & 2.1 Cum capacity Loader	
(iii) Using by 10 cum capacity Tipper cum & 1 Cum capacity Loader	50.000
c) Overhead charges @ on (a+b) @ on (a-	+b) @ on (a+b)
d) Contractor's profit @ on (a+b+c) @ on (a+	יירט (a+b+c) ש טוו (a+b+c)
Cost for 250 cum = a+b+c+d	
Rate per cum = (a+b+c+d)/250	
.22 Stripping, Storing and Re-laying Top Soil	
from Borrow Areas in Agriculture Fields.	
Stripping of top soil from borrow areas	
located in agriculture fields, storing at a	
suitable place, spreading and re-laying	
after	
taking the borrow earth to maintain	
fertility of the agricultural field, finishing it	
to the required levels and satisfaction of	
the farmer.	
Unit = cum	

Sr	D-f +- 1		Paradotta:	11	Quantity	as per project	category	Rate
No	Ref. to N	//	Description	Unit	Large	Medium	Small	(Rs.)
			Taking output = 250 cum					
			a) Labour	day	0.053	0.053	0.053	
			Mate Mazdoor	day day	0.053 1.330	0.053 1.330	0.053 1.330	
			b) Machinery	uay	1.550	1.550	1.550	
			Motor grader					
			(i) Motor grader 4.30 metre blade	hour	1.920			
			(ii) Motor grader 3.70 metre blade	hour		2.316		
			(iii) Motor grader 3.35 metre blade	hour			2.583	
			Hydraulic Excavator for					
			reapplication	hour	3.338			
			(i) 1.2 cum bucket capacity	hour	3.336	3.845		
			(ii) 1.1 cum bucket capacity	hour		3.643	5.375	
			(iii) 0.9 cum bucket capacity Tipper	noui			3.373	
			For transportation					
			(i) 14 cum capacity	t.km	250x1.6 x L2			
			(ii) 14 cum capacity	t.km		250x1.6 x L2		
			(iii) 10 cum capacity	t.km			250x1.6 x L2	
			For loading & unloading					
			(i) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum	250.000			
			(ii) Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader	cum		250.000		
			(iii) Using by 10 cum capacity Tipper & 1 Cum capacity Loader	cum			250.000	
			c) Overhead charges d) Contractor's profit Cost for 250 cum = a+b+c+d Rate per cum = (a+b+c+d)/250		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	1
3.23	307	Α	Turfing with Sods					
3.23	307		Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing or as directed by the engineer including preparation of ground, fetching of sods and watering. Unit = sqm					
			Taking output = 100 sqm					
			a) Labour			.		
			Mate Mazdoor for preparation of ground and fetching of sods	day day	0.160 3.990	0.160 3.990	0.160 3.990	

Sr	D-f :		Des. 1 tr		Quantity	as per project	category	Ra
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
		-	Machinery					
			Water tanker including watering for					
			3 months Water tanker (speed @ Water tanker					
			speed km/hr. and return speed @ 10					
			km/hr. and spreading speed @ 2.5					
			Km/hr.)					
			(i) 16 KL capacity	hour	1.000 x L1 +			
					0.096			
			(ii) 12 KL capacity	hour		1.333 x L1 +		
			(***) 5 (4)			0.128	2667 14	
			(iii) 6 KL capacity	hour			2.667 x L1 +	
			Tractor-trolley	hour	1.000	1.000	0.256 1.000	
			Material	noui	1.000	1.000	1.000	
		•		O1 · · · ·	0.400	0.100	0.400	
			Farm yard manure @ 0.18 cum per	cum	0.180	0.180	0.180	
			100 sqm at site of work Cost of water	KL	12.000	12.000	12.000	
		d)	Overhead charges				@ on (a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		•	•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost	for $100 \text{ sqm} = a+b+c+d+e$					
		Rate	per 100 sqm = (a+b+c+d+e)/100					
.24	308	Seed	ling and Mulching					
	300		aration of seed bed on previously laid					
		-	soil, furnishing and placing of seeds,					
			izer, mulching material, applying					
			minous emulsion at the rate of 0.23					
			s per sqm and laying and fixing jute					
			ng, including cost of watering for 3					
			ths all as per clause 308.					
			= sqm ng output = 240 sqm					
			Labour					
		•	Mate	day	0.532	0.532	0.532	
			Mazdoor	day	13.300	13.300	13.300	
			Machinery					
		-	Water tanker including watering for					
			3 months					
			Water tanker (speed @ Water tanker					
			speed km/hr. and return speed @ 10					
			km/hr. and spreading speed @ 2.5					
			Km/hr.)					
			(i) 16 KL capacity	hour	7 x L1 + 1.613			
			(ii) 12 KL capacity	hour		9.333 x L1 +		
				_		2.150		
			(iii) 6 KL capacity	hour			18.667 x L1 +	
						<u>.</u>	4.301	
			Tractor-trolley	hour	2.400	2.400	2.400	
			Natorial					
		•	Material	_				
		•	Seeds	kg	3.600	3.600	3.600	
		·		kg cum	3.600 0.430	3.600 0.430	3.600 0.430	

CHAPTER: 3- EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr	Dof to M	Doscrintion	11:4:4	Quantity	as per project	category	Ra
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
		Bitumen Emulsion	litre	55.200	55.200	55.200	
		Jute netting, open weave, 2.5 cm square opening	sqm	264.000	264.000	264.000	
		Cost of water for 3 months	KL	84.000	84.000	84.000	
		d) Overhead charges			@ on (a+b+c)		,
		e) Contractor's profit				@ on	
		•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 240 sqm = $a+b+c+d+e$					
		Rate per sqm = $(a+b+c+d+e)/240$					
3.25	309	Surface Drains in Soil					
		Construction of unlined surface drains	of				
		average cross sectional area 0.40 sqm	in				
		soil to specified lines, grades, levels ar	ıd				
		dimensions to the requirement of claus					
		301 and 309. Excavated material to b					
		used in embankment within a lead	of				
		1000 metres					
		Unit = metre					
	_	Taking output = 10 metres					
	Α	Mechanical means					
		a) Labour		0.043	0.042	0.043	
		Mate	day	0.013	0.013	0.013	
		Mazdoor for dressing of bed and sic of drain	e day	0.333	0.333	0.333	
		b) Machinery					
		Hydraulic Excavator 0.9 cum bucket capacity	hour	0.107	0.107	0.107	
		Tractor-trolley					
		Tractor-trolley for transportation & for loading & Unloading Time	hour	0.263	0.263	0.263	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 metres = a+b+c+d					
		Rate per metre = (a+b+c+d)/10					
3.25	В	Manual Means					
		a) Labour					
		Mate	day	0.106	0.106	0.106	
		Mazdoor	day	2.660	2.660	2.660	
		b) Machinery					
		Tractor-trolley					
		Tractor-trolley for transportation & for loading & Unloading Time	hour	0.822	0.822	0.822	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit			@ on (a+b+c)		
		Cost for 10 metres = a+b+c+d			•	•	
		Rate per metre = (a+b+c+d)/10					

Note: Where lining of drain is provided, quantity shall be worked out 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.

Unit	Large	Medium	Small	(Rs
day	0.027	0.027	0.027	
day	0.665	0.665	0.665	
nour	0.133	0.133	0.133	
nour	0.288	0.288	0.288	
	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
day	0.160	0.160	0.160	
day	3.990	3.990	3.990	
•				
nour	1.044	1.044	1.044	
	@ on (a+b)	@ on (a+b)	@ on (a+b)	
	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
ממ	our our	day 0.665 our 0.133 our 0.288 @ on (a+b) @ on (a+b+c) day 0.160 day 3.990 our 1.044 @ on (a+b)	day 0.665 0.665 our 0.133 0.133 our 0.288 0.288 @ on (a+b) @ on (a+b) @ on (a+b+c) @ on (a+b+c) day 0.160 0.160 day 3.990 3.990 our 1.044 1.044 @ on (a+b) @ on (a+b)	day 0.665 0.665 0.665 our 0.133 0.133 0.133 our 0.288 0.288 0.288 @ on (a+b) @ on (a+b) @ on (a+b) @ on (a+b+c) @ on (a+b+c) day 0.160 0.160 0.160 day 3.990 3.990 our 1.044 1.044 1.044

	Donasis ties	1112	Quantity as per project category				
	Description	Unit	Large	Medium	Small	(R	
sur bec cus exc ma Un Tal	pending upon size of material rounding the pipe, with 150 mm dding below the pipe and 300 mm shion above the pipe, cross section of tavation 450 x 550 mm. Excavated terial to be utilised in roadway at site. it = metre king output = 10 metres	:					
a)	Labour	d	0.040	0.040	0.040		
	Mate	day	0.040	0.040	0.040		
	Mazdoor for excavation and back filling	day	2.660	2.660	2.660		
b)	Material						
	Perforated pipe of cement concrete, internal dia 100 mm	metre	10.000	10.000	10.000		
	Crushed stone as per table 300-3	cum	2.400	2.400	2.400		
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)		
d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))	
-	st for 10 metres = a+b+c+d+e						
	te per metre = (a+b+c+d+e)/10						

Note Type of pipe may be modified depending upon provision in design.

3.29 309 Aggregate Sub-Surface Drains

Sr

No

Ref. to

Construction of aggregate sub surface drain 300 mm x 450 mm with aggregates conforming to table 300-4, excavated material to be utilised in roadway.

Unit = metre

Taking output = 10 metres

Iak	ing output - 10 metres									
a)	Labour									
	Mate	day	0.080	0.080	0.080					
	Mazdoor for excavation and back	day	1.995	1.995	1.995					
	filling with aggregates									
b)	Material									
	Crushed stone as per table 300-3	cum	1.350	1.350	1.350					
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)					
d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)					
Cos	Cost for 10 metres = a+b+c+d									
Rat	Rate per metre = (a+b+c+d)/10									

3.30 309 Underground Drain at Edge of Pavement

Construction of an underground drain 1 m x 1 m (inside dimensions) lined with RCC-20 cm thick and covered with RCC slab10 cm in thickness on urban roads.

Unit = Running metre

Taking output = one metre

так	ing output = one metre				
a)	Earthwork in soil	cum	1.500	1.500	1.500
	(Rate taken from Item No 3.13				
	including OH & CP)				
b)	RCC work M-20	cum	0.495	0.495	0.495
	(Rate taken from Item No 9.06 C				

Sr	Dof to M	2		Quantity as per project category			
No	Ref. to M	Description	Unit	Large	Medium	Small	Rate (Rs.)
<u> </u>				. 3			1, ,
		Case-II including OH & CP)					
			tonne	0.020	0.020	0.020	
		(Rate taken from Item No 9.07					
		including OH & CP)					
		Rate per metre = (a+b+c)					
		. , , ,					
		Note :- Rates for these items may be	taken	from chapters	on earth wor	rk and culvert	t
		respectively.					
3.31	310	Preparation and Surface Treatment of					
		Formation.					
		Preparation and surface treatment of					
		formation by removing mud and slurry,					
		watering to the extent needed to					
		maintain the desired moisture content,					
		trimming to the required line, grade,					
		profile and rolling with smooth wheeled roller, complete as					
		per clause 310.					
		Unit = sqm					
		Taking output = 3500 sqm					
		a) Labour					
		Mate	day	0.372	0.372	0.372	
		Mazdoor	-	7.980	7.980	7.980	
			day				
		Mazdoor skilled	day	1.330	1.330	1.330	
		b) Machinery					
		Water tanker (speed @ Water tanker					
		speed km/hr. and return speed @ 10					
		km/hr. and spreading speed @ 2.5 Km/hr.)					
		•	سييم ما	0.2511 .			
		(i) 16 KL capacity	hour	0.25 x L1 + 0.84			
		(ii) 12 KL canacity	hour	0.64	0.333 x L1 +		
		(ii) 12 KL capacity	Hour		0.555 X L1 +		
		(iii) 6 KL capacity	hour		1.12	0.667 x L1 +	
		(III) O KE capacity	Hour			2.24	
		Vibratory roller	hour	3.035	3.035	3.035	
		c) Material		5.055	5.055	3.033	
		Cost of water	KL	18.000	18.000	18.000	
			KL		@ on (a+b+c)		`
)
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for $3500 \text{ sqm} = a+b+c+d+e$		(атытсти)	(атытсти)	(атытсти)	
		Rate per sqm = $(a+b+c+d+e)/3500$					
		nate per squi - (arbitrare)/3300					
3.32	313	Construction of Rock fill Embankment					
		with all lifts and lead upto 5 Km					
		Construction of rock fill embankment					
		from roadway excavation with broken					
		hard rock fragments of size not exceeding					
		300 mm laid in layers not exceeding 500					
		mm thick including filling of surface voids					

	Description	Quantity	Quantity as per project category				
	νειτιμαστι	Unit	Large	Medium	Small	(1	
_	ar material, rolled with vibratory bller, all complete as per clause 313.						
_							
_	output = 500 cum bour						
•	late	day	0.053	0.053	0.053		
	lazdoor	day	1.330	1.330	1.330		
	lachinery	day	1.330	1.330	1.330		
•	ozer						
		hour	4.717				
	ozer (240HP)		4.717	6.024			
	ozer (175 HP)	hour hour		6.024	10.870		
	ozer (90 HP) ipper for transportation of rock	nour			10.870		
	onsidering lead @ 5 km						
) 14 cum capacity	t.km	4000.000				
	i) 14 cum capacity	t.km	4000.000	4000.000			
•	ii) 10 cum capacity	t.km		4000.000	4000.000		
W sp kr	Vater tanker (speed @ Water tanker beed km/hr. and return speed @ 10 m/hr. and spreading speed @ 2.5 m/hr.)	CKIII			4000.000		
(i)	16 KL capacity	hour	0.222 x L1 + 0.427				
(ii) 12 KL capacity	hour		0.296 x L1 + 0.569			
(ii	ii) 6 KL capacity	hour			0.593 x L1 + 1.138		
Vi	ibratory roller	hour	2.890	2.890	2.890		
	1aterial						
	ost of water (considering 5% dditional moisture required)	KL	16.000	16.000	16.000		
	overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
-	ontractor's profit		@ on	@ on	@ on		
			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)		
Cost fo	or 500 cum = a+b+c+d+e						
Rate p	er cum = (a+b+c+d+e)/500						

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.

3.33 Work in Urban Roads

Sr

No

Ref. to M

The cost of earth work in urban roads inhabited area will be comparatively higher due to following reasons:

- a) There is mixed traffic on urban roads like slow moving hand and animal driven carts, rickshaws, cycles, two/three wheeler apart from the usual vehicular traffic resulting into traffic jams. This causes loss of working time which may be in the range of 10 -15 Percent
- b) There is considerable disruption of

Sr	Def to M	Description	11	Quantity as per project category			
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

traffic adversely affecting the efficiency of the working parties including machines due to congestion caused by pedestrian traffic, local road side venders, parking of vehicles by the road side, encroachments by the shopkeepers and local shops who make use of the berms of the road in of these shops front and unauthorised conversion of road berms into mini local market The output of manpower and machines is substantially reduced due to factors mentioned above.

- c) Cost of living in urban areas is comparatively more resulting into higher wages.
- d) At times, work is executed during night time due to heavy traffic during day time. This involves extra expenditure by way of making arrangement for lighting and special transport for working parties due to odd hour

In the light of above, the authorities engaged in preparing the cost estimates may exercise their judgment and cater for the additional cost to the extent of 2 to 3 Percent, keeping in view the severity of factors mentioned above. Supporting details for the extra cost based on the actual conditions in specific cases will have to give in justification.

3.34 Suggestive

Embankment Construction with Flyash/ Pond ash available from coal or lignite burning Thermal Plants as waste material.

Construction of embankment with Fly ash conforming to Table 1 of IRC: SP: 58 obtained from coal or lignite burning thermal power stations as waste material, spread and compacted in layers at OMC, all as specified in IRC: SP: 58 and as per approved plans.

Considering Soil blanketing of 2 m either side for 4 lane section

Unit = cum

Taking output = 450 cum

a) l	_abour
------	--------

 Mate
 day
 0.160
 0.160
 0.160

 Mazdoor
 day
 3.990
 3.990
 3.990

b) Machinery

Hydraulic Excavator For borrow area soil

(i) 1.2 cum bucket capacity hour 0.901

CHAPTER: 3- EARTH WORK, EROSION CONTROL AND DRAINAGE

Sr	Dof to Me		Descript:	11	Quantity	Quantity as per project category			
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.	
			/**\			4.020			
			(ii) 1.1 cum bucket capacity	hour		1.038	4 454		
			(iii) 0.9 cum bucket capacity	hour			1.451		
			Tipper						
			Transportation of borrow area soil						
			(i) 14 cum capacity	t.km	67.5x1.6 x L2				
			(ii) 14 cum capacity	t.km		67.5x1.6 x L2			
			(iii) 10 cum capacity	t.km			67.5x1.6 x L2		
			Transportation of flyash						
			To be supplied by the Thermal Power						
			Plant including loading and unloading						
			Loading & unloading						
			(i) 14 cum capacity	hour	0.901				
			(ii) 14 cum capacity	hour		1.038			
			(iii) 10 cum capacity	hour			1.451		
			Motor grader for grading						
			(i) Motor grader 4.30 metre blade	hour	2.488				
			(ii) Motor grader 3.70 metre blade	hour		3.002			
			(iii) Motor grader 3.35 metre blade	hour			3.347		
			Water tanker (speed @ Water tanker						
			speed km/hr. and return speed @ 10						
			km/hr. and spreading speed @ 2.5						
			Km/hr.)						
			(i) 16 KL capacity	hour	0.713 x L1 +				
			, ,		1.231				
			(ii) 12 KL capacity	hour		0.95 x L1 +			
			, , ,			1.642			
			(iii) 6 KL capacity	hour			1.9 x L1 +		
			() = =================================				3.283		
			Vibratory roller 12 tonne	hour	2.601	2.601	2.601		
		c)	Material						
		٠,	Cost of water (considering 5%	KL	51.300	51.300	51.300		
			additional moisture required)		31.300	31.300	31.300		
			Compensation for earth taken from	cum	67.500	67.500	67.500		
			private land	cum	07.500	07.500	07.500		
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+h+c)	١	
		e)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	'	
		٦,	contractor a profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)		
		Con	t for 450 cum = a+b+c+d+e		(atutitu)	(a+b+t+u)	(a+b+c+u)		
		CUS	に いい チンひ しいい ー タナルナしてはてせ						

Cost for 450 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/450

Note 1. As fly ash is available free of cost as waste material from Thermal Plants, cost of material has not been added.

2. The earth cover on sides and intermediate layers of earth sandwiching the fly ash has been included in this analysis.

CHAPTER - 4

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

PREAMBLES:

- 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, three alternatives as under have been provided:
 - a. Plant mix method
 - b. Mix in Placed method
 - c. Crusher Run method
- For Plant Mix method of Granular sub base, a wet mix plant of 250, 200 & 100 TPH capacity is taken as the appropriate mixing plant.
- The plant mix method is actually being practiced from quite some time to get better quality of mix. It is also found economical as it can achieve much more progress.
- In the case of cement treated sub-base or base course, Plant mixing as well as site mixing with the help of cement spreader, stabilizer equipment is considered for rate analysis.
- 6 In the case of sub-base or base course using RAP, milling machine is considered for rate analysis.
- In the case of medians, separators and footpaths, plate compactor has been catered for compaction due to restricted space.
- It has been assumed in the case of crushed cement concrete sub-base/base that during the process of dismantling, 25% of aggregate will get segregated and only the remaining will have to be broken/crushed from dismantled concrete slab portions. Transportation of material has been catered from place of dismantling to work site. In case, site is the same, transportation can be deleted.
- 9 Separate rate for penetration coat over top layer of crushed cement concrete base has been provided, as this item is optional.
- 10 The rate analysis for crushing of aggregates has been included in Chapter-1.
- The quantity considered in the output is the compacted quantity. The quantities of aggregates provided in the rate analysis under the head material are the un-compacted quantities.

			Description		Quantity a	Rate			
Sr No	Ref. to M		Description		Unit	Large	Medium	Small	(Rs.)
		1		1		- 6-			. ,
4.01	401	Gra	nular Sub-Base with Graded M	laterial					
		-	ble:- 400-1)						
	Α		nt Mix Method						
			struction of granular sub-base	•					
		•	viding granular material, mixing	_					
			chanical mix plant at OMC, carri ed Material to work site, spreac	_					
			form layers with motor grad	•					
			pared surface and compacting						
		-	ratory power roller to achiev	_					
		des	ired density, complete as per claus	se 401					
		Uni	t = cum						
		Tak	ing output = 400 cum						
		a)	Labour						
			Mate		day	0.106	0.106	0.106	
			Mazdoor skilled		day	1.330	1.330	1.330	
			Mazdoor		day	1.330	1.330	1.330	
		b)	•						
			Wet mix plant			4.000			
			(i) 250 tonne per hour		hour	4.800	C 000		
			(ii) 200 tonne per hour		hour		6.000	12 000	
			(iii) 100 tonne per hour Electric generator	ſ	hour			12.000	
			(i) 125 KVA		hour	4.800			
			(ii) 100 KVA		hour	4.000	6.000		
			(iii) 62.5 KVA		hour		0.000	12.000	
			Front end loader	·				12.000	
			(i) 3.1 Cum Capacity	ı	hour	11.376			
			(ii) 2.1 Cum Capacity		hour		16.827		
			(iii) 1 Cum Capacity	ŀ	hour			35.117	
			Tipper						
			For transportation						
			(i) 14 cum capacity	1	t.km	840 x L1			
			(ii) 14 cum capacity	1	t.km		840 x L1		
			(iii) 10 cum capacity	1	t.km			840 x L1	
			For loading & unloading Time						
			(i) 14 cum capacity		hour	4.800			
			(ii) 14 cum capacity		hour		6.000		
			(iii) 10 cum capacity	ŀ	hour			12.000	
			Motor grader			2.50=			
			(i) Motor grader 4.30 metre bl		hour	3.687	4 4 4 7		
			(ii) Motor grader 3.70 m blade	netre l	hour		4.447		
				netre l	hour			4.958	
			blade	icu C I	noul			7.330	
			Vibratory roller	ı	hour	3.077	3.077	3.077	
		c)	Material						
		•	Granular sub-base Material as po	er					
			table 400-1						
		For	Grading-I Material						
			mm to 26.5 mm @27.5 Percent	(cum	148.077	148.077	148.077	
		26.5	5 mm to 9.5 mm @ 22.5 Percent	•	cum	121.154	121.154	121.154	

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

				Quantity a	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
			I	8-		• • • • • • • • • • • • • • • • • • • •	, ,
		9.5 mm to 4.75 mm @ 10%	cum	53.846	53.846	53.846	
		4.75 mm below @ 40 Percent	cum	215.385	215.385	215.385	
		Cost of water	KL	67.200	67.200	67.200	
		OR			*******		
		For Grading-II Material					
		26.5 mm to 9.5 mm @ 35 Percent	cum	188.462	188.462	188.462	
		9.5 mm to 4.75 mm @ 12.5 %	cum	67.308	67.308	67.308	
		4.75 mm below @ 52.5 Percent	cum	282.692	282.692	282.692	
		Cost of water	KL	67.200	67.200	67.200	
		OR					
		For Grading-III Material					
		26.5 mm to 9.5 mm @ 68 Percent	cum	366.154	366.154	366.154	
		9.5 mm to 4.75 mm @ 12 %	cum	64.615	64.615	64.615	
		4.75 mm below @ 20 Percent	cum	107.692	107.692	107.692	
		Cost of water	KL	67.200	67.200	67.200	
		OR					
		For Grading-IV Material					
		26.5 mm to 9.5 mm @ 64 Percent	cum	344.615	344.615	344.615	
		9.5 mm to 4.75 mm @ 11 %	cum	59.231	59.231	59.231	
		4.75 mm below @ 25 Percent	cum	134.615	134.615	134.615	
		Cost of water	KL	67.200	67.200	67.200	
		OR					
		For Grading-V Material					
		53 mm to 26.5 mm @27.5 Percent	cum	148.077	148.077	148.077	
		26.5 mm to 9.5 mm @ 22.5 Percent	cum	121.154	121.154	121.154	
		9.5 mm to 4.75 mm @ 12.50 %	cum	67.308	67.308	67.308	
		4.75 mm below @ 37.5 percent	cum	201.923	201.923	201.923	
		Cost of water	KL	67.200	67.200	67.200	
		OR					
		For Grading-VI Material					
		53 mm to 26.5 mm @12.5 Percent	cum	67.308	67.308	67.308	
		26.5 mm to 9.5 mm @22.5 Percent	cum	121.154	121.154	121.154	
		9.5 mm to 4.75 mm @ 22.5 %	cum	121.154	121.154	121.154	
		4.75 mm below @ 42.5 percent	cum	228.846	228.846	228.846	
		Cost of water	KL	67.200	67.200	67.200	
4.01A	(i)	Rate per cum for grading-I Material		_	_	_	
		d) Overhead charges		@ on	@ on	@ on	
		e) Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		e, contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 400 cum = a+b+c+d+e		(4.5.0.4)	(a.b.c.a)	(4.5.0.4)	
		Rate per cum = (a+b+c+d+e)/400					
4.01A	(ii)	Rate per cum for grading-II Material					
	. ,	d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Coat for 100 areas as the sale		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 400 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/400					
		nate per cam - (arbretate)/400					

	56			Quantity a	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
4.01A	(iii)	Rate per cum for grading-III Material d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit Cost for 400 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/400		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
4.01A	(iv)	Rate per cum for grading-IV Material d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Cost for 400 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/400					
4.01A	(v)	Rate per cum for grading-V Material d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit Cost for 400 cum = a+b+c+d+e		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
4.01A	(vi)	Rate per cum = (a+b+c+d+e)/400 Rate per cum for grading-VI Material					
		d) Overhead chargese) Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		Cost for 400 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/400		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	Note	:- Any one of the grading for material may	be adop	ted as per de	esign.		
4.01	В	By Mix in Place Method Construction of granular sub-base is providing granular material, spreading is uniform layers with motor grader of prepared surface, mixing by mix in place method with front end loader at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401 Unit = cum Taking output = 250 cum a) Labour	n n e d e	0.242	0.242	0.242	
		Mate Mazdoor skilled Mazdoor b) Machinery Front end loader for mixing at stock pile location (i) 3.1 Cum Capacity	day day day hour	0.213 1.330 3.990 5.319	0.213 1.330 3.990	0.213 1.330 3.990	
		(ii) 2.1 Cum Capacity	hour	3.313	7.813		

Sr No	Ref. to M		Description	Unit	Quantity a	as per projec	t category	Rate
Sr NO	Ker. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			(m) 4 2 2 2 1					
			(iii) 1 Cum Capacity	hour			16.667	
			Water tanker (speed @ 10 km/hr. and					
			return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.583 x L1			
			/**\ 42.44		+ 0.778	0.770 14		
			(ii) 12 KL capacity	hour		0.778 x L1		
			/···\ C (4)			+ 1.037	4.556.14	
			(iii) 6 KL capacity	hour			1.556 x L1	
							+ 2.074	
			Motor Grader		• • • •			
			(i) Motor grader 4.30 metre blade	hour	2.304			
			(ii) Motor grader 3.70 metre blade	hour		2.779	2 000	
			(iii) Motor grader 3.35 metre blade	hour	4.022	4.022	3.099	
		- \	Vibratory roller	hour	1.923	1.923	1.923	
		c)	Material					
			Granular sub-base Material as per table 400-1					
			table 400-1					
		For	r Grading-I Material					
			mm to 26.5 mm @27.5 Percent	cum	92.548	92.548	92.548	
			5 mm to 9.5 mm @ 22.5 Percent	cum	75.721	75.721	75.721	
			mm to 4.75 mm @ 10%	cum	33.654	33.654	33.654	
			'5 mm below @ 40 percent	cum	134.615	134.615	134.615	
			st of water	cum KL	42.000	42.000	42.000	
		Cos		KL	42.000	42.000	42.000	
			OR					
			r Grading-II Material					
			5 mm to 9.5 mm @ 35 Percent	cum	117.788	117.788	117.788	
			mm to 4.75 mm @ 12.5 %	cum	42.067	42.067	42.067	
			5 mm below @ 52.5 percent	cum	176.683	176.683	176.683	
		Cos	st of water	KL	42.000	42.000	42.000	
			OR					
		For	Grading-III Material					
		26.	5 mm to 9.5 mm @ 68 Percent	cum	228.846	228.846	228.846	
		9.5	mm to 4.75 mm @ 12 %	cum	40.385	40.385	40.385	
		4.7	5 mm below @ 20 percent	cum	67.308	67.308	67.308	
		Cos	st of water	KL	42.000	42.000	42.000	
			OR					
		For	Grading-IV Material					
			5 mm to 9.5 mm @ 64 Percent	cum	215.385	215.385	215.385	
			mm to 4.75 mm @ 11 %	cum	37.019	37.019	37.019	
			5 mm below @ 25 percent	cum	84.135	84.135	84.135	
			st of water	KL	42.000	42.000	42.000	
			OR					
		For						
			Grading-V Material	01100	02 540	02 540	02 540	
			mm to 26.5 mm @27.5 Percent	cum	92.548 75.721	92.548 75.721	92.548 75.721	
			5 mm to 9.5 mm @ 22.5 Percent	cum		75.721	75.721	
			mm to 4.75 mm @ 12.50 %	cum	42.067 126.202	42.067 126.202	42.067 126.202	
			'5 mm below @ 37.5 percent st of water	cum KL	126.202 42.000	126.202 42.000	42.000	
		COS	OR	ΝL	42.000	42.000	42.000	
		_						
			Grading-VI Material		40.00-	40.05=	40.00=	
		53	mm to 26.5 mm @12.5 Percent	cum	42.067	42.067	42.067	

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

C., N	Def 4- 84	Described on	1112	Quantity a	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		26.5 mm to 9.5 mm @22.5 Percent	cum	75.721	75.721	75.721	
		9.5 mm to 4.75 mm @ 22.5 %	cum	75.721	75.721	75.721	
		4.75 mm below @ 42.5 percent	cum	143.029	143.029	143.029	
		Cost of water	KL	42.000	42.000	42.000	
4.01 B	(i)	Rate per cum for grading-I Material					
	• • • • • • • • • • • • • • • • • • • •	d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/250$					
4.01 B	(ii)	Rate per cum for grading-II Material					
	` ,	d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/250$					
4.01 B	(iii)	Rate per cum for grading-III Material					
	` ,	d) Overhead charges		@ on	@ on	@ on	
		-		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/250$					
4.01 B	(iv)	Rate per cum for grading-IV Material					
	` ,	d) Overhead charges		@ on	@ on	@ on	
		-		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/250$					
4.01 B	(v)	Rate per cum for grading-V Material					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Control 250 over the state		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/250					
		nate per cuiti - (a+b+C+Q+e)/ 250					
4.01 B	(vi)	Rate per cum for grading-VI Material					
	•	d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/250					

Note :- Any one of the grading for material may be adopted as per design

					Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		1				1		
4.01 401	. & 407 C	Usi	ng Crusher Run					
			nstruction of granular sub-base using					
			sher run, spreading in uniform layers					
			h motor grader on prepared surface,					
			ing by mix in place method with avator at OMC, and compacting with					
			ratory roller to achieve the desired					
			sity, complete as per clause 401					
			t = cum					
		Tak	ing output = 250 cum					
		a)	Labour					
			Mate	day	0.106	0.106	0.106	
			Mazdoor skilled	day	1.330	1.330	1.330	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Front end loader for loading to Tipper					
			(i) 3.1 Cum Capacity	hour	1.838			
			(ii) 2.1 Cum Capacity	hour		2.732		
			(iii) 1 Cum Capacity	hour			5.747	
			Tipper					
			For transportation	4 l	F2F 1.4			
			(i) 14 cum capacity	t.km	525 x L1	F2F I 1		
			(ii) 14 cum capacity (iii) 10 cum capacity	t.km t.km		525 x L1	525 x L1	
			For loading & unloading Time	L.KIII			323 X L1	
			(i) 14 cum capacity	hour	1.838			
			(ii) 14 cum capacity	hour	1.050	2.732		
			(iii) 10 cum capacity	hour		2.732	5.747	
			Water tanker (speed @ 10 km/hr.	noai			3., .,	
			and return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.583 x L1			
					+ 0.778			
			(ii) 12 KL capacity	hour		0.778 x L1		
			tun			+ 1.037		
			(iii) 6 KL capacity	hour			1.556 x L1 + 2.074	
			Motor Grader				+ 2.074	
			(i) Motor grader 4.30 metre blade	hour	2.304			
			(ii) Motor grader 3.70 metre blade	hour	2.304	2.779		
			(iii) Motor grader 3.35 metre blade	hour		2.775	3.099	
			Vibratory roller	hour	1.923	1.923	1.923	
		c)	Material		1.0 20	2.020	1.525	
		-,	Granular sub-base Material as per					
			table 400-1					
			For Grading-I Material					
			53 mm to 4.75 mm below	cum	336.538	336.538	336.538	
			Cost of water	KL	42.000	42.000	42.000	
			OR					
			For Grading-II Material					
			26.5 mm to 4.75 mm below	cum	336.538	336.538	336.538	
			_5.5 mm to 1.75 mm below	Caill	550.550	330.330	550.550	

Sr No	Ref. to M	Description	Unit	Quantity a	as per projec	t category	Rate
31 110	Rei. to ivi	Description	Onit	Large	Medium	Small	(Rs.
			1/1	42.000	42.000	42.000	
		Cost of water	KL	42.000	42.000	42.000	
		OR					
		For Grading-III Material					
		26.5 mm to 4.75 mm below	cum	336.538	336.538	336.538	
		Cost of water	KL	42.000	42.000	42.000	
		OR					
		For Grading-IV Material					
		26.5 mm to 4.75 mm below	cum	336.538	336.538	336.538	
		Cost of water	KL	42.000	42.000	42.000	
		OR					
		For Grading-V Material					
		53 mm to 4.75 mm below	cum	336.538	336.538	336.538	
		Cost of water	KL	42.000	42.000	42.000	
		OR					
		For Grading-VI Material					
		53 mm to 4.75 mm below	cum	336.538	336.538	336.538	
		Cost of water	KL	42.000	42.000	42.000	
	m						
4.01C	(i)	Rate per cum for grading-I Material		_	_	_	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		c, commune prom		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/250$					
4.01C	(ii)	Rate per cum for grading-II Material					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Cost for 250 cum = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per cum = (a+b+c+d+e)/250					
		tate per cam (and term of 200					
4.01C	(iii)	Rate per cum for grading-III Material					
		d) Overhead charges		@ on	@ on	@ on	
		a) Combinata da muelto		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$		(a.b.c.a)	(a.b.c.a)	(a.b.c.a)	
		Rate per cum = $(a+b+c+d+e)/250$					
4.01C	(iv)	Rate per cum for grading-IV Material					
	(10)	d) Overhead charges		@ on	@ on	@ on	
		,		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		0.16.050		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = a+b+c+d+e					
		Rate per cum = (a+b+c+d+e)/250					

				Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
				6			, ,
4.01C	(v)	Rate per cum for grading-V Material					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = a+b+c+d+e					
		Rate per cum = $(a+b+c+d+e)/250$					
4.01C	(vi)	Pate per cum for grading VI Material					
4.010	(VI)	Rate per cum for grading-VI Material d) Overhead charges		@ on	@ on	@ on	
		d) Overhead charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		(a 151c) @ on	@ on	@ on	
		c) contractor s pront		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 250 cum = $a+b+c+d+e$		(((
		Rate per cum = $(a+b+c+d+e)/250$					
	Note	:- Any one of the grading for material may be	e adopt	ed as per de	sign		
4.02 A	402	Lime Stabilisation for Improving Sub-grade					
		Providing, laying and spreading available					
		soil in the sub-grade on a prepared surface,					
		pulverising, mixing the spread soil in place					
		with rotavator with 2 Percent slaked lime					
		having minimum content of 70 Percent 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					
	Δ	By Manual Means					
		a) Labour					
		Mate	day	0.479	0.479	0.479	
		Skilled mazdoor for alignment and	day	1.330	1.330	1.330	
		geometrics					
		Mazdoor for spraying lime	day	10.640	10.640	10.640	
		b) Machinery					
		Hydraulic Excavator					
		(i) 1.2 cum bucket capacity	hour	4.006			
		(ii) 1.1 cum bucket capacity	hour		4.614		
		(iii) 0.9 cum bucket capacity	hour			6.450	
		Tipper					
		For Transportation	+ 1	F2F L2			
		(i) 14 cum capacity	t.km	525 x L2	E3E v 13		
		(ii) 14 cum capacity	t.km t.km		525 x L2	E3E v l 3	
		(iii) 10 cum capacity For loading & unloading Time	ı.Kiii			525 x L2	
		(i) 14 cum capacity	hour	4.006			
		(ii) 14 cum capacity	hour	4.000	4.614		
		(iii) 10 cum capacity	hour		7.017	6.450	
		Tractor with ripper and rotavator				5.150	
		attachments @ 250 cum per hour for	hour	1.200	1.200	1.200	
		mixing	-		-	-	
		<u> </u>					

Sr No	Ref. to M		Description	Unit	Quantity	as per projec	ct category	Rate
31 140	Kei. to ivi		Description	0	Large	Medium	Small	(Rs.)
			Motor Grader (i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre			3.335		
			blade					
			(iii) Motor grader 3.35 metre	e hour			3.719	
			blade					
			Vibratory roller	hour	1.734	1.734	1.734	
			Water tanker (speed @ 10 km/hr. a return speed @ 15 km/hr. and	na				
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.385 x L1			
					+ 2.217			
			(ii) 12 KL capacity	hour		1.847 x L1		
			(11)			+ 2.956		
			(iii) 6 KL capacity	hour			3.694 x L1	
		c)	Material				+ 5.911	
		c,	Lime at site	tonne	10.500	10.500	10.500	
			Cost of water including water for	KL	99.750	99.750	99.750	
			curing					
			Compensation for earth taken from	cum	300.000	300.000	300.000	
		٨١	private land		Ø	Ø	0	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		(атытс) @ on	(атытс) @ on	(атытс) @ on	
		-,	эт э		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 300 cum= a+b+c+d+e					
		Rat	e per cum =(a+b+c+d+e)/ 300					
4.02 B	402 (i)	Lim	e Stabilisation for Improving Sub-gra	de				
		Pro	viding, laying and spreading availa	ble				
			in the sub-grade on a prepared surfa					
			verising, mixing the spread soil in pla					
			h Soil Stabilizer with 2 Percent slal e using Binder spreader Machi					
			ring minimum content of 70 Percent	-				
			D, grading with motor grader a					
			npacting with the road roller at OMC					
			desired density to form a layer	of				
			proved sub grade					
			t = cum					
			ing output = 300 cum					
		ву і а)	Mechanical Means Labour					
		u,	Mate	day	0.106	0.106	0.106	
			Skilled mazdoor for alignment and	day	1.330	1.330	1.330	
			geometrics	,				
			- Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour				
			(ii) 1.1 cum bucket capacity	hour		4.614		
			(iii) 0.9 cum bucket capacity	hour			6.450	

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

					Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		•				•		
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	525 x L2			
			(ii) 14 cum capacity	t.km		525 x L2		
			(iii) 10 cum capacity	t.km			525 x L2	
			For loading & unloading Time					
			(i) 14 cum capacity	hour	4.006			
			(ii) 14 cum capacity	hour		4.614		
			(iii) 10 cum capacity	hour	2.667	2.667	6.450	
			Soil Stabilizer for mixing and pulverising with capacity 1000 m ² per	hour	2.667	2.667	2.667	
			hour					
			Binder Spreader	hour	2.667	2.667	2.667	
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	2.765	2 225		
			(ii) Motor grader 3.70 metre blade	hour		3.335	2.740	
			(iii) Motor grader 3.35 metre blade	hour	1 724	1 724	3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.385 x L1 + 2.217			
			(ii) 12 KL capacity	hour		1.847 x L1 + 2.956		
			(iii) 6 KL capacity	hour			3.694 x L1 + 5.911	
		c)	Material					
			Lime at site	tonne	10.500	10.500	10.500	
			Cost of water including water for curing	KL	99.750	99.750	99.750	
			Compensation for earth taken from private land	cum	300.000	300.000	300.000	
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		Con	st for 300 cum= a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			te per cum =(a+b+c+d+e)/ 300					
4.02 B	402 (-	ne Stabilisation for Improving Sub-grade					
		soil pul wit lim cor mo	viding, laying and spreading available in the sub-grade on a prepared surface, verising, mixing the spread soil in place h Soil Stabilizer with 2 Percent slaked e mannualy spreaded having minimum stent of 70 Percent of CaO, grading with tor grader and compacting with the road er at OMC to the desired density to form					
		a la Un i	yer of improved sub grade it = cum king output = 300 cum					

No	Ref. to M		Description	Unit	Quantity a	s per projec		۱
INO	itel. to ivi		Description	Oilit	Large	Medium	Small	
		_	Mechanical Means					
		a)	Labour	J	0.470	0.470	0.470	
			Mate	day	0.479	0.479	0.479	
			Skilled mazdoor for alignment and geometrics	day	1.330	1.330	1.330	
			Mazdoor for spraying lime	day	10.640	10.640	10.640	
		b)	Machinery	aay	10.040	10.040	10.040	
		٠,	Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	4.006			
			(ii) 1.1 cum bucket capacity	hour		4.614		
			(iii) 0.9 cum bucket capacity	hour			6.450	
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	525 x L2			
			(ii) 14 cum capacity	t.km		525 x L2		
			(iii) 10 cum capacity	t.km			525 x L2	
			For loading & unloading					
			Time					
			(i) 14 cum capacity	hour	4.006			
			(ii) 14 cum capacity	hour		4.614		
			(iii) 10 cum capacity	hour			6.450	
			Soil Stabilizer for mixing and	hour	2.667	2.667	2.667	
			pulverising with capacity 1000 m2 per					
			hour Motor Grador					
			Motor Grader (i) Motor grader 4.20 metre, blade	hour	2.765			
			(i) Motor grader 4.30 metre blade(ii) Motor grader 3.70 metre	hour	2.703	3.335		
			blade	Houi		3.333		
			(iii) Motor grader 3.35 metre blade	hour			3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Water tanker (speed @ 10 km/hr. and					
			return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.385 x L1 + 2.217			
			(ii) 12 KL capacity	hour		1.847 x L1 + 2.956		
			(iii) 6 KL capacity	hour		. 2.330	3.694 x L1	
		c)	Material				+ 5.911	
		٠,	Lime at site	tonne	10.500	10.500	10.500	
			Cost of water including water for	KL	99.750	99.750	99.750	
			curing	INE.	33.730	33.730	33.730	
			Compensation for earth taken from private land	cum	300.000	300.000	300.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		۱۵	Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			t for 300 cum= a+b+c+d+e		(a · b+c+u)	(a · b+c+u)	(a · b+c+u)	

6	. .			D		Quantity a	as per projec	t category	Rate
Sr No	Ref. to	М		Description	Unit	Large	Medium	Small	(Rs.
4.03	402	Α	Cen	nent Stabilisation for Improving Sub- de					
			Pro	viding, laying and spreading available					
				in the sub-grade on a prepared surface,					
			-	verising, mixing the spread soil in place					
				n rotavator with 2 Percent cement,					
			_	ding motor grader and compacting with road roller at OMC to the desired					
				sity to form a layer of improved sub					
			grad						
			_	t = cum					
			Tak	ing output = 300 cum					
		Α		Manual Means					
			a)	Labour					
			-	Mate	day	0.479	0.479	0.479	
				Skilled mazdoor for alignment and	day	1.330	1.330	1.330	
				geometrics					
				Mazdoor for spraying lime	day	10.640	10.640	10.640	
			b)	Machinery					
				Hydraulic Excavator					
				(i) 1.2 cum bucket capacity	hour	4.006			
				(ii) 1.1 cum bucket capacity	hour		4.614		
				(iii) 0.9 cum bucket capacity	hour			6.450	
				Tipper					
				For Transportation					
				(i) 14 cum capacity	t.km	525 x L2			
				(ii) 14 cum capacity	t.km		525 x L2		
				(iii) 10 cum capacity	t.km			525 x L2	
				For loading & unloading Time					
				(i) 14 cum capacity	hour	4.006			
				(ii) 14 cum capacity	hour		4.614		
				(iii) 10 cum capacity	hour			6.450	
				Tractor with ripper and rotavator	l	4 200	4 200	4 200	
				attachments @ 250 cum per hour for mixing	hour	1.200	1.200	1.200	
				Motor Grader					
				(i) Motor grader 4.30 metre blade	hour	2.765			
				(ii) Motor grader 3.70 metre blade	hour	2.703	3.335		
				(iii) Motor grader 3.35 metre blade	hour		3.333	3.719	
				Vibratory roller	hour	1.734	1.734	1.734	
				Water tanker (speed @ 10 km/hr. and	noui	1.751	1.75	1.75	
				return speed @ 15 km/hr. and					
				spreading speed @ 3.0 Km/hr.)					
				(i) 16 KL capacity	hour	1.385 x L1			
				·		+ 2.217			
				(ii) 12 KL capacity	hour		1.847 x L1		
							+ 2.956		
				(iii) 6 KL capacity			- 2.550		

c)

Material

Cement at site

+ 5.911

10.500

10.500

tonne

10.500

Cr No	Dof t-	D.//		Description	l lm!4	Quantity a	as per projec	ct category	Rate
Sr No	Ref. to	IVI		Description	Unit	Large	Medium	Small	(Rs.)
				Cost of water including water for	KL	99.750	99.750	99.750	
				curing Compensation for earth taken from	cum	300.000	300.000	300.000	
				private land	Cum	300.000	300.000	300.000	
			d)	Overhead charges		@ on	@ on	@ on	
						(a+b+c)	(a+b+c)	(a+b+c)	
			e)	Contractor's profit		@ on	@ on	@ on	
				16 200		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
				t for 300 cum= a+b+c+d+e e per cum =(a+b+c+d+e)/ 300					
			Nati	e per cum -(arbrerure)/ 500					
4.03	402	В	Cen	nent Stabilisation for Improving Sub-					
			grad						
		(i)		viding, laying and spreading available					
				in the sub-grade on a prepared surface,					
				verising, mixing the spread soil in place on Soil Stabilizer with 2 percent cement					
				ng Binder spreader Machine, grading					
				n motor grader and compacting with	-				
				road roller at OMC to the desired					
				sity to form a layer of improved sub)				
			grad						
			-	Mechanical Means t = cum					
			_	ing output =300 cum					
			a)	Labour					
			,	Mate	day	0.106	0.106	0.106	
				Skilled mazdoor for alignment and	day	1.330	1.330	1.330	
				geometrics					
				Mazdoor for spraying lime	day	1.330	1.330	1.330	
			b)	Machinery					
				Hydraulic Excavator (i) 1.2 cum bucket capacity	hour	4.006			
				(ii) 1.1 cum bucket capacity	hour hour	4.006	4.614		
				(iii) 0.9 cum bucket capacity	hour		4.014	6.450	
				Tipper					
				For Transportation					
				(i) 14 cum capacity	t.km	525 x L2			
				(ii) 14 cum capacity	t.km		525 x L2		
				(iii) 10 cum capacity	t.km			525 x L2	
				For loading & unloading					
				Time		4.006			
				(i) 14 cum capacity		4.006	4.614		
				(ii) 14 cum capacity (iii) 10 cum capacity			4.614	6.450	
				Soil Stabilizer for mixing and		2.667	2.667	2.667	
				pulverising with capacity		2.007	2.007	2.007	
				1000 m2 per hour					
				Binder Spreader		2.667	2.667	2.667	
				Motor Grader					
				(i) Motor grader 4.30 metre blade	hour	2.765			
				(ii) Motor grader 3.70 metre blade	hour		3.335		

Sr No	Ref. to	M		Description	Unit	Quantity a	as per projec	t category	Rate
SI NO	kei. to	IVI		Description	Unit	Large	Medium	Small	(Rs.)
				(iii) Motor grader 3.35 metre blade Vibratory roller Water tanker (speed @ 10 km/hr. and	hour hour	1.734	1.734	3.719 1.734	
				return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.) (i) 16 KL capacity	hour	1.385 x L1 + 2.217			
				(ii) 12 KL capacity	hour		1.847 x L1 + 2.956		
				(iii) 6 KL capacity	hour			3.694 x L1 + 5.911	
			c)	Material					
				Cement at site	tonne	10.500	10.500	10.500	
				Cost of water including water for curing	KL	99.750	99.750	99.750	
				Compensation for earth taken from private land	cum	300.000	300.000	300.000	
			d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
						(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
				t for 300 cum= a+b+c+d+e e per cum =(a+b+c+d+e)/ 300					
4.03 B	402	(ii)	Cem	nent Stabilisation for Improving Sub-					
I.03 B	402	(ii)	Cem grace Layi sub- pulv with mar grace at C laye	ment Stabilisation for Improving Sub- de ng and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place a Soil Stabilizer with 2 Percent cement anualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a per of improved sub grade					
.03 В	402	(ii)	Cem grad Layi sub- pulv with mar grad at C laye Unit	nent Stabilisation for Improving Sub- de ng and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place a Soil Stabilizer with 2 Percent cement anualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a ar of improved sub grade t = cum					
.03 В	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit	ment Stabilisation for Improving Sub- de ng and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place a Soil Stabilizer with 2 Percent cement anualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a per of improved sub grade					
.03 В	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit Taki	nent Stabilisation for Improving Sub- de ng and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place a Soil Stabilizer with 2 Percent cement anualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a ar of improved sub grade t = cum ing output =300 cum		0.479	0.479	0.479	
.03 В	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit	ment Stabilisation for Improving Sub- de ng and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place a Soil Stabilizer with 2 Percent cement anualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a ar of improved sub grade t = cum ting output =300 cum Labour		0.479 1.330	0.479 1.330	0.479 1.330	
.03 В	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit	nent Stabilisation for Improving Sub- de Ing and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place in Soil Stabilizer with 2 Percent cement innualy spreaded, grading with motor ider and compacting with the road roller ider and co	day				
.03 B	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit Taki a)	nent Stabilisation for Improving Sub- de Ing and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place in Soil Stabilizer with 2 Percent cement innualy spreaded, grading with motor ider and compacting with the road roller ider and compacting with the road roller ider and improved sub grade it = cum ing output =300 cum Labour Mate Skilled mazdoor for alignment and geometrics Mazdoor for spraying lime	day day	1.330	1.330	1.330	
.03 B	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit Taki a)	nent Stabilisation for Improving Sub- de Ing and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place a Soil Stabilizer with 2 Percent cement anualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a ar of improved sub grade at = cum and output =300 cum Labour Mate Skilled mazdoor for alignment and geometrics Mazdoor for spraying lime Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity (iii) 0.9 cum bucket capacity Tipper	day day day	1.330 10.640	1.330 10.640	1.330	
I.03 B	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit Taki a)	nent Stabilisation for Improving Sub- de Ing and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place in Soil Stabilizer with 2 Percent cement innualy spreaded, grading with motor ider and compacting with the road roller ing output =300 cum Labour Mate Skilled mazdoor for alignment and geometrics Mazdoor for spraying lime Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity Tipper For Transportation (i) 14 cum capacity	day day day hour hour hour	1.330 10.640	1.330 10.640	1.330 10.640	
I.03 B	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit Taki a)	nent Stabilisation for Improving Sub- de Ing and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place in Soil Stabilizer with 2 Percent cement innualy spreaded, grading with motor ider and compacting with the road roller ing output =300 cum Labour Mate Skilled mazdoor for alignment and geometrics Mazdoor for spraying lime Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity Tipper For Transportation (i) 14 cum capacity (ii) 14 cum capacity (iii) 14 cum capacity	day day hour hour hour	1.330 10.640 4.006	1.330 10.640	1.330 10.640	
4.03 B	402	(ii)	Cem grace Layi sub- pulv with man grace at C laye Unit Taki a)	nent Stabilisation for Improving Sub- de Ing and spreading available soil in the grade on a prepared surface, verising, mixing the spread soil in place in Soil Stabilizer with 2 Percent cement innualy spreaded, grading with motor ider and compacting with the road roller ing output =300 cum Labour Mate Skilled mazdoor for alignment and geometrics Mazdoor for spraying lime Machinery Hydraulic Excavator (i) 1.2 cum bucket capacity (ii) 1.1 cum bucket capacity Tipper For Transportation (i) 14 cum capacity	day day day hour hour hour	1.330 10.640 4.006	1.330 10.640 4.614	1.330 10.640	

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

					Quantity as per project catego		t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
<u> </u>		•				•	•	•
			(ii) 14 cum capacity	hour		4.614		
			(iii) 10 cum capacity	hour			6.450	
			Soil Stabilizer for mixing and	hour	2.667	2.667	2.667	
			pulverising with capacity 1000 m2 per hour					
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre blade	hour		3.335		
			(iii) Motor grader 3.35 metre blade	hour			3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.385 x L1 + 2.217			
			(ii) 12 KL capacity	hour		1.847 x L1 + 2.956		
			(iii) 6 KL capacity	hour			3.694 x L1 + 5.911	
		c)	Material					
			Cement at site	tonne	10.500	10.500	10.500	
			Cost of water including water for curing	KL	99.750	99.750	99.750	
			Compensation for earth taken from private land	cum	300.000	300.000	300.000	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			t for 300 cum= a+b+c+d+e					
		Rat	e per cum =(a+b+c+d+e)/ 300					
4.04	402		e Stabilisation in Embankment					
		soil pul wit hav	viding, laying and spreading available in the sub-grade on a prepared surface, verising, mixing the spread soil in place h rotavator with 2 Percent slaked lime ring minimum content of 70 Percent of					
		con	D, grading with motor grader and npacting with the road roller at OMC to desired density to form a layer of					
			proved sub grade					
	Α	-	Manual Means					
		-	t = cum					
		Tak	ing output =300 cum					
		a)	Labour					
		- /						
		,	Mate	day	0.479	0.479	0.479	
		-,	Mate Skilled mazdoor for alignment and geometrics	day day	0.479 1.330	0.479 1.330	0.479 1.330	

Sr No Ref. to M		Description U		Quantity a	as per projec	ct category	Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	Rate (Rs.)
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	4.006	4.54.4		
			(ii) 1.1 cum bucket capacity	hour		4.614	6.450	
			(iii) 0.9 cum bucket capacity Tipper	hour			6.450	
			For Transportation					
			(i) 14 cum capacity	t.km	450 x L2			
			(ii) 14 cum capacity	t.km	430 X LZ	450 x L2		
			(iii) 10 cum capacity	t.km			450 x L2	
			For loading & unloading Time					
			(i) 14 cum capacity	hour	4.006			
			(ii) 14 cum capacity	hour		4.614		
			(iii) 10 cum capacity	hour			6.450	
			Tractor with ripper and rotavator					
			attachments @ 250 cum per hour for	hour	1.200	1.200	1.200	
			mixing					
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre blade	hour		3.335	0.740	
			(iii) Motor grader 3.35 metre blade	hour	4 724	4.704	3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.188 x L1			
			(i) 10 KL capacity	noui	+ 1.9			
			(ii) 12 KL capacity	hour	. 1.3	1.583 x L1		
			(ii) 12 KE capacity	noai		+ 2.533		
			(iii) 6 KL capacity	hour			3.167 x L1	
			(, o M2 supusity				+ 5.067	
		c)	Material					
		-,	Lime at site	tonne	9.000	9.000	9.000	
			Cost of water including water for	KL	85.500	85.500	85.500	
			curing		00.000	00.000	00.000	
			Compensation for earth taken from	cum	300.000	300.000	300.000	
			private land					
		d)	Overhead charges		@ on	@ on	@ on	
		-	-		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 300 cum= a+b+c+d+e					
		Rat	e per cum =(a+b+c+d+e)/300					
4.04 B	402 (i)) Lim	e Stabilisation in Embankment					
		Pro	viding, laying and spreading available					
		soil	in the sub-grade on a prepared surface,					
		pul	verising, mixing the spread soil in place					
			h Soil Stabilizer with 2 percent slaked					
			e using Binder spreader Machine,					
			ring minimum content of 70 Percent of					
), grading with motor grader and					
			npacting with the road roller at OMC to					
		the	desired density to form a layer of					

C A.!	Def 4- 84		Description	11	Quantity a	ıs per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		-	roved sub grade					
			t = cum					
			ing output =300 cum					
		a)	Mechanical Means Labour					
		a,	Mate	day	0.093	0.093	0.093	
			Skilled mazdoor for alignment and	day	1.000	1.000	1.000	
			geometrics	aay	1.000	1.000	1.000	
			Mazdoor for spraying lime	day	1.330	1.330	1.330	
		b)	Machinery	•				
		•	Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	4.006			
			(ii) 1.1 cum bucket capacity	hour		4.614		
			(iii) 0.9 cum bucket capacity	hour			6.450	
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	450 x L2			
			(ii) 14 cum capacity	t.km		450 x L2		
			(iii) 10 cum capacity	t.km			450 x L2	
			For loading & unloading Time		4.006			
			(i) 14 cum capacity	hour	4.006	1.614		
			(ii) 14 cum capacity	hour		4.614	C 450	
			(iii) 10 cum capacity Soil Stabilizer for mixing and	hour	2.667	2.667	6.450	
			pulverising with capacity 1000 m2 per	hour	2.007	2.667	2.667	
			hour					
			Binder Spreader	hour	2.667	2.667	2.667	
			Motor Grader			2.007	2.007	
			(i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre blade	hour		3.335		
			(iii) Motor grader 3.35 metre blade	hour			3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Water tanker (speed @ 10 km/hr. and					
			return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.188 x L1			
			(ii) 42 KLit	l	+ 1.9	. === :		
			(ii) 12 KL capacity	hour		1.583 x L1		
			(iii) 6 KL capacity	hour		+ 2.533	2.46714	
			(III) O NE Capacity	hour			3.167 x L1 + 5.067	
		c)	Material				± 3.∪0/	
		٠,	Lime at site	tonne	9.000	9.000	9.000	
			Cost of water including water for	KL	85.500	85.500	85.500	
			curing		23.500	55.500	03.300	
			Compensation for earth taken from	cum	300.000	300.000	300.000	
			private land					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 300 cum= a+b+c+d+e					
		Rate	e per cum =(a+b+c+d+e)/ 300					

			T		Quantity	ıs per projec	t category	Pata
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	Rate (Rs.)
					Laige	MEGIUIII	Jiliali	(113.)
4.04 B	402 (ii)	Lim	e Stabilisation in Embankment					
		soil pul witl	viding, laying and spreading available in the sub-grade on a prepared surface, verising, mixing the spread soil in place h Soil Stabilizer with 2 percent slaked a mannualy spreaded having minimum					
		con	tent of 70 Percent of CaO, grading with tor grader and compacting with the road					
			er at OMC to the desired density to form					
			yer of improved sub grade					
			t = cum					
			ing output =300 cum					
			Mechanical Means					
		a)	Labour Mate	day	0.466	0.466	0.466	
			Skilled mazdoor for alignment and geometrics	day	1.000	1.000	1.000	
			Mazdoor for spraying lime	day	10.640	10.640	10.640	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	4.006			
			(ii) 1.1 cum bucket capacity	hour		4.614	C 450	
			(iii) 0.9 cum bucket capacity Tipper	hour			6.450	
			For Transportation (i) 14 cum capacity	t.km	450 x L2			
			(ii) 14 cum capacity	t.km	450 X LZ	450 x L2		
			(iii) 10 cum capacity	t.km		430 X LZ	450 x L2	
			For loading & unloading Time	C.KIII			430 X LZ	
			(i) 14 cum capacity	hour	4.006			
			(ii) 14 cum capacity	hour		4.614		
			(iii) 10 cum capacity	hour			6.450	
			Soil Stabilizer for mixing and	hour	2.667	2.667	2.667	
			pulverising with capacity 1000 m2 per hour					
			Motor Grader		_			
			(i) Motor grader 4.30 metre blade	hour	2.765	0.55=		
			(ii) Motor grader 3.70 metre blade	hour		3.335	2.740	
			(iii) Motor grader 3.35 metre blade	hour	1 724	1.734	3.719	
			Vibratory roller Water tanker (speed @ 10 km/hr. and	hour	1.734	1./34	1.734	
			return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.188 x L1 + 1.9			
			(ii) 12 KL capacity	hour		1.583 x L1 + 2.533	2.467	
			(iii) 6 KL capacity	hour			3.167 x L1 + 5.067	
		c)	Material	ton==	0.000	0.000	0.000	
			Lime at site	tonne	9.000	9.000	9.000	

				it		Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
				Laige	Wiedidili	Jiliali	(113.)
		Cost of water including water for curing	KL	85.500	85.500	85.500	
		Compensation for earth taken from private land	cum	300.000	300.000	300.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on	@ on (a+b+c+d)	
		Cost for 300 cum= a+b+c+d+e			·		
		Rate per cum =($a+b+c+d+e$)/300					
4.04 B	403 (iii)	Cement Stabilisation in Embankment Providing, laying and spreading availal soil in the sub-grade on a prepared surfa pulverising, mixing the spread soil in pla	ce, ace				
		with Soil Stabilizer with 2 Percent ceme using Binder spreader Machine , grad with motor grader and compacting w the road roller at OMC to the desir	ing ith				
		density to form a layer of improved s grade					
		Unit = cum					
		Taking output = 300 cum					
		By Mechanical Means					
		a) Labour		0.000	0.000	0.000	
		Mate	day	0.093	0.093	0.093	
		Skilled mazdoor for alignment and geometrics Mazdoor for spraying lime	day	1.000	1.000	1.000	
		b) Machinery	day	1.330	1.330	1.330	
		Hydraulic Excavator					
		(i) 1.2 cum bucket capacity	hour	4.006			
		(ii) 1.1 cum bucket capacity	hour		4.614		
		(iii) 0.9 cum bucket capacity	hour			6.450	
		Tipper					
		For Transportation (i) 14 cum capacity	t km	450 x L2			
		(ii) 14 cum capacity	t.km t.km	43U X LZ	450 x L2		
		(iii) 10 cum capacity	t.km		430 X LZ	450 x L2	
		For loading & unloading Time	L.KIII			→JU A LZ	
		(i) 14 cum capacity	hour	4.006			
		(ii) 14 cum capacity	hour		4.614		
		(iii) 10 cum capacity	hour			6.450	
		Soil Stabilizer for mixing and pulverising with capacity 1000 m2 per	hour er	2.667	2.667	2.667	
		hour Binder Spreader	hour	2.667	2.667	2.667	
		Motor Grader	Houi	2.007	2.007	2.007	
		(i) Motor grader 4.30 metre blade	hour	2.765			
		(ii) Motor grader 3.70 metre blade	hour		3.335		
		(iii) Motor grader 3.35 metre blade	hour			3.719	

П					Quantity :	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
1					20.80	· · · · · · · · · · · · · · · · · · ·	Ju.i	(1101)
			Vibratory roller Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)	hour	1.734	1.734	1.734	
			(i) 16 KL capacity	hour	1.188 x L1 + 1.9			
			(ii) 12 KL capacity	hour		1.583 x L1 + 2.533		
			(iii) 6 KL capacity	hour			3.167 x L1 + 5.067	
		c)	Material					
			Cement at site	tonne	9.000	9.000	9.000	
			Cost of water including water for curing	KL	85.500	85.500	85.500	
			Compensation for earth taken from private land	cum	300.000	300.000	300.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 300 cum= a+b+c+d+e					
		Rate	e per cum =(a+b+c+d+e)/300					
		soil pulve with man grade at C layer Unit	viding, laying and spreading available in the sub-grade on a prepared surface, verising, mixing the spread soil in place in Soil Stabilizer with 2 percent cement innualy spreaded, grading with motor der and compacting with the road roller DMC to the desired density to form a er of improved sub grade t = cum ing output = 300 cum Mechanical Means					
		a)	Labour					
			Mate	day	0.466	0.466	0.466	
			Skilled mazdoor for alignment and geometrics	day	1.000	1.000	1.000	
			Mazdoor for spraying lime	day	10.640	10.640	10.640	
		b)	Machinery					
		-	Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	4.006			
			(ii) 1.1 cum bucket capacity	hour		4.614		
			(iii) 0.9 cum bucket capacity	hour			6.450	
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	450 x L2			
			(ii) 14 cum capacity	t.km		450 x L2		
			(iii) 10 cum capacity	t.km			450 x L2	
			For loading & unloading Time					

	Ref. to M				Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 14 cum capacity	hour	4.006			
			(ii) 14 cum capacity	hour		4.614		
			(iii) 10 cum capacity	hour			6.450	
			Soil Stabilizer for mixing and	hour	2.667	2.667	2.667	
			pulverising with capacity 1000 m2 per					
			hour					
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre blade	hour		3.335	2 742	
			(iii) Motor grader 3.35 metre blade	hour	1 724	1 724	3.719	
			Vibratory roller Water tanker (speed @ 10 km/hr. and	hour	1.734	1.734	1.734	
			return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.188 x L1			
			(,, ===,		+ 1.9			
			(ii) 12 KL capacity	hour		1.583 x L1		
						+ 2.533		
			(iii) 6 KL capacity	hour			3.167 x L1	
							+ 5.067	
		c)	Material					
			Cement at site	tonne	9.000	9.000	9.000	
			Cost of water including water for curing	KL	85.500	85.500	85.500	
			Compensation for earth taken from	cum	300.000	300.000	300.000	
			private land					
		d)	Overhead charges		@ on	@ on	@ on	
		٠.	Combine at a rile in unafit		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Co	st for 300 cum= a+b+c+d+e		(arbiciu)	(arbiciu)	(arbiciu)	
			te per cum =(a+b+c+d+e)/ 300					
			te per cum =(a.b.e.a.e., 300					
4.05	402	Lin	ne Treated Soil for Sub- Base					
		Pro	oviding, laying and spreading soil on a					
			epared sub grade, pulverising, mixing the					
		spr	read soil in place with rotavator with 3					
		•	rcent slaked lime with minimum content					
			70 Percent of CaO, grading with motor					
		_	nder and compacting with the road roller					
			OMC to achieve at least 98 Percent of					
			e max dry density to form a layer of sub					
		bas	it = cum					
			king output = 300 cum					
		a)	Labour					
		aj	Mate	day	0.638	0.638	0.638	
			Mazdoor skilled	day	2.660	2.660	2.660	
			Mazdoor	day	13.300	13.300	13.300	
		b)		auy	13.300	13.300	13.300	
		~,	Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	9.347			
			(,		**			

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

					Unit Quantity as per		as per projec	t category	Rate
Sr No	Ref. to M		Description		Unit	Large	Medium	Small	(Rs.)
						Luige	Mediam	Jillan	(1.0.)
			(ii) 1.1 cum bucket capacity		hour		10.765		
			(iii) 0.9 cum bucket capacity		hour			15.050	
			Tipper						
			For Transportation of Soil						
			(i) 14 cum capacity		t.km	525 x L2			
			(ii) 14 cum capacity		t.km		525 x L2		
			(iii) 10 cum capacity		t.km			525 x L2	
			For loading & unloading						
			(i) 14 cum capacity		hour	9.347			
			(ii) 14 cum capacity		hour		10.765		
			(iii) 10 cum capacity		hour			15.050	
			Motor grader for grading						
			(i) Motor grader 4.30 metre		hour	2.765			
			(ii) Motor grader 3.70 blade	metre	hour		3.335		
			(iii) Motor grader 3.35 blade	metre	hour			3.719	
			Vibratory roller		hour	1.734	1.734	1.734	
			Tractor with ripper and rotav	ator					
			attachments @ 250 cum per mixing	hour for	hour	1.200	1.200	1.200	
			Water tanker (speed @ 10 km	n/hr.					
			and return speed @ 15 km/hr						
			spreading speed @ 3.0 Km/h						
			(i) 16 KL capacity	·	hour	0.729 x L1 + 1.167			
			(ii) 12 KL capacity		hour		0.972 x L1 + 1.556		
			(iii) 6 KL capacity		hour			1.944 x L1 + 3.111	
		c)	Material						
		•	Lime at site		tonne	15.750	15.750	15.750	
			Compensation for earth taker private land	n from	cum	300.000	300.000	300.000	
			Cost of water		KL	52.500	52.500	52.500	
		d)	Overhead charges			@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit			(a+b+c) @ on	(атытс) @ on	(a+b+c) @ on	
		٠,	Contractor's profit			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	st for 300 cum = a+b+c+d+e			(arbiciu)	(a.p.c.a)	(arbiciu)	
			te per cum= (a+b+c+d+e)/300						
4.06	403	Cer	ment Treated Soil Sub Base/ Ba	se					
			oviding, laying and spreading s						
			pared sub grade, pulverising, a						
			signed quantity of cement to th	-					
			l, mixing in place with rotavator						
			h the motor grader and compac	_					
			e road roller at OMC to ach sired unconfined compressive						
			d to form a layer of sub-base/ba						
		Uni	it = cum	JC.					
		Tak	king output = 300 cum						

				Quantity as per project categor		t category	Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
	•	•						
			4 Percent quantity of cement by					
		wei	ght of soil					
		a)	Labour					
			Mate	day	0.638	0.638	0.638	
			Mazdoor skilled	day	2.660	2.660	2.660	
			Mazdoor	day	13.300	13.300	13.300	
		b)	Machinery					
			Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	9.347			
			(ii) 1.1 cum bucket capacity	hour		10.765		
			(iii) 0.9 cum bucket capacity	hour			15.050	
			Tipper					
			For Transportation of Soil					
			(i) 14 cum capacity	t.km	525 x L2			
			(ii) 14 cum capacity	t.km		525 x L2		
			(iii) 10 cum capacity	t.km			525 x L2	
			For loading & unloading					
			(i) 14 cum capacity	hour	9.347			
			(ii) 14 cum capacity	hour		10.765		
			(iii) 10 cum capacity	hour			15.050	
			Motor grader for grading					
			(i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre blade	hour		3.335		
			(iii) Motor grader 3.35 metre blade	hour			3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Tractor with ripper and rotavator					
			attachments @ 250 cum per hour for mixing	hour	1.200	1.200	1.200	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.729 x L1 + 1.167			
			(ii) 12 KL capacity	hour		0.972 x L1 + 1.556		
			(iii) 6 KL capacity	hour			1.944 x L1 + 3.111	
		c)	Material					
			Cement at site (@ 4 Percent of 525 tonne)	tonne	21.000	21.000	21.000	
			Compensation for earth taken from private land	cum	300.000	300.000	300.000	
			Cost of water	KL	52.500	52.500	52.500	
		d)	Overhead charges @ on (a+b+c)					
		e)	Contractor's profit @ on (a+b+c+d)					
		Cor	t for 300 cum = a+b+c+d+e					
			e per cum= (a+b+c+d+e)/300					
		nat	e per cum (urbiciuie)/ 300					

_					Quantity a	s per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
4.07	403	con 400 Pro	ment Treated Crushed Rock or nbination as per clause 403 and Table 0.4 in Sub base/ Base viding, laying and spreading Material on					
		qua mix the roa uno	repared sub grade, adding the designed antity of cement to the spread Material, ting in place with rotavator, grading with motor grader and compacting with the d roller at OMC to achieve the desired confined compressive strength and to malayer of sub-base/base.					
			it = cum					
		Tak	ing output = 300 cum					
		Qua	antity of cement assumed as 4 Percent quantity of crushed rock by weight. Labour					
		۳,	Mate	day	0.638	0.638	0.638	
			Mazdoor skilled	day	2.660	2.660	2.660	
			Mazdoor	day	13.300	13.300	13.300	
		b)	Machinery	<i>,</i>	20.000	20.000	20.000	
		~,	Motor grader for grading					
			(i) Motor grader 4.30 metre blade	hour	2.765			
			(ii) Motor grader 3.70 metre blade	hour		3.335		
			(iii) Motor grader 3.35 metre blade	hour			3.719	
			Vibratory roller	hour	1.734	1.734	1.734	
			Tractor with ripper and rotavator attachments @ 250 cum per hour for	hour	1.200	1.200	1.200	
			mixing Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.833 x L1 + 1.333			
			(ii) 12 KL capacity	hour		1.111 x L1 + 1.778		
			(iii) 6 KL capacity	hour			2.222 x L1 + 3.556	
		c)	Material					
			Cement at site @ 4 Percent by weight of crushed aggregate (600 tonne)	tonne	24.000	24.000	24.000	
			iding of material for sub-base course		244 200	244 200	244 200	
			5 mm to 9.5 mm @ 55 Percent	cum	211.200	211.200	211.200	
			mm to 4.75 mm @ 20 Percent	cum	76.800	76.800	76.800	
			5 mm to 75 micron @ 25 Percent	cum	96.000	96.000	96.000	
		Cos	et of water	KL	60.000	60.000	60.000	
		_	Or					
			Iding of material for Base course		124.000	124.000	124.000	
			5 mm to 9.5 mm @ 32.5 Percent	cum	124.800	124.800	124.800	
			mm to 4.75 mm @ 5 Percent	cum	19.200	19.200	19.200	
			5 mm to 75 micron @ 62.5 Percent	cum	240.000	240.000	240.000	
		Cos	t of water	KL	60.000	60.000	60.000	

C# No	Ref. to M	Description	Unit	Quantity	as per projec	t category	Rate
Sr No	Ker. to IVI	Description	Unit	Large	Medium	Small	(Rs.
4.07	(i)	For Sub-Base course					
-	()	d) Overhead charges @ on (a+b+c)					
		e) Contractor's profit @ on (a+b+c+d)					
		Cost for 300 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/300$					
4.07	(ii)	For Base course					
		d) Overhead charges @ on (a+b+c)					
		e) Contractor's profit @ on (a+b+c+d)					
		Cost for 300 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/300$					
	Note	:- Quantities of aggregates provided under	'c' abo	ve are un-co	mpacted qua	ntities.	
4.08	403	Cement Treated Crushed Stone Sub base					
	Α	Plant Mix Method					
		Construction of granular sub-base by	,				
		providing graded Material, mixing with					
		cement in a mechanical mix plant at OMC,					
		carriage of mixed Material to work site,					
		spreading in uniform layers with Mechanical Paver on prepared surface and					
		compacting with vibratory power roller to					
		achieve the desired density, complete as					
		per clause 401					

Unit = cum

Tak	ing output = 250 cum				
a)	Labour				
	Mate	day	0.213	0.213	0.213
	Mazdoor skilled	day	1.330	1.330	1.330
	Mazdoor	day	3.990	3.990	3.990
b)	Machinery				
	Wet mix plant				
	(i) 250 tonne per hour	hour	3.000		
	(ii) 200 tonne per hour	hour		3.750	
	(iii) 100 tonne per hour	hour			7.500
	Electric generator				
	(i) 125 KVA	hour	3.000		
	(ii) 100 KVA	hour		3.750	
	(iii) 62.5 KVA	hour			7.500
	Front end loader for loading to Tipper				
	(i) 3.1 Cum Capacity	hour	7.110		
	(ii) 2.1 Cum Capacity	hour		10.517	
	(iii) 1 Cum Capacity	hour			21.948
	Tipper				
	For Transportation				
	(i) 14 cum capacity	t.km	525 x L1		
	(ii) 14 cum capacity	t.km		525 x L1	
	(iii) 10 cum capacity	t.km			525 x L1
	For loading & unloading time				
	(i) 14 cum capacity	hour	6.000		

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

Cr N-	Dof to M	Description	l lm!t	Quantity	as per proje	ct category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		(ii) 14 cum capacity	hour		6.750		
		(iii) 10 cum capacity	hour			10.500	
		Mechanical Paver finisher	hour	3.000	3.750	3.750	
		Vibratory roller	hour	2.400	3.000	3.000	
		Water tanker (speed @ 10 km/hr.					
		and return speed @ 15 km/hr. and					
		spreading speed @ 3.0 Km/hr.)					
		(i) 16 KL capacity	hour	0.656 x L1			
				+ 0.875			
		(ii) 12 KL capacity	hour		0.875 x L1		
					+ 1.167		
		(iii) 6 KL capacity	hour			1.75 x L1 +	
						2.333	
		c) Material					
		Cement at site	tonne	13.125	13.125	13.125	
		Cost of water including water for	KL	99.750	99.750	99.750	
		curing					
	(i)	For Grading-III Material					
		26.5 mm to 9.5 mm @ 68 Percent	cum	228.846	228.846	228.846	
		9.5 mm to 4.75 mm @ 12 %	cum	40.385	40.385	40.385	
		4.75 mm below @ 20 Percent	cum	67.308	67.308	67.308	
		OR					
	(ii)	For Grading-IV Material					
		26.5 mm to 9.5 mm @ 64 Percent	cum	215.385	215.385	215.385	
		9.5 mm to 4.75 mm @ 11 %	cum	37.019	37.019	37.019	
		4.75 mm below @ 25 Percent	cum	84.135	84.135	84.135	
	(i)	Rate per cum for Grading-III Material					
	``	d) Overhead charges @ on (a+b+c)					
		e) Contractor's profit @ on (a+b+c+d)					
		Cost for 250 cum = a+b+c+d+e					
		Rate per cum = (a+b+c+d+e)/250					
		(, , , , , , , , , , , , , , , , , , ,					
	(ii)	Rate per cum for Grading-IV Material					
	(7	d) Overhead charges @ on (a+b+c)					
		e) Contractor's profit @ on (a+b+c+d)					
		Cost for hour cum = a+b+c+d+e					
		Rate per cum = (a+b+c+d+e)/250					
		nate per cam = (arbiterare)/230					
4.08	403	Cement Treated Crushed Stone Sub base					
4.00		By Mix in Place Method					
		Construction of granular sub-base by					
		providing graded Material, mixing ,					
		carriage of mixed Material to work site,					
		spreading in uniform layers with motor					
		grader on prepared surface, mixing with					
		cement at OMC and compacting with					
		vibratory power roller to achieve the					
		desired density, complete as per clause 401					
		Unit = cum					
		Taking output = 250 cum					
		By Mechanical Means					
		,					

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

	_				Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
					. 0-			. ,
		a)	Labour					
			Mate	day	0.532	0.532	0.532	
			Skilled mazdoor for alignment and	day	2.660	2.660	2.660	
			geometrics					
			Mazdoor for spraying lime	day	10.640	10.640	10.640	
		b)	Machinery Front and loader for mixing at stack					
			Front end loader for mixing at stock pile location					
			(i) 3.1 Cum Capacity	hour	5.319			
			(ii) 2.1 Cum Capacity	hour	5.515	7.813		
			(iii) 1 Cum Capacity	hour		7.013	16.667	
			Water tanker (speed @ 10 km/hr.	nou.			10.007	
			and return speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	1.385 x L1			
					+ 1.847			
			(ii) 12 KL capacity	hour		1.847 x L1		
			(;;;) C (() =====;t=;			+ 2.463		
			(iii) 6 KL capacity	hour			3.694 x L1	
			Soil Stabilizer for mixing and	h	2 222	2 222	+ 4.926	
			pulverising with capacity 1000 m2 per	hour	2.222	2.222	2.222	
			hour					
			Binder Spreader	hour	2.222	2.222	2.222	
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	2.304			
			(ii) Motor grader 3.70 metre blade	hour		2.779		
			(iii) Motor grader 3.35 metre blade	hour			3.099	
			Vibratory roller	hour	1.923	1.923	1.923	
		c)	Material					
			Cement at site	tonne	13.125	13.125	13.125	
			Cost of water including water for	KL	99.750	99.750	99.750	
		Eor	curing Grading-III Material					
			5 mm to 9.5 mm @ 68 Percent	cum	228.846	228.846	228.846	
			mm to 4.75 mm @ 12 %	cum	40.385	40.385	40.385	
			5 mm below @ 20 Percent	cum	67.308	67.308	67.308	
			OR	Culli	07.300	07.300	07.300	
		For	Grading-IV Material					
			5 mm to 9.5 mm @ 64 Percent	cum	215.385	215.385	215.385	
		9.5	mm to 4.75 mm @ 11 %	cum	37.019	37.019	37.019	
		4.75	5 mm below @ 25 Percent	cum	84.135	84.135	84.135	
	(i)	Rat	e per cum for Grading-III Material					

(i) Rate per cum for Grading-III Material

- d) Overhead charges @ on (a+b+c)
- e) Contractor's profit @ on (a+b+c+d)

Cost for cum = a+b+c+d+e

Rate per cum = (a+b+c+d+e)/250

(ii) Rate per cum for Grading-IV Material

- d) Overhead charges @ on (a+b+c)
- e) Contractor's profit @ on (a+b+c+d)

Cost for day cum = a+b+c+d+e

Rate per cum = (a+b+c+d+e)/250

				Ouantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
4.09	404.3.1 (i)	Making 50 mm x 50 mm Furrows Making 50 mm x 50 mm furrows, 25mm/ 50mm deep, 450 to the center line of the road and at one metre interval in the existing thin bituminous wearing coarse including sweeping and disposal of excavated material within 1000 metres lead Unit = sqm Taking output = 30 m x 7 m = 210 sqm 25mm deep furrow cutting a) Labour Mate		0.106	0.106	0.106	(113-)
		Mazdoor b) Machinery Tractor-trolley c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 210 sqm= a+b+c+d Rate per sqm =(a+b+c+d)/210	day	2.660	2.660	2.660	
	(ii)	50mm deep furrow cutting a) Labour Mate Mazdoor b) Machinery Tractor-trolley c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 210 sqm= a+b+c+d Rate per sqm =(a+b+c+d)/210	day day hour	0.213 5.320 0.400	0.213 5.320 0.400	0.213 5.320 0.400	
4.10	404.3.2	Inverted Choke Construction of inverted choke by providing, laying, spreading and compacting screening B type/ coarse sand of specified grade in uniform layer on a prepared surface with motor grader and compacting with power roller etc Unit = cum Taking output = 600 cum a) Labour Mate Mazdoor skilled Mazdoor b) Machinery Motor Grader (i) Motor grader 4.30 metre blade (ii) Motor grader 3.70 metre blade (iii) Motor grader 3.35 metre blade Vibratory roller 8-10 tonnes @ 60 cum per hour	day day day hour hour	1.224 2.660 27.930 5.530 6.000	1.224 2.660 27.930 6.670 6.000	1.224 2.660 27.930 7.438 6.000	

Sr No	Ref. to M		Description	Unit	Quantity	as per projec	t category	Rate
31 140	Kei. to ivi		Description	Oilit	Large	Medium	Small	(Rs.)
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)	h	4514			
			(i) 16 KL capacity	hour	1.5 x L1 + 4.8			
			(ii) 12 KL capacity	hour		2 x L1 + 6.4		
			(iii) 6 KL capacity	hour			4 x L1 + 12.8	
		c)	Material					
			Screening type 'B' or coarse sand	cum	720.000	720.000	720.000	
			Cost of water	KL	108.000	108.000	108.000	
		d)	Overhead charges @ on (a+b+c)					
		e)	Contractor's profit @ on (a+b+c+d)					
			st for 600 cum = a+b+c+d+e					
		Rat	te per cum = (a+b+c+d+e)/ 600					
4.11	404	Wa	iter Bound Macadam					
		size spe thic who pro bro bin of	ecification including spreading in uniform ckness, hand packing, rolling with 3 eeled steel/ vibratory roller in stages to oper grade and camber, applying and coming requisite type of screening/ding Materials to fill up the interstices coarse aggregate, watering and impacting to the required density.					
	Α	_	Manual Means					
			it = cum					
			king output = 360 Cum					
		a)	Labour	day	13.406	13.406	13.406	
			Mate Mazdoor skilled	day	2.660	2.660	2.660	
			Mazdoor	day	332.500	332.500	332.500	
		b)		•				
		-,	Vibratory roller	hour	2.769	2.769	2.769	
			or					
			Smooth 3 wheeled steel roller @ 30cum/hour	hour	5.538	5.538	5.538	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	2 x L1 + 3.84			
			(ii) 12 KL capacity	hour	5.04	2.667 x L1 + 5.12		
			(iii) 6 KL capacity	hour			1.067 x L1 + 10.24	

		I					F_
Sr No	Ref. to M	Description	Unit		as per projec		Rate
				Large	Medium	Small	(Rs.)
		c) Material (Refer table 400 - 7, 8 & 9)					
4.11 A	(i)	Grading-I					
		Aggregate					
		Grading-I 63 mm to 45 mm /Grading-II 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	435.600	435.600	
		Stone Screening					
		Type A 13.2 mm for grading-I@ 0.12 cum per 10 sqm	cum	57.600	57.600	57.600	
		OR		405 500	105 500	105 500	
		Crushable type such as Moorum or Gravel for grading I &II @ 0.22 cum per 10 sqm	cum	105.590	105.590	105.590	
		OR		06.400	06.400	00 400	
		Type B11.2 mm for grading-II @ 0.18 cum per 10 sqm	cum	86.400	86.400	86.400	
		Binding material	cum	28.800	28.800	28.800	
		Binding Material @ 0.06cum per 10 sqm for grading I material Cost of water	KL	144.000	144.000	144.000	
		Cost of water	INE	144.000	144.000	144.000	
4.11 A (i)	(a)	Using Screening Crushable type such as Mo	orum o	r Gravel			
		d) Overhead charges @ on (a+b+c)					
		e) Contractor's profit @ on (a+b+c+d) Cost for 360 cum = a+b+c+d+e					
		Rate per cum = (a+b+c+d+e)/360					
		nate per cam = (a.b.c.a.e.) 300					
		OR					
4.11 A (i)	(b)	Using Screening Type-A (13.2mm agg.)					
	-	Overhead charges @ on (a+b+c)					
	e)	Contractor's profit @ on (a+b+c+d)					
		Cost for 360 cum = $a+b+c+d+e$					
		Rate per cum = (a+b+c+d+e)/360					
		OR					
4.11 A (i)	(c)	Using Screening Type-B (11.2mm agg.)					
	· ·	Overhead charges @ on (a+b+c)					
	e)	Contractor's profit @ on (a+b+c+d)					
		Cost for $360 \text{ cum} = a+b+c+d+e$ Rate per cum = $(a+b+c+d+e)/360$					
4.11 A	(ii)	Grading-II					
		Aggregate					
		Grading-II 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	435.600	435.600	

				Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
				Luige	Wicalam	Siliali	(1.0.)
		Stone Screening					
		Type B 11.2 mm for grading-II @ 0.18 cum per 10 sqm	cum	86.400	86.400	86.400	
		OR					
		Crushable type such as Moorum or Gravel	cum	105.590	105.590	105.590	
		for grading I &II @ 0.22 cum per 10 sqm Binding material					
		Binding Material @ 0.06cum per 10 sqm for grading I material	cum	28.800	28.800	28.800	
		Cost of water	KL	144.000	144.000	144.000	
4.11 A (ii)	(a)	Using Screening Crushable type such as Mo	orum o	r Gravel			
` '	(d)	Overhead charges @ on (a+b+c)					
		(e) Contractor's profit @ on (a+b+c+d)					
		Cost for 360 cum = a+b+c+d+e					
		Rate per cum = $(a+b+c+d+e)/360$					
		OR					
4.11 A (ii)		Using Screening Type-B (11.2mm agg.)					
	-	Overhead charges @ on (a+b+c)					
	e)	Contractor's profit @ on (a+b+c+d) Cost for 360 cum = a+b+c+d+e					
		Rate per cum = (a+b+c+d+e)/360					
		(Anyone of the aggregate grading,					
		screening and binding material may be					
		used as per design)					
4.11	В	By Mechanical Means:					
		Unit = cum					
		Taking output = 360 Cum					
		a) Labour					
		Mate	day	0.904	0.904	0.904	
		Mazdoor skilled	day	2.660	2.660	2.660	
		Mazdoor	day	19.950	19.950	19.950	
		b) Machinery					
		Front end loader for mixing at stock pile location					
		(i) 3.1 Cum Capacity	hour	7.660			
		(ii) 2.1 Cum Capacity	hour		11.250		
		(iii) 1 Cum Capacity	hour			24.000	
		Motor Grader					
		(i) Motor grader 4.30 metre blade	hour	3.318	4.000		
		(ii) Motor grader 3.70 metre blade	hour		4.002	4.463	
		(iii) Motor grader 3.35 metre blade	hour	2.700	2.700	4.463	
		Vibratory roller	hour	2.769	2.769	2.769	
		or Smooth 3 wheeled steel roller	hour	5.538	5.538	5.538	

Sr No	Pof to M	Description	Heit	Quantity a	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.) (i) 16 KL capacity (ii) 12 KL capacity	hour	2 x L1 + 3.84	2.667 x L1 + 5.12		
		(iii) 6 KL capacity	hour			5.333 x L1 + 10.24	
		c) Material (Refer table 400 - 7, 8 & 9)					
4.11 B	(i)	Grading-I					
		Aggregate					
		Grading-I 63 mm to 45 mm /Grading-II 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	435.600	435.600	
		Stone Screening					
		Type A 13.2 mm for grading-I@ 0.12 cum per 10 sqm	cum	57.600	57.600	57.600	
		OR					
		Crushable type such as Moorum or Gravel for grading I &II @ 0.22 cum per 10 sqm	cum	105.590	105.590	105.590	
		OR					
		Type B11.2 mm for grading-II @ 0.18 cum per 10 sqm	cum	86.400	86.400	86.400	
		Binding material					
		Binding Material @ 0.06cum per 10 sqm for grading I material	cum	28.800	28.800	28.800	
		Cost of water	KL	144.000	144.000	144.000	
4.11 B (i)	(a)	Using Screening Crushable type such as Mo	orum c	r Gravel			
(1)		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 360 cum = $a+b+c+d+e$					
		Rate per cum = (a+b+c+d+e)/360					
		OR					
4.11 B (ii)	(b)	Using Screening Type-A (13.2mm agg.)					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 360 cum = $a+b+c+d+e$					
		Rate per cum = (a+b+c+d+e)/360					

Sr No	Ref. to M	Description	Unit	Quantity a	s per projec	t category	Rate
31 140	Kei. to ivi	Description	Unit	Large	Medium	Small	(Rs.
4.11 B (ii)	(c)	Using Screening Type-B (11.2mm agg.)					
	(d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	(e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 360 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/360$					
4.11 B	(ii)	Grading-II					
		Aggregate					
		Grading-II 53 mm to 22.4 mm@ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	435.600	435.600	
		Stone Screening Type B11.2 mm for grading-II @ 0.18 cum	cum	86.400	86.400	86.400	
		per 10 sqm					
		OR					
		Crushable type such as Moorum or Gravel for grading I &II @ 0.22 cum per 10 sqm Binding material	cum	105.590	105.590	105.590	
		Binding Material @ 0.06cum per 10 sqm for grading I material	cum	28.800	28.800	28.800	
		Cost of water	KL	144.000	144.000	144.000	
4.11 B (iii)	(a)	Using Screening Crushable type such as Mo	orum c	or Gravel			
, ,	(d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	(e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on	
		Cost for 360 cum = a+b+c+d+e					
		Rate per cum = (a+b+c+d+e)/360					
		OR					
4.11 B (iii)	(b)	Using Screening Type-B (11.2mm agg.)					
	(d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	(e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 360 cum = $a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/360$					
4.12	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 400.9 transporting the aggregates obtained from breaking of cement concrete slabs at a lead of L1 Km,					

					1				I
Sr No	Ref. to M		Description	Un	nit		as per projec		Rate
			·			Large	Medium	Small	(Rs.)
		lavi	ng and compacting the same as	suh					
		-	e/ base course, constructed as WBN						
			use 404 except the use of screening						
			ding Material.	6					
			t = cum						
		Tak	ing output = 360 cum						
		a)	Labour						
			Mate	da	ау	5.533	5.533	5.533	
			Mazdoor skilled	da	ау	2.660	2.660	2.660	
			Mazdoor for crushing broken ceme	ent da	ау	135.660	135.660	135.660	
			concrete pavement/slabs into						
			aggregate						
		b)	Machinery						
			Motor grader for grading						
			(i) Motor grader 4.30 metre blade			3.318			
			(ii) Motor grader 3.70 metr	re ho	ur		4.002		
			blade	.a ha				4.462	
			(iii) Motor grader 3.35 metr blade	re ho	ui			4.463	
			Vibratory roller 8 - 10 tonne@ 60 c	um ho	ıır	6.000	6.000	6.000	
			per hour		· G1	0.000	0.000	0.000	
			or						
			Smooth 3 wheeled steel roller @	ho	ur	12.000	12.000	12.000	
			30cum/hr.						
			Front end loader for loading to Tip	per					
			(i) 3.1 Cum Capacity	ho	ur	2.647			
			(ii) 2.1 Cum Capacity	ho	ur		3.934		
			(iii) 1 Cum Capacity	ho	ur			8.276	
			Tipper						
			For Transportation						
			(i) 14 cum capacity	t.k		720 x L1			
			(ii) 14 cum capacity	t.k			720 x L1		
			(iii) 10 cum capacity	t.k				720 x L1	
			For loading & unloading time	ho		2 6 4 7			
			(i) 14 cum capacity	ho		2.647	2.024		
			(ii) 14 cum capacity	ho			3.934	0 276	
			(iii) 10 cum capacity Water tanker (speed @ 10 km/hr.	ho	ur			8.276	
			return speed @ 15 km/hr.						
			spreading speed @ 3.0 Km/hr.)	unu					
			(i) 16 KL capacity	ho	ur	0.8 x L1 +			
			, ,			1.536			
			(ii) 12 KL capacity	ho	ur		1.067 x L1		
							+ 2.048		
			(iii) 6 KL capacity	ho	ur			2.133 x L1	
								+ 4.096	
		c)	Material						
			Material available from dismantled						
			concrete slab after crushing / break	king					
			and only carriage is required to be						
			provided Cost of water	K	1	57.600	57 600	57 600	
			Cost of water	K	. L	37.000	57.600	57.600	

C# No	Dof to M	Ref. to M Description	Description	l lait	Quantity a	Rate		
Sr No	Ref. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		C	+ for 260 our - achieved a					

Cost for 360 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/360

Note

- 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 L1 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.

4.13 405.2 Penetration Coat Over Top Layer of Crushed Cement Concrete Base

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

Unit = sqm

Taking output = 7500 sqm

٦)	Labour				
a)					
	Mate	day	0.745	0.745	0.745
	Mazdoor skilled	day	2.660	2.660	2.660
	Mazdoor	day	15.960	15.960	15.960
b)	Machinery				
	Mechanical broom (2.1m sweeping width)	hour	2.232	2.232	2.232
	Hydraulic self propelled chips spreader	hour	5.140	5.140	5.140
	Front end loader 1 cum bucket capacity	hour	6.000	6.000	6.000
	Tipper 10 tonne capacity	hour	6.000	6.000	6.000
	Vibratory roller 8 -10 tonnes	hour	5.140	5.140	5.140
	Bitumen pressure distributor @ 1750 sqm per hour	hour	4.280	4.280	4.280
c)	Material				
	Crushed stone aggregate 11.2 mm size	cum	97.500	97.500	97.500
	Bitumen (60-70 grade)	tonne	0.250	0.250	0.250
d)	Overhead charges		@ on	@ on	@ on
			(a+b+c)	(a+b+c)	(a+b+c)
e)	Contractor's profit		@ on	@ on	@ on
			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)

Cost for 7500 sqm = a+b+c+d+e

Rate per sqm = (a+b+c+d+e)/7500

				Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
4.14	406	Wet Mix Macadam (Plant Mix Method)	_				
		Providing, laying, spreading and compacting graded stone aggregate to wet mi	_				
		macadam specification including premixing					
		the Material with water at OMC i	_				
		mechanical mix plant carriage of mixed	d				
		Material by tipper to site, laying in uniforn					
		layers with paver in sub- base / base cours					
		on well prepared surface and compacting with vibratory roller to achieve the desired	_				
		density.	u				
		Laying Using Mechanical Paver					
		Unit = cum					
		Taking output = 225 cum					
		a) Labour					
		Mate	day	0.213	0.213	0.213	
		Mazdoor skilled	day	1.330	1.330	1.330	
		Mazdoor	day	3.990	3.990	3.990	
		b) Machinery					
		Wet mix plant (i) 250 tonne per hour	hour	2.829			
		(ii) 200 tonne per hour	hour	2.029	3.536		
		(iii) 100 tonne per hour	hour		3.330	7.071	
		Electric generator	noui			7.071	
		(i) 125 KVA	hour	2.829			
		(ii) 100 KVA	hour		3.536		
		(iii) 62.5 KVA	hour			7.071	
		Front end loader for loading to Tippe	r				
		(i) 3.1 Cum Capacity	hour	2.829			
		(ii) 2.1 Cum Capacity	hour		3.536		
		(iii) 1 Cum Capacity	hour			7.071	
		Tipper					
		For Transportation		405 12			
		(i) 14 cum capacity	t.km t.km	495 x L2	40513		
		(ii) 14 cum capacity (iii) 10 cum capacity	t.km		495 x L2	495 x L2	
		For loading & unloading time	hour			433 X LZ	
		(i) 14 cum capacity	hour	5.657			
		(ii) 14 cum capacity	hour		7.071		
		(iii) 10 cum capacity	hour			10.607	
		Mechanical Paver finisher	hour	2.829	3.536	3.536	
		Vibratory roller	hour	2.263	2.829	2.829	
		c) Material					
		Material as per table 400-1					
		For Grading-I Material		05.455	0= 155	05.455	
		45 mm to 22.4 mm@ 30 Percent	cum	95.192	95.192	95.192	
		22.4 mm to 2.36 mm @ 40 Percent	cum	126.923	126.923	126.923	
		2.36 mm to 75 micron@ 30 Percent Cost of water	cum KL	95.192 59.400	95.192 59.400	95.192 59.400	
		Rate per cum	ΝL	J9.4UU	J9.4UU	J9.4UU	
		d) Overhead charges		@ on	@ on	@ on	
		.,		(a+b+c)	(a+b+c)	(a+b+c)	
				,	,	,	

C:: No	Ref. to M		Description		11	Quantity as per project category			Rate
Sr No					Unit	Large	Medium	Small	(Rs.)
				Contractor's profit t for 225 cum = a+b+c+d+e		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			кат	e per cum = (a+b+c+d+e)/225					
4.14	406 B		Wet Mix Macadam (Plant Mix Method) 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 grader in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying Using Grader Unit = cum						
			Tak	ing output = 225 cum					
			a)	Labour	al a	0.242	0.242	0.242	
				Mate	day	0.213	0.213	0.213	
				Mazdoor skilled	day	1.330	1.330	1.330	
				Mazdoor	day	3.990	3.990	3.990	
			b)	Machinery					
				Wet mix plant	hour	2.829			
				(i) 250 tonne per hour	hour	2.023	3.536		
				(ii) 200 tonne per hour (iii) 100 tonne per hour	hour		3.330	7.071	
				Electric generator				7.07.2	
				(i) 125 KVA	hour	2.829			
				(ii) 100 KVA	hour		3.536		
				(iii) 62.5 KVA	hour			7.071	
				Front end loader for loading to Tipper					
				(i) 3.1 Cum Capacity	hour	2.829			
				(ii) 2.1 Cum Capacity	hour		3.536		
				(iii) 1 Cum Capacity	hour			7.071	
				Tipper					
				For Transportation					
				(i) 14 cum capacity	t.km	495 x L2			
				(ii) 14 cum capacity	t.km		495 x L2		
				(iii) 10 cum capacity	t.km			495 x L2	
				For loading & unloading time					
				(i) 14 cum capacity	hour	2.829			
				(ii) 14 cum capacity	hour		3.536		
				(iii) 10 cum capacity	hour			7.071	
				Motor Grader	L .	2.074			
				(i) Motor grader 4.30 metre blade	hour	2.074	2.501		
				(ii) Motor grader 3.70 metre blade	hour		2.501	2 700	
				(iii) Motor grader 3.35 metre blade	hour			2.789	

Sr No Ref. to M Description Unit Large Medi Vibratory roller hour 1.731 1.73 c) Material Close graded Granular sub-base Material as per table 400-1 For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm@ 40 Percent cum 126.923 126.93	
c) Material Close graded Granular sub-base Material as per table 400-1 For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	1 1.731
c) Material Close graded Granular sub-base Material as per table 400-1 For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	1 1.731
Close graded Granular sub-base Material as per table 400-1 For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	
Material as per table 400-1 For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	
Material as per table 400-1 For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	
For Grading-I Material 45 mm to 22.4 mm@ 30 Percent cum 95.192 95.1 22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	
22.4 mm to 2.36 mm @ 40 Percent cum 126.923 126.9	
	95.192
	23 126.923
2.36 mm to 75 micron@ 30 Percent cum 95.192 95.1	95.192
Cost of water KL 59.400 59.4	00 59.400
Rate per cum	_
d) Overhead charges @ on @ o	
(a+b+c) (a+b-	
e) Contractor's profit @ on @ o (a+b+c+d) (a+b+c	_
Cost for 225 cum = $a+b+c+d+e$,
Rate per cum = (a+b+c+d+e)/225	
4.15 406 Cement Treated Crushed Stone Base	
(Plant Mix Method)	
Providing, laying, spreading and	
compacting graded stone aggregate mixed	
with cement to crushed stone treated base	
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.	
Laying Using Mechanical Paver	
Unit = cum	
Taking output = 225 cum	
a) Labour	
Mate day 0.213 0.21	
Mazdoor skilled day 1.330 1.33	
Mazdoor day 3.990 3.99	0 3.990
b) Machinery Wet mix plant	
(i) 250 tonne per hour hour 2.829	
(ii) 200 tonne per hour hour 3.53	6
(iii) 100 tonne per hour hour	7.071
Electric generator	- - -
(i) 125 KVA hour 2.829	
(ii) 100 KVA hour 3.53	6
(iii) 62.5 KVA hour	7.071
Front end loader for loading to Tipper	
(i) 3.1 Cum Capacity hour 2.829	
(ii) 2.1 Cum Capacity hour 3.53	
(iii) 1 Cum Capacity hour	7.071
Tipper	
For Transportation (i) 14 cum capacity the 495 x 12	
(i) 14 cum capacity t.km 495 x L2	1.2
(ii) 14 cum capacity t.km 495 x	LZ

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Cable Bef to M Receiption Quantity as per project cat	tegory Rate
Sr No Ref. to M Description Unit Large Medium S	mall (Rs.)
(iii) 10 cum capacity t.km 49	5 x L2
For loading & unloading time	
(i) 14 cum capacity hour 5.657	
(ii) 14 cum capacity hour 6.364	
(iii) 10 cum capacity hour 9	9.900
·	2.263
	2.829
Water tanker (speed @ 10 km/hr. and	
return speed @ 15 km/hr. and	
spreading speed @ 3.0 Km/hr.)	
(i) 16 KL capacity hour 1.444 x L1	
+1.733	
(ii) 12 KL capacity hour 1.925 x L1	
+ 2.31	F 14 .
	5 x L1 +
	4.62
c) Material	
Close graded Granular sub-base	
Material as per table 400-1 For Grading-I Material	
	5.192
	26.923
	5.192
	9.800
	3.350
	p on
	+b+c)
	on ,
	b+c+d)
Cost for 225 cum = $a+b+c+d+e$	
Rate per cum = $(a+b+c+d+e)/225$	
4.16 408 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 408	
Unit = cum	
Taking output = 21 cum	
a) Labour	
Mate day 0.319 0.319 0	0.319
·	'.980
b) Machinery	
Water tanker (speed @ 10 km/hr. and	
return speed @ 15 km/hr. and	
spreading speed @ 3.0 Km/hr.)	
(i) 16 KL capacity hour 0.035 x L1	
+ 0.004	
(ii) 12 KL capacity hour 0.047 x L1	
+ 0.005	

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C N. a	Dof to M	to M Description	Unit	Quantity a	Rate			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 6 KL capacity	hour			0.093 x L1	
							+ 0.01	
			Plate compactor @ 3.5 cum per hour	hour	6.000	6.000	6.000	
		c)	Material					
			Cost of water	KL	2.520	2.520	2.520	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 21 cum = a+b+c+d+e					

Cost for 21 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/21

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.

4.17 408 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 408

com	pacted as per clause 408				
Unit	t = cum				
Tak	ing output = 21 cum				
a)	Labour				
	Mate	day	0.106	0.106	0.106
	Mazdoor	day	2.660	2.660	2.660
b)	Machinery				
	Hydraulic Excavator				
	(i) 1.2 cum bucket capacity	hour	0.280		
	(ii) 1.1 cum bucket capacity	hour		0.323	
	(iii) 0.9 cum bucket capacity	hour			0.451
	Tipper				
	For Transportation				
	(i) 14 cum capacity	t.km	31.5 x L2		
	(ii) 14 cum capacity	t.km		31.5 x L2	
	(iii) 10 cum capacity	t.km			31.5 x L2
	For loading & unloading time				
	(i) 14 cum capacity	hour	0.280		
	(ii) 14 cum capacity	hour		0.323	
	(iii) 10 cum capacity	hour			0.451
	Water tanker (speed @ 10 km/hr. and				
	return speed @ 15 km/hr. and				
	spreading speed @ 3.0 Km/hr.)				
	(i) 16 KL capacity	hour	0.035 x L1		
	(11) 45 111		+ 0.002		
	(ii) 12 KL capacity	hour		0.047 x L1 + 0.003	
	(iii) 6 KL capacity	hour		7 0.003	0.093 x L1
	. ,				+ 0.006
	Plate compactor	hour	1.400	1.400	1.400

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Sr No	Small (Rs.)
	21.000
	2.520
	@ on (a+b+c)
	@ on (a+b+c+d)
	(

Cost for 21 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/21

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.

4.18 408 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.

4.19 410 Footpaths and Separators

Construction of footpath/separator by providing a 150 mm compacted granular sub base as per clause 401 and 25 mm thick cement concrete grade M15, over laid with pre-cast concrete tiles in cement mortar 1:3 including provision of all drainage arrangements but excluding kerb channel..

Unit = sqm

Taking output = 300 sqm

a)	Labour				
	Mate	day	1.809	1.809	1.809
	Mason	day	5.320	5.320	5.320
	Mazdoor	day	39.900	39.900	39.900
b)	Machinery				
	Vibratory roller	hour	0.750	0.750	0.750
	Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)				
	(i) 16 KL capacity	hour	0.167 x L1 + 0.04		

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Cr No	Pof to M		Description	Linit	Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(ii) 12 KL capacity	hour		0.222 x L1		
			(ii) 12 N2 capacity	nou.		+ 0.053		
			(iii) 6 KL capacity	hour			0.444 x L1	
							+ 0.107	
			Concrete mixer 0.4/0.28 cum per hour	hour	6.000	6.000	6.000	
		c)	Material					
		i)	For Granular sub base material					
			53 mm to 26.5 mm @ 35 Percent	cum	20.790	20.790	20.790	
			26.5 mm to 4.75 mm @ 45 Percent	cum	26.730	26.730	26.730	
			2.36 mm below @ 20 Percent	cum	11.880	11.880	11.880	
		ii)	For cement concrete grade M15 7.5 cum					
			Aggregate 12 mm crushed @ 0.9 cum of concrete	cum	6.750	6.750	6.750	
			Sand @ 0.45 cum/cum of concrete	cum	3.380	3.380	3.380	
			Cement	tonne	1.880	1.880	1.880	
		iii)	For cement plaster 1:3					
			Sand	cum	3.840	3.840	3.840	
			Cement	tonne	1.830	1.830	1.830	
		iv)	Pre-cast cement concrete tiles					
			Tiles size 300 x 300 mm and 25 mm thick	each	3300.000	3300.000	3300.000	
		v)	RCC pipes					
			Pipes 200 mm dia,2.5 m long for drainage	metre	22.500	22.500	22.500	
			vi) Cost of water	KL	12.000	12.000	12.000	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Co	st for 300 sqm = $a+b+c+d+e$					
		Ra	te per sqm = (a+b+c+d+e)/300					
4.20	410	Cru	usher Run Macadam Base					
			oviding crushed stone aggregate,					
			positing on a prepared surface by hauling					
			hicles, spreading and mixing with a motor					
		_	ader, watering and compacting with vibratory roller to clause 417 to form					
			ayer of sub-base/Base					
			nit = cum					
		Tal	king output = 360 cum					
			Mix in Place Method					
		a)	Labour					
			Mate	day	0.638	0.638	0.638	
			Mazdoor skilled	day	2.660	2.660	2.660	
			Mazdoor	day	13.300	13.300	13.300	
		b)	Machinery					
			Tractor attached with rotavator @ 25	hour	12.000	12.000	12.000	
			cum per hour					
			Front end loader for mixing at stock					

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Sr No	Ref. to M		Description	Unit	Quantity a	s per projec	t category	Ra
Sr NO	Ket. to ivi		Description	Unit	Large	Medium	Small	(R
			(i) 3.1 Cum Capacity	hour	7.660			
			(ii) 2.1 Cum Capacity	hour		11.250		
			(iii) 1 Cum Capacity	hour			24.000	
			Motor Grader		2 24 2			
			(i) Motor grader 4.30 metre blade	hour	3.318	4.000		
			(ii) Motor grader 3.70 metre blade	hour		4.002		
			(iii) Motor grader 3.35 metre blade	hour			4.463	
			Vibratory roller	hour	2.769	2.769	2.769	
			or					
			Smooth 3 wheeled steel roller	hour	5.538	5.538	5.538	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.5 x L1 + 0.96			
			(ii) 12 KL capacity	hour		0.667 x L1 + 1.28		
			(iii) 6 KL capacity	hour			1.333 x L1 + 2.56	
		c)	Material					
		i)	For 53 mm maximum size					
			63 mm to 45 mm @ 33	cum	157.460	157.460	157.460	
			Percent					
			22.5 mm to 5.6 mm@ 32 Percent	cum	151.060	151.060	151.060	
			Below 5.6 mm @ 35 Percent	cum	166.680	166.680	166.680	
			Cost of water	KL	36.000	36.000	36.000	
			Or					
		ii)	For 45 mm maximum size					
			45 mm to 22.5 mm@ 5 Percent	cum	24.120	24.120	24.120	
			22.4 mm to 5.6 mm@ 50 Percent	cum	237.600	237.600	237.600	
			Below 5.6 mm@ 45 Percent	cum	213.480	213.480	213.480	
			Cost of water	KL	36.000	36.000	36.000	
4.20 A	(i)	For	53 mm maximum size					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 360.0cum = a+b+c+d+e					
		Rat	e per cum = (a+b+c+d+e)/360					
			or					
4.20 A	(ii)	For	45 mm maximum size					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 360.0cum = a+b+c+d+e					
		Rat	e per cum = (a+b+c+d+e)/360					

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Cr No	Ref. to M		Description		Unit	Quantity a	s per projec	t category	Rate
Sr No	Ket. to IVI		Description		Unit	Large	Medium	Small	(Rs.)
4.20	D	D.	Miving Plant						
4.20	В	-	Mixing Plant : it = cum						
			king output = 225 Cum						
		a)	Labour						
		aj	Mate		day	0.372	0.372	0.372	
			Mazdoor skilled		day	1.330	1.330	1.330	
			Mazdoor		day	7.980	7.980	7.980	
		b)			uay	7.300	7.300	7.300	
		IJ,	Wet mix plant						
			(i) 250 tonne per hour		hour	2.571			
			(ii) 200 tonne per hour		hour	2.571	3.214		
			(iii) 100 tonne per hour		hour		3.211	6.429	
			Electric generator		11001			0.123	
			(i) 125 KVA		hour	2.571			
			(ii) 100 KVA		hour		3.214		
			(iii) 62.5 KVA		hour			6.429	
			Front end loader for loading to T	ipper					
			(i) 3.1 Cum Capacity	• •	hour	2.571			
			(ii) 2.1 Cum Capacity		hour		3.214		
			(iii) 1 Cum Capacity		hour			6.429	
			Motor Grader						
			(i) Motor grader 4.30 metre bla	ade	hour	2.074			
			(ii) Motor grader 3.70 me	etre	hour		2.501		
			blade						
			. ,	etre	hour			2.789	
			blade		l	2.574	2 574	2 574	
			Vibratory roller	امدم م	hour	2.571	2.571	2.571	
			Water tanker (speed @ 10 km/hr return speed @ 15 km/hr.						
			spreading speed @ 3.0 Km/hr.)	anu					
			(i) 16 KL capacity		hour	0.25 x L1 +			
			(i) Is it suppose,			0.3			
			(ii) 12 KL capacity		hour		0.333 x L1		
							+ 0.4		
			(iii) 6 KL capacity		hour			0.667 x L1	
								+ 0.8	
			Tipper						
			For Transportation						
			(i) 14 cum capacity		t.km	450 x L2			
			(ii) 14 cum capacity		t.km		450 x L2	450 10	
			(iii) 10 cum capacity		t.km			450 x L2	
			For loading & unloading time		h	2 574			
			(i) 14 cum capacity		hour	2.571	2 214		
			(ii) 14 cum capacity (iii) 10 cum capacity		hour hour		3.214	6.429	
		c)	Material		Hour			0.423	
		٠,	Aggregate at site						
		i)	For 53 mm maximum size						
		-,	63 mm to 45 mm @ 33 Percent		cum	98.400	98.400	98.400	
			22.5 mm to 5.6 mm@ 32 Percent		cum	94.410	94.410	94.410	
			Below 5.6 mm @ 35 Percent		cum	104.180	104.180	104.180	

		Quantity a	as per projec	t category	Rat
Description	Unit		Medium	Small	(Rs
	· ·		l	l	
Or					
ii) For 45 mm maximum size					
45 mm to 22.5 mm@ 5 Percent	cum	15.060	15.060	15.060	
22.4 mm to 5.6 mm@ 50 Percent	cum	148.500	148.500	148.500	
Below 5.6 mm@ 45 Percent	cum	133.430	133.430	133.430	
Cost of water	KL	18.000	18.000	18.000	
For 53 mm maximum size					
d) Overhead charges		@ on	@ on	@ on	
		(a+b+c)	(a+b+c)	(a+b+c)	
e) Contractor's profit		@ on	@ on	@ on	
		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
Cost for 225cum = a+b+c+d+e					
Rate per cum = $(a+b+c+d+e)/225$					
For 45 mm maximum size					
		@ on	@ on	@ on	
a, cramea ana gas		_	_	_	
e) Contractor's profit		-		-	
,		(a+b+c+d)	(a+b+c+d)	_	
Cost for 360.0cum = a+b+c+d+e		, ,	,	,	
Rate per cum = $(a+b+c+d+e)/360$					
(2 2 2 2 6)					
Lime, Fly ash Stabilised Soil Sub-Base					
organic matter/ deleterious material of clayey silts and low plasticity clays having F between 5 and 20 and liquid limit less tha 25 and commercial dry lime, slaked at sit or pre-slaked with CaO content not less than 50 Percent, Fly ash to conform to gradation as per clause 4.3 of IRC: 88-1984 lime + Fly ash content ranging between 1 to 30 Percent, the minimum un-confine compressive strength and CBR value after 28 days curing and 4 days soaking to b 7.5kg/sq, cm and 25 Percent respectively all as specified in IRC: 88-1984. Unit = cum Taking output = 480 cum (720 tonned density 1.50 t/cum) Assumptions made Total mass taken for analysis = 720 t	or Pl n e s o o d d er e				
	ii) For 45 mm maximum size 45 mm to 22.5 mm@ 5 Percent 22.4 mm to 5.6 mm@ 50 Percent Below 5.6 mm@ 45 Percent Cost of water For 53 mm maximum size d) Overhead charges e) Contractor's profit Cost for 225cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/225 For 45 mm maximum size d) Overhead charges e) Contractor's profit Cost for 360.0cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/360 Lime, Fly ash Stabilised Soil Sub-Base Construction of Sub-base using lime - Flyas admixture with granular soil, free fror organic matter/ deleterious material of clayey silts and low plasticity clays having Floetween 5 and 20 and liquid limit less than 25 and commercial dry lime, slaked at sit or pre-slaked with CaO content not less than 50 Percent, Fly ash to conform the gradation as per clause 4.3 of IRC: 88-1984 lime + Fly ash content ranging between 1 to 30 Percent, the minimum un-confine compressive strength and CBR value afte 28 days curing and 4 days soaking to b 7.5kg/sq, cm and 25 Percent respectively all as specified in IRC: 88-1984. Unit = cum Taking output = 480 cum (720 tonned density 1.50 t/cum) Assumptions made Total mass taken for analysis = 720 t Lime + Fly ash admixture @ 20 Percent 0.2 x 720=144 t Soil = 720 -144 = 576 t 576 /1.6 = 360 cum Lime + Fly ash = 144 t Ratio Lime 4 : Fly ash 16	ii) For 45 mm maximum size 45 mm to 22.5 mm@ 50 Percent cum Below 5.6 mm@ 45 Percent cum Cost of water KL For 53 mm maximum size d) Overhead charges e) Contractor's profit Cost for 225cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/225 For 45 mm maximum size d) Overhead charges e) Contractor's profit Cost for 360.0cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/360 Lime, Fly ash Stabilised Soil Sub-Base Construction of Sub-base using lime - Flyash admixture with granular soil, free from organic matter/ deleterious material or clayey silts and low plasticity clays having Pl between 5 and 20 and liquid limit less than 25 and commercial dry lime, slaked at site or pre-slaked with CaO content not less than 50 Percent, Fly ash to conform to gradation as per clause 4.3 of IRC: 88-1984, lime + Fly ash content ranging between 10 to 30 Percent, the minimum un-confined compressive strength and CBR value after 28 days curing and 4 days soaking to be 7.5kg/sq, cm and 25 Percent respectively, all as specified in IRC: 88-1984. Unit = cum Taking output = 480 cum (720 tonne, density 1.50 t/cum) Assumptions made Total mass taken for analysis = 720 t Lime + Fly ash admixture @ 20 Percent = 0.2 x 720=144 t Soil = 720 -144 = 576 t 576 /1.6 = 360 cum Lime + Fly ash = 144 t Ratio Lime 4 : Fly ash 16	Or ii) For 45 mm maximum size 45 mm to 22.5 mm@ 5 Percent cum 148.500 Below 5.6 mm@ 45 Percent cum 133.430 Cost of water KL 18.000) For 53 mm maximum size d) Overhead charges @ on (a+b+c) e) Contractor's profit @ on (a+b+c+d) Cost for 225cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/225 i) For 45 mm maximum size d) Overhead charges @ on (a+b+c+d) Cost for 225cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/360 Lime, Fly ash Stabilised Soil Sub-Base Construction of Sub-base using lime - Flyash admixture with granular soil, free from organic matter/ deleterious material or clayey silts and low plasticity clays having Pl between 5 and 20 and liquid limit less than 25 and commercial dry lime, slaked at site or pre-slaked with CaO content not less than 50 Percent, Fly ash to conform to gradation as per clause 4.3 of IRC: 88-1984, lime + Fly ash content ranging between 10 to 30 Percent, the minimum un-confined compressive strength and CBR value after 28 days curing and 4 days soaking to be 7.5kg/sq, cm and 25 Percent respectively, all as specified in IRC: 88-1984. Unit = cum Taking output = 480 cum (720 tonne, density 1.50 t/cum) Assumptions made Total mass taken for analysis = 720 t Lime + Fly ash admixture @ 20 Percent = 0.2 x 720-144 = 576 t 576 /1.6 = 360 cum Lime + Fly ash = 144 t Ratio Lime 4 : Fly ash 16	Or ii) For 45 mm maximum size 45 mm to 22.5 mm@ 5 Percent cum 15.060 15.060 22.4 mm to 5.6 mm@ 50 Percent cum 133.430 133.430 Cost of water KL 18.000 18.000 iii) For 53 mm maximum size d) Overhead charges d) Overhead charges e) Contractor's profit Cost for 225cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/225 d) Overhead charges e) Contractor's profit e) On (a+b+c+d) e) On (a+b+c+d) contractor's profit e) On (a+b+c+d) e) On (a+b+c+	Or ii) For 45 mm maximum size

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

Cr N-	Dof to M		Description		Unit	Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description		Large	Medium	Small	(Rs.)	
		a)	Labour						
			Mate		day	0.372	0.372	0.372	
			Mazdoor		day	7.980	7.980	7.980	
			Mazdoor skilled		day	1.330	1.330	1.330	
		b)	Machinery						
			Hydraulic Excavator			4.007			
			(i) 1.2 cum bucket capacity		hour	4.807	F F2C		
			(ii) 1.1 cum bucket capacity		hour		5.536	7 740	
			(iii) 0.9 cum bucket capacity		hour			7.740	
			Tipper For transportation						
			(i) 14 cum capacity		t.km	720 x L1			
			(ii) 14 cum capacity		t.km	/20 X L1	720 x L1		
			(iii) 10 cum capacity		t.km		720 X LI	720 x L1	
			For Loading & unloading time		LIKITI			720 X LI	
			(i) 14 cum capacity		hour	4.807			
			(ii) 14 cum capacity		hour	1.007	5.536		
			(iii) 10 cum capacity		hour		3.330	7.740	
			Tractor with disc harrows for		hour	6.000	6.000	6.000	
			pulverisation						
			Motor grader for grading						
			(i) Motor grader 4.30 metre	blade	hour	3.773			
			(ii) Motor grader 3.70	metre	hour		4.551		
			blade						
			(iii) Motor grader 3.35	metre	hour			5.075	
			blade						
			Vibratory roller		hour	6.000	6.000	6.000	
			Water tanker (speed @ 10 km						
			return speed @ 15 km/hr. and						
			spreading speed @ 3.0 Km/h	1.)	hour	0 6 v l 1 ±			
			(i) 16 KL capacity		Houi	0.6 x L1 + 1.572			
			(ii) 12 KL capacity		hour	1.572	0.8 x L1 +		
			(ii) 12 K2 capacity		11001		2.096		
			(iii) 6 KL capacity		hour			1.6 x L1 +	
								4.192	
		c)	Material						
			Slaked Lime		tonne	29.000	29.000	29.000	
			Compensation for earth taker	n from	cum	360.000	360.000	360.000	
			private source						
			Cost of water (considering 5%		KL	43.200	43.200	43.200	
			additional moisture required)			_	_	_	
		d)	Overhead charges			@ on	@ on	@ on	
		۵۱	Contractorio vfit			(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit			@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost	t for 480 cum = a+b+c+d+e			(4.5.6.4)	(4.5.6.4)	(4151614)	

Cost for 480 cum = a+b+c+d+e

Rate per cum= (a+b+c+d+e)/480

Note

 Compensation for earth will vary from place to place and will have to be assessed realistically as per particular ground situation. In case earth is available from Govt. land, compensation for earth will not be required. The position is required to be clearly stated in the cost estimate.

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

C. N.	Dof to M	Description	l lock	Quantity a	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

- 2. Cost of Fly ash has not been considered as same will be available free of cost. Only carriage of Fly ash has been provided.
- 3. Lime + Fly ash has been taken as 20 Percent of total mass and ratio of lime and Fly ash as 1:4 for estimating purposes. Total quantities will be as per approved design.

4.22 Suggestive Granul

Granular crack relief layer

Granular crack relief layer laying Using Mechanical Paver (Providing, laying, spreading and compacting graded stone aggregate to Granular crack relief layer as per IRC SP-37 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 over base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)

Unit = cum

Note:- Rate shall be taken from item no. - 4.14 A.

CHAPTER - 5

BASES AND SURFACE COURSE (BITUMINOUS)

PREAMBLES:

- 1 Various alternatives for machines and materials have been provided. The one that suits a particular situation and design may be adopted.
- The clauses of MoRT&H Specifications have been mentioned for each item, may be referred for detailed specifications and construction procedure. The rate analyses mention only brief description.
- The machinery and equipment included in analysis are as per specifications of MoRT&H and are mandatory. As per the present trend, contractors are procuring machinery and equipment of higher capacity.
- The outputs taken for the construction equipment are for the compacted quantities of the relevant items and not for loose quantities.
- In case of prime coat and tack coat, minimum quantities of binder indicated in specifications have been taken. Adjustment plus or minus can be made for the variation between this quantity and the actual quantity approved by the Engineer after the preliminary trials.
- The items of bituminous works under maintenance have been added in the Chapter on Maintenance.
- 7 Tack coat and prime coat, wherever provided are required to be measured and paid separately.
- 8 Brooming & Cleaning of surface is a part of the 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.
- 9 It is presumed that tack coat, where required, will be provided immediately preceding the bituminous layer.
- Rolling of bituminous courses is required to be done as per Clause 501.6. Provision in the analyses has accordingly been made. 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 road rollers are deployed at sites as per provision in the rate analyses.
- 11 Spreading of bituminous materials shall be done as per Clause 501.5.3.
- 12 The source of all materials to be used on the project must be tested and expressly approved by the Engineer.
- Quantities of materials taken in the analyses are for the proposed of cost estimate only. The actual quantity shall be as per job mix formula.
- 14 Choice of grade of bitumen shall be made as per IRC 37:2018
- The specification and requirements for modified binders with various types of modifiers have been laid down in Clause 501.2.1 of MoRT&H Specifications and IRC : SP:53 which shall be followed.
- 16 The guidelines given vide Annexure A to Clause 501 of MoRT&H Specifications in regard to protection of environment shall be followed for a particular situation.
- 17 The quantities taken as output of the item rate analysis are the compacted quantities and the quantities of aggregates taken under the head 'material' are the un-compacted quantities for the procurement purposes.
- The approximate proportions by weight of different aggregates and bitumen necessary to produce the intended mix satisfying the job requirements and meeting the designated specifications are for estimating purpose only. The actual quantities should be worked out on the basis of job mix formula adopted for the job after working out the same in the laboratory for particular aggregates and bitumen approved by the Engineer.

Sr No	Ref. to M	Description	Unit	Quantity a	as per project ca	itegory	Rate
31 110	Kei. to ivi	Description	Offic	Large	Medium	Small	(Rs.)
5.01	502 A	Prime Coat over WMM/WBM					
	(i)	Providing and applying primer coat with SS1 grade bitumen emulsion of prepared surface of granular Base including clearing road surface and spraying primer at the rate of 0.7	de on ar of				
		kg/sum using mechanic means.	al				
		Unit = sqm					
		Taking output = 7000 Sqm					
		a) Labor					
		Mate	day	0.106	0.106	0.106	
		Maduro	day	2.660	2.660	2.660	
		b) Machinery					
		Mechanical broom (2.1m sweeping width)	hour	2.083	2.083	2.083	
		Air compressor 250 cfr	n hour	2.083	2.083	2.083	
		Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.944	1.944	1.944	
		Water tanker (speed of 10 km/hr. and retuing speed @ 15 km/hr. are spreading speed @ 4 Km/hr.)	rn id				
		(I) 16 KL capacity	hour	0.146 x L1 + 0.613			
		(ii) 12 KL capacity	hour		0.194 x L1 + 0.817		
		(iii) 6 KL capacity	hour			0.389 x L1 + 1.633	
		c) Material					
		SS1 grade Bitumen emulsion @ 0.70 kg pe sum	tonne r	4.900	4.900	4.900	
		Cost of water	KL	10.500	10.500	10.500	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 7000 Sqm = $a+b+c$	+d+e				

Note Bitumen primer has been provided @ 0.70 kg per sum 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.

Rate per Sqm = (a+b+c+d+e)/7000

Sr No

Ref. to M		Description	Unit	Quantity a	s per project ca	tegory	Rate
Rei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
(ii)	prir 30 pre Bas roa prir kg/ me Uni	viding and applying mer coat with cutback MC bitumen emulsion or pared surface of granular e including clearing of d surface and spraying mer at the rate of 0.60 sum using mechanica ans. t = sqm	c f g	Large	wedium	Smail	(65.)
		ing output = 7000 Sqm					
	a)	Labor					
		Mate	day	0.106	0.106	0.106	
		Maduro	day	2.660	2.660	2.660	
	b)	Machinery					
		Mechanical broom (2.1m sweeping width)	hour	2.083	2.083	2.083	
		Air compressor 250 cfm	hour	2.083	2.083	2.083	
		Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.944	1.944	1.944	
		Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 4.0 Km/hr.)					
		(I) 16 KL capacity	hour	0.146 x L1 + 0.613			
		(ii) 12 KL capacity	hour		0.194 x L1 + 0.817		
		(iii) 6 KL capacity	hour			0.389 x L1 + 1.633	
	c)	Material					
		Cutback Bitumen MC 30 @ 0.60 kg per sum	tonne	4.200	4.200	4.200	
		Cost of water	KL	10.500	10.500	10.500	
	d)	Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Cos	t for 7000 Sgm = a + b + c + c	d+e				

Cost for 7000 Sqm = a+b+c+d+e

Rate per Sqm = (a+b+c+d+e)/7000

Note Bitumen primer has been provided @ 0.60 kg per sum 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.

Sr No Ref. to M Description Unit Quantity as per project c Large Medium 5.01 502 B Prime Coat over Stabilized soil bases/Crusher Run Macadam (i) Providing and applying primer coat with SS1 grade bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.90 kg/sum using mechanical means. Unit = sqm Taking output = 7000 Sqm a) Labor Mate day 0.106 0.106 Maduro day 2.660 2.660 b) Machinery Mechanical broom hour 2.083 2.083	Small (Rs.)
soil bases/Crusher Run Macadam (i) Providing and applying primer coat with SS1 grade bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.90 kg/sum using mechanical means. Unit = sqm Taking output = 7000 Sqm a) Labor Mate day 0.106 0.106 Maduro day 2.660 b) Machinery	
primer coat with SS1 grade bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.90 kg/sum using mechanical means. Unit = sqm Taking output = 7000 Sqm a) Labor Mate day 0.106 0.106 Maduro day 2.660 b) Machinery	
road surface and spraying primer at the rate of 0.90 kg/sum using mechanical means. Unit = sqm Taking output = 7000 Sqm a) Labor Mate day 0.106 0.106 Maduro day 2.660 b) Machinery	
Unit = sqm Taking output = 7000 Sqm a) Labor Mate day 0.106 0.106 Maduro day 2.660 2.660 b) Machinery	
Taking output = 7000 Sqm a) Labor Mate day 0.106 0.106 Maduro day 2.660 2.660 b) Machinery	
a) Labor Mate day 0.106 0.106 Maduro day 2.660 2.660 b) Machinery	
Maduro day 2.660 2.660 b) Machinery	
b) Machinery	0.106
	2.660
Mechanical broom hour 2.083 2.083	
(2.1m sweeping width)	2.083
Air compressor 250 hour 2.083 2.083 cfm	2.083
Bitumen pressure hour 1.944 1.944 distributor (Spraying width 4.5 m)	1.944
Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 4.0 Km/hr.)	
(I) 16 KL capacity hour 0.146 x L1 + 0.613	
(ii) 12 KL capacity hour 0.194 x L1 + 0.817	
(iii) 6 KL capacity hour	0.389 x L1 + 1.633
c) Material	
SS1 grade Bitumen tonne 6.300 6.300 emulsion @ 0.9 kg per sum	6.300
Cost of water KL 10.500 10.500	10.500
d) Overhead charges @ on @ on (a+b+c) (a+b+c)	@ on (a+b+c)
e) Contractor's profit @ on @ on (a+b+c+d) (a+b+c+d)	@ on
Cost for 7000 Sqm = a+b+c+d+e	(a+b+c+d)

Note Bitumen primer has been provided @ 0.9 kg per sum 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.

Rate per Sqm = (a+b+c+d+e)/7000

Sr No

Ref. to M		Description	Unit	Quantity a	is per project ca	itegory	Rate
Kei. to ivi		Description	Ullit	Large	Medium	Small	(Rs.)
(ii)	prir 70 pre Bas roa prir kg/ me Uni	viding and applying mer coat with cutback MC bitumen emulsion or pared surface of granular e including clearing of d surface and spraying mer at the rate of 0.90 sum using mechanica ans. It = sqm Ling output = 7000 Sqm	5 1 - f 5				
	a)	Labor					
	•	Mate	day	0.106	0.106	0.106	
		Maduro	day	2.660	2.660	2.660	
	b)	Machinery					
		Mechanical broom (2.1m sweeping width)	hour	2.083	2.083	2.083	
		Air compressor 250 cfm	hour	2.083	2.083	2.083	
		Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.944	1.944	1.944	
		Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 4.0 Km/hr.)					
		(I) 16 KL capacity	hour	0.146 x L1 + 0.613			
		(ii) 12 KL capacity	hour		0.194 x L1 + 0.817		
		(iii) 6 KL capacity	hour			0.389 x L1 + 1.633	
	c)	Material			6 200	6 200	
		Cutback Bitumen MC 70 @ 0.9 kg per sum	tonne	6.300	6.300	6.300	
		Cost of water	KL	10.500	10.500	10.500	
	d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Cost for 7000 Sqm = a+b+c+d+e

Rate per Sqm = (a+b+c+d+e)/7000

Note Bitumen primer has been provided @ 0.9 kg per sum 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.

C:: No	D-f +- N4	Description	Unit	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

5.02 503 (i) Tack Coat on Bituminous surfaces

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

Unit = sqm

Taking output = 7000 Sqm

	0 4				
a)	Labor				
	Mate	day	0.106	0.106	0.106
	Maduro	day	2.660	2.660	2.660
b)	Machinery				
	Mechanical broom (2.1m sweeping width)	hour	2.083	2.083	2.083
	Air compressor 250 cfm	hour	2.083	2.083	2.083
	Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.944	1.944	1.944
c)	Material				
	Bitumen emulsion @ 0.20 kg per sum	tonne	1.400	1.400	1.400
d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)

Cost for 7000 Sqm = a+b+c+d+e

Rate per Sqm = (a+b+c+d+e)/7000

Note:

Bitumen emulsion has been provided @ 0.20 kg per sum 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.

5.02 503 (ii) Tack Coat on Granular surfaces treated with primer

Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg per sum on the prepared bituminous surface cleaned with mechanical broom.

C:: No	r No Ref. to M	f to M	Description	l locit	Quantity a	as per project ca	ategory	Rate
Sr No	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
		Un	it = sqm					
		Tak	king output = 7000 Sqm					
		a)	Labor					
			Mate	day	0.106	0.106	0.106	
			Maduro	day	2.660	2.660	2.660	
		b)	Machinery					
			Mechanical broom	hour	2.083	2.083	2.083	
			(2.1m sweeping width)					
			Air compressor 250 cfm	hour	2.083	2.083	2.083	
			Bitumen pressure	hour	1.944	1.944	1.944	
			distributor (Spraying					
			width 4.5 m)					
		c)	Material					
		-	Bitumen emulsion @	tonne	1.750	1.750	1.750	
			0.25 kg per sum					
		d)	Overhead charges		@ on	@ on	@ on	
		/			(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	

Cost for 7000 Sqm = a+b+c+d+e

Rate per Sqm = (a+b+c+d+e)/7000

Note _{1.}

- 1. Bitumen emulsion has been provided @ 0.25 kg per sum 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 7000 sum has been considered in case of prime coat and tack coat which can be covered by bituminous courses on the same day.

5.02 503 (iii) Tack Coat on Cement concrete pavement

Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.30 kg per sum on the prepared bituminous surface cleaned with mechanical broom.

Unit = sqm

Taking output = 7000 Sqm

a)	Labor				
	Mate	day	0.106	0.106	0.106
	Maduro	day	2.660	2.660	2.660
b)	Machinery				
	Mechanical broom (2.1m sweeping width)	hour	2.083	2.083	2.083

C: No	D-f 4- 84		Description	Quantity		as per project category		Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Air compressor 250 cfm	hour	2.083	2.083	2.083	
			Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.944	1.944	1.944	
		c)	Material					
			Bitumen emulsion @ 0.30 kg per sum	tonne	2.100	2.100	2.100	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Cost for 7000 Sqm = a+b+c+d+e

Rate per Sqm = (a+b+c+d+e)/7000

Note 1 Ritumen en

- 1. Bitumen emulsion has been provided @ 0.30 kg per sum 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 7000 sum has been considered in case of prime coat and tack coat which can be covered by bituminous courses on the same day.

5.03 504 (i) Bituminous Macadam Grading – I

Providing and laying bituminous macadam with higher capacity hot mix plant using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over 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

a)	Labor				
	Mate	day	0.585	0.585	0.585
	Maduro	day	7.980	7.980	7.980
	Maduro skilled	day	6.650	6.650	6.650

b) Machinery

Batch Type Hot Mix

Plant

Cr No	Dof to M		Description	Linit	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
			(I) HMP 200 TPH	hour	3.221			
			(ii) HMP 160 TPH	hour		4.027		
			(iii) HMP 120 TPH	hour			5.369	
			Mechanical broom	hour	0.697	0.697	0.697	
			(2.1m sweeping width)					
			Air compressor 250 cfm	hour	0.697	0.697	0.697	
			Paver finisher					
			hydrostatic with sensor control compatible with					
			the hot mix plant					
			(I) Paver (240HP)	hour	3.221			
			(ii) Paver (240HP)	hour		4.027		
			(iii) Paver (174HP)	hour			5.369	
			Electric generator					
			(I) 500 KVA	hour	3.221			
			(ii) 400 KVA	hour		4.027		
			(iii) 250 KVA	hour			5.369	
			Front end loader for					
			feeding the plant	h	F F20			
			(I) 3.1 Cum Capacity (ii) 2.1 Cum Capacity	hour hour	5.528	8.177		
			(iii) 1 Cum Capacity	hour		8.177	17.065	
			Tipper	noui			17.005	
			For Transportation					
			(i) 14 cum capacity	t.km	451 x L1			
			(ii) 14 cum capacity	t.km	431 X L1	451 x L1		
			(iii) 10 cum capacity	t.km		431 X L1	451 x L1	
			Tipper for loading &	C.KIII			431 X L1	
			unloading time					
			(i) 14 cum capacity	hour	6.443			
			(ii) 14 cum capacity	hour	211.12	8.054		
			(iii) 10 cum capacity	hour			10.738	
			Smooth steel wheeled	hour	8.638	8.638	8.638	
			tandem roller for static					
			and vibratory passages					
		c)	Material					
		I)	Bitumen@ 3.3 Percent of mix	tonne	14.883	14.883	14.883	
			weight of mix = 205 x 2.2	= 451 tone				
		ii)	Aggregate					
			Total weight of mix =	451.00	tonnes			
			Weight of bitumen =	14.88	tonnes			
			Weight of aggregate =	436.12	tonnes			
		Tak	ing density of aggregate =					
			rading I (40 mm nominal	-				
		size						
		37.	5 - 25 mm 15	cum	43.612	43.612	43.612	
		Per	cent					

C: No	Dof to M	Description	l loit	Quantity	as per project ca	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		25 - 10 mm 45 Percent	cum	130.835	130.835	130.835	
		10 - 5 mm 25 Percent	cum	72.686	72.686	72.686	
		5 mm and below15 Percent	cum	14.537	14.537	14.537	
		* Any one of the altern	ative may be a	adopted as pera	pproved design		
	(i)	for Grading I (40 mm nominal size)					
		d) Overhead charge	s	<i>@</i> on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profi	it	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Cost for 205 cum = a+b+c+d+e

Rate per cum = (a+b+c+d+e)/205

- **Note** 1. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
 - 2. Labor for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
 - 3. In case BM is laid over freshly laid tack coat, provision of Mechanical broom and 2 tandoors for the same shall be deleted as the same has been included in the cost of tack coat

5.03 504 (ii) Bituminous Macadam Grading –II

Providing and laying bituminous macadam with higher capacity hot mix plant using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over 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

a) Labor

Mate	day	0.585	0.585	0.585
Maduro	day	7.980	7.980	7.980
Maduro skilled	day	6.650	6.650	6.650

C N -	D-6 4- 84	Description	11!4	Quantity	as per project ca	ategory	Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery					
			Batch Type Hot Mix					
			Plant	hour	2 221			
			(I) HMP 200 TPH	hour	3.221	4.027		
			(ii) HMP 160 TPH	hour		4.027	5.369	
			(iii) HMP 120 TPH	hour	0.076	0.076	0.976	
			Mechanical broom (2.1m sweeping width)	hour	0.976	0.976	0.976	
			(2.1111 Sweeping width)					
			Air compressor 250 cfm	hour	0.976	0.976	0.976	
			Paver finisher					
			hydrostatic with sensor					
			control compatible with					
			the hot mix plant		0.004			
			(i) Paver (240HP)	hour	3.221	4.00=		
			(ii) Paver (240HP)	hour		4.027		
			(iii) Paver (174HP)	hour			5.369	
			Electric generator		0.004			
			(i) 500 KVA	hour	3.221	4.00=		
			(ii) 400 KVA	hour		4.027	= 0.50	
			(iii) 250 KVA	hour			5.369	
			Front end loader for					
			feeding the plant	hour	6.136			
			(i) 3.1 Cum Capacity	hour	6.136	0.076		
			(ii) 2.1 Cum Capacity	hour		9.076	10.042	
			(iii) 1 Cum Capacity	hour			18.942	
			Tipper					
			For Transportation	+ lem	4E1 v l 1			
			(i) 14 cum capacity	t.km	451 x L1	4F1 v l 1		
			(ii) 14 cum capacity	t.km		451 x L1	45414	
			(iii) 10 cum capacity	t.km			451 x L1	
			Tipper for loading & unloading time					
			(i) 14 cum capacity	hour	6.443			
			(ii) 14 cum capacity	hour	0.445	8.054		
			(iii) 10 cum capacity	hour		0.054	10.738	
			Smooth steel wheeled	hour	12.094	12.094	12.094	
			tandem roller for static	noui	12.054	12.054	12.054	
			and vibratory passages					
		c)	Material					
		i)	Bitumen@ 3.4 Percent	tonne	15.334	15.334	15.334	
			of mix					
			ight of mix = $205 \times 2.2 = 4$	51 tonne				
		ii)	Aggregate					
			Total weight of mix =	451.00	tonnes			
			Weight of bitumen =	15.33	tonnes			
			Weight of aggregate =	435.67	tonnes			
		Tal	king density of aggregate	= 1.5 ton/cu	m			

Sr No	Def to M	Description	l locit	Quantity	Rate		
Sr NO	Ref. to M		Unit	Large	Medium	Small	(Rs.)
		Grading II(19 mm nominal si	ze)				
		25 - 10 mm 40 Percent	cum	116.178	116.178	116.178	
		10 - 5 mm 40 Percent	cum	116.178	116.178	116.178	
		5 mm and below 20 Percent	cum	58.089	58.089	58.089	

^{*} Any one of the alternative may be adopted as per approved design

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

d)	Overhead charges	@ on	@ on	@ on
•	G	(a+b+c)	(a+b+c)	(a+b+c)
e)	Contractor's profit	@ on	@ on	@ on
		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)

Cost for 205 cum = a+b+c+d+e

Rate per cum = (a+b+c+d+e)/205

Note

- 1. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
- 2. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 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.

5.04 505 A Dense Graded Bituminous Macadam Grading -I

Providing and laying dense bituminous graded macadam with higher capacity batch type HMP using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 Percent 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. 505 complete in all respects.

Unit = cum

No	Ref. to M		Description	Unit	Quantity a	s per project ca	ategory
NO	Rei. to ivi		Description	Unit	Large	Medium	Small
			king output = 195 cum				
		a)	Labour	da	0.505	0.585	0.585
			Mate	day	0.585	7.980	7.980
			Mazdoor	day	7.980	6.650	6.650
		۱.۱	Mazdoor skilled	day	6.650	0.030	0.030
		b)	Machinery Hot Mix Plant				
				hour	2 210		
			(i) HMP 200 TPH	hour	3.218	4.022	
			(ii) HMP 160 TPH (iii) HMP 120 TPH	hour hour		4.022	5.363
			Mechanical broom	hour	0.663	0.663	0.663
			(2.1m sweeping width)	nour	0.003	0.003	0.003
			Air compressor 250 cfm	hour	0.663	0.663	0.663
			Paver finisher	noui	0.003		
			hydrostatic with sensor				
			control compatible with				
			the hot mix plant				
			(i) Paver (240HP)	hour	3.218		
			(ii) Paver (240HP)	hour		4.022	
			(iii) Paver (174HP)	hour			5.363
			Electric generator				
			(i) 500 KVA	hour	3.218		
			(ii) 400 KVA	hour		4.022	
			(iii) 250 KVA	hour			5.363
			Front end loader for feeding the plant				
			(i) 3.1 Cum Capacity	hour	6.151		
			(ii) 2.1 Cum Capacity	hour		9.099	
			(iii) 1 Cum Capacity	hour			18.989
			Tipper				
			For Transportation				
			(i) 14 cum capacity	t.km	450.45 x L1		
			(ii) 14 cum capacity	t.km		450.45 x L1	
			(iii) 10 cum capacity	t.km			450.45 x L1
			Tipper for loading & unloading time				
			(i) 14 cum capacity	hour	6.435		
			(ii) 14 cum capacity	hour		8.044	
			(iii) 10 cum capacity	hour			10.725
			Smooth steel wheeled	hour	11.504	11.504	11.504
			tandem roller for static				
		۱۵	and vibratory passages				
		c)	Material	tonno	10 010	18.018	18.018
		i)	Bitumen@ 4 Percent of mix	tonne	18.018	16.016	16.016
			weight of mix = 205×2.2	= 451 tonne			
		ii)	Aggregate				
			Total weight of mix =	450.45	tonnes		
			Weight of bitumen =	18.02	tonnes		

C N -	D-6 4- NA	Description.	11!4	Quantity a	ategory	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Weight of aggregate =	432.43	tonnes			
		Taking density of aggregate	= 1.5 ton/cu	m			
		Grading - I40 mm (Nominal Size)					
		37.5 - 25 mm 22 Percent	cum	63.423	63.423	63.423	
		25 - 10 mm 13 Percent	cum	37.477	37.477	37.477	
		10 -4.75 mm 19 Percent	cum	54.775	54.775	54.775	
		4.75 mm and below 44 Percent	cum	126.847	126.847	126.847	
		Filler @ 2 Percent of weight of aggregates.	tonne	8.649	8.649	8.649	
		* Any one of the alternative may be adopted as per approved design					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 195 cum = a+b+c+d+	e				
		Rate per cum = (a+b+c+d+e)/	195				

5.04 505 B Dense Graded Bituminous Macadam Grading -II

Providing and laying dense bituminous graded higher macadam with capacity batch type HMP using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 Percent 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 smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505 complete in all respects.

Unit = cum

Taking output = 195 cum

a) Labour

Mate day 0.585 0.585 0.585

Sr No	Ref. to M		Description	Unit	Quantity as per project category			
Sr NO	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs
						7.980	7.980	
			Mazdoor	day	7.980			
			Mazdoor skilled	day	6.650	6.650	6.650	
		b)	Machinery					
			Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.218			
			(ii) HMP 160 TPH	hour		4.022		
			(iii) HMP 120 TPH	hour			5.363	
			Mechanical broom (2.1m sweeping width)	hour	0.663	0.663	0.663	
			Air compressor 250 cfm	hour	0.663	0.663	0.663	
			Paver finisher hydrostatic with sensor control compatible with the hot mix plant					
			(i) Paver (240HP)	hour	3.218			
			(ii) Paver (240HP)	hour		4.022		
			(iii) Paver (174HP)	hour			5.363	
			Electric generator					
			(i) 500 KVA	hour	3.218			
			(ii) 400 KVA	hour		4.022		
			(iii) 250 KVA	hour			5.363	
			Front end loader for feeding the plant					
			(i) 3.1 Cum Capacity	hour	6.119			
			(ii) 2.1 Cum Capacity	hour		9.052		
			(iii) 1 Cum Capacity	hour			18.891	
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	450.45 x L1			
			(ii) 14 cum capacity	t.km		450.45 x L1		
			(iii) 10 cum capacity	t.km			450.45 x L1	
			Tipper for loading & unloading time					
			(i) 14 cum capacity	hour	6.435			
			(ii) 14 cum capacity	hour		8.044		
			(iii) 10 cum capacity	hour			10.725	
			Smooth steel wheeled tandem roller for static and vibratory passages	hour	11.504	11.504	11.504	
		c)	Material					
		i)	Bitumen@ 4.5 Percent of mix	tonne	20.270	20.270	20.270	
		ii)	Aggregate					
			al weight of mix =	450.45	tonnes			
			ight of bitumen =	20.27	tonnes			
			U	430.18				

C+ No	Dof to M	Description	Linit	Quantity a	ategory	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Grading - II19 mm (Nominal	Size)				
		25 - 10 mm 30 Percent	cum	86.036	86.036	86.036	
		10 - 5 mm 28 Percent	cum	80.300	80.300	80.300	
		5 mm and below 40 Percent	cum	114.715	114.715	114.715	
		Filler @ 2 Percent of weight of aggregates.	cum	8.604	8.604	8.604	
		* Any one of the alternative may be adopted as per approved design					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Cost for 195 cum = a+b+c+d+e

Rate per cum = (a+b+c+d+e)/195

Note

- 1. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
- 2. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 3. 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.
- 4. The average density of 1.5 tonne/cum is only a reference density in this Data Book.
- 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 Percent by weight of dry aggregates.

5.05 507 A Bituminous Concrete Grading -I

Providing and laying bituminous concrete with higher capacity batch type hot mix plant using crushed aggregates of specified with grading, premixed bituminous binder @ 5.2 Percent 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

Sr No Ref. to M	Description	1124	Quantity a	as per project ca	ategory	Rate	
Sr No	Ket. to M	Description	Unit	Large	Medium	Small	(Rs.)
		achieve the compaction as per N specification clause N complete in all respect	o. 507				
		Unit = cum					
		Taking output = 191 co	um				
		a) Labour					
		Mate	day	0.585	0.585	0.585	
		Mazdoor	day	7.980	7.980	7.980	
		Mazdoor skilled	day	6.650	6.650	6.650	
		b) Machinery					
		Hot Mix Plant					
		(i) HMP 200 TPH	hour	3.220			
		(ii) HMP 160 TPH	hour		4.025		
		(iii) HMP 120 TPH	hour			5.366	
		Mechanical broor (2.1m sweeping w		1.137	1.137	1.137	
		Air compressor 25	60 cfm hour	1.137	1.137	1.137	
		Paver finisher hydrostatic with s control compatibl the hot mix plant					
		(i) Paver (240HP)	hour	3.220			
		(ii) Paver (240HP)	hour	3.220	4.025		
		(iii) Paver (174HP)				5.366	
		Electric generator				3.333	
		(i) 500 KVA	hour	3.220			
		(ii) 400 KVA	hour	0.220	4.025		
		(iii) 250 KVA	hour			5.366	
		Front end loader				3.333	
		feeding the plant	.0.				
		(i) 3.1 Cum Capaci	ty hour	6.079			
		(ii) 2.1 Cum Capac	ity hour		8.992		
		(iii) 1 Cum Capacit	y hour			18.765	
		Tipper	•				
		For Transportation	า				
		(i) 14 cum capacit	y t.km	450.76 x L1			
		(ii) 14 cum capacit	=		450.76 x L1		
		(iii) 10 cum capaci	-			450.76 x L1	
		Tipper for loading unloading time	&				
		(i) 14 cum capacit	y hour	6.439			
		(ii) 14 cum capaci			8.049		
		(iii) 10 cum capaci	•			10.732	
		Smooth steel who tandem roller for	e eled hour static	14.085	14.085	14.085	
		and vibratory pass		2.849	3.220	4.293	
		Pneumatic Tyre r	oller hour	2.049	3.220	4.293	

D-f +- 84	Description	l locit	Quantity as per project category			Rate
Ket. to IVI	Description	Unit	Large	Medium	Small	(Rs.
	c) Material					
	i) Bitumen@ 5.2 Percent of mix	tonne	23.440	23.440	23.440	
	ii) Aggregate					
	Total weight of mix =	450.76	tonnes			
	Weight of bitumen =	23.44	tonnes			
	Weight of aggregate =	427.32	tonnes			
	Taking density of aggregate	= 1.5 ton/cu	n			
	* Grading - I-19 mm (Nomina	l Size)				
	20 - 10 mm 38 Percent	cum	108.255	108.255	108.255	
	10 - 5 mm 17 Percent	cum	48.430	48.430	48.430	
	5 mm and below 43 Percent	cum	122.499	122.499	122.499	
	Filler @ 2 Percent of weight of aggregates.	cum	8.546	8.546	8.546	
	* Any one of the alternative may be adopted as per approved design					
	d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Cost for 191 cum = a+b+c+d+e	е				
	Ref. to M	c) Material i) Bitumen@ 5.2 Percent of mix ii) Aggregate Total weight of mix = Weight of bitumen = Weight of aggregate = Taking density of aggregate * Grading - I-19 mm (Nomina 20 - 10 mm 38 Percent 10 - 5 mm 17 Percent 5 mm and below 43 Percent Filler @ 2 Percent of weight of aggregates. * Any one of the alternative may be adopted as per approved design d) Overhead charges e) Contractor's profit	c) Material i) Bitumen@ 5.2 Percent tonne of mix ii) Aggregate Total weight of mix = 450.76 Weight of bitumen = 23.44 Weight of aggregate = 427.32 Taking density of aggregate = 1.5 ton/cur * Grading - I-19 mm (Nominal Size) 20 - 10 mm 38 Percent cum 10 - 5 mm 17 Percent cum 5 mm and below 43 Percent cum Filler @ 2 Percent of weight cum of aggregates. * Any one of the alternative may be adopted as per approved design d) Overhead charges	c) Material i) Bitumen@ 5.2 Percent tonne 23.440 of mix ii) Aggregate Total weight of mix = 450.76 tonnes Weight of bitumen = 23.44 tonnes Weight of aggregate = 427.32 tonnes Taking density of aggregate = 1.5 ton/cum * Grading - I-19 mm (Nominal Size) 20 - 10 mm 38 Percent cum 108.255 10 - 5 mm 17 Percent cum 48.430 5 mm and below 43 Percent cum 122.499 Filler @ 2 Percent of weight cum 8.546 of aggregates. * Any one of the alternative may be adopted as per approved design d) Overhead charges @ on (a+b+c) e) Contractor's profit @ on (a+b+c+d)	c) Material i) Bitumen@ 5.2 Percent of mix ii) Aggregate Total weight of mix = 450.76 tonnes Weight of aggregate = 427.32 tonnes Taking density of aggregate = 1.5 ton/cum * Grading - I-19 mm (Nominal Size) 20 - 10 mm 38 Percent cum 108.255 108.255 10 - 5 mm 17 Percent cum 48.430 48.430 5 mm and below 43 Percent cum 122.499 122.499 Filler @ 2 Percent of weight cum 8.546 8.546 of aggregates. * Any one of the alternative may be adopted as per approved design d) Overhead charges @ on @ on (a+b+c) (a+b+c) e) Contractor's profit @ on @ on (a+b+c+d)	C Material i) Bitumen@ 5.2 Percent of mix tonne 23.440 23.4

Rate per cum = (a+b+c+d+e)/191

5.05 507 B Bituminous Concrete Grading -II

Providing and laying bituminous concrete with higher capacity batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 Percent 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 smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects

	No Ref. to M	Description		Unit	Quantity a	Quantity as per project category		
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			it = cum					
			king output = 191 cum					
		a)	Labour					
			Mate	day	0.585	0.585	0.585	
			Mazdoor	day	7.980	7.980	7.980	
			Mazdoor skilled	day	6.650	6.650	6.650	
		b)	Machinery					
			Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.220			
			(ii) HMP 160 TPH	hour		4.025		
			(iii) HMP 120 TPH	hour			5.366	
			Mechanical broom	hour	1.624	1.624	1.624	
			(2.1m sweeping width)		4.604	4.62.4	4.604	
			Air compressor 250 cfm	hour	1.624	1.624	1.624	
			Paver finisher					
			hydrostatic with sensor control compatible with					
			the hot mix plant					
			(i) Paver (240HP)	hour	3.220			
			(ii) Paver (240HP)	hour	3.220	4.025		
			(iii) Paver (240HP)	hour		4.023	5.366	
			Electric generator	Hour			5.500	
			(i) 500 KVA	hour	3.220			
				hour	3.220	4.025		
			(ii) 400 KVA (iii) 250 KVA	hour		4.025	5.366	
			Front end loader for	nour			5.300	
			feeding the plant					
			(i) 3.1 Cum Capacity	hour	5.994			
			(ii) 2.1 Cum Capacity	hour	3.334	8.853		
			(iii) 1 Cum Capacity	hour		8.833	18.563	
			Tipper	Houi			18.505	
			For Transportation					
			(i) 14 cum capacity	t.km	450.76 x L1			
			(ii) 14 cum capacity	t.km	430.70 X LI	450.76 x L1		
			(iii) 10 cum capacity	t.km		430.70 X L1	450.76 x L1	
			Tipper for loading &	L.KIII			430.70 X LI	
			unloading time					
			(i) 14 cum capacity	hour	6.439			
			(ii) 14 cum capacity	hour	0.439	8.049		
			(iii) 10 cum capacity	hour		8.049	10.732	
			Smooth steel wheeled	hour			10.732	
			tandem roller for static	Houi	20.121	20.121	20.121	
			and vibratory passages		20.121	20.121	20.121	
			Pneumatic Tyre roller	hour	2.849	3.220	4.293	
		c)	Material		2.0.0	3.220	55	
		-,	i) Bitumen@ 5.4	tonnes	24.341	24.341	24.341	
			Percent of mix	20111100	, , ,	+1		
			ii) Aggregate					
		Tot	al weight of mix =	450.760	tonnes			
			eight of bitumen =	24.341	tonnes			

C: N:	Dof to M	Description	l locia	Quantity	as per project ca	ategory	Rate
Sr No	or No Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Weight of aggregate =	426.419	Tonnes			
		Taking density of aggregate = 1.5 ton/cum					
		13.2 - 10 mm 21 Percent	cum	59.825	99.498	99.498	
		10 - 5 mm 17 Percent	cum	48.430	48.430	48.430	
		5 mm and below 60 Percent	cum	170.928	170.928	170.928	
		Filler @ 2 Percent of weight of aggregates.	cum	8.528	8.528	8.528	
		* Any one of the alternative may be adopted as per approved design					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 191 cum = a+b+c+d+	·e				

Rate per cum = (a+b+c+d+e)/191

- Note *1. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.
 - 2. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
 - 3. 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.
 - 4. The average density of 1.5 tonne/cum is only a reference density in this Data Book.
 - 5. 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 Percent by weight of dry aggregates.

5.06 509 **Surface Dressing**

Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates 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

CHAPTER: 5- BASES AND SURFACE COURSES (BITUMINOUS)

Sr No	Ref. to M		Description	Unit	Quantity as per project category		
. 140	nen to IVI		Description	Jille	Large	Medium	Small
.06	Case -I	·_1Q	mm nominal chipping size	•			
		19 a)	Labour	E			
		aj	Mate	day	0.585	0.585	0.585
			Mazdoor	day	11.970	11.970	11.970
			Mazdoor skilled	day	2.660	2.660	2.660
		ы	Machinery	uuy	2.000	2.000	2.000
		b)	Mechanical broom (2.1m sweeping width)	hour	2.679	2.679	2.679
			Air compressor 250 cfm	hour	2.679	2.679	2.679
			Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.250	1.250	1.250
			Hydraulic self-propelled chip spreader	hour	7.401	7.401	7.401
			Front end loader for feeding the plant				
			(i) 3.1 Cum Capacity	hour	0.978		
			(ii) 2.1 Cum Capacity	hour		1.452	
			(iii) 1 Cum Capacity	hour			3.068
			Tipper				
			For Transportation				
			(i) 14 cum capacity	t.km	202.5 x L1		
			(ii) 14 cum capacity	t.km		202.5 x L1	
			(iii) 10 cum capacity	t.km			202.5 x L1
			For loading & unloading time				
			(i) 14 cum capacity	hour	8.380		
			(ii) 14 cum capacity	hour		8.853	
			(iii) 10 cum capacity	hour			10.469
			Smooth steel wheeled tandem roller for static and vibratory passages	hour	7.111	7.111	7.111
			Pneumatic Tyre roller	hour	7.111	7.111	7.111
		c)	Material				
			Bitumen@ 1.20 kg per sqm	tonne	10.800	10.800	10.800
			Crushed stone chipping,19 mm nominal size @ 0.015 cum per sqm	cum	135.000	135.000	135.000
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		Cos	st for 9000 sqm = $a+b+c+d$	+e			

Sr No	Ref. to	N/I		Description	Unit	Quantity a	is per project cat	egory	Rate
31 110	Kei. to	IVI		Description	Onit	Large	Medium	Small	(Rs.)
5.06	509	Case - I		mm nominal size chipping	S				
				t = sqm ing output = 9000 Sqm					
			a)	Labour					
			aj	Mate	day	0.585	0.585	0.585	
				Mazdoor	day	11.970	11.970	11.970	
				Mazdoor skilled	day	2.660	2.660	2.660	
			b)	Machinery	aay	2.000	2.000	2.000	
			•	Mechanical broom (2.1m sweeping width)	hour	2.679	2.679	2.679	
				Air compressor 250 cfm	hour	2.679	2.679	2.679	
				Bitumen pressure distributor (Spraying width 4.5 m)	hour	1.250	1.250	1.250	
				Hydraulic self-propelled chip spreader	hour	7.401	7.401	7.401	
				Front end loader for loading					
				(i) 3.1 Cum Capacity	hour	0.646			
				(ii) 2.1 Cum Capacity	hour		0.957		
				(iii) 1 Cum Capacity	hour			2.015	
				Tipper					
				For Transportation					
				(i) 14 cum capacity	t.km	135 x L1			
				(ii) 14 cum capacity	t.km		135 x L1		
				(iii) 10 cum capacity	t.km			135 x L1	
				For loading & unloading time					
				(i) 14 cum capacity	hour	8.047			
				(ii) 14 cum capacity	hour		8.359		
				(iii) 10 cum capacity	hour			9.416	
				Smooth steel wheeled tandem roller for static and vibratory passages	hour	4.741	4.741	4.741	
				Pneumatic Tyre roller	hour	4.741	4.741	4.741	
			c)	Material					
				Bitumen@ 1.20 kg per sqm	tonne	9.000	9.000	9.000	
				Crushed stone chipping,13 mm nominal size @ 0.015 cum per sqm	cum	90.000	90.000	90.000	
			d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	

C: No	Dof to M	Description	l locit	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

e) Contractor's profit

@ on (a+b+c+d)

@ on (a+b+c+d) @ on (a+b+c+d)

Cost for 9000 sqm = a+b+c+d+e

Rate per sqm = (a+b+c+d+e)/9000

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.

5.07 Spen - 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 using Viscosity grade bitumen to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable hot mix plant of appropriate capacity not less than 200 tonnes/hour, laying and rolling with a smooth wheeled roller, finished to required level and grades.

Unit = cum

Taking output = 10250 Sqm

	• .				
a)	Labour				
	Mate	day	0.585	0.585	0.585
	Mazdoor	day	7.980	7.980	7.980
	Mazdoor skilled	day	6.650	6.650	6.650
b)	Machinery				
	Hot Mix Plant				
	(i) HMP 200 TPH	hour	3.456		
	(ii) HMP 160 TPH	hour		4.320	
	(iii) HMP 120 TPH	hour			5.760
	Mechanical broom	hour	1.220	1.220	1.220
	(2.1m sweeping width)				
	Air compressor 250 cfm	hour	1.220	1.220	1.220
	Paver finisher				
	hydrostatic with sensor				
	control compatible with				
	the hot mix plant	_			
	(i) Paver (240HP)	hour	3.456		

6	D-(: -:			Quantity	as per project c	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		(11) - (2.22.12)			4.220		
		(ii) Paver (240HP)	hour		4.320	5.760	
		(iii) Paver (174HP)	hour			5.760	
		Electric generator	hour	3.456			
		(i) 500 KVA (ii) 400 KVA	hour	3.450	4.320		
		(iii) 250 KVA	hour		4.320	5.760	
		Front end loader for	noui			3.700	
		feeding the plant					
		(i) 3.1 Cum Capacity	hour	5.888			
		(ii) 2.1 Cum Capacity	hour		8.648		
		(iii) 1 Cum Capacity	hour			18.450	
		Tipper					
		For Transportation					
		(i) 14 cum capacity	t.km	483.8 x L1			
		(ii) 14 cum capacity	t.km		483.8 x L1		
		(iii) 10 cum capacity	t.km			483.8 x L1	
		For loading & unloadi time	ng				
		(i) 14 cum capacity	hour	6.911			
		(ii) 14 cum capacity	hour		8.639		
		(iii) 10 cum capacity	hour			11.519	
		Smooth steel wheele tandem roller for stat and vibratory passage	tic	21.596	21.596	21.596	
		c) Material					
		Bitumen @ 14.60 kg p 10 sqm	oer tonne	14.965	14.965	14.965	
		Crushed stone chipping,13.2 mm to ! mm @ 0.27 cum per 1 sqm		276.750	276.750	276.750	
		* Any one of the alternation	ve				
		may be adopted as					
		per approved design					
		d) Overhead charges		@ on	@ on	@ on	
		e) Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	
		Cost for 10250 Sqm = a+b-	+c+d+e	(атытсти)	(атытсти)	(атытсти)	
		Rate per Sqm = (a+b+c+d+					
5.08	508	Close Graded Premix Surfacing/Mixed Seal Surfacing					
		Providing, laying and roll of open - graded prer surfacing of 20 r thickness composed of 1 mm to 0.09 mm (Type	mix mm 1.2				
		or 13.2 mm to 0.09 r (Type-b) aggregates us	mm				

				Quantity as per project category			
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	
		Viscosity grade bitumen required line, grade a					
		level to serve as weari					
		course on a previou	_				
		prepared base, includi	ng				
		mixing in a suitable hot n					
		plant of appropriate capac not less than 2	.00				
		_	nd				
		rolling with a smoo					
		wheeled roller, finished	to				
		required level and grades.					
		Unit = cum					
		Taking output = 10250 Sqr	m				
		a) Labour	day	0 505	O E0F	0 505	
		Mate Mazdoor	day day	0.585 7.980	0.585 7.980	0.585 7.980	
		Mazdoor Mazdoor skilled	day	6.650	6.650	6.650	
			uay	0.030	0.030	0.030	
		b) Machinery Hot Mix Plant					
		(i) HMP 200 TPH	hour	3.456			
		(ii) HMP 160 TPH	hour	31.33	4.320		
		(iii) HMP 120 TPH	hour			5.760	
		Mechanical broom	hour	1.220	1.220	1.220	
		(2.1m sweeping width					
		Air compressor 250 cf	m hour	1.220	1.220	1.220	
		Paver finisher					
		hydrostatic with senso					
		control compatible wi	th				
		the hot mix plant	hour	3.456			
		(i) Paver (240HP) (ii) Paver (240HP)	hour	3.430	4.320		
		(iii) Paver (240HP)	hour		4.320	5.760	
		Electric generator	noui			3.700	
		(i) 500 KVA	hour	3.456			
		(ii) 400 KVA	hour	31.33	4.320		
		(iii) 250 KVA	hour			5.760	
		Front end loader for					
		feeding the plant					
		(i) 3.1 Cum Capacity	hour	3.456			
		(ii) 2.1 Cum Capacity	hour		8.648		
		(iii) 1 Cum Capacity	hour			18.450	
		Tipper					
		For Transportation					
		(i) 14 cum capacity	t.km	483.8 x L1			
		(ii) 14 cum capacity	t.km		483.8 x L1		
		(iii) 10 cum capacity	t.km			483.8 x L1	
		For loading & unloading	ng				
		time					
		(:) 4.4 ::	hour	C 011			

(i) 14 cum capacity

hour

6.911

Cr M-	Dof to M	Description	l lmit	Quantity a	as per project c	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
			h		0.630		
		(ii) 14 cum capacity	hour		8.639	11 510	
		(iii) 10 cum capacity	hour	24 506	24 506	11.519	
		Smooth steel wheeled tandem roller for static	hour	21.596	21.596	21.596	
		and vibratory passaes					
		c) Material					
		Type - A					
		* Bitumen@ 22 kg per 10	tonne	22.550	22.550	22.550	
		sqm					
		Stone crushed aggregates	cum	276.750	276.750	276.750	
		11.2 mm to 0.09 @ 0.27 cum per 10 sqm					
		or					
		Туре - В					
		Bitumen @ 19 kg per 10 sqm	tonne	19.475	19.475	19.475	
		Stone crushed aggregates	cum	276.750	276.750	276.750	
		13.2 mm to 0.09 mm @ 0.27					
		cum per 10 sqm					
		* Any one of the alternative					
		may be adopted as per					
		approved design					
		Type - A		@ on	@ on	@ on	
		d) Overhead charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 10250 Sqm = a+b+c+	d+e				
		Rate per Sqm = (a+b+c+d+e),	/10250				
		Type - B					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 10250 Sqm = a+b+c+	d+e				
		Rate per Sqm = (a+b+c+d+e),	/10250				
5.09	511	Seal Coat					
		Providing and laying seal					
		coat sealing the voids in a bituminous surface laid to					
		the specified levels, grade					
		and cross fall using Type A					
		and B seal coats					

Sr No	Ref. to M	Description		Unit	Quantity as per project category			Rate
) NO	Nei. to W		Description	Oilit	Large	Medium	Small	(
	(i)	Car	o I. Tuno A					
	(1)		se - I : Type A it = Sqm					
			•					
			king output = 10250 Sqm					
		a)	Labour	day	0.319	0.319	0.319	
			Mate	day	7.980	7.980	7.980	
			Mazdoor	uay	7.560	7.980	7.360	
		b)	Machinery	h aa	2.054	2.051	2.051	
			Mechanical broom (2.1m sweeping width)	hour	3.051	3.051	3.051	
			Air compressor 250 cfm	hour	3.051	3.051	3.051	
			Bitumen pressure distributor (Spraying width 4.5 m)	hour	2.847	2.847	2.847	
			Hydraulic self-propelled chip spreader	hour	8.429	8.429	8.429	
			Front end loader		a aa-			
			(i) 3.1 Cum Capacity	hour	0.668			
			(ii) 2.1 Cum Capacity	hour		0.992		
			(iii) 1 Cum Capacity	hour			2.097	
			Tipper					
			For loading time					
			(i) 14 cum capacity	hour	0.668			
			(ii) 14 cum capacity	hour		0.992		
			(iii) 10 cum capacity	hour			2.097	
			For Transportation					
			(i) 14 cum capacity	t.km	202.95 x L1			
			(ii) 14 cum capacity	t.km		202.95 x L1		
			(iii) 10 cum capacity	t.km			202.95 x L1	
			For unloading time					
			(i) 14 cum capacity	hour	8.429			
			(ii) 14 cum capacity	hour		8.429		
			(iii) 10 cum capacity	hour			8.429	
			Smooth steel wheeled tandem roller for static	hour	4.859	4.859	4.859	
			and vibratory passages					
		c)	Material	tonno	10.045	10.045	10.045	
			Bitumen@ 9.80 kg per 10 sqm	tonne				
			Crushed stone chipping of 6.7 mm size defined as 100 Percent passing 11.2 mm sieve and retained on 2.36 mm sieve applied @ 0.09 cum per 10 sqm	cum	92.250	92.250	92.250	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	

Sr No	Ref. to M	Description	Unit	Quantity as per project category			Rate
				Large	Medium	Small	(Rs.)

e) Contractor's profit

@ on (a+b+c+d) @ on (a+b+c+d) @ on (a+b+c+d)

3.076

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

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

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

5.09

(ii) Case - II : Type B

Providing and laying of premix sand seal coat with HMP of appropriate capacity not less than 200 tonnes/ hours using crushed stone chipping 6.7 mm size and penetration bitumen of suitable grade.

Unit = Sqm

Taking output = 7860 Sqm

(iii) 1 Cum Capacity

Tipper

a)	ı	.at	00	ur

b)

Mate	day	0.585	0.585	0.585
Mazdoor	day	7.980	7.980	7.980
Mazdoor skilled	day	6.650	6.650	6.650
Machinery				
Hot Mix Plant				
(i) HMP 200 TPH	hour	0.337		
(ii) HMP 160 TPH	hour		0.421	
(iii) HMP 120 TPH	hour			0.561
Mechanical broom (2.1m sweeping width)	hour	2.339	2.339	2.339
Air compressor 250 cfm	hour	2.339	2.339	2.339
Paver finisher hydrostatic with sensor control compatible with the hot mix plant				
(i) Paver (240HP)	hour	0.337		
(ii) Paver (240HP)	hour		0.421	
(iii) Paver (174HP)	hour			0.561
Electric generator				
(i) 500 KVA	hour	0.337		
(ii) 400 KVA	hour		0.421	
(iii) 250 KVA	hour			0.561
Front end loader for feeding the plant				
(i) 3.1 Cum Capacity	hour	0.996		
(ii) 2.1 Cum Capacity	hour		1.474	

hour

Sr No	Ref. to M	Description	Unit	Quantity a	as per project c	ategory	Rate
31 110	Kei. to ivi	Description	Onit	Large	Medium	Small	(Rs.
		For Transportation		102.752 14			
		(i) 14 cum capacity	t.km	103.752 x L1	400 750 14		
		(ii) 14 cum capacity	t.km		103.752 x L1	402.752.14	
		(iii) 10 cum capacity	t.km			103.752 x L1	
		For loading & unloading time	5				
		(i) 14 cum capacity	hour	0.674			
		(ii) 14 cum capacity	hour		0.842		
		(iii) 10 cum capacity	hour			1.123	
		Smooth steel wheeled tandem roller for station and vibratory passages	hour	2.484	2.484	2.484	
		c) Material					
		Bitumen@ 6.80 kg per 10 sqm	tonne	5.345	5.345	5.345	
		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		47.160	47.160	47.160	
		* Any one of the alternative may be adopted as per approved design					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 7860 Sqm = a+b+c+					
		Rate per Sqm. = (a+b+c+d+c	e)/7860				
5.10	520	Supply of Stone Aggregates for Pavement Courses	:				
		Supply of stone aggregate from approved source conforming to the physical requirement, specified in the respective specified clause including royalties, feed rents, collection transportation, stacking and testing and measured in currous per clause 520. Competitive market rates to be ascertained Alternatively, rates for stone crushing given in chapter may be adopted, if foun economical. In case for supply of aggregates at site.	essal ee s, es n, d m o d. ee				

C. N. D. f	D-6 4- NA	Description	11	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

are not available, nearest crusher site may be ascertained. Loading and unloading charges and cost of carriage may be added to these rates to arrive at the cost at site.

5.11 516 Mastic Asphalt

Providing and laying 25 mm thick mastic asphalt wearing course with paving grade bitumen meeting requirements given in table 500-39, 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 516.

Unit = sqm

Taking output = 35 sqm

a)	Labour				
	Mate	day	0.585	0.585	0.585
	Mazdoor	day	13.300	13.300	13.300
	Mazdoor skilled	day	1.330	1.330	1.330
b)	Machinery				
·	Mechanical broom (2.1m sweeping width)	hour	0.010	0.010	0.010
		hour	0.010	0.010	0.010
	Air compressor 250 cfm	Houl	0.010	0.010	0.010
	Mastic cooker 1 tonne capacity	hour	3.000	3.000	3.000
	Bitumen boiler 1500 litres capacity	hour	3.000	3.000	3.000
	Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	1.000	1.000

C:: No	D-6 4- NA			Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

c)

Material Base mastic (without coarse aggregates) = 60 Percent Coarse aggregate (6.3mm to 13.2 mm) = 40 Percent. Proportion of material required for mastic asphalt with coarse aggregates (based on mix design done by CRRI for a specific case)				
I) Bitumen 85/25 or 30/40 @ 10.2 Percent by weight of mix. 2 x 10.2/100 = 0.204	tonne	0.205	0.205	0.205
ii) Fine aggregate passing 2.36mm and retained on 0.075mm sieve @ 31.9 Percent by weight of mix = 2 x 31.9/100 = 0.638 tonnes = 0.638/1.625 = 0.39	cum	0.395	0.395	0.395
iii) Lime stone dust filler with calcium content not less than 80 Percent by weight @ 17.92 Percent by weight of mix = 2 x 17.92/100 = 0.36	tonne	0.361	0.361	0.361
iv) Coarse aggregates 6.3 mm to 13.2 mm @ 40 Percent by weight of mix = 2 x 40/100 = 0.8 MT = 0.8/1.456 = 0.55	cum	0.553	0.553	0.553
v) Pre-coated stone chips of 13.2 mm nominal size for skid resistance = 35 x 0.005/10 = 0.018	cum	0.018	0.018	0.018
vi) Bitumen for coating of chips @ 2 Percent by weight = 0.018 x 1.456 x 2/100 = 0.0005 MT = 0.5kg	kg	0.510	0.510	0.510

C" No	or No Ref. to M Descri	Description	ption Unit -	Quantity as per project category			Rate
Sr NO		Description		Large	Medium	Small	(Rs.)
		d) Overhead charges		@ on (a+b+c)	<i>@</i> on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 35 Sam = $a+b+c+d+$					

Cost for 35 Sqm = a+b+c+d+eRate per Sqm = (a+b+c+d+e)/35

- Note 1. The rates for 50 mm & 40 mm thick layers may be worked out on pro-rata basis.
 - 2. Where tack coat is required to be provided before laying mastic asphalt, the same required to be measured and paid separately.
 - 3. The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design.
 - 4. This rate analysis is based on design made by CRRI for a specific case and is meant estimating purposes only. Actual design is required to be done for each case.

5.12 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) 2-3 mm thickness (Type-I)

Unit = sqm

Taking output = 24000 sqm (60 cum)

	0	,			
7	Taking density of 2.2 tonnes	per cum			
a)	Labour				
	Mate	day	0.266	0.266	0.266
	Mazdoor	day	6.650	6.650	6.650
b)	Machinery				
	Mechanical broom	hour	7.143	7.143	7.143
	(2.1m sweeping width)				
	Air compressor 250 cfm	hour	7.143	7.143	7.143
	Mobile slurry seal	hour	6.579	6.579	6.579
	equipment				
	Front end loader				
	(i) 3.1 Cum Capacity	hour	0.435		
	(ii) 2.1 Cum Capacity	hour		0.645	
	(iii) 1 Cum Capacity	hour			1.364
	Tipper				
	Tipper for loading time				
	(i) 14 cum capacity	hour	0.435		
	(ii) 14 cum capacity	hour		0.645	
	(iii) 10 cum capacity	hour			1.364
	For Transportation				
	(i) 14 cum capacity	t.km	132 x L1		
	(ii) 14 cum capacity	t.km		132 x L1	
	(iii) 10 cum capacity	t.km			132 x L1

Sr No	Ref. to M		Description	Unit	Quantity a	s per project ca	itegory	Rat
טאו וכ	nei. lu IVI		Description	OIIIL	Large	Medium	Small	(Rs
			Tipper for unloading					
			time	hour	6.579			
			(i) 14 cum capacity	hour	0.575	6.579		
			(ii) 14 cum capacity	hour		0.373	6.579	
			(iii) 10 cum capacity	noui			0.373	
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			spreading speed @ 3.0					
			Km/hr.)					
			(i) 16 KL capacity	hour	0.167 x L1 + 3.200			
			(ii) 12 KL capacity	hour		0.222 x L1 + 4.267		
			(iii) 6 KL capacity	hour			0.444 x L1 +	
				hour	5.263	5.263	8.533 5.263	
			Pneumatic tyred roller with individual wheel	Hour	5.205	5.205	5.205	
			load not exceeding 1.5					
			tonnes					
		c)	Material					
		•	Residual Binder @ 13	tonne	17.160	17.160	17.160	
			percent of mix = $60 x$ 2.2 x 0.13					
			Fine aggregate 3 mm	cum	75.240	75.240	75.240	
			and below 85.5					
			percent of total mix,					
			60x 2.2 x 0.855 = 112.860 tonnes.					
			Taking density 1.5, =					
			112.860/1.5 = 75.240					
			cum					
			Filler @ 1.5 percent	tonne	1.980	1.980	1.980	
			of total mix = $60x 2.2 x$					
			0.015	KL	12.000	12.000	12.000	
			Cost of water	NL.	0 on	@ on	@ on	
		d)	Overhead charges		@்on (a+b+c)	(a+b+c)	மு on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	st for 24000 Sqm = a+b+c+c	l+e	,	,	, ,	
			te per Sqm = (a+b+c+d+e)/					
.12	(ii)	16	mm thickness (Type-II)					
	("/		it = sqm					
			king output = 16000 sqm (8	0 cum)				
		a)	Labour					
		aj	Mate	day	0.319	0.319	0.319	
			Mazdoor	day	7.980	7.980	7.980	
			IVIAZUUUI	1				

					Quantity a	s per project ca	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery Mechanical broom	hour	4.762	4.762	4.762	
			(2.1m sweeping width)	Hour	4.702	4.702	4.762	
			Air compressor 250 cfm	hour	4.762	4.762	4.762	
			Mobile slurry seal	hour	4.386	4.386	4.386	
			equipment					
			Front end loader					
			(i) 3.1 Cum Capacity	hour	0.580			
			(ii) 2.1 Cum Capacity	hour		0.860		
			(iii) 1 Cum Capacity	hour			1.818	
			Tipper					
			Tipper for loading time					
			(i) 14 cum capacity	hour	0.580			
			(ii) 14 cum capacity	hour		0.860		
			(iii) 10 cum capacity	hour			1.818	
			For Transportation					
			(i) 14 cum capacity	t.km	176 x L1			
			(ii) 14 cum capacity	t.km		176 x L1		
			(iii) 10 cum capacity	t.km			176 x L1	
			Tipper for unloading					
			time					
			(i) 14 cum capacity	hour	4.386	4.006		
			(ii) 14 cum capacity	hour		4.386		
			(iii) 10 cum capacity	hour			4.386	
			Water tanker (speed @					
			10 km/hr. and return speed @ 15 km/hr. and					
			spreading speed @ 3.0					
			Km/hr.)					
			(i) 16 KL capacity	hour	0.167 x L1 +			
			()		2.133			
			(ii) 12 KL capacity	hour	200	0.222 x L1 +		
			· , , , ,			2.844		
			(iii) 6 KL capacity	hour			0.444 x L1 +	
			. , . ,				5.689	
			Pneumatic tyred roller	hour	3.509	3.509	3.509	
			with individual wheel	11001	3.303	0.000	3.303	
			load not exceeding 1.5					
			tonnes					
		c)	Material					
			Residual Binder @ 10.5	tonne	18.480	18.480	18.480	
			percent of mix 80 x 2.2					
			x 0.105		402.252			
			Fine aggregate 4.75 mm and below 88	cum	103.253	103.253	103.253	
			percent of total mix,80					
			x 2.2 x 0.88 = 154.880					
			tonnes.					
			Taking density 1.5, =					
			154.880/1.5 = 103.253					
			cum					
			Filler @ 1.5 percent of	tonne	2.640	2.640	2.640	
			total mix = 80 x 2.2 x					
			0.015	1/1	12 000	12 000	40.000	
		١١ـ	Cost of water	KL	12.000	12.000	12.000	
		d)	Overhead charges		@ on	@ on	@ on .	
					(a+b+c)	(a+b+c)	(a+b+c)	

Sr No	Ref. to M		Description	Unit	Quantity a	s per project ca	itegory	Rate
SFINO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			st for 16000 Sqm = a+b+c+					
		Rat	te per Sqm = (a+b+c+d+e)/	16000				
5.12	(iii)	6-8	mm thickness (Type-III)					
			it = sqm king output = 12000 sqm (84 cum)				
		٠,١	Labarra					
		a)	Labour	مام، ،	0.272	0.272	0.373	
			Mate	day	0.372	0.372	0.372	
			Mazdoor	day	9.310	9.310	9.310	
		b)	Machinery					
			Mechanical broom	hour	3.571	3.571	3.571	
			(2.1m sweeping width)		2.574	2.574	2.574	
			Air compressor 250 cfm	hour	3.571	3.571	3.571	
			Mobile slurry seal	hour	3.289	3.289	3.289	
			equipment					
			Front end loader		0.600			
			(i) 3.1 Cum Capacity	hour	0.609			
			(ii) 2.1 Cum Capacity	hour		0.903		
			(iii) 1 Cum Capacity	hour			1.909	
			Tipper					
			Tipper for loading time					
			(i) 14 cum capacity	hour	0.609			
			(ii) 14 cum capacity	hour		0.903		
			(iii) 10 cum capacity	hour			1.909	
			For Transportation					
			(i) 14 cum capacity	t.km	184.8 x L1			
			(ii) 14 cum capacity	t.km		79.2 x L1		
			(iii) 10 cum capacity	t.km			79.2 x L1	
			Tipper for unloading				, 3.2 x 21	
			time					
			(i) 14 cum capacity	hour	3.289			
			(ii) 14 cum capacity	hour	3.203	3.289		
			(iii) 10 cum capacity	hour		3.203	3.289	
			Water tanker (speed @	noui			3.209	
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			spreading speed @ 3.0					
			Km/hr.)					
			(i) 16 KL capacity	hour	0.167 x L1 +			
			(I) TO KE Capacity	Hour				
			/::\ 4.2 KL		1.600	0.000 14		
			(ii) 12 KL capacity	hour		0.222 x L1 +		
			(111) = 111	_		2.133		
			(iii) 6 KL capacity	hour			0.444 x L1 +	
							4.267	
			Pneumatic tyred roller	hour	2.632	2.632	2.632	
			with individual wheel					
			load not exceeding 1.5					
			tonnes					
		c)	Material					
			Residual Binder @ 9	tonne	16.632	16.632	16.632	
			percent of mix, 84 x 2.2					
			x 0.09					
			Fine aggregate 2.36 mm	cum	110.264	110.264	110.264	
			and below, 89.5					
			percent of total mix,84x					

C:: No	Def to M		Description	l locia	Quantity a	as per project ca	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	
			2.2 x 0.895 = 165.396 tonnes. Taking density 1.5, = 165.396/1.5 = 110.264 cum Filler @ 1.5 percent of total mix = 84 x 2.2 x 0.015	tonne	2.772	2.772	2.772	
			Cost of water	KL	12.000	12.000	12.000	
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	
		Cos	t for 12000 Sqm = a+b+c+	d+e				
		Rat	e per Sqm = (a+b+c+d+e)/	12000				

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

519 **Recycling of Bituminous** 5.13 **Pavement with Central**

Recycling Plant

Recycling pavement by cold milling of existing bituminous layers, planning the surface after cold milling, reclaiming excavated material to the extent of 30 per cent of the required quantity, hauling and stock piling the reclaimed material near the central recycling plant after carrying out checks and necessary evaluation, adding fresh material including rejuvenators as required, mixing in a hot mix plant, transporting and laying at site and compacting to the required grade, level and thickness, all as specified in clause 519.

Unit = cum

5.13 **Using by Bituminous** (i)

Macadam Grading -II

Unit = Cum

0.372
5.320
3.990

Milling Machine With 1.3 meter Drum Width 1.3 meter Drum Width 1.2 meter Drum Width 1.3 meter Drum Width 1.2 meter Drum Width 1.2 meter Drum Width 1.3 meter Drum Width 1.4 meter Drum Width 1.5 meter Drum Width	C# NI =	Dof to M	Decementary	11:!4	Quantity	as per project ca	ategory	Rate
1.3 meter Drum Width Milling Machine with 1.2 meter Drum Width Bitumen pressure distributor (Spraying width 4.5 m) Batch Type Hot Mix Plant (i) HMP 200 TPH (iii) HMP 120 TPH (iiii) HMP 120 TPH (iiii) HMP 120 TPH Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) (ii) Paver (240HP) (ii) Paver (240HP) (iii) Paver (2	Sr No	Ref. to M	Description	Unit				(Rs.)
1.3 meter Drum Width Milling Machine with 1.2 meter Drum Width								
Milling Machine with 1.2 meter Drum Width Bittumen pressure distributor (Spraying width 4.5 m) Batch Type Hot Mix Plant (i) HMP 200 TPH (ii) HMP 120 TPH (iii) HMP 120 TPH Mechanical broom (2.1m sweeping width) Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) (iii) Paver (174HP) (iii) Paver (174HP) (iii) Paver (204DP) (iii) 400 KVA (iii) 250 KVA Front end loader for feeding the plant (i) 3.1 Cum Capacity (iii) 1.1 Cum Capacity hour Tipper For Transportation (i) 14 cum capacity t.km (ii) 14 cum capacity to Plant (iii) 14 cum capacity hour For Transportation of dismantle material Site to Plant (ii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity hour For Transportation of dismantle material Site to Plant (ii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity hour For Transportation of dismantle material Site to Plant (ii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity hour For Transportation of dismantle material Site to Plant (ii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1			•	hour		12.125		
1.2 meter Drum Width Bitumen pressure distributor (Spraying width 4.5 m)				hour			12 126	
Bitumen pressure distributor (Spraying width 4.5 m) Batch Type Hot Mix Plant (i) HMP 200 TPH hour 1.971 (ii) HMP 100 TPH hour 0.571 0.57				Hour			13.130	
distributor Spraying width 4.5 m Batch Type Hot Mix Plant				hour	0.667	0.667	0 667	
(Spraying width 4.5 m) Batch Type hot Mix Plant (i) HMP 200 TPH hour 1.971 (ii) HMP 120 TPH hour 3.286 Mechanical broom hour 0.571 0.571 0.571 (2.1m sweeping width) Air compressor 250 cfm hour 0.571 0.571 0.571 Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (ii) Paver (240HP) hour 2.464 (iii) Paver (174HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 2.631 (ii) 2.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 2.631 (ii) 1 Cum Capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1				nour	0.007	0.007	0.007	
Plant			(Spraying width 4.5 m)					
(i) HMP 200 TPH hour 1.971 (ii) HMP 160 TPH hour 2.464 (iii) HMP 120 TPH hour 3.286 Mechanical broom hour 0.571 0.571 0.571 (2.1m sweeping width) Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (ii) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 3.286 Electric generator (i) 500 KVA hour 2.464 (iii) 250 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 7.784 (iii) 10 cum Capacity hour 8.123 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity hour 1.971 (iii) 10 cum capacity hour 1.971 (iii) 10 cum capacity hour 2.631 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1			Batch Type Hot Mix					
(ii) HMP 160 TPH hour 3.286 Mechanical broom hour 0.571 0.571 0.571 (2.1m sweeping width) Air compressor 250 cfm hour 0.571 0.571 0.571 Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 14 cum capacity hour 1.971 (iii) 14 cum capacity thour 1.971 (iii) 15 Cum Capacity t.km 276 x L1 (iii) 16 cum capacity hour 1.971 (iii) 17 cum capacity hour 1.971 (iii) 18 cum capacity hour 1.971 (iii) 19 cum capacity hour 1.971 (iii) 10 cum capacity hour 1.971 (iii) 14 cum capacity hour 2.464 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity hour 3.276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1			Plant					
(iii) HMP 120 TPH hour 3.286 Mechanical broom hour 0.571 0.571 0.571 (2.1m sweeping width) Air compressor 250 cfm hour 0.571 0.571 0.571 Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (iii) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 1.971 3.286 Electric generator (i) 500 KVA hour 1.971 3.286 (ii) 250 KVA hour 1.971 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 2.631 3.286 Front end loader for feeding the plant (ii) 1.2 Lum Capacity hour 7.784 3.286 Tipper For Transportation (i) 14 cum capacity hour 7.784 3.286 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 276 x L1 (iii) 10 cum capacity t.km 1.971 10.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			(i) HMP 200 TPH	hour	1.971			
Mechanical broom hour 0.571 0.571 0.571 (2.1m sweeping width)			(ii) HMP 160 TPH	hour		2.464		
(2.1m sweeping width) Air compressor 250 cfm hour 0.571 0.571 0.571 Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (ii) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 2.631 (ii) 2.1 Cum Capacity hour 3.7.784 (iii) 1 Cum			(iii) HMP 120 TPH	hour			3.286	
Air compressor 250 cfm hour 0.571 0.571 Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (ii) 3.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 4.191 (ii) 1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity t.km 276 x L1 (ii) 1 Cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1				hour	0.571	0.571	0.571	
Paver finisher hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (ii) Paver (240HP) hour 2.464 (iii) Paver (174HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 7.784 (iii) 1.1 Cum Capacity hour 7.784 (iii) 1.1 Cum Capacity hour 7.784 (iii) 1.1 Cum Capacity hour 2.631 (ii) 1.1 Cum Capacity hour 7.784 (iii) 1.1 Cum Capacity hour 7.784 (iii) 1.1 Cum Capacity hour 7.784 (iii) 1.1 Cum Capacity hour 1.976 x L1 (iii) 1.2 Cum capacity t.km 276 x L1 (iii) 1.3 Cum capacity hour 1.971 (iii) 1.4 cum capacity hour 2.464 (iiii) 1.5 Cum Capacity hour 1.971 (iii) 1.4 cum capacity hour 2.76 x L1 (iii) 1.4 cum capacity hour 2.76 x L1 (iii) 1.5 Cum Capacity t.km 276 x L1								
hydrostatic with sensor control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (ii) Paver (240HP) hour 2.464 (iii) Paver (240HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 2.631 (ii) 2.1 Cum Capacity hour 3.284 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (iii) 14 cum capacity hour 2.464 (iiii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1				hour	0.571	0.571	0.571	
control compatible with the hot mix plant (i) Paver (240HP) hour 1.971 (iii) Paver (240HP) hour 2.464 (iii) Paver (174HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 8.123 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 14 cum capacity hour 1.971 (iii) 10 cum capacity hour 1.971 (iii) 14 cum capacity hour 1.971 (iii) 14 cum capacity hour 2.464 (iiii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 14 cum capacity hour 2.464 (iiii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity hour 2.464 (iiii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1								
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(i) Paver (240HP) (ii) Paver (240HP) (iii) Paver (174HP) (iii) Paver (174HP) (iii) Paver (174HP) (iii) 400 KVA (iii) 400 KVA (iii) 250 KVA (iii) 2.1 Cum Capacity (iii) 2.1 Cum Capacity (iii) 1 Cum Capacity (iiii) 1 Cum Capacity (iiii) 1 Cum Capacity (iiiiii) 1 Cum Cap								
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(iii) Paver (174HP) hour 3.286 Electric generator (i) 500 KVA hour 1.971 (ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 2.631 (ii) 2.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 8.123 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 Tipper for loading & unloading time (i) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 10 cum capacity hour 1.971 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity hour 2.76 x L1 (iii) 10 cum capacity hour 2.76 x L1 (iii) 10 cum capacity hour 2.76 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1						2.464		
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(ii) 400 KVA hour 2.464 (iii) 250 KVA hour 3.286 Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 7.784 (iii) 2.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 8.123 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (ii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 1.971 (ii) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity hour 2.464 (iii) 10 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 12.125								
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Front end loader for feeding the plant (i) 3.1 Cum Capacity hour 2.631 (ii) 2.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 8.123 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 1.971 (ii) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 1.971 (iii) 10 cum capacity hour 1.971 (iii) 10 cum capacity hour 2.464 (iiii) 10 cum capacity hour 2.464 (iiii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1			(ii) 400 KVA	hour		2.464		
feeding the plant (i) 3.1 Cum Capacity hour 2.631 (ii) 2.1 Cum Capacity hour 7.784 (iii) 1 Cum Capacity hour 8.123 Tipper For Transportation (i) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity hour 16.422 For Transportation of dismantle material Site to Plant (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 14 cum capacity t.km 276 x L1			(iii) 250 KVA	hour			3.286	
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For Transportation (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 Tipper for loading & unloading time (i) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity hour 16.422 For Transportation of dismantle material Site to Plant (i) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 1276 x L1 (iii) 14 cum capacity t.km 1276 x L1			, , , , ,	hour			8.123	
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unloading time (i) 14 cum capacity hour 1.971 (ii) 14 cum capacity hour 2.464 (iii) 10 cum capacity hour 16.422 For Transportation of dismantle material Site to Plant (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 1276 x L1 (iii) 10 cum capacity t.km 1276 x L1 (iii) 14 cum capacity t.km 1276 x L1 (iii) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125				t.km			276 x L1	
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(iii) 10 cum capacity hour 16.422 For Transportation of dismantle material Site to Plant (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 1276 x L1 Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125					1.571	2 464		
For Transportation of dismantle material Site to Plant (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125						2.404	16 422	
dismantle material Site to Plant (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125				nour			10.422	
to Plant (i) 14 cum capacity t.km 276 x L1 (ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125			-					
(ii) 14 cum capacity t.km 276 x L1 (iii) 10 cum capacity t.km 276 x L1 Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125			to Plant					
(iii) 10 cum capacity t.km 276 x L1 Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125			(i) 14 cum capacity	t.km	276 x L1			
Tipper for loading time (i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125			(ii) 14 cum capacity	t.km		276 x L1		
(i) 14 cum capacity hour 7.881 (ii) 14 cum capacity hour 12.125			(iii) 10 cum capacity	t.km			276 x L1	
(ii) 14 cum capacity hour 12.125			Tipper for loading time					
				hour	7.881			
(iii) 10 cum canacity hour 12 126				hour		12.125		
(iii) to culti capacity flour 15.150			(iii) 10 cum capacity	hour			13.136	

Sr No	Ref. to M	Description	Unit	Quantity a	as per project ca	ategory	Rate
31 110	Rei. to ivi	Description	Offic	Large	Medium	Small	(Rs.)
		Smooth steel wheeled tandem roller for static and vibratory passaes c) Material A bitumen content is 3.3 per cent bitumen weight of mix. For reclaimed material, fresh bitumen will be required to the extent of 60 per cent of normal requirement. In a mix of 276 tonnes, 82.8 tonne is reclaimed and balance 193.2		12.642	12.642	12.642	
		tonne is fresh mix. Bitumen required for reclaimed mix of 82.8 tonne @ 60 per cent = 82.8 x 0.60 x 0.033 = 1 639	tonne	1.639	1.639	1.639	
		Bitumen required for fresh mix of 193.2 tonnes = 193.2 x 0.033: 6.376 ii) Aggregate Percentage of mix requiring fresh aggregates - 70 percer Weight of fresh mix = 276 x 0.70 = 193.2 tonne Weight of fresh aggregate in the mix = 193.2 x 0.967 = 186.824 tonne Taking average density of 1.5 tonnes/cum, total volume of aggregate = 124.550 cum. *Grading I (40 mm nominal size)	nt 4	6.376	6.376	6.376	
		37.5 - 25 mm 15 per cent	cum	18.683	18.683	18.683	
		25 - 10 mm 45 per cen	t cum	56.048	56.048	56.048	
		10 - 5 mm 25 per cent	cum	31.138	31.138	31.138	
		5 mm and below 15	cum	18.683	18.683	18.683	
		per cent Credit for milled material for use (70 Percent), Considering 20 percent cost as salvage value of above average materia rate of aggregate	f	124.550	124.550	124.550	

C# No	Dof to	N.4		Description	l lmit	Quantity a	as per project ca	ategory	Rate
Sr No	Ref. to	IVI		Description	Unit	Large	Medium	Small	(Rs.)
		(i)	nor d) e)	* Any one of the alternated adopted as per approve Grading I (40 mm minal size) Overhead charges Contractor's profit	d design	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
				t for 120 cum = a+b+c+d					
			Kat	e per cum = (a+b+c+d+e)	/120				
5.13	Α	(ii)		ng by Bituminous cadam Grading –II					
			a)	Labour					
				Mate	day	0.372	0.372	0.372	
				Mazdoor	day	5.320	5.320	5.320	
			b)	Machinery	day	3.990	3.990	3.990	
				Milling machine Milling Machine With 2 meter Drum Width	hour	7.881			
				Milling Machine With 1.3 meter Drum Width	hour		12.125		
				Milling Machine with 1.2 meter Drum Width	hour			13.136	
				Bitumen pressure distributor (Spraying width 4.5 m) Batch Type Hot Mix Plant	hour	0.667	0.667	0.667	
				(i) HMP 200 TPH	hour	1.971			
				(ii) HMP 160 TPH	hour		2.464		
				(iii) HMP 120 TPH	hour			3.286	
				Mechanical broom (2.1m sweeping width)	hour	0.571	0.571	0.571	
				Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with the hot mix plant		0.571	0.571	0.571	
				(i) Paver (240HP)	hour	1.971			
				(ii) Paver (240HP)	hour		2.464		
				(iii) Paver (174HP) Electric generator	hour			3.286	
				(i) 500 KVA	hour	1.971			
				(ii) 400 KVA	hour		2.464		
				(iii) 250 KVA Front end loader for feeding the plant	hour			3.286	
				(i) 3.1 Cum Capacity	hour	2.629			
				(ii) 2.1 Cum Capacity	hour	2.025	3.888		
				(iii) 1 Cum Capacity Tipper	hour		-	8.114	

C# No	Ref. to M		Description	l lmit	Quantity	as per project ca	ategory	Rate
Sr No	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
			For Transportation					
			(i) 14 cum capacity	t.km	276 x L1	276 14		
			(ii) 14 cum capacity	t.km		276 x L1	276	
			(iii) 10 cum capacity	t.km			276 x L1	
			Tipper for loading & unloading time					
			(i) 14 cum capacity	hour	1.971			
			(ii) 14 cum capacity	hour	1.571	2.464		
			(iii) 10 cum capacity	hour			16.422	
			For Transportation of				-	
			dismantle material Site					
			to Plant					
			(i) 14 cum capacity	t.km	276 x L1			
			(ii) 14 cum capacity	t.km		276 x L1		
			(iii) 10 cum capacity	t.km			276 x L1	
			Tipper for loading time					
			(i) 14 cum capacity	hour	7.881			
			(ii) 14 cum capacity	hour		12.125		
			(iii) 10 cum capacity	hour			13.136	
			Smooth steel wheeled	hour	12.642	12.642	12.642	
			tandem roller for static and vibratory passaes					
		c)	Material					
		٠,	i) Bitumen					
			A bitumen content is					
			3.4 per cent bitumen					
			weight of mix. For					
			reclaimed material,					
			fresh bitumen will be					
			required to the extent					
			of 60 per cent of normal requirement.					
			In a mix of 276 tonnes,					
			82.8 tonne is reclaimed					
			and balance 193.2					
			tonne is fresh mix.					
			Bitumen required for	tonne	1.689	1.639	1.639	
			reclaimed mix of 82.8					
			tonne @ 60 per cent =					
			82.8 x 0.60 x 0.034 =					
			1.689		C FC0	C 27C	C 27C	
			Bitumen required for fresh mix of 193.2	tonne	6.569	6.376	6.376	
			tonnes = 193.2 x 0.034=					
			6.569					
			ii) Aggregates					
			Percentage of mix					
			requiring fresh					
			aggregates - 70 per					
			cent					
			Weight of fresh mix =					
			276 x 0.70 = 193.2					
			tonne					

Rate

(Rs.)

C: No	Ref. to M	Description	11	Quantity a	as per project ca	ategory
Sr No	Ref. to IVI	Description	Unit	Large	Medium	Small
		Weight of fresh aggregate in the mix = 193.2 x 0.966 = 186.63 tonne Taking average density of 1.5 tonnes/cum, tot volume of aggregate = 124.421 cum. Size wise requirement of fresh aggregates Grading II (19 mm	, al			
		nominal size) 25 - 10 mm 40 per cer	nt cum	49.768	49.768	49.768
		10 - 5 mm 40 per cent		49.768	49.768	49.768
		5 mm and below 20 po		24.884	24.884	24.884
		Credit for milled material for use (70 Percent), Considering 20 percent cost as salvage value of above average material rate of aggregate * Any one of the alternative may be adopted as per approved design	f	124.421	124.421	124.421
	(i)	for Grading I (40 mm nominal size)		@ 10% a.a.	@ 13% an	@ 15% an
		d) Overhead chargese) Contractor's profit		@ 10% on (a+b+c) @ 10% on (a+b+c+d)	@ 12% on (a+b+c) @ 10% on (a+b+c+d)	@ 15% on (a+b+c) @ 10% on (a+b+c+d)
		Cost for 120 cum = a+b+c+c Rate per cum = (a+b+c+d+e		(ατυτίτα)	(ατυτέτα)	(ατυτέτα)

Note *1. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

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

5.13 (i) **Using by Dense Graded Bituminous Macadam** Grading -I a) Labour Mate day 0.372 0.372 0.372 5.320 5.320 5.320 Mazdoor day Mazdoor skilled day 3.990 3.990 3.990 Machinery Milling machine

, N.	Dof to M	Docarintian	Hoit	Quantity as per project category				
r No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs	
		Adulta Adulta Adulta		7.004				
		Milling Machine With 2	hour	7.881				
		meter Drum Width	haur		12 125			
		Milling Machine With 1.3 meter Drum Width	hour		12.125			
		Milling Machine with	hour			13.136		
		1.2 meter Drum Width	Hour			13.130		
		Bitumen pressure	hour	0.667	0.667	0.667		
		distributor	nou.	0.007	0.007	0.007		
		(Spraying width 4.5 m)						
		Batch Type Hot Mix						
		Plant						
		(i) HMP 200 TPH	hour	1.971				
		(ii) HMP 160 TPH	hour		2.464			
		(iii) HMP 120 TPH	hour			3.286		
		Mechanical broom	hour	0.571	0.571	0.571		
		(2.1m sweeping width)						
		Air compressor 250 cfm	hour	0.571	0.571	0.571		
		Paver finisher						
		hydrostatic with sensor						
		control compatible with						
		the hot mix plant	haur	1.971				
		(i) Paver (240HP)	hour hour	1.9/1	2.464			
		(ii) Paver (240HP)			2.404	2 206		
		(iii) Paver (174HP)	hour			3.286		
		Electric generator	hour	1.971				
		(i) 500 KVA	hour	1.9/1	2.464			
		(ii) 400 KVA (iii) 250 KVA	hour		2.404	3.286		
		Front end loader for	Hour			3.200		
		feeding the plant						
		(i) 3.1 Cum Capacity	hour	2.560				
		(ii) 2.1 Cum Capacity	hour		3.787			
		(iii) 1 Cum Capacity	hour			7.903		
		Tipper						
		For Transportation						
		(i) 14 cum capacity	t.km	276 x L1				
		(ii) 14 cum capacity	t.km		276 x L1			
		(iii) 10 cum capacity	t.km			276 x L1		
		Tipper for loading &						
		unloading time						
		(i) 14 cum capacity	hour	1.971				
		(ii) 14 cum capacity	hour		2.464			
		(iii) 10 cum capacity	hour			16.422		
		For Transportation of						
		dismantle material Site						
		to Plant						
		(i) 14 cum capacity	t.km	276 x L1				
		(ii) 14 cum capacity	t.km		276 x L1			
		(iii) 10 cum capacity	t.km			276 x L1		
		Tipper for loading time						
		(i) 14 cum capacity	hour	7.881				
		(ii) 14 cum capacity	hour		12.125			

Sr No	Ref. to M	Description	Unit	Quantity	as per project c	ategory	Rate
Sr NO	Ref. to IVI	Description	Unit	Large	Medium	Small	(Rs.)
		(iii) 10 cum capacity	hour			13.136	
		Smooth steel wheeled tandem roller for stati and vibratory passaes c) Material		12.642	12.642	12.642	
		•					
		reclaimed materi fresh bitumen will required to the exte of 60 per cent of norm requirement.	be nt				
		In a mix of 276 tonne 82.8 tonne is reclaime and balance 193 tonne is fresh mix.	ed				
		Bitumen required freclaimed mix of 82 tonne @ 60 per cent 82.8 x 0.60 x0.04 1.987	2.8	1.987	1.987	1.987	
		Bitumen required f fresh mix of 193 tonnes = 193.2 x 0.0 7.728	3.2	7.728	7.728	7.728	
		ii) AggregatesPercentage of mixrequiring freshaggregates - 70 percent					
		Weight of fresh mix = 276 x 0.70 = 193.2 tonne Weight of fresh					
		aggregate in the mix = 193.2 x 0.96 = 185.472 tonne					
		Taking average density of 1.5 tonnes/cum, to volume of aggregate = 123.648 cum.	tal				
		Size wise requirement of fresh aggregates *Grading I (40 mm nominal size)					
		37.5 - 25 mm 22 per cent	cum	27.203	27.203	27.203	
		25 - 10 mm 13 per cei 10 -4.75 mm 19 per	nt cum cum	16.074 23.493	16.074 23.493	16.074 23.493	
		cent 4.75 mm and below 44 per cent	4 cum	54.405	54.405	54.405	

Sr No	Ref. to M		Description	Unit	Quantity a	as per project c	ategory	
J. 140	Neil to W		Description	Onic	Large	Medium	Small	
			Filler @ 2 per cent of weight of aggregates.	tonne	5.520	5.520	5.520	
			Credit for milled material for use (70 Percent), Considering 20 percent cost as salvage value of above average material rate of aggregate * Any one of the alternative may be		123.648	123.648	123.648	
			adopted as per					
		d)	approved design Overhead charges		@ on	@ on	@ on	
		uj	Overneau charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			for 120 cum = a+b+c+d-					
		Rate	per cum = (a+b+c+d+e)	/120				
5.13	B (ii)	Bitu Grac	g by Dense Graded minous Macadam ling -II Labour					
		•	Mate	day	0.372	0.372	0.372	
			Mazdoor	day	5.320	5.320	5.320	
			Mazdoor skilled	day	3.990	3.990	3.990	
		b)	Machinery					
			Milling machine					
			Milling Machine With 2 meter Drum Width	hour	7.881			
			Milling Machine With 1.3 meter Drum Width	hour		12.125		
			Milling Machine with 1.2 meter Drum Width	hour			13.136	
			Bitumen pressure distributor (Spraying width 4.5 m)	hour	0.667	0.667	0.667	
			Batch Type Hot Mix Plant					
			(i) HMP 200 TPH	hour	1.971			
			(ii) HMP 160 TPH	hour		2.464		
			(iii) HMP 120 TPH	hour			3.286	
			Mechanical broom	hour	0.571	0.571	0.571	
			(2.1m sweeping width)					
			Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with		0.571	0.571	0.571	
			the hot mix plant					
			(i) Paver (240HP)	hour	1.971			
			(ii) Paver (240HP)	hour		2.464		
			(iii) Paver (174HP)	hour			3.286	

C NI -	Def +- *4	Description	11	Quantity	as per project c	ategory	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	
		Electric generator						
		(i) 500 KVA	hour	1.971				
		(ii) 400 KVA	hour		2.464			
		(iii) 250 KVA	hour			3.286		
		Front end loader for						
		feeding the plant						
		(i) 3.1 Cum Capacity	hour	2.547				
		(ii) 2.1 Cum Capacity	hour		3.767			
		(iii) 1 Cum Capacity	hour			7.862		
		Tipper						
		For Transportation						
		(i) 14 cum capacity	t.km	276 x L1				
		(ii) 14 cum capacity	t.km		276 x L1			
		(iii) 10 cum capacity	t.km			276 x L1		
		Tipper for loading &						
		unloading time						
		(i) 14 cum capacity	hour	1.971				
		(ii) 14 cum capacity	hour		2.464			
		(iii) 10 cum capacity	hour			16.422		
		For Transportation of						
		dismantle material Site						
		to Plant						
		(i) 14 cum capacity	t.km	276 x L1				
		(ii) 14 cum capacity	t.km		276 x L1			
		(iii) 10 cum capacity	t.km			276 x L1		
		Tipper for loading time		7.004				
		(i) 14 cum capacity	hour	7.881				
		(ii) 14 cum capacity	hour		12.125			
		(iii) 10 cum capacity	hour			13.136		
		Smooth steel wheeled	hour	12.642	12.642	12.642		
		tandem roller for static						
		and vibratory passaes						
		c) Material						
		i) Bitumen						
		A bitumen content is 4.5 per cent bitumen						
		weight of mix. For						
		reclaimed material,						
		fresh bitumen will be						
		required to the extent						
		of 60 per cent of normal						
		requirement.						
		In a mix of 276 tonnes,	,					
		82.8 tonne is reclaimed						
		and balance 193.2	:					
		tonne is fresh mix.						
		Bitumen required for		2.236	2.236	2.236		
		reclaimed mix of 82.8						
		tonne @ 60 per cent =						
		82.8 x 0.60 x0.045 =	•					
		1.689		0.663	0.66	0.00:		
		Bitumen required for	tonne	8.694	8.694	8.694		
		fresh mix of 193.2						

Sr No Ref. to M Description Unit Large tonnes = 193.2 x 0.045= 6.569 ii) Aggregates	Medium	Small (Rs.
6.569 ii) Aggregates		
6.569 ii) Aggregates		
ii) Aggregates		
Percentage of mix		
requiring fresh		
aggregates - 70 per		
cent		
Weight of fresh mix =		
276 x 0.70 = 193.2 tonne		
Weight of fresh		
aggregate in the mix =		
193.2 x 0.955 = 184.506		
tonne		
Taking average density		
of 1.5 tonnes/cum, total		
volume of aggregate = 123.004 cum.		
Size wise requirement		
of fresh aggregates		
Grading - II 19 mm		
(Nominal Size)		
25 - 10 mm 30 per cent cum 36.90	1 36.901	36.901
10 - 5 mm 28 per cent cum 34.44		34.441
5 mm and below 40 per cum 49.20	2 49.202	49.202
cent		
Filler @ 2 per cent of 5.520	5.520	5.520
weight of aggregates. Credit for milled 123.00	04 123.004	123.004
material for use (70	125.004	123.004
Percent),		
Considering 20 percent		
cost as salvage value of		
above average material		
rate of aggregate * Any one of the		
alternative may be		
adopted as per		
approved design		
d) Overhead charges @ or	n @ on	@ on
(a+b+c	c) (a+b+c)	(a+b+c)
e) Contractor's profit @ o	_	@ on
(a+b+c+	+d) (a+b+c+d)	(a+b+c+d)
Cost for 120 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/120		
5.13 C (i) Using By Bituminous		
Concrete Grading-I a) Labour		
Mate day 0.372	2 0.372	0.372
Mazdoor day 5.320		5.320
Mazdoor skilled day 3.990		3.990
,		

					Quantity	as per project c	er project category		
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)	
		b)	Machinery						
			Milling machine						
			Milling Machine With 2	hour	7.881				
			meter Drum Width Milling Machine With	hour		12.125			
			1.3 meter Drum Width	Hour		12.123			
			Milling Machine with	hour			13.136		
			1.2 meter Drum Width						
			Bitumen pressure	hour	0.667	0.667	0.667		
			distributor						
			(Spraying width 4.5 m)						
			Batch Type Hot Mix Plant						
			(i) HMP 200 TPH	hour	1.971				
			(ii) HMP 160 TPH	hour	1.371	2.464			
			(iii) HMP 120 TPH	hour			3.286		
			Mechanical broom	hour	0.571	0.571	0.571		
			(2.1m sweeping width)						
			Air compressor 250 cfm	hour	0.571	0.571	0.571		
			Paver finisher						
			hydrostatic with sensor						
			control compatible with						
			the hot mix plant	hour	1.971				
			(i) Paver (240HP) (ii) Paver (240HP)	hour	1.9/1	2.464			
			(iii) Paver (240HP) (iii) Paver (174HP)	hour		2.404	3.286		
			Electric generator	noui			3.200		
			(i) 500 KVA	hour	1.971				
			(ii) 400 KVA	hour		2.464			
			(iii) 250 KVA	hour		-	3.286		
			Front end loader for						
			feeding the plant						
			(i) 3.1 Cum Capacity	hour	2.528				
			(ii) 2.1 Cum Capacity	hour		3.739			
			(iii) 1 Cum Capacity	hour			7.804		
			Tipper						
			For Transportation						
			(i) 14 cum capacity	t.km	276 x L1	276 14			
			(ii) 14 cum capacity	t.km		276 x L1	27614		
			(iii) 10 cum capacity	t.km			276 x L1		
			Tipper for loading & unloading time						
			(i) 14 cum capacity	hour	1.971				
			(ii) 14 cum capacity	hour	1.371	2.464			
			(iii) 10 cum capacity	hour			16.422		
			For Transportation of						
			dismantle material Site						
			to Plant		276				
			(i) 14 cum capacity	t.km	276 x L1	276 - 14			
			(ii) 14 cum capacity (iii) 10 cum capacity	t.km t.km		276 x L1	276 x L1		
			Tipper for loading time	CINIII			270 X LI		
			(i) 14 cum capacity	hour	7.881				
			•						

Sr No R	Ref. to M	(ii) 14 cum capacity (iii) 10 cum capacity Smooth steel wheeled tandem roller for static	hour hour	Large	as per project communication Medium	Small	Rate (Rs.)
		(iii) 10 cum capacity Smooth steel wheeled	hour		12 125		
		(iii) 10 cum capacity Smooth steel wheeled	hour		17 175		
		Smooth steel wheeled			12.125	12.126	
				10.510	10.610	13.136	
		tandem roller for static	hour	12.642	12.642	12.642	
		and vibratory passaes					
	1	c) Material					
		i) Bitumen					
		A bitumen content is					
		5.2 per cent bitumen					
		weight of mix. For					
		reclaimed material,					
		fresh bitumen will be					
		required to the extent					
		of 60 per cent of					
		normal requirement.					
		In a mix of 276 tonnes,					
		82.8 tonne is reclaimed					
		and balance 193.2					
		tonne is fresh mix.					
		Bitumen required for	tonne	2.583	2.583	2.583	
		reclaimed mix of 82.8					
		tonne @ 60 per cent =					
		82.8 x 0.60 x 0.052 =					
		2.583					
		Bitumen required for	tonne	10.046	10.046	10.046	
		fresh mix of 193.2					
		tonnes = 193.2 x 0.052=					
		10.046					
		ii) Aggregates					
		Percentage of mix					
		requiring fresh					
		aggregates - 70 per					
		cent					
		Weight of fresh mix =					
		276 x 0.70 = 193.2					
		tonne					
		Weight of fresh					
		aggregate in the mix =					
		193.2 x 0.948 = 183.154					
		tonne					
		Taking average density					
		of 1.5 tonnes/cum, total					
		volume of aggregate =					
		122.102 cum.					
		Size wise requirement					
		of fresh aggregates					
		* Grading - I-19 mm					
		(Nominal Size)					
		20 - 10 mm 38 per cent	cum	46.399	46.399	46.399	
		10 - 5 mm 17 per cent	cum	20.757	20.757	20.757	
		5 mm and below 43 per	cum	52.504	52.504	52.504	
		cent					
		Filler @ 2 per cent of	cum	5.520	5.520	5.520	
		weight of aggregates.					

C:: No	Def to N		Description	11	Quantity a	is per project ca	tegory	Rate	
Sr No	Ref. to N	1	Description	Unit	Large	Medium	Small	(Rs.	
			Credit for milled material for use (70 Percent), Considering 20 percent cost as salvage value of above average material rate of aggregate * Any one of the alternative may be adopted as per	:	122.102	122.102	122.102		
			approved design d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)		
			e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)		
			Cost for 120 cum = a+b+c+d	l+e					
			Rate per cum = (a+b+c+d+e))/120					
5.13	С		Using By Bituminous Concrete Grading-II						
			a) Labour Mate	day	0.372	0.372	0.372		
			Mazdoor	day day	5.320	5.320	5.320		
			Mazdoor skilled	day	3.990	3.990	3.990		
			b) Machinery	uuy	3.550	3.550	3.330		
			Milling machine						
			Milling Machine With 2 meter Drum Width	hour	7.881				
			Milling Machine With 1.3 meter Drum Width	hour		12.125			
			Milling Machine with 1.2 meter Drum Width	hour			13.136		
			Bitumen pressure distributor (Spraying width 4.5 m) Batch Type Hot Mix Plant	hour	0.667	0.667	0.667		
			(i) HMP 200 TPH	hour	1.971				
			(ii) HMP 160 TPH	hour		2.464			
			(iii) HMP 120 TPH	hour			3.286		
			Mechanical broom (2.1m sweeping width)	hour	0.571	0.571	0.571		
			Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with the hot mix plant	-	0.571	0.571	0.571		
			(i) Paver (240HP)	hour	1.971				
			(ii) Paver (240HP)	hour		2.464			
			(iii) Paver (174HP) Electric generator	hour			3.286		
			-		4.074				
			(i) 500 KVA	hour	1.971				

r No	r No Ref. to M		Doccrintion	Hoit	Quantity	as per project ca	ategory	Rate
or NO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			(···) 250 to to				2 22 2	
			(iii) 250 KVA	hour			3.286	
			Front end loader for					
			feeding the plant	h	2 522			
			(i) 3.1 Cum Capacity	hour	2.523	2.722		
			(ii) 2.1 Cum Capacity	hour		3.732	7 707	
			(iii) 1 Cum Capacity	hour			7.787	
			Tipper For Transportation					
			(i) 14 cum capacity	t.km	276 x L1			
			(ii) 14 cum capacity	t.km	270 X L1	276 x L1		
			(iii) 10 cum capacity	t.km		270 X LI	276 x L1	
			Tipper for loading &	CIKITI			ZYOKLI	
			unloading time					
			(i) 14 cum capacity	hour	1.971			
			(ii) 14 cum capacity	hour		2.464		
			(iii) 10 cum capacity	hour			16.422	
			For Transportation of					
			dismantle material Site					
			to Plant					
			(i) 14 cum capacity	t.km	276 x L1			
			(ii) 14 cum capacity	t.km		276 x L1		
			(iii) 10 cum capacity	t.km			276 x L1	
			Tipper for loading time					
			(i) 14 cum capacity	hour	7.881			
			(ii) 14 cum capacity	hour		12.125		
			(iii) 10 cum capacity	hour			13.136	
			Smooth steel wheeled	hour	12.642	12.642	12.642	
			tandem roller for static					
		-1	and vibratory passaes					
		c)	Material					
			i) Bitumen					
			A bitumen content is 5.4 per cent bitumen					
			weight of mix. For					
			reclaimed material,					
			fresh bitumen will be					
			required to the extent					
			of 60 per cent of					
			normal requirement.					
			In a mix of 276 tonnes,					
			82.8 tonne is reclaimed					
			and balance 193.2					
			tonne is fresh mix.	tonno	2 692	2 692	2 602	
			Bitumen required for reclaimed mix of 82.8	tonne	2.683	2.683	2.683	
			tonne @ 60 per cent =					
			82.8 x 0.60 x 0.054 =					
			2.683					
			Bitumen required for	tonne	10.433	10.433	10.433	
			fresh mix of 193.2	-				
			tonnes = 193.2 x 0.054=					
			10.433					

					Quantity	as per project c	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
LL		<u> </u>						
			Percentage of mix					
			requiring fresh					
			aggregates - 70 per					
			cent					
			Weight of fresh mix = 276 x 0.70 = 193.2					
			tonne					
			Weight of fresh					
			aggregate in the mix =					
			193.2 x 0.946 = 182.767					
			tonne					
			Taking average density					
			of 1.5 tonnes/cum, total volume of aggregate =					
			121.845 cum.					
			Size wise requirement					
			of fresh aggregates					
			Grading - II-13 mm					
			(Nominal Size)					
			13.2 - 10 mm 21 per	cum	25.587	25.587	25.587	
			cent		20.744	20.744	20.744	
			10 - 5 mm 17 per cent	cum	20.714	20.714	20.714	
			5 mm and below 60 per cent	cum	73.107	73.107	73.107	
			Filler @ 2 per cent of weight of aggregates.	cum	5.520	5.520	5.520	
			Credit for milled		121.845	121.845	121.845	
			material for use (70					
			Percent), Considering 20 percent					
			cost as salvage value of					
			above average material					
			rate of aggregate					
			* Any one of the					
			alternative may be					
			adopted as per					
		۸۱	approved design		@ on	@ on	@ 0.0	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		-,	р		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	st for 120 cum = a+b+c+d+e	2				
		Rat	te per cum = (a+b+c+d+e)/	120				
5.14	513	Fo	g Spray					
			oviding and applying low					
			cosity bitumen emulsior					
			sealing cracks less than 3					
		mr or	n wide or incipient fretting disintegration in ar					
			sting bituminous surfacing					
			it = sqm					
		_						

Taking output = 10500 Sqm

CHAPTER: 5- BASES AND SURFACE COURSES (BITUMINOUS)

	Sr No Ref. to M				Quantity a	s per project cat	egory	Rate
Sr No	Ref. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
	<i>(</i> •)	,						
	(i)	a)	Labour	day	0.160	0.160	0.160	
			Mate	day	0.160	0.160	0.160 3.990	
		ь١	Mazdoor	day	3.990	3.990	3.990	
		b)	Machinery Mechanical broom @	hour	3.125	3.125	3.125	
			1250 sqm per hour	Hour	3.123	5.125	5.125	
			Air compressor 250 cfm	hour	3.125	3.125	3.125	
			Bitumen pressure	tonne				
			distributor (Spraying		2.917	2.917	2.917	
			width 4.5 m)					
		c)	Material					
			Bitumen emulsion @ 0.75 kg per sqm	tonne	7.880	7.880	7.880	
		d)	Overhead charges		@ on	@ on	@ on	1
		•			(a+b+c)	(a+b+c)	(a+b+c	
		e)	Contractor's profit		` <i>,</i> @ on	`	` @ on	
			•		(a+b+c+d)	(a+b+c+d)	(a+b+c+	d)
			t for 10500 Sqm = a+b+c+					
		Rat	e per Sqm = (a+b+c+d+e)	/10500				
	(ii)	1.ln	case it is decided by the					
			ineer to blind the fog					
			ay, the following may be					
		add						
		a)	Labour					
			Mate	day	0.213	0.160	0.160	
			Mazdoor for pre-coating	g day	5.320	4.000	4.000	
		b)	of grit Material					
		۵,	Crushed stone grit 3 mm	n cum	26.250	26.250	26.250)
			size @ 3.75 kg per sqm	-		_55		
			Bitumen emulsion for	tonne	0.790	0.790	0.790	
			pre-coating grit @ 2					
			Percent of grit,39.38 x					
			0.02					
5.15	518	Bitu	ıminous Cold Mix					
		-	luding Gravel Emulsion)					
			viding, laying and rolling					
			oituminous cold mix on	_				
			pared base consisting of a ture of unheated mineral					
			regate and emulsified or					
			back bitumen, including					
			ing in a plant of suitable					
			e and capacity,					
			nsporting, laying,					
			npacting and finishing to					
		-	cified grades and levels. t = cum					
		_	t = cum ing output = 205 Cum					
	(i)		ng bitumen emulsion and	i				
	ν.,		mm or 13.2 mm size					

C# No	Dof to M	Description aggregate	Lleit	Quantity	as per project ca	itegory	Rat	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
		ags	gregate					
			mposition of mix (450					
			nne) is assumed to be as					
			der:-					
		Bit	umen Emulsion 8 Percent					
		Ву	weight of total mix					
		Fill	er 2 Percent					
		Tot	tal aggregates 90 Percent					
		Pro	oportion of aggregates					
		19	mm to 9.5 mm25 Percent					
			mm to 6 mm29 Percent					
			nm to 0.075 mm 36					
		_	rcent					
		a)	Labour		0.620	0.620	0.63	_
			Mate Mazdoor	day	0.638	0.638	0.63	
			Mazdoor Mazdoor skilled	day	9.310	9.310	9.31	
		۳,		day	6.650	6.650	6.65	U
		b)	Machinery Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.214			
			(ii) HMP 160 TPH	hour	3.214	4.018		
			(iii) HMP 120 TPH	hour		4.010	5.35	7
			Mechanical broom (2.1m	hour	1.743	1.743	1.74	
			sweeping width)	11041	11, 13	1.7.13	2.7 1.	•
			Air compressor 250 cfm	hour	1.743	1.743	1.74	3
			Paver finisher					
			hydrostatic with sensor					
			control compatible with					
			the hot mix plant					
			(i) Paver (240HP)	hour	3.214			
			(ii) Paver (240HP)	hour		4.018		
			(iii) Paver (174HP)	hour			5.35	7
			Electric generator		_			
			(i) 500 KVA	hour	3.214			
			(ii) 400 KVA	hour		4.018		_
			(iii) 250 KVA	hour			5.35	7
			Front end loader for					

	inposition of filix (450				
	ne) is assumed to be as				
	ler:-				
	imen Emulsion 8 Percent				
	weight of total mix				
	er 2 Percent				
	al aggregates 90 Percent				
	portion of aggregates				
	mm to 9.5 mm25 Percent				
9.5	mm to 6 mm29 Percent				
	m to 0.075 mm 36				
	cent				
a)	Labour				
	Mate	day	0.638	0.638	0.638
	Mazdoor	day	9.310	9.310	9.310
	Mazdoor skilled	day	6.650	6.650	6.650
b)	Machinery				
	Hot Mix Plant				
	(i) HMP 200 TPH	hour	3.214		
	(ii) HMP 160 TPH	hour		4.018	
	(iii) HMP 120 TPH	hour			5.357
	Mechanical broom (2.1m	hour	1.743	1.743	1.743
	sweeping width)				
	Air compressor 250 cfm	hour	1.743	1.743	1.743
	Paver finisher				
	hydrostatic with sensor				
	control compatible with				
	the hot mix plant				
	(i) Paver (240HP)	hour	3.214		
	(ii) Paver (240HP)	hour		4.018	
	(iii) Paver (174HP)	hour			5.357
	Electric generator				
	(i) 500 KVA	hour	3.214		
	(ii) 400 KVA	hour		4.018	
	(iii) 250 KVA	hour			5.357
	Front end loader for				
	feeding the plant				
	(i) 3.1 Cum Capacity	hour	5.813		
	(ii) 2.1 Cum Capacity	hour		8.308	
	(iii) 1 Cum Capacity	hour			18.000
	Tipper				
	For Transportation				
	(i) 14 cum capacity	t.km	450 x L1		
	(ii) 14 cum capacity	t.km	.00 X 22	450 x L1	
	(iii) 10 cum capacity	t.km		130 X 21	450 x L1
	Tipper for loading &	Citari			130 % 22
	unloading time				
	(i) 14 cum capacity	hour	6.429		
	(ii) 14 cum capacity	hour	323	8.036	
	(iii) 10 cum capacity	hour		0.000	10.714
	, 10 carricapacity	Hour			10.714

CHAPTER: 5- BASES AND SURFACE COURSES (BITUMINOUS)

C:: No	D-f +- N4		Description	l locia	Quantity as	per project cate	egory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Smooth steel wheeled	hour				
			tandem roller for static		21.596	21.596	21.59	6
			and vibratory passages					
			Pneumatic Tyre roller	hour	3.058	3.214	4.286	5
		c)	Material					
			Bitumen emulsion @ 8	tonne	36.000	36.000	36.00	10
			Percent					
			Filler (lime)@ 2 Percent	t tonne	9.000	9.000	9.000)
			Aggregates size 19 to 9.	5 cum	75.000	75.000	75.00	10
			mm - 450 x 0.25 x 1/1.5					
			Aggregates size 9.5 to 6	cum	87.000	87.000	87.00	0
			mm - 450 x 0.29 x 1/1.5					
			Aggregates size 6 to	cum	108.000	108.000	108.00	00
			0.075 mm - 450 x 0.36 x	[
			1/1.5					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a-	+b+c)
		e)	Contractor's profit		@ on	@ on	@ o	n
					(a+b+c+d)	(a+b+c+d)	(a+b+c-	+d)
		Cod	t for 205 cum = 2464c4d	L O				

Cost for 205 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/205

(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.

5.15 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 Percent

Filler2 Percent

Total aggregates 90 Percent

Proportion of aggregates

37.5 mm to 19 mm25

Percent

19 mm to 6 mm 30 Percent

6 mm to 0.075 mm 35

O III	111 10 0.073 11111 33									
Per	ercent									
a)	Labour									
	Mate	day	0.638	0.638	0.638					
	Mazdoor	day	9.310	9.310	9.310					
	Mazdoor skilled	day	6.650	6.650	6.650					
b)	Machinery									
	Hot Mix Plant									
	(i) HMP 200 TPH	hour	3.214							
	(ii) HMP 160 TPH	hour		4.018						
	(iii) HMP 120 TPH	hour			5.357					
	Mechanical broom	hour	1.743	1.743	1.743					
	(2.1m sweeping width)									

CHAPTER: 5- BASES AND SURFACE COURSES (BITUMINOUS)

	56.56				Quantity as	per project cate	gory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Air	h	1 742	1 740	1 742	
			Air compressor 250 cfm Paver finisher	hour	1.743	1.743	1.743	
			hydrostatic with sensor					
			control compatible with					
			the hot mix plant					
			(i) Paver (240HP)	hour	3.214			
			(ii) Paver (240HP)	hour		4.018		
			(iii) Paver (174HP)	hour			5.357	
			Electric generator					
			(i) 500 KVA	hour	3.214			
			(ii) 400 KVA	hour		4.018		
			(iii) 250 KVA	hour			5.357	
			Front end loader for					
			feeding the plant					
			(i) 3.1 Cum Capacity	hour	5.813			
			(ii) 2.1 Cum Capacity	hour		8.308		
			(iii) 1 Cum Capacity	hour			18.000	
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	450 x L1			
			(ii) 14 cum capacity	t.km		450 x L1		_
			(iii) 10 cum capacity	t.km			450 x L1	1
			Tipper for loading &					
			unloading time	haur	6 420			
			(i) 14 cum capacity	hour	6.429	8.036		
			(ii) 14 cum capacity (iii) 10 cum capacity	hour		8.030	10 714	
			Smooth steel wheeled	hour			10.714	•
			tandem roller for static	hour	21.596	21.596	21.596	
			and vibratory passages		21.550	21.330	21.550	
			Pneumatic Tyre roller	hour	3.058	3.214	4.286	
		c)	Material					
		,	Bitumen emulsion @ 8 Percent	tonne	36.000	36.000	36.000	ı
			Filler (lime)@ 2 Percent	tonne	9.000	9.000	9.000	
			Aggregates size 37.5 to	cum	75.000	75.000	75.000	1
			19 mm - 450 x 0.25 x 1/1.5					
			Aggregates size 19 to 6 mm - 450 x 0.3 x 1/1.5	cum	90.000	90.000	90.000	ı
			Aggregates size 6 to 0.075 mm - 450 x 0.35 x	cum	105.000	105.000	105.000)
		,,	1/1.5		0	0 - 1 - 1	o , .	L. 1
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+l @ on (a+b+c+c	
		Cos	st for 205 cum = a+b+c+d+e		(ατυτίτα)	(arbtetu)	(ατυτίτ	ω

Cost for 205 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/205

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

2. Tack coat where provided will be measured and paid separately.

C. N.	D-6 4- M		Dan animalian	11	Quantity	as per project ca	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
5.15	9.5 mm or 13.2 mm nominal size aggregate Composition of mix (450 tonne) is assumed to be as under:- Cutback bitumen 5 Percent Filler (lime) 2 Percent Total aggregates 93 Percent Proportion of aggregates 19 mm to 9.5 mm26 Percent 9.5 mm to 6 mm31 Percent 6 mm to 0.075 mm 36		S	zunge	cuiu	Sinun	(,	
		Per	rcent					
		a)	Labour					
			Mate	day	0.638	0.638	0.638	
			Mazdoor	day	9.310	9.310	9.310	
			Mazdoor skilled	day	6.650	6.650	6.650)
		b)	Machinery					
			Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.214			
			(ii) HMP 160 TPH	hour		4.018		
			(iii) HMP 120 TPH	hour			5.357	7
			Mechanical broom (2.1m sweeping width)	hour	1.743	1.743	1.743	3
			Air compressor 250 cfm Paver finisher hydrostatic with sensor control compatible with the hot mix plant		1.743	1.743	1.743	3
			(i) Paver (240HP)	hour	3.214			
			(ii) Paver (240HP)	hour		4.018		
			(iii) Paver (174HP)	hour			5.357	7
			Electric generator					
			(i) 500 KVA	hour	3.214			
			(ii) 400 KVA	hour		4.018		

Tipper

C. N.	Cu No. Dof to M		Description	Unit	Quantity as per project category			Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Smooth steel wheeled	hour				
			tandem roller for static and vibratory passaes		21.596	21.596	21.59	6
			Pneumatic Tyre roller	hour	3.058	3.214	4.286	5
		c)	Material					
			Cutback bitumen @ 5 Percent	tonne	22.500	22.500	22.50	0
			Filler (lime)@ 2 Percent	tonne	9.000	9.000	9.000)
			Aggregates size 19 to 9.5 mm - 450 x 0.26 x 1/1.5	cum	78.000	78.000	78.00	0
			Aggregates size 9.5 to 6 mm - 450 x 031 x 1/1.5	cum	93.000	93.000	93.00	0
			Aggregates size 6 to 0.075 mm - 450 x 0.36 x 1/1.5	cum	108.000	108.000	108.00)0
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a-	+b+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ o (a+b+c-	
		_						

Cost for 205 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/205

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

> 2. Tack coat where provided will be measured and paid separately.

5.16 506 **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, laying, transporting, compacting and finishing.

Unit = cum

Taking output = 205 Cum

	aking output = 205 Cum												
a)	Labour												
	Mate	day	0.638	0.638	0.638								
	Mazdoor	day	9.310	9.310	9.310								
	Mazdoor skilled	day	6.650	6.650	6.650								
b)	Machinery												
	Hot Mix Plant												
	(i) HMP 200 TPH	hour	3.214										
	(ii) HMP 160 TPH	hour		4.018									
	(iii) HMP 120 TPH	hour			5.357								
	Paver finisher												
	hydrostatic with sensor												
	control compatible with												
	the hot mix plant												
	(i) Paver (240HP)	hour	3.214										
b)	Mazdoor skilled Machinery Hot Mix Plant (i) HMP 200 TPH (ii) HMP 160 TPH (iii) HMP 120 TPH Paver finisher hydrostatic with sensor control compatible with the hot mix plant	hour hour hour	6.650 3.214	6.650	6.6								

CHAPTER: 5- BASES AND SURFACE COURSES (BITUMINOUS)

Cu Ni-	Dof +- 14		Dogguintia	l lmit	Quantity as	per project cate	gory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(m) = (=)					
			(ii) Paver (240HP)	hour		4.018		
			(iii) Paver (174HP)	hour			5.357	
			Electric generator		2.244			
			(i) 500 KVA	hour	3.214			
			(ii) 400 KVA	hour		4.018		
			(iii) 250 KVA	hour			5.357	
			Front end loader for					
			feeding the plant		6.074			
			(i) 3.1 Cum Capacity	hour	6.074	0.040		
			(ii) 2.1 Cum Capacity	hour		9.019	40.60	
			(iii) 1 Cum Capacity	hour			18.601	L
			Tipper					
			For Transportation		450 14			
			(i) 14 cum capacity	t.km	450 x L1	450 14		
			(ii) 14 cum capacity	t.km		450 x L1	450	
			(iii) 10 cum capacity	t.km			450 x L	.1
			Tipper for loading &					
			unloading time	h	C 420			
			(i) 14 cum capacity	hour	6.429	0.026		
			(ii) 14 cum capacity	hour		8.036	10.71	4
			(iii) 10 cum capacity	hour			10.714	+
			Smooth steel wheeled tandem roller for static	hour	21.596	21.596	21.596	2
			and vibratory passages		21.590	21.590	21.590)
		c)	Material					
		٠,	Composition of mix (450					
			tonne) is assumed to be					
			as under:-					
			Density 2.20 tonne per					
			cum					
			Weight450 tonne					
			Bitumen5 Percent					
			Filler2 Percent					
			Sand of size 4.75 to					
			0.075 mm 93 Percent					
			Bitumen@ 5 Percent	tonne	22.500	22.500	22.500)
			Filler (lime)@ 2 Percent	tonne	9.000	9.000	9.000	
			Sand of size 4.75 to	cum	288.620	288.620	288.62	0
			0.075 mm - 450 x 0.93 x					
			1/1.5					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+	·b+c)
		e)	Contractor's profit		@ on	@ on	@ or	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+	·d)
			st for 205 cum = a+b+c+d+e					
		Rat	e per cum = (a+b+c+d+e)/2	205				

Note 1. Tack coat will be measured and paid separately

5.17 **Crack Prevention Courses**

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

C:: No	D-6 +- M	D		Quantity	as per project c	ategory	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	

Providing and laying of a stress absorbing membrane over a cracked road surface, with crack width below 6 mm after cleaning with mechanical broom, using modified binder complying with IRC:SP: 53, sprayed at the rate of 9 kg per 10 sqm and spreading 5.6 mm crushed stone aggregates @ 0.11 cum per 10 sqm with hydraulic chip spreader, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.

Unit = sqm

Taking output = 10500 sqm

a)	Labour				
	Mate	day	0.213	0.160	0.160
	Mazdoor	day	5.320	4.000	4.000
b)	Machinery				
	Mechanical broom (2.1m sweeping width)	hour	3.125	3.125	3.125
	Air compressor 250 cfm	hour	3.125	3.125	3.125
	Bitumen pressure	hour			
	distributor (Spraying width 4.5 m)		2.917	2.917	2.917
	Hydraulic Chip spreader	hour	5.397	5.397	5.397
	Smooth wheeled road roller 8-10 tonne	hour	5.397	5.397	5.397
c)	Material				
	Modified binder	tonne	9.450	9.450	9.450
	Crushed stone	cum	105.000	105.000	105.000
	aggregates 5.6 mm size		_		_
d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

@ on

(a+b+c+d)

@ on

(a+b+c+d)

@ on

(a+b+c+d)

Cost for 10500 Sqm = a+b+c+d+eRate per Sqm = (a+b+c+d+e)/10500

Contractor's profit

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

e)

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 IRC:SP: 53, sprayed at the rate of 11 kg per 10 sqm and spreading 11.2 mm

C:: No	D-f +- M	Description	l lmi4	Quantity	Rate			
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	
crushed stone aggregates @								

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

	S outhat				
a)	Labour				
	Mate	day	0.213	0.160	0.160
	Mazdoor	day	5.320	4.000	4.000
b)	Machinery				
	Mechanical broom (2.1m sweeping width)	hour	3.125	3.125	3.125
	Air compressor 250 cfm	hour	3.125	3.125	3.125
	Bitumen pressure	hour			
	distributor (Spraying		2.917	2.917	2.917
	width 4.5 m)				
	Hydraulic Chip spreader	hour	5.397	5.397	5.397
	Smooth wheeled road	hour	5.397	5.397	5.397
	roller 8-10 tonne				
c)	Material				
	Modified binder	tonne	11.550	11.550	11.550
	Crushed stone chipping 11.2 mm size	cum	105.000	105.000	105.000

@ on

(a+b+c+d)

@ on (a+b+c) @ on (a+b+c) @ on (a+b+c)

@ on

(a+b+c+d)

@ on

(a+b+c+d)

Cost for 10500 Sqm = a+b+c+d+e Rate per Sqm = (a+b+c+d+e)/10500

d) Overhead charges

e) Contractor's profit

5.17 (iii) Stress absorbing membrane (SAM) crack width above 9 mm and cracked area above 50 Percent

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 Percent after cleaning with a mechanical broom, using modified binder complying with IRC:SP: 53, 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

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Sr No Ref. to M		Description		l loit	Quantity as	Quantity as per project category		
Sr No	Ret. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Labour					
			Mate	day	0.319	0.266	0.266	i
			Mazdoor	day	5.320	4.000	4.000)
			Mazdoor skilled	day	2.660	2.660	2.660)
		b)	Machinery					
			Mechanical broom (2.1m sweeping width)	hour	3.125	3.125	3.125	i
			Air compressor 250 cfm	hour	3.125	3.125	3.125	,
			Bitumen pressure	hour				
			distributor (Spraying width 4.5 m)		2.917	2.917	2.917	,
			Hydraulic Chip spreader	hour	5.397	5.397	5.397	,
			Smooth wheeled road roller 8-10 tonne	hour	5.397	5.397	5.397	•
		c)	Material					
			Modified binder	tonne	15.750	15.750	15.75)
			Crushed stone aggregates 11.2 mm size	cum	126.000	126.000	126.00	0
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+	-b+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ oı (a+b+c+	า

Cost for 10500 Sqm = a+b+c+d+e Rate per Sqm = (a+b+c+d+e)/10500

Note In case 2nd coat is also required to be provided, material provided for the 2nd coat shall be as per Table 500-43.

5.17 (iv) Case - IV : Bitumen impregnated geotextile

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 518.3

Unit = sqm

Taking output = 3500 sqm

	• •				
a)	Labour				
	Mate	day	0.372	0.372	0.372
	Mazdoor	day	6.650	6.650	6.650
	Mazdoor skilled	day	2.660	2.660	2.660
b)	Machinery				
	Mechanical broom (2.1m sweeping width)	hour	1.042	1.042	1.042
	Air compressor 250 cfm	hour	1.042	1.042	1.042
	Bitumen pressure	hour			
	distributor (Spraying width 4.5 m)		0.972	0.972	0.972

Sr No	Ref. to M		Doscription	Linit	Quantity as	per project cate	gory	Rate
Sr No	Ker. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
		Dna	eumatic roller	hour	2.000	2.000	2.000	
			terial	noui	2.000	2.000	2.000	
		•		f +0nno				
			ving grade bitumen of - 100 penetration @	f tonne	3.680	3.680	3.680	
			5 kg per sqm		3.080	3.080	3.080	
			= : :	cam	3950,000	3950,000	2050.00	00
			otextile including 10	sqm	3850.000	3850.000	3850.00)0
			cent for overlaps		O andaubual	@ an (a.b.a)	@ an /au	h . a\
		-	erhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+	
		e) Co	ntractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ or (a+b+c+	
		Cost for	3500 Sqm = a+b+c+c	1+e	(атытсти)	(атытсти)	(атытст	uj
			r Sqm = (a+b+c+d+e)					
		•		•				
5.18	518.3	-	Cold Mix					
		Providir		of				
		•	of crushed ston					
		aggrega						
			mixed in a batch typ					
			ixing plant, laid ove					
			d surface, by pave					
		finisher		a				
		pneuma						
		-	and finished with steel wheel roller, a					
			lause 518.3	III				
		Unit = c						
			output= 205 Cum					
	(i)	_	thickness					
	.,	a) Lab	our					
		Ma	te	day	0.638	0.638	0.638	
		Ma	zdoor	day	9.310	9.310	9.310	
		Ma	zdoor skilled	day	6.650	6.650	6.650	
		b) Ma	achinery					
		Но	t Mix Plant					
			HMP 200 TPH	hour	3.214			
			HMP 160 TPH	hour		4.018		
		• •	HMP 120 TPH	hour			5.357	
			ctric generator	_				
		٠,	500 KVA	hour	3.214			
			400 KVA	hour		4.018	F 257	
			250 KVA	hour			5.357	
			ont end loader for					
			eding the plant	hour	6.457			
			3.1 Cum Capacity 2.1 Cum Capacity	hour hour	0.457	9.581		
			1 Cum Capacity	hour		9.561	19.800	1
			per	noui			13.600	,
			Transportation					
			14 cum capacity	t.km	450 x L1			
			14 cum capacity	t.km	430 V FT	450 x L1		
			10 cum capacity	t.km		-30 X LI	450 x L	1
			r loading & unloading				750 X L	-
		tir		•				
			14 cum capacity	hour	6.429			
			14 cum capacity	hour		8.036		
		(,				2.300		

	- 6				Quantity as	per project cate	gory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 10 cum capacity Paver finisher hydrostatic with sensor control compatible with the hot mix plant	hour			10.71	4
			(i) Paver (240HP)	hour	3.214			
			(ii) Paver (240HP)	hour		4.018		
			(iii) Paver (174HP)	hour			5.357	,
			Smooth steel wheeled tandem roller for static and vibratory passages	hour	14.085	14.085	14.08	
			Pneumatic Tyre roller Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)	hour	2.571	3.214	4.286	5
			(i) 16 KL capacity	hour	0.083 x L1 + 0.182			
			(ii) 12 KL capacity	hour		0.111 x L1 + 0.243		
			(iii) 6 KL capacity	hour			0.222 x 0.486	
		c)	Material					
			Bitumen emulsion @ 45 litres per tonne	tonne	20.250	20.250	20.25	0
			Crushed stone aggregates 40 mm nominal size	cum	297.000	297.000	297.00	00
			Cost of water	KL	6.000	6.000	6.000)
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+	-b+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ oı (a+b+c+	
		Cos	st for 205 cum = $a+b+c+d+e$	9	-	-		

Cost for 205 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/205

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.

5.18 40 mm thickness (ii) a) Labour Mate day 0.638 0.638 0.638 Mazdoor day 9.310 9.310 9.310 Mazdoor skilled 6.650 6.650 6.650 day b) Machinery **Hot Mix Plant** (i) HMP 200 TPH hour 3.214 (ii) HMP 160 TPH hour 4.018 (iii) HMP 120 TPH hour 5.357 **Electric generator** hour 3.214 (i) 500 KVA

CHAPTER: 5- BASES AND SURFACE COURSES (BITUMINOUS)

	- 6				Quantity as	per project cate	gory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(ii) 400 KVA	hour		4.018	F 257	
			(iii) 250 KVA	hour			5.357	
			Front end loader for					
			feeding the plant	L	C 10C			
			(i) 3.1 Cum Capacity	hour	6.106	0.000		
			(ii) 2.1 Cum Capacity	hour		8.969	40.422	,
			(iii) 1 Cum Capacity	hour			19.133	3
			Tipper					
			For Transportation	A loss	450			
			(i) 14 cum capacity	t.km	450 x L1	450 4		
			(ii) 14 cum capacity	t.km		450 x L1	450	
			(iii) 10 cum capacity	t.km			450 x L	1
			For loading & unloading					
			time	haur	6.420			
			(i) 14 cum capacity	hour	6.429	9.026		
			(ii) 14 cum capacity	hour		8.036	10.71	4
			(iii) 10 cum capacity	hour			10.714	+
			Paver finisher					
			hydrostatic with sensor					
			control compatible with the hot mix plant					
			(i) Paver (240HP)	hour	3.214			
			(ii) Paver (240HP)	hour	3.214	4.018		
			(iii) Paver (240HP)	hour		4.010	5.357	
			Smooth steel wheeled	hour	14.085	14.085	14.085	
			tandem roller for static	noui	14.005	14.005	14.000	,
			and vibratory passages					
			Pneumatic Tyre roller	hour	2.571	3.214	4.286	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			spreading speed @ 3.0					
			Km/hr.)					
			(i) 16 KL capacity	hour	0.083 x L1 +			
					0.342			
			(ii) 12 KL capacity	hour		0.111 x L1 +		
						0.456		
			(iii) 6 KL capacity	hour			0.222 x L	
		c)	Material				0.911	
		c,	Bitumen emulsion @ 70	tonne	31.500	31.500	31.500	1
			litres per tonne	torine	31.500	31.300	31.500	,
			Crushed stone	cum	287.000	287.000	287.00	0
			aggregates 14 mm					
			nominal size					
			Cost of water	KL	6.000	6.000	6.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+	b+c)
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+	d)
			st for 205 cum = a+b+c+d+					
		Rat	te per cum = (a+b+c+d+e),	/205				

Sr No	Ref. to M		Description	Unit	Quantity as	per project cate	egory	Rate
SI NO	Rei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
5.18	(iii)	25	mm thickness					
5.10	(111)	a)	Labour					
		aj	Mate	day	0.638	0.638	0.638	!
			Mazdoor	day	9.310	9.310	9.310	
			Mazdoor skilled	day	6.650	6.650	6.650	
		b)	Machinery	uay	0.030	0.030	0.030	•
		٠,	Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.214			
			(ii) HMP 160 TPH	hour	0.22	4.018		
			(iii) HMP 120 TPH	hour			5.357	,
			Electric generator					
			(i) 500 KVA	hour	3.214			
			(ii) 400 KVA	hour		4.018		
			(iii) 250 KVA	hour			5.357	,
			Front end loader for					
			feeding the plant					
			(i) 3.1 Cum Capacity	hour	5.510			
			(ii) 2.1 Cum Capacity	hour		8.182		
			(iii) 1 Cum Capacity	hour			16.87	5
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	450 x L1			
			(ii) 14 cum capacity	t.km		450 x L1		
			(iii) 10 cum capacity	t.km			450 x L	.1
			For loading & unloading					
			time	_				
			(i) 14 cum capacity	hour	6.429			
			(ii) 14 cum capacity	hour		8.036		_
			(iii) 10 cum capacity	hour			10.71	4
			Paver finisher hydrostatic with sensor					
			control compatible with					
			the hot mix plant					
			(i) Paver (240HP)	hour	3.214			
			(ii) Paver (240HP)	hour		4.018		
			(iii) Paver (174HP)	hour			5.357	,
			Smooth steel wheeled	hour	14.085	14.085	14.08	
			tandem roller for static					
			and vibratory passages					
			Pneumatic Tyre roller	hour	2.571	3.214	4.286	i
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
				hour	0 002 v l 1 ±			
			(i) 16 KL capacity	hour	0.083 x L1 + 0.547	0.444		
			(ii) 12 KL capacity	hour		0.111 x L1 + 0.729		
			(iii) 6 KL capacity	hour			0.222 x I 1.458	

C:: No	Dof to M		Dagawintian	l lmit	Quantity as	per project cate	gory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		٠,	0.4a.ta.vial					
		c)	Material Bitumen emulsion @ 85	tonne	38.250	38.250	38.25	Λ
			litres per tonne	torne	38.230	38.230	30.23	U
			Crushed stone	cum	270.000	270.000	270.00	00
			aggregates 6 mm					
			nominal size					
			Cost of water	KL	6.000	6.000	6.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a-	-
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ o a+b+c-	
		Cos	st for 205 cum = a+b+c+d+	۵	(атртсти)	(атртсти)	(атитс	ru)
			te per cum = (a+b+c+d+e)/					
			te per cum – (u.b.e.u.e)	203				
5.19	suggestive A	Bit	uminous Concrete					
		Gra	ading 1 Using waste plasti	С				
			oviding and laying	_				
			uminous concrete with					
		_	her capacity batch typo t mix plant using crushed					
			gregates of specified					
			ding, premixed with					
		_	uminous binder @ 5.2	2				
			rcent of mix and filler					
			nsporting the hot mix to					
			rk site, laying with a drostatic paver finishe					
		•	th sensor control to the					
			quired grade, level and					
		alig	gnment, rolling with	h				
			ooth wheeled, vibrator	-				
			d tandem rollers to achieve					
		per	e desired compaction a r MORTH specification					
		•	use No. 507 complete in al					
			pects					
		Un	it = cum					
			king output = 191 cum					
		a)	Labour					_
			Mate	day	0.585	0.585	0.585	
			Mazdoor Mazdoor skilled	day day	7.980 6.650	7.980 6.650	7.980 6.650	
		b)	Machinery	uay	0.030	0.030	0.030	,
		٠,	Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.220			
			(ii) HMP 160 TPH	hour	-	4.025		
			(iii) HMP 120 TPH	hour			5.366	5
			Mechanical broom	hour	1.137	1.137	1.137	7
			(2.1m sweeping width)					
			Air compressor 250 cfm	hour	1.137	1.137	1.137	7
			Paver finisher					
			hydrostatic with sensor control compatible with					
			the hot mix plant					
			and not mix plant					

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Cr NIA	Dof to M	to M	Description	Hoit	Quantity as per project category			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(R
			(1)					
			(i) Paver (240HP)	hour	3.220			
			(ii) Paver (240HP)	hour		4.025		
			(iii) Paver (174HP)	hour			5.366	5
			Electric generator					
			(i) 500 KVA	hour	3.220			
			(ii) 400 KVA	hour		4.025		
			(iii) 250 KVA	hour			5.366	5
			Front end loader for					
			feeding the plant					
			(i) 3.1 Cum Capacity	hour	6.079			
			(ii) 2.1 Cum Capacity	hour		8.992		
			(iii) 1 Cum Capacity	hour			18.76	5
			Tipper					
			For Transportation Mix					
			(i) 14 cum capacity	t.km	450.76 x L1			
			(ii) 14 cum capacity	t.km		450.76 x L1		
			(iii) 10 cum capacity	t.km			450.76	k L1
			Loading & unloading					
			time for Mix					
			(i) 14 cum capacity	hour	6.439			
			(ii) 14 cum capacity	hour	01.00	8.049		
			(iii) 10 cum capacity	hour		0.0.5	10.73	2
			Smooth steel wheeled	hour	14.085	14.085	14.08	
			tandem roller for static	nour	14.005	14.003	14.00	,
			and vibratory passages					
			Pneumatic Tyre roller	hour	2.849	3.220	4.293	3
			Shredding Machine	hour	1.250	1.250	1.250	
		c)	Material		1.200	1.200		•
		٠,	i) Bitumen@ 4.78	tonne	21.564	21.564	21.56	4
			Percent of mix	tome	21.504	21.504	21.50	•
			ii) Plastic @ 8 Percent	tonne	1.875	1.875	1.875	5
			of Bitumen	torric	1.073	1.073	1.07	
			iii) Aggregate					
		Tot	al weight of mix =	450.760	tonnes			
			ight of bitumen =	21.564	tonnes			
			ight of Plastic =	1.875	tonnes			
			ight of ridstic =	427.320	tonnes			
			king density of aggregate					
			rading - I-19 mm (Nomin		•			
		J	20 - 10 mm 38 percent	•	108.255	108.255	108.25	55
			10 - 5 mm 17 percent		48.430	48.430	48.43	
			5 mm and below 43	cum				
				cum	122.499	122.499	122.49	99
			percent Filler @ 2 percent of	cum	8.546	8.546	8.546	=
			- •	cum	8.540	8.540	8.540)
		* ^	weight of aggregates.	may be adopt	ad ac nor annec:	od dosian		
			ny one of the alternative		eu as per approv	eu uesigii		
			rading - I-19 mm (Nomin	ai Sizej	@ a= /= · b · `	@ an /a.t	@ ~~ !	ı le ·
		d)	Overhead charges		@ on (a+b+c)		@ on (a-	
		e)	Contractor's profit		@ on	@ on	@ o	
		_	st for 191 cum = a+b+c+d+		(a+b+c+d)	(a+b+c+d)	(a+b+c-	+a)
		1.00	этог 191 cum = a+h+c+d+					

C:: N -	D-f +- M	Danadatian	11	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

5.19 suggestive B Bituminous Concrete Grading 2 (Using waste plastic)

Providing and laying bituminous concrete with higher capacity batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 Percent 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 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 = 191 cum

Idk	ing output – 131 cum				
a)	Labour				
	Mate	day	0.585	0.585	0.585
	Mazdoor	day	7.980	7.980	7.980
	Mazdoor skilled	day	6.650	6.650	6.650
b)	Machinery				
	Hot Mix Plant				
	(i) HMP 200 TPH	hour	3.220		
	(ii) HMP 160 TPH	hour		4.025	
	(iii) HMP 120 TPH	hour			5.366
	Mechanical broom	hour	1.624	1.624	1.624
	(2.1m sweeping width)				
	Air compressor 250 cfm	hour	1.624	1.624	1.624
	Paver finisher				
	hydrostatic with sensor				
	control compatible with				
	the hot mix plant				
	(i) Paver (240HP)	hour	3.220		
	(ii) Paver (240HP)	hour		4.025	
	(iii) Paver (174HP)	hour			5.366
	Electric generator				
	(i) 500 KVA	hour	3.220		
	(ii) 400 KVA	hour		4.025	
	(iii) 250 KVA	hour			5.366
	Front end loader for				
	feeding the plant				
	(i) 3.1 Cum Capacity	hour	5.982		
	(ii) 2.1 Cum Capacity	hour		8.835	
	(iii) 1 Cum Capacity	hour			18.524

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C:: No	Dof to M		Description	l locia	Quantity a	s per project ca	tegory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	450.76 x L1			
			(ii) 14 cum capacity	t.km		450.76 x L1		
			(iii) 10 cum capacity	t.km			450.76 x L	.1
			Tipper for loading & unloading time					
			(i) 14 cum capacity	hour	6.439			
			(ii) 14 cum capacity	hour		8.049		
			(iii) 10 cum capacity	hour			10.732	
			Smooth steel wheeled	hour				
			tandem roller for stationand vibratory passages		20.121	20.121	20.121	
			Pneumatic Tyre roller	hour	2.849	3.220	4.293	
			Shredding Machine	hour	1.298	1.298	1.298	
		c)	Material					
		-,	i) Bitumen@ 4.97 Percent of mix	tonne	22.394	22.394	22.394	
			ii) Plastic @ 8 Percent of Bitumen	tonne	1.947	1.947	1.947	
			iii) Aggregate					
		Tot	tal weight of mix =	450.76	tonnes			
			eight of bitumen =	22.39	tonnes			
			eight of Plastic =	1.95	tonnes			
			eight of Flastic =	426.42	tonnes			
			king density of aggregat					
			ading - II-13 mm (Nomina		4111			
		Gia	13.2 - 10 mm 21	cum	59.825	99.498	99.498	
			percent	t cum	48.430	48.430	48.430	
			10 - 5 mm 17 percen 5 mm and below 60					
			percent	cum	170.928	170.928	170.928	
			Filler @ 2 percent of weight of aggregates.	cum	8.528	8.528	8.528	
		* A	ny one of the alternative		oted as per appro	ved design		
			irading - I-19 mm	•		-		
			ominal Size)					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b	+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)

Cost for 191 cum = a+b+c+d+e

Rate per cum = (a+b+c+d+e)/191

Note *1. Quantity of Bitumen & Plastic have been taken for analysis purpose. The actual will depend upon job mix formula.

- 2. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 3. In case BC is laid over freshly laid tack coat, provision of mechanical broom and 2 mazdoors
- 4. 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 Percent by weight of dry aggregates.

				Quantity a	s per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
5.20	519 A	bituminous concrete with Recycling in place use crushed aggregates specified grading, with bituminous binder @ 5.2 cent of mix and fitransporting the aggregate work site, laying with a Recycling in place to required grade, level alignment, rolling with smowheeled, vibratory tandem rollers to achieve desired compaction as	ying Hot sing of with per ller, to hot the and ooth and the per	Eurge	ca.u.iii	Januari	(1-1-7)
		MORTH specification cla No. 519 complete in					
		respects. Unit = cum					
		Taking output = 191 cum					
		a) Labour					
		Mate	day	0.692	0.692	0.692	
		Mazdoor working weeking weeking working working aspecture and assistance setting out lines, leand layout of construct Skilled mazdoor	om, halt for vels ion	10.640 6.650	10.640 6.650	10.640 6.650	
		checking line & levels b) Machinery Hot in place recyc	ling				
		with Pre heater unit hot in place recycling	_	7.980 1.596	7.980	7.980	
		(ii) 2.1 Cum Capacity (iii) 1 Cum Capacity (iii) 1 Cum Capacity Tipper For Transportation (Miz 20 % fresh material has been considered)	hour hour x	1.550	1.596	1.596	
		(i) 18 cum capacity	t.km	90.152 x L1			
		(ii) 14 cum capacity	t.km		90.152 x L1		
		(iii) 10 cum capacity	t.km			90.152 x L1	
		Smooth steel wheeled tandem roller for station and vibratory passaes	hour	14.085	14.085	14.085	
		Pnumetic Tyre roller c) Material	hour	6.384	6.384	6.384	

Cu Nia	Def +- 84	Description	1164	Quantity a	as per project	category	Ra
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
		i) Bitumen@ 5.2 per cent of weight of m (for 80% recycled	tonne ix	10.088	10.088	10.088	
		material @ 1.5%) ii) Aggregate Total weight of mi	x = 450.760	tonnes			
		Weight of bitumer		tonnes			
		Weight of aggregate		tonnes			
		Taking density of aggregate * Grading - I-19 mm (Nomin Size) (only 20 % fresh mater has been considered)	=1.5 ton/cum al				
		-	cum	21 651	100 255	108.255	
		20 - 10 mm 38 per cent	cum	21.651	108.255		
		10 - 5 mm 17 per cent	cum	9.686	48.430	48.430	
		5 mm and below 43 per cen		24.500	122.499	122.499	
		Filler @ 2 per cent of weight of aggregates.	t cum	1.709	8.546	8.546	
		* Any one of the alternative may be adopted as per approved design					
		* Grading - I-19 mm (Nomin	al				
		Size) d) Overhead charges		@ on	@ on	@ on	
		e) Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	
		Cost for 191 cum = a+b+c+d- Rate per cum = (a+b+c+d+e)	_	(4.5.0.4)	(a.b.c.a)	(4.2.0.4)	
5.20	519 B	Hot Recycling in place of Bituminous Pavement with bituminous concrete Grading II					
		_	inα				
		Providing and layi bituminous concrete with F	=				
		Recycling in place usi crushed aggregates	ng of				
		specified grading, w bituminous binder @ 5.4 p cent of mix and fill					
		transporting the aggregate work site, laying with a h Recycling in place to t	not				
		alignment, rolling with smoo	nd oth nd				
		tandem rollers to achieve t desired compaction as p	he oer				
		MORTH specification clau No. 519 complete in respects.					
		Unit = cum Taking output = 191 cum					
		a) Labour Mate	day	0.692	0.692	0.692	

				Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Mazdoor working HMP, mechanical brooker, roller, as cutter and assistance setting out lines, I and layout construction	oom, phalt e for	10.640	10.640	10.640	
		Skilled mazdoor checking line & levels	for day	6.650	6.650	6.650	
		b) Machinery Mechanical broom (2 sweeping width) Front end loader for feeding the plant	2.1m hour	7.980	7.980	7.980	
		(i) 3.1 Cum Capacity	hour	1.596	4.500		
		(ii) 2.1 Cum Capacity (iii) 1 Cum Capacity Tipper	hour hour		1.596	1.596	
		For Transportation (i) 14 cum capacity	t.km	90.152 x L1			
		(ii) 14 cum capacity	t.km		90.152 x L1		
		(iii) 10 cum capacity Smooth steel wheele tandem roller for sta	tic	14.085	14.085	90.152 x L1 14.085	
		and vibratory passaes Pneumatic Tyre rolle		6.384	6.384	6.384	
		c) Material i) Bitumen@ 5.4 per of weight of mix (fo 80% recycled mate @ 1.5%) ii) Aggregate	or	10.268	10.268	10.268	
		Total weight of mix =	450.76	tonnes			
		Weight of bitumen =	24.341	tonnes			
		Weight of aggregate : Taking density of aggrego 1.5 ton/cum Grading - II-13 mm (Nor	ate =	tonnes			
		Size) (only 20 % fresh materia been considered)	l has				
		13.2 - 10 mm 21 per cent	cum	21.704	59.825	59.825	
		10 - 5 mm 17 per cent	cum	9.710	48.430	48.430	
		5 mm and below 60 per c	ent cum	24.560	170.928	170.928	
		Filler @ 2 per cent of wei of aggregates. * Any one of the altern may be adopted as approved design * Grading - I-19 mm (Nor Size)	ative per	1.713	8.546	8.546	
		d) Overhead charges		@ 10% on (a+b+c)	@ 12% on (a+b+c)	@ 15% on (a+b+c)	

C:: No	D-f +- M	Description	Unit	Quantity a	Rate		
Sr No	Ref. to M	Description		Large	Medium	Small	(Rs.)
		e) Contractor's profit		@ 10% on (a+b+c+d)	@ 10% on (a+b+c+d)	@ 10% on (a+b+c+d)	
		Cost for 191 cum = a+b+c+c	d+e				
		Rate per cum = (a+b+c+d+e	e)/191				

Note

- *1. Quantity of Bitumen & Plastic have been taken for analysis purpose. The actual quantity will depend upon job mix formula.
- 2. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.
- 3. The average density of 1.5 tonne/cum is only a reference density in this Data Book.
- 4. 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 percent by weight of dry aggregates.

CHAPTER - 6

CEMENT CONCRETE PAVEMENT

PREAMBLES:

- 1 High capacity of batch mix plants of 240 cum/hour & 120 cum/hour have 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 Chemical admixture and Silica Fumes has been considered to improve workability with reduced water cement ratio.
- 4 OPC 43 & 53 grade, Portland Slag Cement and Portland Pozzolana Cement 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 OPC 43 grade, Portland Slag Cement and Portland Pozzolana Cement.
- While a slip form paver has been considered for pavement quality concrete, mechanical paver has been provided for dry lean and rolled cement concrete. However for smaller length construction by fixed form paver is an alternative.
- The letter 'L1' (Lead from Mixing Plant to working site) represents lead in km one way. This will vary from project to project and is required to be ascertained at site to provide for the cost of carriage of the mix to work site.
- Materials provided in the rate analysis are for estimating purpose. Exact quantity of materials will be determined for the job mix formula.
- 8 Fiber reinforcement concrete is also considered as specified in Clause 602.2.5 of MoRT&H Specification.
- 9 Rate of Ultra Thin White Topping analyzed.

C. N.	D-6 4- 84		Description	1114	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
6.01	601	Dry	Lean Cement Concrete Sub-					
		bas	se					
			nstruction of dry lean cement					
			ncrete Sub- base over a					
			pared sub-grade with coarse d fine aggregate conforming to					
			383, the size of coarse					
		agg	regate not exceeding 25 mm,					
			regate cement ratio not to					
			eed 15:1, aggregate gradation er blending to be as per table					
			0-1, cement content not to be					
			s than 150 kg/ cum, optimum					
			isture content to be determined					
			ring trial length construction,					
			ncrete strength not to be less n 10 Mpa at 7 days, mixed in a					
			ching plant, transported to site,					
			I with a paver with electronic					
			sor, compacting with 8-10					
			nes vibratory roller, finishing					
			d curing. it = cum					
		_	king output= 450 cum					
		a)	Labour					
		۵,	Mate	day	0.479	0.479	0.479	
			Mazdoor skilled	day	2.660	2.660	2.660	
			Mazdoor	day	9.310	9.310	9.310	
		b)	Machinery					
			Paver with electronic sensor					
			(i) Paver Finisher Concrete with 300 HP Motor	hour	2.045			
			(ii) Paver Finisher Concrete with 241 HP Motor			3.000		
			(iii) Paver Finisher Concrete with 118 HP Motor				5.625	
			Vibratory roller 8-10 t capacity	hour	2.045	3.000	5.625	
			Tipper					
			For Transportation	t.km	990 x L1			
			(i) 14 cum capacity	t.km	990 X L1	990 x L1		
			(ii) 14 cum capacity	t.km		990 X L1	990 x L1	
			(iii) 10 cum capacity	t.KIII			990 X L1	
			For loading & unloading Time (i) 14 cum capacity	hour	4.724			
			(ii) 14 cum capacity	hour	= 1	5.679		
			(iii) 10 cum capacity	hour		2.2.0	10.982	
			Water tanker (speed @					
			10 km/hr. and return speed@ 15 km/hr. and spreading					
			speed @ 3.0 Km/hr.)					

Sr No	Ref. to M		Description	Unit	Quantity	as per projec	t category	Rate
31 140	Kei. to Wi		Description	Onit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	3.019 x L1 + 7.245			
			(ii) 12 KL capacity	hour		4.025 x L1 + 9.66		
			(iii) 6 KL capacity	hour			8.05 x L1 + 19.32	
		c)	Material					
			Concrete from sub-analysis of concrete Rate					
			(i) Using Batching Plant 240 Cum Capacity (Rate taken from sub- analysis of concrete - 21.18 A)	cum	450.000			
			(ii) Using Batching Plant 240 Cum Capacity (Rate taken from subanalysis of concrete - 21.18 A)	cum		450.000		
			(iii) Using Batching Plant 120 Cum Capacity (Rate taken from sub- analysis of concrete - 21.18 C)	cum			450.000	
			Cost of water (Curing)	KL	217.350	217.350	217.350	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 450 cum = a+b+c+d+e					
		Rat	te per cum = $(a+b+c+d+e)/450$					
	Note	Qu.	antity provided for aggregate is for design.	or estima	ating purpose	e. Exact quant	ity shall be as	s per
6.02	602	Cor dov cor pre gra coa cor size exc bat app to s	ment Concrete Pavement Instruction of un-reinforced, Ivel jointed, plain cement Increte pavement over a Ipared sub base with approve Ide cement @ 400 kg per cum, Irse and fine aggregate Informing to IS 383, maximum Itse of coarse aggregate not Itseeding 25 mm, mixed in a Itseeding and mixing plant as per Itseed					

- N	26.00		5		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		cont cons joint men seala bar, appr finis drav	roved, curing compound, hing to lines and grades as per ving					
			: = cum ng output = 900 Cum					
			Labour					
		u,	Mate	day	0.585	0.585	0.585	
			Mazdoor skilled	day	6.650	6.650	6.650	
			Mazdoor	day	7.980	7.980	7.980	
		b)	Machinery	,				
		Σ,	Mechanical broom @ 1250 sqm per hour	hour	0.893	0.893	0.893	
			Air compressor 250 cfm	hour	0.893	0.893	0.893	
			Paver with electronic sensor					
			(i) Paver Finisher Concrete with 300 HP Motor	hour	4.091			
			(ii) Paver Finisher Concrete with 241 HP Motor			6.000		
			(iii) Paver Finisher Concrete with 118 HP Motor				11.250	
			Transit truck agitator					
			For Transportation Transit truck agitator 6 cum capacity	t.km	2070 x L1	2070 x L1	2070 x L1	
			For Unloading time	hour	4.091	6.000	11.250	
			Concrete joint cutting machine	hour	101.587	101.587	101.587	
			Texturing machine					
			Texturing machine (TCM) - upto 18 m	hour	4.091			
			Texturing machine (TCM) - upto 18 m			6.000		
			Texturing machine (TCM) - upto 9 m				11.250	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	6.563 x L1 + 15.75			
			(ii) 12 KL capacity	hour		8.75 x L1 + 21		
			(iii) 6 KL capacity	hour			17.5 x L1 + 42	

Rate (Rs.)

C., N	Dof +- 84	Description:	11: **	Quantity	as per projec	t category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
		c) Material				
		Concrete from sub-analysis				
		of concrete Rate				
		(i) Using Batching Plant 240				
		Cum Capacity (Rate taken from sub-	cum	900.000		
		analysis of concrete -	cam	300.000		
		21.19 A)				
		(ii) Using Batching Plant 240				
		Cum Capacity				
		(Rate taken from sub-	cum		900.000	
		analysis of concrete - 21.19 A)				
		(iii) Using Batching Plant 120				
		Cum Capacity				
		(Rate taken from sub-	cum			900.000
		analysis of concrete -				
		21.19 C)				
		36 mm mild steel dowel	tonne	9.170	9.170	9.170
		bars of grade S 240 12 mm deformed steel tie	tonne	1.051	1.051	1.051
		bars of grade S 415	tonne	1.031	1.031	1.031
		Separation Membrane of	sqm	3150.000	3150.000	3150.000
		impermeable plastic	•			
		sheeting 125 micron thick				
		(including 5% Overlap)				
		Joint sealant	kg	609.524	609.524	609.524
		Sealant primer Plastic sheath,1.25 mm	kg	100.003 155.735	100.003 155.735	100.003 155.735
		thick for dowel bars	sqm	133.733	133.733	133.733
		Curing compound	Liter	600.000	600.000	600.000
		Cost of water (Curing)	KL	472.500	472.500	472.500
		Add 1 Percent of material for cost				
		of miscellaneous materials like				
		tarpauline, Hessian cloth, metal				
		cap, cotton / compressible sponge				
		and cradle for dowel bars, work bridges for men to approach				
		concrete surface without walking				
		over it, cutting blades and bites,				
		minor equipment's like scabbling				
		machine, threads, ropes, guide				
		wires and any other unforeseen items.				
		d) Overhead charges		@ on	@ on	@ on
		a, overnead charges		(a+b+c)	(a+b+c)	(a+b+c)
		e) Contractor's profit		@ on	@ on	@ on
		•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
		Cost for 900 cum = $a+b+c+d+e$				
		Rate per cum = $(a+b+c+d+e)/900$				

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

C:: No	D-6 4- M	Description	11	Quantity	Rate		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

6.03 Suggestive

Transition Section between Rigid and Flexible Pavement

Due to change in the properties of materials and type of construction, a gradual changeover from rigid pavement to flexible pavement is desirable to avoid any damage at the butting joint. After provision of an expansion joint in the cement concrete slab, the thickness of slab should be tapered to 10 cm over a length of 3 m towards the flexible pavement. The deficiency of thickness caused due to tapering of the slab should be made up by the asphaltic layers.

The quantities of items should be worked out based on the approved design and drawings and priced as per rates given under respective clauses for cement concrete and asphaltic work.

6.04 Suggestive

Cement – Fly ash 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, replacing cement by fly ash to the extent of 20 Percent, 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 129 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

a) Labour

Mate	day	0.479	0.479	0.479
Mazdoor skilled	day	2.660	2.660	2.660
Mazdoor	day	9.310	9.310	9.310

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
31 140	iver. to ivi		Description	Oiiit	Large	Medium	Small	(Rs.)
		b)	Machinery					
			Paver with electronic sensor					
			(i) Paver Finisher Concrete with 300 HP Motor	hour	2.045			
			(ii) Paver Finisher Concrete with 241 HP Motor			3.000		
			(iii) Paver Finisher Concrete with 118 HP Motor				5.625	
			Vibratory roller 8-10 t capacity	hour	2.045	3.000	5.625	
			Tipper					
			For Transportation					
			(i) 14 cum capacity	t.km	990 x L1			
			(ii) 14 cum capacity	t.km	333 N ==	990 x L1		
			(iii) 10 cum capacity	t.km			990 x L1	
			For loading & unloading Time					
			(i) 14 cum capacity	hour	4.724			
			(ii) 14 cum capacity	hour		5.679		
			(iii) 10 cum capacity	hour			10.982	
			Water tanker (speed @ 10					
			km/hr. and return speed @ 15					
			km/hr. and spreading speed					
			@ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	3.019 x L1 + 7.245			
			(ii) 12 KL capacity	hour	+ 7.243	4.025 x L1 +		
			(II) 12 KL capacity	noui		9.66		
			(iii) 6 KL capacity	hour			8.05 x L1 + 19.32	
		c)	Material					
		•	Concrete from sub-analysis					
			of concrete Rate					
			(i) Using Batching Plant 240					
			Cum Capacity (Rate taken	cum	450.000			
			from sub-analysis of					
			concrete - 21.18 B)					
			(ii) Using Batching Plant 240 Cum Capacity (Rate taken					
			from sub-analysis of	cum		450.000		
			concrete - 21.18 B)					
			(iii) Using Batching Plant 120					
			Cum Capacity (Rate taken	cum			450.000	
			from sub-analysis of	Cuili			150.000	
			concrete - 21.18 D)	171	247 252	247.252	247.250	
			Cost of water (Curing)	KL	217.350	217.350	217.350	

6.5:			Barrier 1		Quantity	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			st for 450 cum = a+b+c+d+e					
		Rat	te per cum = (a+b+c+d+e)/450					
	Note		antity provided for aggregate is fo design.	or estima	ating purpose	. Exact quanti	ity shall be as	per
6.05	Suggestive		ment – Fly ash Concrete					
			vement.					
			nstruction reinforced-					
			nforced, dowel jointed, plain ment concrete pavement over a					
			epared sub base with approve					
		-	ide cement @ 340 kg per cum,					
		_	arse and fine aggregate					
			nforming to IS 383, maximum					
		size	e of coarse aggregate not					
			ceeding 25 mm, replacing					
			ment by fly ash to the extent of					
			Percent and sand by 10					
			cent, mixed in a batching and king plant as per approved mix					
			sign, transported to site, laid					
			th a fixed form or slip form					
			ver, spread, compacted and					
		fini	shed in a continuous operation					
			luding provision of contraction,					
		•	pansion, construction and					
			gitudinal joints, joint filler,					
		-	paration membrane, sealant mer, joint sealant, debonding					
		stri	_					
			mixtures as approved, curing					
			mpound, finishing to lines and					
			des as per drawing					
		Uni	it = cum					
			king output = 900 Cum					
		a)	Labour					
			Mate	day	0.585	0.585	0.585	
			Mazdoor skilled	day	6.650	6.650	6.650	
			Mazdoor	day	7.980	7.980	7.980	
		b)	•		0.00-	6.55-	c	
			Mechanical broom @ 1250 sqm per hour	hour	0.893	0.893	0.893	
			Air compressor 250 cfm	hour	0.893	0.893	0.893	
			Paver with electronic sensor					
			(i) Paver Finisher Concrete with 300 HP Motor	hour	4.091			
			(ii) Paver Finisher Concrete			6.000		
			with 241 HP Motor					

C:: No	Def. to M		Description	I I mile	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
			(iii) Paver Finisher Concrete with 118 HP Motor				11.250	
			Transit truck agitator For Transportation Transit	t.km	2070 x L1	2071 x L1	2072 x L1	
			truck agitator 6 cum capacity For Unloading time	hour	4.091	6.000	11.250	
			Concrete joint cutting machine.	hour	101.587	101.587	101.587	
			Texturing machine. Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)	hour	4.091	6.000	11.250	
			(i) 16 KL capacity	hour	6.563 x L1 + 15.75			
			(ii) 12 KL capacity	hour		8.75 x L1 + 21		
			(iii) 6 KL capacity	hour			17.5 x L1 + 42	
		c)	Material Concrete from sub-analysis of concrete Rate (i) Using Batching Plant 240					
			Cum Capacity (Rate taken from sub- analysis of concrete - 21.19 B)	cum	900.000			
			(ii) Using Batching Plant 240 Cum Capacity (Rate taken from sub- analysis of concrete - 21.19 B)	cum		900.000		
			(iii) Using Batching Plant 120 Cum Capacity (Rate taken from sub- analysis of concrete -	cum			900.000	
			21.19 D) 36 mm mild steel dowel bars	tonne	9.170	9.170	9.170	
			of grade S 240 12 mm deformed steel tie bars of grade S 415	tonne	1.051	1.051	1.051	
			Separation Membrane of impermeable plastic sheeting 125 micron thick (including 5%	sqm	3150.000	3150.000	3150.000	
			Overlap) Joint sealant	kg	609.524	609.524	609.524	
			Sealant primer	kg	100.003	100.003	100.003	
			Plastic sheath,1.25 mm thick for dowel bars	sqm	155.735	155.735	155.735	
			Curing compound	Liter	600.000	600.000	600.000	
			Cost of water (Curing)	KL	472.500	472.500	472.500	

C: No	Def. to M.	11	Quantity	Rate			
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Add 1 Percent of material for cost of miscellaneous materials like tarpaulin, Hessian cloth, metal cap, cotton / compressible sponge and cradle for dowel bars, work bridges for men to approach concrete surface without walking over it, cutting blades and bites, minor equipment's like scabbling machine, threads, ropes, guide wires and any other unforeseen items.

d) Overhead charges

e) Contractor's profit

@ on @ on @ on (a+b+c) (a+b+c) (a+b+c) @ on @ on @ on (a+b+c+d) (a+b+c+d)

Cost for 900 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/900

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

6.06 Suggestive

Thin White topping

Construction of thin white topping plain cement concrete pavement over existing surface with approve grade cement @ 400 kg per cum and as per IRC SP-76, coarse and fine aggregate conforming to IS 383, maximum size of fine aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction joint, joint filler, sealant primer, joint sealant, admixtures as approved, curing compound, finishing to lines etc. and grades as per drawing.

Unit = cum

Taking output = 450 Cum

a)	Labour				
	Mate	day	0.585	0.585	0.585
	Mazdoor skilled	day	6.650	6.650	6.650
	Mazdoor	day	7.980	7.980	7.980
b)	Machinery				
	Mechanical broom @ 1250 sqm per hour	hour	0.893	0.893	0.893
	Air compressor 250 cfm	hour	0.893	0.893	0.893

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Davier with all atmostic account					
			Paver with electronic sensor (i) Paver Finisher Concrete	hour	2.045			
			with 300 HP Motor					
			(ii) Paver Finisher Concrete			3.000		
			with 241 HP Motor					
			(iii) Paver Finisher Concrete with 118 HP Motor				5.625	
			Transit truck agitator					
			For Transportation Transit truck agitator 6 cum capacity	t.km	2070 x L1	2070 x L1	2070 x L1	
			For Unloading time	hour	2.045	3.000	5.625	
			Concrete joint cutting machine	hour	320.000	320.000	320.000	
			Texturing machine					
			Texturing machine (TCM) - upto 18 m	hour	2.045			
			Texturing machine (TCM) - upto 18 m			3.000		
			Texturing machine (TCM) - upto 9 m				5.625	
			Water tanker (speed @ 10					
			km/hr. and return speed @					
			15 km/hr. and spreading					
			speed @ 3.0 Km/hr.) (i) 16 KL capacity	hour	3.281 x L1			
			(I) TO KE capacity	noui	+ 7.875			
			(ii) 12 KL capacity	hour		4.375 x L1 + 10.5		
			(iii) 6 KL capacity	hour			8.75 x L1 + 21	
		c)	Material					
			Concrete from sub-analysis of concrete Rate					
			(i) Using Batching Plant 240 Cum Capacity					
			(Rate taken from sub- analysis of concrete -	cum	450.000			
			21.19 A)					
			(ii) Using Batching Plant 240					
			Cum Capacity (Rate taken from sub-	cum		450.000		
			analysis of concrete -	cann		430.000		
			21.19 A)					
			(iii) Using Batching Plant 120					
			Cum Capacity (Rate taken	cum			450.000	
			from sub-analysis					
			of concrete - 21.19 C) Joint sealant	kg	1920.000	1920.000	1920.000	
			Sealant primer	kg	50.001	50.001	50.001	
			Fiber Reinforcement 9.25	tonne	4.163	4.163	4.163	
			kg Per Cum.		55		55	

Sr No	Dof to M	Description	11	Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Curing compound	Liter	600.000	600.000	600.000	
		Cost of water (Curing)	KL	236.250	236.250	236.250	
		Add 1 Percent of material for cost					
		of miscellaneous materials like					
		tarpauline, Hessian cloth, cotton /					
		compressible sponge and, work					
		bridges for men to approach					
		concrete surface without walking					
		over it, cutting blades and bites,					
		minor equipments like scabbling					
		machine, threads, ropes, guide					
		wires and any other unforeseen items.					
		d) Overhead charges		@ on	@ on	@ on	
		a, Overneda charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		-		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for $450 \text{ cum} = a+b+c+d+e$					
		Rate per cum = $(a+b+c+d+e)/450$					

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

6.07 Suggestive

Cement- - Fly ash Thin White topping

Construction of thin white topping plain cement concrete with pavement over existing surface with approve grade cement @ 340 kg per cum and Flyash as per IRC SP-76, coarse and fine aggregate conforming to IS 383, maximum size of fine aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction joint, joint filler, sealant primer, joint sealant, admixtures as approved, curing compound, finishing to lines etc. and grades as per drawing.

Unit = cum

Taking output = 450 Cum

a) Labour

Mate	day	0.585	0.585	0.585
Mazdoor skilled	day	6.650	6.650	6.650
Mazdoor	day	7.980	7.980	7.980

					Quantity	as per project	category	Data
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	Rate (Rs.)
					Laige	Wediam	Jillali	(11.5.)
		b)	Machinery					
		٠,	Mechanical broom @ 1250 sqm per hour	hour	0.893	0.893	0.893	
			Air compressor 250 cfm	hour	0.893	0.893	0.893	
			Paver with electronic sensor					
			(i) Paver Finisher Concrete with 300 HP Motor	hour	2.045			
			(ii) Paver Finisher Concrete with 241 HP Motor			3.000		
			(iii) Paver Finisher Concrete with 118 HP Motor				5.625	
			Transit truck agitator					
			For Transportation Transit truck agitator 6 cum capacity	t.km	2070 x L1	2070 x L1	2070 x L1	
			For Unloading time	hour	2.045	3.000	5.625	
			Concrete joint cutting machine	hour	320.000	320.000	320.000	
			Texturing machine					
			Texturing machine (TCM) - upto 18 m	hour	2.045			
			Texturing machine (TCM) - upto 18 m			3.000		
			Texturing machine (TCM) - upto 9 m				5.625	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	3.281 x L1 + 7.875			
			(ii) 12 KL capacity	hour		4.375 x L1 + 10.5		
			(iii) 6 KL capacity	hour			8.75 x L1 + 21	
		c)	Material					
			Concrete from sub-analysis of concrete Rate					
			(i) Using Batching Plant 240 Cum Capacity (Rate taken from sub-analysis of concrete - 21.19 B)	cum	450.000			
			(ii) Using Batching Plant 240 Cum Capacity(Rate taken from sub-analysis of concrete - 21.19 B)	cum		450.000		
			(iii) Using Batching Plant 120 Cum Capacity(Rate taken from sub-analysis of concrete - 21.19 D)	cum			450.000	

CHAPTER: 6- CEMENT CONCRETE PAVEMENTS

C# No	Dof to M	Description	l lmia	Quantity	Rate		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Joint sealant	kg	1920.000	1920.000	1920.000	
		Sealant primer	kg	50.001	50.001	50.001	
		Fiber Reinforcement @ 9.25	tonne	4.163	4.163	4.163	
		kg Per Cum.					
		Curing compound	Liter	600.000	600.000	600.000	
		Cost of water (Curing)	KL	236.250	236.250	236.250	
		Add 1 Percent of material for cost					
		of miscellaneous materials like					
		tarpaulin, Hessian cloth, cotton /					
		compressible sponge and, work					
		bridges for men to approach					
		concrete surface without walking over it, cutting blades and bites,					
		minor equipment's like scabbling					
		machine, threads, ropes, guide					
		wires and any other unforeseen					
		items.					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 450 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/450		(ατυτίτα)	(atutetu)	(атытсти)	

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

CHAPTER - 7

GEOSYNTHETIC, REINFORCED EARTH AND PROTECTION WORKS

PREAMBLES:

- The specifications for geo-synthetics which includes geotextiles, geogrids, geo-nets, geomembranes, geo-composites, geo-cells, geo-synthetic-map, natural geotextiles and Paving Fabric and Glass Grids shall be as per section 700 of MoRT&H Specifications.
- 2 The geotextile proposed for sub-surface drain shall satisfy the requirements given in Clause 702.2.3.1
- 3 Bitumen overlay shall follow on the same day where paving fabric is laid.
- 4 Rates are including quality control and testing.

C+ No	Ref. to M		Description	l lmit	Quantity as	Rate		
Sr No	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
7.01	702	Sub	o-Surface Drain with Geotextiles					
		Cor	nstruction of sub surface drain 200					
			n dia using geotextiles treated with					
			bon black with physical properties as					
		_	en in clause 702.2.3 formed in to a ble network and a planar geo					
			nposite structure, joints wrapped					
		with geotextile to prevent ingress of						
			, all as per clause 702 and approved					
			wings including excavation and					
			kfilling					
			t = Running metre					
			ing output = one metre					
		a)		-1	0.040	0.040	0.040	
			Mate Mazdoor skilled	day day	0.040 0.333	0.040	0.040 0.333	
			Mazdoor	day	0.333	0.333 0.665	0.333	
		b)	Material	uay	0.003	0.003	0.003	
		IJ,	Geo nets, geomembrane and					
			geotextile to make planar geo					
			composite stable network for sub					
			surface drain including wrapping of					
			joints with 160 mm over lapping					
			with geotextile.		1 000	4.000	1 000	
			Geo nets Geomembrane	sqm	1.000 1.000	1.000 1.000	1.000 1.000	
			Geotextile	sqm	2.000	2.000	2.000	
		Δdα	2 Percent cost of material for	sqm	2.000	2.000	2.000	
			cellaneous items like synthetic cord					
		c)	Overhead charges		@ on (a+b)	@ on	@ on	
		•	G		. ,	(a+b)	(a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		Rat	e per metre = a+b+c+d					

Note Surplus excavated material to be used at site. Hence separate cost for disposal not added.

7.02 708 Laying Paving Fabric Beneath a **Pavement Overlay**

Providing and laying paving fabric with physical requirements as per Table 700-16 over a tack coat of paving grade Bitumen 80-100 penetration, laid at the rate of 1 kg per sqm over thoroughly cleaned and repaired surface to provide a water resistant membrane and crack retarding layer. Paving fabric to be free of wrinkling and folding and to be laid before cooling of tack coat, brooming and rolling of surface with pneumatic roller to maximise paving fabric contact with pavement surface

C: No	Def 4- 14		Description	l lucit	Quantity a	Rate		
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		Hni	it = sgm					
			in = sqm sing output = 2800 sqm					
			Labour					
		a)		ala	1.064	1.064	1.064	
			Mate	day	1.064	1.064	1.064	
			Mazdoor	day	26.600	26.600	26.600	
		b)	Machinery					
			Mechanical broom (2.1m	hour	0.833	2.240	2.240	
			sweeping width)					
			Pneumatic roller 14 tonnes 2000	hour	1.400	1.400	1.400	
			sqm per hour					
			Bitumen pressure distributor	hour	0.778	0.778	0.778	
			(Spraying width 4.5 m)					
		c)	Material					
			Paving Fabric	sqm	2940.000	2940.000	2940.000	
			Paving Bitumen 80-100	tonne	2.800	2.800	2.800	
		d)	Overhead charges		@ on	@ on	@ on	
		•	· ·		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		٠,	сонического рассии		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 2800 sqm = a+b+c+d+e		(4.5.0.0)	(4.5.0.4)	(a.p.c.u)	
			re per sqm =(a+b+c+d+e)/ 2800					
		Ndl	e per sqiii -(a+b+c+u+e)/ 2000					

7.03 703 Laying Boulder Apron in Crates of Synthetic Geogrids

Providing, preparing and laying of geogrid crated apron 1 m x 5 m, 600 mm thick including excavation and backfilling with baffles at 1 metre interval, made with geogrids having characteristics as per clause 703.2, joining sides with connectors/ring staples, top corners to be tie tensioned, placing of suitable cross interval ties in layers of 300 mm connecting opposite side with lateral braces and tied with polymer braids to avoid bulging, constructed as per clause 703.3. filled with stone with minimum size of 200 mm and specific gravity not less than 2.65, packed with stone spalls, keyed to the foundation recess in case of sloping ground and laid over a layer of geotextile to prevent migration of fines, all as per clause 703 and laid as per clause 2503.3 and approved design.

Unit = cum

Taking output = 3 cum

Ian	ing output – 3 cuin				
a)	Labour				
	Mate	day	0.106	0.106	0.106
	Mazdoor skilled	day	0.665	0.665	0.665
	Mazdoor	day	1.995	1.995	1.995
b)	Material				
	Geo grids	sqm	21.000	21.000	21.000
	Connectors/ Staples	each	50.000	50.000	50.000
	Polymer braids	metre	20.000	20.000	20.000

		T T	-				1
Sr No	Ref. to M	Description	Unit		as per project		Rate
				Large	Medium	Small	(Rs.)
		Stones with minimum size of 200 mm	cum	3.450	3.450	3.450	
		Stones spall for filling voids	cum	0.450	0.450	0.450	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 3 cum = a+b+c+d					
		Rate per cum = $(a+b+c+d)/3$					
7.04	3100	Reinforced Earth Structures					
		Reinforced earth Structures have four main components as under:					
		a) Excavation for foundation, foundation concrete and cement concrete grooved seating in the foundation for facing elements (fascia material).					
		b) Fascia material and its placement.					
		c) Assembling, joining with facing elements and laying of the reinforcing elements.					
		d) Earth fill with granular material which is to be retained by the wall.					
		Each component is analysed separately a	s under:				
		considering Average height of wall = 8 m.					
7.04	3103 (i)	Assembling, joining and laying of					
	.,	reinforcing elements.					
	Α	With reinforcing element of steel / Aluminium strips / polymeric strips.					
		Unit = Running Metre					
		Taking Output = 450 m					
		a) Labour					
		Mate	day	0.266	0.266	0.266	
		Mazdoor	day	3.990	3.990	3.990	
		Mazdoor skilled	day	2.660	2.660	2.660	
		b) Material					
		@ Reinforcement strips 60 mm wide 5 mm thick as per clause 3103. including 5% wastage					
		1. Galvanised carbon steel	metre	472.500	472.500	472.500	
		strips					
		Add 5 Percent of the cost of reinforcing elements strip towards accessories like tie-strips, nuts and					
		bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps heat bonding or extension					
		0.5					

or

Sr No	Ref. to M		Unit	Quantity as per project category			
		Description		Large	Medium	Small	(Rs.)
		2.Copper Strips Add 5 Percent of the cost of reinforcing elements strip towards accessories like tie-strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps heat bonding or extension or	metre	472.500	472.500	472.500	
		3.Aluminium Strips Add 5 Percent of the cost of reinforcing elements strip towards accessories like tie-strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps heat bonding or extension or	metre	472.500	472.500	472.500	
		4.Stainless steel strips Add 5 Percent of the cost of reinforcing elements strip towards accessories like tie-strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps heat bonding or extension or	metre	472.500	472.500	472.500	
		polymer/fiber reinforced polymer/polymeric strips Add 5 Percent of the cost of reinforcing elements strip towards accessories like tie-strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps heat bonding or extension @ Any one of the above alternative may be adopted as per approved design.	metre	472.500	472.500	472.500	
	Type 1	 1.Galvanised carbon steel strips c) Overhead charges d) Contractor's profit Cost of 450 m = a+b+c+d 		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		Rate per metre =(a+b+c+d)/ 450					
	Type 2	2.Copper Stripsc) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	

Co. N	Ref. to M	Donasis tile s	Unit	Quantity as per project category			Rate
Sr No		Description		Large	Medium	Small	(Rs.)
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost of 450 m = $a+b+c+d$					
		Rate per metre =(a+b+c+d)/ 450					
	Type 3	3.Aluminium Strips					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost of 450 m = $a+b+c+d$					
		Rate per metre =(a+b+c+d)/450					
	Type 4	4.Stainless steel strips					
	,	c) Overhead charges		@ on	@ on	@ on	
		d) Contractor's profit		(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	
		Cost of 450 m = $a+b+c+d$					
		Rate per metre =(a+b+c+d)/ 450					
	Type 5	5.Glass reinforced polymer/fiber reinforced polymer/polymeric strips					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost of 450 m = $a+b+c+d$					
		Rate per metre =(a+b+c+d)/450					
7.04 (i)	В	With reinforcing elements of synthetic geogrids					
		Unit = sqm Taking output= 300 sqm					
		a) Labour					
		Mate	day	0.266	0.266	0.266	
		Mazdoor	day	3.990	3.990	3.990	
		Mazdoor skilled	day	2.660	2.660	2.660	
		b) Material	·				
		Synthetic Geogrids as per clause 3100 and approved design and specifications including 5% wastage. Add 5 Percent of the cost of	sqm	315.000	315.000	315.000	
		reinforcing elements (synthetic geogrids) for accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids.					
		, 3 3					

	Ref. to M			Unit	Quantity as per project category			Rate	
Sr No			Description		Large	Medium	Small	(Rs.)	
						Laige	Wiedidiii	Jillali	(11.5.)
			c) Overhead charges			@ on	@ on	@ on	
			•	, comean marger		(a+b)	(a+b)	(a+b)	
		C	d) (Contractor's profit		@ on	@ on	@ on	
				•		(a+b+c)	(a+b+c)	(a+b+c)	
				f 300 sqm of Synthetic geogrids = a	+b+c+d				
			Rate per sqm = (a+b+c+d)/ 300						
7.04	3105	(ii)	Facing elements of RCC						
			Unit =	= sqm					
			_	g output= 200 sqm					
		;	•	abour					
				//ate	day	0.426	0.426	0.426	
				Mazdoor	day	7.980	7.980	7.980	
				Mazdoor skilled	day	2.660	2.660	2.660	
			-	Machinery					
		į	-	or Casting yard					
				ight crane with lifting capacity	la a con	2.062	2.062	2.062	
				<pre>ipto 3 tonne (For Lifting at casting ard)</pre>	hour	2.963	2.963	2.963	
		i		or transportation and placement					
			-	it site					
				ight crane with lifting capacity	hour				
				upto 3 tonne for loading &		5.926	5.926	5.926	
			ι	Inloading					
				railer 30 tonne capacity for	t.Km	26 v 2 E v I	36 x 2.5 x L	36 x 2.5 x	
				ransporting to site		30 X Z.3 X L	30 X Z.3 X L	L	
				ight crane with lifting capacity		8.000	8.000	8.000	
				pto 3 tonne (For erection)		0.000	0.000	0.000	
			•	Material					
				Pre-cast RCC M-35 facing elements	cu.m	36.000	36.000	36.000	
				of size as per design and 18 cm hick for 75 sqm. (Refer Item 12.08					
				H) Case -II Basic Cost of Labour,					
				Material & Machinery)					
				formwork @ 4 Percent on cost of					
			С	oncrete i.e. cost of material,					
			la	abour and machinery					
				Ion-Woven geotextile behind the	Sqm	80.000	80.000	80.000	
				ascia element to avoid leaching					
			_	out of backfill material					
				HYSD steel @ 7 kg / sqm (Refer	tonnes	1.400	1.400	1.400	
				tem 9.07,Basic Cost of Labour,					
				Material & Machinery) Add 2 Percent of cost of fascia					
				pannels, for all necessary					
				emporary form work, scaffolding					
				and provision of loops/lugs for					
				fting of panels and joining the					
				einforcing elements.					
			d) (Overhead charges		@ on	@ on	@ on	
						(a+b)	(a+b)	(a+b)	
			e) (Contractor's profit		@ on	@ on	@ on	
						(a+b+d)	(a+b+d)	(a+b+d)	
				or 200 sqm = a+b+c+d+e					
			Rate p	per sqm = (a+b+c+d+e)/200					

C:: No	D-f +- N4		11	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Note

- 1. The specification and construction details to be adopted shall be as per section 3100 of MoRT&H Specification.
- 2. Drainage arrangement shall be made as per approved design and drawings.
- 3. The quantity of filler media shall be calculated as per approved design and specifications and shall be priced separately. The rate for same to be adopted from chapter 9.
- 4. Excavation for foundation including foundation concrete and groove in the foundation for seating of bottom most fascia panel and capping beam to be calculated as per design and priced separately. The rates for excavation and foundation concrete shall be taken from the chapter 3.
- 5. The earth fill to be retained is not included in this analysis. The same is to be worked out and provided separately complete as per clause 305.
- 6. For compaction of Earthwork, attention is invited to clause 3106.5 of MoRT&H Specification.
- 7. Length of reinforcing strips will vary with the height of wall and will be as per approved design and drawings.
- 8. The type of reinforcing elements to be adopted shall be as per approved design and specifications.
- 9. The market rate for supply of reinforcing elements and their accessories are to be ascertained from reputed firms in the field of earth reinforcement.
- 10. The earth fill material shall be clean, free draining, granular with high friction and low cohesion, non-corrosive, coarse grained with not 10 Percent of particles passing 75 micron sieve, free of any deleterious matter, chlorides, salts, acids, alkalies, mineral oil, fungus and microbes and shall be of specified PH value.
- 11. Capping beam is to be priced separately as per approved design. The rate for cement concrete shall be taken from the chapter of sub-structure in bridge section.
- 12. The cost of reinforced earth retaining wall shall include following:
 - (i) Foundation concrete as per approved design.
 - (ii) Cost of fascial panels and their erection .
 - (iii) Cost of reinforcing elements including their fixing and joining with the fascial panels.
 - (iv) Drainage arrangement including filter media as per approved design and drawings.
- 13. The compacted earth filling to be retained shall form part of embankment.
- 14. Excavation for foundation including backfilling paid separately.
- 15. The compacted earth filling to be retained shall form part of embankment/backfilling.

7.05 703 (i)

Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 15kN/m in the longitudinal and transverse direction, with 5kN/m and 7kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening.

Unit = Sqm

Taking output = 300 Sqm

a) Labour

Mate	day	0.266	0.266	0.266
Mazdoor	day	3.990	3.990	3.990
Mazdoor (Skilled)	day	2.660	2.660	2.660

Ref to M	I Description	Unit	Quantity as per project category			
Nei. to Wi	Description	Oilit	Large	Medium	Small	(Rs
	b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tie- strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect including taxes and transportation. c) Overhead charges d) Contractor's profit	sqm	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
	Cost for 300 sqm = a+b+c+d					
	Rate per sqm = $(a+b+c+d)/300$					
703 (ii)	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction, with 7kN/m and 14kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening.					
	Taking output= 300 Sqm					
	Mate Mazdoor Mazdoor (Skilled) b) Material Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tie- strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective	day day day sqm	0.266 3.990 2.660 300.000	0.266 3.990 2.660 300.000	0.266 3.990 2.660 300.000	
		b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect including taxes and transportation. c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300 703 (ii) Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction, with 7kN/m and 14kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit = Sqm Taking output= 300 Sqm a) Labour Mate Mazdoor Mazdoor (Skilled) b) Material Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels,	b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect including taxes and transportation. c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300 703 (ii) Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction, with 7kN/m and 14kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit = Sqm Taking output= 300 Sqm a) Labour Mate day Mazdoor day Mazdoor (Skilled) b) Material Bi-Axial Extruded GeoGrids of sqm Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective	b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect including taxes and transportation. c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300 703 (ii) Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction, with 7kN/m and 14kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit = Sqm Taking output= 300 Sqm a) Labour Mate day 0.266 Mazdoor day 3.990 Mazdoor (Skilled) day 2.660 b) Material Bi-Axial Extruded GeoGrids of sqm 300.000 Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction, which is strength 20 kN/m in the longitudinal and transverse direction, shall Extruded GeoGrids of sqm 300.000 Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective	b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction of Losse's bub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction for base's bub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction. 703 (ii) Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base'sub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction, with 7kN/m and 14kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, ijunction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit = 5qm Taking output= 300 Sqm a) Labour Mate day 0.266 0.266 b) Material Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction. Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective	b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect including taxes and transportation. c) Overhead charges Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300 703 (ii) Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 20kN/m in the longitudinal and transverse direction, with 7kN/m and 14kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, unction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit - Sqm Taking output-300 Sqm a) Labour Mate day 0.266 0.266 0.266 0.266 Mazdoor (Skilled) b) Material Bi-Axial Extruded GeoGrids of Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction. Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tiestrips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective

				Quantity as per project category		category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		and all other activities required to complete the item in all respect including taxes and transportation. c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
7.05	703 (iii)	Rate per sqm = (a+b+c+d)/300 Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 30kN/m in the longitudinal and transverse direction, with 10.5kN/m and 21kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit = Sqm Taking output = 300 Sqm					
		a) Labour Mate Mazdoor Mazdoor (Skilled)	day day day	0.266 3.990 2.660	0.266 3.990 2.660	0.266 3.990 2.660	
		b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 30 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tie- strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia panels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect like transportation etc. c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d	sqm	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300					

Cr No	Pof to M	Description	Unit	Quantity a	s per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
7.05	703 (iv)	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 40kN/m in the longitudinal and transverse direction, with 14kN/m and 28kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening. Unit = Sqm Taking output = 300 Sqm a) Labour					
		Mate	day	0.266	0.266	0.266	
		Mazdoor	day	3.990	3.990	3.990	
		Mazdoor (Skilled)	day	2.660	2.660	2.660	
		b) Material Bi-Axial Extruded Geo Grids of Minimum Tensile Strength 40 kN/m in the longitudinal and transverse direction Add 10 % of the cost of reinforcing elements (synthetic geogrids) for wastage and accessories like tie- strips, nuts and bolts and loops/lugs for joining reinforcing elements with the fascia pannels, overlaps and other protective elements for synthetic geogrids and all other activities required to complete the item in all respect like transportation etc c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300	sqm	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
7.06	703	Supplying and laying high strength flexible geogrids (HSFG) as soil reinforcement / basal reinforcement as per MORTH 3100 and IRC 113, made of high tenacity polyester core with polyethylene coating with minimum Long Term Design Strength (LTDS) of more than 50% of ultimate tensile strength at 30 degree Celcius corresponding to 12 % strain etc. complete and as directed by Engineer - In - Charge. Unit = Sqm Taking output = 300 Sqm					

Cultin Define M		2			Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Labour	-l	0.266	0.266	0.266	
			Mate	day	0.266	0.266	0.266	
			Beldar	day	3.990	3.990	3.990	
			Skilled Beldar	day	2.660	2.660	2.660	
	(:)	a)	Material	cam	300*1.1	300*1.1	300*1.1	
	(i)		Synthetic Geogrid Ultimate tensile strength- 100 kN/m	sqm				
	(ii)		Synthetic Geogrid Ultimate tensile strength- 150 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(iii)		Synthetic Geogrid Ultimate tensile strength- 200 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(iv)		Synthetic Geogrid Ultimate tensile strength- 250 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(v)		Synthetic Geogrid Ultimate tensile strength- 300 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(vi)		Synthetic Geogrid Ultimate tensile strength- 350 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(vii)		Synthetic Geogrid Ultimate tensile strength- 400 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(viii)		Synthetic Geogrid Ultimate tensile strength- 500 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(ix)		Synthetic Geogrid Ultimate tensile strength- 600 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(x)		Synthetic Geogrid Ultimate tensile strength- 800 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(xi)		Synthetic Geogrid Ultimate tensile strength- 900 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(xii)		Synthetic Geogrid Ultimate tensile strength- 1000 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(xiii)		Synthetic Geogrid Ultimate tensile strength- 1100 kN/m	sqm	300*1.1	300*1.1	300*1.1	
	(xiv)		Synthetic Geogrid Ultimate tensile strength- 1200 kN/m	sqm	300*1.1	300*1.1	300*1.1	
			@ Any one of the above alternative may be adopted as per					
			approved design.					
			Add 10 Percent of the cost of					
			reinforcing elements (synthetic					
			geogrids) for wastage and					
			accessories like tie-strips, nuts and					
			bolts and loops/lugs for joining					
			reinforcing elements with the fascia panels, overlaps and other					
			protective elements for synthetic					
			geogrids and all other activities					
			required to complete the item in					
	(i)	c)	all respect like transportation etc. Overhead charges		@ on	@ on	@ on	
		d)	Contractor's profit		(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	
		Cos	st for 300 sqm = a+b+c+d		(a 1 D TC)	(a 1 b + c)	(a i b rc)	
			e per sqm = (a+b+c+d)/300					
			- -					

C:: No	Def to M	Description		Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	(ii)	c) Overhead charges		@ on	@ on	@ on	
	(,	,		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300					
		nate per squi = (a.b.e.a)/300					
	(iii)	c) Overhead charges		@ on	@ on	@ on	
		1) 6		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on (a+b+c)	
		Cost for sqm = a+b+c+d		(a+b+c)	(a+b+c)	(атытс)	
		Rate per sqm = $(a+b+c+d)/300$					
				_			
	(iv)	c) Overhead charges		@ on	@ on	@ on	
		d) Contractor's profit		(a+b) @ on	(a+b) @ on	(a+b) @ on	
		a, commune prom		(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = (a+b+c+d)/300					
	(v)	c) Overhead charges		@ on	@ on	@ on	
	(*)	o,		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300					
		Nate per sqiii = (a+b+c+u)/300					
	(vi)	c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
		Cost for 300 sqm = a+b+c+d		(a+b+c)	(a+b+c)	(a+b+c)	
		Rate per sqm = (a+b+c+d)/300					
	(vii)	c) Overhead charges		@ on	@ on	@ on	
		d) Contractor's profit		(a+b) @ on	(a+b) @ on	(a+b) @ on	
		u, commune o prome		(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d		, ,	, ,	, ,	
		Rate per sqm = $(a+b+c+d)/300$					
	(viii)	c) Overhead charges		@ on	@ on	@ on	
	(VIII)	-,		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300					
		nate per squi – (arbreru)/ soo					
	(ix)	c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	

				Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = (a+b+c+d)/300					
	(x)	c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = $(a+b+c+d)/300$					
	(xi)	c) Overhead charges		@ on	@ on	@ on	
	(A1)			(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = $(a+b+c+d)/300$					
	(xii)	c) Overhead charges		@ on	@ on	@ on	
	(XII)	cy Overneud charges		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = (a+b+c+d)/300					
	(xiii)	c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = (a+b+c+d)/300					
	(xiv)	c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d		(a+b+c)	(a+b+c)	(атытс)	
		Rate per sqm = (a+b+c+d)/300					
7.07	704	Supplying & laying of drainage composite for use behind walls,					
		between two different fills, alongside					
		drains of road, below concrete lining of					
		canals etc. Geo composite for planar					
		drainage, realized by thermos bonding a draining core in extruded					
		monofilaments with two filtering					
		nonwoven geotextiles that may also be					
		working as separation or protecting					
		layers. The draining three dimensional					
		core will have a "W" configuration as					

Sr No	Def 4- 84	Description	l lni±	Quantity as per project category			
Sr NO	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
		longitudinal parallel channels. Minimum thickness to be 7.2mm, with two filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75 mm having pores of 150 micron and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, geo composite having in plane flow capacity of 2.1 L / (m.s) at hydraulic gradient of 1.0 & 20 kpa pressure and tensile strength of 18 kN/m , with mass per unit area of 740 gsm, supplied in the form of roll for easy transportation to site of work as per					
		detailed specification all complete as per directions of Engineer in charge.					
		Unit = Sqm					
		Taking output = 300 Sqm					
		a) Labour					
		Mate	day	0.266	0.266	0.266	
		Mazdoor	day	3.990	3.990	3.990	
		Mazdoor (Skilled)	day	2.660	2.660	2.660	
		b) Material					
		Geo synthetic Drainage Composite	sqm	300.000	300.000	300.000	
		Add 10 Percent of the cost of synthetic Composites for wastage and accessories for joining sheets with the fascia panels, overlaps and other protective elements for synthetic Composites and other miscellaneous activities required to complete the item in all respect including transportation & takes. c) Overhead charges d) Contractor's profit		@ on (a+b) @ on	@ on (a+b) @ on	@ on (a+b) @ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300					
7.08	704	Supplying & laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. having thermobonding a draining core - HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyethylene film and a nonwoven geotextile having mass per unit area 130 g/m2 and tensile strength of 8.0 kN/m that will be					

working as separation or protecting layer, geocomposite having in plane flow capacity of 0.7 L / (m.s) at

Rate (Rs.)

C., N.	Def 4- 84	Description	11	Quantity a	is per project	t category	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small
		pre- kN/ gsm incl and mat dire	Iraulic gradient of 1.0 & 20 kPa ssure and tensile strength of 13.5 m, with mass per unit area of 830 n, at easily accessible location uding top and bottom, with all leads I lifts, manpower and machinery, terials, labour etc. complete and as ected by Engineer - In - Charge. t = Sqm				
			ing output = 300 Sqm				
		a)	Labour				
		u,	Mate	day	0.266	0.266	0.266
			Mazdoor	day	3.990	3.990	3.990
			Mazdoor (Skilled)	day	2.660	2.660	2.660
		b)	Material				
			Geo synthetic Drainage Composite Add 10 Percent of the cost of synthetic Composites for wastage and accessories for joining sheets with the fascia panels, overlaps and other protective elements for synthetic Composites and other miscellaneous activities required to complete the item in all respect including transportation & takes.	sqm	300.000	300.000	300.000
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c
		Cos	t for 300 sqm = a+b+c+d				
		Pat	e per sqm = (a+b+c+d)/300				

Barrier with frication Slab

Provision of an Reinforced cement concrete crash barrier with frication slab at the approaches to bridge structures, constructed with M-40 HYSD grade concrete with reinforcement conforming to IRC:112 and as per dimensions in the approved drawing and at locations directed by the specified. Engineer, all as (Area-0.185 Sqm. /Meter) below frication slab and (Area-1.032 Sqm. /Meter) Crash Barrier with frication Slab

Unit = Linear meter

Taking output = 10 m

Rs.)

Cost for 10 meter = a+b+c+d+e

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

Note

- Excavation and backfilling are incidental to work and not to be measured separately.
- ii) Rate for PCC M 15 may be taken from chapter on 12.
- iii) Rate for RCC M 40 may be taken from chapter on 14.

7.10

Sr No

In-Situ Soil reinforcement for slope restoration and protection work (Soil Nailing)

Supply and installation of In-Situ Soil reinforcement (Soil Nailing) with fully threaded hot-dip galvanized solid geotechnical bars as soil nails (galvanization minimum 500 grams per sqm) of minimum 25 mm diameter, having yield strength > 670N/mm² and tensile strength > 800N/mm² as per technical specifications and drawings etc. complete including drilling, flushing, grouting, and all Supply and installation of all components listed as per technical specifications and drawings etc. and considering all lead, lift and machinery.

Unit = Running meter

a)

Taking output = 6 Running Meter

)	Labour				
	Mate	day	0.479	0.479	0.479
	Skilled Mazdoor	day	1.330	1.330	1.330
	Semi Skilled Mazdoor	day	2.660	2.660	2.660
	Highly Skilled	day	5.320	5.320	5.320
	Driller	day	1.330	1.330	1.330
	Operator (Grouting)	day	1.330	1.330	1.330

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

C# No	Ref. to M		Description	Unit	Quantity a	s per projec	t category	Rate
Sr No	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery					
			Air Compressor	hour	6.000	6.000	6.000	
			Tractor-trolley	hour	3.000	3.000	3.000	
			Grouting pump with agitator	hour	6.000	6.000	6.000	
			Drilling Machine	hour	6.000	6.000	6.000	
		c)	Material					
			Fully Threaded Hot Dip galvanized	LM	6.000	6.000	6.000	
			geotechnical bars with casing'					
			Centralizer	No.	3.000	3.000	3.000	
			Bearing Plate 200mm x 200mm x	No.	1.000	1.000	1.000	
			10mm	140.	1.000	1.000	1.000	
			Spherical Dome Nut	No.	1.000	1.000	1.000	
			Cement	tonne	0.300	0.300	0.300	
			Admixture	Kg	1.000	1.000	1.000	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			st of repair for10m = a+b+c+d					
		Cos	st of meter = (a+b+c+d+e)/6					
7.11	suggestive	Hor	rizontal Drainage Boring					

Horizontal Drainage Boring methods on the types of Sandy Soil / Cohesive Soil and drilling length including cost of all materials, machinery, labour and all other ancillary operations etc.(Nominal Diameter of drilling pipe- 90 mm)

Nominal Diameter of drilling pipe- 90 mm.

Unit = Running Meter

(i) Drilling length below bed level upto 50.0 Meter

A Sandy Soil / Cohesive Soil

Taking output = 32 Meter

a)	Labour
	For boring work

Mate	day	0.213	0.213	0.213
Mazdoor	day	3.990	3.990	3.990
Mazdoor (Skilled)	day	1.330	1.330	1.330
For installation of pipe material				
Mate	day	0.040	0.040	0.040
Mazdoor	day	0.532	0.532	0.532
Mazdoor (Skilled)	day	0.468	0.468	0.468
For both installation and removal of machinery and equipment of				
boring works				
Mate	day	0.234	0.234	0.234
Mazdoor	day	3.458	3.458	3.458
Mazdoor (Skilled)	day	2.394	2.394	2.394
For installation and removal of				

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

	Def to M				Ouantity a	ıs per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		1			6-	1		, ,
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)					
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC) - 90	meter	32.960	32.960	32.960	
			mm Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling bit) Core tube (drilling pipe)	Nos	0.416	0.416	0.416	
			Core tube (Inner rod)	Nos.	0.224	0.224	0.224	
			Geo-textile for wrapping the pipe	sqm	11.180	11.180	11.180	
			including 5% wastage					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Cos	t for 32 meter = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			e per meter = (a+b+c+d+e)/ 32					
			(a.a.e.a.e, e_					
	В	Gra	velly Soil					
		Tak	ing output = 22 Meter					
		a)	Labour					
			For boring work		0.242	0.242	0.242	
			Mardage	day	0.213	0.213	0.213	
			Mazdoor Mazdoor (Skilled)	day day	3.990 1.330	3.990 1.330	3.990 1.330	
			For installation of pipe material	uay	1.550	1.550	1.550	
			Mate	day	0.029	0.029	0.029	
			Mazdoor	day	0.399	0.399	0.399	
			Mazdoor (Skilled)	day	0.322	0.322	0.322	
			For both installation and removal					
			of machinery and equipment of					
			boring works		0.224	0.224	0.224	
			Mardaer	day	0.234	0.234	0.234	
			Mazdoor Mazdoor (Skilled)	day day	3.458 2.394	3.458 2.394	3.458 2.394	
			For installation and removal of	uay	2.334	2.334	2.334	
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for installation and removal of	hour	5.600	5.600	5.600	
			mstaliation and removal of					

C# NI =	Def += *4		Donasistica.	11	Quantity a	s per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
		-1	temporary stage)					
		c)	Materials		22.660	22.660	22.660	
			Vinyl chloride pipes	meter	22.660	22.660	22.660	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288 7.686	0.288 7.686	0.288 7.686	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	7.000	7.000	7.000	
		d)	Overhead charges		@ on	@ on	@ on	
		•	_		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	st for 22 meter = a+b+c+d+e					
		Rat	te per meter = (a+b+c+d+e)/ 22					
		С	Rubble/Cobble Stone					
			king output =16 Meter					
		a)	Labour					
		aj	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material	,	2.555	2.555	2.000	
			Mate	day	0.004	0.004	0.004	
			Mazdoor	day	0.106	0.106	0.106	
			Mazdoor (Skilled)	day	0.000	0.000	0.000	
			For both installation and removal	•				
			of machinery and equipment of					
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain	day	0.494	0.494	0.494	
			Mate Mazdoor	day	0.484 7.581	0.484	0.484 7.581	
			Mazdoor (Skilled)	day	4.522	7.581 4.522	4.522	
		b)	Machinery	day	4.322	4.322	4.522	
		IJ,	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	0.000	5.600	5.600	
			installation and removal of machinery and equipment)	noui	5.600	3.000	5.000	
			Crawler Crane- 5 tonne (for temporary stage)	hour	3.600	3.600	3.600	
		c)	Materials					
			Vinyl chloride pipes	meter	0.000	0.000	0.000	

	1	1			1			l
Sr No	Ref. to M		Description	Unit		s per projec		Rate
					Large	Medium	Small	(Rs.)
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	0.000	0.000	0.000	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		_			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 16 meter = a+b+c+d+e					
		Kat	e per meter = (a+b+c+d+e)/ 16					
	D	Sof	t Rock					
	5		ing output = 20 Meter					
		a)	Labour					
		•	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.027	0.027	0.027	
			Mazdoor	day	0.372	0.372	0.372	
			Mazdoor (Skilled)	day	0.293	0.293	0.293	
			For both installation and removal					
			of machinery and equipment of					
			boring works Mate		0.224	0.224	0.224	
			Mazdoor	day	0.234	0.234	0.234	
			Mazdoor (Skilled)	day	3.458	3.458	3.458	
			For installation and removal of	day	2.394	2.394	2.394	
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery	1				
		-	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
		c١	temporary stage) Materials					
		c)	Vinyl chloride pipes	meter	20.600	20.600	20.600	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.410	0.410	0.410	
			Core tube (Inner rod)	Nos.	0.224	0.224	0.224	
			Geo-textile for wrapping the pipe	sqm	6.988	6.988	6.988	
			including 5% wastage	24111	3.300	3.330	3.330	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	

6.11	5 () 44		Description		Quantity a	s per projec	t category	Ra
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
		e)	Contractor's profit		@ on	@ on	@ on	
		Cos	st for 20 meter = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			te per meter = (a+b+c+d+e)/ 20					
			(, , , , , , , , , , , , , , , , , , ,					
	(ii)	Dri	lling length from 50.0 Meter - 80					
		me						
	Α		ndy Soil / Cohesive Soil					
			king output = 26.7 Meter					
		a)	Labour					
			For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.034	0.034	0.034	
			Mazdoor	day	0.462	0.462	0.462	
			Mazdoor (Skilled)	day	0.391	0.391	0.391	
			For both installation and removal					
			of machinery and equipment of					
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain	day	0.484	0.484	0.484	
			Mate Mazdoor	day day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		h۱	Machinery	uuy	4.522	4.322	4.322	
		IJ,	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	5.555	5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)		3.000			
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)	meter	27.501	27.501	27.501	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	9.328	9.328	9.328	
		۱۱,	including 5% wastage Overhead charges		@ on	@ on	@ on	
		d)	Overlieau clidiges		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		-,			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	st for 26.7 meter = a+b+c+d+e					

Rate per meter = (a+b+c+d+e)/26.7

C# No	Ref. to M		Description	Unit	Quantity as per project cate			Ra
Sr No	Kei. to ivi		Description	Unit	Large	Medium	Small	(R
	В	Gra	velly Soil					
		Tak	ing output = 18.3 Meter					
		a)	Labour					
			For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.025	0.025	0.025	
			Mazdoor	day	0.350	0.465	0.465	
			Mazdoor (Skilled)	day	0.268	0.356	0.356	
			For both installation and removal					
			of machinery and equipment of					
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain		0.404	0.404	0.404	
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
		L	Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery	la acces	0.000	0.000	0.000	
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump Crawler Crane- 5 tonne (for	hour	8.000	8.000 5.600	8.000 5.600	
			installation and removal of	hour	5.600	5.000	5.000	
			machinery and equipment)		3.000			
			Crawler Crane- 5 tonne (for	hour		3.600	3.600	
			temporary stage)		3.600			
		c)	Materials					
		•	Vinyl chloride pipes	meter	18.849	18.849	18.849	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	6.394	6.394	6.394	
			including 5% wastage					
		d)	Overhead charges		@ on	@ on	@ on	
		- 1	Combinatorile musik		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Cos	t for 18.3 meter = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			e per meter = (a+b+c+d+e)/ 18.3					
	С	Rub	oble/Cobble Stone					
	_		ing output =13.3 Meter					
		a)	Labour					
			For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					

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Mate		_				Quantity a	as per projec	t category	Rate
Mate day 0.019 0.019 0.019 0.019 Mazdoor day 0.283 0.377 0.377 day 0.019 day 0.283 0.377 0.377 day 0.019 day 0.195 0.259 0.254	Sr No	Ref. to M		Description	Unit				
Mazdoor Maz	l				l			1 2	/
Mazdoor Maz				Mate	day	0.019	0.019	0.019	
Mazdoor (skilled)				Mazdoor	-				
For both installation and removal of machinery and equipment of boring works				Mazdoor (Skilled)	-				
boring works Mate day 0.234 0.234 0.234 0.234 Mazdoor (skilled) day 2.394				For both installation and removal	•				
boring works Mate day 0.234 0.234 0.234 0.234 Mazdoor (skilled) day 2.394				of machinery and equipment of					
Mazdoor (Skilled)									
Mazdoor (skilled) day 2.394 2.394 2.394 Evistaliation and removal of temporary stage in flat terrain Mate Mazdoor Mazdoor (skilled) day 7.581 7.581 7.581 7.581 Mazdoor (skilled) day 4.522 4.522 4.522 4.522				Mate	day	0.234	0.234	0.234	
For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 0.484 Mazdoor (Skilled) day 7.581 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 6.000 Grawler Crane-5 tonne (for hour 5.600 5.600 installation and removal of machinery and equipment) Grawler Crane-5 tonne (for hour crawler Crane-5 tonne (for hour temporary stage) C) Materials Vinyl chloride pipes meter 13.699 13.699 13.699 Core tube (drilling bit) Nos 0.416 0.416 0.416 0.416 Core tube (firlling pipe) Nos 0.224 0.224 0.224 0.224 Core tube (Inner rod) Nos 0.288 0.288 0.288 0.288 0.288 0.288 0.288 0.288 0.288 0.288 0.288 0.288 0.284 0.284 0.224 0.				Mazdoor	day	3.458	3.458	3.458	
For installation and removal of temporary stage in flat terrain Mate Mazdoor Mazdoor (Skilled) Mazdoor (Skilled) Machinery Boring Machine Grout Pump Crawler Crane-5 tonne (for hour s.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 5.600 Installation and removal of machinery and equipment) Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne (for hour s.000 8.000 8.000 8.000 Crawler Crane-5 tonne for s.000 8.000 8.000 8.000 Crawler Crawler S.000 8.000 8.000 8.000 Crawler S.000 8.000 8.000 Crawler S.000 8.000 8.000 Crawler S.000 8.000 8.000 Crawler S.000 8.				Mazdoor (Skilled)	day	2.394	2.394	2.394	
temporary stage in flat terrain Mate May 0.484 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.5									
Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522									
Mazdoor (Skilled)					day	0.484	0.484	0.484	
Mazdoor (Skilled)				Mazdoor	day	7.581	7.581	7.581	
b) Machinery Boring Machine Grout Pump hour Crawler Crane- 5 tonne (for hour installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for temporary stage) c) Materials Vinyl chloride pipes meter 13.699 13.699 13.699 Core tube (drilling pipe) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (drilling pipe) Nos 0.288 0					=	4.522	4.522	4.522	
Boring Machine Hour S.000 S.00			b)		•				
Grout Pump			~,	-	hour	8.000	8.000	8.000	
Crawler Crane- 5 tonne (for installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for temporary stage) Crawler				_					
installation and removal of machinery and equipment) Crawler Crane-5 tonne (for temporary stage) c) Materials Vinyl chloride pipes				•		0.000			
machinery and equipment)				•	11041	5.600	3.000	3.000	
Crawler Crane-5 tonne (for temporary stage) 3.600						3.333			
temporary stage					hour		3.600	3.600	
c) Materials Vinyl chloride pipes meter 13.699 13.699 13.699 Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe including 5% wastage d) Overhead charges @ on @ on @ on (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on (a+b+c+d) (a+b+c+d) Cost for 13.3 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/13.3 D Soft Rock Taking output = 16.7 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				-		3.600			
Vinyl chloride pipes			c)						
Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe including 55% wastage d) Overhead charges Gon Gon Gon Ga+b+c) (a+b+c) e) Contractor's profit Gon Gon Gon Ga+b+c+d) (a+b+c+d) Cost for 13.3 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/13.3 D Soft Rock Taking output = 16.7 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor day 0.329 0.437 0.437 Mazdoor day 0.329 0.437 0.437 Mazdoor day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234			-,		meter	13.699	13.699	13.699	
Core tube (drilling pipe) Core tube (Inner rod) Nos. 0.224 0.224 0.224 0.224 0.228 0.284 0.4647					Nos	0.416			
Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe including 5% wastage d) Overhead charges @ on @ on @ on (a+b+c) (a+b+c) (a+b+c) e) Contractor's profit @ on (a+b+c+d) (a+b+c+d) (a+b+c+d) Cost for 13.3 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/13.3 D Soft Rock Taking output = 16.7 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor day 0.329 0.437 0.437 Mazdoor day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234									
Geo-textile for wrapping the pipe including 5% wastage d) Overhead charges @ on @ on @ on (a+b+c) (a+b+c) (a+b+c) e) Contractor's profit @ on (a+b+c+d) (a+b+c+d) Cost for 13.3 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/ 13.3 D Soft Rock Taking output = 16.7 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor (Skilled) day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234									
including 5% wastage d) Overhead charges									
d) Overhead charges @ on @ on @ on (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c+d)					34		1.017	1.017	
(a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c+d)			d)			@ on	@ on	@ on	
e) Contractor's profit (a on (a+b+c+d) (a+b+c+d) Cost for 13.3 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/13.3 D Soft Rock Taking output = 16.7 Meter a) Labour For boring work Mate			ω,	Overnieda charges		_	_	•	
(a+b+c+d) (a+b+c+d) (a+b+c+d)			e)	Contractor's profit					
Rate per meter = (a+b+c+d+e)/ 13.3			•	•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
D Soft Rock Taking output = 16.7 Meter a) Labour For boring work Mate			Cos	t for 13.3 meter = a+b+c+d+e					
Taking output = 16.7 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234			Rat	e per meter = (a+b+c+d+e)/ 13.3					
Taking output = 16.7 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234									
Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works day 0.234 0.234 0.234		D	Sof	t Rock					
For boring work Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor (Skilled) day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234			Tak	ing output = 16.7 Meter					
Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234			a)	Labour					
Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				For boring work					
Mazdoor (Skilled) For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				Mate	day	0.213	0.213	0.213	
For installation of pipe material Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				Mazdoor	day	3.990	3.990	3.990	
Mate day 0.023 0.023 0.023 Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				Mazdoor (Skilled)	day	1.330	1.330	1.330	
Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				For installation of pipe material					
Mazdoor day 0.329 0.437 0.437 Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234					day	0.023	0.023	0.023	
Mazdoor (Skilled) day 0.244 0.325 0.325 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234				Mazdoor	=			0.437	
For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234					=		0.325		
of machinery and equipment of boring works Mate day 0.234 0.234 0.234					,				
boring works Mate day 0.234 0.234 0.234									
Mate day 0.234 0.234 0.234									
•					day	0.234	0.234	0.234	
				Mazdoor	=				
					•				

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

					Quantity a	ıs per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
I				1	6-			, , ,
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of	•				
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	5.600	5.600	5.600	
			installation and removal of					
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)					
		c)	Materials					
			Vinyl chloride pipes	meter	17.201	17.201	17.201	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	5.835	5.835	5.835	
			including 5% wastage					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		C -	Afan 107 makan salasas		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			st for 16.7 meter = a+b+c+d+e					
		кat	se per meter = $(a+b+c+d+e)/16.7$					

Rate per meter = (a+b+c+d+e)/16.7

7.12 Suggestive

Horizontal Drainage Boring (Nominal Diameter of drilling pipe- 110 mm)

Horizontal Drainage Boring methods on the types of Sandy Soil / Cohesive Soil and drilling length including cost of all materials, machinery, labour and all other ancillary operations etc.(Nominal Diameter of drilling pipe- 90 mm)

Nominal Diameter of drilling pipe- 110 mm.

Unit = Running Meter

- (i) Drilling length below bed level upto 50.0 Meter
- A Sandy Soil / Cohesive Soil Taking output =24 Meter

a) Labour For boring work

Mate	day	0.213	0.213	0.213
Mazdoor	day	3.990	3.990	3.990
Mazdoor (Skilled)	day	1.330	1.330	1.330
For installation of pipe material				
Mate	day	0.067	0.067	0.067
Mazdoor	day	1.330	1.330	1.330
Mazdoor (Skilled)	day	0.351	0.467	0.467

Cr No	Ref. to M		Description	Linit	Quantity a	s per projec	t category	Rate
Sr No	Rei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
			For both installation and removal					
			of machinery and equipment of boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of	uay	2.334	2.334	2.334	
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)		3.000			
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)-110 mm	meter	24.720	24.720	24.720	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	8.385	8.385	8.385	
		d)	Overhead charges		@ on	@ on	@ on	
		•	-		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 24 meter = a+b+c+d+e					
		Rat	e per meter = (a+b+c+d+e)/ 24					
	В	Gra	velly Soil					
		Tak	ing output = 18 Meter					
		a)	Labour					
			For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.100	0.100	0.100	
			Mazdoor	day	1.170	1.557	1.557	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For both installation and removal					
			of machinery and equipment of boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			, ,	,				

C# No	Ref. to M		Description	l lmit	Quantity a	s per projec	t category	Rate
Sr No	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			For installation and removal of					
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)					
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)-110	meter	18.540	18.540	18.540	
			mm					
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	6.289	6.289	6.289	
		d)	Overhead charges		@ on	@ on	@ on	
		u,	Overnead charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		٠,	contractor o prom		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 18 meter = a+b+c+d+e		,	, ,	,	
		Rat	e per meter = (a+b+c+d+e)/ 18					
	_							
	С		oble/Cobble Stone					
			ing output =14 Meter					
		a)	Labour					
			For boring work	مامر ،	0.212	0.212	0.212	
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material	day	0.053	0.052	0.053	
			Mate	day day	1.117	0.053 1.486	1.486	
			Mazdoor	•	0.205	0.272	0.272	
			Mazdoor (Skilled)	day	0.205	0.272	0.272	
			For both installation and removal of machinery and equipment of					
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of	~~,				
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
				,				

					Quantity a	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
					Laige	Wicalani	Siliuli	(1.0.)
		b)	Machinery					
		~,	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)		3.000			
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)-110 mm	meter	14.420	14.420	14.420	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	4.891	4.891	4.891	
			including 5% wastage		_		_	
		d)	Overhead charges		@ on	@ on	@ on	
		۵,	Contractorio munit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		e)	Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 14 meter = a+b+c+d+e		(arbiciu)	(4.5.5.4)	(4.5.6.4)	
			e per meter = (a+b+c+d+e)/ 14					
			(0.0.0.0.0.7.2.7					
	D	Soft	t Rock					
		Tak	ing output = 17 Meter					
		a)	Labour					
			For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.056	0.056	0.056	
			Mazdoor	day	1.157	1.539	1.539	
			Mazdoor (Skilled)	day	0.249	0.331	0.331	
			For both installation and removal					
			of machinery and equipment of					
			boring works	day	0.224	0.234	0.234	
			Mate Mazdoor	day day	0.234 3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of	uay	2.334	2.554	2.554	
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery	,				
		•	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)					

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

C., N	Daf 4- 84		Decement!	11!*	Quantity as per project category			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
						2.500	2.600	
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
		۵۱	temporary stage) Materials					
		c)	Polyvinyl Chloride Pipe (PVC)-110	meter	17.510	17.510	17.510	
			mm		27.020	27.020	27.020	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	5.939	5.939	5.939	
		d)	including 5% wastage Overhead charges		@ on	@ on	@ on	
		u,	Overnedd charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		-	•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 17 meter = a+b+c+d+e					
		Rate	e per meter = (a+b+c+d+e)/ 17					
	(ii)	Dr	illing length from 50.0 Meter - 80					
	(11)		eter					
	Α	San	dy Soil / Cohesive Soil					
			ing output =20 Meter					
		a)	Labour					
		۳,	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.060	0.060	0.060	
			Mazdoor	day	1.197	1.592	1.592	
			Mazdoor (Skilled)	day	0.293	0.389	0.389	
			For both installation and removal	•				
			of machinery and equipment of					
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain		0.404	0.404	0.404	
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
		b)	Mazdoor (Skilled) Machinery	day	4.522	4.522	4.522	
		D)		hour	9 000	9 000	9 000	
			Boring Machine Grout Pump	hour hour	8.000 8.000	8.000 8.000	8.000 8.000	
			Crawler Crane- 5 tonne (for	hour	0.000	5.600	5.600	
			installation and removal of machinery and equipment)	noul	5.600	3.000	5.000	
			Crawler Crane- 5 tonne (for	hour	2 600	3.600	3.600	
		_,	temporary stage)		3.600			
		c)	Materials		20.500	20.000	20.500	
			Polyvinyl Chloride Pipe (PVC)-110	meter	20.600	20.600	20.600	

Sr No Ref. to M Description Unit						Quantity a	s per projec	t category	Rate
Core tube (drilling bit) Core tube (drilling pipe) Core tube (Inner rod) Core tube (Inner rod) Core tube (Inner rod) Nos. 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textlie for wrapping the pipe including 5% wastage d) Overhead charges d) Overhead charges d) Overhead charges e) Contractor's profit e) Contractor's profit Cost for 20.0 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/20 B Gravelly Soil Taking output = 15 Meter a) Labour For boring work Mate Mazdoor (Skilled) For installation and removal of machinery and equipment of boring works Mate Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) For both installation and removal of machinery stage in flat terrain Mate Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Gay 0.234 0.234 0.234 0.234 Mazdoor (Skilled) Mazdoor (Skilled) Aday 0.299 2.399 For both installation and removal of temporary stage in flat terrain Mate Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Gay 7.581 7.581 7.581 7.581 Mazdoor (Skilled) Mazdoor (Skilled	Sr No	Ref. to M		Description	Unit				(Rs.)
Core tube (drilling pipe)			ı			Laige	Wiediaiii	Jiliali	(113.)
Core tube (drilling pipe)				Core tube (drilling bit)	Nos	0.416	0.416	0.416	
Core tube (Inner rod)									
Geo-textile for wrapping the pipe including 5% wastage d) Overhead charges @ on									
including 5% wastage d) Overhead charges @ on @ on @ on @ on @ on (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) @ on @ on @ on @ on (a+b+c+d) (a+b+c+d) Cost for 20.0 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/ 20 B Gravelly Soil Taking output = 15 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 0.213 Mazdoor (skilled) day 1.330 1.330 1.330 1.330 For installation of pipe material Mate day 0.054 0.0									
Contractor's profit					34111	0.500	0.500	0.500	
(a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c+d) (a			d)			@ on	@ on	@ on	
e) Contractor's profit Cost for 20.0 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/ 20 B Gravelly Soil Taking output = 15 Meter a) Labour For boring work Mate Mazdoor Mazdoor (Skilled) Mardoor (Skilled) Mazdoor (Skilled) For installation and removal of temporary stage in flat terrain Mate Mazdoor (Skilled) Mazdoor (Skilled) For installation and removal of mazdoor (Skilled) Mazdoor (Skilled) For installation and removal of temporary stage in flat terrain Mate Mazdoor (Skilled) Mazdoor (Skilled) For installation and removal of temporary stage in flat terrain Mate Mazdoor (Skilled)			ω,	o vermeda enarges		_	•	_	
Cost for 20.0 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/ 20			e)	Contractor's profit			-	-	
B Gravelly Soil Taking output = 15 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 0.213 Mazdoor (Skilled) day 1.330 1.330 1.330 Eor installation of pipe material Mate day 0.054 0.054 0.054 0.054 Mazdoor (Skilled) day 0.219 0.292 0.292 0.292 0.292 Eor both installation and removal of machinery and equipment of boring works Mazdoor (Skilled) day 0.234 0.234 0.234 0.234 0.234 Mazdoor (Skilled) day 0.234			-,			_	•	_	
B Gravelly Soil Taking output = 15 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.054 0.054 0.054 Mazdoor (Skilled) day 0.219 0.292 0.292 Corawler Coraw			Cos	t for 20.0 meter = a+b+c+d+e					
Taking output = 15 Meter a) Labour For boring work Mate day 0.213 0.213 0.213 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mate day 0.054 0.054 0.054 Mazdoor (Skilled) day 1.131 1.504 1.504 Mazdoor (Skilled) day 0.219 0.292 0.292 For both installation and removal of machinery and equipment of boring works Mazdoor (Skilled) day 0.234 0.234 0.234 Mazdoor (Skilled) day 3.458 3.458 3.458 Mazdoor day 7.581 7.581 Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 Mazdoor day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour 5.600 3.600 Torwing Crane 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 3.600 3.600 Crawler Crane- 5 tonne (for hour 5.600 3.			Rat	e per meter = (a+b+c+d+e)/ 20					
a) Labour For boring work Mate		В	Gra	velly Soil					
For boring work Mate			Tak	ing output = 15 Meter					
Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mazdoor day 0.054 0.054 0.054 Mazdoor (Skilled) day 0.219 0.292 0.292 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234 Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Maxedoor day 0.484 0.484 0.484 Mazdoor (Skilled) day 4.522 4.522 4.522 4.522 Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour			a)	Labour					
Mate day 0.213 0.213 0.213 Mazdoor day 3.990 3.990 3.990 Mazdoor (Skilled) day 1.330 1.330 1.330 For installation of pipe material Mazdoor day 0.054 0.054 0.054 Mazdoor (Skilled) day 0.219 0.292 0.292 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234 Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Maxedoor day 0.484 0.484 0.484 Mazdoor (Skilled) day 4.522 4.522 4.522 4.522 Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour			-	For boring work					
Mazdoor (Skilled)				Mate	day	0.213	0.213	0.213	
For installation of pipe material Mate				Mazdoor	day	3.990	3.990	3.990	
Mate day 0.054 0.054 0.054 Mazdoor day 1.131 1.504 1.504 Mazdoor (Skilled) day 0.219 0.292 0.292 For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234 Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor (Skilled) day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 5.600 5.600 <td< td=""><td></td><td></td><td></td><td>Mazdoor (Skilled)</td><td>day</td><td>1.330</td><td>1.330</td><td>1.330</td><td></td></td<>				Mazdoor (Skilled)	day	1.330	1.330	1.330	
Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Mazdoor (Skilled) Maxdoor (Skilled) Mazdoor Mazdoor Mazdoor Mazdoor Mazdoor Mazdoor Mazdoor Mazdoor (Skilled) Mazdoor Mazdoor (Skilled) Mazdoor Mazd				For installation of pipe material					
Mazdoor (Skilled)				Mate	day	0.054	0.054	0.054	
For both installation and removal of machinery and equipment of boring works Mate day 0.234 0.234 0.234 Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 machinery and equipment) Crawler Crane- 5 tonne (for hour 3.600 3.600 3.600 temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling pipe) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe including 5% wastage d) Overhead charges @ on @ on @ on				Mazdoor	day	1.131	1.504	1.504	
of machinery and equipment of boring works Mate day 0.234 0.234 0.234 Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 8.000 8.000 8.000 6.600 5.60				Mazdoor (Skilled)	day	0.219	0.292	0.292	
Mate May 0.234 0.234 0.234 Mazdoor May 3.458 3.458 3.458 Mazdoor May 2.394				For both installation and removal					
Mate day 0.234 0.234 0.234 Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 bi Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of 5.600 3.600 3.600 temporary stage) 3.600 3.600 3.600 c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (Inner rod) </td <td></td> <td></td> <td></td> <td>of machinery and equipment of</td> <td></td> <td></td> <td></td> <td></td> <td></td>				of machinery and equipment of					
Mazdoor day 3.458 3.458 3.458 Mazdoor (Skilled) day 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of 5.600 5.600 5.600 machinery and equipment) 7.560 7.560 7.560 Crawler Crane- 5 tonne (for hour 3.600 3.600 3.600 Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 Core tube (drilling bit) Nos 0.416 0.416 0.416 0.416 <td></td> <td></td> <td></td> <td>boring works</td> <td></td> <td></td> <td></td> <td></td> <td></td>				boring works					
Mazdoor (Skilled) day 2.394 2.394 2.394 2.394 For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4				Mate	day	0.234	0.234	0.234	
For installation and removal of temporary stage in flat terrain Mate day 0.484 0.484 0.484 Mazdoor (Skilled) day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour 5.600 3.600 3.600 temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on @ on				Mazdoor	day	3.458	3.458	3.458	
temporary stage in flat terrain Mate Mate Mazdoor day 7.581 7.581 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 Machinery Boring Machine Grout Pump hour Crawler Crane- 5 tonne (for hour installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 mm Core tube (drilling bit) Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Gay 7.581 8.000 8.				Mazdoor (Skilled)	day	2.394	2.394	2.394	
Mate day 0.484 0.484 0.484 Mazdoor day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of 5.600 3.600 3.600 crawler Crane- 5 tonne (for hour 3.600 3.600 temporary stage) Naterials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (Inner rod) Nos. 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 Geo-textile for wrapping the pipe including 5% wastage @ on @ on @ on @ on <td></td> <td></td> <td></td> <td>For installation and removal of</td> <td></td> <td></td> <td></td> <td></td> <td></td>				For installation and removal of					
Mazdoor day 7.581 7.581 7.581 Mazdoor (Skilled) day 4.522 4.522 4.522 b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for installation and removal of machinery and equipment) 5.600 5.600 Crawler Crane- 5 tonne (for temporary stage) hour temporary stage) 3.600 3.600 3.600 C) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos 0.288 0.288 0.288 Geo-textile for wrapping the pipe including 5% wastage 60 on 60 on 60 on 60 on									
Mazdoor (Skilled) day 4.522 4.522 4.522					· -				
b) Machinery Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour 3.600 3.600 temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on					=				
Boring Machine hour 8.000 8.000 8.000 Grout Pump hour 8.000 8.000 8.000 Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour 3.600 3.600 temporary stage) C) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on					day	4.522	4.522	4.522	
Grout Pump			b)	-					
Crawler Crane- 5 tonne (for hour 5.600 5.600 installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on				_					
installation and removal of machinery and equipment) Crawler Crane- 5 tonne (for hour temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on						8.000			
machinery and equipment) Crawler Crane- 5 tonne (for hour temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on				·	hour	_	5.600	5.600	
Crawler Crane- 5 tonne (for temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on						5.600			
temporary stage) c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on									
c) Materials Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on				•	hour	3.600	3.600	3.600	
Polyvinyl Chloride Pipe (PVC)-110 meter 15.450 15.450 15.450 mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on									
mm Core tube (drilling bit) Nos 0.416 0.416 0.416 Core tube (drilling pipe) Nos 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on			c)		t	15 450	15 450	15 450	
Core tube (drilling pipe) Nos 0.224 0.224 Core tube (Inner rod) Nos. 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 including 5% wastage d) Overhead charges @ on @ on @ on					meter	15.450	15.450	15.450	
Core tube (Inner rod) Nos. 0.288 0.288 0.288 Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on				Core tube (drilling bit)	Nos	0.416	0.416	0.416	
Geo-textile for wrapping the pipe sqm 5.241 5.241 5.241 including 5% wastage d) Overhead charges @ on @ on @ on				Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
including 5% wastage d) Overhead charges @ on @ on @ on				Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
d) Overhead charges @ on @ on @ on					sqm	5.241	5.241	5.241	
(a+b+c) (a+b+c) (a+b+c)			d)	Overhead charges		_	_	_	
						(a+b+c)	(a+b+c)	(a+b+c)	

					Quantity a	s per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
					Large	Wiediaiii	Jillali	(11.5.)
		e)	Contractor's profit		@ on	@ on	@ on	
		Coo	t for 15 mater - achieved a		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			st for 15 meter = a+b+c+d+e					
		Kat	e per meter = (a+b+c+d+e)/ 15					
	С	Ruk	oble/Cobble Stone					
	•		ring output = 11.7 Meter					
		a)	Labour					
		ω,	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material		2.000	2.555	2.000	
			Mate	day	0.050	0.050	0.050	
			Mazdoor	day	1.087	1.445	1.445	
			Mazdoor (Skilled)	day	0.171	0.228	0.228	
			For both installation and removal of machinery and equipment of	•				
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain	day	0.404	0.404	0.494	
			Mate Mazdoor	day	0.484 7.581	0.484 7.581	0.484 7.581	
			Mazdoor (Skilled)	day day	7.581 4.522	7.581 4.522	7.581 4.522	
		b)	Machinery	uay	4.322	4.322	4.322	
		IJ	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	5.600	5.600	5.600	
			installation and removal of machinery and equipment)	noui	3.000	3.000	3.000	
			Crawler Crane- 5 tonne (for temporary stage)	hour	3.600	3.600	3.600	
		c)	Materials					
		•	Polyvinyl Chloride Pipe (PVC)-110 mm	meter	12.051	12.051	12.051	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	4.088	4.088	4.088	
			including 5% wastage	•				
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	st for 11.7 meter = a+b+c+d+e			•	•	
		Rat	te per meter = (a+b+c+d+e)/ 11.7					

	56			Quantity a	s per project	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
							<u>'</u>
	D	Soft Rock					
		Taking output = 14.2 Meter					
		a) Labour					
		For boring work					
		Mate	day	0.213	0.213	0.213	
		Mazdoor	day	3.990	3.990	3.990	
		Mazdoor (Skilled)	day	1.330	1.330	1.330	
		For installation of pipe m					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	1.120	1.489	1.489	
		Mazdoor (Skilled)	day	0.208	0.276	0.276	
		For both installation and					
		of machinery and equipn boring works	ient oi				
		Mate	day	0.234	0.234	0.234	
		Mazdoor	day	3.458	3.458	3.458	
		Mazdoor (Skilled)	day	2.394	2.394	2.394	
		For installation and remo	· ·	2.33 1	2.55 1	2.33 .	
		temporary stage in flat to					
		Mate	day	0.484	0.484	0.484	
		Mazdoor	day	7.581	7.581	7.581	
		Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b) Machinery	•				
		Boring Machine	hour	8.000	8.000	8.000	
		Grout Pump	hour	8.000	8.000	8.000	
		Crawler Crane- 5 tonne (f	or hour	5.600	5.600	5.600	
		installation and removal o	•				
		machinery and equipmen	t)				
		Crawler Crane- 5 tonne (f temporary stage)	or hour	3.600	3.600	3.600	
		c) Materials					
		Polyvinyl Chloride Pipe (P mm	VC)-110 meter	14.626	14.626	14.626	
		Core tube (drilling bit)	Nos	0.416	0.416	0.416	
		Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
		Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
		Geo-textile for wrapping	the pipe sqm	4.961	4.961	4.961	
		including 5% wastage					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	(3+p+c+q)	@ on (a+b+c+d)	
		Cost for 14.2 meter = a+b+c+d	+e	(a+v+c+u)	(a+b+c+d)	(ατυτίτα)	
		Rate per meter = $(a+b+c+d+e)$					
7.13	suggestive	Horizontal Drainage Boring (N Diameter of drilling pipe- 135					
		Horizontal Drainage Boring me	thods on				
		the types of Sandy Soil / Coh					
		and drilling length including of					
		materials, machinery, labour					
		other ancillary operations etc	Isnimovi).				

Sr No	Dof to M		Doscription	l lmi+	Quantity a	s per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		Dian	neter of drilling pipe- 90 mm)					
			ninal Diameter of drilling pipe- 135					
		mm.	= : :					
			= Running Meter					
	(i)	Drill	ing length below bed level upto Meter					
	Α		dy Soil / Cohesive Soil					
			ng output = 20 Meter					
			Labour					
		,	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material	1		-		
			Mate	day	0.026	0.026	0.026	
			Mazdoor	day	0.359	0.478	0.478	
			Mazdoor (Skilled)	day	0.293	0.389	0.389	
			For both installation and removal	,				
			of machinery and equipment of					
			boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour		5.600	5.600	
			installation and removal of		5.600			
			machinery and equipment)	h		2 (00	2 (00	
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
		c)	temporary stage) Materials					
		c)	Polyvinyl Chloride Pipe (PVC)-135	meter	20.600	20.600	20.600	
			mm	meter	20.000	20.000	20.000	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.410	0.410	0.410	
			Core tube (Inner rod)	Nos.	0.224	0.224	0.224	
			Geo-textile for wrapping the pipe	sqm	6.988	6.988	6.988	
			including 5% wastage	34111	5.550	5.500	3.330	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	

Cost for 20 meter = a+b+c+d+e Rate per meter = (a+b+c+d+e)/ 20

Cr. N	Def 4- 24		December 1	11**	Quantity a	as per projec	t category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
	_	6	wells 6-11					
	В		ivelly Soil					
		так а)	ing output = 15 Meter Labour					
		aj	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material	,	2.000	2.555	2.000	
			Mate	day	0.020	0.020	0.020	
			Mazdoor	day	0.293	0.389	0.389	
			Mazdoor (Skilled)	day	0.219	0.292	0.292	
			For both installation and removal					
			of machinery and equipment of boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for installation and removal of machinery and equipment)	hour	5.600	5.600	5.600	
			Crawler Crane- 5 tonne (for temporary stage)	hour	3.600	3.600	3.600	
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)-135 mm	meter	15.450	15.450	15.450	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	5.241	5.241	5.241	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 15 meter = a+b+c+d+e					
		Rat	e per meter = (a+b+c+d+e)/ 15					
	С		oble/Cobble Stone					
			ing output = 13 Meter					
		a)	Labour					
			For boring work	. بجام	0.242	0.343	0.242	
			Mate	day	0.213	0.213	0.213	
			Mazdoor Mazdoor (Skilled)	day day	3.990 1.330	3.990 1.330	3.990 1.330	
			Mazaooi (Skillea)	uay	1.330	1.330	1.330	

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

r No	Ref. to M		Description	Unit	Quantity a	s per projec	t category	R
OF INO	rei. to ivi		Description	Unit	Large	Medium	Small	(F
			For installation of pipe material					
			Mate	day	0.018	0.018	0.018	
			Mazdoor	day	0.266	0.354	0.354	
			Mazdoor (Skilled)	day	0.190	0.253	0.253	
			For both installation and removal of machinery and equipment of boring works					
			Mate	day	0.234	0.234	0.234	
			Mazdoor	day	3.458	3.458	3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of temporary stage in flat terrain	,				
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery	,				
		-,	Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for installation and removal of machinery and equipment)	hour	5.600	5.600	5.600	
			Crawler Crane- 5 tonne (for temporary stage)	hour	3.600	3.600	3.600	
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)-135 mm	meter	13.390	13.390	13.390	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	4.542	4.542	4.542	
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	
		Cos	t for 13 meter = a+b+c+d+e		(атытсти)	(атытсти)	(атытсти)	
			e per meter = (a+b+c+d+e)/ 13					
	D		Rock					
			ing output = 15 Meter					
		a)	Labour					
			For boring work		0.242	0.242	0.242	
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.020	0.020	0.020	
			Mazdoor	day	0.293	0.389	0.389	
			Mazdoor (Skilled)	day	0.219	0.292	0.292	

C N -	D-6 4- 14		Describition	11	Quantity a	s per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			For both installation and removal					
			of machinery and equipment of					
			boring works	da	0.224	0.224	0.224	
			Mate Mazdoor	day day	0.234 3.458	0.234 3.458	0.234 3.458	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of	uay	2.334	2.334	2.334	
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery	•				
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	5.600	5.600	5.600	
			installation and removal of					
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
			temporary stage)					
		c)	Materials		45.450	45.450	45.450	
			Polyvinyl Chloride Pipe (PVC)-135	meter	15.450	15.450	15.450	
			mm	Nos	0.416	0.416	0.416	
			Core tube (drilling bit) Core tube (drilling pipe)	Nos Nos	0.416 0.224	0.416 0.224	0.416 0.224	
			Core tube (Inner rod)	Nos.	0.224	0.224	0.224	
			Geo-textile for wrapping the pipe	sqm	5.241	5.241	5.241	
			including 5% wastage	34111	3.241	3.271	3.241	
		d)	Overhead charges		@ on	@ on	@ on	
		,			(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		`@ on	`@ on	`@ on	
		-			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 15 meter = a+b+c+d+e					
		Rat	e per meter = (a+b+c+d+e)/ 15					
	(ii)	Dril met	ling length from 50.0 Meter - 80 ter					
	Α	San	dy Soil / Cohesive Soil					
	A		ing output = 16.7 Meter					
			Labour					
		aj	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	•	1.330	1.330	1.330	
				day	1.550	1.550	1.550	
			For installation of pipe material	ala	0.022	0.022	0.022	
			Mate	day	0.022	0.022	0.022	
			Mazdoor	day	0.306	0.407	0.407	
			Mazdoor (Skilled)	day	0.244	0.325	0.325	
			For both installation and removal of machinery and equipment of boring works					
			Mate	day	0.245	0.245	0.245	
			Mazdoor	day	3.724	3.724	3.724	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			Mazaooi (Skillea)	uay	۷.334	2.334	2.334	

C:: No	Dof to M		Description	l locia	Quantity a	s per projec	t category	Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)	
			For installation and removal of						
			temporary stage in flat terrain						
			Mate	day	0.484	0.484	0.484		
			Mazdoor	day	7.581	7.581	7.581		
			Mazdoor (Skilled)	day	4.522	4.522	4.522		
		b)	Machinery		0.000	0.000	0.000		
			Boring Machine	hour	8.000	8.000	8.000		
			Grout Pump	hour	8.000	8.000	8.000		
			Crawler Crane- 5 tonne (for installation and removal of	hour	5.600	5.600	5.600		
			machinery and equipment)		5.000				
			Crawler Crane- 5 tonne (for	hour		3.600	3.600		
			temporary stage)	noui	3.600	3.000	3.000		
		c)	Materials						
		٠,	Polyvinyl Chloride Pipe (PVC)-135	meter	17.201	17.201	17.201		
			mm						
			Core tube (drilling bit)	Nos	0.416	0.416	0.416		
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224		
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288		
			Geo-textile for wrapping the pipe	sqm	5.835	5.835	5.835		
			including 5% wastage	-					
		d)	Overhead charges		@ on	@ on	@ on		
					(a+b+c)	(a+b+c)	(a+b+c)		
		e)	Contractor's profit		@ on	@ on	@ on		
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)		
			st for 16.7 meter = a+b+c+d+e						
		Rat	e per meter = (a+b+c+d+e)/ 16.7						
	В	C=-	wells Sail						
	В		ivelly Soil ing output = 12.5 Meter						
		a)	Labour						
		aj	For boring work						
			Mate	day	0.213	0.213	0.213		
			Mazdoor	day	3.990	3.990	3.990		
			Mazdoor (Skilled)	day	1.330	1.330	1.330		
			For installation of pipe material	uay	1.550	1.550	1.550		
			Mate	day	0.017	0.017	0.017		
			Mazdoor	day	0.250	0.333	0.333		
			Mazdoor (Skilled)	day	0.183	0.243	0.243		
			For both installation and removal	aay	0.103	0.243	0.243		
			of machinery and equipment of						
			boring works						
			Mate	day	0.245	0.245	0.245		
			Mazdoor	day	3.724	3.724	3.724		
			Mazdoor (Skilled)	day	2.394	2.394	2.394		
			For installation and removal of	,					
			temporary stage in flat terrain						
			Mate	day	0.484	0.484	0.484		
			Mazdoor	day	7.581	7.581	7.581		
			Mazdoor (Skilled)	day	4.522	4.522	4.522		

	- 6				Quantity a	ıs per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
								•
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	5.600	5.600	5.600	
			installation and removal of					
			machinery and equipment)	la a con	2.600	2.600	2.600	
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
		c)	temporary stage) Materials					
		c)	Polyvinyl Chloride Pipe (PVC)-135	meter	12.875	12.875	12.875	
			mm	meter	12.073	12.073	12.073	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	4.367	4.367	4.367	
			including 5% wastage	•				
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 12.5 meter = a+b+c+d+e					
		Rat	e per meter = (a+b+c+d+e)/ 12.5					
	•	D I	-hl-/C-hhl-Ch-n-					
	С		oble/Cobble Stone					
		a)	ing output = 10.8 Meter Labour					
		aj	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material	aay	1.550	1.550	1.550	
			Mate	day	0.015	0.015	0.015	
			Mazdoor	day	0.227	0.227	0.227	
			Mazdoor (Skilled)	day	0.158	0.158	0.158	
			For both installation and removal	•				
			of machinery and equipment of					
			boring works					
			Mate	day	0.245	0.245	0.245	
			Mazdoor	day	3.724	3.724	3.724	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of					
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
		۴,	Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery Paring Machine	ha	0.000	0.000	0.000	
			Boring Machine Grout Rump	hour	8.000	8.000	8.000	
			Grout Pump Crawler Crane- 5 tonne (for	hour hour	8.000 5.600	8.000 5.600	8.000 5.600	
			installation and removal of	Hour	3.000	3.000	5.000	
			machinery and equipment)					
			Crawler Crane- 5 tonne (for	hour	5.600	5.600	5.600	
					3.000	2.000	000	

					Quantity a	Rate		
Sr No	Ref. to M		Description	Unit	Quantity as per project categor Large Medium Smal			(Rs.)
		<u> </u>			=0.80	· · · · · · · · · · · · · · · · · · ·	Ja	(/
			temporary stage)					
		c)	Materials					
			Polyvinyl Chloride Pipe (PVC)-135	meter	11.124	11.124	11.124	
			mm					
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe	sqm	3.773	3.773	3.773	
			including 5% wastage		_	_	_	
		d)	Overhead charges		@ on	@ on	@ on	
		٠,١	Combinatoula muafit		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 10.8 meter = a+b+c+d+e		(arbiciu)	(arbiciu)	(arbiciu)	
			e per meter = (a+b+c+d+e)/ 10.8					
		· · · ·	e per meter = (a.b.e.a.e)/ 1010					
	D	Soft	t Rock					
		Tak	ing output = 12.5 Meter					
		a)	Labour					
		-	For boring work					
			Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			For installation of pipe material					
			Mate	day	0.017	0.017	0.017	
			Mazdoor	day	0.250	0.333	0.333	
			Mazdoor (Skilled)	day	0.183	0.183	0.183	
			For both installation and removal					
			of machinery and equipment of boring works					
			Mate	day	0.245	0.245	0.245	
			Mazdoor	day	3.724	3.724	3.724	
			Mazdoor (Skilled)	day	2.394	2.394	2.394	
			For installation and removal of	aay	2.33 1	2.55	2.33	
			temporary stage in flat terrain					
			Mate	day	0.484	0.484	0.484	
			Mazdoor	day	7.581	7.581	7.581	
			Mazdoor (Skilled)	day	4.522	4.522	4.522	
		b)	Machinery					
			Boring Machine	hour	8.000	8.000	8.000	
			Grout Pump	hour	8.000	8.000	8.000	
			Crawler Crane- 5 tonne (for	hour	5.600	5.600	5.600	
			installation and removal of					
			machinery and equipment)	la a con	2.600	2.600	2.600	
			Crawler Crane- 5 tonne (for	hour	3.600	3.600	3.600	
		c)	temporary stage) Materials					
		٠,	Polyvinyl Chloride Pipe (PVC)-135	meter	12.875	12.875	12.875	
			mm	metel	12.073	12.073	12.0/3	
			Core tube (drilling bit)	Nos	0.416	0.416	0.416	
			Core tube (drilling pipe)	Nos	0.224	0.224	0.224	

					Quantity as per project category			
Sr No	Ref. to M	Description		Unit	Large Medium Small			Rate (Rs.)
	ı				1 0		<u> </u>	
			Core tube (Inner rod)	Nos.	0.288	0.288	0.288	
			Geo-textile for wrapping the pipe including 5% wastage	sqm	4.367	4.367	4.367	
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	
		Cos	t for 12.5 meter = a+b+c+d+e		((,	(,	
		Rat	e per meter = (a+b+c+d+e)/ 12.5					
7.14	710.1.4.of IRC:78 & 2200	wal	ected fill behind Reinforced Earth I complete as per drawing and hnical Specification					
	Α	Gra	nular material					
		Uni	t = cum					
		Tak	ing output = 250 cum					
		a)	Labour					
			Mate	day	0.106	0.106	0.106	
			Mazdoor skilled	day	1.330	1.330	1.330	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Motor Grader					
			(i) Motor grader 4.30 metre blade	hour	1.382			
			(ii) Motor grader 3.70 metre blade	hour		1.668		
			(iii) Motor grader 3.35 metre blade	hour			1.859	
			Vibratory roller	hour	1.445	1.445	1.445	
			Water tanker (speed @ Water tanker speedkm/hr and return speed @ 10 km/hr and spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.583 x L1 + 0.467			
			(ii) 12 KL capacity	hour		0.778 x L1 + 0.622		
			(iii) 6 KL capacity	hour			1.556 x L1 + 1.244	
		c)	Material		42.25-	46.05-	40.00-	
			Cost of water	KL	42.000	42.000	42.000	
			Granular material	cum	300.000	300.000	300.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 250 cum of granular backfill = a+b	+c+d+e	•	ŕ	·	
		Rat	e per cum = (a+b+c+d+e)/ 250					

	Ref. to M	Description	Unit	Quantity as per project category				
Sr No		Description		Large	Medium	Small	(Rs.)	
7.14	В		ndy material					
		_	it = cum					
			ring output = 450 cum					
		a)						
			Mate	day	0.106	0.106	0.106	
			Mazdoor	day	2.660	2.660	2.660	
		b)	Machinery					
			Motor grader for grading	la accesa	2.400			
			(i) Motor grader 4.30 metre blade	hour	2.488	2.002		
			(ii) Motor grader 3.70 metre blade	hour		3.002	2 247	
			(iii) Motor grader 3.35 metre blade	hour			3.347	
			Water tanker (speed @ Water					
			tanker speed km/hr. and return					
			speed @ 10 km/hr. and spreading					
			speed @ 2.5 Km/hr.)					
			(i) 16 KL capacity	hour	0.5 x L1 + 0.864			
			(ii) 12 KL capacity	hour		0.667 x L1 + 1.152		
			(iii) 6 KL capacity	hour			1.333 x L1 + 2.304	
			Vibratory roller	hour	2.601	2.601	2.601	
		c)	Material					
			Cost of water	KL	36.000	36.000	36.000	
			Sand at site	cum	450.000	450.000	450.000	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		_	. 6 . 450		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 450 cum = a+b+c+d+e te per cum = (a+b+c+d+e)/ 450					
7.15	710.1.4.of		viding and laying of Filter media with					
	IRC:78	_	nular materials / stone crushed					
	and		regates satisfying the requirements					
	2504.2		I down in clause 2504.2.2. of MoRTH					
		•	cifications to a thickness of not less					
			n 600 mm with smaller size towards					
			soil and bigger size towards the wall					
			d provided over the entire surface					
			nind abutment, wing wall and return					
			Il to the full height compacted to a					
			n condition complete as per drawing					
			Technical Specification.					
		_	it = cum					
			king output = 10 cum.					
		a)	Labour					
			Mate	day	0.426	0.426	0.426	
			Mazdoor for filling, watering,	day	9.310	9.310	9.310	
			ramming etc.					
			Mazdoor (Skilled)	day	1.330	1.330	1.330	

Sr No	Ref. to M	Description	Unit	Quantity a	s per projec	t category	Ra
JI INU	ver to M	Description	Oiiit	Large	Medium	Small	(R
		b) Material		12.000	12 000	12.000	
		Filter media of stone aggregate		12.000	12.000	12.000	
		conforming to clause 2504.2.2. of MoRTH specifications.					
		c) Machinery	hour	0.060	0.060	0.060	
		Water Tanker of 6 KL capacity	hour	0.060	0.060	0.060	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		e) Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		cost for 10 cum of Filter Media = a+b+c+	d+e				
		Rate per cum = (a+b+c+d+e)/ 10					
7.16	704	Supplying & laying of drainage					
		composite for use behind walls with					
		Geo synthetic Drainage Composite					
7.16	Α	Supplying & laying of drainage					
		composite for use behind walls,					
		between two different fills, alongside					
		drains of road, below concrete lining of					
		canals etc. Geocomposite for drainage,					
		realized by thermobonding a draining					
		core in extruded monofilaments with					
		two filtering nonwoven geotextiles that					
		may also be working as separation or protecting layers. The draining three					
		dimensional core will have a "W"					
		configuration as longitudinal parallel					
		channels. Minimum thickness to be					
		7.2mm, with two filtering UV stabilized					
		polypropylene nonwoven geotextile of					
		minimum thickness of 0.75 mm having					
		pores of 150 micron and tensile					
		strength of 8.0 kN/m that will be					
		working as separation or protecting layer, geocomposite having in plane					
		flow capacity of 2.1 L / (m.s) at					
		hydraulic gradient of 1.0 & 20 kpa					
		pressure and tensile strength of 18					
		kN/m , with mass per unit area of 740					
		gsm, supplied in the form of roll for easy					
		transportation to site of work as per					
		detailed specification all complete as					
		per directions of Engineer in charge.					
		Unit = Sqm					
		Taking output = 300 Sqm					
		a) Labour					
		Mate	day	0.266	0.266	0.266	
		Mazdoor	day	3.990	3.990	3.990	
		Mazdoor (Skilled)	day	2.660	2.660	2.660	
		b) Material					

C: No	Def to M	Description	Quantity as		s per projec	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Geo synthetic Drainage Composite Add 10 Percent of the cost of synthetic Composits for wastage and accessories for joining sheets with the fascia pannels, overlaps and other protective elements for synthetic Composites and other miscellaneous activities required to complete the item in all respect including transportation & takes.	sqm	300.000	300.000	300.000	
		c) Overhead charges		@ on	@ on	@ on	
		d) Contractor's profit		(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	
		Cost for 300 sqm = a+b+c+d					
		Rate per sqm = $(a+b+c+d)/300$					
7.16	В	Supplying & laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. having thermos bonding a draining core - HDPE geo net comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyethylene film and a nonwoven geotextile having mass per unit area 130 g/m2 and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, geo composite having in plane flow capacity of 0.7 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 13.5 kN/m, with mass per unit area of 830 gsm, at easily accessible location including top and bottom, with all leads and lifts, manpower and machinery, materials, labour etc. complete and as directed by Engineer - In - Charge.					
		Taking output = 300 Sqm					
		a) Labour		0.265	0.055	0.255	
		Mate Mazdoor	day	0.266 3.990	0.266 3.990	0.266 3.990	
		Mazdoor Mazdoor (Skilled)	day day	3.990 2.660	3.990 2.660	3.990 2.660	
		b) Material Geo synthetic Drainage Composite Add 10 Percent of the cost of synthetic Composites for wastage and accessories for joining sheets with the fascia panels, overlaps and other protective elements for synthetic Composites and other	sqm	300.000	300.000	300.000	

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

Cu No	Dof to MA	Decement	l le !+	Quantity a	s per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		miscellaneous activities required to complete the item in all respect including transportation & takes. c) Overhead charges d) Contractor's profit Cost for 300 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/300		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
7.17	705	Geocell for Slope Protection Furnishing and installing of the Geocell for Slope Protection including fixing and anchoring of cells in the ground ,preparation of ground, filling of cells with specified materials, seeding, watering and all other incidentals including all other items to complete the work as per these specifications drawing or as directed by the engineer.					
		Unit = sqm					
		Taking output = 100 sqm					
		a) Labour Mate	day	0.080	0.080	0.080	
		Mazdoor for preparation of ground and laying of the Geocell	day	1.500	1.500	1.500	
		Skilled Mazdoor c) Material		0.500	0.500	0.500	
		Geocell Add 10 per cent of the cost of Geocell for wastage, overlaps and accessories for anchoring with the ground, other protective elements for Geocell and other miscelleneus activities required to complete the item in all respect including transpotarion & takes.	Sqm	100.000	100.000	100.000	
		d) Overhead chargese) Contractor's profit		@ 10% on (a+b+c) @ 10% on	@ 12% on (a+b+c) @ 10% on	(a+b+c)	
		Cost for 100 sqm = a+b+c+d+e Rate per sqm = (a+b+c+d+e)/100 For rate of soil filling, turfing/seeding, refe		(a+b+c+d)	(a+b+c+d)	_	

Note For rate of soil filling, turfing/seeding, refer relevant chapter-03.

7.18 706 Geosynthetics mat on the slope

Furnishing and installing of the Geosynthetics mat for control of erosion of slopes including supplying and laying the mat, spreading soil and seeding to promote the design of vegetation, watering and all other

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

Def to M	Description	Unit	Quantity a	s per project	category	Rate
Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	incidentals including all other items to complete the work as per these specifications drawing or as directed by the engineer. Unit = sqm					
	Taking output = 100 sqm a) Labour					
	Mate Mazdoor for preparation of ground	day day	0.080 1.500	0.080 1.500	0.080 1.500	
	and laying of the Geocell Skilled Mazdoor c) Material		0.500	0.500	0.500	
	Geosynthetics mat Add 10 per cent of the cost of Geosynthetics mat for wastage, overlaps and accessories for anchoring with the ground, other protective elements for Geosynthetics mat and other miscelleneus activities required to complete the item in all respect including transpotarion & takes.	Sqm	100.000	100.000	100.000	
	d) Overhead charges e) Contractor's profit		@ 10% on(a+b+c)@ 10% on(a+b+c+d)	@ 12% on (a+b+c)@ 10% on (a+b+c+d)	@ 15% on (a+b+c)@ 10% on (a+b+c+d)	
	Cost for 100 sqm = a+b+c+d+e Rate per sqm = (a+b+c+d+e)/100		,	,		

Note For rate of soil filling, turfing/seeding, refer relevant chapter-03.

7.19 707 Natural Geotextile on the slope

Sr No

Furnishing and installing of the natural geotextile for control of erosion of slopes including supplying and laying the natural geotextile, spreading soil and seeding to promote the design of vegetation, watering and all other incidentals including all other items to complete the work as per these specifications drawing or as directed by the engineer .

Unit = sqm

Taki	ng output = 100 sqm				
a)	Labour				
	Mate	day	0.080	0.080	0.080
	Mazdoor for preparation of ground and laying of the Geocell	day	1.500	1.500	1.500
	Skilled Mazdoor		0.500	0.500	0.500
c)	Material				
	Natural geotextile Add 10 per cent of the cost of natural geotextile for wastage, overlaps and accessories for anchoring with the ground, other	Sqm	100.000	100.000	100.000

CHAPTER: 7- GEOSYNTHETICS AND REINFORCED EARTH

6.11	5 () 14			Quantity as per project category				
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		d)	protective elements for natural geotextile and other miscelleneus activities required to complete the item in all respect including transpotarion & takes. Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			t for 100 sqm = a+b+c+d+e e per sqm = (a+b+c+d+e)/100		(3:2:0:4)	(2:2:0:0)	(3.2.0.0)	

Note:- For rate of soil filling, turfing/seeding, refer relevant chapter-03.

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TRAFFIC SIGNS, MARKINGS AND OTHER ROAD APPURTENANCES

PREAMBLES:

- 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 fabric with mesh size of 75 X 25 mm
 - c) Welded steel wire fabric with mesh size of 75 X 50 mm
- 3 Kerb stone laying and road marking has been provided for laying by mechanical means.
- 4 Back filling of foundation of boundary pillars has been proposed with stone spalls, tightly packed and compacted.
- The item pertaining to road traffic signals has not been analyzed as this is a specialized work and rates can be obtained from firms having specialization 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.
- Printing of letters and signs on item Nos. 18 to 21 is required to be measured and paid separately. A separate rate analysis for lettering has been prepared and included in this chapter for this purpose.
- Two supports have been provided for direction and place identification signs where size is more than 0.9 sqm. Only one is provided for size upto 0.9 sqm.
- 9 The Traffic signs proposed are of retro-reflectorized type made of encapsulated lens type reflective sheeting fixed over Aluminium sheeting as per Clause 801.3 and installation.
- 10 The size, location of traffic signs shall be as per IRC:67.
- 11 The analyses for rigid, semi-rigid and flexible crash barriers have been included.
- 12 Provision has been made for a crane for installation of overhead signs.
- 13 Separate rate analysis has been made for Tubular steel railing with RCC posts and MS steel posts.
- The organization and financial aspects are required to be finalized in consultation with administrative and traffic authorities.
- The rate for the message display board for gantry mounted variable message sign is required to be ascertained from the market, this being a commercially produced item by specialized firms.
- 16 The rate analyses for traffic impact attenuators at abutments and piers have been included.
- 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.
- 18 Ducts for Utility Services Along and Across the Expressway/Highway:

The running meter cost of duct along the road including inspection chambers (where applicable) or across the road depend upon the approved design. The various item involved are earthen work, plain cement

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TRAFFIC SIGNS, MARKINGS AND OTHER ROAD APPURTENANCES

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 meter 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.

20 Items and rate analysis for ATMS, HTMS and Solar Road Studs has been included.

Sr	r Ref. to M	Description	l lmia	Quantity as per project category			Rate
No	Ker. to IVI	Description	Unit	Large	Medium	Small	(Rs.)

Total Concrete = 11.610

8.01 409 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 on M-15 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 409

Unit = Running metre

Taking output = 360 meter

Using Concrete Batching and Mixing

Plant

(i) PCC M15 for Kerb base

a)	Labour									
	Mate	day	0.319	0.319	0.319					
	Mason	day	2.660	2.660	2.660					
	Mazdoor	day	5.320	5.320	5.320					
b)	Machinery									
	Transit truck agitator									
	For Transportation Transit truck agitator 6 cum capacity	t.Km	26.703 x L1	26.703 x L1	26.703 x L1					
	For loading & Unloading time	hour	3.729	3.729	3.729					
	Water tanker (speed @Water tanker speed km /hr. and return speed @ 10 km/hr. and spreading speed @ 3.0 Km/hr.)									
	(i) 16 KL capacity	hour	0.022 x L1 + 0.12							
	(ii) 12 KL capacity	hour		0.03 x L1 + 0.12						
	(iii) 6 KL capacity	hour			0.059 x L1 + 0.12					
c)	Material									
	Per Cum Basic Cost									
	(Rate taken from sub-analysis 21.21)	cum	11.610	11.610	11.610					
	Cost of water	KL	1.602	1.602	1.602					
d)	Overhead charges		@ on	@ on	@ on					
			(a+b+c)	(a+b+c)	(a+b+c)					
e)	Contractor's profit		@ on	@ on	@ on					
_	11 250		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)					
	Cost for 360 meter = a+b+c+d+e									
кat	Rate per metre = (a+b+c+d+e)/360									

Cum.

(ii) PCC M20 for Kerb Cast in Situ

Total Concrete = 12.600 Cum.

CHAPTER: 8- TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr	Sr Pof to M		Description		Quantity a	as per projec	ct category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Labour					
			Mate	day	0.080	0.080	0.080	
			Mason	day	0.665	0.665	0.665	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Kerb casting machine @ 120 metres/hour	hour	3.000	3.000	3.000	
			Transit truck agitator For Transportation Transit truck					
			agitator 6 cum capacity	t.Km	28.980 x L1	28.980 x L1	28.980 x L1	
			For loading & Unloading time	hour	3.140	3.140	3.140	
			Concrete cutting machine	hour	6.000	6.000	6.000	
			Water tanker (speed @ Water tanker speed km/hr and return speed @ 10 km/hr and spreading					
			speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.085 x L1 + 0.12			
			(ii) 12 KL capacity	hour		0.113 x L1 + 0.12		
			(iii) 6 KL capacity	hour			0.225 x L1 + 0.12	
		c)	Material					
			Per Cum Basic Cost		42.600	42.600	42.600	
			(Rate taken from sub-analysis 21.20)	cum	12.600	12.600	12.600	
			Cost of water	KL	6.086	6.086	6.086	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 360 meter = a+b+c+d+e		, ,	,	,	
		Rat	e per metre = (a+b+c+d+e)/360					
8.02	409		t in Situ Cement Concrete M 20 b with Channel					
			struction of cement concrete kerb					
		witl	h channel with top and bottom th 115 and 165 mm respectively,					
			mm high in M 20 grade PCC on					
			5 grade foundation 150 mm thick,					
			b channel 300 mm wide, 50 mm					
			ck in PCCM20 grade, sloped vards the kerb, kerb stone with					
			nnel laid with kerb laying machine,					
			ndation concrete laid manually, all					
			nplete as per clause 409					
		Uni	t = Running metre					
			ing output = 300 meter					
			al Concrete = 9.675 Cum.					
		Usi: Pla:	ng Concrete Batching and Mixing					
		Piul	m.					

Sr	D-f +- N4	Description		Unit	Quantity a	as per projec	t category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
	(i)		M15 for Kerb base					
		a)	Labour					
			Mate	day	0.319	0.319	0.319	
			Mason	day	2.660	2.660	2.660	
			Mazdoor	day	5.320	5.320	5.320	
		b)	Machinery					
			Transit truck agitator					
			For Transportation Transit truck	t.Km	26.703 x L1	26.703 x L1	26.703 x L1	
			agitator 6 cum capacity	la accesa	2.400	2.400	2.400	
			For loading & Unloading time	hour	3.108	3.108	3.108	
			Water tanker (speed @ Water tanker speed km/hr. and return					
			speed @ 10 km/hr. and					
			spreading speed @ 3.0 Km/hr.)					
			(i) 16 KL capacity	hour	0.019 x L1			
			(,, === == ,,		+ 0.1			
			(ii) 12 KL capacity	hour		0.025 x L1		
						+ 0.1		
			(iii) 6 KL capacity	hour			0.049 x L1	
							+ 0.1	
		c)	Material					
			Per Cum Basic Cost					
			(Rate taken from sub-analysis	cum	9.675	9.675	9.675	
			21.20)		4.005	4 00=	4.00=	
			Cost of water	KL	1.335	1.335	1.335	
		d)	Overhead charges		@ on	@ on	@ on	
		۵١	Contractor's profit		(a+b+c) @ on	(a+b+c)	(a+b+c) @ on	
		e)	contractor's profit		(a+b+c+d)	@ on (a+b+c+d)	(a+b+c+d)	
		Cos	t for 300 meter = a+b+c+d+e		(4.5.0.4)	(4.5.0.4)	(4.5.0.4)	
			e per metre = (a+b+c+d+e)/300					
			(
	(ii)	PCC	M20 for Kerb Cast in Situ					
		Tota	al Concrete = 15.00 cum					
		a)	Labour					
			Mate	day	0.080	0.080	0.080	
			Mason	day	0.665	0.665	0.665	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Machinery					
			Kerb casting machine @ 90	hour	3.333	3.333	3.333	
			metres/hour	noui	3.333	3.333	3.333	
			Transit truck agitator					
			For Transportation Transit truck	t.Km	28.980 x L1	28.980 x L1	28.980 x L1	
			agitator 6 cum capacity					
			For loading & Unloading time	hour	3.500	3.500	3.500	
			Concrete cutting machine	hour	5.000	5.000	5.000	
			Water tanker (speed @ Water					
			tanker speed km/ hr. and return					
			speed @ 10 km/hr. and spreading speed @ 3.0 Km/hr.)					
			spicauling specu @ 3.0 KIII/III.)					

Sr	D-f +- 14	Bassistian	I I mile	Quantity as per project co		ct category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		(i) 16 KL capacity	hour	0.101 x L1 + 0.1			
		(ii) 12 KL capacity	hour		0.134 x L1 + 0.1		
		(iii) 6 KL capacity	hour		0.2	0.268 x L1 + 0.1	
		c) Material Per Cum Basic Cost					
		(Rate taken from sub-analysis 21.21)	cum	15.000	15.000	15.000	
		Cost of water	KL	7.245	7.245	7.245	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 300 meter = a+b+c+d+e					
		Rate per metre = (a+b+c+d+e)/300					
8.03	801	Printing New Letter and Figures of any Shade					
		Printing new letter and figures of any					
		shade with synthetic enamel paint					
		black or any other approved colour to					
		give an even shade Hindi (Matrass, commas and the like					
	(i)	not to be measured and paid for Half					
	(-7	letter shall be counted as half)					
		Details for 100 letters of 16 cm height i.e. 1600 cm					
		Unit = per cm height per letter					
		Taking Output= 1600 cm					
		a) Labour					
		Mate	day	0.160	0.160	0.160	
		Painter	day	2.660	2.660	2.660	
		Mazdoor	day	1.330	1.330	1.330	
		b) Material	Litro	0.700	0.700	0.700	
		Paint	Litre	0.700	0.700	0.700	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 1600 cm = a+b+c+d					
		Rate per cm height per letter = (a+b+c+	+ d)/1600	1			
8.03	(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.1600 cm					
		Unit = per cm height per letter Taking Output= 1600 cm					

Sr	Dof to M		Dagovintion	l l mit	Quantity	Quantity as per project category		
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Labour					
			Mate	day	0.093	0.093	0.093	
			Painter Ist class	day	1.663	1.663	1.663	
			Mazdoor	day	0.665	0.665	0.665	
		b)	Material	,				
			Paint	Litre	0.500	0.500	0.500	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	t for 1600 cm = a+b+c+d					

Rate per cm height per letter = (a+b+c+d)/1600

8.04 801 Retro-Reflectorised Traffic Signs

Providing and fixing of retroreflectorised cautionary, mandatory and informatory sign as per IRC :67 made of Class-B Type IV retro reflective sheeting fixed over 2 mm thick Aluminium sheeting vide clause 801.3, 3mm/4mm thick Aluminium composite material sheet depending on the size of the sign fixed over back support frame of min 25 x 25 x 3mm Angle mounted on a mild steel circular pipe 65 NB ,3.2 mm thicknness firmly fixed to the ground by means of properly designed foundation with M25 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. The sign shall be maintained as per section 12 of IRC 67.

Unit = Each

Tak	ing	output = one traffic sign				
	i)	Excavation for foundation (Rate taken from item No. 9.01 A (I) including OH & CP)	cum	0.122	0.122	0.122
	ii)	Cement concrete M25 grade (Rate taken from item No. 9.06, E, Case-II including OH & CP)	cum	0.122	0.122	0.122
	iii)	Painting angle iron post two coats (Rate taken from item No. 8.09 including OH & CP) bour (For fixing at site)	sqm	1.414	1.414	1.414
a)		, ,	-l	0.010	0.040	0.010
		ate	day	0.010	0.010	0.010
	M	azdoor	day	0.250	0.250	0.250
b)	M	aterial ild Steel 'L' Angle Back Support ame 25 x 25 x 3mm	kg	2.200	2.200	2.200

Sr				Quantity	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Mild Steel circular pipe 65 NB,					
		3.2 mm thickness, 3.6 meter	kg	20.556	20.556	20.556	
		height					
		Aluminium sheeting fixed with					
		encapsulated lens type reflective					
		sheeting of size including					
	(i)	lettering and signs as applicable 120 cm equilateral triangle	cam	0.624	0.624	0.624	
	(1)	Add 1 Percent of cost material	sqm	0.024	0.024	0.024	
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(ii)	90 cm equilateral triangle	sqm	0.351	0.351	0.351	
	, ,	Add 1 Percent of cost material	•				
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(iii)	75 cm equilateral triangle	sqm	0.244	0.244	0.244	
		Add 1 Percent of cost material					
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
	(;,)	or		0.156	0.156	0.156	
	(iv)	60 cm equilateral triangle Add 1 Percent of cost material	sqm	0.156	0.156	0.156	
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(v)	120 cm circular	sqm	1.131	1.131	1.131	
	, ,	Add 1 Percent of cost material	·				
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(vi)	90 cm circular	sqm	0.636	0.636	0.636	
		Add 1 Percent of cost material					
		(b) towards cost of drilling holes, nuts, bolts etc.					
		or					
	(vii)	75cm circular	sqm	0.442	0.442	0.442	
	(VII)	Add 1 Percent of cost material	34111	0.442	0.442	0.442	
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(viii)	60 cm circular	sqm	0.283	0.283	0.283	
		Add 1 Percent of cost material					
		(b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or		0.6==	0.675	0.675	
	(ix)	90 cm x 75 cm rectangular	sqm	0.675	0.675	0.675	
		Add 1 Percent of cost material (b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
		-					

Sr				Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	(x)	80 mm x 60 mm rectangular	sqm	0.480	0.480	0.480	
		Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc.	·				
	(xi)	or 60 cm x 50 cm rectangular Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc. or	sqm	0.300	0.300	0.300	
	(xii)	60 cm x 45 cm rectangular Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc. or	sqm	0.270	0.270	0.270	
	(xiii)	60 cm x 60 cm square Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc. or	sqm	0.360	0.360	0.360	
	(xiv)	120 cm high octagon Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc. or	sqm	1.193	1.193	1.193	
	(xv)	90 cm high octagon Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc. or	sqm	0.671	0.671	0.671	
	(xvi)	 75 cm high octagon Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc. c) Machinery 	sqm	0.466	0.466	0.466	
		Tractor-trolley	hour	0.010	0.010	0.010	
	(i)	120 cm equilateral triangle d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Rate per traffic sign = (i+ii+iii+a+b+c+d	+e)	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	(ii)	90 cm equilateral triangle					
	, ,	d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+d	+e)	. ,	. ,	. ,	

Sr				Ouantity a	s per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
11		1	1	8-			
	(iii)	75 cm equilateral triangle					
	(/	d) Overhead charges		@ on	@ on	@ on	
		,		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	l+e)				
	<i>(</i> :)	CO and a mullate mality is a sla					
	(iv)	60 cm equilateral triangle d) Overhead charges		@ an	@ an	@ an	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		e, contractor o prom		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	d+e)	,	,	` ,	
	(v)	120 cm circular					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	d+e)				
	<i>(</i>)	90 cm circular					
	(vi)	d) Overhead charges		@ on	@ on	@ 00	
		u) Overneau charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		(a 151c) @ on	@ on	(a+b+c) @ on	
		c, contractor s pront		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	d+e)	(4.5.6.4)	(4.5.5.4)	(a.b.c.a)	
		()					
	(vii)	75cm circular					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Data was traffic along the Walliam Inc.		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	a+e)				
	(viii)	60 cm circular					
	(****)	d) Overhead charges		@ on	@ on	@ on	
		.,		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		`@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	d+e)				
	(ix)	90 cm x 75 cm rectangular		6	@	@	
		d) Overhead charges		@ on (a+b+c)	@ on	@ on (a+b+c)	
		e) Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		e, contractor a profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	d+e)	(= = · • · • /	(= ~:3:4)	,,	
			-				
	(x)	9					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Pata nor traffic sign = / ! . !! . !!	۱۵۱	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+	u+e)				

Sr	D-f +- NA	Description .	1124	Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	(xi)	60 cm x 50 cm rectangular		0	0	0	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		(атытс) @ on	(атытс) @ on	(a+b+c) @ on	
		e) Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	d+e)	, ,	, ,	,	
	(xii)	60 cm x 45 cm rectangular					
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on (a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	4+0)	(a+b+c+d)	(a+b+c+d)	(атытсти)	
		Nate per trainic sign - (Ithitimtatutcto	ите)				
	(xiii)	60 cm x 60 cm square					
		d) Overhead charges		@ on	@ on	@ on	
		,		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Data was traffic size = / initiality as because	١, ٥١	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	1+e)				
	(xiv)	120 cm high octagon					
		d) Overhead charges		@ on	@ on	@ on	
		,		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	d+e)	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	(m)	90 cm high octagon					
	(xv)			@ on	@ on	@ on	
		d) Overhead charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	d+e)				
	(yvi)	75 cm high octagon					
	(,	d) Overhead charges		@ on	@ on	@ on	
		u, overmeda enarges		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+c	d+e)				
8.04	801 B	Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of Class-C Type XI retro reflective sheeting fixed over 2 mm thick Aluminium sheeting vide clause 801.3, 3mm/4mm thick Aluminium composite material sheet depending on the size of the sign fixed over back support frame of min 25 x 25 x 3mm					

G.:.			1	Overstitus		t ootooo	D-4-
Sr No	Ref. to M	Description	Unit	Large	as per projec Medium	Small	Rate (Rs.)
140				Laige	Wediam	Jillali	(1131)
		Angle mounted on a mild steed circular pipe 65 NB ,3.2 mm thickness firmly fixed to the ground by means of properly designed foundation wit M25 grade cement concrete 45 cm 45 cm x 60 cm, 60 cm below groun level as per approved drawing. The	ss of h x d				
		sign shall be maintained as pe section 12 of IRC 67.	er				
		Unit = Each					
		Taking output = one traffic sign					
		i) Excavation for foundation (Rate taken from item No. 9.01 A (I) including OH & CP	cum	0.122	0.122	0.122	
		ii) Cement concrete M25 grade (Rate taken from item No. 9.06, E Case-II including OH & CP)	E, cum	0.122	0.122	0.122	
		iii) Painting angle iron post two coats (Rate taken from item No. 8.09 including OH & CP)	s sqm	1.414	1.414	1.414	
		a) Labour (For fixing at site)					
		Mate	day	0.010	0.010	0.010	
		Mazdoor	day	0.250	0.250	0.250	
		b) aterial Mild Steel 'L' Angle Back Support Frame 25 x 25 x 3mm	kg	2.200	2.200	2.200	
		Mild Steel circular pipe 65 NB ,3.2 mm thickness, 3.6 meter height	kg	20.556	20.556	20.556	
		Aluminium sheeting fixed with encapsulated lens type reflective sheeting of size including lettering and signs as applicable					
	(i)	120 cm equilateral triangle Add 1 Percent of cost material (b towards cost of drilling holes, nuts, bolts etc.	sqm)	0.624	0.624	0.624	
	/ ;; \	Or	cam	0.351	0.351	0.351	
	(ii)	90 cm equilateral triangle Add 1 Percent of cost material (b towards cost of drilling holes, nuts, bolts etc.	sqm)	0.351	0.351	0.351	
		or					
	(iii)	75 cm equilateral triangle Add 1 Percent of cost material (b towards cost of drilling holes, nuts, bolts etc.	sqm)	0.244	0.244	0.244	

or

C				Quantity	as nor projec	t catagory	Data
Sr No	Ref. to M	Description	Unit	Large	as per projec Medium	Small	Rate (Rs.)
140				Large	Medium	Jiliali	(113.)
	(iv)	60 cm equilateral triangle	sqm	0.156	0.156	0.156	
	(,	Add 1 Percent of cost material (b)	34	0.130	0.130	0.130	
		towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(v)	120 cm circular	sqm	1.131	1.131	1.131	
		Add 1 Percent of cost material (b)					
		towards cost of drilling holes,					
		nuts, bolts etc.					
	(vi)	or 90 cm circular	cam	0.636	0.636	0.636	
	(VI)	Add 1 Percent of cost material (b)	sqm	0.030	0.030	0.030	
		towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(vii)	75cm circular	sqm	0.442	0.442	0.442	
		Add 1 Percent of cost material (b)					
		towards cost of drilling holes, nuts, bolts etc.					
		or					
	(viii)	60 cm circular	sqm	0.283	0.283	0.283	
	(,	Add 1 Percent of cost material (b)	- 4		0.200		
		towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(ix)	90 cm x 75 cm rectangular	sqm	0.675	0.675	0.675	
		Add 1 Percent of cost material (b)					
		towards cost of drilling holes,					
		nuts, bolts etc.					
	(×)	Or 80 mm v 60 mm rectangular	sqm	0.480	0.480	0.480	
	(^)	80 mm x 60 mm rectangular Add 1 Percent of cost material (b)	Sqiii	0.460	0.460	0.460	
		towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(xi)	60 cm x 50 cm rectangular	sqm	0.300	0.300	0.300	
		Add 1 Percent of cost material (b)					
		towards cost of drilling holes,					
		nuts, bolts etc.					
	()	or		0.070	0.070	0.070	
	(xii)	60 cm x 45 cm rectangular	sqm	0.270	0.270	0.270	
		Add 1 Percent of cost material (b) towards cost of drilling holes,					
		nuts, bolts etc.					
		or					
	(xiii)	60 cm x 60 cm square	sqm	0.360	0.360	0.360	
	, ,	Add 1 Percent of cost material (b)	•				
		towards cost of drilling holes,					
		nuts, bolts etc.					
		or					

Sr				Quantity	s per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
140				Laige	Mediaiii	Jillali	(113.)
	(xiv)	120 cm high octagon Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc.	sqm	1.193	1.193	1.193	
	(xv)	or 90 cm high octagon Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc.	sqm	0.671	0.671	0.671	
	(xvi)	Add 1 Percent of cost material (b) towards cost of drilling holes, nuts, bolts etc.	sqm	0.466	0.466	0.466	
	(i)	c) Machinery Tractor-trolley 120 cm equilateral triangle	hour	0.010	0.010	0.010	
	(1)	d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		Rate per traffic sign = (i+ii+iii+a+b+c+d-	+e)	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	(ii)	90 cm equilateral triangle d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+d-	+e)				
	(iii)	75 cm equilateral triangle					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit Rate per traffic sign = (i+ii+iii+a+b+c+d-	±0)	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		For starrie sign – (1.11.111.11.11.11.11.11.11.11.11.11.11.	,				
	(iv)	60 cm equilateral triangle					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+d-	+e)				
	(v)	120 cm circular					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per traffic sign = (i+ii+iii+a+b+c+d-	+e)				

6					Overstitus			D-4-
Sr No	Ref. to M		Description	Unit	Large	s per projec Medium	Small	Rate (Rs.)
					Large	Wicalam	Siliali	(1.0.)
	(vi)	90 d	cm circular					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Rati	e per traffic sign = (i+ii+iii+a+b+c+c	l+e)	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		·······	e per trame sign – (r.m.m.a.b.e.e	,				
	(vii)	75 c	m circular					
		d)	Overhead charges		@ on	@ on	@ on	
		-1	Court and the state of the		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate	e per traffic sign = (i+ii+iii+a+b+c+c	l+e)	(arbiciu)	(arbiciu)	(arbiciu)	
			. 5 .	•				
	(viii)		cm circular					
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		c,	Contractor's pront		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate	e per traffic sign = (i+ii+iii+a+b+c+c	l+e)	((0 0 0 0)	(= = = = = = = = = = = = = = = = = = =	
	(ix)		cm x 75 cm rectangular		_		_	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		(атытс) @ on	(a+b+c) @ on	(a+b+c) @ on	
		-,	отпольный при		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			e per traffic sign =					
		(i+ii	+iii+a+b+c+d+e)					
	(x)	80 r	mm x 60 mm rectangular					
	(~)	d)	Overhead charges		@ on	@ on	@ on	
		•	_		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Dat		ادما	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Kat	e per traffic sign = (i+ii+iii+a+b+c+c	ı+e)				
	(xi)	60 d	cm x 50 cm rectangular					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Rate	e per traffic sign = (i+ii+iii+a+b+c+c	l+e)	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			(,				
	(xii)		cm x 45 cm rectangular					
		d)	Overhead charges		@ on	@ on	@ on .	
		e)	Contractor's profit		(a+b+c)	(a+b+c)	(a+b+c)	
		۲)	Contractor 5 profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate	e per traffic sign = (i+ii+iii+a+b+c+c	l+e)	(= = : • : •)	(= = · · · · · ·)	(= =:/	
	(xiii)		cm x 60 cm square		-	_	_	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	

Dof to M		Description	l lmit	Quantity a	Quantity as per project category				
Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)		
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)			
	Rate	e per traffic sign = (i+ii+iii+a+b+c+d	+e)						
(xiv)	120	cm high octagon							
	d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)			
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)			
	Rate	e per traffic sign = (i+ii+iii+a+b+c+d	+e)						
(xv)	90 c	m high octagon							
	d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)			
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)			
	Rate	e per traffic sign = (i+ii+iii+a+b+c+d	+e)						
(xvi)	75 c	m high octagon							
	d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)			
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)			
	Rate	e per traffic sign = (i+ii+iii+a+b+c+d	+e)						

Note

Sr No

- 1. Any one area of Aluminium sheeting given at (i) to (xvi) may be adopted as per site requirement and in accordance with IRC: 67
- 2. Rate for excavation, cement concrete M-25 and painting may be taken from respective chapters -09 & 08 respectively.
- 3. The depth of foundation and quantity of cement concrete in the foundation are indicative. These may be increased for areas having higher wind velocities like in coastal areas. This is applicable to all road signs and directions boards.

8.05 801 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 or Aluminium composite material sheet with overall thickness of 4mm with area not exceeding 0.9 sqm fixed over back support frame of min 35 x 35 x 3mm Angle mounted on a mild steel circular pipe 65 NB, firmly fixed to the ground by means of properly designed foundation with M25 grade cement concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawing

Unit = sqm

Sr	Ref. to M		Description	l lmit	Quantity as per project category		Rate	
No	Rei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
		Tak	ing output = 0.9 sqm					
			 i) Excavation for foundation (Rate taken from item No. 9.01 A (I) including OH & CP) 	cum	0.122	0.122	0.122	
			ii) Cement concrete M25 grade (Rate taken from item No. 9.06 E, Case-II including OH & CP)	cum	0.122	0.122	0.122	
			iii) Painting angle iron post two coats (Rate taken from items 8.09 A including OH & CP)	sqm	1.414	1.414	1.414	
		a)	Labour (For fixing at site)					
			Mate	day	0.011	0.011	0.011	
			Mazdoor	day	0.266	0.266	0.266	
		b)	Material					
			Mild Steel 'L' Angle Back Support Frame 35 x 35 x 3mm	kg	6.080	6.080	6.080	
			Mild Steel circular pipe 65 NB ,3.2 mm thickness, 3.6 meter height	kg	20.556	20.556	20.556	
			Aluminium sheeting fixed with encapsulated lens type reflective sheeting of size 0.9 sqm	sqm	0.900	0.900	0.900	
		Add	2 Percent of cost of materials for					
			ling holes, nuts, bolts, fabrication					
		etc.						
		c)	Machinery					
			Tractor-trolley	hour	0.020	0.020	0.020	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Coc	t for 0.0 sam - Lilitilit athrough		. ,	•	-	

Cost for 0.9 sqm =I+ii+ii+ a+b+c+d+e

Rate per sqm (for sign having area upto 0.9 sqm) = (I+ii+iii+a+b+c+d+e)/0.90

Note 1) Lettering and arrow marks on sign board to be provided separately as per actual requirement. Rates for these items have been analysed separately.

2. Rate for excavation, cement concrete M-25 and painting may be taken from respective chapters -09 & 08 respectively.

8.06 801 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 lause 801.3, fixed over aluminium sheeting, 2 mm thick or Aluminium composite material sheet with overall thickness

Sr	Ref. to M		Danishin		Quantity	as per projec	t category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
		sqr mir mo circ and to des cer cm	4 mm with area exceeding 0.9 m fixed over back support frame of a 40 x 40 x 5 mm MS Angle runted on two nos. of mild steel cular pipe 65 NB ,3.2 mm thickness d 4.5 meter total height firmly fixed the ground by means of properly signed foundation with M 25 grade ment concrete 45 cm x 45 cm x 60 , 60 cm below ground level as per proved drawing					
		Un	it = sqm					
		Tak	 i) Excavation for foundation (Rate taken from item No. 9.01 A (I) including OH & CP) 	cum	0.243	0.243	0.243	
			ii) Cement concrete M25 grade (Rate taken from item No. 9.06 E, Case-II including OH & CP)	cum	0.243	0.243	0.243	
			iii) Painting angle iron post two coats(Rate taken from item No. 8.09 including OH & CP)	sqm	2.827	2.827	2.827	
		a)	Labour (For fixing at site)					
			Mate	day	0.016	0.016	0.016	
			Mazdoor	day	0.399	0.399	0.399	
		b)	Material					
			Mild Steel 'L' Angle Back Support Frame 40 x 40 x 5 mm	kg	14.400	14.400	14.400	
			Mild Steel circular pipe 65 NB ,3.2 mm thickness, 3.6 meter height	kg	41.112	41.112	41.112	
			Aluminium sheeting fixed with encapsulated lens type reflective sheeting	sqm	1.500	1.500	1.500	
			d 2 Percent of cost of materials for lling holes, nuts, bolts, fabrication .					
		c)	Machinery					
			Tractor-trolley	hour	0.020	0.020	0.020	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		_	st for 1 FO cam - achieved to					

Cost for 1.50 sqm = a+b+c+d+e

Rate per Sqm. = (a+b+c+d+e) /1.50

No.	Sr	Ref. to M	Description	Unit	Quantity	as per projec	t category	Rate
with a corrosion resistant 2mm thick aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC.57 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 0.319 day 2.660	No	Kei. to ivi	Description	Onit	Large	Medium	Small	(Rs.)
with a corrosion resistant 2mm thick aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC.57 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 0.319 day 2.660								
with a corrosion resistant Zmm thick aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC.67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 Blacksmith day 2.660 2.660 2.660 2.660 day 5.320 5.320 5.320 day 5.320 5.320 blacksmith day 2.660 2.660 2.660 day 5.320 5.320 day 5.320 6.320 day 5.320 5.320 day 5.320 6.320 day 5.320 5.320 day 5.320 6.320 day 6.320 6.320 day 6.320 6.320 day 6.320 day 6.320 6.320 day 6.3200 day 6.320 da	8.07	802	Overhead Signs					
aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC.567 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 Blacksmith day 2.660 2.660 2.660 2.660 day 5.320 5.320 5.320 day 5.320 5.320 5.320 day 5.320 5.320 5.320 day 5.320 5.320 5.320 day 5.320 6.320 6.320 day 5.320 6.320 day 6			Providing and erecting overhead signs					
with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC :67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 Blacksmith day 2.660 2.660 2.660 2.660 Mazdoor including for handling & fixing at site. b) Material Aluminium alloy / galvanised steel including 2 Percent tonne 1.020 1.020 1.020 wastage Add 1 Percent on cost of material for nuts, bolts and drilling and welding consumables Add 15 Percent on cost of material for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 0.500 0.500 0.500 d) Overhead charges e) Contractor's profit @ @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 0.013 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			with a corrosion resistant 2mm thick					
Sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC: 67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.			aluminium alloy sheet reflectorised					
with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC:67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 0.319 day 2.660 2.660 2.660 day 5.320 5.320 5.320 day 5.320 5.320 5.320 b day 5.320 5.320 5.320 b day 5.320 5.320 5.320 day 5.320 6.300 day 5.320 5.320 day 5.320 6.300 day 5.320 6.300 day 6.3			with high intensity retro-reflective					
given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and truses of sections and type as per structural design requirements and approved plans & as per iRC:67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 0.319 0.319 0.319 Blacksmith day 2.660 2.660 2.660 Mazdoor including for handling & fixing at site. b) Material Aluminium alloy / galvanised steel including 2 Percent tonne 1.020 1.020 1.020 wastage Add 1 Percent on cost of material for nuts, bolts and drilling and welding consumables Add 15 Percent on cost of material for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 0.500 0.500 0.500 d) Overhead charges e) Contractor's profit @ @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 0.013 0.030 Mazdoor day 0.200 0.200 0.200 0.500 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			sheeting of encapsulated lense type					
Installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC:67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne Taking output = 1 tonne Alabour Mate Day Da								
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type as per structural design requirements and approved plans & as per IRC :67 A Truss and Vertical Support Unit = tonne Taking output = 1 tonne a) Labour Mate day 2.660 2.660 2.660 Mazdoor including for handling & fixing at site. b) Material Aluminium alloy / galvanised steel including 2 Percent tonne 1.020 1.020 1.020 1.020 wastage Add 1 Percent on cost of material for nuts, bolts and drilling and welding consumables Add 15 Percent on cost of material for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on (a+b+c) (a+b+c+d) (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000 1.000			·					
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Aluminium alloy / galvanised steel including 2 Percent tonne 1.020 1.020 1.020 wastage Add 1 Percent on cost of material for nuts, bolts and drilling and welding consumables Add 15 Percent on cost of material for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on @ on (a+b+c+d) (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Mate day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			fixing at site.	day	5.320	5.320	5.320	
Steel including 2 Percent wastage			•					
Wastage			· -	tonno	1 020	1 020	1 020	
Add 1 Percent on cost of material for nuts, bolts and drilling and welding consumables Add 15 Percent on cost of material for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on @ on (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			_	tonne	1.020	1.020	1.020	
nuts, bolts and drilling and welding consumables Add 15 Percent on cost of material for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on @ on (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Mazdoor day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			S					
Consumables								
for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on @ on (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Mazdoor day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000 1.000								
for fabrication of trusses as per approved design c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on @ on (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Mazdoor day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000 1.000			Add 15 Percent on cost of material					
c) Machinery Crane 3 tonne capacity hour 3.000 3.000 3.000 Truck hour 0.500 0.600 0.								
Crane 3 tonne capacity Hour 3.000 3.000 3.000 3.000 Truck Hour 0.500 0.500 0.500 d) Overhead charges @ on @ on @ on (a+b+c) (a+b+c) (a+b+c) e) Contractor's profit @ on @ on @ on (a+b+c+d) (a+b+c+d) Rate per tonne = (a+b+c+d+e) 8.07 B			approved design					
Truck			c) Machinery					
## do not contractor's profit ## day 0.013 0.013 0.013 ## Blacksmith day 0.200 0.200 0.200 ## blacksmith Allow plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 ## con @ on @ on @ on @ on @ on (a+b+c+d)			Crane 3 tonne capacity	hour	3.000	3.000	3.000	
Contractor's profit (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c) (a+b+c+d)			Truck	hour	0.500	0.500	0.500	
e) Contractor's profit (a+b+c+d) (a+b+c+d) (a+b+c+d) (a+b+c+d) (a+b+c+d)			d) Overhead charges		@ on	@ on	@ on	
Rate per tonne = (a+b+c+d+e) (a+b+c+d)					(a+b+c)	(a+b+c)	(a+b+c)	
Rate per tonne = (a+b+c+d+e) 8.07 B Aluminium Alloy Plate for Over Head Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Blacksmith day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate, 2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			e) Contractor's profit		_	_		
Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Blacksmith day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			Rate per tonne = (a+b+c+d+e)		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
Sign Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Blacksmith day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000	ס ס	P	Aluminium Alloy Plate for Over Hood					
Unit = sqm Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Blacksmith day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000	8.07	Ь						
Taking output = 1 sqm a) Labour Mate day 0.013 0.013 0.013 Blacksmith day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			=					
a) Labour day 0.013 0.013 0.013 Mate day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			-					
Blacksmith day 0.133 0.133 0.133 Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000								
Mazdoor day 0.200 0.200 0.200 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			Mate	day	0.013	0.013	0.013	
 b) Material Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000 			Blacksmith	day	0.133	0.133	0.133	
Aluminium alloy plate,2 mm thick, fixed with high intensity grade sqm 1.000 1.000 1.000			Mazdoor	day	0.200	0.200	0.200	
fixed with high intensity grade sqm 1.000 1.000 1.000			b) Material					
sheeting vide clause 801.3				sqm	1.000	1.000	1.000	
			sneeting vide clause 801.3					

Sr	D-6 4- M	Description	11	Quantity	t category	Rate	
No	Ref. to M		Unit	Large	Medium	Small	(Rs.)
		Miscellaneous Add 1 Percent of cost of labour for lifting arrangement, like ladders, pulleys, ropes etc					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per sqm = (a+b+c+d)		, ,	, ,	, ,	
	Note	^e The cost of excavation and foundation	n concre	te for fixing	of vertical s	upport syste	em to

worked out separately as per the approved drawing/design and to be included in the estimate.

Lettering and arrow marks on sign board to be provided separately as per actual requirement. Rates for these items have been included separately in this chapter.

Painting Two Coats on New Concrete 8.08 803 Surfaces

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

Cost for 40 sqm = a+b+c+dRate per sqm = (a+b+c+d)/40

Unit = sqm

d)	Contractor's profit		(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)
c)	Overhead charges		@ on	@ on	@ on
	of clause 803.3. Add for scaffolding @ 1 Percent of labour cost where required Add @ 5 Percent 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.				
b)	Material Paint conforming to requirement	Litre	6.000	6.000	6.000
	Mazdoor	day	1.330	1.330	1.330
	Painter	day	2.660	2.660	2.660
	Mate	day	0.160	0.160	0.160
a)	Labour				
	ing output = 40 sqm				
	ring output = 40 sqm				

Sr				Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
			1	8-		0111411	,
8.09	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					
		Unit = sqm					
		Taking output = 10 sqm					
		a) Labour Mate	day	0.027	0.027	0.027	
		Painter	day day	0.037 0.599	0.037 0.599	0.037 0.599	
		Mazdoor	day	0.333	0.333	0.333	
		b) Material	aay	0.555	0.555	0.555	
		Paint ready mixed approved					
		brand.	Litre	1.250	1.250	1.250	
		Add @ 1 Percent on cost of					
		material for scaffolding					
		Add @ 5 Percent 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.					
		c) Overhead charges		@ on	@ on	@ on	
		d) Contractor's profit		(a+b) @ on	(a+b) @ on	(a+b) @ on	
		Cost for 10 sqm = a+b+c+d		(a+b+c)	(a+b+c)	(a+b+c)	
		Rate per sqm= (a+b+c+d)/10					
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	0.037	0.037	0.037	
		Painter	day	0.665	0.665	0.665	
		Mazdoor	day	0.266	0.266	0.266	
		b) Material	•				
		Paint ready mixed of approved	Litre	1.500	1.500	1.500	
		brand.	Little	1.300	1.300	1.300	
		Add @ 1 Percent on cost of					
		material for scaffolding					
		Add @ 5 Percent 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.					
		c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	

Sr				Quantity as per project category		t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
				Luige	Mcalain	Jillali	(1.5.)
		d) Contractor's profit		@ on	@ on	@ on	
		·		(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 10 sqm = $a+b+c+d$					
		Rate per sqm = $(a+b+c+d)/10$					
8.11	803	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					
		Taking output =10 sqm					
		a) Labour		0.440	0.440	0.110	
		Mate	day	0.112	0.112	0.112	
		Painter	day	0.732	0.732	0.732	
		Mazdoor b) Material	day	2.062	2.062	2.062	
		Road marking Paint as per IS :164	Litre	1.480	1.480	1.480	
		Road Marking Faint as per 13 .104	Little	1.400	1.400	1.400	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
		Cost for 10 sqm = a+b+c+d		(a+b+c)	(a+b+c)	(a+b+c)	
		Rate per sqm= (a+b+c+d)/10					
		that per equit (a is early to					
8.11	(ii)	Up to 10 cm in width Unit = sqm					
		Taking output =10 sqm					
		a) Labour					
		Mate	day	0.073	0.073	0.073	
		Painter	day	0.466	0.466	0.466	
		Mazdoor	day	1.350	1.350	1.350	
		b) Material	Librar	4 400	4 400	4 400	
		Road marking paint	Litre	1.480	1.480	1.480	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/10		()	(()	
8.12	803	Painting Lines, Dashes, Arrows etc on Roads in Two Coats on Old Work					
		Painting lines, dashes, arrows etc. on					

				1			
Sr	Ref. to M	Description	Heit	Quantity a	as per projec	t category	Rate
No	Rei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
No	(i)	roads in two coats on old 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 Over 10 cm in width Unit = sqm Taking output = 10 sqm a) Labour Mate Painter Ist class Mazdoor b) Material Road marking paint c) Overhead charges d) Contractor's profit	day day day Litre	0.082 0.399 1.663 0.900 @ on (a+b) @ on (a+b+c)	0.082 0.399 1.663 0.900 @ on (a+b) @ on (a+b+c)	0.082 0.399 1.663 0.900 @ on (a+b) @ on (a+b+c)	(Rs.)
		Cont. for 10 come and hand		(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 10 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/10					
8.12	/::\	Up to 10 cm in width					
0.12	(ii)	Unit = sqm					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.073	0.073	0.073	
		Painter Ist class	day	0.466	0.466	0.466	
		Mazdoor	day	1.350	1.350	1.350	
			uay	1.550	1.550	1.550	
		b) Material Road marking Paint	Litre	0.900	0.900	0.900	
		, and the second	Little				
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 sqm= a+b+c+d					
		Rate per sqm = (a+b+c+d)/10					
8.13	803	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.					

Dof to M	Description	l lmin	Quantity a	s per projec	t category	Rate	
Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		t = sqm ing output = 600 sqm					
	a)	Labour					
		Mate	day	0.040	0.040	0.040	
		Mazdoor	day	0.998	0.998	0.998	
	b)	Machinery					
		Road marking machine @ 60 sqm per hour	hour	10.000	10.000	10.000	
		Tractor-trolley	hour	0.500	0.500	0.500	
	c)	Material					
		Hot applied thermoplastic compound	Litre	1500.000	1500.000	1500.000	
		Reflectorising glass beads	kg	150.000	150.000	150.000	
	d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Cos	t for 600 sqm = a+b+c+d+e		·	·	•	

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

Sr

No

Reinforced cement concrete M15 grade kilometre stone of standard design as per IRC:8, fixing in position including painting and printing etc

Rate per sqm = a+b+c+d+e)/ 600

(i) 5th kilometre stone (precast)

Unit = Nos.

Taking output = 6 Nos.

 	-p				
a)	M-15 grade of concrete (Rate taken from item No. 9.06, A, Case-II including OH & CP)	cum	2.350	2.350	2.350
b)	Steel reinforcement @ 5 kg per sqm (Rate taken from items 9.07)/1000 including OH & CP)	kg	22.080	22.080	22.080
c)	Excavation in soil for foundation (Rate taken from item No. 9.01 A (I) including OH & CP)	cum	1.680	1.680	1.680
d)	Painting two coats on concrete surface (Rate taken from item No. 8.08 including OH & CP)	sqm	9.850	9.850	9.850
e)	Lettering on km post (average 30 letters of 10 cm height each) (Rate taken	per cm per letter	1800.000	1800.000	1800.000

Sr	D-6 4- 84			December 1	Linit	Quantity as per project category		t category	Rate
No	Ref. to M			Description	Unit	Large	Medium	Small	(Rs.)
				from item No. 8.03 including OH & CP)					
		Tra	nsport	ation and fixing					
		f)	Labo	ur					
			Mate		day	0.351	0.351	0.351	
			Masc	on	day	0.798	0.798	0.798	
				door including ng/unloading	day	7.980	7.980	7.980	
		g)	Mach	ninery					
		0,		or-trolley	hour	6.000	6.000	6.000	
		h)		head charges			@ on (f+g)		
		i)		ractor's profit		@ on (f+g+h)	@ on (f+g+h)	@ on (f+g+h)	
		Cos	t for 6	Nos. 5th km stone = a+b+c+	d+e +f+g+h		() ,		
				ach 5th km stone = (a+b+c+	•				
				(4.0.0		,,,			
8.14	(ii)		dinary l	kilometer stone (precast) s.					
		Tak	_	tput = 14 Nos.					
			a)	M-15 grade of concrete					
				(Rate taken from item No. 9.06, A, Case-II including OH & CP)	cum	3.770	3.770	3.770	
			b)	Steel reinforcement @ 5 kg per sqm (Rate taken from items 9.07)/1000 including) OH & CP	kg	26.320	26.320	26.320	
			c)	Excavation in soil for foundation (Rate taken from item No. 9.01 A (I) including OH & CP)	cum	2.770	2.770	2.770	
			d)	Painting two coats on concrete surface (Rate taken from item No. 8.08 including OH & CP)	sqm	11.410	11.410	11.410	
			e)	Lettering on km post (average 12 letters of 10 cm height each) (Rate taken from item No. 8.03 including OH & CP)	per cm per letter	1680.000	1680.000	1680.000	
		Tra	nsport	ation and fixing					
		f)	Labo						
			Mate		day	0.426	0.426	0.426	
			Maso		day	1.330	1.330	1.330	
		٦,	Mazd		day	9.310	9.310	9.310	
		g)		ninery cor-trolley	hour	6.000	6.000	6.000	
		h)		head charges	Houl		@ on (f+g)		
		i)		ractor's profit		@ on (f+g+h)	@ on (f+g+h)	@ on (f+g+h)	

Sr	Def to M	Description	11	Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Cost for 14 Nos. ordinary km stone = (a+b+c+d+e+f+g+h+i)Rate for each ordinary km stone = (a+b+c+d+e+f+g+h+j)/14

8.14 (iii) Hectometer stone (precast)

Unit = Nos.

Tak	ing ou	utput = 33 Nos.				
	a)	M-15 grade of concrete (Rate taken from item No. 9.06, A, Case-II including OH & CP)	cum	1.580	1.580	1.580
	b)	Steel reinforcement @ 5 kg per sqm (Rate taken from items 9.07)/1000 including) OH & CP	kg	66.000	66.000	66.000
	c)	Excavation in soil for foundation (Rate taken from item No. 9.01 A (I) including OH & CP)	cum	1.390	1.390	1.390
	d)	Painting two coats on concrete surface (Rate taken from item No. 8.08 including OH & CP)	sqm	6.270	6.270	6.270
	e)	Lettering on km post (average 1 letter of 10 cm height each) (Rate taken from item No. 8.03 including OH & CP)	per cm per letter	330.000	330.000	330.000
Tra	nspor	tation and fixing				
f)	Labo					
	Mat	e	day	0.452	0.452	0.452
	Mas		day	1.995	1.995	1.995
	-	door	day	9.310	9.310	9.310
g)		hinery		6.000	6.000	6.000
ل		tor-trolley	hour	6.000	6.000	6.000
h) i)		rhead charges tractor's profit		@ on (t+g)	@ on (f+g) @ on	@ on (f+g) @ on
')	COIII	tractor's profit		(f+g+h)	(f+g+h)	(f+g+h)

Cost for 33 Nos. Hectometer stone = (a+b+c+d+e+f+g+h+i)Rate for each Hectometer stone = (a+b+c+d+e+f+g+h+i)/33

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

8.15 805 **Road Delineators**

Supplying and installation of delineators (road way indicators, hazard markers, object markers), 80-100 cm high above ground level, painted black and white in 15 cm wide strips, fitted with 80 x 100 mm rectangular or 75 mm dia circular

Description	Unit	Quantity a	as per projec	t category	Rate
Description	Unit	Large	Medium	Small	(Rs.)
reflectorised panels at the top, buried or pressed into the ground and conforming to IRC-79 and the drawings. Unit = Each					
Taking output= 30 Nos.					
a) Labour					
Mate	day	0.053	0.053	0.053	
Mazdoor for fixing	day	1.330	1.330	1.330	
b) Material	-				
Cost of approved type of delineators from ISI certified firm as per the standard drawing given in IRC - 79	each	30.000	30.000	30.000	
Add 10 Percent cost of material for installation					
c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
Cost for 30 Nos. delineators = (a+b+ c+d)				
Rate per delineators = (a+b+c+d) /30					

Sr

No

Ref. to M

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.

8.16 806 **Boundary pillar**

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

Unit = Each

Taking output = 57 Nos.

•	•				
a)	M-15 grade of the boundary stone (Rate taken from item No. 9.06, A, Case-II including OH & CP)	cum	1.250	1.250	1.250
b)	Steel reinforcement (Rate taken from items 9.07)/1000 including) OH & CP	kg	79.800	79.800	79.800
c)	Excavation in soil (Rate taken from item No. 9.01 A (I) including OH & CP)	cum	10.720	10.720	10.720
d)	Lettering, each 10 cm high (Rate taken from item No. 8.03 including OH & CP)	per letter per cm high	2280.000	2280.000	2280.000

Sr	Dof to M		Description Half	l loit	Quantity as per project category			
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		Tra	nsportation and fixing					
		e)	Labour					
			Mate	day	0.758	0.758	0.758	
			Mazdoor	day	18.953	18.953	18.953	
		f)	Machinery					
			Tractor-trolley	hour	6.000	6.000	6.000	
		g)	Material					
			Stone spall	cum	11.970	11.970	11.970	
		h)	Overhead charges		@ on	@ on	@ on	
					(e+f+g)	(e+f+g)	(e+f+g)	
		i)	Contractor's profit		@ on	@ on	@ on	
					(e+f+g+h)	(e+f+g+h)	(e+f+g+h)	

Cost for 57 Nos. boundary pillar = (a+b+c+d+e+f+g+h+i)

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

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.

8.17 808 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 817

Unit = per running metre

Taking output = 30 metres

a)	Labour				
	Mate	day	0.120	0.120	0.120
	Blacksmith	day	0.333	0.333	0.333
	Mazdoor	day	2.660	2.660	2.660
b)	Material				
	Barbed wire 335 metres length @ 9.38 kg per 100 metres	kg	31.420	31.420	31.420
	MS angle iron 40 mm x 40mm x 6 mm, 23 metres in length @ 3.5 kg per metre	kg	80.500	80.500	80.500
	Add for GI staple binding wire, drilling holes etc. @ 2 Percent of the cost of material				
c)	Painting				
	Applying two coats of painting on	sqm	2.110	2.110	2.110

Sr	D-6 4- M	Description	11	Quantity	Rate			
No	Ref. to M		Unit	Large	Medium	Small	(Rs.)	
		d)	exposed surface of angle iron posts (Rate as per item no. 8.08) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+d)	@ on (a+b+d)	@ on (a+b+d)	
			t for 30 metres fencing = a+b+c+d+e	j	-	-	-	

Rate per metre = (a+b+c+d+e)/30

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.

G.I Barbed Wire Fencing 1.8 Metre 8.18 808 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 808

Uni	Unit = per running metre										
Tak	Taking output = 30 metres										
a)	Labour										
	Mate	day	0.154	0.154	0.154						
	Blacksmith	day	0.532	0.532	0.532						
	Mazdoor	day	3.325	3.325	3.325						
b)	Material										
	Barbed wire 428 metres length @ 9.38 kg per 100 metres	kg	40.150	40.150	40.150						
	MS angle iron 50 mm x 50 mm x 6 mm,33.8 metres in length @ 4.5 kg per metre	kg	152.000	152.000	152.000						
	Add for GI staple, binding wire, drilling holes etc. @ 2 Percent of the cost of material										
c)	Painting										
	Applying two coats of painting on										
	exposed surface of angle iron posts	sqm	3.960	3.960	3.960						
d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)						
e)	Contractor's profit		@ on (a+b+d)	@ on (a+b+d)	@ on (a+b+d)						
Cos	t for 30 metres fencing = a+b+c+d+e										
Rate	Rate per metre fencing = (a+b+c +d+e)/30										

Sr	2 () 44	Description	11!4	Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

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 Suggestive

Fencing With Welded Steel Wire Fabric 75 mm x 50 mm

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

Unit = Running metre Taking output = 30 m

a)	Labour				
	Mate	day	0.160	0.160	0.160
	Welder	day	1.330	1.330	1.330
	Mazdoor	day	2.660	2.660	2.660
b)	Material				
	i) Angle iron for posts 50 x 50 x 6 mm	kg	106.000	106.000	106.000
	ii) Runner flat 50 x 5 mm	kg	26.000	26.000	26.000
	iii) Welded steel wire fabric				
	75x50 mm mesh @ 4	kg	151.000	151.000	151.000
	kg/sqm,4 x 30 x 1.2 + 5	۸g	131.000	131.000	131.000
	Percent wastage				
	OR				
	Welded steel wire fabric 75 x 25				
	mm mesh @ 7.75 kg/sqm, 7.75 x	kg	293.000	293.000	293.000
۸۵۵	30 x 1.2 + 5 Percent wastage 2.5 Percent of cost of material				
for					
_	tting angle at bottom, nuts and				
-	s and welded consumables				
c)	Machinery				
٠,	Tractor-trolley	hour	0.100	0.100	0.100
d)	Painting	noui	0.100	0.100	0.100
,	Painting two coats including				
	priming	sqm	8.000	8.000	8.000
e)	Overhead charges		@ on	@ on	@ on
			(a+b+c)	(a+b+c)	(a+b+c)
f)	Contractor's profit		@ on (a+b+c+e)	@ on (a+b+c+e)	@ on (a+b+c+e)

Cost for 30 metre = a+b+c+d+e+f Rate per metre = (a+b+c+d+e+f)/30

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

Sr	Def to M	Description	11	Quantity a	Rate		
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

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 x 50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings

Unit = Running metre

Taking output = 10 metres

Так	ing output = 10 metres				
	i) Excavation for foundation (6 Nos)6 x 0.6 x 0.6 x 0.6 (Rate taken from item No. 9.01 A (I) including OH & CP)	cum	1.296	1.296	1.296
	ii) Foundation concrete M-15 grade PCC 6 x 0.6 x 0.6 x 0.3 (Rate taken from item No. 9.06, A, Case-II including OH & CP)	cum	0.648	0.648	0.648
	iii) Painting of pipe (Rate taken from item No.8.09 including OH & CP)	sqm	4.710	4.710	4.710
	iv) Painting of channel section 6 nos,1.8 metres each 0.2 x 1.8 x 6 = 2.16	sqm	2.160	2.160	2.160
a)	Labour (For fixing at site)				
	Mate	day	0.014	0.014	0.014
	Mazdoor	day	0.333	0.333	0.333
	Plumber	day	0.013	0.013	0.013
b)	Material				
	Steel pipe 50 mm external dia as per IS:1239	metre	30.000	30.000	30.000
	Medium weight steel channel (ISMC series) 100 mm x 50 mm,10.8 metres length @ 9.2 kg per metre	kg	99.360	99.360	99.360
Add	for drilling holes @ 2 Percent of				
	t of channels				
c)	Machinery		0.040	0.040	0.040
۸۱	Tractor-trolley	hour	0.040	0.040 @ on	0.040
d)	Overhead charges		@ on (a+b+c)	(a+b+c)	@ on (a+b+c)
e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
Cos	t for 10 metre =i+ii+iii+iv+ a+b+c+d+	e	•	·	·

Rate per metre = (i+ii+iii+iv+a+b+c+d+e)/10

Sr	_			_	Quantity	as per projec	ct category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
8.21	808	Po Le Pr	abular Steel Railing on Precast RCC psts, 1.2 m High Above Ground vel oviding, fencing and erecting 50 m dia painted steel pipe railing in 3					
		ro ve ab pi co	ws on precast M20 grade RCC rtical posts 1.8 metres high (1.2 m love GL) with 3 holes 50 mm dia for pe, fixed 2 metres centre to centre, implete as per approved drawing hit = Running metre					
			king output = 10 metres i) Excavation for foundation (6					
			Nos)6 x 0.6 x 0.6 x 0.6 (Rate taken from item No. 9.01 A (I) including OH & CP) ii) Foundation concrete M-15	cum	1.296	1.296	1.296	
			grade PCC 6 x 0.6 x 0.6 x 0.3 (Rate taken from item No. 9.06, A, Case-II including OH & CP)	cum	0.648	0.648	0.648	
			iii) RCC M - 20 for pre cast posts 6 nos of 1.8 metres each (Rate taken from items 9.06 B Case-II including OH & CP)	cum	4.710	4.710	4.710	
			iv) Painting of pipe (Rate taken from item No. 8.09 including OH & CP)	sqm	2.160	2.160	2.160	
		a)	Labour Mate Mazdoor Plumber	day day day	0.014 0.333 0.013	0.014 0.333 0.013	0.014 0.333 0.013	
		b)		metre	30.000	30.000	30.000	
		c) d)	Machinery Tractor-trolley Overhead charges	hour	0.040 @ on	0.040 @ on	0.040 @ on (a+b+c)	
		e)	·		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	@ on (a+b+c+d)	
			ost for 10 metre =i+ii+iii+iv+ a+b+c+d- nte per metre = (i+ii+iii+iv+a+b+c+d+					
8.22	811		einforced Cement Concrete Crash Irrier					
	,	co th Re HY co ar 26	ovision of an Reinforced cement increte new jersey crash barrier at emedians, constructed with sinforced Cement Concrete with I/SD reinforcement conforming to informing MoRT&H Specification at as per details given IRC -119 (Fig1) including dowel bars 25 mm dia, so mm long at expansion joints filled th pre-moulded asphalt filler board					

Sr	D-f +- N4	Doorwinstian	11	Quantity a	as per projec	t category	Rate
 No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

etc.., as per approved drawing and at locations directed by the Engineer, all as specified.

(Area-0.261 Sqm. /Meter, Double

Face)

b)

c)

Unit = Linear metre

Taking output = 20 m

M 25 grade concrete (i)

M 25 grade concrete & HYSD

steel reinforcement M 25 grade concrete (Area-0.243 Sqm. /Meter) 4.860 cum 4.860 4.860 (Rate taken from item No. 9.06 E Case-II including OH & CP) **HYSD** steel reinforcement tonne 0.194 0.194 0.194 including dowel bars Labour Mate day 0.053 0.053 0.053 Mazdoor day 1.330 1.330 1.330 Material Pre-moulded asphalt filler board 0.250 sqm 0.250 0.250 **Overhead charges** @ on @ on @ on (b+c) (b+c) (b+c) Contractor's profit @ on @ on @ on (b+c+d)

Cost for 20 metre = a+b+c+d+eRate per metre = (a+b+c+d+e)/20

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

ii) If PCC required below crash barrier then it should be measured & Paid separately.

(b+c+d)

(b+c+d)

iii) Rate for RCC M 25 may be taken from chapter-12 on foundation.

8.22 811 (ii) M 30 grade concrete

a) M 30 grade concrete & HYSD steel reinforcement

e)	Contractor's profit		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)
			(b+c)	(b+c)	(b+c)
d)	Overhead charges		@ on	@ on	@ on
	Pre-moulded asphalt filler board	sqm	0.250	0.250	0.250
c)	Material				
	Mazdoor	day	1.330	1.330	1.330
	Mate	day	0.053	0.053	0.053
b)	Labour				
	including dowel bars	tonne	0.194	0.194	0.194
	HYSD steel reinforcement				
	(Rate taken from item No. 9.06 E Case II including OH & CP)				
	Sqm. /Meter)	cum	4.860	4.860	4.860
	M 30 grade concrete (Area-0.243				
	remnorcement				

Cost for 20 metre = a+b+c+d+e

Rate per metre = (a+b+c+d+e)/20

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

ii) If PCC required below crash barrier then it should be measured & Paid separately. Rate for RCC M 30 may be taken from chapter-12 on foundation.

Sr	Daf 4a 84	Description	l lada	Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Provision of an Reinforced cement concrete new jersey crash barrier at the medians, constructed with Reinforced Cement Concrete with HYSD reinforcement conforming to conforming MoRT&H Specification and as per details given IRC -119 (Fig.-26) including dowel bars 25 mm dia, 450 mm long at expansion joints filled with pre-moulded asphalt filler board etc., as per approved drawing and at locations directed by the Engineer, all as specified.

(Area-0.261 Sqm. /Meter, Double Face)

Unit = Linear metre

Taking output = 20 m

(i) M 25 grade concrete

a) M 25 grade concrete &

HVSD steel reinforcement

e)	Contractor's profit		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)
d)	Overhead charges		@ on (b+c)	@ on (b+c)	@ on (b+c)
۸۱	Pre-moulded asphalt filler board	sqm	0.250	0.250	0.250
c)	Material				
	Mazdoor	day	1.330	1.330	1.330
IJ)	Mate	day	0.053	0.053	0.053
b)	HYSD steel reinforcement including dowel bars Labour	tonne	0.209	0.209	0.209
	M 25 grade concrete (Area-0.261 Sqm. /Meter) (Rate taken from item No. 12.11 A (ii) Case-II including OH & CP)	cum	5.220	5.220	5.220
	HYSD steel reinforcement				

Cost for 20 metre = a+b+c+d+e Rate per metre = (a+b+c+d+e)/20

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

- ii) If PCC required below crash barrier then it should be measured & Paid separately.
- ili) Rate for RCC M 25 may be taken from chapter-12 on foundation.

8.22 811 (ii) M 30 grade concrete

b)

a) M 30 grade concrete & HYSD steel

reinforcement

eintorcement				
M 30 grade concrete (Area-0.261				
Sqm. /Meter)	cum	5.220	5.220	F 220
(Rate taken from item No. 12.11	cum	5.220	5.220	5.220
A (iii) Case II including OH & CP)				
HYSD steel reinforcement	tonne	0.209	0.209	0.209
including dowel bars	torne	0.209	0.209	0.209
Labour				
Mate	day	0.053	0.053	0.053
Mazdoor	day	1.330	1.330	1.330

Sr	Def to M	Description	l loit	Quantity as per project c		t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		c) Material					
		Pre-moulded asphalt filler board	l sqm	0.250	0.250	0.250	
		d) Overhead charges		@ on (b+c)	@ on (b+c)	@ on (b+c)	
		e) Contractor's profit		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	

Cost for 20 metre = a+b+c+d+e Rate per metre = (a+b+c+d+e)/20

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

- ii) If PCC required below crash barrier then it should be measured & Paid separately.
- iii) Rate for RCC M 30 may be taken from chapter-12 on foundation.

8.23 811 Metal Beam Crash Barrier

Type - 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 811

Unit = Running metre

Taking output = 4.5 metre length

IUN	ing output – 4.5 metre length				
a)	Labour				
	Mate	day	0.080	0.080	0.080
	Blacksmith	day	0.665	0.665	0.665
	Mazdoor	day	1.330	1.330	1.330
b)	Machinery				
	Tractor-trolley	hour	0.100	0.100	0.100
c)	Material				
	Corrugated sheet,3 mm thick, "W" beam section railing,4.5 m in length	kg	41.210	41.210	41.210
	Channel post 150 x 75 x 5 mm,1.8 m long,3 Nos @ 16.4 kg per metre	kg	88.560	88.560	88.560
	Spacer 150 x 75 x 5 mm channel 0.33 m long,3 Nos @ 16.4 kg per metre	kg	16.240	16.240	16.240
	Nuts and bolts	kg	20.000	20.000	20.000
	Add 25 Percent of the cost of material for fabrication, nuts, bolts and washers etc.)				

CHAPTER: 8- TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr				Quantity as per project category		t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	,
		Cost for 4.5 metre = a+b+c+d+e					
		Rate per metre = (a+b+c+d+e)/4.5					
8.23	В	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 x 75 x 5 mm spaced 2 m centre to centre, 2 m high with 1.15 m below ground level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a space of channel section 150 x 75 x 5 mm, 546 mm long complete as per clause 811 Unit = Running metre Taking output = 4.5 metre length a) Labour					
		Mate	day	0.080	0.080	0.080	
		Blacksmith	day	0.665	0.665	0.665	
		Mazdoor	day	1.330	1.330	1.330	
		b) Machinery	hour	0.100	0.100	0.100	
		"Thrie" beam section railing,4.5 m in length Channel post 150 x 75 x 5 mm, 2	kg	72.940	72.940	72.940	
		m long,3 Nos @ 16.4 kg per metre	kg	98.400	98.400	98.400	
		Spacer 150 x 75 x 5 mm channel 0.546 m long,3 Nos	kg	26.860	26.860	26.860	
		Nuts and bolts Add 15 Percent of the cost of material for fabrication, nuts, bolts and washers etc.)	kg	30.000	30.000	30.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 4.5 metre = a+b+c+d+e					

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.

Rate per metre= (a+b+c+d+e)/4.5

Sr	31	Description	11	Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

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 Suggestive

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.

Unit = Running metre

Taking output = 15 metre a) Labour

a)	Lar	oour				
	Ma	te	day	0.160	0.160	0.160
	Ma	zdoor	day	2.660	2.660	2.660
	Blacksmith		day	1.330	1.330	1.330
b)	Ma	terial				
	i)	RS Joist 100 x 75 mm - 16.5 m @ 11.5 kg per metre	kg	190.000	190.000	190.000
	ii)	Struts - 2 Nos. for terminal posts,2 m long each 2 x 2 x 11.50	kg	46.000	46.000	46.000
	iii)	Tie 2 Nos. of 8 mm steel plate,1.5 sqm each for terminal posts @ 62.80 kg/sqm (2 x 1.5)	kg	188.400	188.400	188.400
	iv)	Steel wire rope 40 mm, including 7.50 Percent extra for fixing at ends 15 x 4 x 1.075 @ 1 kg per m	kg	65.000	65.000	65.000

Add 5 Percent of cost of material for drilling, gripping, fixing, fabrication and welding consumables

Sr	Def to M		Decembrica	Unit	Quantity a	Quantity as per project category			
No	Ref. to M		Description	Onit	Large	Medium	Small	(Rs.)	
		c) d)	Painting Applying 2 coats of painting on exposed surface (Rate taken from item No. 8.09 including OH & CP) Machinery	sqm	16.500	16.500	16.500		
		Ψ,	Tractor-trolley	hour	0.250	0.250	0.250		
		e)	Overhead charges		@ on (a+b+d)	@ on (a+b+d)	@ on (a+b+d)		
		f)	Contractor's profit		@ on (a+b+d+e)	@ on (a+b+d+e)	@ on (a+b+d+e)		
		Cos	st for 15 m = a+b+c+d+e+f						
		Rat	te per m = (a+b+c+d+e+f)/15						

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

8.26 Suggestive

Anti-Glare Devices in Median

A Plantation

Plantation of shrubs and plants of approved species in the median. apart from cutting off glare from vehicle coming from opposite direction, these plants provide a pleasant environment and are eco-friendly. The rate for this item is available in the chapter 11 on horticulture.

Anti-glare screen with 25 mm steel B pipe framework fixed with circular and rectangular vans

Providing and erecting an anti - glare screen with 25 mm dia vertical pipes fabricated and framed in the form of panels of one metre length and 1.75 metre height fixed with circular vane 250 mm dia at top and rectangular vane 600 x 300 mm at the middle, made out of steel sheet of 3 mm thickness, end vertical pipes of the panel made larger for embedding in foundation concrete, applying 2 coats of paint on all exposed surfaces, all as per approved design and drawings.

Unit = Running metre

Taking output = one metre

a)	Labour											
	Mate	day	0.005	0.005	0.005							
	Mazdoor	day	0.133	0.133	0.133							
b)	Material											
	i) 25 mm steel pipe	metre	16.000	16.000	16.000							
	ii) MS sheet for 600 x 300 x 3 mm rectangular vane, one number @ 24kg/sqm	kg	4.320	4.320	4.320							

Sr	Ref. to M		Description	l lmit	Quantity	as per projec	t category	Rate
No	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			iii) MS sheet for 250 mm dia circular vane 3 mm thick,4 numbers @ 24 kg/sqm	kg	4.800	4.800	4.800	
		fab	d 5 Percent cost of material for rication, welding, bending, nuts, ts etc.					
		c)	Painting Applying 2 coats of painting on exposed surface (Rate taken from item No. 8.09 including OH & CP)	sqm	1.830	1.830	1.830	
		d)	Overhead charges	•	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		e)	Contractor's profit		@ on (a+b+d)	@ on (a+b+d)	@ on (a+b+d)	
		Rat	e per metre = a+b+c+d+e					

Note The items of excavation and cement concrete as per approved design to be measured and paid separately

8.26 C Anti-glare screen with rectangular vane of MS sheet

Providing and erecting anti - glare screen with rectangular vanes of size 750 x 500 mm made from MS sheet, 3 mm thick and fixed on MS angle 50 x 50 x 6 mm at an angle of 450 to the direction of flow of traffic, 1.5 m center to center, top edge of the screen 1.75 m above ground level, vertical post firmly embedded in M-15 cement concrete foundation 0.60 m below ground level, applying 2 coats of paint on exposed faces, all complete as per approved design and drawings

Unit = Running metre

Taking output = 1.50 metre

a)	Labour				
	Mate	day	0.005	0.005	0.005
	Mazdoor	day	0.133	0.133	0.133
b)	Material				
	i) Angle iron post,50 x 50 x 6 mm, length 2.35 m	kg	10.580	10.580	10.580
	ii) MS sheet 3 mm thick @ 24 kg/sqm	kg	9.000	9.000	9.000
Add	I 5 Percent of cost of material for				
fab	rication, nuts, bolts etc				
c)	Machinery				
	Tractor-trolley	hour	0.100	0.100	0.100
d)	Painting				
	Applying 2 coats of painting (Rate taken from item No. 8.09 including OH & CP)	sqm	0.850	0.850	0.850

Sr	Dof to M	Description	Unit	Quantity a	Quantity as per project category				
No	Ref. to M	Description		Large	Medium	Small	(Rs.)		
		e) Overhead charges		@ on	@ on	@ on			
				(a+b+c)	(a+b+c)	(a+b+c)			
		f) Contractor's profit		@ on	@ on	@ on			
				(a+b+c+e)	(a+b+c+e)	(a+b+c+e)			
		Cost for 1.5 m = $a+b+c+d+e+f$							
		Rate per metre = $(a+b+c+d+e+f)/1.50$							

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

8.27 Suggestive

Street Lighting

Providing and erecting street light mounted on a steel circular hollow pole of standard specifications for street lighting, 10 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

(i)

	i)	Steel circular hollow pole of standard specification for				
		street lighting to mount light at 10 m height above road level	each	1.000	1.000	1.000
	ii)	Sodium vapour lamp	each	1.000	1.000	1.000
hol	der,	ercent of cost of material for electric cable, insulation, scaffolding etc.				
c)		inting				
	Pro alu cir	r Fixing in Median oviding two coats of uminium paint over steel cular hollow pipe with	sqm	5.750	5.750	5.750
		erhang on both sides				
	Fo Pro	r fixing in Footpath oviding two coats of uminium paint over steel		4.620	4.620	4.620
	Fo Pro alu cir	oviding two coats of uminium paint over steel cular hollow pipe with	sqm	4.630	4.630	4.630
For	Fo Pro alu cire ove	oviding two coats of uminium paint over steel	sqm	4.630	4.630	4.630
For d)	Fo Pro alu cire ove Fixii	oviding two coats of uminium paint over steel cular hollow pipe with erhang on one side	sqm	4.630 @ on	4.630 @ on	4.630 @ on
	Fo Pro alu cir ove Fixiu	oviding two coats of uminium paint over steel cular hollow pipe with erhang on one side ng in Median	sqm			

Sr	Def to M. Description	11	Quantity a	Rate			
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

(ii) For fixing in Footpath

Rate per light for Fixing in Footpath = a+b+c+d+e

Note The items of excavation and cement concrete foundation will be measured and included separately in the estimate as per approved design and drawing. The rate for painting has been analysed in this chapter.

8.28 Suggestive

Lighting on Bridges

Providing and fixing lighting on bridges, mounted on steel hollow circular poles of standard specifications, 5 m high fixed on parapets with cement concrete, 20 m apart and fitted with sodium vapour lamp

Unit = Each

a)	Labour Mate	day	0.032	0.032	0.032
	Mazdoor	day	0.532	0.532	0.532
	Electrician	day	0.266	0.266	0.266
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	1.000	1.000
	ii) Sodium vapour lamp 70 watt d 1 Percent of cost of material for	each	1.000	1.000	1.000
	der, electric cable, insulation, der, scaffolding etc				
c)	Painting Providing two coats of aluminium paint over steel circular hollow				
	pipe (Rate taken from item No. 8.09 including OH & CP)	sqm	2.760	2.760	2.760
d)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
e)	Contractor's profit		@ on (a+b+d)	@ on (a+b+d)	@ on (a+b+d)

Rate per light = a+b+c+d+e

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 Suggestive

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

Organular 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 proori, invert evel 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. (1) Single row for one utility service Unit = Running metre Taking output = 20metres a) Random Rubble masonny/Brick masonny in cement mortan 1:6 for head wall both side (Rate taken from item No. 15.07 B including OH & CP) b) Labour Mate CRate taken from tem Ron day 0.067 0	Sr	Ref. to M		Description	Unit	Quantity a	as per projec	t category	Rate
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 masonny/Brick masonry in cement mortar 1:6 for head wall both side (Rate taken from item No. 15.07 b including OH & CP) b) Labour Mate Mazdoor day 0.067 0.067 0.067 0.067 Material Reinforced Cement Concrete pipe 300 mm dia less than 6 for bedding and sides of pipe (0.5 x 0.6 x 20 m) Collar for joints 300 mm dia Cement mortar 1:2 for joints (Rate taken from item No. 15.05 B) d) Machinery Tractior-trolley Poverhead charges i) Contractor's profit Cost for 20 metre = a+b+c+d+e+f/(20 the che) (ii) Double row for two utility services Unit = Running metre Taking output = 20 metre Taking output = 20 metre a) Random Rubble masonny/Brick masonry in cement mortar 1:2 for joints (Rate taken from item No. 15.07 B) (Rate taken from item No. 15.05 cm 3.370 3.370 4.370 masonry/Brick masonry in cement mortar 1:2 for joints (Rate taken from item No. 15.07 B) (Rate taken from item No. 15.07 B) b) Labour Mate	No	itel: to ivi		Description	Oilit	Large	Medium	Small	(Rs.)
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## display									
d) Machinery				•	cum	0.020	0.020	0.020	
Tractor-trolley									
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masonry/Brick masonry in cement mortar 1:6 for head wall both side (Rate taken from item No. 15.07 B) b) Labour Mate Mazdoor Mazdoor Mazdoor Mazdoor Masonry/Brick masonry in cum 3.370									
cement mortar 1:6 for head wall both side (Rate taken from item No. 15.07 B) b) Labour Mate day 0.120 0.120 0.120 Mazdoor day 2.660 2.660				•					
(Rate taken from item No. 15.07 B) b) Labour Mate day 0.120 0.120 0.120 Mazdoor day 2.660 2.660 2.660									
15.07 B) b) Labour Mate day 0.120 0.120 0.120 Mazdoor day 2.660 2.660 2.660					cum	3.370	3.370	3.370	
15.07 B) b) Labour Mate day 0.120 0.120 0.120 Mazdoor day 2.660 2.660 2.660									
b) Labour Mate day 0.120 0.120 0.120 Mazdoor day 2.660 2.660 2.660									
Mate day 0.120 0.120 0.120 Mazdoor day 2.660 2.660			b)						
Mazdoor day 2.660 2.660 2.660			•		dav	0.120	0.120	0.120	
,					-				
D э д ө 317									

CHAPTER: 8- TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr					Quantity	as per projec	t category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		1			8-	1		, ,
			Mazdoor skilled	day	0.333	0.333	0.333	
		c)	Material	uuy	0.333	0.555	0.555	
		٠,	Reinforced Cement Concrete					
			pipe 300 mm dia	metre	40.000	40.000	40.000	
			Granular soil with PI less than 6					
			for bedding and sides of pipe (0.6	cum	14.400	14.400	14.400	
			x 0.6 x 40 m)	Carri	100	111100	111100	
			Collar for joints 300 mm dia	each	18.000	18.000	18.000	
			Cement mortar 1:2 for joints	cacii	10.000	10.000	10.000	
			(Rate taken from item No. 15.05	cum	0.040	0.040	0.040	
			B)	cam	0.040	0.040	0.040	
		d)	Machinery					
		u,	Tractor-trolley	hour	1.000	1.000	1.000	
		۵۱	Overhead charges	noui	@ on	@ on	@ on	
		e)	Overneau charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		(втсти) @ on	(D+C+u) @ on	(D+C+u) @ on	
		',	Contractor's profit		(b+c+d+e)	(b+c+d+e)	(b+c+d+e)	
		Cor	st for 20 metre = a+b+c+d+e+f		(שינייטיפ)	(DICTUTE)	(DICTUTE)	
			te per metre = (a+b+c+d+e+f)/20					
		Nat	e per metre – (атртститеті)/20					
8.29	(iii)	Tris	ole Row for three utility services					
0.23	(111)		it = Running metre					
			king output = 20 metres					
		a)	Random Rubble masonry/Brick					
		a)	masonry in cement mortar 1:6					
			for head wall both side	cum	4.380	4.380	4.380	
			(Rate taken from item No. 15.07	Carri		11300	11300	
			B including OH & CP)					
		b)	Labour					
		•	Mate	day	0.213	0.213	0.213	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor skilled	day	1.330	1.330	1.330	
		c)	Material	aa y	1.550			
		-,	Reinforced Cement Concrete					
			pipe 300 mm dia	metre	60.000	60.000	60.000	
			Granular soil with PI less than 6					
			for bedding and sides of pipe (0.6	cum	21.600	21.600	21.600	
			x 0.6 x 60 m)	_				
			Collar for joints 300 mm dia	each	27.000	27.000	27.000	
			Cement mortar 1:2 for joints		0.050	0.000	0.000	
			(Rate taken from sub-analysis	cum	0.060	0.060	0.060	
		d)	21.01 B) Machinery					
		uj	Tractor-trolley	hour	1.500	1 500	1.500	
		e)	Overhead charges	nour		1.500		
		د)	Overnieum charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		(b+c+u) @ on	(b+c+u) @ on	(b+c+u) @ on	
		٠,	contractor o profit		(b+c+d+e)	(b+c+d+e)	(b+c+d+e)	
		Cos	st for 20 metre = a+b+c+d+e+f		(Biciate)	(B.C.UTE)	(BICIUTE)	
			te per metre = (a+b+c+d+e+f)/20					

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

Sr	Def to M	Description		Quantity a	s per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

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

8.30 Suggestive

Highway Patrolling and Traffic Aid Post

It is proposed to locate one Traffic Aid Post every 50-60 km of the highway. The organisation and financial aspect are required to be finalised in consultation with administrative and traffic authorities.

8.31 Suggestive

Items Related to Underpass/ Subway/ Overhead Bridge/ Overhead Foot Bridge

The items involved for underpass/ subway/ overhead bridge/ overhead foot bridge are earthwork, plain cement concrete, plastering, painting, information sign etc. The rates for these items are available in respective chapters which can be adopted for the quantities derived from the approved designs and drawings

8.32 Suggestive

Traffic Control System and Communication System

Providing a traffic control centre and communication system including telecommunication facilities and related accessories, CCTV, radar, vehicle detection camera, central computer system

These are specialised item of telecommunication system and are the commercial products. The designer is required to contact the manufacturers to ascertain market prices. In case of civil works required to be executed for these installations, pricing may be done as per rates in relevant chapters for quantities derived as per approved design and drawing.

As regards the locations where such devices are required to be installed, the traffic control authority should be consulted to finalise the location

8.33 Suggestive

Gantry Mounted Variable Message Sign Board

Providing and erecting gantry mounted variable message sign board electronically operated capable of flashing the desired message over a

Sr	Ref. to M	Docarinking	11:::*	Quantity	as per proje	ct category	Ra
No	Ket. to IVI	Description	Unit	Large	Medium	Small	(R
		designed support system of					
		aluminium alloy or galvanised steel,					
		erected as per approved design and					
		drawings and with lateral clearance as					
		per clause 802.3					
	(i	•					
	(1)	Unit = tonne					
		Taking output=1 tonne					
		a) Labour					
		Mate	day	0.160	0.160	0.160	
		Mazdoor	day	2.660	2.660	2.660	
		Blacksmith	day	1.330	1.330	1.330	
		b) Material					
		Aluminium alloy/galvanised steel	tonno	1.050	1 050	1.050	
		including 5 Percent wastage	tonne	1.050	1.050	1.050	
		Add 15 Percent of cost of	:				
		material for fabrication and					
		erection.					
		Add 1 Percent of cost of material					
		for nuts, bolts and welding					
		_					
			h	1 000	1 000	1 000	
		Truck 10 tonne	hour	1.000	1.000	1.000	
		d) Overhead charges		@ on	@ on .	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per tonne = a+b+c+d+e					
3.33	(ii	Mossaga Display					
	("						
		Message display board 6 sqm					
		electronically operated with complete					
		electronic fitments for flashing the					
		pre-determined messages.					
		This is a specilised commercial					
		product and the lump sum rate					
		including erection at site is required					
		to be ascertained from the market					
		and including in the rate analysis. The					
		_					
		size of the board will vary depending					
		upon specific location.					
		The rate for the gantry mounted					
		variable sign would be the addition of					
		cost of gantry support system as per					
		approved design determined at (i)					
		above and the cost of message display					
		board ascertained from the market at					
		(ii) above					
3.34 Su	ggestive	Traffic Impact Attenuators at Abutments and Piers					
	Α	· · · · · · · · · · · · · · · · · · ·					
		Provision and installation of traffic					
		attenuators at abutment/pier of	:				
		flyovers bridges using scrap tyres of					

flyovers bridges using scrap tyres of

Sr	Ref. to M		Description	Unit	Quantity a	as per projec	t category	Rat
No	Keil to ivi		Description	Oilit	Large	Medium	Small	(Rs.
			400 20 1: 15 1					
			e 100 x 20 retrieved from trucks in 2 rows and 4 tiers, one above					
			other and tied with 20 mm wire					
			e as per approved design and					
		-	wings.					
			t = sqm					
			ing output = 20 sqm					
		a)	Labour					
		aj	Mate	day	0.093	0.093	0.093	
				day	1.995	1.995	1.995	
			Mazdoor					
			Blacksmith	day	0.333	0.333	0.333	
		b)	Material .					
			Scrap tyres of size 900 x 20	each	80.000	80.000	80.000	
			20 mm steel wire rope	kg	150.000	150.000	150.000	
			1 1 Percent of cost of wire rope					
			clamps etc.					
		c)	Machinery	_				
			Tractor-trolley	hour	3.000	3.000	3.000	
		d)	Overhead charges		@ on	@ on	@ on	
			6		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		e)	Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 20 sqm = a+b+c+d+e					
		Rat	e per sqm = (a+b+c+d+e)/20					
3.34	В	Usi San	ng Plastic/Steel Barrel, Filled with					
		imp of f bar fille with app	vision and installation of traffic pact attenuator at abutment/pier flyovers bridges using plastic/steel rels 0.60 m dia and 1.0 m in height, and with sand in three rows and tied the half of the hal					
			t = sqm					
			ing output = 20 sqm					
		a)	Labour					
			Mate	day	0.173	0.173	0.173	
			Mazdoor	day	3.990	3.990	3.990	
			Blacksmith	day	0.333	0.333	0.333	
		b)	Material		= 0.000	=0.000	5 0.000	
			Plastic barrels	each	50.000	50.000	50.000	
			or		F0 055	EC 000	EC 055	
			Steel barrels	each	50.000	50.000	50.000	
			Sand	cum	8.000	8.000	8.000	
		Λ-I	20 mm steel wire rope	kg	15.000	15.000	15.000	
			d 1 Percent of cost of wire rope for					
			nps etc.					
		c)	Machinery Tractor trollov	hour	2 000	2 000	2 000	
		۱,	Tractor-trolley	hour	2.000	2.000	2.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
					(a i b TC)	(a i b FC)	(4 1 5 7 6)	

Sr	- 6				Quantity a	as per projec	t category	Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		e) (Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost fo	or 20 sqm = a+b+c+d+e		(4.5.0.4)	(4.5.6.4)	(a.b.c.a)	
		Rate p	per sqm = (a+b+c+d+e)/20					
8.34	С	With	HI - DRO cell Sandwich					
		(Pater						
		-	is patented HI - DRO cell system,					
		water tubes	gets discharged from plastic on impact over a pre-					
			mined time, thus absorbing the					
		energ						
			ding and installing a patented HI					
			cell system as a traffic impact uators, using plastic tubes 50 cm					
			.2 m in height, 25 mm opening					
			top, placed in three rows, filled					
			water and tied with a 20 mm wire rope					
		Unit =	•					
			g output = 10 sqm					
		a) L	abour					
			Mate	day	0.133	0.133	0.133	
			Mazdoor	day	3.325	3.325	3.325	
		P	Material Plastic tubes 50 cm dia,1.2 m nigh	each	40.000	40.000	40.000	
			Cost of water	KL	12.000	12.000	12.000	
			20 mm steel wire rope	kg	100.000	100.000	100.000	
			Percent of cost of wire rope for					
		clamp	os etc. Machinery					
		-	ractor-trolley	hour	2.000	2.000	2.000	
			Vater tanker 6 KL capacity	hour	2.000	2.000	2.000	
		d) (Overhead charges		@ on	@ on	@ on	
		e) (Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	
		Cost f	or 10 sqm = a+b+c+d+e					
		Rate p	per sqm = (a+b+c+d+e)/10					
8.35	Suggestive	Solar Stud)	Powered Road Marker (Solar					
		Supply Market moldet solar pactive and prisma	ying of Solar Raised Pavement ers made of polycarbonate ed body with circular shape, powered,LED self illumination in mode, 360 degree illumination reflective panels with micro atic lens capable of providing					
		enteri mode	internal reflection of the light ing the lens face in passive . The marker shall support a					

load of 20000 kg tested in accordance

Sr	Dof 40 84	Description	l locia	Quantity a	as per projec	t category	Rate	
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	

to ASTM D 4280. The marker should be resistant to dust and water ingress according to IP 65 standards and should withstand temperatures in the range of 0 C to 70 C. Color of lighting could be provided in red or yellow (amber) as per requirement and typical frequency of blinking is 1 Hz. There should be current losses of less than 20 microamperes at 2.4 V in sleepcharging mode to enhance the life of the marker and a full charge should provide for a minimum autonomy of 50 hours. The height, width and length of the marker shall not be less than 10 mm x 100 mm x 100 mm. Also, the surface diameter of the marker shall not be less than 100 mm respectively. The weight of the marker shall not exceed 0.5 Kilograms. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive and complete as directed by the engineer.

Unit = Nos

Taking output = 50 Nos

a)	Labour				
	Mate	day	0.053	0.053	0.053
	Mazdoor	day	1.330	1.330	1.330
b)	Material				
	Poly carbonate or ABS body and shall support a load of 13.635 Kg tested in accordance to ASTM D 4280 with height not exceeding 20mm and width/length not exceeding 130mm	each	50.000	50.000	50.000
	I 10 Percent of cost of material				
	fixing and installation		_	_	_
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)

@ on

(a+b+c)

@ on

(a+b+c)

@ on

(a+b+c)

Cost for 50 studs = a+b+c+d Rate per studs = (a+b+c+d)/50

Contractor's profit

8.36 Suggestive

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

Sr	D-6 4- 84		D	11!4	Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	
		Uni	it = Running metre					
			king output = 68 Nos.					
		a)	Labour					
		•	Mate	day	0.027	0.027	0.027	
			Mazdoor	day	0.665	0.665	0.665	
		b)	Material	•				
			Traffic cones with 150 mm reflective sleeve	each	68.000	68.000	68.000	
		c)	Machinery					
		-	Tractor-trolley	hour	0.100	0.100	0.100	
		d)	Overhead charges		@ on	@ on	@ on	
		e)	Contractor's profit		(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	(a+b+c) @ on (a+b+c+d)	

Cost for 68 Nos. = a+b+c+d+e Rate per metre = (a+b+c+d+e)/68

8.37 Suggestive

Roadside Amenities

A Rest areas

Providing plainly furnished accommodation for rest rooms, dormitories, restaurants, stalls, shops, petrol pump, telephone booth, first aid room, traffic aid post, police assistance booth, including electricity, toilet and sewerage system

Pricing may be done based on current plinth area rates approved by PWD/CPWD/MES for a particular zone. Area is required to be assessed for specific location as per actual site conditions

Parking areas and bus lay byes for trucks, buses and light vehicles

Pricing of parking areas may be done for the quantities of various items based on the approved dimensions and pavement design for a particular terrain and soil. Rates for items may be from respective chapters.

C Lawn

Providing a lawn planted with grass and its maintenance

Pricing of lawn may be done as per rates given in the chapter on horticulture for the quantities as per approved dimensions in the drawings

8.38 Suggestive

Rumble Strips

Provision of 15 nos rumble strips covered with premix bituminous

Sr	Dof to M	Description	11	Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

carpet, 15-20 mm high at center, 250 mm wide placed at 1 m center to center at approved locations to control speed, marked with white strips of road marking paint.

Unit = sqm

Taking output = 100 sqm (including gaps)

The rate per sqm of premix carpet and road marking may be adopted from chapter 5 & 8 respectively for the quantities calculated from approved drawings.

8.39 Suggestive

Policeman Umbrella

Provision of a 2 m high (floor to roof) umbrella for traffic policeman at road crossings, where necessary, installed on a raised platform, built on a central support of a steel pipe 100 mm dia, roof made of 25 mm dia steel pipe to provide covered area of 3 sqm, roofed with CGI sheets, all steel parts to be given 2 coats of paint

Unit = each

Taking output = one number

Far	thwork	cum	Г						
-	nent Concrete		Quantities o	f these item	sto be calculated as				
		cum _	 per approve	d cost added as per					
bric	k masonry or	cum	rates of these items given in chapter 3 an						
sto	ne masonry	cum	L		·				
	Painting								
	(Rate taken from item No. 8.09	sqm	2.500	2.500	2.500				
	including OH & CP)								
a)	Labour								
	Mate	day	0.120	0.120	0.120				
	Mazdoor	day	1.330	1.330	1.330				
	Blacksmith (Ist class)	day	1.330	1.330	1.330				
	Welder	day	0.333	0.333	0.333				
b)	Material								
	Steel pipe 100 mm dia	metre	3.500	3.500	3.500				
	Steel pipe 25 mm dia	metre	10.000	10.000	10.000				
	CGI sheets (0.8 mm)	kg	8.000	8.000	8.000				
Add	I 25 Percent of cost of material								
for	fabrication								
Add	I 2 Percent of cost of material for								
wel	ding consumables, J-hooks,								
was	washers etc.								
c)	c) Machinery								
	Tractor-trolley		0.500	0.500	0.500				
d)	Overhead charges		@ on	@ on	@ on				

(a+b+c)

(a+b+c)

(a+b+c)

Sr	Def to M	Description	11	Quantity a	s per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

e) Contractor's profit

Rate per policeman umbrella = a+b+c+d+e

8.40 suggestive

High Mast Pole Lighting at Interchanges and Flyovers

Providing and erecting a high mast pole lighting with 30 m high hot dip galvanised mast designed withstand forces exerted with wind speeds of 180 km per hour with 3 seconds gust, as per IS:875 (Part 3) -1978, fitted with a base flange, door at the base of mast with heavy duty internal lock, lantern carriage, suitable winching arrangement for safe working load of 750 kg and high powered electrically driven power tools for raising and lowering of lantern carriage, flexible 8 core electric cable, lightening conductor, earthing terminal, and fixing 2 nos aviation obstruction lights on top of the mast, all complete as per approved design and drawings

This is a specialised work and is generally done by firms who specialise in such jobs. The detailed designs and estimates are submitted by the firms along with their tender for checks by the Department. The cost of this work is required to be worked out based on approved design, drawings and estimate of the lowest tender. A separate contract for this work is concluded as the contractors for road and bridge works generally donot undertake such jobs.

8.41 Toll Plaza

The construction, operation and maintenance of Toll Plaza can be broken into separate items of work as under based on the approved design and drawings:-

 a) Provision of toll collection service lane to separate different categories of vehicles for purpose of toll collection. This involves considerable increase in carriage way width

Sr	Dof to M	Description	11	Quantity a	s per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

- b) Provision of 2.5 m wide separators for different toll collection service lanes for safety
- Toll booths with integrated roof c) cover
- d) Barrier gates for individual lanes
- e) Provision of building to provide facility to toll plaza personnel
- f) Toll plaza office equipment and furniture
- Water supply, electricity, g) sanitation, septic-tank system and drainage
- Telephone, intercoms, wireless h) communication system
- i) High mast lighting
- j) Pavement marking
- k) Overhead signs
- I) Fixed message signs (Advance)
- Variable message signs m)
- n) Traffic cones and pylons
- 0) First aid post
- p) Traffic aid post and security

The quantities for the above mentioned items may be calculated from the approved design and drawings and their rates adopted from respective chapters of the Standard Data Book.

Safety Devices and Signs in 8.42 **Construction Zones**

Provision and fixing of traffic signs for limited period at suitable locations in construction zone comprising of warning zone, approach transition zone, working zone and terminal transition zone with a minimum distance of 60 cm from the edge of the kerb in case of kerbed roads and 2 to 3 m from the edge of the carriageway in case of un-kerbed roads, the bottom edge of the lowest sign plate to be not less than 2 m above the road level, fixed on 60 mm x 60 mm x 6 mm angle iron post, founded and installed as per approved design and drawings, removed and disposed of after completion of construction work, all as per IRC:SP:55

Unit = each

Taking output = one sign post

Sr	2	Description		Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Following types of signs are required to be fixed in construction zones for safety of traffic

- a) Diversion one km ahead
- b) Traffic sign ahead
- c) Road ahead closed
- d) Men at work
- e) Road narrow
- f) Single file traffic
- g) Right lane diverted
- h) Left lane diverted
- i) Right lane closed
- j) Left lane closed
- k) Median closed
- I) Diversion to other carriageway
- m) Traffic signal ahead
- n) Two way traffic
- o) Un even road
- p) Slippery road
- q) Loose chippings
- r) Dual carriageway ends
- s) Diversion
- t) Do not enter
- u) Road closed
- v) Stop
- w) Slow
- x) One way
- y) Give way
- z) Overtaking prohibited
- aa) Speed limit
- bb) Weight limit
- cc) Height and length limit
- dd) No stopping or standing
- ee) Any other warning or regulatory safety sign as per site requirement and consistent with IRC:SP:55 and IRC:67

The rate for traffic signs are already worked out and given elsewhere in this chapter. The same may be adopted.

8.43 suggestive

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

Sr	Dof to M	Description	I India	Quantity as per project category		t category	
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Unit = each					
		Taking output = one steel portable					
		barricade					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	0.333	0.333	0.333	
		Painter	day	0.665	0.665	0.665	
		Welder	day	0.333	0.333	0.333	
			uay	0.555	0.555	0.333	
		b) Material	L	25.000	25.000	25.000	
		Angle iron 45 x 45 x 5 mm	kg	25.000	25.000	25.000	
		MS sheet 300 mm wide,2.5 m	kg	15.000	15.000	15.000	
		long and 2.6 mm thick		0.500	0.500	0.500	
		Paint	litre	0.500	0.500	0.500	
		Add 2 Percent of cost of steel for					
		welding consumables, nuts & bolts					
		and drilling holes		0	0	Ø	
		c) Overhead charges		@ on	@ on	@ on	
		d) Contractor's profit		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Rate per barricade = a+b+c+d					
		Permanent Type Barricade in					
8.44	suggestive	Construction Zone					
	Α	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					
		Unit = each					
		Taking output = one barricade					
		a) Labour					
		Mate	day	0.064	0.064	0.064	
		Mazdoor	day	0.399	0.399	0.399	
		Painter	day	0.798	0.798	0.798	
		Welder	day	0.399	0.399	0.399	
		b) Material					
		Angle iron 50 x 50 x 5 mm,2 m	ka	15.000	15.000	15.000	
		long,2 Nos.	kg	12.000	13.000	13.000	
		MS sheet of 12 SWG,3 Nos of	kg	50.000	50.000	50.000	
		200 mm width and 4 m length	νŔ	50.000	30.000	30.000	
		Paint	litre	1.000	1.000	1.000	
		Add 1 Percent of cost of steel for					
		welding consumables, nuts & bolts					
		and drilling holes					
		c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	

Sr	56. 14	5		Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per barricade = a+b+c+d					
8.44	В	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 of 450, complete as per IRC:SP:55 Unit = each					
		Taking output = one barricade					
		a) Labour					
		Mate	day	0.080	0.080	0.080	
		Mazdoor	day	0.399	0.399	0.399	
		Painter	day	0.798	0.798	0.798	
		Carpenter	day	0.798	0.798	0.798	
		b) Material					
		Timber Add 1 Percent of cost of timber for nuts & bolts, nails, etc.	cum	0.180	0.180	0.180	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per barricade = a+b+c+d					
8.44	С	With 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 Mazdoor Painter	day day day	0.319 3.990 1.330	0.319 3.990 1.330	0.319 3.990 1.330	
		Mason	day	2.660	2.660	2.660	
		b) Material	•				
		Brick	each	1800.000	1800.000	1800.000	
		Cement	kg	22.000	22.000	22.000	
		Sand	cum	0.090	0.090	0.090	
		Paint	litre	1.250	1.250	1.250	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	

Sr	- 6			Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Contractor's profit Rate per barricade = a+b+c+d		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
8.45	suggestive	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 Red and white 100 mm wide fitted with reflectors 3 Nos of 75 mm wide, all as per IRC:SP:55. Unit = each Taking output = one drum delineator a) Labour Mate Mazdoor Painter b) Material Steel drum 300 mm dia 1.2 m high/empty bitumen drum Paint c) Overhead charges d) Contractor's profit	day day day each litre	0.027 0.333 0.333 1.000 0.500 @ on (a+b) @ on (a+b+c)	0.027 0.333 0.333 1.000 0.500 @ on (a+b) @ on (a+b+c)	0.027 0.333 0.333 1.000 0.500 @ on (a+b) @ on (a+b+c)	
		Rate per drum delineator = a+b+c+d Water Filled Barricades Work zone					
8.46	suggestive	sheeting Providing water filled barricades made up of LDPE to segregate the vehicular movement and work zone as per IRC SP 55 shall be in Trapezoidal Shape 800 mm to 1000 mm in length, 700 mm in height for Major Roads and expressway and 500 mm tall for other roads with interlocking arrangements, To be placed 0.5 m from the edge of the carriageway for expressway and 0.3 m for other roads. It should have reboundable work zone sheeting as per ASTM D 4956 S2. Unit = each Taking output = one drum delineator a) Labour Mate Mazdoor b) Material Water Filled Barricades Work zone sheeting	day day each	0.013 0.333 1.000	0.013 0.333 1.000	0.013 0.333 1.000	

Sr	2 () 24	5		Quantity a	as per projec	t category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per drum delineator = a+b+c+d		(4.2.0)	(4.2.0)	(4.2.0)	
8.47	suggestive	Tubular Marker/ Spring post 450 mm Providing Tubular Marker made up of Polyurethane used to divide opposing lanes of road users shall be flexible in nature. Tubular maker having height upto 450 mm shall be having 75 mm reboundable work zone retroreflective sheeting as per ASTM 4956 S2. Application of Tubular Marker Shall be done as per IRC SP 55 Unit = each Taking output = one drum delineator a) Labour Mate Mazdoor b) Material Tubular Marker/ Spring post 450 mm c) Overhead charges	day day each	0.013 0.333 1.000 @ on (a+b)	0.013 0.333 1.000 @ on (a+b)	0.013 0.333 1.000 @ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	(а+b) @ on (a+b+c)	(а+b) @ on (a+b+c)	
		Rate per drum delineator = a+b+c+d					
8.48	suggestive	Tubular Marker/ Spring post 700 mm Providing Tubular Marker made up of Polyurethane used to divide opposing lanes of road users shall be flexible in nature. Tubular maker having minimum height 700 mm shall be having minimum 75 mm Reboundable work zone retroreflective sheeting as per ASTM 4956 S2. Application of Tubular Marker Shall be done as per IRC SP 55. Unit = each					
		Taking output = one drum delineator a) Labour					
		Mate	day	0.013	0.013	0.013	
		Mazdoor	day	0.333	0.333	0.333	
		b) Material					
		Tubular Marker/ Spring post 700 mm	each	1.000	1.000	1.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per drum delineator = a+b+c+d		((2:3:5)	(=:3:0)	

Sr	Def + **		Description	11!	Quantity as per project category			Rate
No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
. 10 c	uggestive	Elar	rman					
.43 3	uggestive	-	gman					
			itioning of a smart flagman with a					
		-	ow vest and a yellow cap and a red g 600 x 600 mm securely fastened					
			s staff 1 m in length for guiding the					
		traf						
			it = each					
		_	ing output = one flagman					
			Labour					
		a)		day	0.053	0.052	0.053	
			Mate	day		0.053		
			Mazdoor	day	1.330	1.330	1.330	
		b)	Material					
			Flag of red color cloth 600 x 600	each	1.000	1.000	1.000	
			mm					
			Wooden staff for fastening of	each	1.000	1.000	1.000	
		,	flag 25 mm dia, one m long		@ on	@ on	@ on	
		c)	Overhead charges		(a+b)	(a+b)	(a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
		u,	contractor s profit		(a+b+c)	(a+b+c)	(a+b+c)	
		Rat	e per flagman = a+b+c+d					
		۸ ماء	vanced Traffic Management					
3.50	816		vanced Traffic Management tems (ATMS) work shall cover					
			ign, supply, installation,					
			nmissioning and/or operation and					
			intenance of Advance Traffic					
		Ma	nagement Systems (which is one					
		of	the components of Intelligent					
		Tra	nsport Systems - ITS). The system					
		wou	uld include out-door equipment					
			uding emergency call boxes,					
			iable message sign systems,					
			teorological data system, close					
			tuit TV camera (CCTV) system, ffic counting and classification					
		trat	TIC COUNTING AND CIASSITICATION					
			_					
		syst	tem and transmission system. The					
		syst ind	tem and transmission system. The oor equipment would comprise a					
		syst ind larg	tem and transmission system. The oor equipment would comprise a ge display board, central computer					
		syst inde larg (wit	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System -					
		syst inde larg (wit NM	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call					
		syst inde larg (wit NM cen	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System -					
		syst inde larg (wit NM cen eme	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call tre system or management of					
		syst inde larg (wit NM cen eme con	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call tre system or management of ergency call boxes housed in a					
	٨	syst inde larg (wit NM cen eme con	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call tre system or management of ergency call boxes housed in a attrol centre with uninterrupted					
	A	syst inde larg (wit NM cen em- con pov Tra Cen	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call tre system or management of ergency call boxes housed in a atrol centre with uninterrupted wer supply. If ic Management Command intre Equipment					
		syst inde larg (with NM cen eme con pov Tra Cen	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call tre system or management of ergency call boxes housed in a strol centre with uninterrupted wer supply. If ic Management Command atre Equipment exterial					
	A1	syst inde larg (wit NM cen eme con pov Tra Cen	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call stre system or management of ergency call boxes housed in a strol centre with uninterrupted wer supply. ffic Management Command intre Equipment aterial Control Centre Server	Nos.	1.000	1.000	1.000	
		syst inde larg (wit NM cen eme con pov Tra Cen	tem and transmission system. The oor equipment would comprise a ge display board, central computer th Network Management System - IS), CCTV monitor system, call tre system or management of ergency call boxes housed in a strol centre with uninterrupted wer supply. If ic Management Command atre Equipment exterial	Nos. Nos.	1.000 1.000	1.000 1.000	1.000 1.000	

1.000

1.000

1.000

Backup Video (Only Incidents) Nos.

Α4

Sr			Unit	Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Server					
	A5	Graphic Display (70" LED DLP in 3x2 matrix)	Set	1.000	1.000	1.000	
	A6	Graphic Display Controller and software including Video Switches	Set	1.000	1.000	1.000	
	A7	CCTV Monitoring Workstation	Nos.	1.000	1.000	1.000	
	A8	Emergency Telephone (1033) console	Nos.	1.000	1.000	1.000	
	A9	VIDS- Workstation	Nos.	1.000	1.000	1.000	
	A10	Administrative Workstation	Nos.	1.000	1.000	1.000	
	A11	ATMS Operator Workstation	Nos.	1.000	1.000	1.000	
	A12	CCTV Joystick	Nos.	1.000	1.000	1.000	
	A13	Operations Laser Printer (Colour)	Nos.	1.000	1.000	1.000	
	A14	Operations Laser Printer (Black)	Nos.	1.000	1.000	1.000	
	A15	Rack 19"	Nos.	1.000	1.000	1.000	
	В	Advanced Traffic Management Systems (ATMS) Software					
	B1	ATMS Control Room Software (integrated with VIDS, ATCC, VMS, MOS)	Nos.	1.000	1.000	1.000	
	В2	Video Management Software with atleast 150 VMS Lic.	Nos.	1.000	1.000	1.000	
	В3	Facility Monitoring System Controller Software	Nos.	1.000	1.000	1.000	
	B4	Server & Database license	Nos.	1.000	1.000	1.000	
	B5	Antivirus license	Nos.	1.000	1.000	1.000	
	С	PTZ Closed Circuit Television System					
		PTZ Camera (including CCTV Controller)	Set	1.000	1.000	1.000	
		Solar System with UPS, battery & 12m Pole & Cabinet	Set	1.000	1.000	1.000	
	D	Video Incident Detection System Equipment (VIDS)					
	D1	VIDS Camera (including Image Processing unit)	Set	1.000	1.000	1.000	
	D2	Warning amber lights with hooters, 72 Hrs solar backup, 5m poles and foundation	Set	1.000	1.000	1.000	
	D3	Cabinet	Nos.	1.000	1.000	1.000	
	D4	12 m Pole (including manufacturing and galvanizing)	Nos.	1.000	1.000	1.000	
	D5	Solar System with UPS & batteries	Set	1.000	1.000	1.000	
	E	Automatic Traffic Counters-cum- classifier System Equipment (ATCC)					
	E1	Equipment, Sensor unit, Processing unit, Solar power supply	Set	1.000	1.000	1.000	
	E3	Solar System with UPS, batteries	Set	1.000	1.000	1.000	
	F	Variable Message Sign Equipment (VMS)					

CHAPTER: 8- TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr	Dof to M	Description	l lmit	Quantity	as per project	category	Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	F1	VMS (Variable Message Sign - M type)	Nos.	1.000	1.000	1.000	
	F2	Gantry (including manufacturing and galvanizing)	Nos.	1.000	1.000	1.000	
	F3	Solar System with UPS, battery and cabinet for M type VMS	Set	1.000	1.000	1.000	
	G	UPS and Power system					
	G1	Uninterruptible Power Supply (UPS) For Server Rack (10 KVA)	Set	1.000	1.000	1.000	
	G2	Uninterruptible Power Supply (UPS) For TMC (30 KVA)	Set	1.000	1.000	1.000	
	G3	Power Distribution Board (Essential & Critical Supply)	Set	1.000	1.000	1.000	
	н	Meteorological Observation System (MOS)					
	H1	MOS sensor Equipment (including MOS Controller)	Set	1.000	1.000	1.000	
	H2	Cabinet	Nos.	1.000	1.000	1.000	
	H3	Pole	Nos.	1.000	1.000	1.000	
	H4	Steel fence for protection	Set	1.000	1.000	1.000	
	1	Digital Transmission System (DTS)					
	I1	24 Core Armoured OFC + all accessories	Km	1.000	1.000	1.000	
	12	40 mm PLB HDPE duct as per latest TSEC specifications + all accessories	Km	1.000	1.000	1.000	
	13	Trenching of 1.8 meters, Laying & Backfilling for PLB HDPE duct	Km	1.000	1.000	1.000	

Note Overhead and contractor profit will be add separately on Item no 8.50.

Civil works required to be executed for these installations, pricing may be done as per rates in relevant chapters for quantities derived approved design and drawing.

8.51 suggestive Fiber Reinforced Cement Concrete new jersey crash barrier

Unit = Linear metre

Taking output = 20 m

A Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with Reinforced Cement Concrete with fiber steel and as per details given IRC -5 (Fig.-5, b) including dowel bars 25 mm dia, 450 mm long at expansion joints filled with premoulded asphalt filler board etc., as per approved drawing and at locations directed by the Engineer, all as specified. (Area-0.243 Sqm. /Meter, Single Face)

a) M 30 grade concrete

M 30 grade concrete (Area-0.243 Sqm. /Meter)(Rate taken

cum 4.860 4.860 4.860

CHAPTER: 8- TRAFFIC SIGNS. MARKINGS & OTHER ROAD APPURTENANCES

Sr	Dof to M	Description	11	Quantity as per project category			Rate
No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		from item No. 12.11 A (iii) Case II including OH & CP)					
		b) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	1.330	1.330	1.330	
		c) Material	•				
		Fiber Steel (35 Kg / Cum)	tonne	0.170	0.170	0.170	
		d) Overhead charges		@ on (b+c)	@ on (b+c)	@ on (b+c)	
		e) Contractor's profit		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	

Cost for 20 metre = a+b+c+d+e

Rate per metre = (a+b+c+d+e)/20

- Note i) Excavation and backfilling are incidental to work and not to be measured separately.
 - ii) If PCC required below crash barrier then it should be measured & Paid separately.
 - iii) Rate for RCC M 30 may be taken from chapter on 12.
- 8.15 B Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with Reinforced Cement Concrete with fiber steel and as per details given IRC -119 (Fig.-26) including dowel bars 25 mm dia, 450 mm long at expansion joints filled with pre-moulded asphalt filler board etc., as per approved drawing and at locations directed by the Engineer, all as specified.

(Area-0.261 Sqm. /Meter, Double Face)

	•	, , ,
(i)	a)	M 30 grade concrete
		MAZO arada canarata

e)	Contractor's profit		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)
•	ŭ		(b+c)	(b+c)	(b+c)
d)	Overhead charges		@ on	@ on	@ on
	Fiber Steel (35 Kg / Cum)	tonne	0.183	0.183	0.183
c)	Material				
	Mazdoor	day	1.330	1.330	1.330
	Mate	day	0.053	0.053	0.053
b)	Labour				
	A (iii) Case II including OH & CP)				
	(Rate taken from item No. 12.11	cum	5.220	5.220	5.220
	0.261 Sqm. /Meter)		F 220	F 220	F 220
	M 30 grade concrete (Area-				

Cost for 20 metre = a+b+c+d+e

Rate per metre = (a+b+c+d+e)/20

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

- ii) If PCC required below crash barrier then it should be measured & Paid separately.
- iii) Rate for RCC M 30 may be taken from chapter on 12.

CHAPTER - 9

PIPE CULVERTS

PREAMBLES:

- Excavation for structures has been provided both by manual and mechanical means. The rate relevant to a particular situation may be adopted.
- The earth excavated from foundation has been proposed to be backfilled and balance quantity utilized for road work locally except for marshy soil where disposal has been provided.
- Pipe culverts of size 1000 mm, 1200 mm & 1500 mm dia in single row and double row which are generally used on roads, have been included. Only laying pipe has been included in the rate. Auxiliary works such as excavation, backfilling, concrete and masonry shall be paid for separately, as provided under the respective clauses.
- Any river training and protection work like stone pitching, apron, revetment, curtain wall etc. may be provided under the respective clauses included in Chapter 16.
- The choice between first class bedding and cement cradle bedding will depend on particular situations and approved design.
- 6 The joining of pipes is proposed by collar or flush joints.
- Backfilling upto 300 mm above top of the pipe shall be carefully done and the soil thoroughly rammed, tamped or vibrated in layers not exceeding 150 mm.
- 8 Head walls and other ancillary works shall be executed under respective clauses.
- 9 Pipe shall be laid at least 600 mm below from the top of road.

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category Rate
Sr NO	Kei. to ivi	Description	Unit	Large	Medium	Small (Rs.
9.01	304 I A (i)	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. Ordinary soil Unit = cum Taking output = 10 cum Manual Means Depth upto 3 m a) Labour Mate Mazdoor b) Overhead charges c) Contractor's profit Cost for 10 cum = a+b+c Rate per cum = (a+b+c)/10		0.186 4.655 @ on (a) @ on (a+b)	0.186 4.655 @ on (a) @ on (a+b)	0.186 4.655 @ on (a) @ on (a+b)
	Note	 Cost of dewatering may be Assessment for dewatering The excavated earth can be road work except for marsh marshy soil. This remark is a few of excavation for open four 	shall be used p ny soil. I commo uttering	e made as per si artially for back Hence cost of di n to all cases of , where needed	te conditions. filling of founda sposal has not l item 9.01 exclu	ation pit and partly for been added except for ding marshy soil.
9.01	A (ii)	Depth 3 m to 6 m a) Labour Mate/Supervisor Mazdoor b) Overhead charges c) Contractor's profit Cost for 10 cum = a+b+c Rate per cum = (a+b+c)/10	day day	0.239 5.985 @ on (a) @ on (a+b)	0.239 5.985 @ on (a) @ on (a+b)	0.239 5.985 @ on (a) @ on (a+b)
	Note	 Cost of dewatering may be Assessment for dewatering 		•		
9.01	A (iii)	Depth above 6 m a) Labour Mate/Supervisor Mazdoor b) Overhead charges c) Contractor's profit Cost for 10 cum = a+b+c Rate per cum = (a+b+c)/10	day day	0.319 7.980 @ on (a) @ on (a+b)	0.319 7.980 @ on (a) @ on (a+b)	0.319 7.980 @ on (a) @ on (a+b)

2. Assessment for dewatering shall be made as per site conditions.

1. Cost of dewatering may be added where required upto 20 Percent of labour cost.

Note

Sr No Ref. to M					Quantity	Quantity as per project category		
Sr No	Ref.	to M	Description	Unit	Large	Medium	Small	Rate (Rs.)
9.01	В	(i)	Mechanical Means (Depth upto 3 m) Unit = cum Taking output = 330 cum a) Labour					
			Mate	day	0.426	0.426	0.426	
			Mazdoor	day	10.640	10.640	10.640	
			b) Machinery Hydraulic Excavator For excavation	auy	10.040	10.040	10.040	
			(i) 1.2 cum bucket capacity	hour	5.508			
			(ii) 1.1 cum bucket capacity	hour		6.344		
			(iii) 0.9 cum bucket capacity For backfilling (considering 60% of the excavated material)	hour			8.869	
			(i) 1.2 cum bucket capacity	hour	3.305			
			(ii) 1.1 cum bucket capacity	hour		3.806		
			(iii) 0.9 cum bucket capacity	hour			5.321	
			Tipper for transportation of excess material to dumping yard considering lead @ 1 km					
			(i) 18 cum capacity (ii) 14 cum capacity	t-km t-km	198.000	198.000		
			(iii) 10 cum capacity	t-km			198.000	
			c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			Cost for 330 cum = $a+b+c+d$ Rate per cum = $(a+b+c+d)/330$					
9.01	В	(ii)	Mechanical Means (Depth 3 m to 6 m)					
			Unit = cum Taking output = 300 cum					
			a) Labour					
			Mate	day	0.426	0.426	0.426	
			Mazdoor	day	10.640	10.640	10.640	
			b) Machinery Hydraulic Excavator	,				
			For excavation					

C N. a	Def to M	Ref. to M Description	l linit	Quantity a	s per project	category	Rate
Sr No	кет. то ічі	Description	Unit	Large	Medium	Small	(Rs.)
		(i) 1.2 cum bucket capacity	hour	5.564			
		(ii) 1.1 cum bucket	hour		6.408		
		capacity					
		(iii) 0.9 cum bucket capacity	hour			8.958	
		For backfilling (considering 60% of the excavated material)					
		(i) 1.2 cum bucket capacity	hour	3.338			
		(ii) 1.1 cum bucket capacity	hour		3.845		
		(iii) 0.9 cum bucket capacity	hour			5.375	
		Tipper for transportation of excess material to dumping yard considering lead @ 1 km					
		(i) 18 cum capacity	t-km	180.000			
		(ii) 14 cum capacity	t-km		180.000		
		(iii) 10 cum capacity	t-km			180.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c) (@ on (a+b+c)	@ on (a+b+c)	
		Cost for 300 cum = $a+b+c+d$					
		Rate per cum = $(a+b+c+d)/300$					
9.01	B (iii)	Mechanical Means (Depth above 6 m)					
		Unit = cum					
		Taking output = 270 cum					
		a) Labour					
		Mate	day	0.426	0.426	0.426	
		Mazdoor	day	10.640	10.640	10.640	
		b) Machinery					
		Hydraulic Excavator					
		For excavation					
		(i) 1.2 cum bucket capacity	hour	5.634			
		(ii) 1.1 cum bucket capacity	hour		6.488		
		(iii) 0.9 cum bucket capacity	hour			9.070	
		For backfilling (considering 60% of the excavated material)					
		(i) 1.2 cum bucket capacity	hour	3.380			
		(ii) 1.1 cum bucket capacity	hour		3.893		

				Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
<u> </u>		/::\0.0	h a			•	, - <i>,</i>
		(iii) 0.9 cum bucket capacity	hour			5.442	
		Tipper for transportation	n				
		of excess material to					
		dumping yard considering	3				
		lead @ 1 km (i) 18 cum capacity	t-km	162.000			
		(ii) 14 cum capacity	t-km	102.000	162.000		
		(iii) 10 cum capacity	t-km		102.000	162.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit			@ on (a+b+c)		
		Cost for 270 cum = $a+b+c+d$		C 1 (1 1 1,	C 1 (1 1 1)	C = (, , ,	
		Rate per cum = $(a+b+c+d)/27$	0				
		. , , , , ,					
9.01	II	Ordinary Rock (not requiring blasting)					
	Α	Manual Means					
	(i)	Depth upto 3 m					
		Unit = cum					
		Taking output = 10 cum					
		a) Labour					
		Mate	day	0.266	0.266	0.266	
		Mazdoor	day	6.650	6.650	6.650	
		b) Overhead charges @ on					
		c) Contractor's profit @ on	ո (a+b)				
		Cost for 10 cum = a+b+c					
		Rate per cum = (a+b+c)/10					
	Note	 Cost of dewatering upto 1 Assessment for dewatering 			•	where required	d.
9.01	В	Mechanical Means					
		Unit = cum					
		Taking output = 50 cum					
		a) Labour					
		Mate	day	0.160	0.160	0.160	
		Mazdoor	day	3.990	3.990	3.990	
		b) Machinery					
		Hydraulic Excavator					
		Excavator for excavation		6.926			
		(i) 1.2 cum bucket capacity	hour	6.926			
		(ii) 1.1 cum bucket capacity	hour		8.149		
		(iii) 0.9 cum bucket capacity	hour			8.658	
		εαραειτγ					

			l	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		For loading					
		(i) 1.2 cum bucket capacity	hour	1.039			
		(ii) 1.1 cum bucket	hour		1.196		
		capacity					
		(iii) 0.9 cum bucket capacity	hour			1.672	
		Jack Hammer	hour	6.926	8.149	8.658	
		Tipper					
		For transportation considering lead @ 1km					
		(i) 18 cum capacity	t-km	75.000			
		(ii) 14 cum capacity	t-km		75.000		
		(iii) 10 cum capacity	t-km			75.000	
		For loading & unloading time					
		(i) 18 cum capacity	hour	1.039			
		(ii) 14 cum capacity	hour		1.196		
		(iii) 10 cum capacity	hour			1.672	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 50 cum = $a+b+c+d$					
		Rate per cum = $(a+b+c+d)/50$					
9.01	III	Hard Rock (requiring blasting)					
	Α	Manual Means					
		Unit = cum					
		Taking output = 10 cum a) Labour					
		Mate	day	0.466	0.466	0.466	
		Driller	day	0.665	0.665	0.665	
		Blaster	day	0.333	0.333	0.333	
		Mazdoor b) Machinery	day	10.640	10.640	10.640	
		Air Compressor 250 cfm with 2 jack hammer for	hour	1.000	1.000	1.000	
		drilling. c) Material					
		Explosives (Blasting Material)	kg	3.500	3.500	3.500	
		Detonator electric	each	14.000	14.000	14.000	
		d) Overhead chargese) Contractor's profit			@ on (a+b+c)		
		e, contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 10 cum = a+b+c+d+e		(4.8.014)	(4.8.014)	(4.8.014)	
		Rate per cum = $(a+b+c+d+e)/1$	0				
		(4.0.0.0,0,7	-				

Note 1. Cost of dewatering @ 10 Percent of (a+b) may be added, where required.

2. Assessment for dewatering shall be made as per site conditions.

6 21	5.1.			Do-contrat*	11*	Quantity	as per project	category	Rate
Sr No	Ref. to	IVI		Description	Unit	Large	Medium	Small	(Rs.)
9.01	301 & 302	III	Har	d Rock (requiring blasting)					
			hard spec	rying out excavation in d rock to achieve a cified slope of the rock face					
			-	controlled use of explosives blasting accessories in					
			pro _l drill	perly aligned and spaced holes, collection of the avated rock by a dozer,					
			load	ding in tipper by a front end der and disposing of the					
			upt	terial with all lifts and lead o 1000 m, all as specified in use No. 303					
		В	Me	chanical Means					
				t = cum					
				ing output = 120 cum					
			a)	Labour Mate	day	0.279	0.279	0.279	
				Mazdoor	day	3.990	3.990	3.990	
				Driller	day	2.660	2.660	2.660	
				Blaster	day	0.333	0.333	0.333	
			b)	Machinery					
				Air compressor	hour	6.000	6.000	6.000	
				Jack Hammer for drilling holes (@ 4.5 m per hour)	hour	24.000	24.000	24.000	
				Jack Hammer (consider 5% of the volume for dressing)	hour	1.219	1.219	1.219	
				Hydraulic Excavator					
				Excavator for excavation					
				(i) 1.2 cum bucket capacity	hour	1.219			
				(ii) 1.1 cum bucket capacity	hour		1.219		
				(iii) 0.9 cum bucket capacity	hour			1.219	
				For loading	l	2.402			
				(i) 1.2 cum bucket capacity	hour	2.493	2.074		
				(ii) 1.1 cum bucket capacity	hour		2.871	4.040	
				(iii) 0.9 cum bucket capacity	hour			4.013	
				Tipper					
				For transportation considering lead @ 1 km		400.000			
				(i) 18 cum capacity	t-km t-km	180.000	180.000		
				(ii) 14 cum capacity (iii) 10 cum capacity	t-km t-km		100.000	180.000	
				(iii) 10 cuili capacity	CKIII			100.000	

		_			Quantity	as per project	category	Rate
Sr No	Ref. to N	/1	Description	Unit	Large	Medium	Small	(Rs.)
			For loading & unloading					
			time					
			(i) 18 cum capacity	hour	2.493			
			(ii) 14 cum capacity	hour		2.871		
			(iii) 10 cum capacity	hour			4.013	
			c) Materials					
			Small dia Explosive at 0.40 kg / cum for 120 cum (120 x 0.40) Explosive at 0.20 kg / cum for secondary blast @ 5%of the total volume (120 x 0.2x5%)	kg	48.000	48.000	48.000	
			Electric detonators at 1 per hole for main blast holes (21x3+20*2)=103 nos	no	69.000	69.000	69.000	
			Ordinary detonators @ 1 per hole for 10 secondary holes(required for 5% of the total quantity @ 0.6	no	7.000	7.000	7.000	
			m per hole for I cum)	m	213.000	213.000	213.000	
			Detonating fuse coil				@ on (a+b+c)	
			d) Overhead chargese) Contractor's profit		@ on	@ on	@ on	
			e) Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			Cost for 120 cum = a+b+c+d+e					
			Rate per cum = (a+b+c+d+e)/ 1	20				
9.01	301, I'		Hard Rock (blasting prohibited)					
			Unit = cum					
			Taking output = 35 cum					
	,		Mechanical Means					
			a) Labour Mate	day	0.106	0.106	0.106	
			Mazdoor	day	2.660	2.660	2.660	
			b) Machinery	auy	2.000	2.000	2.000	
			Jack Hammer	hour	7.111	8.889	10.940	
			Hydraulic Excavator					
			Excavator for excavation					
			(i) 1.2 cum bucket capacity	hour	7.111			
			(ii) 1.1 cum bucket capacity	hour		8.889		
			(iii) 0.9 cum bucket capacity	hour			10.940	
			For loading	L	0.727			
			(i) 1.2 cum bucket capacity	hour	0.727			

Sr No	Ref. to M		Docerintion	Unit	Quantity	as per project	category	Rate
Sr No	кет. то іч		Description	Unit	Large	Medium	Small	(Rs.)
				l		0.027		
			(ii) 1.1 cum bucket	hour		0.837		
			capacity	hour			1.171	
			(iii) 0.9 cum bucket capacity	noui			1.171	
			Tipper					
			For transportation to dumping yard considering lead @ 1km					
			(i) 18 cum capacity	t-km	52.500			
			(ii) 14 cum capacity	t-km		52.500		
			(iii) 10 cum capacity	t-km			52.500	
			For loading & unloading time					
			(i) 18 cum capacity	hour	0.727			
			(ii) 14 cum capacity	hour		0.837		
			(iii) 10 cum capacity	hour			1.171	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost	t for 35 cum = a+b+c+d					
		Rate	e per cum = (a+b+c+d)/ 35					
9.01	V		shy Soil					
			t = cum					
			ing output = 10 cum th upto 3 m					
	Α	Mar	nual means					
		a)	Labour					
			Mate/Supervisor	day	0.532	0.532	0.532	
			Mazdoor	day	13.300	13.300	13.300	
		b)	Machinery					
			Tractor-trolley for removal.	hour	2.670	2.670	2.670	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			t for 10 cum = a+b+c+d					
		Rate	e per cum = (a+b+c+d)/ 10					
	Note	1.	Cost of dewatering @ 30 F for dewatering shall be ma				equired Assessn	nent
		2.	Shoring & strutting 15 Per	cent of	(a), where requ	ired may be ad	ded	
		3.	It is assumed that Marshy excavation below 3 m dep			•		
9.01	В	Med	chanical Means					
			t = cum					
			ing output = 260 cum					
		a)	Labour					
		a)	Labour Mate	day	0.053	0.053	0.053	

C N	Dof to M		Description	l loste	Quantity	Quantity as per project category		Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery					
		•	Hydraulic Excavator					
			(i) 1.2 cum bucket capacity	hour	10.126			
			(ii) 1.1 cum bucket capacity	hour		11.662		
			(iii) 0.9 cum bucket capacity	hour			16.304	
			Tipper					
			For transportation to dumping yard considering lead @ 1km					
			(i) 18 cum capacity	t-km	390.000			
			(ii) 14 cum capacity	t-km		390.000		
			(iii) 10 cum capacity For loading & unloading time	t-km			390.000	
			(i) 18 cum capacity	hour	10.126			
			(ii) 14 cum capacity	hour		11.662		
			(iii) 10 cum capacity	hour			16.304	
		c)	Material Selected earth for	cum	156.000	156.000	156.000	
		d)	refilling Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			t for 260 cum = a+b+c+d e per cum = (a+b+c+d)/ 260					
9.02	304	Tre:	d Filling in Foundation nches as per Drawing & hnical Specification t = cum					
			ing output = 100 cum					
		a)	Labour	-l	0.053	0.053	0.053	
			Mate Mazdoor	day day	0.053 1.330	0.053 1.330	0.053 1.330	
		b)	Machinery	uay	1.550	1.550	1.550	
		•	Water tanker (speed @					
			Water tanker speed					
			km/hr and return speed					
			@ 10 km/hr and spreading speed @ 2.5					
			Km/hr.)					
			(i) 16 KL capacity	hour	0.25 x L1 +			
			(ii) 12 KL capacity	hour	0.16	0.333 x L1 +		
			(iii) 6 KL capacity	hour		0.213	0.667 x L1 + 0.427	
		c)	Material				0.44/	
		-,	Sand (assuming 20 Percent voids) at site	cum	120.000	120.000	120.000	
		d)	Water Overhead charges	KL	18.000 @ on (a+b+c)	18.000 @ on (a+b+c)	18.000 @ on (a+b+c)	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	ı
SI NO	Kei. to ivi		Description	Unit	Large	Medium	Small	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			e per 100 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/ 10	00	, ,			
9.03		PCC	1:3:6 in Foundation					
		non with 40 med four	n cement concrete 1:3:6 ninal mix in foundation n crushed stone aggregate mm nominal size chanically mixed, placed in ndation and compacted by ration including curing for					
		14 0	days.					
		Uni	t = cum					
		Tak	ing output = 15 cum					
		a)	Labour					
			Mate	day	0.426	0.426	0.426	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	9.310	9.310	9.310	
		b)	Material					
			Plain cement concrete 1:3:6 nominal mix using batching plant (Rate taken from sub- analysis 21.02)	cum	15.000	15.000	15.000	
			Water	KL	3.240	3.240	3.240	
		c)	Machinery					
			Plate Compactor	hour	1.000	1.000	1.000	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.045 x L1 + 0.135			
			(ii) 12 KL capacity	hour		0.06 x L1 + 0.18		
			(iii) 6 KL capacity	hour			0.12 x L1 + 0.36	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c))
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 15 cum = a+b+c+d+e					
		Rate	e per cum = (a+b+c+d+e)/ 1	5				

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contractor.

C = 14 = 2	Dof +- M	Description	l led	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
9.04	2900	Laying Reinforced Cement Concrete Pipe NP4 / Pre- stressed Concrete Pipe on First Class Bedding in Single Row. Laying Reinforced cement concrete pipe NP4/pre- stressed 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		Large	Medium	Small	(Rs.)
		in head walls and parapets .					
		Unit = metre Taking output = 12.5 metres					
		(5 pipes of 2.5 m length each)					
	Α	1000 mm dia					
		a) Labour					
		Mate	day	0.133	0.133	0.133	
		Mason	day	0.665	0.665	0.665	
		Mazdoor	day	2.660	2.660	2.660	
		b) Material					
		Sand at site	cum	0.070	0.070	0.070	
		Cement at site	tonne	0.050	0.050	0.050	
		RCC pipe NP-4 /pre- stressed concrete pipe including collar at site	metre	12.500	12.500	12.500	
		Granular material passing 5.6 mm sieve for bedding	cum	4.500	4.500	4.500	
		c) Machinery					
		Light Crane 3 tonnes capacity for placing of Hume pipe	hour	2.083	2.083	2.083	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Cost for 12.5 metres = a+b+c+d+e

Rate per metre = (a+b+c+d+e)/12.5

Note

- 1. In case of cement cradle 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

9.04 B 1200 mm dia

a) Labour

Mate day 0.213 0.213 0.213

C+ No	Dof to M	Description	Linia	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Mason	day	1.330	1.330	1.330	
		Mazdoor	day	3.990	3.990	3.990	
		b) Material					
		Sand at site	cum	0.090	0.090	0.090	
		Cement at site	tonne	0.070	0.070	0.070	
		RCC pipe NP-4/pre-	metre	12.500	12.500	12.500	
		stressed concrete pipe					
		including collar at site					
		Granular material passir	ig cum	5.000	5.000	5.000	
		5-6 mm sieve for class					
		bedding					
		c) Machinery					
		Light Crane 3 tonnes	hour	2.083	2.083	2.083	
		capacity for handling					
		Hume pipe		@ an lack al	@ an /a . b . a\	@ an /a.h.a\	
		d) Overhead charges			@ on (a+b+c)		
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 12.5 metres = a+b+c-	rd+o	(מדטדנדט)	(מדטדנדט)	(מדטדנדם)	

Rate per metre= (a+b+c+d+e)/ 12.5

Note

- In case of cement cradle bedding, quantity of PCC M15 is to be calculated as per design 1. 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

9.04	С	150	0 mm dia				
		a)	Labour				
			Mate	day	0.213	0.213	0.213
			Mason	day	1.330	1.330	1.330
			Mazdoor	day	3.990	3.990	3.990
		b)	Material				
			Sand at site	cum	0.090	0.090	0.090
			Cement at site	tonne	0.070	0.070	0.070
			RCC pipe NP-4/pre-	metre	12.500	12.500	12.500
			stressed concrete pipe				
			including collar at site				
			Granular material passing	cum	5.750	5.750	5.750
			5-6 mm sieve for class				
			bedding				
		c)	Machinery				
			Light Crane 3 tonnes	hour	2.500	2.500	2.500
			capacity for handling				
			Hume pipe				
		d)	Overhead charges			@ on (a+b+c) (
		e)	Contractor's profit		@ on	@ on	@ on
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)

Cost for 12.5 metres = a+b+c+d+eRate per metre= (a+b+c+d+e)/12.5

In case of cement cradle bedding, quantity of PCC M15 is to be calculated as per design 1. Note 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

C+ No	Ref. to M		Description	l lmia	Quantity as per project category		category	Rate
Sr No	O Neil to Wi		Description	Unit	Large	Medium	Small	(Rs.)
9.05	2900	Cor stre	ing Reinforced Cement ncrete Pipe NP4 / Pre- essed Concrete Pipe on t Class Bedding in Double w.					
		stre culv of g row cen exc pro con	ing Reinforced cement acrete pipe NP4 / pre- essed concrete pipe for verts on first class bedding granular material in double vincluding fixing collar with ment mortar 1:2 but luding excavation, tection works, backfilling, icrete and masonry works aread walls and parapets.					
			t = metre					
		Tak (10	ing output = 12.5 metres pipes of 2.5 m length each					
	Α		wo rows.) 00 mm dia					
	A	a)	Labour					
		aj	Mate	day	0.266	0.266	0.266	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	5.320	5.320	5.320	
		b)	Material	ady	3.320	3.320	3.320	
		,	Sand at site	cum	0.140	0.140	0.140	
			Cement at site	tonne	0.100	0.100	0.100	
			RCC pipe NP-4/pre- stressed concrete pipe including collar at site	metre	25.000	25.000	25.000	
			Granular material passing 5.6 mm sieve for bedding	cum	12.500	12.500	12.500	
		c)	Machinery					
			Light Crane 3 tonnes capacity for handling Hume pipe	hour	4.167	4.167	4.167	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Cost for 12.5 metres = a+b+c+d+e

Rate per metre = (a+b+c+d+e)/ 12.5

Note 1. In case of cement cradle 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

G N	D-6 4- 84		Description		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
9.05	В	120	0 mm dia					
5.05		a)	Labour					
		aj	Mate	day	0.426	0.426	0.426	
				day				
			Mason	day	2.660	2.660	2.660	
			Mazdoor	day	7.980	7.980	7.980	
		b)	Material					
			Sand at site	cum	0.180	0.180	0.180	
			Cement at site	tonne	0.140	0.140	0.140	
			RCC pipe NP-4 /pre- stressed concrete pipe including collar at site	metre	25.000	25.000	25.000	
			Granular material passing 5-6 mm sieve for class bedding	cum	13.750	13.750	13.750	
		c)	Machinery					
		٠,	Light Crane 3 tonnes capacity for handling Hume pipe	hour	4.167	4.167	4.167	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 12.5 metres = a+b+c+d	+e				

Rate per metre= (a+b+c+d+e)/12.5

Note 1. In case of cement cradle 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

9.05 1500 mm dia

a)	Labour				
	Mate	day	0.426	0.426	0.426
	Mason	day	2.660	2.660	2.660
	Mazdoor	day	7.980	7.980	7.980
b)	Material				
	Sand at site	cum	0.180	0.180	0.180
	Cement at site	tonne	0.140	0.140	0.140
	RCC pipe NP-4 /pre- stressed concrete pipe including collar at site	metre	25.000	25.000	25.000
	Granular material passing 5-6 mm sieve for class bedding	cum	15.625	15.625	15.625
c)	Machinery				
	Light Crane 3 tonnes capacity for handling Hume pipe	hour	5.000	5.000	5.000

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category	Rate
31 140	Kei. to ivi	Description	Oilit	Large	Medium	Small	(Rs.)
		 d) Overhead charges e) Contractor's profit Cost for 12.5 metres = a+b+c+d Rate per metre= (a+b+c+d+e)/ 		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
	Note	 In case of cement cradle be and priced separately and The rate analysis does no backfilling, protection wo approved design and direspective sections 	added . t includ rks and	e excavation, coparapet walls.	ement /masonr The same are t	y works in hea o be calculated	d walls,
9.06	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.					
9.06	Α	PCC Grade M15					
	Case I	PCC Grade M15 using batching plant transit mixer & Concrete pump					
		Unit = cum					
		Taking output = 30 cum					
		Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
		analysis 21.03) Water for curing	Κl	15.750	15.750	15.750	
		b) Labour					
		For pouring and placing					
		Mate	day	0.152	0.152	0.152	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	1.813	1.813	1.813	
		c) Machinery					
		Transit truck agitator					
		For transportation (6 cum Capacity)	km	75 x L1	75 x L1	75 x L1	
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
		Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
		(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
		(ii) 12 KL capacity	hour	0.050	0.292 x L1 + 0.875		
		(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	

C N -	D-f +- 14	D	11	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Formwork @ 10 on cost of concucost of material and machinery e) Overhead charge	rete i.e. , labour	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's pro	fit	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 30 cum = a+b	+c+d+e+f				
		Rate per cum = (a+b+	c+d+e+f)/ 30				
	Case II	PCC Grade M15 using batching plant transit manual placing Unit = cum Taking output = 15 cu	mixer &				
		Per Cum Basic Co (Rate taken from analysis 21.03)		15.000	15.000	15.000	
		Water for curing b) Labour	KI	7.875	7.875	7.875	
		For pouring and	placing				
		Mate	p.u.o8	0.505	0.505	0.505	
		Mason		1.995	1.995	1.995	
		Mazdoor		10.640	10.640	10.640	
		c) Machinery					
		Transit truck agi	tator				
		For transportation Capacity)	on (6 cum	37.5 x L1	37.5 x L1	37.5 x L1	
		For unloading Water tanker (sp km/hr and return @ km/hr and 30 unloading)	n speed	0.833	0.833	0.833	
		(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
		(ii) 12 KL capacity			0.146 x L1 + 0.438		
		(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d) Formwork @ 10 on cost of concr cost of material and machinery	ete i.e.				
		e) Overhead charg		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's pro		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 15 cum = a+b	+c+a+e+t				

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

				Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
9.06	B Case I	PCC Grade M20 PCC Grade M20 using batching plant transit mixer & Concrete pump Unit = cum					
		Taking output = 30 cum a) Material					
		Per Cum Basic Cost (Rate taken from sub- analysis 21.04)	cum	30.000	30.000	30.000	
		Water for curing	Kl	15.750	15.750	15.750	
		b) Labour					
		For pouring and placing					
		Mate	day	0.152	0.152	0.152	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	1.813	1.813	1.813	
		c) Machinery					
		Transit truck agitator		75 14	75 14	75 14	
		For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
		Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
		(i) 16 KL capacity	hour	0.219 x L1 +			
		(ii) 12 KL capacity	hour	0.656	0.292 x L1 + 0.875		
		(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d) Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/					
	Case II	PCC Grade M20 using batching plant transit mixer & manual placing Unit = cum Taking output = 15 cum					

C. 21	D-1 : ::		Daniel III	.,	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.04)					
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing	day	0.505	0.505	0.505	
			Mate Mason	day day	0.505 1.995	0.505 1.995	0.505 1.995	
			Mazdoor	day	1.993	10.640	10.640	
		c)	Machinery	uay	10.040	10.640	10.640	
		۲,	Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km	37.3 X LI	37.3 X LI	37.3 X LI	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			km/hr and return speed					
			@ km/hr and 30 mins for					
			unloading)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
					0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 +		
			(iii) C I/Iit	l		0.438	0.202	
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f		•			
		Rat	e per cum = (a+b+c+d+e+f)/	15				
9.06	C Case I		C Grade M20 C Grade M20 using					
	cuse i	bat	ching plant transit mixer & ncrete pump					
		Uni	it = cum					
		Tak	ing output = 30 cum					
		a)	Material					
		·	Per Cum Basic Cost (Rate taken from sub- analysis 21.05)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
							0	(- /
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery	uuy	3.1.3	3.1.13	3.1.3	
		-,	Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed					
			@ km/hr and 30 mins for					
			unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(ii) 12 KL capacity	hour	0.656	0.292 x L1 +		
			(II) 12 KL Capacity	Hour		0.292 x L1 +		
			(iii) 6 KL capacity	hour		0.075	0.583 x L1 +	
			(III) O RE capacity	noui			1.75	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		۲)	C		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f		(атытстите)	(атртстите)	(атртстите)	
			e per cum = (a+b+c+d+e+f)/					
	Case II		Grade M20 using					
			ching plant transit mixer &					
			nual placing					
			t = cum					
			ing output = 15 cum					
		a)	Material		45.000	45.000	45.000	
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub- analysis 21.05)					
			Water for curing	Κl	7.875	7.875	7.875	
		b)	Labour	KI	7.075	7.875	7.875	
		٠,	For pouring and placing					
			Mate	day	0.559	0.559	0.559	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	11.970	11.970	11.970	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum		37.5 x L1	37.5 x L1	37.5 x L1	
			Capacity)	.km	6		c	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			km/hr and return speed					
			@ km/hr and 30 mins for unloading)					
			amoading /					

STRIC ROT TO MI DOSCRIPTION LIMIT						Quantity	as per project	category	Rate
(i) 16 KL capacity hour 0.109 x L1 + 0.328 (ii) 12 KL capacity hour 0.328 (iii) 6 KL capacity hour 0.438 (iii) 6 KL capacity hour 0.438 d) Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges @ on (a+b+c+d+e) (a+b+c+d+e) 1 Contractor's profit @ on (a+b+c+d+e) (a+b+c+d+e) Cost for 15 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/15 9.06 D PCC Grade M25 Case I PCC Grade M25 PCC Grade M25 PCC Grade M25 PCC Grade M25 State laten from sub-analysis 21.06) Water for curing Kl 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Myth and return speed @ km/hr and return speed	Sr No	Ref. to M		Description	Unit				(Rs.)
(ii) 12 KL capacity hour 0.146 x L1 + 0.438			•	(i) 16 KL capacity	hour	0.109 x L1 +			
(iii) 6 KL capacity hour				(ii) 12 KL capacity	hour	0.326			
on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges (a+b+c+d) (a+b+c+d) (a+b+c+d) f) Contractor's profit (a+b+c+d+e) (a+b+c+d+e) Cost for 15 cum = a+b+c+d+e+f /15 9.06 D PCC Grade M25 Case! PCC Grade M25 Scare I PCC Grade M25 Using batching plant transit mixer & Concrete pump Unit = cum Taking output = 30 cum a) Material Per Cum Basic Cost (Rate taken from subanalysis 21.06) Water for curing KI 15.750 15.750 b) Labour For pouring and placing Mate Mason day 1.995 1.995 1.995 Masdoor day 1.995 1.995 1.995 Masdoor Por transportation (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 D.726 Mg/randing hour 0.726 0.726 0.726 pump Water taker (speed @ km/hr and ateum speed @ km/hr and a gent and miss for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.0583 x L1 + 0.0580 x L1 + 0.058				(iii) 6 KL capacity	hour		0.436		
Second S			d)	on cost of concrete i.e. cost of material, labour					
Cost for 15 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/15			e)	Overhead charges		_	_	_	
Rate per cum = (a+b+c+d+e+f)/15			f)	Contractor's profit		_	_	_	
9.06 D PCC Grade M25 PCC Grade M25 PCC Grade M25 Strain PCC Grade M25 PCC Grade M25			Cos	t for 15 cum = a+b+c+d+e+f					
Case I PCC Grade M25 using batching plant transit mixer & Concrete pump Unit = cum Taking output = 30 cum a) Material Per Cum Basic Cost (Rate taken from subanalysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.875 (iii) 6 KL capacity hour 0.583 x L1 +			Rat	e per cum = (a+b+c+d+e+f)/	15				
batching plant transit mixer & Concrete pump Unit = cum Taking output = 30 cum a) Material Per Cum Basic Cost cum 30.000 30.000 30.000 (Rate taken from subanalysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +	9.06	D	PCC	Grade M25					
Concrete pump Unit = cum Taking output = 30 cum a) Material Per Cum Basic Cost (Rate taken from subanalysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.875 (iii) 6 KL capacity hour 0.875		Case I	PCC	Grade M25 using					
Taking output = 30 cum a) Material Per Cum Basic Cost (Rate taken from subanalysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and return sp				= -					
a) Material Per Cum Basic Cost (Rate taken from subanalysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and return speed (ii) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +			Uni	t = cum					
Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 Mason day 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom placer pump Water tanker (speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.583 x L1 +			Tak	= -					
(Rate taken from sub- analysis 21.06) Water for curing KI 15.750 15.750 15.750 b) Labour For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.875 (iii) 12 KL capacity hour 0.283 x L1 +			a)	Material					
Water for curing Kl 15.750 15.750 15.750				(Rate taken from sub-	cum	30.000	30.000	30.000	
For pouring and placing Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 mump Water tanker (speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				Water for curing	KI	15.750	15.750	15.750	
Mate day 0.152 0.152 0.152 Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 C) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and return speed @ km/hr and return speed @ km/hr and 30 mins for unloading) 0.219 x L1 + 0.656 (ii) 16 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +			b)	Labour					
Mason day 1.995 1.995 1.995 Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 Hydraulic Boom placer pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				For pouring and placing					
Mazdoor day 1.813 1.813 1.813 c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				Mate	day	0.152	0.152	0.152	
c) Machinery Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.583 x L1 +				Mason	day	1.995	1.995	1.995	
Transit truck agitator For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				Mazdoor	day	1.813	1.813	1.813	
For transportation tonne- 75 x L1 75 x L1 75 x L1 (6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (iii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +			c)	Machinery					
(6 cum Capacity) km For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour 0.726 0.726 0.726 pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				Transit truck agitator					
Hydraulic Boom placer hour 0.726 0.726 0.726 pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +						75 x L1	75 x L1	75 x L1	
pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				For unloading	hour	0.726	0.726	0.726	
km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +					hour	0.726	0.726	0.726	
(i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.292 x L1 + 0.875 (iii) 6 KL capacity hour 0.583 x L1 +				km/hr and return speed @ km/hr and 30 mins for					
0.875 (iii) 6 KL capacity hour 0.583 x L1 +					hour				
(m) o R2 capacity				(ii) 12 KL capacity					
				(iii) 6 KL capacity	hour				

	T			1 1				
Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
31 110	nen to m		Description	0	Large	Medium	Small	(Rs.)
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		_			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			t for 30 cum = $a+b+c+d+e+f$					
		Rat	e per cum = (a+b+c+d+e+f)/	30				
	Case II	PCC	Grade M25 using					
		bat	ching plant transit mixer &					
			nual placing					
		Uni	it = cum					
		Tak	ing output = 15 cum					
		a)	Material					
		•	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.06)					
			Water for curing	Κl	7.875	7.875	7.875	
		b)	Labour					
		For	pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			km/hr and return speed					
			@ km/hr and 30 mins for					
			unloading)	h	0.10011 .			
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour	0.320	0.146 x L1 +		
			(II) 12 KL capacity	noui		0.438		
			(iii) 6 KL capacity	hour		0.130	0.292 x L1 +	
			()				0.875	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			it for 15 cum = $a+b+c+d+e+f$					

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

Cr. Al	D-6 4- 84		Describetter	11*	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
0.00	_	D C:	Consider NACE					
9.06	E		Grade M25					
	Case I		Grade M25 using					
			ching plant transit mixer &					
			ncrete pump					
			t = cum					
			ring output = 30 cum					
		a)	Material					
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis 21.07)	νI	15 750	15 750	15 750	
		b)	Water for curing Labour	Kl	15.750	15.750	15.750	
		-	pouring and placing					
		101	Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery	,	3.1.3	3.2.3	5.2.5	
		-,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed					
			@ km/hr and 30 mins for					
			unloading)	la accesa	0.24014 .			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
			(II) 12 KL capacity	Hour		0.232 x L1 +		
			(iii) 6 KL capacity	hour		0.873	0.583 x L1 +	
			(iii) o KE capacity	noui			1.75	
		d)	Formwork @ 10 Percent					
		•	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
			t for 30 cum = a+b+c+d+e+f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			e per cum = (a+b+c+d+e+f),	/30				
	Case II	bat	C Grade M25 using ching plant transit mixer & nual placing					
			t = cum					
			ring output = 15 cum					
		a)	Material					
		-1	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-		-			
			analysis 21.07)					

C., N	D-6 +- 84		Decodutter	11,-14	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour	KI	7.873	7.873	7.873	
		•	pouring and placing					
			Mate	day	0.559	0.559	0.559	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	11.970	11.970	11.970	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
			(ii) 12 KL capacity	hour	0.328	0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour		0.430	0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on	@ on	
		f)	Contractor's profit		@ on	(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f),	/15				
9.07	1600	un- Rei cor Tec	oplying, Fitting and Placing coated HYSD bar inforcement in Foundation inplete as per Drawing and chnical Specifications.					
		_	it = MT					
			king output = 8 MT					
		a)	Material	tonne	8.400	8.400	8.400	
			MS bars including 5 Percent overlaps and wastage	tonne	6.400	6.400	6.400	
			Binding wire	Kg	48.000	48.000	48.000	
			- U ·····-	-				

Cu Na	Dof to B4		Description	l lmit	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Labour for straightening,					
			cutting, bending, shifting					
			to site, tying and placing					
			in position					
			Mate	day	0.213	0.213	0.213	
			Blacksmith	day	1.330	1.330	1.330	
			Mazdoor	day	3.990	3.990	3.990	
		c)	Machinery					
		-,	Cutting Machine &	hour	5.333	5.333	5.333	
			Bending Machine					
			Electric generator 15	hour	5.333	5.333	5.333	
			KVA					
			Tipper					
			Tipper for Transportation					
			(i) 18 cum capacity	t.km	8 x L1			
			(ii) 14 cum capacity	t.km		8 x L1		
			(iii) 10 cum capacity	t.km			8 x L1	
			Loading & Unloading	hour				
			Time					
			(i) 18 cum capacity	hour	1.000			
			(ii) 14 cum capacity	hour		1.280		
			(iii) 10 cum capacity	hour			1.778	
			Light weight Crane					
			At cutting bending yard	hour	2.000	2.000	2.000	
			At site	hour	2.000	2.000	2.000	
		d)	Overhead charges			@ on (a+b+c)	-	
		e)	Contractor's profit		@ on	@ on	@ on	
		_			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 8 MT (a+b+c+d+e)					
		Rat	e for per MT (a+b+c+d+e)/8					

CHAPTER - 10

MAINTENANCE OF ROADS

PREAMBLES:

- In case of rain cuts, it has been assumed that some material cut by rain, approximately 25 Percent, will be available at site which can be retrieved and re-used and the balance 75 Percent is required to be provided as fresh material.
- 2 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 the 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 the dozer on the valley side. In case there is any objection to this arrangement due to particular site conditions, resources like loader and tripper will have to be provided for disposal of earth/debris for the lead involved.
- 5 Pot-hole repair and patchwork are provided to be done by mechanical means.
- The rates for items like slurry seal, fog spray, crack prevention courses, surface dressing & micro-surfacing for maintenance works have been included in Chapter-5.
- The cost of other items like repair of ruts and undulation maintenance of earthen shoulders, cross drainage works, minor and major bridges and miscellaneous items like turfing and arboriculture, painting and lettering on km stones, repair to signage, repair to footpath, street light, railing, dividers, separators and under passes for pedestrians 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.
- 8 The repair items related to bridges have been given in Chapter-17.

C:: No	Def 4	- 84		Description	l locia	Quantity	as per projec	t category	Rate
Sr No	Ref. to) IVI		Description	Unit	Large	Medium	Small	(Rs.)
10.01	3002		Res	toration of Rain Cuts					
			Res	toration of rain cuts with					
				, moorum, gravel or a					
				ture of these, clearing the					
			mm	se soil, benching for 300 width, laying fresh					
				terial in layers not					
			exc	eeding 250 mm and					
				npacting with plate					
				npactor or power rammers					
			to	restore the original nment, levels and slopes					
			_	t = cum					
				ing output = 10 cum					
			a)	Labour					
			,	Mate	day	0.106	0.106	0.106	
				Mazdoor	day	2.660	2.660	2.660	
			b)	Machinery	·				
				Hydraulic Excavator					
				(i) 1.2 cum bucket	hour	0.009			
				capacity (ii) 1.1 cum bucket	h		0.010		
				capacity	hour		0.010		
				(iii) 0.9 cum bucket	hour			0.014	
				capacity					
				Tipper					
				For transportation to dumping yard					
				considering lead @ 1km					
				(i) 18 cum capacity	t.km	12 x L2			
				(ii) 14 cum capacity	t.km		12 x L2		
				(iii) 10 cum capacity	t.km			12 x L2	
				For loading & unloading					
				(i) 18 cum capacity	hour	0.009			
				(ii) 14 cum capacity	hour		0.010	0.04	
				(iii) 10 cum capacity Plate compactor	hour	0.500	0.500	0.014	
			c١	Overhead charges	hour	0.500	0.500	0.500	
			c)	Overneau Charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			d)	Contractor's profit		@ on	@ on	@ on	
			•	·		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			Cos	t for 10 cum = a+b+c+d					
			Rat	e per cum = (a+b+c+d)/10					
		Note	fror	y 75 Percent of fresh mater m earth that is flown down	-				
			the	re in cuts					
10.02	3003			intenance of Earthen					
			Sno	oulder (filling with fresh					

soil)

Making up loss of material/ irregularities on shoulder to

C 1	D-f : 24		December 1	11**	Quantity	as per projec	t category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
			design level by adding					
			sh approved soil and					
			npacting it with					
			propriate equipment.					
			it = sqm					
			king output = 100 sqm					
			suming average thickness of ng to be 150 mm					
			antity of fresh material = 15 C	um				
		a)	Labour	um				
		aj	Mate	day	0.239	0.239	0.239	
			Mazdoor	day	5.985	5.985	5.985	
		b)	Machinery	uay	3.363	3.983	3.363	
		IJ,	Hydraulic Excavator					
			(i) 1.2 cum bucket	hour	0.013			
			capacity	noui	0.013			
			(ii) 1.1 cum bucket	hour		0.015		
			capacity					
			(iii) 0.9 cum bucket capacity	hour			0.021	
			Tipper					
			For transportation to					
			dumping yard					
			considering lead @ 1km (i) 18 cum capacity	A luna	2412			
			(ii) 14 cum capacity	t.km	24 x L2	24 1.2		
			(iii) 10 cum capacity	t.km		24 x L2	24 v 12	
			For loading & unloading	t.km			24 x L2	
			(i) 18 cum capacity	hour	0.013			
			(ii) 14 cum capacity	hour	0.013	0.015		
			(iii) 10 cum capacity	hour		0.013	0.021	
			Plate compactor @ 25	hour	12.000	12.000	12.000	
			sqm per hour	nour	12.000	12.000	12.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	st for 100 sqm = a+b+c+d		(4.2.5)	(4.2.0)	(4.2.0)	
			te per sqm = (a+b+c+d)/100					
		· · · ·	ic per 34m - (a151614)/ 100					
10.03	3003		intenance of Earth					
			oulder (stripping excess					
		soi						
			ipping excess soil from the bulder surface to achieve					
		the						
			npacting with plate					
			npactor					
			it = sqm					
			king output = 100 sqm					
			suming average depth of					
			nning as 75 mm					

stripping as 75 mm

C# No	Dof to M	Description	lleit	Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Quantity of earth cutting involved = 7.5 cum a) Labour	4	0.422	0.422	0.422	
		Mate	day	0.133	0.133	0.133	
		Mazdoor	day	3.325	3.325	3.325	
		b) Machinery					
		Plate compactor @ 25 sqm per hour	hour	4.000	4.000	4.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 100 sqm = a+b+c+d					
		Rate per sqm on = (a+b+c+d)10	00				

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

10.04 3004.2

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

Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 510, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2

Unit = Sqm

Taki	ng out put = 10250 sqm				
a)	Labour				
	Mate	Day	5.001	5.001	5.001
	Mazdoor	Day	119.700	119.700	119.700
	Mazdoor skilled	Day	5.320	5.320	5.320
b)	Machinery				
	Hot Mix Plant				
	(i) HMP 200 TPH	hour	2.893		
	(ii) HMP 160 TPH	hour		3.616	
	(iii) HMP 120 TPH	hour			4.821
	Mechanical broom (2.1m sweeping width)	hour	3.051	3.051	3.051
	Air compressor 250 cfm	hour	3.051	3.051	3.051
	Electric generator				
	(i) 500 KVA	hour	2.893		
	(ii) 400 KVA	hour		3.616	

C N.I	D-6 +- NA		December 1 au	11	Quantity	as per projec	t category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
			(iii) 250 KVA	hour			4.821	
			Front end loader for	noui			4.021	
			feeding the plant					
			(i) 3.1 Cum Capacity	hour	2.893			
			(ii) 2.1 Cum Capacity	hour	2.033	3.616		
			(iii) 1 Cum Capacity	hour		3.010	4.821	
				Houl			4.021	
			Tipper					
			For Transportation					
			(i) 18 cum capacity	t.km	405 x L			
			(ii) 14 cum capacity	t.km		405 x L		
			(iii) 10 cum capacity	t.km			405 x L	
			For loading & unloading					
			time (i) 18 cum capacity	h a	2 002			
			(ii) 14 cum capacity	hour	2.893	2.616		
			(iii) 10 cum capacity	hour		3.616	4.821	
			Smooth steel wheeled	hour			4.821	
			tandem roller for static	hour	17.277	17.277	17.277	
			and vibratory passaes		17.277	17.277	17.277	
		c)	Material					
		•	Crushed stone aggregates	cum	184.500	184.500	184.500	
			nominal size 13.2mm					
			Crushed stone aggregates	cum	92.250	92.250	92.250	
			nominal size 11.2mm Bitumen 80/100		44.070	14.070	44.070	
			Bitumen emulsion for	tonne	14.970	14.970	14.970	
			tack coat including	tonne	2.460	2.460	2.460	
			vertical sides of pot hole.					
		d)	Overhead charges		@ on	@ on	@ on	
		-,	· · · · · · · · · · · · · · · ·		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 10250 sqm = a+b+c+d+e					

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

10.05 3004.2

Filling Pot-holes and Patch **Repairs with Bituminous** concrete, 40mm.

Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 504, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2

C:: No	Dof to M		Description	l lait	Quantity	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			it = Sqm					
			king out put = 4900 sqm					
		a)	Labour					
			Mate	Day	3.884	3.884	3.884	
			Mazdoor	Day	93.100	93.100	93.100	
			Mazdoor skilled	Day	3.990	3.990	3.990	
		b)	Machinery					
			Hot Mix Plant					
			(i) HMP 200 TPH	hour	3.214			
			(ii) HMP 160 TPH	hour		4.018		
			(iii) HMP 120 TPH	hour			5.357	
			Mechanical broom (2.1m sweeping width)	hour	1.458	1.458	1.458	
			Air compressor 250 cfm	hour	1.458	1.458	1.458	
			Electric generator		200	21.00	21.100	
			(i) 500 KVA	hour	3.214			
			(ii) 400 KVA	hour	3.211	4.018		
			(iii) 250 KVA	hour		4.010	5.357	
			Front end loader for	noai			3.337	
			feeding the plant					
			(i) 3.1 Cum Capacity	hour	3.214			
			(ii) 2.1 Cum Capacity	hour		4.018		
			(iii) 1 Cum Capacity	hour			5.357	
			Tipper					
			For Transportation					
			(i) 18 cum capacity	t.km	450 x L			
			(ii) 14 cum capacity	t.km	130 % 2	450 x L		
			(iii) 10 cum capacity	t.km		430 X L	450 x L	
			For loading & unloading	CIKIII			430 X L	
			time					
			(i) 18 cum capacity	hour	3.214			
			(ii) 14 cum capacity	hour	3.214	4.018		
			(iii) 10 cum capacity	hour		4.010	5.357	
			Smooth steel wheeled	hour			3.337	
			tandem roller for static	noui	16.518	16.518	16.518	
			and vibratory passaes		10.010	10.510	10.510	
		c)	Material					
		-,	i) Bitumen	tonne	23.890	23.890	23.890	
			ii) Bitumen emulsion for tack coat.	tonne	1.180	1.180	1.180	
			iii) Aggregates					
		Gra	ading I - 19mm(Nominal					
		size	_					
			20-10mm 38 percent	cum	108.255	108.255	108.255	
			10-5 mm 17 percent	cum	48.430	48.430	48.430	
			5mm and below43	cum	122.499	122.499	122.499	
			percent	Cani				
			Filler @ 2 per cent of	tonne	8.546	8.546	8.546	
			weight of aggregates.	332			- ·- · ·	
		Ado	d 5 Percent for wastage					
		or	0 -					

Sr No	Pof to M		Description	l lmit	Quantity	as per projec	ct category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		_	P 11 46 45 5					
		Gra	ding-II 13mm (Nominal					
		3120	13.2-10 mm 21 percent	cum	59.825	85.500	85.500	
			10-5 mm 17 percent	cum	48.430	71.250	71.250	
			5 mm and Below 60	cum	170.928	122.550	122.550	
			percent					
			Filler 2 percent	tonne	8.546	8.546	8.546	
			5 Percent for wastage					
		Any						
			rnatives of aggregate i.e. nm or 13mm nominal size					
			be adopted as per					
		-	roved design.					
10.05	(i)	for	grading I Material					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost	t for 4900 sqm = a+b+c+d+e		(a+b+c+d)	(atbtctu)	(атртсти)	
			e per sqm = (a+b+c+d+e)/ 49					
			(a a c a c _H a					
10.05	(ii)	for a	grading II Material					
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Cost	t for 4900 sqm =		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			+c+d+e					
		Rate	e per sqm = (a+b+c+d+e)/ 49	900				
	Note	For	detailed working of quantiti	es of aggregat	es & bitume	en, refer item	5.05 of chapt	ter 5.
10.06 3	3004.3.3	Crac	ck Filling					
			ng of crack using slow -					
			ng bitumen emulsion and					
			lying crusher dust in case					
			k are wider than 3mm.					
			t = Running Meter ing out put = 500 m					
		a)	Labour					
		~,	Mate	day	0.053	0.053	0.053	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Material	,				
			Slow-curing bitumen	Kg	33.000	33.000	33.000	
			emulsion					
			Stone crusher dust	cum	0.020	0.020	0.020	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			Contractor's profit		(a+b) @ on	(a+b) @ on	(a+b) @ on	
		(I)	CONTRACTOR S DECINI		(ω ::::			
		d)	Contractor's profit		(a+b+c)	(a+b+c)	(a+b+c)	
			t for 500 meter = a+b+c+d		_	_	_	

Sr No	Ref. to	o M	Description	Unit	Quantity	as per projec	t category	Rate
31 140	Nei. t	U IVI	Description	Oilit	Large	Medium	Small	(Rs.)
10.07	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	0.106	0.106	0.106	
			Mazdoor	day	2.660	2.660	2.660	
			b) Material	cum	6.250	6.250	6.250	
			Stone crusher dust finer than 3mm with not more than 10 Percent passing 0.075 sieve.	cum	6.230	0.230	6.230	
			c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			Cost for 3500 sqm = $a+b+c+d$					
			Rate per meter = $(a+b+c+d)/35$	00				
10.08	(A) 3004.3.2		Fog Seal	sqm				
	(B) 3004.3.4		Crack Prevention courses.					
		(i)	Stress Absorbing Membrane (SAM) crack width less than 6 mm	sqm				
		(ii)	Stress Absorbing Membrane (SAM) with crack width 6 mm to 9 mm	sqm				
		(iii)	Stress Absorbing Membrane (SAM) crack width above 9 mm and cracked area above 50 Percent	sqm				
		(iv)	Bitumen Impregnated Geotextile	sqm				
10.08	(C) 3004.5		Slurry Seal					
		(i)	5 mm thickness	sqm				
		(ii)	3 mm thickness	sqm				
		(iii)	1.5 mm thickness	sqm				
10.08	(D) 3004.6		Surface Dressing for maintenance works.					
		(i)	19 mm nominal chipping size	sqm				
		(ii)	13 mm nominal size chipping	sqm				
		Note	The above mentioned items have	e already bee	n included ir	chapter 5.		

Sr No	Ref. to M		Description	Unit	Quantity	as per projec	ct category
	Rei. to ivi		Description	Unit	Large	Medium	Small
0.09	3005.1	-	pair of Joint Grooves with				
		-	oxy Mortar				
		-	pair of spalled joint grooves				
			contraction joints,				
			gitudinal joints and				
		•	ansion joints in concrete rements using epoxy				
		-	rtar or epoxy concrete				
			t = running metre				
			ing output = 10 metres				
		a)	Labour				
		u,	Mate	day	0.053	0.053	0.053
			Mazdoor	day	0.665	0.665	0.665
			Chiseller	day	0.665	0.665	0.665
		b)	Material	aay	0.003	0.003	0.003
		IJ,	Epoxy primer	kg	2.500	2.500	2.500
			Epoxy compound with	kg	10.000	10.000	10.000
			accessories for preparing	J			
			epoxy mortar				
		c)	Machinery				
		•	Air compressor 250 cfm	hour	0.050	0.050	0.050
			for cleaning				
		d)	Overhead charges		@ on	@ on	@ on
					(a+b+c)	(a+b+c)	(a+b+c)
		e)	Contractor's profit		@ on	@ on	@ on
		_	. 6 . 40		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
			t for 10 metres = $a+b+c+d+e$				
		D - 1					
		Rat	e per metre = (a+b+c+d+e)/ 10				
0.10	3005.2						
0.10	3005.2	Rep	pair of old Joints Sealant				
0.10	3005.2	Rep Ren	pair of old Joints Sealant noval of existing sealant				
0.10	3005.2	Rep Ren and	pair of old Joints Sealant				
0.10	3005.2	Rep Ren and long	pair of old Joints Sealant moval of existing sealant I re sealing of contraction,				
0.10	3005.2	Rep Ren and long join	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion				
0.10	3005.2	Rep Ren and long join with	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion tts in concrete pavement				
.0.10	3005.2	Rep Ren and long join with	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement th fresh sealant material				
0.10	3005.2	Rep Ren and long join with	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement th fresh sealant material t = running metre				
0.10	3005.2	Rep Ren and long join with Uni	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion atts in concrete pavement the fresh sealant material at = running metre sting output = 10 metres	day	0.027	0.027	0.027
0.10	3005.2	Rep Ren and long join with Uni	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement th fresh sealant material t = running metre sing output = 10 metres Labour		0.027 0.665	0.027 0.665	0.027 0.665
0.10	3005.2	Rep Ren and long join with Uni	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement in fresh sealant material It = running metre Iting output = 10 metres Labour Mate	day			
0.10	3005.2	Rep Ren and long join with Uni Tak a)	pair of old Joints Sealant moval of existing sealant if re sealing of contraction, gitudinal or expansion with in concrete pavement in fresh sealant material it = running metre wing output = 10 metres Labour Mate Mazdoor	day			
0.10	3005.2	Rep Ren and long join with Uni Tak a)	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement th fresh sealant material t = running metre sing output = 10 metres Labour Mate Mazdoor Material	day day	0.665	0.665	0.665
.0.10	3005.2	Rep Ren and long join with Uni Tak a)	pair of old Joints Sealant moval of existing sealant if re sealing of contraction, gitudinal or expansion ats in concrete pavement the fresh sealant material t = running metre ting output = 10 metres Labour Mate Mazdoor Material Primer	day day kg	0.665 0.250	0.665 0.250	0.665 0.250
10.10	3005.2	Rep Ren and long join with Uni Tak a)	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement in fresh sealant material at = running metre ating output = 10 metres Labour Mate Mazdoor Material Primer Sealant	day day kg	0.665 0.250	0.665 0.250	0.665 0.250
10.10	3005.2	Rep Ren and long join with Uni Tak a)	pair of old Joints Sealant moval of existing sealant I re sealing of contraction, gitudinal or expansion ats in concrete pavement the fresh sealant material t = running metre sing output = 10 metres Labour Mate Mazdoor Material Primer Sealant Machinery Air compressor 250 cfm	day day kg kg	0.665 0.250 1.000 0.050 @ on	0.665 0.250 1.000 0.050 @ on	0.665 0.250 1.000 0.050
10.10	3005.2	Rep Ren and long join with Uni Tak a) b)	pair of old Joints Sealant moval of existing sealant if re sealing of contraction, gitudinal or expansion ats in concrete pavement in fresh sealant material it = running metre ding output = 10 metres Labour Mate Mazdoor Material Primer Sealant Machinery Air compressor 250 cfm for cleaning Overhead charges	day day kg kg	0.665 0.250 1.000 0.050 @ on (a+b+c)	0.665 0.250 1.000 0.050 @ on (a+b+c)	0.665 0.250 1.000 0.050 @ on (a+b+c)
0.10	3005.2	Rep Ren and long join with Uni Tak a)	pair of old Joints Sealant moval of existing sealant if re sealing of contraction, gitudinal or expansion ats in concrete pavement the fresh sealant material t = running metre ting output = 10 metres Labour Mate Mazdoor Material Primer Sealant Machinery Air compressor 250 cfm for cleaning	day day kg kg	0.665 0.250 1.000 0.050 @ on (a+b+c) @ on	0.665 0.250 1.000 0.050 @ on (a+b+c) @ on	0.665 0.250 1.000 0.050 @ on (a+b+c) @ on
10.10	3005.2	Repand long join with Unit Tak a) b) c)	pair of old Joints Sealant moval of existing sealant if re sealing of contraction, gitudinal or expansion ats in concrete pavement in fresh sealant material it = running metre ding output = 10 metres Labour Mate Mazdoor Material Primer Sealant Machinery Air compressor 250 cfm for cleaning Overhead charges	day day kg kg	0.665 0.250 1.000 0.050 @ on (a+b+c)	0.665 0.250 1.000 0.050 @ on (a+b+c)	0.665 0.250 1.000 0.050 @ on (a+b+c)

C# No	Def to M	Description	l lmit	Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
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 Mazdoor b) Overhead charges c) Contractor's profit Cost for 10 metres = a+b+c Rate per metre = (a+b+c)/10	day day	0.040 1.000 @ on (a) @ on (a+b)	0.040 1.000 @ on (a) @ on (a+b)	0.040 1.000 @ on (a) @ on (a+b)	
10.12	3000	Land Slide Clearance in soil Clearance of land slides in soil and ordinary rock by a bull- dozer D 80 A-12, 180 HP and disposal of the same on the valley side Unit = cum Taking output = 100 cum a) Labour Mate Mazdoor b) Machinery	day day	0.040 1.000	0.040 1.000	0.040 1.000	
		Dozer 175 HP c) Overhead charges d) Contractor's profit Cost for 100 cum = a+b+c+d Rate per cum = (a+b+c+d)/100	hour	1.670 @ on (a+b) @ on (a+b+c)	1.670 @ on (a+b) @ on (a+b+c)	1.670 @ on (a+b) @ on (a+b+c)	
	Note	Land Slide clearance involves puron the valley side. Since no cut been taken as 60 cum per hou there are objection to disposing shall be considered as per site considered.	ting of originaries of the solution of the sol	al ground is inary rock a	involved, the	e output of d ard rock. Ho	ozer has wever, if
10.13	3000	Landslide Clearance in Hard Rock Requiring Blasting Clearing of land slide in hard rock requiring blasting for 50 Percent of the boulders and disposal of the same on the					

C N	D-f +- N4		Baranistias.	1114	Quantity	as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		vall	ey side.					
			it = cum					
		Tak	ring output = 100 cum					
		a)	Labour					
		•	Mate	day	0.093	0.093	0.093	
			Mazdoor	day	1.500	1.500	1.500	
			Driller	day	0.750	0.750	0.750	
			Blaster	day	0.070	0.070	0.070	
		b)	Machinery	,				
		•	Dozer 175 HP	hour	1.670	1.670	1.670	
			Air compressor 250 cfm	hour	2.500	2.500	2.500	
			with two jack hammer					
		c)	Materials					
			Explosives	kg	17.500	17.500	17.500	
			Electric Detonators @ 1	each	70.000	70.000	70.000	
			Detonator for 2 Gelatine					
			sticks of 125 gms each					
		c)	Overhead charges		@ on	@ on	@ on	
					(a+b)	(a+b)	(a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	st for 100 cum = a+b+c+d+e			()	(
			e per cum = (a+b+c+d+e)/ 10	0				
			(a a c a e) = -	-				

Note Credit for the rock if found acceptable as construction material shall be afforded

10.14 3000 A 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	0.080	0.080
	Mazdoor	day	2.000	2.000	2.000
b)	Machinery				
	Dozer 175 HP	hour	5.880	5.880	5.880
c)	Overhead charges		@ on	@ on	@ on
			(a+b)	(a+b)	(a+b)
d)	Contractor's profit		@ on	@ on	@ on
			(a+b+c)	(a+b+c)	(a+b+c)

Cost for 5000 cum = a+b+c+d

Rate per cum = (a+b+c+d)/5000

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.

Cr No	Ref. to M	Description	l lait	Quantity	as per project	category	Rate
Sr No	Ker. to IVI	Description	Unit	Large	Medium	Small	(Rs.)
10.14	В	Snow Clearance on Roamwith Backhoe-loader Snow clearance from roamsurface by a Backhoe-load and disposing it on the valle side Unit = cum Taking output = 5000 cum a) Labour Mate Mazdoor	ad er	0.200 5.000	0.200 5.000	0.200 5.000	(RS.)
		b) MachineryBackhoe-loader	hour	10.200	10.200	10.200	
		Cost for 5000 cum = $a+b+c+d$ Rate per cum = $(a+b+c+d)/5$					
	Note	Labour provided wil	I not be cutting tl	he snow. The	ey will be guid	ling the Back	hoe-
10.15	3000	snow and the edges hill side for any ever Snow Clearance on Roa	ntuality of avalan		-	·	
10.15	3000	with Snow Blowers					
		Snow clearance from roa surface by a snow blower ar disposing on the valley side. Unit = cum					
		Taking output = 3600 cum					
		a) Labour Mate Mazdoor	day day	0.080 2.000	0.080 2.000	0.080 2.000	
		b) Machinery					
		Snow blower equipment 175 HP @ 600 cum per hour	: hour	6.000	6.000	6.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on	@ on	@ on	

Cost for 3600 cum (a+b+c+d)

Rate per cum = (a+b+c+d)/ 3600

10.16 811 Replacement of Metal Beam Crash Barrier

Α

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

Replacement of "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed (a+b+c)

(a+b+c)

(a+b+c)

Sr No	Ref. to M				Quantity as per project category			Rat
		Description		Unit	Large	Medium	Small	(F
		0.0	ISMC sories shannel					
		on	ISMC series channel tical post, 150 x 75 x 5 mm					
			aced 2 m centre to centre,					
		-	m high, 1.1 m below					
			ound/road level, all steel					
		par	ts and fitments to be					
			vanised by hot dip process,					
			fittings to conform to					
			1367 and IS:1364, metal					
			am rail to be fixed on the tical post with a spacer of					
			annel section 150 x 75 x 5					
			n, 330 mm long complete					
			per clause 811					
		Un	it = Running metre					
		Tal	king output = 4.5 metre					
		a)	Labour					
			Mate	day	0.106	0.106	0.106	
			Blacksmith	day	0.665	0.665	0.665	
			Mazdoor	day	1.995	1.995	1.995	
		b)	Machinery					
			Tractor-trolley	hour	0.100	0.100	0.100	
		c)	Material					
			Corrugated sheet,3 mm	l.=	41 210	41 310	41 210	
			thick, "W" beam section railing,4.5 m in length	kg	41.210	41.210	41.210	
			Channel post 150 x 75 x 5					
			mm,1.8 m long,3 Nos @	kg	88.560	88.560	88.560	
			16.4 kg per metre					
			Spacer 150 x 75 x 5 mm					
			channel 0.33 m long,3	kg	16.240	16.240	16.240	
			Nos @ 16.4 kg per metre					
			Nuts and bolts	kg	20.000	20.000	20.000	
			Add 25 Percent of the					
			cost of material for					
			fabrication, nuts, bolts and washers etc.)					
			Credit for salvage value of					
			dismantled material	kg	166.010	166.010	166.010	
		d)	Overhead charges		@ on	@ on	@ on	
		•	· ·		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			st for 4.5 metre = a+b+c+d+e					
		Rat	te per metre = (a+b+c+d+e)/ 4	.5				
	В		oe - B, "THRIE" : Metal					
			am Crash Barrier					
			olacement of "Thrie"					
			tal beam crash barrier					
			mprising of 3 mm thick rugated sheet metal beam					
			85 cm above road/ground					

rail, 85 cm above road/ground

C 61			Description		Quantity as per project category			Rate
r No	Ref. to M				Large	Medium	Small	(R
		leve	el, fixed on ISMC series					
			innel vertical post, 150 x 75					
			mm spaced 2 m centre to					
		cen	tre, 2 m high with 1.15 m					
			ow ground level, all steel					
		•	ts and fitments to be					
		_	vanised by hot dip process,					
			fittings to conform to .367 and IS:1364, metal					
			m rail to be fixed on the					
			tical post with a space of					
		cha	nnel section 150 x 75 x 5					
			n, 546 mm long complete					
			per clause 811					
			t = Running metre					
			ing output = 4.5 metre					
		a)	Labour Mate	day	0.106	0.106	0.106	
			Blacksmith	day day	0.106 0.665	0.106	0.106	
			Mazdoor	day	1.995	1.995	1.995	
		b)	Machinery	aay	1.555	1.555	1.555	
		-,	Tractor-trolley	hour	0.100	0.100	0.100	
		c)	, Material					
		-	Corrugated sheet,3 mm					
			thick, "Thrie" beam	kg	72.940	72.940	72.940	
			section railing,4.5 m in length	0			. =	
			Channel post 150 x 75 x 5					
			mm, 2 m long,3 Nos @	kg	98.400	98.400	98.400	
			16.4 kg per metre	J				
			Spacer 150 x 75 x 5 mm					
			channel 0.546 m long,3 Nos	kg	26.860	26.860	26.860	
			Nuts and bolts	kg	30.000	30.000	30.000	
			Add 15 Percent of the	'\B	30.000	30.000	30.000	
			cost of material for					
			fabrication, nuts, bolts					
			and washers etc.)					
			Credit for salvage value of dismantled material	kg	228.200	228.200	228.200	
		d)	Overhead charges		@ on	@ on	@ on	
		-	-		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
			•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 4.5 metre = $a+b+c+d+e$					
		Kat	e per metre= (a+b+c+d+e)/ 4.5					
LO.17		Net	twork Survey Vehicle (NSV)					
/			ached with SUV					
			a collection of					
			gitudinal profiling					
			ernational Roughness					
		Ind	ex), Transverse profiling t Depth), Pavement					

(Rut Depth), Pavement

		П							
Sr No	Ref. to M	Description		Unit	Quantity as per project category			Rate	
					Large	Medium	Small	(Rs.)	
		Toyturo	in terms of Mean						
			epth,Road Geometry						
			oss slope, gradient,						
		-	re), GPS coordinates						
			viz. longitude, latitude						
			de, Video imaging for						
			e furniture / Road						
		Assets a	nd Video imaging for						
		Paveme	nt Surface Distresses						
		and rep							
			ane Kilometer						
		Taking o	output = 200 Lane Km						
		a) Lal	oour						
		Ma		day	0.468	0.468	0.468		
			zdoor (skilled)	day	11.700	11.700	11.700		
		-	chinery						
		Ne (NS	twork Survey Vehicle SV)	hour	8.000	8.000	8.000		
			twork Survey Vehicle						
		-	SV) Mobilization & mobilization	hour	15.000	15.000	15.000		
			d 1 Percent of cost of of for Miscellaneous						
		wo							
		c) Ov	erhead charges		@ on	@ on	@ on		
					(a+b+c)	(a+b+c)	(a+b+c)		
		d) Co	ntractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)		
		Cost for	200 Km = a+b+c+d		(4.2.0.4)	(0.0.0.0)	(4.2.0.4)		
		Rate per Km = (a+b+c+d)/200							
	Note:	(i) Average Distance has been considered 300 km for mobilization at workin same for demobilization						site and	
		(ii) Speed of vehicle 40 Km/hr. has been considered.							
(iii) The survey speed shall be within 30 to 80 kmph.									
10.18		Falling (FWD)	weight deflectometer						
		-	ane Kilometer						
			output = 120 Lane Km						
			our						
		Ma		day	0.158	0.158	0.158		
			zdoor (skilled)	day	1.300	1.300	1.300		
			zdoor (skilled)	day	2.660	2.660	2.660		
			chinery	aay	2.000	2.000	2.000		
		-	ing weight						
			ectometer (FWD)	hour	8.000	8.000	8.000		
			ipment						
			ing weight						
			ectometer (FWD)	hour	15 000	15 000	15 000		
			ipment Mobilization emobilization	hour	15.000	15.000	15.000		

CHAPTER: 10- MAINTENANCE OF ROADS

Sr No	Ref. to M	Description	Unit	Quantity	as per proje	ct category	Rate
Sr NO	Rei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
		Add 1 Percent of cost of					
		a+b for Miscellaneous					
		work					
		c) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 120 Km = $a+b+c+d$					
		Rate per Km = $(a+b+c+d)/120$)				
	Note:	(i) Average Distance has be	en considered 3	00 km for	mobilizatio	n at working	site and
		same for demobilization					
		(ii) Speed of vehicle 40 Km/h	r. has been cons	sidered.			
10.19		Road Retroreflectometer					
		attached with SUV					
		Unit = Km					
		Taking output =50 Km					
		a) Labour	al a	1 500	1.500	1.500	
		Mate	day	1.560	1.560	1.560	
		Mazdoor (skilled) Mazdoor	day day	26.000 13.000	26.000 13.000	26.000 13.000	
		b) Machinery	uay	13.000	13.000	13.000	
		Falling weight					
		deflectometer (FWD)	hour	80.000	80.000	80.000	
		Equipment					
		Falling weight					
		deflectometer (FWD)	hour	15.000	15.000	15.000	
		Equipment Mobilization	noui	13.000	13.000	13.000	
		& demobilization					
		Add 1 Percent of cost of					
		a+b as Miscellaneous					
		work		0.5	6	6 5 -	
		c) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		d) Contractor's profit		(атытс) @ on	(атытс) @ on	(атытс) @ on	
		a, contractor s pront		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 50 Km = $a+b+c+d$		(4.2.0.0)	(4.2.5.5.4)	(4.5.6.4)	
		Rate per Km = $(a+b+c+d)/50$					
	Note:	(i) Average Distance has be	en considered 3	300 km for	mobilizatio	n at working	site and
		same for demobilization					
		(ii) Speed of vehicle 40 Km/l					
		(iii) The Km is only for one sid	ie if road is more	e than 2 iane	2		
10.20		Automatic Vehicle Counte	er				
		Classifier (ATCC)					
		Unit = Per Location					
		Taking output = 1 Location					
		a) Labour	i	2 22-	2 22-	2 22-	
		Mate	day	2.205	2.205	2.205	
		Mazdoor (skilled)	day	0.520	0.520	0.520	
		Mazdoor	day	54.600	54.600	54.600	

CHAPTER: 10- MAINTENANCE OF ROADS

C N.o	Dof to M		Description	Unit	Quantity	as per proje	ct category	Rate
Sr No	Ref. to M	Description		Unit	Large	Medium	Small	(Rs.)
		b)	Machinery Automatic Vehicle					
			Counter Classifier (ATCC) Equipment etc.	hour	168.000	168.000	168.000	
			Sport utility vehicle (SUV) including Mobilization & demobilization	hour	72.000	72.000	72.000	
			Data processing and Report charges Add 1 Percent of cost of a+b as Miscellaneous work	Lumpsum	1.000	1.000	1.000	
		c)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		d)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 1 location = a+b+c+d		-	-	-	

Rate per Location = (a+b+c+d)/ 1

Note: (i) Average interval of location has been considred 50 Km

(ii) The duration of traffic counting 24 hours for 7 days has been considered for one location

CHAPTER - 11

HORTICULTURE

PREAMBLES:

- 1 The items of turfing with sods and seeding and mulching have been included in the chapter of earthwork.
- The analysis of 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

Section from above may be made as per actual situation and design.

- 4 Analysis of rates for wrought iron and mild steel welded work has been included to cater for any miscellaneous work in connection with horticulture, fencing and traffic sign.
- 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.
- In the rate analysis of some items, the quantities of sub-items involved in that analysis, like, excavation for foundation, foundation concrete, painting, lettering, etc. have been given. The rates for such items may be taken from relevant chapters where the same have already been analysed.

				Quantity	as per project o	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
11.01	307	Spreading of Sludge Farm Yard Manure or/and good Earth Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) Unit = cum Taking output = 15 cun a) Labour Mate Mazdoor	n day day	0.053 1.330	0.053 1.330	0.053 1.330	
		c) Contractor's profice Cost for 15 cum= a+b+c Rate per cum = (a+b+c)	t	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	
11.02	307 (i)	Grassing with 'Doobs' Grass Grassing with 'Doobs' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed Unit = sqm Taking output = 100 sq In rows 15 cm apart in	m				
		either direction					
		a) Labour Mate	day	0.093	0.093	0.093	
		Mazdoor for	day	0.998	0.998	0.998	
		grassing Mazdoor for maintenance for 30 days	day	1.330	1.330	1.330	
		b) MachineryWater tanker 6KL capacityc) Material	hour	0.500	0.500	0.500	
		Doob grass d) Overhead charges		100.000 @ on (a+b+c)	100.000 @ on (a+b+c)	100.000 @ on (a+b+c)	
		e) Contractor's profit	•	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

6 11	5 () 14		- · · ·		Quantity	, as per project o	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			t for 100 sqm = a+b- e per sqm= (a+b+c+		0			
11.02	(ii)		rows 7.5 cm apart ither direction Labour					
			Mate	day	0.120	0.120	0.120	
			Mazdoor for grassing.	day	1.663	1.663	1.663	
			for maintenance for 30 days	day	1.330	1.330	1.330	
		b)	Machinery Water tanker 6 KL capacity	hour	0.750	0.750	0.750	
		c)	Material Doob grass	kg	200.000	200.000	200.000	
		d)	Overhead charges	6	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profi	t	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for $100 \text{ sqm} = a+b+$	+c+d+e		-		

Rate per sqm = (a+b+c+d+e)/100

Note In the case of horticulture one mate has been provided for every 10 mazdoors as maintenance of grass and plants require more care.

11.03	307	Making Lawns
11.03	307	IVIANIII LAWIIS

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 including apart, supplying spreading of farm yard manure at rate of 0.18 cum per 100 sqm

Unit = sqm

Taking output = 100 sqm

		=			
a)	Labour				
	Mate	day	0.080	0.080	0.080
	Mazdoor for preparation of ground	day	0.665	0.665	0.665
	Mali for fetching doobs grass roots and grassing at 15 cm apart	day	1.330	1.330	1.330

Cu Ni -	Def to \$4		Description	11**	Quantity	as per project o	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery					
			Water tanker 6	hour	0.500	0.500	0.500	
			KL capacity Tractor with	hour	0.010	0.010	0.010	
			tipper	Hour	0.010	0.010	0.010	
		c)	Material					
		-,	Supply of farm	cum	0.180	0.180	0.180	
			yard manure at					
			site of work					
			Fine grass	kg	100.000	100.000	100.000	
		d)	Overhead charge		@ on (a+b+c)	@ on (a+b+c)		
		e)	Contractor's profi	it	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	it for 100 sqm = $a+b$	+c+d+e				
		Rat	e per sqm = (a+b+c+	+d+e)/ 1	00			
11.04	307		intenance of					
			vns or Turfing of					
		Slo	='					
			intenance of lawns Turfing of slopes					
			ugh grassing) for a					
		-	iod of one year					
		incl	uding watering etc					
		Uni	it = sqm					
		Tak	ing output = 100 sq	m				
		a)	Labour					
			Mate	day	0.532	0.532	0.532	
			Mali	day	13.300	13.300	13.300	
		b)	Machinery					
			Water tanker 6 KL capacity	hour	15.000	15.000	15.000	
		c)	Material					
		•	Cost of water	KL	90.000	90.000	90.000	
		d)	Overhead charges	s	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profi	it	@ on	@ on	@ on	
			-		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Co	st for 100 sqm = a+b	+c+d+e				
		Rat	e per sqm = (a+b+c-	+d+e)/ 1	00			
11.05	307		fing Lawns with					
			e Grassing					
			luding Ploughing, essing					
			fing lawns with fine					
			ssing including					
		plo	ughing, dressing					
			uding breaking of					
		clo	•					
			bish, dressing and					
		sup	plying doobs grass					

				Quantity	, as per project o	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
1		-			1	1	
		roots at 10 cm apar	t,				
		including supplyir	_				
		and spreading of far					
		yard manure at ra					
		of0.6 cum per 10	00				
		sqm					
		Unit = sqm					
		Taking output = 100 : a) Labour	sqm				
		a) Labour Mate	day	0.133	0.133	0.133	
		Mazdoor for	day	1.330	1.330	1.330	
		preparation of	uay	1.550	1.550	1.550	
		ground					
		Mali for fetching	g day	1.995	1.995	1.995	
		doobs grass roo	-	1.555	1.555	1.333	
		hedges and					
		grassing at 10 cr	n				
		apart					
		b) Machinery					
		Water tanker 6	hour	0.500	0.500	0.500	
		KL capacity					
		Tractor with tille	er hour	0.010	0.010	0.010	
		c) Material					
		Supply of farm	cum	0.600	0.600	0.600	
		yard manure at					
		site of work @					
		0.6 cum per 100					
		sqm		100.000	100.000	100.000	
		Fine grass	kg	100.000	100.000	100.000	
		d) Overhead charge e) Contractor's pro		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		e) Contractor's pro	JIIL	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 100 sqm = a+	-h+c+d+e	(атытсти)	(атытста)	(атытсти)	
		Rate per sqm = (a+b+		.00			
			-				
11.06	307		of				
		Lawns with Fir					
		Grassing for the Fir Year	St				
		Maintenance of lawr					
		with fine grassing for					
		the first year includir					
		watering etc	ıg				
		Unit = sqm					
		Taking output = 100	ram				
		= -	sqiii				
		•	da	0.533	0.533	0.533	
		Mate	day	0.532	0.532	0.532	
		Mali	day	13.300	13.300	13.300	
		b) Machinery		20.000	20.000	20.000	
		Water tanker 6	hour	20.000	20.000	20.000	
		KL capacity					
		c) Material					
		<u> </u>		c		c	
		Cost of water	KL	60.000	60.000	60.000	
		Cost of water d) Overhead charg e) Contractor's pro	ges	60.000 @ on (a+b+c) @ on	60.000 @ on (a+b+c) @ on	60.000 @ on (a+b+c) @ on	

C:: N -	D-f +- 84	Do a suitati a u	11	Quantity	as per project o	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Cost for 100 sqm = a+b Rate per sqm = (a+b+c+		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
11.07	307 (a)	Planting and Maintaining of Permanent Hedges Planting permanent hedges including digging of trenches Planting permanent hedges including digging of trenches, 60 cm wide and 45 cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65 cum per 100 metres and supplying and planting hedge plants at 30 cm apart					
		Unit = Running metre					
		Taking output = 100 me	etre				
		a) Labour		0.745	0.745	0.745	
		Mate Mazdoor for digging of trench 60 cm wide and 45 cm deep	day day	0.745 13.300	0.745 13.300	0.745 13.300	
		Mazdoor for refilling the excavated earth mixed with cow dung, preparation of ground and digging of plant, from the nursery carriage to site and planting in position	day	5.320	5.320	5.320	
		b) Machinery Water tanker 6 KL capacity	hour	0.500	0.500	0.500	
		c) Material Cost of hedge plants 2 rows at 30 cm apart	each	2x340	2x340	2x340	
		Supply of farm yard manure at site of work	cum	4.670	4.670	4.670	
		Pesticide	kg	0.250	0.250	0.250	

Sr No	Ref. to M	Description	Unit	Quantity as per project category			
Sr NO	Kei. to ivi	Description	Unit	Large	Medium	Small	(Rs
		Cost of water d) Overhead charge e) Contractor's profi	t	3.000 @ on (a+b+c) @ on (a+b+c+d)	3.000 @ on (a+b+c) @ on (a+b+c+d)	3.000 @ on (a+b+c) @ on (a+b+c+d)	
		Cost for 100 metres = a Rate per metre = a+b+e					
	(b)	Maintenance of hedge for one year Unit = Running metre Taking output = 100 m a) Labour					
		Mate Mazdoor	day day	1.596 39.900	1.596 39.900	1.596 39.900	
		b) Machinery Water tanker 6 KL capacity	hour	5.000	5.000	5.000	
		c) Material Manure sludge/Farm yard	cum	2.000	2.000	2.000	
		manure Pesticide Cost of water Cost of hedge plants @ 10	kg KL each	0.500 30.000 68.000	0.500 30.000 68.000	0.500 30.000 68.000	
		Percent casualty d) Overhead charge: e) Contractor's profi		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Cost for 100 metres = a Rate per metre = a+b+e					
1.08	307	Planting and Maintaining of Flowering Plants and	ститеј/ 1				
	(a)	Shrubs Planting flowering plants and shrubs in central verge Unit = RM 200 plants and 800 shrubs in two rows in					
		one km length of road where width of verge is 3 m and above. Taking output = 1000 metres a) Labour					
		Mate Mazdoor	day	0.638 15.960	0.638 15.960	0.638 15.960	
		b) Machinery Water tanker 6	day hour	6.000	6.000	6.000	
		KL capacity c) Material					

		Doccrintian	110:4		as per project o		Ra
Ref. to M		Description	Unit	Large	Medium	Small	(R
		Plants	each	200.000	200.000	200.000	
		Shrubs	each	800.000	800.000	800.000	
		Manure	cum	63.640	63.640	63.640	
		sludge/Farm yard					
	-	_					
	e)	Contractor's profi	t	_	_	_	
	Data		۸. ۵۱	(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	Kate	e per km = (a+b+c+6	a+e)				
(b)	Maiı	ntenance of					
	flow	ering plants and					
	verg	e for one year					
			n				
	a)						
			-				
			day	485.450	485.450	485.450	
	b)	Machinery					
		Water tanker 6 KL capacity	hour	90.000	90.000	90.000	
	c)	Material					
		Manure Sludge / farm yard	cum	10.000	10.000	10.000	
		Replacement of casualties @ 10	KL	180.000	180.000	180.000	
			each	20.000	20.000	20.000	
	ď١						
	-	-				-	
	٠,	contractor 3 profit		_	_	_	
	Rate	per Km for one ye	ar = (a+l		. ,	,	
307		_					
		-					
		· · · · · · · · · · · · · · · · · · ·					
		•					
		•					
		/sludge manure,					
		ting the saplings,					
	(b)	d) e) Rate (b) Main flow shru verg Unit Taki a) b) c) Rate 307 Plan their one Plan the trees hole the g	Plants Shrubs Manure sludge/Farm yard manure Pesticide Cost of water d) Overhead charges e) Contractor's profit Rate per Km = (a+b+c+d) (b) Maintenance of flowering plants and shrubs in central verge for one year Unit = km Taking output = one kn a) Labour Mate Mazdoor b) Machinery Water tanker 6 KL capacity c) Material Manure Sludge / farm yard manure at site Cost of water Replacement of casualties @ 10 Percent Plants Shrubs Pesticides d) Overhead charges e) Contractor's profit Rate per Km for one year	Plants each Shrubs each Manure cum sludge/Farm yard manure Pesticide kg Cost of water KL d) Overhead charges e) Contractor's profit Rate per Km = (a+b+c+d+e) (b) Maintenance of flowering plants and shrubs in central verge for one year Unit = km Taking output = one km a) Labour Mate day Mazdoor day b) Machinery Water tanker 6 hour KL capacity c) Material Manure Sludge / cum farm yard manure at site Cost of water KL Replacement of casualties @ 10 Percent Plants each Shrubs each Pesticides kg d) Overhead charges e) Contractor's profit Rate per Km for one year = (a+1) 307 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	Plants each 200.000 Shrubs each 800.000 Manure cum 63.640 sludge/Farm yard manure Pesticide kg 0.500 Cost of water KL 36.000 d) Overhead charges @ on (a+b+c) e) Contractor's profit @ on (a+b+c+d) Rate per Km = (a+b+c+d+e) (b) Maintenance of flowering plants and shrubs in central verge for one year Unit = km Taking output = one km a) Labour Mate day 19.418 Mazdoor day 485.450 b) Machinery Water tanker 6 hour 90.000 KL capacity c) Material Manure Sludge / cum 10.000 farm yard manure at site Cost of water KL 180.000 Replacement of casualties @ 10 Percent Plants each 20.000 Shrubs each 80.000 Pesticides kg 1.500 d) Overhead charges @ on (a+b+c) e) Contractor's profit @ on (a+b+c) 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	Plants	Plants

C: N -	D-6 +- M		D	11	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		tree mai for Uni	intaining the plants one year t = Each					
			ing output = 10 tree	es .				
		a)	Labour Mate	day	0.904	0.904	0.904	
			Mazdoor for planting	day	2.660	2.660	2.660	
			Mazdoor for maintenance for one year	day	19.950	19.950	19.950	
		b)	Machinery					
			Water tanker 6 KL capacity	hour	2.000	2.000	2.000	
		c)	Material					
			Sapling 2 m high 25 mm dia	each	10.000	10.000	10.000	
			Farm yard manure	cum	0.940	0.940	0.940	
			Pesticide	kg	0.500	0.500	0.500	
			Cost of water	KL	12.000	12.000	12.000	
		d)	Overhead charges	6	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profi		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 10 trees = a+b+	-c+d+e				

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

11.10 308

Renovation Lawns including, Weeding, Forking the Ground, **Top Dressing with 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

				Quantity	as per project o	ategory	F
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(
		Unit = sqm					
		Taking output = 100 sq	lm				
		a) Labour	day	0.160	0.160	0.160	
		Mate Mazdoor	day	0.160 3.990	0.160 3.990	0.160 3.990	
		b) Machinery	day	3.990	3.990	3.990	
		Water tanker 6	hour	0.500	0.500	0.500	
		KL capacity	noai	0.500	0.500	0.500	
		c) Material					
		Cost of water	KL	3.000	3.000	3.000	
		d) Overhead charge	s	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's prof	it	@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 100 sqm = a+b					
		Rate per sqm = (a+b+c	+d+e)/10	0			
1.11	308.2	Supply at Site Well					
1.11	506.2	Decayed Farm Yard					
		Manure					
		Supply at site of work					
		well decayed farm					
		yard manure, from					
		any available source, approved by the					
		approved by the engineer in charge					
		including screening					
		and stacking					
		Unit = cum					
		Taking output = one cu	ım				
		a) Material					
		Cost of well	cum	1.000	1.000	1.000	
		decayed farm					
		yard manure duly					
		screened,					
		loading, carriage,					
		unloading and stacking at site					
		b) Overhead charge	c	@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profi		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per cum = (a+b+c		C 511 (1 15)	C 311 (11 11)	C 311 (1 13)	
		•	•				
1.12	308.20	Supply at Site of					
		Work/ Store-Deoiled					
		Neem Cake					
		Supply at site of work/					
		store-deoiled neem					
		cake duly packed in					
		used gunny bags					
		Unit = quintal					
		Taking output = one qu					
		a) Cost, carriage,	quintal	1.000	1.000	1.000	

				Quantity	as per project o	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		loading, unloading and stacking in store/site b) Overhead charges c) Contractor's profi	t	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	
11.13	308.2	Supplying Sludge Supplying sludge duly stacked at site/ store Unit = cum Taking output = one cu a) Cost of sludge including carriage, loading, unloading and	m cum	1.000	1.000	1.000	
		stacking at site b) Overhead charges c) Contractor's profi Rate per cum = a+b+c		@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	
11.14	308 & 1300	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 Unit = Each Taking output = one tre a) Labour Mate		0.027	0.027	0.027	
		Mate Mason	day day	0.027 0.333	0.027 0.333	0.027 0.333	
		IVIGSUII	uay	0.555	0.555	0.555	

					Quantity	as per project c	ategory	Rate
Sr No	Ref. to M		Description	Unit		Medium	Small	(Rs.)
					Large	iviedium	Siliali	(113.)
		b)	Mazdoor Material	day	0.333	0.333	0.333	
			Brick 2nd class including carriage	each	230.000	230.000	230.000	
			Cement mortar 1:6 (Rate taken from sub-analysis 21.01 D)	cum	0.025	0.025	0.025	
		c)	Overhead charges	;	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profi		@ on (a+b+c)			
		Rat	e per tree Guard = a	a+b+c+d				
11.15	308 & 1300	Brid Len	ging with 2nd Class cks, Laid Dry gthwise					
		brio	ging with 2nd class cks, laid dry gthwise, including					
			avation, refilling,					
			isolidation, with a					
		han						
		•	eading nearly					
			plus earth within a d of 50 metres					
			it = Metre					
		_	ing output= 10 met	res				
		a)	Labour	163				
		u,	Mate	day	0.005	0.005	0.005	
			Mason	day	0.067	0.067	0.067	
			Mazdoor	day	0.067	0.067	0.067	
		b)	Material	,				
		,	Brick 2nd class including carriage	each	50.000	50.000	50.000	
		c)	Overhead charges	;	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profi		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			t for 10 metre = a+b					
		Rat	e per metre = (a+b+	·c+d)/ 10				
11.16	Suggestive	cm	king Tree Guard 53 dia and 1.3 m High per Design from					
		Em Dru	pty Bitumen ıms					
			king tree guard 53 dia and 1.3 m high					
			per design from					
			pty bitumen drum,					
			suitably to permit					
			and air, (supplied the department at					
		sto						
			uding providing					
		_	5 , 5					

Sr No	Ref. to M		Description	Unit	Quantity	as per project o	ategory	Ra
31 110	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs
		anc	I fixing 2 nos MS					
			et rings 50 x 0.5					
		mm						
		con	nplete in all respect					
		Uni	t = Each					
		Tak	ing output = one tre	e guard				
		a)	Labour					
			Mate	day	0.012	0.012	0.012	
			Blacksmith	day	0.200	0.200	0.200	
			Mazdoor	day	0.093	0.093	0.093	
		b)	Material					
			Empty bitumen drum	each	1.000	1.000	1.000	
			MS sheet 50 x 0.5 mm	kg	0.650	0.650	0.650	
			Rivets 6 mm dia and 10 mm in length	each	22.000	22.000	22.000	
		d)	Overhead charges	;	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profi	t	@ on	@ on	@ on	
			e for each tree guar		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		froi Dru	m Empty Bitumen ıms					
		fro						
		Ma	king tree guard 53					
			dia and 2 metres					
		higl	h as per design					
			m empty bitumen					
			ms, slit suitably to					
		•	mit sun and air,					
			oplied by the					
		-	partment at stock					
			re rate) including					
		-	viding and fixing					
			r legs 40 cm long of x 3 mm MS riveted					
			tree guard and					
			viding and fixing 2					
			MS sheet rings 50					
			.5 mm with rivets					
			nplete in all					
			pects					
			t = Each					
			ing output = one tre	e guard				
		a)	Labour	- Dual a				
		aj	Mate		0.021	0.021	0.021	
			Mate Blacksmith	day	0.021	0.021	0.021	

C., A.	p.f. **		December 1	11	Quantity	as per project o	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Mazdoor		0.266	0.266	0.266	
		b)	Material					
			Empty bitumen	each	1.500	1.500	1.500	
			drum					
			MS sheet 50 x	kg	0.650	0.650	0.650	
			0.5 mm	J				
			Rivets 6 mm dia	each	50.000	50.000	50.000	
			and 10 mm in					
			length					
			MS plate 30 x 3	kg	1.300	1.300	1.300	
			mm					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		-	e for each tree guar			. ,	. ,	
11.18	Suggestive	Wr	ought Iron and					
	00		d Steel Welded					
		Wo	ork					
			ought iron and mild					
			el welded work					
			ing angles, square					
			rs, tees and channel					
		_	ls, grating frames,					
		_	es and tree guards any size and design					
			. including cost of					
			eens and welding					
			ls or bolts and nuts					
			nplete fixed in					
		pos	sition but without					
		the	cost of excavation					
			d concrete for fixing					
			ich will be paid					
		-	parately					
			it = quintal king output = one qu	intal				
		a)	Labour	ıllıtai				
		aj	Mate	day	0.239	0.239	0.239	
			Blacksmith/	day	2.660	2.660	2.660	
			welder for cutting	,				
			to design and					
			shape and					
			jointing					
			Mazdoor for	day	3.325	3.325	3.325	
			fixing and helper					
			for Blacksmith/					
			welder					
		b)	Material					
			Angle, tees,	quinta	1.050	1.050	1.050	
			channels etc	 				
			Deduct the cost	quinta	0.050	0.050	0.050	
			of scrap	I				
			Add 5 Percent of					

Sr No	Ref. to M		Description	Unit	Quantity	as per project o	category	Rate
Sr INO	Rei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
			cost of material for welding rods and other welding accessories Overhead charges Contractor's profit e per quintal = a+b+		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
11.19	-Suggestive	Tre Iror	e Guard with MS า					
		MS cm high leve (25 (25 in the tog dia bolt pain with bra prir all r	nting two coats h paint of approved nd over a coat of ming, complete in respects. t = Each ring output = one tre	ee guard				
		a)	Labour					
			Mate	day	0.027	0.027	0.027	
			Blacksmith	day	0.333	0.333	0.333	
			Mazdoor	day	0.333	0.333	0.333	
		b)	Material					
			MS iron 25 x 6 mm	kg	19.200	19.200	19.200	
			MS iron 25 x 3 mm	kg	9.600	9.600	9.600	
			Add 5 Percent of cost of material for riveting, bolting and welding accessories					
		c)	Machinery					
			Tractor-trolley	hour	0.040	0.040	0.040	
		d)	Painting Painting two coats including priming Rate for concrete	sqm	1.770	1.770	1.770	

may be adopted

C:: No	Def to M	Dogovintion	11	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

vide item no. 8.09

e) **Overhead charges** @ on @ on @ on (a+b+c+d) (a+b+c+d) (a+b+c+d) f) **Contractor's profit** @ on @ on @ on (a+b+c+d+e) (a+b+c+d+e) (a+b+c+d+e)

Rate per tree guard =a+b+c+d+e+f

- 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 Suggestive

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

Taki

Tak	ing output = one				
a)	Labour				
	Mate	day	0.040	0.040	0.040
	Blacksmith	day	0.333	0.333	0.333
	Welder	day	0.333	0.333	0.333
	Mazdoor	day	0.333	0.333	0.333
b)	Material				
	MS angle 30 x 30	kg	13.500	13.500	13.500
	x 3 mm				
	MS iron 25 x 3 mm	kg	18.000	18.000	18.000
	Steel wire 3 mm	kg	6.000	6.000	6.000
	dia	מיי	0.000	0.000	0.000
	Add 5 Percent of				
	cost of material				
	for riveting,				
	bolting and welding				
	accessories				
c)	Machinery				
	Tractor-trolley	hour	0.040	0.040	0.040
d)	Painting				
	Painting two coats including priming	sqm	1.500	1.500	1.500
	Rate for concrete				

			Quantity	as per project o	ategory	Rate
Sr No Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	may be adopted vide item no. 8.09 e) Overhead charges f) Contractor's profit Rate per tree guard = a	t	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
11.21	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 he a) Labour i) Planting Mate Mazdoor ii) For Maintenance for one year Mate	day day day	33.250 5.000	1.330 33.250 5.000	1.330 33.250 5.000	
	Mazdoor b) Machinery Dozer 90 HP @ 1000 sqm/hour Water tanker 6 KL capacity (for planting) Water tanker 6	hour hour hour	66.500 10.000 3.000 25.000	66.500 10.000 3.000 25.000	66.500 10.000 3.000 25.000	
	KL capacity (for maintenance) c) Material Sapling 1 to 1.5 m high 2 cm dia stem Add 10 Percent of sapling Decayed farm	each each cum	290.000 29.000 60.900	290.000 29.000 60.900	290.000 29.000 60.900	

CHAPTER: 11- HORTICULTURE

C:: No	Dof to M		Description	I I mile	Quantity	as per project c	ategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			yard/sludge manure (planting) Decayed farm yard/sludge manure (maintenance)	cum	4.000	4.000	4.000	
			Pesticides for planting	kg	0.500	0.500	0.500	
			Pesticides for maintenance	kg	1.500	1.500	1.500	
			Cost of water	KL	18.000	18.000	18.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit	_	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Rate per hectare = a+b+c+d+e

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

11.22 Rain Water Harvesting

Constructing rain water harvesting recharge trench cum recharge shaft / well including grating passage joining storm water drain and trench having brick walls, RCC cover slab and filled with layers of filter media (size 75 mm to 100 mm), grating having brick walls and CC 1:2:4 base and PVC pipe shaft packed with gravel, provided with wire screen and bottom plug complete per Drawing, direction of the Engineer andMORT&H Specifications sections 300, 1000, 1300, 1500, 1600 & 1700. (Dimension of rain water harvesting pit 6.5 m depth, 2.10 meter inner dia, wall width 375 mm and top slab thickness 150 mm)

Unit = Number

Taking output = 10 Number

CHAPTER: 11- HORTICULTURE

C N -	D-f +- 84		December :	11	Quantity a	as per project cat	egory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		,						
		a)	Material Excavation	Cum	230.213	230.213	230.213	
			12.01	Cuiii	230.213	230.213	230.213	
			(Rate taken					
			from Item No					
			12.01 (I) B (iii))					
			Brick Wall (2.5	cum	61.819	61.819	61.819	
			meter)					
			(Rate taken					
			from Item No 12.05)					
			Brick Wall		98.910	98.910	98.910	
			(Without		30.310	30.310	30.310	
			Mortar -4					
			meter)					
			(Rate taken					
			from Item No					
			12.05 x 83%) RCC M20 for	Cum	F 102	F 102	Г 102	
			Slab	Cum	5.193	5.193	5.193	
			(Rate taken					
			from Item No					
			12.08 C, Case-II)					
			Reinforcement	MT	0.415	0.415	0.415	
			(Rate taken from Item No					
			12.42)					
		b)	Filter Material	cum	225.020	225.020	225.020	
			(Size from 75-					
			100 mm)					
		c)	Add 1 per cent					
			of the cost of					
			(a+b) for other					
			miscelleneus (i.e Pipe etc)					
			activities					
			required to					
			complete the					
			item in all					
			respect.					
		d)	Overhead charge	s	@ on (b)	@ on (b)	@ on (b)	
		e)	Contractor's prof	:4	@ on (b)	@ on (b)	@ on (b)	

Cost for 10 Nos. = a+b+c+d+eRate per No. = (a+b+c+d+e)/10

PART- B BRIDGE WORKS

B. STRUCTURE WORKS

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

The basic approach for the preparation of Standard Data Book for Bridge Works is indicated as under:

Description of items

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

Overhead Charges

The overhead charges include the following elements:

- i. Site accommodation, setting up plant, access road, water supply, electricity and general site arrangements.
- ii. Office furniture, equipment and communications
- iii. Expenditure on

Corporate office of contractor

Site supervision

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. Temporary Diversion
- x. Watch and ward
- xi. Traffic management during construction
- xii. Expenditure on 'safeguarding environment
- xiii. Sundries
- xiv. Financing Expenditure
- xv. Insurance/compensation

For the purpose of calculation of overhead charges, the bridge projects may be categorized into two basic types as under

Category 1: Bridge / Structure Works 25 percent

Category 2: Rehabilitation of Bridges / Structure 30 percent

Contractor Profit: 10 Percent of cost of works

B. STRUCTURE WORKS

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

Contractor profit is also added on overhead charges.

Basic Inputs

Basic inputs are only given in the standard data book. The rates for material and labour have to be updated by concerned State/UT govt. Officials like E-in-C, CE(NH), State PWDs.

Plants and Equipment

In the analysis of rates, for any items of work, capacity of equipment with corresponding output has been indicated which is most common in use for estimation purpose. Seeing the volume of job, different capacity equipment with corresponding output as indicated in Chapter-20 can be usage for preparing the estimate.

Materials

The rates of material should include basic cost at crushing units, cost of carriage including loading and unloading and stacking of material at site of work and shall be determined through market enquiries.

Labour

Highly Skilled labour include mason (1st class), carpenter, Blacksmith (Ist class)/ Welder/ Plumber/ Electrician, (1st class), mechanics and other trades.

One mate has been provided for 25 labours.

Carriage of Materials

The unit for vehicle for carriage has been taken as under:

- a) In hours where lead is defined including time required for loading and unloading
- b) In tonne km where lead is variable. The loading and unloading for such cases have been provided separately.

General:

Bridge bearing and expansion joints are ready made items commercially produced by specialized firms and in certain cases using imported technology and parts. The rates of these, items are to be obtained directly from different manufacturers approved by the Ministry and shall be adopted after comparison.

Normal method of curing & with curing compound has been covered in the schedule. Analysis for steam curing has been included in the analysis of pre-cast concrete PSC beams.

The testing of materials and finished items of work is covered under overhead charges.

Traffic arrangements during construction are covered under overhead charges. Provisions of a temporary diversion, where required shall be governed by Clause 112.

In the items for well foundation, provision for nominal island/temporary protection, deep islands/cofferdams with wooden ballies and sheet piles has been made. The sinking of well foundation in bouldery strata has been included.

In the case of pile foundation, pile dia up to 1.5 m is analysed.

The analysis of steel bridges has been incorporated. For innovative type of structures like cable stayed bridges, suspension bridges, arch bridges, bow string girder bridges, erected by innovative techniques where erection stage is as important as the construction of bridge components in terms of input of machinery,

B. STRUCTURE WORKS

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

manpower and materials, special analysis is called for.

For some of the items, certain size/specifications have been assumed. If size/specifications other than the same are adopted, corresponding modifications may be made in the inputs of analysis.

The items do not cover all components of bridge projects and all situations. There may be specialized items for specific cases, which need to be analysed keeping in view the basic approach.

Guide Bund

The items for the guide bund are excavation, embankment and protection works. The rates for these items may be taken from the respective chapters.

In case bridge construction works are to be done on wide and deep water channels in major rivers or in sea creeks etc., provision of floating barrages. for taking the construction materials and equipment's inside water shall also be made separately.

Analysis for sinking of wells cover diameter; from 6 m to 12 m and Twin D Type of 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.

The lift for casting of concrete in well staining may be 2 to 2.5 m restricting the free fall of concrete to 1.5 m and concreting layer to 450 mm.

The Standard Data Book is for Department use only. It can not be produced in Court of law as reference/authority and this is a privilege document.

CHAPTER - 12

BRIDGE FOUNDATION

PREAMBLES:

- Excavation for structures has been provided both by manual and mechanical means. The rate relevant to a particular situation may be adopted.
- The earth excavated from foundation has been proposed to be backfilled and balance quantity utilized for road work locally except for marshy soil where disposal has been provided.
- The rock foundations are required to be prepared which has been analysed.
- 4 In case of rocks, excavation has been considered upto a depth of 3 m only.
- 5 Embedment of foundation in soft and hard rocks has been provided as required by the specifications.
- 6 Dewatering has been provided in excavation for foundation. In case dewatering is not required for a particular site condition, the same may be omitted while preparing the estimate.
- 7 Mixing of cement concrete has been considered only by using batching plant.
- 8 Concrete batching plant is generally placed within one km of the bridge site. In case of longer lead, transportation cost may be worked out based on tonne Km
- 9 The coarse and fine aggregate for cement concrete shall be as per IS: 383.
- 10 Description of items has been given very brief. Relevant clauses of MoRT&H Specifications may be referred for detailed specification.
- 11 The rate analysis for well foundation has been included for diameter varying from 6 m to 12 m. Well for twin D type has also been included.
- 12 Pneumatic sinking is a specialized job. All safety precaution as per IS: 4138 are required to be taken. Medical supervision for such works is considered very essential. Depth of pneumatic sinking has been restricted to 30 m below normal water level.
- 13 Rate analysis for various types of piles like bored cast-in-situ, driven precast RCC 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.
- Pile driving rigs including vibratory hammers are assumed to be self contained with power units and necessary accessories required for driving.
- 15 The quantity of concrete which is required to be stripped off upto a minimum height of 600 mm above the designed top level of the pile has been taken into account in the rate analysis.
- 16 The leveling course below the pile cap is proposed with M 15 grade concrete.
- 17 Steel reinforcement for cement concrete works 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.
- 18 Appendix-4 of IRC: 78 may be referred regarding precautions to be taken during sinking of wells.
- 19 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 curb, the thickness of steel plate may be reduced to 6 mm. This extra height of steel lining should be limited to 3 m.
- The concrete mix used in bottom plug shall have minimum cement content of 330 kg/cum and a slump of about 150 mm to permit easy flow of concrete through tremie to fill-up all cavities.

CHAPTER - 12

BRIDGE FOUNDATION

- 21 Necessary safety precautions shall be taken for excavation on open foundations for which guidance may be taken from IS: 3764.
- 22 A leveling course of 100 mm thickness in M 10 shall be provided before laying open foundations.
- 23 In case of open foundation, dewatering shall not be permitted from the time of placing concrete upto 24 hours after placement.
- In case of open foundations in rock, the trenches around the footing shall be filled-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 may 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.
- 27 The top of the bottom plug shall be at least 300 mm above top of curb.
- 28 No dewatering shall be carried out within 7 days of casting of bottom plug.
- 29 In case of cement concrete piles, the minimum grade of concrete shall be M 35 with minimum cement content of 400 kg/cum.
- 30 The top of the pile shall project 50 mm into the pile cap and reinforcement of pile shall be fully anchored in pile cap.
- 31 The minimum thickness of pile cap should be at least 0.6 m or 1.5 times the diameter of the pile whichever is more.
- 32 Guidance for piles is to be obtained from IS: 2911.
- 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.

					Quantity	y as per project	category	Rate			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)			
				l				(1101)			
12.01	304	Exca	avation for Structures								
		Eart	th work in excavation of								
		four	ndation of structures as per								
			wing and technical								
		-	cification, including setting								
			construction of shoring								
			bracing, removal of mps and other deleterious								
			ter, dressing of sides and								
			tom and backfilling with								
			roved material.								
	ı	Ord	inary soil								
		Unit	t = cum								
		Taki	ing output = 10 cum								
	Α	Mar	Manual Means								
	(i)	Dep	oth upto 3 m								
		a)	Labour								
			Mate	day	0.186	0.186	0.186				
			Mazdoor	day	4.655	4.655	4.655				
		b)	Overhead charges		@ on (a)	@ on (a)	@ on (a)				
		c)	Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)				
		Cost	t for 10 cum = a+b+c								
			e per cum = (a+b+c)/10								
	Note	1.	Cost of dewatering may be	e added v	vhere required (upto, 10 Percent	of labour cost				
			Assessment for dewatering		•	•					
		2.	The excavated earth can b	e used pa	artially for backf	illing of foundat	ion pit and partl	y for			
			road work except for mars	-		=	-				
		2	marshy soil. This remark is				-				
		3.	The cost of shoring and sh excavation for open found	•	wnere needed,	may be added (y I Percent on c	OST OT			
			excavation for open found	ation.							
12.01	(ii)	Dep	oth 3 m to 6 m								
(I) A		a)	Labour								
		u,	Mate/Supervisor	day	0.239	0.239	0.239				
			Mazdoor	day	5.985	5.985	5.985				
		b)	Overhead charges	aay	@ on (a)	@ on (a)	@ on (a)				
		c)	Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)				
		-	t for 10 cum = a+b+c		C 011 (2 · 2)	e on (a)	e on (a.a.)				
		Rate	e per cum = (a+b+c)/10								
	Note	Cost	t of dewatering may be add	ed where	required upto	15 Percent of lal	bour cost. Asses	sment fo			
		dew	atering shall be done as pe	r actual g	round conditior	ıs.					
12.01 (I) A	(iii)	Dep	oth above 6 m								
.,,.,		a)	Labour								
			Mate/Supervisor	day	0.210	0.210	0.210				
			iviate/ Super visor	uay	0.319	0.319	0.319				

C# No	Dof to M			Description	l lmia	Quantity as per project category		category	Rate
Sr No	Ref. to M	Description		Unit	Large	Medium	Small	(Rs.)	
		b)	Ove	erhead charges		@ on (a)	@ on (a)	@ on (a)	
		c)		tractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Cost	t for 1	10 cum = a+b+c					
		Rate	e per	cum = (a+b+c)/10					
	Note	1.		t of dewatering may be		-	-	of labour cost.	
			Asse	essment for dewatering	g shall be	e made as per sit	te conditions		
	_	N/1	-l:	aal Maana					
12.01	В	ivied	cnanı	cal Means					
(1)		Don	.+h	140 2 m					
		_	_	oto 3 m					
			t = cu						
		_	ing oi Labo	utput = 330 cum					
		a)	Mat		da	0.426	0.426	0.426	
				.e zdoor	day	0.426	0.426	0.426	
		h۱		hinery	day	10.640	10.640	10.640	
		IJ,		raulic Excavator					
			-	excavation					
			_	1.2 cum bucket	hour	5.508			
			(1)	capacity	Hour	5.506			
			(ii)	1.1 cum bucket	hour		6.344		
			` '	capacity	11041		0.5		
			(iii)	0.9 cum bucket	hour			8.869	
				capacity					
				packfilling (considering					
				of the excavated					
			mate	·					
			(i)	1.2 cum bucket	hour	3.305			
			(ii)	capacity 1.1 cum bucket	h a		2.000		
			(11)	capacity	hour		3.806		
			(iii)	0.9 cum bucket	hour			5.321	
			(,	capacity	noai			3.321	
			Tipp	er for transportation					
			of ex	cess material to					
				ping yard considering					
				@ 1 km					
				18 cum capacity	t-km	198.000			
				14 cum capacity	t-km		198.000		
				10 cum capacity	t-km			198.000	
		c)		erhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)		ntractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
				330 cum = a+b+c+d					
		Kate	e per	cum = (a+b+c+d)/330					

Note Cost of dewatering upto 5 Percent of (a+b) may be added, where required. Assessment for dewatering shall be made as per site conditions.

(ii) Depth 3 m to 6 m Unit = cum Taking output = 300 cum

Cu Ni -	" No Dof to NA		D		Unit	Quantit	category	Rate	
Sr No	Ref. to M			Description U		Large	Medium	Small	(Rs.)
		a)		our		0.426	0.426	0.426	
			Ma		day	0.426	0.426	0.426	
				zdoor	day	10.640	10.640	10.640	
		b)		chinery					
			_	draulic Excavator					
				excavation					
			(i)	1.2 cum bucket capacity	hour	5.564			
			(ii)	1.1 cum bucket capacity	hour		6.408		
			(iii)	0.9 cum bucket capacity	hour			8.958	
			For backfilling (considering 60% of the excavated material)						
			(i)	1.2 cum bucket capacity	hour	3.338			
			(ii)	1.1 cum bucket capacity	hour		3.845		
			(iii)	0.9 cum bucket capacity	hour			5.375	
			Tipper for transportation of excess material to dumping yard considering lead @ 1 km						
			(i)	18 cum capacity	t-km	180.000			
			(ii)	14 cum capacity	t-km		180.000		
			(iii) 10 cum capacity		t-km			180.000	
		c)	Ov	erhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Co	ntractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			-	300 cum = a+b+c+d					
		Rat	e pe	r cum = (a+b+c+d)/300					

Note Cost of dewatering upto 7.5 Percent of (a+b) may be added, where required. Assessment for dewatering shall be made as per site conditions..

(iii) **Mechanical Means (Depth** above 6 m) Unit = cum Taking output = 270 cum a) Labour 0.426 0.426 0.426 day Mate 10.640 day 10.640 10.640 Mazdoor b) Machinery **Hydraulic Excavator** For excavation hour 5.634 1.2 cum bucket capacity

Cu Na	Ref. to M	D	Description	l lmit	Quantity	as per project	category	Rate
Sr No	Si No Rei. to M		Description	Unit	Large	Medium	Small	(Rs.)
		(ii)	1.1 cum bucket capacity	hour		6.488		
		(iii)	0.9 cum bucket capacity	hour			9.070	
		60%	backfilling (considering 6 of the excavated terial)					
		(i)	1.2 cum bucket capacity	hour	3.380			
		(ii)	1.1 cum bucket capacity	hour		3.893		
		(iii)	0.9 cum bucket capacity	hour			5.442	
		of du	per for transportation excess material to mping yard considering d @ 1 km					
		(i)	18 cum capacity	t-km	162.000			
			14 cum capacity	t-km		162.000		
		(iii)	10 cum capacity	t-km			162.000	
		c) Ov	erhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Co	ntractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for	270 cum = a+b+c+d					
		Rate pe	r cum = (a+b+c+d)/270					

Α

- Note 1. Cost of dewatering upto 10 Percent of (a+b) may be added, where required. Assessment for dewatering shall be made as per site conditions.
 - 2. Labour provided for excavation by mechanical means includes that required for trimming of bottom and side slopes.

12.01

- Ш **Ordinary Rock (not requiring** blasting)
 - **Manual Means**
- (i) Depth upto 3 m

Unit = cum

Taking output = 10 cum

a) Labour

c)	Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)
b)	Overhead charges		@ on (a)	@ on (a)	@ on (a)
	Mazdoor	day	6.650	6.650	6.650
•	Mate	day	0.266	0.266	0.266

Cost for 10 cum = a+b+c

Rate per cum = (a+b+c)/10

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

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category
SI NO	Kei. to ivi		Description	Onit	Large	Medium	Small
12.01 (II)	В	Mecha	anical Means				
		Unit =	cum				
		Taking	output = 50 cum				
		a) La	bour				
		M	ate	day	0.160	0.160	0.160
		M	azdoor	day	3.990	3.990	3.990
		b) Ma	achinery				
			ydraulic Excavator				
		Ex	cavator for excavation				
		(i)	1.2 cum bucket	hour	6.926		
			capacity				
		(ii)		hour		8.149	
		,	capacity				0.650
		(111) 0.9 cum bucket	hour			8.658
		Γο.	capacity r loading				
		(i)	•	hour	1.039		
		(1)	capacity	Hour	1.059		
		(ii)		hour		1.196	
		(,	capacity	noai		1.150	
		(iii) 0.9 cum bucket	hour			1.672
		`	, capacity				
		Jac	ck Hammer	hour	6.926	8.149	8.658
		Tip	per				
		Fo	r transportation				
		со	nsidering lead @ 1km				
		(i)	18 cum capacity	t-km	75.000		
		(ii)	14 cum capacity	t-km		75.000	
		(iii) 10 cum capacity	t-km			75.000
		Fo	r loading & unloading				
		tin	ne				
			18 cum capacity	hour	1.039		
			14 cum capacity	hour		1.196	
		•) 10 cum capacity	hour			1.672
		-	verhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
			ontractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
			r 50 cum = a+b+c+d				
		Rate p	er cum = (a+b+c+d)/ 50				

Note 1. Cost of dewatering upto 10 Percent of (a+b), may be added, where required Assessment for dewatering shall be made as per site conditions.

2. In case of rock, foundation beyond3 m is not dug and hence not included.

12.01 302 Ш Hard Rock (requiring blasting)

Carrying out excavation in hard rock to achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the

Rate (Rs.)

Sr No	Ref. to M		Description		Quantity as per project category				
			,,,,,		Large	Medium	Small		
			rated rock by a dozer, ng in tipper by a front end						
			r and disposing of the						
		mate	rial with all lifts and lead						
		-	1000 m, all as specified in						
		clause	e No. 303						
	Α		ual Means						
			= cum						
			g output = 120 cum						
		•	.abour	day	0.279	0.370	0.270		
			Mate	day day		0.279 3.990	0.279 3.990		
			Mazdoor	=	3.990 2.660	2.660	2.660		
			Driller	day day	0.333	0.333	0.333		
			Blaster	uay	0.333	0.333	0.333		
		-	Machinery	hour	6.000	6.000	6.000		
			Air compressor Jack Hammer for drilling	hour	24.000	24.000	24.000		
			holes (@ 4.5 m per hour)						
			lack Hammer (consider	hour	1.219	1.434	1.524		
			5% of the volume for						
			dressing)						
			Hydraulic Excavator						
			Excavator for excavation						
		((i) 1.2 cum bucket capacity	hour	1.219				
		((ii) 1.1 cum bucket capacity	hour		1.434			
		(iii) 0.9 cum bucket capacity	hour			1.524		
		F	or loading						
		(i) 1.2 cum bucket capacity	hour	2.493				
		((ii) 1.1 cum bucket capacity	hour		2.871			
		((iii) 0.9 cum bucket capacity	hour			4.013		
		7	Гipper						
			For transportation considering lead @ 1 km						
			(i) 18 cum capacity	t-km	180.000				
			(ii) 14 cum capacity	t-km		180.000			
			(iii) 10 cum capacity	t-km			180.000		
		F	or loading & unloading						
			(i) 18 cum capacity	hour	2.493				
			(ii) 14 cum capacity	hour	-	2.871			
			(iii) 10 cum capacity	hour			4.013		

			CHAPTER: 12-	FOUND	ATIONS			
					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Materials Small dia.Explosive at 0.40 kg / cum for 120 cum (120 x 0.40) Explosive at 0.20 kg / cum	kg	49.200	49.200	49.200	
			for secondary blast @ 5% of the total volume (120 x 0.2x5%) Electric detonators at 1 per hole for main blast holes (21x3+20*2)=103 nos	no	69.000	69.000	69.000	
			Ordinary detonators @ 1 per hole for 10 secondary holes(required for 5% of the total quantity @ 0.6 m per hole for I cum)	no	7.000	7.000	7.000	
			Detonating fuse coil	m	213.000	213.000	213.000	
		d)	Overhead charges		-	@ on (a+b+c)		
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 120 cum = a+b+c+d+e					
		Rat	e per cum = (a+b+c+d+e)/ 12	20				
	Note		t of dewatering @ 10 Percen vatering shall be made as per	-		d, where require	ed Assessment fo	r
12.01	IV		d Rock (blasting hibited)					
			t = cum					
	Α		ing output = 35 cum chanical Means					
	-	a)	Labour					
		-,			0.406	0.406	0.406	

	6 ~	atput 55 cam				
Me	chan	ical Means				
a)	Lab	our				
	Ma	te	day	0.106	0.106	0.106
	Ma	zdoor	day	2.660	2.660	2.660
b)	Ma	chinery				
	Jac	k Hammer	hour	7.111	8.081	8.889
	Нус	draulic Excavator				
	Exc	cavator for excavation				
	(i)	1.2 cum bucket	hour	7.111		
		capacity				
	(ii)	1.1 cum bucket	hour		8.081	
		capacity				
	(iii)	0.9 cum bucket	hour			8.889
		capacity				
	For	loading				
	(i)	1.2 cum bucket	hour	0.727		
		capacity				
	(ii)	1.1 cum bucket	hour		0.837	
		capacity				
	(iii)	0.9 cum bucket	hour			1.171

	D ()			Quantity	y as per project	category	Rat
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
		capacity					
		Tipper For transportation to					
		dumping yard considering	σ				
		lead @ 1km	5				
		(i) 18 cum capacity	t-km	52.500			
		(ii) 14 cum capacity	t-km		52.500		
		(iii) 10 cum capacity	t-km			52.500	
		For loading & unloading					
		time					
		(i) 18 cum capacity	hour	0.727			
		(ii) 14 cum capacity	hour		0.837		
		(iii) 10 cum capacity	hour	@ am (aubua)	@ am/auhua\	1.171	
		d) Overhead charges		-	@ on (a+b+c)		
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 35 cum = a+b+c+d		(4.5.0.4)	(a.b.c.a)	(a.b.c.a)	
		Rate per cum = $(a+b+c+d)/35$					
	Note	 Cost of dewatering upto 10 dewatering shall be made 			added, where r	equired Assessm	ient i
		2. In case of rock, foundation			d hence not incl	uded.	
12.01	V	Marshy Soil					
		Unit = cum					
		Taking output = 10 cum Depth upto 3 m					
	Α	Manual means					
	^	a) Labour					
		Mate/Supervisor	day	0.532	0.532	0.532	
		Mazdoor	day	13.300	13.300	13.300	
		b) Machinery	,				
		Tractor-trolley for	hour	2.670	2.670	2.670	
		removal.					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 cum = a+b+c+d					
		Rate per cum = $(a+b+c+d)/10$)				
	Note	1. Cost of dewatering @ 30	Percent o	of (a), may be ad	ded, where rea	uired Assessmen	t for
		dewatering shall be made			aca, where requ	an ea 7.55e55men	
		2. Shoring & strutting 15 Per			ed may be adde	d	
		3. It is assumed that Marshy	Soil will l	oe available upto	o 3 m depth only	. For deeper exc	avatio
		below 3 m depth, refer ar	nalysis in i	tem12.01 (i) to ((iv) for ordinary	soil	
12.01 (V)	В	Mechanical Means					
(-/		Unit = cum					
(-/		Unit = cum Taking output = 260 cum					

day

day

0.053

1.330

0.053

1.330

0.053

1.330

a) Labour

Mate

Mazdoor

Cu Al-	Dof to M		Description	11	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
		b)	Machinery					
		υ,	Hydraulic Excavator					
			(i) 1.2 cum bucket	hour	10.126			
			capacity	noui	10.120			
			(ii) 1.1 cum bucket	hour		11.662		
			capacity			11.001		
			(iii) 0.9 cum bucket	hour			16.304	
			capacity					
			Tipper					
			For transportation to					
			dumping yard considering					
			lead @ 1km					
			(i) 18 cum capacity	t-km	390.000			
			(ii) 14 cum capacity	t-km		390.000		
			(iii) 10 cum capacity	t-km			390.000	
			For loading & unloading					
			time					
			(i) 18 cum capacity	hour	10.126	44.663		
			(ii) 14 cum capacity	hour		11.662	16 204	
		۵۱	(iii) 10 cum capacity Material	hour			16.304	
		c)	Selected earth for	cum	156.000	156.000	156.000	
			refilling	cum				
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			st for 260 cum = a+b+c+d					
		Rat	te per cum = $(a+b+c+d)/260$					
	Note	1.	Cost of dewatering @ 20 Pe	ercent o	of (a+b) may be	added, where re	equired	
		2.	Shoring & strutting @ 10 Pe	rcent o	f (a+b), where re	equired may be	added	
		3.	It is assumed that Marshy S below 3 m depth, refer anal					ava
2.01	VI	Bac	ck Filling in Marshy					
(VI)			indation Pits					
		Uni	it = Cum					
		Tak	king Output = 6 cum					
		a)	Labour					
			Mate	day	0.160	0.160	0.160	
			Mazdoor for dressing	day	3.990	3.990	3.990	
			sides, bottom and					
			backfilling					
		b)	Machinery					
			Tractor trolloy for	L	2 000	2.000	2 000	

Cost for 6 cum = a+b+c+d Rate per cum = (a+b+c+d)/6

Tractor-trolley for

transportation c) Overhead charges

d) Contractor's profit

hour

2.000

@ on (a+b)

2.000

@ on (a+b)

@ on (a+b+c) @ on (a+b+c) @ on (a+b+c)

2.000

@ on (a+b)

Rate (Rs.)

				Quantity	y as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
12.02	304	Filling Annular Space Around Footing in Rock Unit = cum Taking out put = 1 cum Lean cement concrete 1:3:6 nominal mix. Rate may be taken as per item 12.04.	5			
12.03	304	Sand Filling in Foundation Trenches as per Drawing 8 Technical Specification Unit = cum Taking output = 100 cum a) Labour Mate Mazdoor b) Machinery Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity		0.053 1.330 0.25 x L1 +	0.053 1.330	0.053 1.330
		(ii) 12 KL capacity (iii) 6 KL capacity c) Material	hour	0.75	0.333 x L1 + 1	0.667 x L1 + 2 120.000
		Sand (assuming 20 Percent voids) at site Water d) Overhead charges e) Contractor's profit	cum KL	120.000 18.000 @ on (a+b+c) @ on	@ on	18.000 @ on (a+b+c) @ on
		Rate per 100 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/ 1		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
12.04	2100	PCC 1:3:6 in Foundation Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days. Unit = cum Taking output = 15 cum a) Labour				
		Mate Mason Mazdoor	day day day	0.426 1.330 9.310	0.426 1.330 9.310	0.426 1.330 9.310

C+ No	Dof to M		Description	Unit	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Material Plain cement concrete 1:3:6 nominal mix using batching plant (Rate taken from sub- analysis 21.02)	cum	15.000	15.000	15.000	
		c)	Water Machinery	KL	3.240	3.240	3.240	
		c)	Plate Compactor Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity	hour	1.000 0.045 x L1 +	1.000	1.000	
			(ii) 12 KL capacity	hour	0.135	0.06 x L1 +		
			(iii) 6 KL capacity	hour		0.18	0.12 x L1 + 0.36	
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
			for 15 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/ 15	;	(2.2.5.3)	(2:2:2:2)	(2:2:2)	

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

12.05 1300 **Brick** Masonry Work in Cement Mortar 1:3 in **Foundation** complete excluding Pointing Plastering, as per Drawing and **Technical Specifications.**

Unit = cum

Taking output = 5 cum a) Material

Bricks Ist class
Cement mortar 1:3
(Rate taken from sub
analysis 21.01 A)
Water for curing

b-Water for curing

KL2.415

each cum

day

2500.000

1.200

0.638

5.320

10.640

2500.000 1.200

2500.000 1.200

b) Labour Mate

day day

2.415 0.638

5.320

10.640

0.638 5.320

10.640

2.415

c) Machinery

Mason

Mazdoor

Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)

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	5.6.	•••	5		Quantity	y as per project	category	Rate
Sr No	Ref. to	O IVI	Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	0.034 x L1 + 0.101			
			(ii) 12 KL capacity	hour	0.202	0.045 x L1 + 0.134		
			(iii) 6 KL capacity	hour		0.134	0.089 x L1 + 0.268	
			c) Overhead charges d) Contractor's profit Cost for 5 cum = a+b+c+d Rate per cum (a+b+c+d)/5		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.06	2.06 Sub- analysis		Cement Mortar 1:3 (1 cement : 3 sand)					
			Unit = cum Taking output = 1 cum Cement mortar 1:3 (Rate taken from subanalysis 21.01 A)	Cum	1.000	1.000	1.000	
		(B)	Cement Mortar 1:2 (1 cement : 2 sand) Unit = cum Taking output = 1 cum Cement mortar 1:2 (Rate taken from subanalysis 21.01 B)	Cum	1.000	1.000	1.000	
		(C)	Cement Mortar 1:4 (1 cement : 4 sand) Unit = cum Taking output = 1 cum Cement mortar 1:4 (Rate taken from subanalysis 21.01 C)	Cum	1.000	1.000	1.000	
		(D)	Cement Mortar 1:4 (1 cement : 4 sand) Unit = cum Taking output = 1 cum Cement mortar 1:4 (Rate taken from sub- analysis 21.01 D)	Cum	1.000	1.000	1.000	
12.07		(A)	Stone Masonry Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical Specifications. Unit = cum Taking output = 5 cum Square Rubble Coursed Rubble Masonry (first sort)					

SrNo	Ref. to M	Description	Unit	Quantit	y as per project	category
Sr No	Rei. to ivi	Description	Unit	Large	Medium	Small
		a) Matavial				
		a) Material	01100	F F00	F F00	F F00
		Stone	cum	5.500	5.500	5.500
		Through and bond stone (35no.x0.24mx0.24mx0.3 9m = 0.79 cu.m)	each	35.000	35.000	35.000
		Cement mortar 1:3 (Rate taken from sub- analysis 21.01 A)	cum	1.500	1.500	1.500
		b) Labour				
		Mate	day	0.878	0.878	0.878
		Mason	day	9.975	9.975	9.975
		Mazdoor	day	11.970	11.970	11.970
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		Cost for 5 cum = a+b+c+d				
		Rate per cum (a+b+c+d)/5				
	(B)	Random Rubble Masonry				
		(coursed/uncoursed)				
		Unit = cum				
		Taking output = 5 cum				
		a) Material				
		Stone	cum	5.500	5.500	5.500
		Through and bond stone (35nos.x0.24mx0.24mx0.39m = 0.79 cu.m)	each	35.000	35.000	35.000
		Cement mortar 1:3 (Rate taken from subanalysis 21.01 A) b) Labour	cum	1.550	1.550	1.550
		Mate	day	0.798	0.798	0.798
		Mason	day			
		Mazdoor	day	7.980	7.980	7.980
		IVIA/UUUI	day	11.970	11.970	11.970
				O / ! `		
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
				@ on (a+b) @ on (a+b+c)		

Note The labour already considered in cement mortar has been taken into account while proposing labour for masonry works.

12.08 1500, 1700 & 2100 Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.

A PCC Grade M15

Case I PCC Grade M15 using

batching plant & Concrete

pump Unit = cum

Taking output = 30 cum

C:: N =	D-6 4- 84		D	11!4	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		,						
		a)	Material Per Cum Basic Cost		20.000	20.000	20.000	
			(Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis 21.03)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity) For unloading	km	0.726	0.726	0.726	
			Hydraulic Boom placer	hour hour	0.726	0.726	0.726	
			pump	noui	0.720	0.720	0.720	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)		0.040 1.4			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
			(ii) 12 K2 capacity	nou.		0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour and machinery					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		C	st for 30 cum = a+b+c+d+e+f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			:e per cum = (a+b+c+d+e+f)/					
		ivat	e per cum = (arbiciure ii)	30				
	Case II	PCC	C Grade M15 using					
		bat	ching plant & manual					
		-	cing					
			it = cum					
			sing output = 15 cum					
		a)	Material		4= 000	4= 000	4= 000	
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub- analysis 21.03)					
			Water for curing	Κl	7.875	7.875	7.875	
		b)	Labour	•••				
		-,	For pouring and placing					

	_				Quantity	as per project	category	R
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(1
l .					<u> </u>			
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery	aay	10.040	10.040	10.040	
		c,	Transit truck agitator					
			=	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			For transportation	km	37.3 X LI	37.3 X LI	37.3 X LI	
			(6 cum Capacity)		0.022	0.022	0.022	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)	l	0.40014 .			
			(i) 16 KL capacity	hour	0.109 x L1 +			
			/**\ 40.141	h	0.328	0.14614 .		
			(ii) 12 KL capacity	hour		0.146 x L1 +		
			(iii) C (()it	haur		0.438	0.202 v.14 v	
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		-11	Farment O A Dancart				0.873	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e. cost of material, labour					
			and machinery					
		٠,١	•		@ on	@ on	@ on	
		e)	Overhead charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		٠,	Contractor 3 profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f		(4 4 5 4 5)	(2 2 2 2 7	(
			e per cum = (a+b+c+d+e+f)/					
		Mat	e per cum = (a · b· c· u· e· i//	13				
12.00	D	DCC	Cuada Maa					
12.08	В		Grade M20					
12.08	B Case I	PCC	Grade M20 using					
12.08		PC0 bat	C Grade M20 using ching plant transit mixer &					
12.08		PCC bat Cor	C Grade M20 using ching plant transit mixer & crete pump					
12.08		PCC bat Cor Uni	C Grade M20 using ching plant transit mixer & acrete pump tt = cum					
12.08		PCC bat Cor Uni Tak	C Grade M20 using ching plant transit mixer & nerete pump it = cum cing output = 30 cum					
12.08		PCC bat Cor Uni	C Grade M20 using ching plant transit mixer & acrete pump tt = cum					
12.08		PCC bat Cor Uni Tak	C Grade M20 using ching plant transit mixer & nerete pump it = cum cing output = 30 cum	cum	30.000	30.000	30.000	
12.08		PCC bat Cor Uni Tak	C Grade M20 using ching plant transit mixer & ncrete pump tt = cum cing output = 30 cum Material	cum	30.000	30.000	30.000	
12.08		PCC bat Cor Uni Tak	C Grade M20 using ching plant transit mixer & ncrete pump it = cum ing output = 30 cum Material Per Cum Basic Cost	cum	30.000	30.000	30.000	
12.08		PCC bat Cor Uni Tak	C Grade M20 using ching plant transit mixer & nerete pump it = cum sing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub-	cum Kl	30.000 15.750	30.000 15.750	30.000 15.750	
12.08		PCC bat Cor Uni Tak	C Grade M20 using ching plant transit mixer & nerete pump it = cum ching output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04)					
12.08		PCC bat Cor Uni Tak a)	C Grade M20 using ching plant transit mixer & nerete pump it = cum sing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour					
12.08		PCC bat Cor Uni Tak a)	c Grade M20 using ching plant transit mixer & crete pump it = cum cing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing	KI	15.750	15.750	15.750	
12.08		PCC bat Cor Uni Tak a)	ching plant transit mixer & nerete pump it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate	Kl	15.750 0.152	15.750 0.152	15.750 0.152	
12.08		PCC bat Cor Uni Tak a)	c Grade M20 using ching plant transit mixer & ncrete pump it = cum cling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate Mason	Kl day day	15.750 0.152 1.995	15.750 0.152 1.995	15.750 0.152 1.995	
12.08		PCC bat Cor Uni Tak a)	c Grade M20 using ching plant transit mixer & crete pump it = cum cing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate Mason Mazdoor	Kl	15.750 0.152	15.750 0.152	15.750 0.152	
12.08		PCC bat Cor Uni Tak a)	ching plant transit mixer & nerete pump it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate Mason Mazdoor Machinery	Kl day day	15.750 0.152 1.995	15.750 0.152 1.995	15.750 0.152 1.995	
12.08		PCC bat Cor Uni Tak a)	ching plant transit mixer & crete pump it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	KI day day day	15.750 0.152 1.995 1.813	15.750 0.152 1.995 1.813	15.750 0.152 1.995 1.813	
12.08		PCC bat Cor Uni Tak a)	ching plant transit mixer & crete pump it = cum cing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum	KI day day day	15.750 0.152 1.995	15.750 0.152 1.995	15.750 0.152 1.995	
12.08		PCC bat Cor Uni Tak a)	ching plant transit mixer & crete pump it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Water for curing Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	KI day day day	15.750 0.152 1.995 1.813	15.750 0.152 1.995 1.813	15.750 0.152 1.995 1.813	

Cr No	Ref. to M		Description	4:ما ا	Quantity	y as per project	category	Rate
Sr No	Ref. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			10 km/hr. and return speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(., === == p==)		0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
		-1	and machinery		Ø 25	0.55	Ø	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		(a+b+c+u) @ on	(a+b+c+u) @ on	(a+b+c+u) @ on	
		',	Contractor 3 pront		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f		((2 2 2 2 7	(4 4 5 6 7 7	
			e per cum = (a+b+c+d+e+f)/	30				
			. , , , , , , , , , , , , , , , , , , ,					
	Case II	PCC	Grade M20 using					
		bat	ching plant transit mixer &					
		ma	nual placing					
		Uni	it = cum					
		Tak	ing output = 15 cum					
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.04)					
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
		-1	Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator		27.5 14	27.5 1.4	27.5	
			For transportation (6 cum		37.5 x L1	37.5 x L1	37.5 x L1	
			Capacity)	km	0 022	0 022	0 022	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
			,,		0.328			
			(ii) 12 KL capacity	hour	-	0.146 x L1 +		
			. , , ,			0.438		

C: N -	D-f +- 84		Description		Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/	15				
12.08	C Case I	RC0 bat	C Grade M20 C Grade M20 using ching plant transit mixer & ncrete pump					
			it = cum					
		Tak	king output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	30.000	30.000	30.000	
		b)	Water for curing Labour	Kl	15.750	15.750	15.750	
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per	hour	0.726	0.726	0.726	
			trip) (i) 16 KL capacity	hour	0.219 x L1 +			
			(ii) 12 KL capacity	hour	0.656	0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour		0.875	0.583 x L1 + 1.75	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery				1.73	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	

Rate (Rs.)

Sr No	Ref. to M		Description	Unit		y as per project	
					Large	Medium	Small
		Cor	st for 30 cum = a+b+c+d+e+f				
			te per cum = (a+b+c+d+e+f)/	20			
		Nat	e per cum - (a+b+c+u+e+i)/	30			
	Case II	bat	C Grade M20 using ching plant transit mixer & nual placing				
			it = cum				
		Tak	king output = 15 cum				
		a)	Material				
			Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	15.000	15.000	15.000
			Water for curing	KI	7.875	7.875	7.875
		b)	Labour				
			For pouring and placing				
			Mate	day	0.440	0.440	0.440
			Mason	day	1.995	1.995	1.995
			Mazdoor	day	9.000	9.000	9.000
		c)	Machinery				
			Transit truck agitator		27.5	27.5	27.5 14
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1
			(6 cum Capacity) For unloading Water tanker (speed @	km hour	0.833	0.833	0.833
			10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity	hour	0.109 x L1 +		
			(I) TO KE capacity	Houi	0.109 x L1 +		
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438	
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery				
		e)	Overhead charges		@ on	@ on	@ on
		f)	Contractor's profit		(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)
		Cos	st for 15 cum = a+b+c+d+e+f		,	,	,
		Rat	te per cum = (a+b+c+d+e+f)/	15			
12.08	D Case I	PC0 bat	C Grade M25 C Grade M25 using ching plant transit mixer & ncrete pump				
		Uni	it = cum				
		Tak a)	king output = 30 cum Material				
			Per Cum Basic Cost	cum	30.000	30.000	30.000

	_				Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(Rate taken from sub-					
			analysis 21.06)	1/1	45.750	45.750	45.750	
		L \	Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum		75 x L1	75 x L1	75 x L1	
			Capacity)	km	0.706	0.706	0.706	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			<pre>pump Water tanker (speed @</pre>					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
			d)				1.75	
			d) Formwork @ 4 Percent on cost of					
			concrete i.e. cost of					
			material, labour and					
			machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			st for 30 cum = $a+b+c+d+e+f$					
		Rat	e per cum = (a+b+c+d+e+f)/	30				
	Case II	DC	C Grade M25 using					
	Case II		ching plant transit mixer &					
			nual placing					
			it = cum					
		_	king output = 15 cum					
		a)	Material					
		aj	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-	cam	13.000	13.000	13.000	
			analysis 21.06)					
			Water for curing	ΚI	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
		_	Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					

					Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km	2 222	0.000	0.000	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
					0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 +		
			(iii) C KL as as situ	h aa		0.438	0.20214	
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
							0.873	
		d)	Formwork @ 4 Percent					
		•	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d)	(a+b+c+d) @ on	(a+b+c+d) @ on	
		')	Contractor's profit		@ on (a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f		(0.10.10.10.10)	(4.5.5.4.5)	(and orange)	
		Rat	e per cum = (a+b+c+d+e+f)/	15				
12.08	E	RCC	C Grade M25					
12.00	Case I		C Grade M25 using					
	-		ching plant transit mixer &					
			ncrete pump					
		Uni	it = cum					
		Tak	ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub- analysis 21.07)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour		201700	201700	201700	
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
		۵۱	Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km		- 	- 	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @ 10 km/hr. and return					
			10 km/hr. and return speed @ 15 km/hr. and					
			Speed to kniving and					

					Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
		ı						
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
			(m) 5			0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 4 Percent				1./5	
		uj	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		•	ŭ		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
			•		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 30 cum = $a+b+c+d+e+f$					
		Rat	e per cum = (a+b+c+d+e+f)/	30				
	Case II		C Grade M25 using					
			ching plant transit mixer &					
			nual placing					
		Uni	it = cum					
		Tak	ing output = 15 cum					
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.07)					
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.440	0.440	0.440	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	9.000	9.000	9.000	
		c)	Machinery					
			Transit truck agitator		27 5 14	27 5 14	27.5 1.4	
			For transportation (6 cum		37.5 x L1	37.5 x L1	37.5 x L1	
			Capacity)	km	0.022	0.022	0.022	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
			,,		0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 +		
			., ,			0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 +	
							0.875	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category
31 NO	עקוי וח ואו		Description	UIIIL	Large	Medium	Small
			and made to an				
		_1	and machinery		@ on	@ on	@ on
		e)	Overhead charges		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on
		f)	Contractor's profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
			t for 15 cum = a+b+c+d+e+f				
		Rat	e per cum = (a+b+c+d+e+f)/	15			
12.08	F	PCC	Grade M30				
	Case I	PCC	Grade M30 using				
			ching plant transit mixer & crete pump				
			t = cum				
		Tak	ing output = 30 cum				
		a)	Material				
		•	Per Cum Basic Cost (Rate taken from sub- analysis 21.08)	cum	30.000	30.000	30.000
			Water for curing	KI	15.750	15.750	15.750
		b)	Labour				
			For pouring and placing				
			Mate	day	0.152	0.152	0.152
			Mason	day	1.995	1.995	1.995
			Mazdoor	day	1.813	1.813	1.813
		c)	Machinery				
			Transit truck agitator				
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1
			For unloading	hour	0.726	0.726	0.726
			Hydraulic Boom placer	hour	0.726	0.726	0.726
			pump				
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and				
			unloading @ 30 mins per trip)				
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656		
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875	
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery				
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
		Cos	t for 30 cum = a+b+c+d+e+f		(((
			e per cum = (a+b+c+d+e+f)/				

C 51	D-6 :		D ' ''		Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
	Case II	bat ma	C Grade M30 using tching plant transit mixer & nual placing					
		Un	it = cum					
			king output = 15 cum					
		a)	Material		45.000	45.000	45.000	
			Per Cum Basic Cost (Rate taken from sub- analysis 21.08)	cum	15.000	15.000	15.000	
			Water for curing	KI	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
		٠,١	Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading Water tanker (speed @	hour	0.833	0.833	0.833	
			10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			st for 15 cum = a+b+c+d+e+f te per cum = (a+b+c+d+e+f)/					
12.08	G Case I	RC bat	C Grade M30 C Grade M30 using tching plant transit mixer & ncrete pump					
			it = cum					
		Tal	king output = 30 cum					
		a)	Material					
		•	Per Cum Basic Cost (Rate taken from sub- analysis 21.09)	cum	30.000	30.000	30.000	

					Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			_					
		۴,	Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum		75 x L1	75 x L1	75 x L1	
			Capacity)	km	0.726	0.726	0.726	
			For unloading Hydraulic Boom placer	hour hour	0.726 0.726	0.726 0.726	0.726 0.726	
			pump	noui	0.720	0.720	0.720	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)		0.240 14			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
			(II) 12 KE capacity	noui		0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
			. ,				1.75	
			Per Cum Basic Cost of					
			Labour, Material &					
		d)	Machinery (a+b+c) Formwork @ 4 Percent					
		u)	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Cos	st for 30 cum = a+b+c+d+e+f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			e per cum = (a+b+c+d+e+f)/					
	Case II		C Grade M30 using					
			ching plant transit mixer & nual placing					
			it = cum					
			ing output = 15 cum Material					
		u,	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.09)					
			Water for curing	KI	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing		0.440	0.440	0.440	
			Mate Mason	day	0.440 1.995	0.440 1.995	0.440 1.995	
			Mazdoor	day day	9.000	9.000	9.000	
		c)	Machinery	auy	5.000	5.000	5.000	
		-1	Transit truck agitator					
			-					

					Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading Water tanker (speed @ 10	hour	0.833	0.833	0.833	
			km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	
			st for 15 cum = a+b+c+d+e+f te per cum = (a+b+c+d+e+f)/		(avoverare)	(4.2.0.4.0)	(4.2.0.4.0)	
12.08	H Case I	RC0 bat	C Grade M35 C Grade M35 using ching plant transit mixer & ncrete pump					
		Uni	it = cum					
		Tak a)	king output = 30 cum Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.11)	cum	30.000	30.000	30.000	
		b)	Water for curing Labour	Kl	15.750	15.750	15.750	
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump		3., 20	3., 20	3., 20	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per trip)					

Cm NI =	Def to se		Description	11	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(;;) 12 KL connector	hour	0.656	0.202 v.14 i		
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour		0.075	0.583 x L1 +	
			, , , ,				1.75	
			Per Cum Basic Cost of					
			Labour, Material &					
		d)	Machinery (a+b+c) Formwork @ 4 Percent					
		uj	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
		٠,	contractor 3 pront		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f		,	,	,	
		Rat	e per cum = (a+b+c+d+e+f)/	30				
	Casa II	D.C.	C Grado M2E using					
	Case II		C Grade M35 using sching plant transit mixer &					
			nual placing					
			it = cum					
		Tak	ring output = 15 cum					
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.11) Water for curing	Κl	7.875	7.875	7.875	
		b)	Labour	Ki	7.873	7.875	7.875	
		-,	For pouring and placing					
			Mate	day	0.440	0.440	0.440	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	9.000	9.000	9.000	
		c)	Machinery					
			Transit truck agitator For transportation (6 cum	tonno	37.5 x L1	37.5 x L1	37.5 x L1	
			Capacity)	km	37.3 X L1	37.5 X LI	37.5 X LI	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @	noui	0.033	0.033	0.033	
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
			(ii) 12 KL capacity	hour	0.328	0.146 x L1 +		
			(II) IZ INE Capacity	noui		0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 +	
							0.875	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					

n Nic	D-6 4- 84		December:	11 **	Quantity	y as per project	category	R
r No	Ref. to M		Description	Unit	Large	Medium	Small	(
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Coc	t for 15 cum = a+b+c+d+e+f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
				15				
		Nat	e per cum = (a+b+c+d+e+f)/	13				
2.08	1	RCC	Grade M40					
	Case I	RCC	Grade M40 using					
			ching plant transit mixer &					
			ncrete pump					
			t = cum					
			ing output = 30 cum					
		a)	Material					
		~,	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-		22.000	22.000	22.000	
			analysis 21.12)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)	l	0.24014 .			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour	0.050	0.292 x L1 +		
			(II) 12 KL capacity	noui		0.875		
			(iii) 6 KL capacity	hour		3.373	0.583 x L1 +	
			() o NE supucity				1.75	
			Per Cum Basic Cost of				-	
			Labour, Material &					
			Machinery (a+b+c)					
		d)						
			cost of concrete i.e. cost					
			of material, labour and					
			machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		_			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 30 cum = $a+b+c+d+e+f$					

C., N	Daf 4- 24		Description	11**	Quantit	y as per project	category	Ra
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(R
	Case II	bat ma	C Grade M40 using ching plant transit mixer & nual placing					
			t = cum					
			ing output = 15 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.12)	cum	15.000	15.000	15.000	
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
		-	For pouring and placing					
			Mate	day	0.440	0.440	0.440	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	9.000	9.000	9.000	
		c)	Machinery	•				
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			t for 15 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)/	15				
2.08	J Case I	RCC bat Con	C Grade M45 C Grade M45 using ching plant transit mixer & acrete pump t = cum					
			ing output = 30 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	

No	Ref. to M		Description	Unit	Quantity	y as per project	category
140	Kei. to W		Description	Oilit	Large	Medium	Small
			analysis 21 12)				
			analysis 21.13)	Κl	15.750	15.750	15.750
		ы	Water for curing Labour	KI	13.730	13.730	13.730
		b)					
		FOI	pouring and placing Mate	day	0.206	0.206	0.206
			Mason	day	1.995	1.995	1.995
			Mazdoor	day	3.143	3.143	3.143
		c)	Machinery	auy	3.143	3.143	3.143
		c,	Transit truck agitator				
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1
			Capacity)	km	-		
			For unloading	hour	0.726	0.726	0.726
			Hydraulic Boom placer	hour	0.726	0.726	0.726
			pump				
			Water tanker (speed @				
			10 km/hr. and return				
			speed @ 15 km/hr. and unloading @ 30 mins per				
			trip)				
			(i) 16 KL capacity	hour	0.219 x L1 +		
			, , ,		0.656		
			(ii) 12 KL capacity	hour		0.292 x L1 +	
			foot a con-			0.875	0.502 14
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75
			Per Cum Basic Cost of		5050.000	5060.000	5093.000
			Labour, Material &		3030.000	3333.333	3033.000
			Machinery (a+b+c)				
		d)	Formwork @ 4 Percent				
			on cost of concrete i.e.				
			cost of material, labour				
		e)	and machinery Overhead charges		@ on	@ on	@ on
		ej	Overnead charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
		f)	Contractor's profit		@ on	@ on	@ on
		•	, .		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
		Cos	t for 30 cum = a+b+c+d+e+f				
		Rat	e per cum = (a+b+c+d+e+f)/	30			
	Case II		Grade M45 using ching plant transit mixer &				
			nual placing				
			t = cum				
			ing output = 15 cum				
		a)	Material				
		۰,	Per Cum Basic Cost	cum	15.000	15.000	15.000
			(Rate taken from sub-		-	-	, -
			analysis 21.13)				
			Water for curing	Kl	7.875	7.875	7.875
		b)	Labour				
			For pouring and placing				

					Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
				•	_		•	
			Mate	day	0.440	0.440	0.440	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	9.000	9.000	9.000	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)	_				
			(i) 16 KL capacity	hour	0.109 x L1 +			
			/::\	haur	0.328	0.146 x L1 +		
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.438		
			(iii) 6 KL capacity	hour		0.436	0.292 x L1 +	
			(III) O KL Capacity	noui			0.875	
		d)	Formwork @ 4 Percent				0.075	
		,	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		_			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			t for 15 cum = a+b+c+d+e+f					
		Kate	e per cum = (a+b+c+d+e+f)/	15				
		W/FI	LL FOUNDATION					
12.09	1200		viding and Constructing					
			nporary Island 24 m					
			neter for Construction of					
		Wel	ll Foundation for 8 m dia.					
		Wel	II.					
	Α	Assı	uming depth of water 1.0					
		m a	nd height of island to be					
		1.25						
		_	t = No					
			ing output = 1 No.					
		a)	Material					
			Earth (compacted)	cum	565.487	565.487	565.487	
			Sand bags	each	1125.000	1125.000	1125.000	
		b)	Labour		6			
			Mate	day	0.920	0.920	0.920	
			Mazdoor for filling sand	day	23.000	23.000	23.000	
			bags, stitching and					
		د١	placing					
		c)	Machinery	h - ·	20.000	20.000	20.000	
			Crane with grab 1 cum	hour	30.000	30.000	30.000	
			capacity					

C:: NI =	D-f +- M			Quantity	y as per project	category	Rate
Sr No	No Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Consumables @ 2.5 Percent of (c) above

- d) Overhead charges @ on (a+b+c)
- e) Contractor's profit @ on (a+b+c+d)

Rate per No. (a+b+c+d+e)

Note It is assumed that earth will be available within the working space of crane with grab bucket.

12.09 B Assuming depth of water 4.0 m and height of island 4.5 m.

Unit = No

Taking output = 1 No

a)	Material				
	Earth (compacted)	cum	1356.000	1356.000	1356.000
	Sand bags	each	9000.000	9000.000	9000.000
	Wooden ballies 8" Dia and 9 m long	each	143.000	143.000	143.000
	Wooden ballies 2" Dia for bracing	metre	285.000	285.000	285.000
b)	Labour				
	Mate	day	8.400	8.400	8.400
	Mazdoor for piling 8" dia ballies for piling 8" dia ballies	day	27.000	27.000	27.000
	Mazdoor for bracing with 2" dia ballies	day	18.000	18.000	18.000
	Mazdoor for filling sand bags, stitching and placing	day	165.000	165.000	165.000
c)	Machinery				
	Crane with grab 1 cum capacity	hour	75.000	75.000	75.000
	Consumables and other arrangements for piling ballies @ 2.5 Percent of (a+b+c).				
d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

Rate per No. (a+b+c+d+e)

Contractor's profit

Note For other well diameters rate can be worked out on the basis of cross-sectional area of well. The diameter of the island shall be in the conformity with clause 1203.4 of MoRTH specifications.

@ on

(a+b+c+d)

@ on

(a+b+c+d)

@ on

(a+b+c+d)

12.09 C Providing and constructing one span service road to reach island location from one pier location to another pier location

e)

Assuming span length 30 m, width of service road 10 m and depth of water 1 m

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category	Rat
	Kei. to ivi		Description	Oilit	Large	Medium	Small	(Rs.
		Hni	t = meter					
			ing output = 30 metre					
		a)	Material					
		,	Earth	cum	450.000	450.000	450.000	
			Sand bags	each	300.000	300.000	300.000	
		b)	Labour	cacii	300.000	300.000	300.000	
		٠,	Mate	day	0.240	0.240	0.240	
			Mazdoor for filling sand	day	6.000	6.000	6.000	
			bags, stitching and	,				
			placing					
		c)	Machinery					
			Front end Loader 1 cum capacity	hour	27.000	27.000	27.000	
			Tipper 5.5 cum capacity	hour	28.000	28.000	28.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 30 m (a+b+c+d+e)					
		Rat	e per m (a+b+c+d+e)/30					
	1900	40 l Fou Dra	e of Mild Steel weighing or per metre for Well undation complete as per wing and Technical cification.					
		Uni	t = MT					
		Tak	ing output = 1.0 MT					
		a)	Material					
			Structural steel in plates,	tonne	1 050	4.050		
			angles, etc including 5 Percent wastage		1.050	1.050	1.050	
			angles, etc including 5	Kg	20.000	20.000	1.050 20.000	
		b)	angles, etc including 5 Percent wastage	Kg				
		b)	angles, etc including 5 Percent wastage Nuts & bolts	Kg hour				
		b)	angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity		20.000	20.000	20.000	
		b)	angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation		20.000	20.000	20.000	
		b)	angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site	hour	20.000 8.000	20.000	20.000	
		b)	angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site (i) 18 cum capacity	hour	20.000 8.000	20.000 8.000	20.000	
		b)	angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site (i) 18 cum capacity (ii) 14 cum capacity	hour t.km t.km	20.000 8.000	20.000 8.000	20.000 8.000	
			angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity	hour t.km t.km	20.000 8.000	20.000 8.000	20.000 8.000	
			angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity Labour (for cutting, bending, making holes, joining, welding and erecting in	hour t.km t.km	20.000 8.000	20.000 8.000	20.000 8.000	
			angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity Labour (for cutting, bending, making holes, joining, welding and erecting in position)	t.km t.km t.km	20.000 8.000 1.05 x L1	20.000 8.000 1.05 x L1	20.000 8.000 1.05 x L1	
			angles, etc including 5 Percent wastage Nuts & bolts Machinery Hydra Crane of capacity 10T for lifting shifting Tipper for Transportation to site (i) 18 cum capacity (ii) 14 cum capacity (iii) 10 cum capacity Labour (for cutting, bending, making holes, joining, welding and erecting in position) Mate	t.km t.km t.km	20.000 8.000 1.05 x L1	20.000 8.000 1.05 x L1	20.000 8.000 1.05 x L1	

Sr No	Ref. to	NA		Description	Unit	Quantity	y as per project	category	Ra
Sr NO	Ker. to	IVI		Description	Unit	Large	Medium	Small	(R:
				Mazdoor	day	17.955	17.955	17.955	
				Electrodes, cutting gas and other consumables @ 10 Percent of cost of (a) above					
			d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			Rat	e per MT (a+b+c+d+e)		, ,	, ,	, ,	
12.11	1200, 1500 & 1700		Con	n/Reinforced Cement crete, in Well Foundation nplete as per Drawing and hnical Specification.					
		Α	We	ll curb					
		(i)	RCC	M20 Grade					
l2.11 A (i)	Case I		bat pun Uni	t = cum					
			Tak	ing output = 30 cum					
			a)	Material					
				Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	30.000	30.000	30.000	
			b)	Labour					
				For pouring and placing					
				Mate	day	0.166	0.166	0.166	
				Mason	day	1.000	1.000	1.000	
				Mazdoor	day	3.143	3.143	3.143	
			c)	Machinery					
				Transit truck agitator					
				For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
				For unloading	hour	0.726	0.726	0.726	
				Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			d)	Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery					
			e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			Cos	t for 30 cum = a+b+c+d+e+f		·	·	,	
			Rat	e per cum = (a+b+c+d+e+f)/	30				

Sr No	Ref. to M		Description	Unit		y as per project	category	
31 140	Nei. to ivi		Description	Oilit	Large	Medium	Small	
2.11 A (i)	Case II	bat pla	C Grade M20 using cching plant & manual cing it = cum					
		Tak	king output = 15 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	15.000	15.000	15.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
		c)	Mazdoor Machinery	day	10.640	10.640	10.640	
			Transit truck agitator For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
		d)	For unloading Formwork @ 20 Percent	hour	0.833	0.833	0.833	
		•	on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	
			st for 15 cum = a+b+c+d+e+f se per cum = (a+b+c+d+e+f)/	15	(((1 1 1 1 1 7	
.11 A (ii)	(ii) Case I	RC0 bat	C M25 Grade C Grade M25 using ching plant & Concrete					
			mp it = cum king output = 30 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.07)	cum	30.000	30.000	30.000	
		b)	Labour					
		IJ,	For pouring and placing					
		IJ,	For pouring and placing Mate	day	0.179	0.179	0.179	
		IJ,	Mate Mason	day	1.330	0.179 1.330	0.179 1.330	
		c)	Mate Mason Mazdoor Machinery	-				
		·	Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum	day day tonne-	1.330	1.330	1.330	
		·	Mate Mason Mazdoor Machinery Transit truck agitator	day day	1.330 3.143	1.330 3.143	1.330 3.143	

Rate (Rs.)

				Quantit	y as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
		 d) Formwork @ 20 Perce on cost of concrete i.e cost of material, labou and machinery e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+d-Rate per cum = (a+b+c+d+e) 	e. ur +e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
12.11 A (ii)	Case II	RCC Grade M25 using batching plant & manual placing Unit = cum Taking output = 15 cum a) Material				
		Per Cum Basic Cost (Rate taken from sub- analysis 21.07)	cum	15.000	15.000	15.000
		b) Labour				
		For pouring and placing				
		Mate	day	0.479	0.479	0.479
		Mason	day	1.330	1.330	1.330
		Mazdoor	day	10.640	10.640	10.640
		c) Machinery				
		Transit truck agitator				
		For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1
		For unloading	hour	0.833	0.833	0.833
		d) Formwork @ 20 Perc on cost of concrete i.e cost of material, labou and machinery	!.			
		e) Overhead chargesf) Contractor's profit		@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on
		i) Contractor's profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
		Cost for 15 cum = $a+b+c+d$	+e+f			
		Rate per cum = (a+b+c+d+	e+f)/15			
12.11 A 12.11 A (iii)	(iii) Case I	RCC M30 Grade RCC Grade M30 using batching plant & Concrete pump Unit = cum Taking output = 30 cum				
		a) Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09)	cum	30.000	30.000	30.000

Sr No	D (. D4				Quantit	y as per project	category
	Ref. to M		Description	Unit	Large	Medium	Small
			_				
		b)	Labour				
			For pouring and placing				
			Mate	day	0.179	0.179	0.179
			Mason	day	1.330	1.330	1.330
			Mazdoor	day	3.143	3.143	3.143
		c)	Machinery				
			Transit truck agitator				
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1
			Capacity)	km			
			For unloading	hour	0.726	0.726	0.726
			Hydraulic Boom placer	hour	0.726	0.726	0.726
			pump				
		d)	Formwork @ 20 Percent				
			on cost of concrete i.e.				
			cost of material, labour and machinery				
		e)	Overhead charges		@ on	@ on	@ on
		٠,	Overneau charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
		f)	Contractor's profit		@ on	@ on	@ on
		-,	р		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
		Cos	st for 30 cum = $a+b+c+d+e+f$,		
2.11 A	Case II	KCC	C Grade M30 using				
(iii)		plac	ching plant & manual cing it = cum				
(iii)		plad Uni	cing it = cum				
(iii)		plad Uni Tak	cing it = cum :ing output = 15 cum				
(iii)		plad Uni	cing it = cum king output = 15 cum Material Per Cum Basic Cost (Rate taken from sub-	cum	15.000	15.000	15.000
(iii)		plad Uni Tak a)	cing it = cum iing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09)	cum	15.000	15.000	15.000
(iii)		plad Uni Tak	cing it = cum iing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour	cum	15.000	15.000	15.000
(iii)		plad Uni Tak a)	cing it = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing				
(iii)		plad Uni Tak a)	cing it = cum iting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate	day	0.479	0.479	0.479
(iii)		plad Uni Tak a)	cing it = cum iting output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason	day day	0.479 1.330	0.479 1.330	0.479 1.330
(iii)		plad Uni Tak a) b)	cing it = cum ting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor	day	0.479	0.479	0.479
(iii)		plad Uni Tak a)	cing it = cum iing output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery	day day	0.479 1.330	0.479 1.330	0.479 1.330
(iii)		plad Uni Tak a) b)	cing it = cum iting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.479 1.330 10.640	0.479 1.330 10.640	0.479 1.330 10.640
(iii)		plad Uni Tak a) b)	cing it = cum ting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity)	day day day tonne- km	0.479 1.330 10.640 37.5 x L1	0.479 1.330 10.640 37.5 x L1	0.479 1.330 10.640 37.5 x L1
(iii)		plac Uni Tak a) b)	cing it = cum ting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading	day day day tonne-	0.479 1.330 10.640	0.479 1.330 10.640	0.479 1.330 10.640
(iii)		plad Uni Tak a) b)	cing it = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour	day day day tonne- km	0.479 1.330 10.640 37.5 x L1	0.479 1.330 10.640 37.5 x L1	0.479 1.330 10.640 37.5 x L1
(iii)		plad Uni Tak a) b)	cing it = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery	day day day tonne- km	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833
(iii)		plac Uni Tak a) b)	cing it = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour	day day day tonne- km	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833
(iii)		plac Uni Tak a) b)	cing it = cum ting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery Overhead charges	day day day tonne- km	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833
(iii)		plad Uni Tak a) b)	cing it = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery	day day day tonne- km	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833 @ on (a+b+c+d) @ on	0.479 1.330 10.640 37.5 x L1 0.833 @ on (a+b+c+d) @ on
(iii)		place Unit Take a) b) c) d)	cing it = cum ting output = 15 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery Overhead charges	day day day tonne- km	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833	0.479 1.330 10.640 37.5 x L1 0.833

Cr. N.	Dof to \$4	December	11	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
12.11 A	(iv)	RCC M35 Grade					
12.11 A	Case I	RCC Grade M35 using					
(iv)	cuse i	batching plant & Concrete					
(10)		pump					
		Unit = cum					
		Taking output = 30 cum					
		a) Material					
		Per Cum Basic Cost	cum	30.000	30.000	30.000	
		(Rate taken from sub-	Cum	30.000	30.000	30.000	
		analysis 21.11)					
		b) Labour					
		For pouring and placing					
		Mate	day	0.179	0.179	0.179	
		Mason	day	1.330	1.330	1.330	
		Mazdoor	day	3.143	3.143	3.143	
		c) Machinery	uuy	3.1.13	3.1.13	3.1.13	
		Transit truck agitator					
		For transportation (6 cur	m tonne-	75 x L1	75 x L1	75 x L1	
		Capacity)	km	75 X LI	73 X LI	73 X LI	
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom placer	hour	0.726	0.726	0.726	
		pump	noui	0.720	0.720	0.720	
		d) Formwork @ 20 Percent					
		on cost of concrete i.e.					
		cost of material, labour					
		and machinery					
		e) Overhead charges		@ on	@ on	@ on	
		f) Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
				(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost for 30 cum = $a+b+c+d+e-$					
		Rate per cum = (a+b+c+d+e+f	f)/30				
12.11 A	Case II	RCC Grade M35 using					
(iv)		batching plant & manual					
		placing					
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Per Cum Basic Cost	cum	15.000	15.000	15.000	
		(Rate taken from sub-					
		analysis 21.11)					
		b) Labour					
		For pouring and placing					
		Mate	day	0.479	0.479	0.479	
		Mason	day	1.330	1.330	1.330	
		Mazdoor	day	10.640	10.640	10.640	
		c) Machinery					
		Transit truck agitator					
		For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
		(6 cum Capacity)	km				
		For unloading	hour	0.833	0.833	0.833	

Rate (Rs.)

				Quantity	y as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
				Laige	Wiedidiii	Siliali
		 d) Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges 		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f) Contractor's profit		@ on	@ on	@ on
		·		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
		Cost for 15 cum = a+b+c+d+e+	f			
		Rate per cum = (a+b+c+d+e+f)	/15			
	Note	If curb concrete is carried out	within ste	el liner, cost of f	ormwork shall b	e excluded.
12.11 A 12.11 A (v)	(v) Case I	RCC M40 Grade RCC Grade M40 using batching plant & Concrete pump Unit = cum				
		Taking output = 30 cum				
		a) Material				
		Per Cum Basic Cost (Rate taken from sub- analysis 21.12) b) Labour	cum	30.000	30.000	30.000
		For pouring and placing				
		Mate	day	0.179	0.179	0.179
		Mason	day	1.330	1.330	1.330
		Mazdoor	day	3.143	3.143	3.143
		c) Machinery	,			
		Transit truck agitator				
		For transportation	tonne-	75 x L1	75 x L1	75 x L1
		(6 cum Capacity)	km			
		For unloading	hour	0.726	0.726	0.726
		Hydraulic Boom placer	hour	0.726	0.726	0.726
		pump d) Formwork @ 20 Percent on cost of concrete i.e. cost of material, labour and machinery				
		e) Overhead charges		@ on	@ on	@ on
		f) Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on
		Cost for 30 cum = a+b+c+d+e+ Rate per cum = (a+b+c+d+e+f)		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
12.11 A (v)	Case II	RCC Grade M40 using batching plant & manual placing Unit = cum Taking output = 15 cum				

C: No	Dof to M		Description	11	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
		1. \	analysis 21.12)					
		b)	Labour For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery	uuy	10.040	10.040	10.040	
		٠,	Transit truck agitator					
			For transportation (6 cum	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
		d)	Formwork @ 20 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery		_	_	_	
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
		''	Contractor's profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f		(0.000,000,000,000,000,000,000,000,000,0	((4 5 5 5 7)	
		Rat	te per cum = (a+b+c+d+e+f)/	15				
	Note	If c	urb concrete is carried out w	ithin stee	el liner, cost of f	ormwork shall b	e excluded.	
12.11		14/-	.II atainina					
12.11	B (i)		ell steining C M15 Grade					
12.11 B	Case I		C Grade M15 using					
(i)	cuse i		tching plant & Concrete					
()		pui						
		Uni	it = cum					
		Tak	king output = 30 cum					
		a)	Material					
			Per Cum Basic Cost					
			(Rate taken from sub-	cum	30.000	30.000	30.000	
		ل ـ ۱	analysis 21.03)					
		b)	Labour pouring and placing					
		FUI	Mate	day	0.126	0.126	0.126	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery	~~ <i>,</i>	2.010	1.013	1.010	
		-,	Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					

Rate (Rs.)

Sr No	Ref. to M		Description	Unit	Quantity as per project category			
31 140		Description		Oilit	Large	Medium	Small	
		d) e) f)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e+f		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
			e per cum = (a+b+c+d+e+f)/	20				
12.11 B (i)	Case II	PCC bate plac Uni	Grade M15 using ching plant & manual cing tt = cum					
			ing output = 15 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.03)	cum	15.000	15.000	15.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
		c)	Mazdoor Machinery Transit truck agitator	day	10.640	10.640	10.640	
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
		d)	For unloading Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery	hour	0.833	0.833	0.833	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			t for 15 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)/	15	(arbiciuie)	(arbiciure)	(arbiciare)	
12.11 B 12.11 B (ii)	(ii) Case I	PCC bate pun Uni	E M20 Grade C Grade M20 using Ching plant & Concrete Inp t = cum Ing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04)	cum	30.000	30.000	30.000	

2.11 B	Ref. to M	b)	Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum	day day day	0.126 1.330 1.813	0.126 1.330 1.813	0.126 1.330	(Rs.)
2.11 B		·	For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day	1.330	1.330		
2.11 B		·	For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day	1.330	1.330		
2.11 B		c)	Mate Mason Mazdoor Machinery Transit truck agitator	day	1.330	1.330		
2.11 B		c)	Mason Mazdoor Machinery Transit truck agitator	day	1.330	1.330		
2.11 B		c)	Mazdoor Machinery Transit truck agitator	-			1.550	
2.11 B		c)	Machinery Transit truck agitator	uay	1.015		1.813	
2.11 B		c)	Transit truck agitator			1.013	1.015	
2.11 B			_					
2.11 B			TOT transportation to cum	tonne-	75 x L1	75 x L1	75 x L1	
2.11 B			Capacity)	km	73 X 21	73 % 21	73 X LI	
2.11 B			For unloading	hour	0.726	0.726	0.726	
2.11 B			Hydraulic Boom placer	hour	0.726	0.726	0.726	
2.11 B			pump					
2.11 B		d)	Formwork @ 10 Percent					
2.11 B		•	on cost of concrete i.e.					
2.11 B			cost of material, labour					
2.11 B			and machinery					
2.11 B		e)	Overhead charges		@ on	@ on	@ on	
2.11 B		£)	Cantus stanla mustit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
.2.11 B		f)	Contractor's profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
2.11 B		Cos	Cost for 30 cum = $a+b+c+d+e+f$					
2.11 B			e per cum = (a+b+c+d+e+f)/	30				
(ii)		pla Uni	ching plant & manual cing it = cum					
		Tak	ing output = 15 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.04)	cum	15.000	15.000	15.000	
		b)	Labour					
		~,	For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	t. km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
		d)	•					
			on cost of concrete i.e.					
			cost of material, labour					
		۵١	and machinery		@ on	@ on	@ on	
		e)	Overhead charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		_				(4.5.0.4.6)	(a.p.c.a+c)	
		Cos	t for 15 cum = a+b+c+d+e+f		,	(a.p.c.a.c)	(a.p.c.a+e)	

Sr No	Ref. to M	Doscrintion		Unit	Quantity as per project category			Rate
			Description		Large	Medium	Small	(Rs.)
	,	DCC	CM20 Cuada					
12.11 B	(iii)		C M20 Grade C Grade M20 using					
12.11 B (iii)	Case I		ching plant & Concrete					
		pur	= :					
		Uni	t = cum					
		Tak	ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost					
			(Rate taken from sub-	cum	30.000	30.000	30.000	
		b)	analysis 21.06) Labour					
			pouring and placing					
			Mate	day	0.179	0.179	0.179	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery	aay	3.1.13	3.1.13	3.1.13	
		٠,	Transit truck agitator					
			For transportation (6 cum	t. km	75 x L1	75 x L1	75 x L1	
			Capacity)					
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
		d)	Formwork @ 10 Percent on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		•			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f		(a+b+c+d+e)	(атытстите)	(атытстите)	
			e per cum = (a+b+c+d+e+f)/	30				
12.11 B	Case II		C Grade M20 using ching plant & manual					
(iii)			cing plant & manual					
		-	t = cum					
			ing output = 15 cum					
			• .					
			Material					
		a)	Material Per Cum Basic Cost	cum	15.000	15.000	15.000	
				cum	15.000	15.000	15.000	
		a)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	15.000	15.000	15.000	
			Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour	cum	15.000	15.000	15.000	
		a)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing					
		a)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate	day	0.479	0.479	0.479	
		a)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate Mason	day day	0.479 1.330	0.479 1.330	0.479 1.330	
		a) b)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate Mason Mazdoor	day	0.479	0.479	0.479	
		a)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate Mason Mazdoor Machinery	day day	0.479 1.330	0.479 1.330	0.479 1.330	
		a) b)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.479 1.330 10.640	0.479 1.330 10.640	0.479 1.330 10.640	
		a) b)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation	day day	0.479 1.330	0.479 1.330	0.479 1.330	
		a) b)	Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.479 1.330 10.640	0.479 1.330 10.640	0.479 1.330 10.640	

Rate (Rs.)

C:: No	Ref. to M	Decembration	l locit	Quantit	y as per project	category
Sr No	Ket. to IVI	Description	Unit	Large	Medium	Small
		 d) Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges f) Contractor's profit Cost for 15 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e+t) 	+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
12.11 B 12.11 B (iv)	(iv) Case I	PCC M25 Grade PCC Grade M25 using batching plant & Concrete pump Unit = cum				
		Taking output = 30 cum				
		a) Material Per Cum Basic Cost				
		(Rate taken from sub- analysis 21.06)	cum	30.000	30.000	30.000
		b) Labour				
		For pouring and placing		0.426	0.426	0.426
		Mate	day	0.126 1.330	0.126 1.330	0.126 1.330
		Mason Mazdoor	day day	1.813	1.813	1.813
		c) Machinery	aay	1.015	1.015	1.015
		Transit truck agitator				
		For transportation (6 cu Capacity)	m t. km	75 x L1	75 x L1	75 x L1
		For unloading	hour	0.726	0.726	0.726
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726
		d) Formwork @ 10 Percen on cost of concrete i.e. cost of material, labour and machinery	t			
		e) Overhead charges		@ on	@ on	@ on
		f) Contractor's profit		(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)
		Cost for 30 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e+		(4.2.0.4.0)	(4.2.2.4.4)	(2.2.2.2)
12.11 B (iv)	Case II	PCC Grade M25 using batching plant & manual placing Unit = cum Taking output = 15 cum				

	D-f +- **		Description	11*	Quantit	y as per project	category	Ra
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(R
		a)	Material		15.000	15.000	15 000	
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub- analysis 21.06)					
		b)	Labour					
		IJ,	For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e. cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f	:	(атытстите)	(атытстите)	(атытстите)	
			e per cum = (a+b+c+d+e+f),					
		Nat	(4 4 5 4 5 1)	/15				
12.11 B	(v)		C M25 Grade	/ 13				
12.11 B	(v) Case I	RCC		,15				
		RCC RCC bat	C M25 Grade C Grade M25 using ching plant & Concrete	,15				
12.11 B		RCC RCC bat pur	C M25 Grade C Grade M25 using ching plant & Concrete mp	,15				
l2.11 B		RCC RCC bat pur Uni	C M25 Grade C Grade M25 using ching plant & Concrete np it = cum	,13				
12.11 B		RCC RCC bat pur Uni	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum cing output = 30 cum	,13				
12.11 B		RCC Bat pur Uni Tak	C M25 Grade C Grade M25 using ching plant & Concrete np it = cum	,13				
12.11 B		RCC Bat pur Uni Tak	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
l2.11 B		RCC Bat pur Uni Tak	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.07)		30.000	30.000	30.000	
l2.11 B		RCC bat pur Uni Tak a)	C M25 Grade C Grade M25 using ching plant & Concrete np it = cum cing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.07) Labour		30.000	30.000	30.000	
l2.11 B		RCC bat pur Uni Tak a)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing	cum				
12.11 B		RCC bat pur Uni Tak a)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum cling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate	cum	0.179	0.179	0.179	
12.11 B		RCC bat pur Uni Tak a)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.07) Labour pouring and placing Mate Mason	cum day day	0.179 1.330	0.179 1.330	0.179 1.330	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor	cum	0.179	0.179	0.179	
12.11 B		RCC bat pur Uni Tak a)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ding output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery	cum day day	0.179 1.330	0.179 1.330	0.179 1.330	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	cum day day day	0.179 1.330 3.143	0.179 1.330 3.143	0.179 1.330 3.143	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp t = cum ting output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation	cum day day day	0.179 1.330	0.179 1.330	0.179 1.330	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity)	cum day day day tonne- km	0.179 1.330 3.143 75 x L1	0.179 1.330 3.143 75 x L1	0.179 1.330 3.143 75 x L1	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading	cum day day day tonne- km hour	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom placer	cum day day day tonne- km	0.179 1.330 3.143 75 x L1	0.179 1.330 3.143 75 x L1	0.179 1.330 3.143 75 x L1	
12.11 B		RCC bat pur Uni Tak a) b) For	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom placer pump	cum day day day tonne- km hour	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	
12.11 B		RCC bat pur Uni Tak a) b)	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom placer	cum day day day tonne- km hour	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	
12.11 B 12.11 B (v)		RCC bat pur Uni Tak a) b) For	C M25 Grade C Grade M25 using ching plant & Concrete mp it = cum ling output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.07) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom placer pump Formwork @ 10 Percent	cum day day day tonne- km hour	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	0.179 1.330 3.143 75 x L1 0.726	

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category	F
31 140	Rei. to ivi		Description	Oilit	Large	Medium	Small	(
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f),	/30				
2.11 B (v)	Case II	bat pla	C Grade M25 using ching plant & manual cing t = cum					
		Tak	ing output = 15 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.07)	cum	15.000	15.000	15.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
		-1	Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
		d)	For unloading Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery	hour	0.833	0.833	0.833	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			t for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/	/15				
2.11 B 2.11 B	(vi) Case I	PCC	C M30 Grade C Grade M30 using ching plant & Concrete					
(vi)		pur	· ·					
			ing output = 30 cum					
		a)	Material					
		•	Per Cum Basic Cost					
			(Rate taken from sub- analysis 21.08)	cum	30.000	30.000	30.000	
			alialysis 21.00)					
		b)	Labour					
		-						
		-	Labour	day	0.126	0.126	0.126	
		-	Labour pouring and placing	day day	0.126 1.330	0.126 1.330	0.126 1.330	

Cu N.a	Dof to M		Descript:	I I m ! A	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery					
		٠,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f	:				
		Rat	e per cum = (a+b+c+d+e+f),	/30				
12.11 B (vi)	Case II	bat pla Uni	C Grade M30 using ching plant & manual cing it = cum cing output = 15 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.08)	cum	15.000	15.000	15.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator	tonno	27 F v l 1	27 F v l 1	27 F v l 1	
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f	:	,	,	,	
		Rat	e per cum = (a+b+c+d+e+f),	/15				

Sr No	Ref. to M		Doccrintion	Unit	Quantity	y as per project	category	Rate
Sr NO	Ket. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
12.11 B	(vii)	PCC	M30 Grade					
12.11 B	Case I		Grade M30 using					
(vii)	Cuse i		hing plant & Concrete					
` '		pum	= -					
		-	= cum					
		Takir	ng output = 30 cum					
		a)	Material					
			Per Cum Basic Cost					
			(Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis 21.09)					
		b)	Labour					
			For pouring and placing	-l	0.470	0.470	0.470	
			Mate	day	0.179	0.179	0.179	
			Mason	day	1.330	1.330	1.330	
		۵۱	Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery Transit truck agitator					
			Transit truck agitator	tonne-	75 x L1	75 x L1	75 x L1	
			For transportation (6 cum Capacity)	km	/3 X L1	/3 X L1	/3 X L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump		0.7.20	0.7.20	0.7.20	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery		Ø 22	Ø	Ø 22	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		٠,	contractor 3 pront		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost	for 30 cum = $a+b+c+d+e+f$					
		Rate	per cum = (a+b+c+d+e+f)/	' 30				
12.11 B	Case II	D.C.C.	Cuada M20 vaina					
(vii)	Case II		Grade M30 using hing plant & manual					
(411)		placi						
		-	= cum					
			ng output = 15 cum					
		Takir	.B - a - p - a - a - a - a - a - a - a - a					
			Material					
			= :	cum	15.000	15.000	15.000	
			Material Per Cum Basic Cost (Rate taken from sub-	cum	15.000	15.000	15.000	
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09)	cum	15.000	15.000	15.000	
			Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour	cum	15.000	15.000	15.000	
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing					
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate	day	0.479	0.479	0.479	
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason	day day	0.479 1.330	0.479 1.330	0.479 1.330	
		a) b)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason Mazdoor	day	0.479	0.479	0.479	
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery	day day	0.479 1.330	0.479 1.330	0.479 1.330	
		a) b)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.479 1.330 10.640	0.479 1.330 10.640	0.479 1.330 10.640	
		a) b)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation	day day day tonne-	0.479 1.330	0.479 1.330	0.479 1.330	
		a) b)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.479 1.330 10.640	0.479 1.330 10.640	0.479 1.330 10.640	

Rate (Rs.)

C:: No	Ref. to M	Description	11	Quantity	y as per project	category
Sr No	Ket. to IVI	Description	Unit	Large	Medium	Small
		d) Formwork @ 10 Perce on cost of concrete i.e. cost of material, labou and machinery e) Overhead charges f) Contractor's profit Cost for 15 cum = a+b+c+d+ Rate per cum = (a+b+c+d+e	r r e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
12.11 B 12.11 B (viii)	(viii) Case I	RCC M35 Grade RCC Grade M35 using batching plant & Concrete pump Unit = cum				
		 Taking output = 30 cum a) Material Per Cum Basic Cost (Rate taken from subanalysis 21.11) b) Labour For pouring and placing 	cum	30.000	30.000	30.000
		Mate Mason Mazdoor c) Machinery	day day day	0.179 1.330 3.143	0.179 1.330 3.143	0.179 1.330 3.143
		Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom place	tonne- km hour r hour	75 x L1 0.726 0.726	75 x L1 0.726 0.726	75 x L1 0.726 0.726
		pump d) Formwork @ 10 Perce on cost of concrete i.e cost of material, labour and machinery e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+d+ Rate per cum = (a+b+c+d+e)	ır e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
12.11 B (viii)	Case II	RCC Grade M35 using batching plant & manual placing Unit = cum Taking output = 15 cum a) Material Per Cum Basic Cost (Rate taken from sub-	cum	15.000	15.000	15.000

					Quantity	y as per project	category	R
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(1
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		٠,	au maiges		യ on (a+b+c+d)	<i>@</i> ்ப (a+b+c+d)	மு on (a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Coo	t for 15 cum = a+b+c+d+e+f	:	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			e per cum = (a+b+c+d+e+f),					
2.11 B 2.11 B (ix)	(ix) Case I	RCC	C M40 Grade C Grade M40 using ching plant & Concrete					
		pur	-					
			t = cum					
			ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost					
			(Rate taken from sub-	cum	30.000	30.000	30.000	
		h۱	analysis 21.12) Labour					
		IJ,	For pouring and placing					
			Mate	da	0.170	0.170	0.170	
			Mason	day	0.179	0.179	0.179	
			Mazdoor	day	1.330	1.330	1.330	
		c)	Machinery	day	3.143	3.143	3.143	
		٠,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	/3 X L1	/3 X L1	/3 X LT	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump	.ioui	5.720	5.720	5.725	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		٦,	Overnicau charges		(a+b+c+d)	(a+b+c+d)	യ ഗ്ന (a+b+c+d)	
					-	@ on	@ on	
		f)	Contractor's profit		(OU ON			
		f)	Contractor's profit		@ on (a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	

Sr No	Pof +o M		Doccrintion	Linit	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
12.11 B	Case II	RC	C Grade M40 using					
(ix)	Cuse II		ching plant & manual					
(/			cing					
		-	it = cum					
			ring output = 15 cum					
		a)	Material					
		•	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.12)					
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
		- \	and machinery		0	0	0	
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
		٠,	contractor 3 profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f	:	(= = = = = = = = = = = = = = = = = = =	(2 2 2 2 7	(2 2 2 2 7	
		Rat	e per cum = (a+b+c+d+e+f),	/15				
12.11 C	С	Bot	ttom Plug					
	(i)		C Grade M20					
	Case I	PC	C Grade M20 using					
		bat	ching plant & Concrete					
		pui	mp					
		•						
		Uni	it = cum					
		Uni Tak	ring output = 30 cum					
		Uni	ring output = 30 cum Material					
		Uni Tak	king output = 30 cum Material Per Cum Basic Cost	cum	30.000	30.000	30.000	
		Uni Tak	king output = 30 cum Material Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
		Uni Tak a)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04)	cum	30.000	30.000	30.000	
		Uni Tak	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Labour	cum	30.000	30.000	30.000	
		Uni Tak a)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.04) Labour For pouring and placing					
		Uni Tak a)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Labour For pouring and placing Mate	day	0.126	0.126	0.126	
		Uni Tak a)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Labour For pouring and placing Mate Mason	day day	0.126 1.330	0.126 1.330	0.126 1.330	
		Uni Tak a) b)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.04) Labour For pouring and placing Mate Mason Mazdoor	day	0.126	0.126	0.126	
		Uni Tak a)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.04) Labour For pouring and placing Mate Mason Mazdoor Machinery	day day	0.126 1.330	0.126 1.330	0.126 1.330	
		Uni Tak a) b)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.126 1.330 1.813	0.126 1.330 1.813	0.126 1.330 1.813	
		Uni Tak a) b)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation	day day day tonne-	0.126 1.330	0.126 1.330	0.126 1.330	
		Uni Tak a) b)	king output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.04) Labour For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.126 1.330 1.813	0.126 1.330 1.813	0.126 1.330 1.813	

C., 11	D-f : 24	D1 11		Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
		Hydra Crane for holding tremie pipe	hour	0.726	0.726	0.726	
		Add 5 Percent of cost of material and labour towards cost of forming sump, protective bunds,					
		chiselling and making arrangements for under water concreting with					
		tremie pipe.			_ , , ,	_ , , ,	
		d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Cost for 30 cum = a+b+c+d+e		(a.b.c.a)	(arbicia)	(arbiciu)	
		Rate per cum = $(a+b+c+d+e)/30$)				
	Case II	PCC Grade M20 using batching plant & manual placing					
		Unit = cum					
		Taking output = 15 cum					
		a) Material					
		Per Cum Basic Cost (Rate taken from sub- analysis 21.04)	cum	15.000	15.000	15.000	
		b) Labour					
		For pouring and placing					
		Mate	day	0.479	0.479	0.479	
		Mason	day	1.330	1.330	1.330	
		Mazdoor	day	10.640	10.640	10.640	
		c) Machinery					
		Transit truck agitator					
		For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
		For unloading	hour	0.833	0.833	0.833	
		Hydra Crane for holding tremie pipe	hour	0.833	0.833	0.833	
		Add 5 Percent of cost of material and labour towards cost of forming sump,					
		protective bunds, chiselling and making arrangements for under water concreting with					
		tremie pipe.					
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 15 cum = a+b+c+d+e					
		Rate per cum = $(a+b+c+d+e)/15$	5				

ir Nia	Ref. to M		Docarintion	l lm!+	Quantity as per project cat	category	F	
Sr No	Ket. to IVI		Description	Unit	Large	Medium	Small	(
	(111)	DCC	Consider MADE					
11 C	(ii)		Grade M25					
	Case I		Grade M25 using					
		pun	ching plant & Concrete					
		•	t = cum					
			ing output = 30 cum					
		a)	Material					
		ω,	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-	cam	30.000	30.000	30.000	
			analysis 21.06)					
		b)	Labour					
			For pouring and placing					
			Mate	day	0.126	0.126	0.126	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery	•				
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Hydra Crane for holding	hour	0.726	0.726	0.726	
			tremie pipe					
			5 Percent of cost of					
		cost	erial and labour towards tof forming sump,					
			t of forming sump, tective bunds, chiselling					
		•	making arrangements for					
			er water concreting with					
			nie pipe.					
		trer	6.60.					
					@ on (a+b+c)	@ on (a+b+c)	@ on (athte)	
		d)	Overhead charges		-	@ on (a+b+c)	-	
					@ on	@ on	@ on	
		d) e)	Overhead charges Contractor's profit		-		-	
		d) e)	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e	1	@ on	@ on	@ on	
		d) e)	Overhead charges Contractor's profit)	@ on	@ on	@ on	
	Case II	d) e) Cos	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e)	@ on	@ on	@ on	
	Case II	d) e) Cos Rate PCC bate	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual)	@ on	@ on	@ on	
	Case II	d) e) Cos Rate PCC bate place	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing)	@ on	@ on	@ on	
	Case II	d) e) Cos Rate PCC bate place	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum)	@ on	@ on	@ on	
	Case II	d) e) Cos Rate PCC bate place Unit	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual sing t = cum ing output = 15 cum)	@ on	@ on	@ on	
	Case II	d) e) Cos Rate PCC bate place	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material)	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Case II	d) e) Cos Rate PCC bate place Unit	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost	cum	@ on	@ on	@ on	
	Case II	d) e) Cos Rate PCC bate place Unit	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub-		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Case II	d) e) Cos Rate PCC bate place Uni Tak a)	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.06)		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Case II	d) e) Cos Rate PCC bate place Unit	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Case II	d) e) Cos Rate PCC bate place Uni Tak a)	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing	cum	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
	Case II	d) e) Cos Rate PCC bate place Uni Tak a)	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing Mate	cum	@ on (a+b+c+d) 15.000	@ on (a+b+c+d) 15.000	@ on (a+b+c+d) 15.000	
	Case II	d) e) Cos Rate PCC bate place Uni Tak a)	Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30 Grade M25 using ching plant & manual cing t = cum ing output = 15 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.06) Labour For pouring and placing	cum	@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

Sr No Ref. to M			Description	l locia	Quantity	as per project	category	Ra
Sr No	Ref. to IVI		Description	Unit	Large	Medium	Small	(R
		c)	Machinery					
			Transit truck agitator		27 514	27 514	27.514	
			For transportation	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity) For unloading	hour	0.833	0.833	0.833	
			Hydra Crane for holding	hour	0.833	0.833	0.833	
			tremie pipe	Hour	0.655	0.655	0.655	
			Add 5 Percent of cost of					
			material and labour					
			towards cost of forming					
			sump, protective bunds,					
			chiselling and making					
			arrangements for under					
			water concreting with					
			tremie pipe.					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on		@ on	
			·		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 15 cum = a+b+c+d+e					
		Rat	e per cum = (a+b+c+d+e)/15	5				
11.6	/:::\	DCC	C Grade M30					
2.11 C	(iii) Case I		Grade M30 using					
	Case i		ching plant & Concrete					
		pur	= :					
		-	t = cum					
		Tak	ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate	cum	30.000	30.000	30.000	
			taken from sub-analysis					
		1.3	21.08)					
		b)	Labour					
			For pouring and placing		0.426	0.426	0.426	
			Mate Mason	day	0.126	0.126	0.126	
			Mazdoor	day	1.330	1.330	1.330	
		c)	Machinery	day	1.813	1.813	1.813	
		c,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	73 X LI	75 X LI	75 X LI	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Hydra Crane for holding	hour	0.726	0.726	0.726	
			tremie pipe					
			Add 5 Percent of cost of material and labour					
			towards cost of forming					
			sump, protective bunds,					
			chiselling and making					
			arrangements for under					
			water concreting with					
			tremie pipe.					

Rate (Rs.)

		T	ı			T
Sr No	Ref. to M	Description	Unit		as per project	
				Large	Medium	Small
		d) Overhead charges e) Contractor's profit Cost for 30 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/30)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)
	Case II	PCC Grade M30 using batching plant & manual placing Unit = cum Taking output = 15 cum a) Material Per Cum Basic Cost	cum	15,000	15.000	15.000
		(Rate taken from sub- analysis 21.08) b) Labour For pouring and placing	cum	13.000	13.000	13.000
		Mate	day	0.479	0.479	0.479
		Mason	day	1.330	1.330	1.330
		Mazdoor	day	10.640	10.640	10.640
		c) Machinery Transit truck agitator	aay	10.0.10	10.0 10	10.010
		For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1
		For unloading	hour	0.833	0.833	0.833
		Hydra Crane for holding tremie pipe Add 5 Percent of cost of material and labour towards cost of forming sump, protective bunds, chiselling and making arrangements for under water concreting with tremie pipe.		0.833	0.833	0.833
		 d) Overhead charges e) Contractor's profit Cost for 15 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/15 	5	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)
12.11 C	(iv) Case I	PCC Grade M35 PCC Grade M35 using batching plant & Concrete pump Unit = cum Taking output = 30 cum a) Material Per Cum Basic Cost	cum	30.000	30.000	30.000
		(Rate taken from sub- analysis 21.10)				

			Description		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Labour					
			For pouring and placing		0.426	0.426	0.426	
			Mate	day	0.126	0.126	0.126	
			Mason Mazdoor	day day	1.330 1.813	1.330 1.813	1.330 1.813	
		c)	Machinery	uay	1.015	1.015	1.015	
		٠,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Hydra Crane for holding	hour	0.726	0.726	0.726	
			tremie pipe					
			Add 5 Percent of cost of					
			material and labour towards cost of forming					
			sump, protective bunds,					
			chiselling and making					
			arrangements for under					
			water concreting with					
			tremie pipe.					
		الہ	Overshand sharens		@ / h . a\	@ an (a third)	@ an (a.b.a)	
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		c,	Contractor 3 profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 30 cum = a+b+c+d+e e per cum = (a+b+c+d+e)/30)	(4 4 5 2)	(= 2 - 2)	(2 2 3 2,	
	Case II	bate plac Uni	Grade M35 using ching plant & manual cing t = cum ing output = 15 cum Material					
		aj	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-	00	20.000	20.000	20.000	
			analysis 21.10)					
		b)	Labour					
			For pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
			Hydra Crane for holding tremie pipe	hour	0.833	0.833	0.833	
			Add 5 Percent of cost of					
			material and labour					
			towards cost of forming					
			sump, protective bunds,					

C:: N -	D-f +- N4	Description	11!4	Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		chiselling and making arrangements for under water concreting with tremie pipe. d) Overhead charges e) Contractor's profit Cost for 15 cum = a+b+c+d+e Rate per cum = (a+b+c+d+e)/15	·	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11	D (i)	Intermediate plug Grade M20 PCC Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.					
12.11 D (i)	Case I	PCC Grade M20 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (i) d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 D (i)	Case II	PCC Grade M20 using batching plant & manual placing Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (i) d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 D	(ii)	Grade M25 PCC Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.					
12.11 D (ii)	Case I	PCC Grade M25 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)					

Cm NI =	Dof to Ma	December :	11:::14	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Rate for concrete may be adopted vide item no. 12.11 (C) (ii) d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 D (ii)	Case II	PCC Grade M25 using batching plant & manual placing Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (ii) d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 D	(iii)	Grade M30 PCC Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.					
12.11 D (iii)	Case I	PCC Grade M30 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (iii) d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c)		
		Rate per cum = (a+b+c+d+e)		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
12.11 D (iii)	Case II	PCC Grade M30 using batching plant & manual placing Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (iii)					
		d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	

Cu No	Def to M	Description	l lucit	Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
12.11	E (i)	Top plug Grade M15 PCC Same as Item 12.8(a) excluding formwork					
12.11 E (i)	Case I	pcc Grade M15 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (A) d) Overhead charges			@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
12.11 E (i)	Case II	PCC Grade M15 using batching plant & manual placing Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08					
		(A) d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 E	(ii)	Grade M20 PCC Same as Item 12.8(b) excluding formwork					
12.11 E (ii)	Case I	PCC Grade M20 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (B)					
		d) Overhead chargese) Contractor's profitRate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 E (ii)	Case II	PCC Grade M20 using batching plant & manual placing Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (B)					

C:: N -	D-f +- N4	December 1		Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
		d) Overhead chargese) Contractor's profitRate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 E	(iii)	Grade M25 PCC Same as Item 12.8 (d) excluding formwork					
12.11 E (iii)	Case I	PCC Grade M25 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (D) d) Overhead charges e) Contractor's profit Rate per cum = (a+b+c+d+e)		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 E (iii)	Case II	PCC Grade M25 using batching plant & manual placing Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (D)					
		d) Overhead chargese) Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
12.11 E	(iv)	Rate per cum = (a+b+c+d+e) Grade M30 PCC Same as Item 12.8(f) excluding formwork					
12.11 E (iv)	Case I	PCC Grade M30 using batching plant & Concrete pump Per Cum Basic Cost of Labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (F) d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		Rate per cum = (a+b+c+d+e)		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	

		Description		Quantity	y as per project	category	Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
12.11 E (iv)	Case II		C Grade M30 using ching plant & manual					
(1.0)			cing					
		-	Cum Basic Cost of Labour,					
			terial & Machinery (a+b+c)					
			e for concrete may be					
		ado (F)	opted vide item no. 12.08					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per cum = (a+b+c+d+e)		(4.2.0.4)	(4.2.0.4)	(4.2.0.4)	
12.11	F		ll cap					
	Case I		Grade M20					
			Grade M20 using ching plant transit mixer &					
			ncrete pump					
			t = cum					
		Tak	ing output = 15 cum					
		a)	Material					
		•	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub- analysis 21.06)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 4 Percent				1.,5	
		,	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category	R
or INO	Kei. to ivi		Description	Onit	Large	Medium	Small	(
		e) f)	Overhead charges Contractor's profit		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f	:	(ararerare)	(4.4.4.4.4.4.4)	(4.0.0.4.0)	
		Rat	e per cum = (a+b+c+d+e+f),	/30				
	Case II	bat ma Uni	C Grade M20 using ching plant transit mixer & nual placing t = cum					
			ing output = 15 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	15.000	15.000	15.000	
			Water for curing	KI	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)	hour	0.833	0.833	0.833	
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	

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

Cr No	Dof to M		Description	l lm!s	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
12.11 F	(ii)	DC(C Grade M25					
12.11 F	(יי) Case I		C Grade M25 using					
(ii)	Case i		ching plant transit mixer &					
("')			ncrete pump					
			it = cum					
		Tak	king output = 30 cum					
		a)	Material					
		u,	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-	00	20.000	20.000	33.333	
			analysis 21.07)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
		-	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)	hour	0.219 x L1 +			
			(i) 16 KL capacity	hour	0.219 X L1 + 0.656			
			(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
			(II) 12 KL capacity	noui		0.875		
			(iii) 6 KL capacity	hour		0.070	0.583 x L1 +	
			(,,				1.75	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Cos	st for 30 cum = a+b+c+d+e+f	:	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			te per cum = (a+b+c+d+e+f)/					
		Mat	e per cum = (arbiciareir)	30				
12.11 F	Case II	RC	C Grade M25 using					
(iii)		bat	ching plant transit mixer &					
			nual placing					
			it = cum					
			king output = 15 cum					
		a)	Material	<u></u>	15.000	15.000	15.000	
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub- analysis 21.07)					
			anary 313 21.07 j					

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category
DI INU	Kei. to ivi		Description	Oiiit	Large	Medium	Small
				ΙΖΙ	7 075	7 075	7 075
			Water for curing	Kl	7.875	7.875	7.875
		b)	Labour				
			For pouring and placing	day	0.505	0.505	0.505
			Mate	day day	1.995	1.995	1.995
			Mason	=	10.640	10.640	10.640
			Mazdoor	day	10.640	10.640	10.040
		c)	Machinery				
			Transit truck agitator	tonne-	37.5 x L1	37.5 x L1	37.5 x L1
			For transportation (6 cum Capacity)	km	37.3 X LI	37.3 X LI	37.3 X LI
			For unloading	hour	0.833	0.833	0.833
			Water tanker (speed @		5.555		
			10 km/hr. and return				
			speed @ 15 km/hr. and				
			unloading @ 30 mins per				
			trip)		0.400 1.4		
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328		
			(ii) 12 KL capacity	hour	0.328	0.146 x L1 +	
			(II) 12 KL capacity			0.438	
			(iii) 6 KL capacity	hour			0.292 x L1 +
							0.875
		d)	Formwork @ 4 Percent				
			on cost of concrete i.e.				
			cost of material, labour and machinery				
		e)	Overhead charges		@ on	@ on	@ on
		-,			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
		f)	Contractor's profit		@ on	@ on	@ on
		C	+ fan 15 awar - a haard ar f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)
			t for 15 cum = a+b+c+d+e+f				
		кат	e per cum = (a+b+c+d+e+f)/	15			
.11 F	(iii)	RC	C Grade M30				
2.11 F	Case I		Grade M30 using				
(iii)			ching plant transit mixer &				
			ncrete pump				
			t = cum				
		Tak	ing output = 30 cum				
		a)	Material				
			Per Cum Basic Cost	cum	30.000	30.000	30.000
			(Rate taken from sub-				
			analysis 21.09)	_			
			Water for curing	Kl	15.750	15.750	15.750
		b)	Labour				
			For pouring and placing				
					0.206	0.206	0.206
			Mate	day			
			Mason	day	1.995	1.995	1.995
			Mason Mazdoor				1.995 3.143
		c)	Mason	day	1.995	1.995	

Sr No	Ref. to M		Description	Unit	Quantit	y as per project	category	Rate
Sr NO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	0.706	0.706	0.706	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump Water tanker (speed @	hour	0.726	0.726	0.726	
			10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			t for 30 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)/					
12.11 F (iii)	Case II	bato mar	Grade M30 using ching plant transit mixer & nual placing t = cum					
		Taki a)	ing output = 15 cum Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.09)	cum	15.000	15.000	15.000	
		b)	Water for curing Labour	Kl	7.875	7.875	7.875	
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per	hour	0.833	0.833	0.833	
			trip)	h a	0.100 v.14 ·			
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			

Cu No	Dof +- N4		Description	l le!+	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			/**\ 42 W	h a		0.14611 .		
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour		0.150	0.292 x L1 +	
			(,				0.875	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		c,	Overneda charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/	15				
12.11 F	(iv)	RCC	C Grade M35					
12.11 F	Case I	RCC	C Grade M35 using					
(iv)			ching plant transit mixer &					
			ncrete pump it = cum					
			ing output = 30 cum					
		a)	Material					
		aj	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub- analysis 21.11)	cam	30.000	30.000	30.000	
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					

Sr No	Ref. to M		Description	Unit	Quantit	y as per project	category
51 NO	itel. to ivi		Description	Oilit	Large	Medium	Small
			cost of material, labour and machinery				
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
			t for 30 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f)				
2.11 F (iv)	Case II		C Grade M35 usin ching plant transit mixer & nual placing	_			
		_	t = cum				
			ing output = 15 cum				
		a)	Material				
			Per Cum Basic Cost (Rate taken from sub- analysis 21.11)	cum	15.000	15.000	15.000
			Water for curing	KI	7.875	7.875	7.875
		b)	Labour				
			For pouring and placing				
			Mate	day	0.505	0.505	0.505
			Mason	day	1.995	1.995	1.995
			Mazdoor	day	10.640	10.640	10.640
		c)	Machinery				
			Transit truck agitator				
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1
			For unloading	hour	0.833	0.833	0.833
			Water tanker (speed @ 10 km/hr. and retur speed @ 15 km/hr. and unloading @ 30 mins petrip)	n d			
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328		
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438	
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875
		d)	Formwork @ 4 Percent on cost of concrete i.e cost of material, labour and machinery	<u>.</u>			
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit	_	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
		Cos	t for 15 cum = a+b+c+d+e+	·f			

Ca N	Def 4. ac		Dan-windi	11**	Quantit	y as per project	category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
42.44.5		200	0.0 1.440					
12.11 F	(v)		C Grade M40					
12.11 F	Case I		C Grade M40 using					
(v)			tching plant transit mixer &					
			ncrete pump it = cum					
			king output = 30 cum					
		a)	Material		20.000	20.000	20.000	
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis 21.12) Water for curing	Κl	15.750	15.750	15.750	
		b)	Labour	NI	13.730	13.730	13.730	
		IJ,	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery	auy	5.145	3.143	3.143	
		٠,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	70 11 ==	70 11 ==	70 / ==	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 4 Percent				1.73	
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
			Combine the ule mane fit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f		(4.5.5.4.5)	(0.10.10.10.10)	(ararerare)	
			te per cum = (a+b+c+d+e+f)/	30				
12.11 F	Coso II	D.C.	C Crada MAO vaina					
(v)	Case II		C Grade M40 using tching plant transit mixer &					
(*)			nual placing					
			it = cum					
			king output = 15 cum					
			= -					
		a)	Material		45.000	45.000	45.000	
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis 21.12)					

					Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
l.						1	1	
			Water for curing	ΚI	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			10 km/hr. and return speed @ 15 km/hr. and					
			unloading @ 30 mins per					
			trip)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
		,			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/	15				
12 11 5	(:)							
12.11 F	(vi) Case I		Grade M45					
	Case i		Grade M45 using ching plant transit mixer &					
			ncrete pump					
			t = cum					
		Tak	ing output = 30 cum					
		a)	Material		22.222	22.222	22.222	
			Per Cum Basic Cost (Rate taken from sub- analysis 21.13)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
		,	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	

Rat to M		Description	Unit	Quantit	y as per project	catego. y	R
Ref. to M		Description	Oilit	Large	Medium	Small	(I
	-1	No ali in a m					
	c)	=					
		-	tonno	7E v l 1	75 v l 1	75 v l 1	
				/3 X L1	/5 X L1	/3 X L1	
		• • • • • • • • • • • • • • • • • • • •		0.726	0.726	0.726	
		=					
			noui	0.720	0.720	0.720	
		10 km/hr. and return					
		speed @ 15 km/hr. and					
		= -					
			hour	0.210 v.l.1 i			
		(I) 16 KL Capacity	nour				
		(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
		, , , ,			0.875		
		(iii) 6 KL capacity	hour			0.583 x L1 +	
		F				1.75	
	d)						
	e)	Overhead charges		@ on	@ on	@ on	
	•	Ū		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	f)	Contractor's profit		@ on	@ on	@ on	
	_	. 6 . 6		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			20				
	Kat	e per cum = (a+b+c+d+e+i)/	30				
Case II	RCC	Grade M45 using					
	bat	ching plant transit mixer &					
		· -					
	a)		cum	15 000	15,000	15 000	
			cum	13.000	15.000	15.000	
		•					
		Water for curing	ΚI	7.875	7.875	7.875	
	b)	Labour					
		For pouring and placing					
		Mate	day	0.505	0.505	0.505	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	10.640	10.640	10.640	
	c)	Machinery					
		Transit truck agitator					
		For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
				0.022	0.022	0.022	
			nour	0.833	0.833	0.833	
		speed @ 15 km/hr. and					
		unloading @ 30 mins per					
	Case II	f) Cos Rat Case II RCC bat ma Uni Tak a)	Transit truck agitator For transportation (6 cum Capacity) For unloading Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity (ii) 12 KL capacity (iii) 6 KL capacity (iii) 6 KL capacity d) Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/ Case II RCC Grade M45 using batching plant transit mixer & manual placing Unit = cum Taking output = 15 cum a) Material Per Cum Basic Cost (Rate taken from sub- analysis 21.13) Water for curing b) Labour For pouring and placing Mate Mason Mazdoor c) Machinery Transit truck agitator	Transit truck agitator For transportation (6 cum Capacity) For unloading hour Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity hour (ii) 12 KL capacity hour (iii) 6 KL capacity hour (iii) 6 KL capacity hour d) Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/30 Case II RCC Grade M45 using batching plant transit mixer & manual placing Unit = cum Taking output = 15 cum a) Material Per Cum Basic Cost cum (Rate taken from subanalysis 21.13) Water for curing KI b) Labour For pouring and placing Mate day Mason day Mazdoor day C) Machinery Transit truck agitator For transportation tonne-(6 cum Capacity) km For unloading hour Water tanker (speed @	c) Machinery Transit truck agitator For transportation (6 cum tonne- Capacity) km For unloading hour 0.726 Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity hour (iii) 12 KL capacity hour (iii) 6 KL capacity hour (iii) 6 KL capacity hour d) Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery e) Overhead charges f) Contractor's profit @ on (a+b+c+d+e) Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/30 Case II RCC Grade M45 using batching plant transit mixer & manual placing Unit = cum Taking output = 15 cum a) Material Per Cum Basic Cost cum 15.000 (Rate taken from subanalysis 21.13) Water for curing Kl 7.875 b) Labour For pouring and placing Mate day 0.505 Mazon day 1.995 Mazdoor day 10.640 c) Machinery Transit truck agitator For transportation tonne- 37.5 x L1 (6 cum Capacity) km For unloading hour 0.833	c) Machinery Transit truck agitator For transportation (6 cum tonne- Capacity) For unloading hour 0.726 0.726 Hydraulic Boom placer place hour 0.726 Hydraulic Boom place place hour 0.726 Hydraulic Boom plac	c) Machinery Transit truck agitator For transportation (6 cum tonne- Capacity) For unloading hour 0.726 0.726 0.726 Hydraulic Boom placer hour pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip) (i) 16 KL capacity hour 0.219 x L1 + 0.656 (ii) 12 KL capacity hour 0.219 x L1 + 0.656 (iii) 6 KL capacity hour 0.219 x L1 + 0.656 (iii) 6 KL capacity hour 0.219 x L1 + 0.656 (iii) 6 KL capacity hour 0.219 x L1 + 0.656 (iii) 6 KL capacity hour 0.219 x L1 + 0.675 (iii) 6 KL capacity hour 0.219 x L1 + 0.675 (iii) 6 KL capacity hour 0.697 (iii) 6 KL capacity hour 0.675 (iii) 6 KL capacity hour 0.575 (iii) 6 KL capacity hour 0.575 (iii) 6 KL capacity km 0.575 (iii) 6 KL capacity hour 0.583 (iii) 6 KL capacity 6 Km 0.575 (i

Cr Na	Ref. to M		Description	l lni+	Quantity	as per project	category	R
Sr No	Ref. to IVI		Description	Unit	Large	Medium	Small	(F
			/:\ 4.C.W		0.400 14			
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour	0.520	0.146 x L1 +		
			(m) = m	·		0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery				0.873	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			t for 15 cum = a+b+c+d+e+f		,	,	,	
		Rate	e per cum = (a+b+c+d+e+f)/	15				
12.12	Section 1200	diar pne thro nan and each draw spec	king of 6 m external meter well (other than umatic method of sinking) ough all types of strata nely sandy soil, clayey soil rock as shown against th case, complete as per wing and technical cifications. Depth of king is reckoned from bed					
		Uni	t = Running Meter					
		Tak	ing output = 1 m					
		Dia	meter of well - 6 m.					
	Α		dy Soil					
	(i)	De _l 3.0	pth below bed level upto					
			e of sinking = 0.50 m per					
		a)	Labour					
		-,	Mate	day	0.160	0.160	0.160	
			Sinker (skilled)	day	1.330	1.330	1.330	
			Sinking helper (semi- skilled)	day	2.660	2.660	2.660	
		b)	Machinery					
		·	Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	2.000	2.000	2.000	
			Consumables in sinking					
		دء	@10 Percent of (b)		@ ~~ /-·!-\	@ cm/cits	@ am (= : E)	
		c) d)	Overhead charges Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category	Ra
31 140	Kei. to ivi	Description	Oilit	Large	Medium	Small	(Rs
12.12 A	/::\	Beyond 3m upto 10m depth					
12.12 A	(ii)	Rate of sinking = 0.33 m per					
		hour.					
		a) Labour					
		Mate	day	0.200	0.200	0.200	
			day	0.200	0.200	0.200	
		Sinker	day	1.663	1.663	1.663	
		Sinking helper (semi- skilled)	day	3.325	3.325	3.325	
		b) Machinery					
			h	2.000	2.000	2.000	
		Hire & running charges of	hour	3.000	3.000	3.000	
		crane with grab bucket of					
		0.75 cum capacity and accessories					
		Consumables in sinking					
		@10 Percent of (b)					
				@ on (a+b)	@ on (a+b)	@ on (a+b)	
		c) Overhead charges					
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.12 A	(iii)	Beyond 10m upto 20m					
	(, a	Add 5 Percent for every					
	ŭ	additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
12.12 A	(iv)	Beyond 20m upto 30 m					
	a	Add 7.5 Percent for every					
	a	additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
	b	Add 20 Percent of cost for					
	-	Kentledge including supports,					
		loading arrangement and					
		Labour.					
12.12 A	(v)	Beyond 30m upto 40 m					
	а	Add 10 Percent for every					
		additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
	b	Add 20 Percent of cost for					
		Kentledge including supports,					
		loading arrangement and					
		Labour.					
	_						
12.12	В	Clayey Soil (6m dia. Well)					
		Unit = Running Meter.					
		Taking output = 1 meter					
	(i)	Depth below bed level upto					
		3.0 M					
		Rate of sinking = 0.33 m per					
		hour.					
		a) Labour					
		Mate	day	0.200	0.200	0.200	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sumer Commed I	au v	±	±		

Cm NI =	Dof to M	Description	11414	Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories Consumables in sinking	hour	3.000	3.000	3.000	
		@ 10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit Rate per metre = (a+b+c+d)		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		(a a a a,					
12.12 B	(ii)	Beyond 3m upto 10m depth Rate of sinking = 0.17 m per hour.					
		a) Labour					
		Mate	day	0.399	0.399	0.399	
		Sinker	day	3.990	3.990	3.990	
		Sinking helper (semi- skilled)	day	5.985	5.985	5.985	
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	
		Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @	hour	2.000	2.000	2.000	
		10 Percent of (b)					
		c) Overhead chargesd) Contractor's profitRate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.12 B	(iii) a b	Beyond 10 m upto 20 m Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter Add for dewatering @ 5					
		Percent of cost, if required.					
12.12 B	(iv) a	Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for dewatering of the cost, if required					

Rate (Rs.)

				Quantity	y as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
	c	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).				
12.12 B	(v)	Beyond 30m upto 40 m				
	а	Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter				
	b	Add 5 Percent of cost for dewatering, if required				
	С	Add 20 Percent of cost for				
		Kentledge including supports, loading arrangement and Labour)				
12.12	c	Extra over item no. 12.12 (A) or (B) irrespective of depth for sinking in Soft Rock (6m dia well) Unit = Running Meter Taking output = 1 m				
		a) Labour				
		Mate	day	0.652	0.645	0.645
		Sinker (skilled) Sinking helper (semi-	day	1.995	1.995	1.995
		skilled)	day	2.993	2.993	2.993
		Diver	day	0.665	0.500	0.500
		Mazdoor b) Machinery	day	10.640	10.640	10.640
		Air Compressor 250 cfm	hour	28.274	28.274	28.274
		Pneumatic breaker Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of 15 Percent of (a+b), if required	hour	56.549	56.549	56.549
		Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit Rate per metre = (a+b+c+d)		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
12.12	D	Extra over item no. 12.12 (A) or (B) irrespective of depth for sinking in Hard Rock (6m dia well) Unit = Running Meter Taking output = 1 m				

Sr No Ref. to M			- · · ·		Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Material					
			Small dia.Explosive at	kg	5.655	5.655	5.655	
			0.20 kg / cum		25.000	25.000	25.000	
			Electric detonators	no	25.000	25.000	25.000	
			Detonating fuse coil	m	78.000	78.000	78.000	
		b)	Labour					
			Mate	day	0.665	0.665	0.665	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Driller	day	2.660	2.660	2.660	
			Blaster	day	0.333	0.333	0.333	
			Mazdoor	day	7.980	7.980	7.980	
		c)	Machinery					
			Air Compressor 250 cfm	hour	26.590	26.590	26.590	
			Pneumatic breaker	hour	22.619	22.619	22.619	
			Pneumatic breaker for	hour	14.561	14.561	14.561	
			drilling holes (@ 4.5 m					
			per hour)					
			Consumables in					
			protected blasting @ 10					
			Percent of (c)					
			Add for dewatering @ of					
			15 Percent of (a+b+c), if					
			required					
			Additional Hire & running	hour	3.000	3.000	3.000	
			charges for shifting of					
			crane (rock breaking					
			time) with grab bucket of					
			0.75 cum capacity and					
		۹/	accessories.		@ on (oubje)	@ on/orbio	@ on (oubje)	
		d)	Overhead charges			@ on (a+b+c)	-	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per metre = (a+b+c+d+e)		(атытсти)	(атытсти)	(атртсти)	
12.12	E		ra over item no. 12.12 (A)					
			B) irrespective of depth for					
			king in rock bouldery strata					
		-	n dia well)					
			t = Running Meter.					
			ring output = 1 m					
		a)	Labour			o =	c	
			Mate	day	0.545	0.545	0.545	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Mazdoor	day	7.980	7.980	7.980	
		b)	Machinery					
			Air Compressor 250 cfm	hour	47.124	47.124	47.124	

Sr No	Ref. to M		Description	Unit	Quantity	y as per project		ļ
J. 140	Nei. to IVI		Description	J.111	Large	Medium	Small	
			Pneumatic breaker Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of	hour	94.248	94.248	94.248	
			15 Percent of (a+b), if required					
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate	e per metre = (a+b+c+d)					
12.13	Section 1200	diar pne thro nam and each draw spec sink leve Unit	king of 7 m external meter well (other than umatic method of sinking) ough all types of strata nely sandy soil, clayey soil rock as shown against th case, complete as per wing and technical cifications. Depth of king is reckoned from bed el. t = Running Meter. ing output = 1 m meter of well - 7 m.					
	Α		dy Soil					
	(i)		oth below bed level upto					
		Rate hou	e of sinking = 0.30 m per r.					
		a)	Labour	ماد	0.300	0.300	0.200	
			Mate Sinker (skilled)	day day	0.200 1.663	0.200 1.663	0.200 1.663	
			Sinking helper (semi- skilled)	day	3.325	3.325	3.325	
		b)	Machinery					
		~ <i>j</i>	Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	3.250	3.250	3.250	
			Consumables in sinking @10 Percent of (b)					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit			@ on (a+b+c)		
		-	e per metre = (a+b+c+d)		- , - 7		/	

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category
31 140	Kei. to ivi	Description	Oilit	Large	Medium	Small
2 12 4	(::)	Beyond 3m upto 10m depth				
2.13 A	(ii)	Rate of sinking = 0.22 m per				
		hour.				
		a) Labour				
		Mate	day	0.239	0.239	0.239
		Sinker				
		Sinking helper (semi-	day	1.995	1.995	1.995
		skilled)	day	3.990	3.990	3.990
		b) Machinery				
		Hire & running charges of	hour	4.500	4.500	4.500
		crane with grab bucket of		4.500	4.500	4.500
		0.75 cum capacity and				
		accessories.				
		Consumables in sinking				
		@10 Percent of (b)				
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit			@ on (a+b+c)	
		Rate per metre = (a+b+c+d)		C 1 (1 1 1)	C - (C 1 (1 1 1)
2.13 A	(iii)	Beyond 10m upto 20m				
2.15 A		Add 5 Percent for every				
	а	additional meter depth of				
		sinking over the rate of sinking				
		for the previous meter				
2.13 A	(iv)	Beyond 20m upto 30 m				
	а	Add 7.5 Percent for every				
		additional meter depth of				
		sinking over the rate of sinking				
		for the previous meter				
	b	Add 20 Percent of cost for				
		Kentledge including supports,				
		loading arrangement and Labour).				
		•				
2.13 A	(v)	Beyond 30m upto 40 m				
	а	Add 10 Percent for every additional meter depth of				
		sinking over the rate of sinking				
		for the previous meter				
	b	Add 20 Percent of cost for	•			
	, and the second	Kentledge including supports				
		loading arrangement, and				
		Labour etc.				
12.13	В	Clayey Soil (7m dia. Well)				
12.13	В					
12.13	В	Unit = Running Meter.				
12.13		Unit = Running Meter. Taking output = 1 cum				
12.13	B (I)	Unit = Running Meter. Taking output = 1 cum Depth below bed level upto				
12.13		Unit = Running Meter. Taking output = 1 cum Depth below bed level upto 3.0 M				
12.13		Unit = Running Meter. Taking output = 1 cum Depth below bed level upto 3.0 M Rate of sinking = 0.22 m per				
12.13		Unit = Running Meter. Taking output = 1 cum Depth below bed level upto 3.0 M				
12.13		Unit = Running Meter. Taking output = 1 cum Depth below bed level upto 3.0 M Rate of sinking = 0.22 m per hour.	day	0.239	0.239	0.239

Cu No	Dof to M	Description	11	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
		Sinking helper (semi- skilled) b) Machinery	day	3.990	3.990	3.990	
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking		4.500	4.500	4.500	
		@ 10 Percent of (b)					
		d) Overhead chargese) Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Rate per metre = (a+b+c+d)		,	, ,	,	
12.13 B	(ii)	Beyond 3m upto 10m depth Rate of sinking = 0.17 m per hour. a) Labour					
		Mate	day	0.319	0.319	0.319	
		Sinker	day	2.660	2.660	2.660	
		Sinking helper (semi- skilled) b) Machinery	day	5.320	5.320	5.320	
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.		6.000	6.000	6.000	
		Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 Percent of (b)		3.250	3.250	3.250	
		c) Overhead chargesd) Contractor's profitRate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.13 B	(iii) a	Beyond 10 m upto 20 m Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add for dewatering @ 5 Percent of cost, if required.					
12.13 B	(iv) a	Beyond 20m upto 30 m Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking					
	b	for the previous meter Add 5 Percent of cost for dewatering on the cost, if required					

Rate (Rs.)

				Quantity	as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
	С	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).		, ,		
12.13 B	(v)	Beyond 30m upto 40 m				
	a	Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter				
	b	Add 5 Percent of cost for dewatering, if required				
	С	Add 20 Percent of cost for				
		Kentledge including supports, loading arrangement and Labour).				
12.13	С	Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in Soft Rock (7m dia well) Unit = Running Meter.				
		Taking output = 1 m				
		a) Labour				
		Mate	day	0.758	0.758	0.758
		Sinker (skilled)	day	1.995	1.995	1.995
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993
		Diver	day	0.665	0.665	0.665
		Mazdoor	day	13.300	13.300	13.300
		b) Machinery Air Compressor 250 ofm	سيمط	20 405	20.405	20.405
		Air Compressor 250 cfm Pneumatic breaker	hour hour	38.485 76.969	38.485 76.969	38.485 76.969
		Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of 15 Percent of (a+b), if required				
		Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000
		c) Overhead chargesd) Contractor's profitRate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)
12.13	D	Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in Hard Rock (7m dia well) Unit = Running Meter Taking output = 1 m				

She No Ner. to w Description Onit Large Medium Small (Rs.)	C. N.	D-f +- 14		Description	11!4	Quantit	y as per project	category	Rate
Small dia_Explosive at 0.20 kg / cum	Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
Small dia_Explosive at 0.20 kg / cum									
0.20 kg / cum Electric detonators no 36.000 36.000 36.000 112.000			a)						
Electric detonators no 36.000 36.000 36.000 112.000 12.000					kg	7.697	7.697	7.697	
Detonating fuse coil Mate Labour Mate Labour Mate Labour La				=	no	26,000	26,000	26,000	
b) Labour Mate day 0.771 0.778 0									
Mate			b)	-	111	112.000	112.000	112.000	
Sinker (skilled)			IJ,		day	0.771	0.771	0.771	
Sinking helper (semi-skilled)									
Skilled Diver									
Driller Blaster day 2.660 2.660 2.660 3.33 0.3									
Blaster Mazdoor Machinery Marchinery				Diver					
Machinery				Driller	=				
C Machinery				Blaster					
Air Compressor 250 cfm Pneumatic breaker Pneumatic breaker Pneumatic breaker for drillling holes (@ 4.5 m per hour) Consumables in protected blasting @ 10 Percent of (a) Add for dewatering @ of 15 Percent of (a+b+c), if required Additional Hire & running charges for shifting of 10 Portactor's profit Rate per metre = (a+b+c+d+e) 12.13 E Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in rock bouldery strata (7m dia well) Unit = Running Meter. Taking output = 1 m a) Labour Mate day 0.652 0.652 0.652 0.652 Sinker (skilled) Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semi-skilled) Diver day 0.665 0.665 0.665 0.665					day	10.640	10.640	10.640	
Pneumatic breaker I 9.820 19.820			c)			.			
Pneumatic breaker for drilling holes (@ 4.5 m per hour)				•					
drilling holes (@ 4.5 m per hour)									
Consumables in protected blasting @ 10 Percent of (c) Add for dewatering @ of 15 Percent of (a+b+c), if required Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. d) Overhead charges e) Contractor's profit Rate per metre = (a+b+c+d+e) 12.13 E Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in rock bouldery strata (7m dia well) Unit = Running Meter. Taking output = 1 m a) Labour Mate Sinker (skilled) Sinking helper (semiskilled) Diver day 0.665 0.665 0.665				drilling holes (@ 4.5 m	hour	19.820	19.820	19.820	
15 Percent of (a+b+c), if required Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. d) Overhead charges e) Contractor's profit Rate per metre = (a+b+c+d+e) 12.13 E Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in rock bouldery strata (7m dia well) Unit = Running Meter. Taking output = 1 m a) Labour Mate Sinker (skilled) Sinking helper (semiskilled) Diver day 0.665 0.665 0.665				Consumables in protected blasting @ 10					
Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. Additional Hire & running of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. Additional Hire & running of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. Additional Hire & running of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. Additional Hire & running of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. Additional Hire & running of crane (rock bucket of 0.75 cum capacity and accessories. Additional Hire & running on (a+b+c)				Add for dewatering @ of 15 Percent of (a+b+c), if					
Accessories. Adj Overhead charges Overhead				Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of	hour	3.000	3.000	3.000	
d) Overhead charges									
e) Contractor's profit			d)			@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
12.13 E Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in rock bouldery strata (7m dia well) Unit = Running Meter. Taking output = 1 m a) Labour Mate day 0.652 0.652 0.652 Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semiskilled) day 2.993 2.993 2.993 skilled) Diver day 0.665 0.665 0.665			-	=		@ on	@ on	@ on	
or (B) irrespective of depth for sinking in rock bouldery strata (7m dia well) Unit = Running Meter. Taking output = 1 m a) Labour Mate day 0.652 0.652 0.652 Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semiday 2.993 2.993 2.993 skilled) Diver day 0.665 0.665 0.665			Rat	e per metre = (a+b+c+d+e)					
Taking output = 1 m a) Labour Mate day 0.652 0.652 0.652 Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semiskilled) day 2.993 2.993 skilled) Diver day 0.665 0.665 0.665	12.13	E	or (sinl (7m	B) irrespective of depth for king in rock bouldery strata n dia well)					
a) Labour Mate day 0.652 0.652 0.652 Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semi- day 2.993 2.993 2.993 skilled) Diver day 0.665 0.665 0.665				-					
Mate day 0.652 0.652 0.652 Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semi-skilled) day 2.993 2.993 2.993 Diver day 0.665 0.665 0.665				= -					
Sinker (skilled) day 1.995 1.995 1.995 Sinking helper (semi-skilled) day 2.993 2.993 2.993 Diver day 0.665 0.665 0.665			a)		J.	0.653	0.653	0.653	
Sinking helper (semi- day 2.993 2.993 2.993 skilled) day 0.665 0.665 0.665					=				
skilled) Diver day 0.665 0.665 0.665									
					aay	2.993	2.993	2.993	
Mazdoor day 10.640 10.640 10.640				Diver	day	0.665	0.665	0.665	
				Mazdoor	day	10.640	10.640	10.640	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category
J. 110	1.61. 60 141		Sescription	J	Large	Medium	Small
		L۱	Machinan				
		b)	Machinery Air Compressor 250 cfm	hour	64.141	64.141	64.141
			Pneumatic breaker	hour	128.282	128.282	128.282
			Consumables in sinking				110.101
			@ 5 Percent of (b)				
			Add for dewatering @ of				
			15 Percent of (a+b), if				
			required Additional Hire & running	hour	3.000	3.000	3.000
			charges for shifting of	Hour	3.000	3.000	3.000
			crane (rock breaking				
			time) with grab bucket of				
			0.75 cum capacity and accessories.				
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d)	Contractor's profit			@ on (a+b+c)	
		-	e per metre = (a+b+c+d)		, ,	, ,	. ,
12.14	Section 1200		king of 8 m external				
			meter well (other than				
		-	umatic method of sinking) ough all types of strata				
			nely sandy soil, clayey soil				
			rock as shown against				
			h case, complete as per				
			wing and technical				
		-	cifications. Depth of ing is reckoned from bed				
		leve	_				
		Unit	t = Running Meter.				
		Taki	ing output = 1 m				
		Diar	meter of well - 8 m.				
	Α	San	dy Soil				
	(i)	-	oth below bed level upto				
		3.0					
			e of sinking @ 0.25 m/hour				
		a)	Labour	day	0.220	0.220	0.220
			Mate Sinker (skilled)	day	0.239 1.995	0.239 1.995	0.239 1.995
			Sinker (skilled) Sinking helper (semi-	day day	3.990	1.995 3.990	3.990
			skilled)	uay	3.330	3.330	3.330
		b)	Machinery				
		-	Hire & running charges of	hour	4.000	4.000	4.000
			crane with grab bucket of				
			0.75 cum capacity and				
			accessories.				
			Consumables in sinking @10 Percent of (b)				
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category	R
31 140	Kei. to ivi	Description	Onit	Large	Medium	Small	(1
2444	/::\	David and an out of the david					
2.14 A	(ii)	Beyond 3m upto 10m depth					
		Rate of sinking @ 0.20 m/hour					
		a) Labour	_				
		Mate	day	0.279	0.279	0.279	
		Sinker	day	2.328	2.328	2.328	
		Sinking helper (semi- skilled)	day	4.655	4.655	4.655	
		b) Machinery					
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	5.000	5.000	
		Consumables in sinking					
		@10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
l2.14 A	(iii)	Beyond 10m upto 20m					
	а	Add 5 Percent for every					
		additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
12.14 A	(iv)	Beyond 20m upto 30 m					
	а	Add 7.5 Percent for every					
		additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
	b	Add 20 Percent of cost for					
		Kentledge including supports,					
		loading arrangement and					
		Labour.					
L2.14 A	()	Beyond 30m upto 40 m					
12.14 A	(v) a	Add 10 Percent for every					
	a	additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
	b	Add 20 Percent of cost for					
	b	Kentledge including supports,					
		loading arrangement, and					
		Labour etc.					
12.14	В	Clayov Soil / 9m dia Mall \					
12.14	Ь	Clayey Soil (8m dia. Well)					
		Unit = Running Meter.					
	<i>(</i> :)	Taking output = 1 meter					
	(i)	Depth from bed level upto					
		3.0 M					
		Rate of sinking @ 0.18 m/hour					
		a) Labour	۔ اے	0.303	0.303	0.303	
		Mate	day	0.293	0.293	0.293	
		Sinker (skilled)	day	2.660	2.660	2.660	
		Sinking helper (semi-	hour	4.655	4.655	4.655	
		skilled)					

Cr. N	Dof to M	Description:	11	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.		5.500	5.500	5.500	
		Consumables in sinking @ 10 Percent of (b) c) Overhead charges d) Contractor's profit Rate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.14 B	(ii)	Beyond 3m upto 10m depth					
		Rate of sinking @ 0.17 m/hour					
		a) Labour		0.070	0.070	0.070	
		Mate	day	0.372	0.372	0.372	
		Sinker	day	3.325	3.325	3.325	
		Sinking helper (semi- skilled) b) Machinery	day	5.985	5.985	5.985	
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	
		Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking @ 10 Percent of (b)	hour	3.500	3.500	3.500	
		c) Overhead charges d) Contractor's profit Rate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.14 B	(iii)	Beyond 10 m upto 20 m					
	a	Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add for dewatering @ 5 Percent of cost, if required.					
12.14 B	(iv) a	Beyond 20m upto 30 m Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking					
	b	for the previous meter Add 5 Percent of cost for dewatering on the cost, if required					
	c	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).					

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category
31 140	Kei. to ivi	Description	Oiiit	Large	Medium	Small
2.14 B	(v)	Beyond 30m upto 40 m				
	(v)	Add 10 Percent for every	,			
	u	additional meter depth of				
		sinking over the rate of sinking				
		for the previous meter				
	b	Add 5 Percent of cost for				
	-	dewatering, if required				
	С	Add 20 Percent of cost for				
		Kentledge including supports,				
		loading arrangement and				
		Labour).				
12.14	С	Extra over item no. 12.14 (A)				
		or (B) irrespective of depth for				
		sinking in Soft Rock (8 m dia				
		well)				
		Unit = Running Meter.				
		Taking output = 1 m				
		a) Labour				
		Mate	day	0.865	0.865	0.865
		Sinker (skilled)	day	1.995	1.995	1.995
		Sinking helper (semi-	day	2.993	2.993	2.993
		skilled)				
		Diver	day	0.665	0.665	0.665
		Mazdoor	day	15.960	15.960	15.960
		b) Machinery				
		Air Compressor 250 cfm	hour	50.265	50.265	50.265
		Pneumatic breaker	hour	100.531	100.531	100.531
		Consumables in sinking				
		@ 5 Percent of (b)				
		Add for dewatering @ of				
		15 Percent of (a+b), if				
		required				
		Additional Hire & running		3.000	3.000	3.000
		charges for shifting of				
		crane (rock breaking				
		time) with grab bucket of 0.75 cum capacity and				
		accessories.				
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit			@ on (a+b+c)	
		Rate per metre = (a+b+c+d)		@ On (a+b+c)	@ On (a+b+c)	@ On (a+b+c)
		nate per metre - (arbiera)				
12.14	D	Extra over item no. 12.14 (A)				
		or (B) irrespective of depth for				
		sinking in Hard Rock (8 m dia				
		well)				
		Unit = Running Meter				
		Taking output = 1 m				
		a) Material				
		Small dia.Explosive at	kg	10.053	10.053	10.053
		0.20 kg / cum		_	_	_
		Electric detonators	no	50.000	50.000	50.000
		Detonating fuse coil		155.000	155.000	155.000

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	R
31 140	Kei. to W		Description	Oiiit	Large	Medium	Small	(
		b)	Labour					
			Mate	day	0.878	0.878	0.878	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Driller	day	2.660	2.660	2.660	
			Blaster	day	0.333	0.333	0.333	
			Mazdoor	day	13.300	13.300	13.300	
		c)	Machinery					
			Air Compressor 250 cfm	hour	41.050	41.050	41.050	
			Pneumatic breaker	hour	40.212	40.212	40.212	
			Pneumatic breaker for drilling holes (@ 4.5 m per hour) Consumables in protected blasting @ 10 Percent of (c)	hour	25.887	25.887	25.887	
			Add for dewatering @ of 15 Percent of (a+b+c), if required Additional Hire & running charges for shifting of	hour	3.000	3.000	3.000	
			crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.					
		d)	Overhead charges				@ on (a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		Rat	e per metre = (a+b+c+d+e)		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
12.14	E	& (I sinl (8 n Uni	ra over item no. 12.14 (A) B) irrespective of depth for king in rock bouldery strata in dia well) t = Running Meter. ing output = 1 m					
		a)	Labour					
			Mate	day	0.758	0.758	0.758	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
		b)	Mazdoor Machinery	day	13.300	13.300	13.300	
		-	Air Compressor 250 cfm	hour	83.776	83.776	83.776	
			Pneumatic breaker Consumables in sinking	hour	167.552	167.552	167.552	

Sr No	Ref. to M	Description	Unit	Quantit	y as per project	category	Rate
31 140	Rei. to Wi	Description	Oilit	Large	Medium	Small	(Rs.)
		Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. c) Overhead charges d) Contractor's profit	hour	3.000 @ on (a+b) @ on (a+b+c)	3.000 @ on (a+b) @ on (a+b+c)	3.000 @ on (a+b) @ on (a+b+c)	
		Rate per metre = (a+b+c+d)		e on (a bic)	e on (arbic)	e on (arbic)	
12.15	Section 1200 A (i)	Sinking of 9 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. Unit = Running Meter. Taking output = 1 m Diameter of well - 9 m. Sandy Soil Depth below bed level upto 3.0 M Rate of sinking @ 0.25 m/hour					
		a) Labour					
		Mate	day	0.253	0.253	0.253	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled) b) Machinery	day	4.323	4.323	4.323	
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @10 Percent of (b)	hour	4.000	4.000	4.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.15 A	(ii)	Beyond 3m upto 10m depth Rate of sinking @ 0.18 m/hour a) Labour					
		Mate	day	0.306	0.306	0.306	
		Sinker	day	2.328	2.328	2.328	
		Sinking helper (semi-	day	5.320	5.320	5.320	
		skilled)	,				

				Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
•			•				
		b) Machinery					
		Hire & running charges of	hour	5.500	5.500	5.500	
		crane with grab bucket of					
		0.75 cum capacity and accessories.					
		Consumables in sinking					
		@10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.15 A	(iii)	Beyond 10m upto 20m					
	а	Add 5 Percent for every					
		additional meter depth of					
		sinking over the rate of sinking					
12.15 A	(iv)	for the previous meter Beyond 20m upto 30 m					
12.15 A	a (IV)	Add 7.5 Percent for every					
	u	additional meter depth of					
		sinking over the rate of sinking					
		for the previous meter					
	b	Add 20 Percent of cost for					
		Kentledge including supports, loading arrangement and					
		Labour.					
12.15 A	(v)	Beyond 30m upto 40 m					
	а	Add 10 Percent for every					
		additional meter depth of					
		sinking over the rate of sinking for the previous meter					
	b	Add 20 Percent of cost for					
	-	Kentledge including supports,					
		loading arrangement, and					
		Labour etc.					
12.15	В	Clayey Soil (9m dia. Well)					
		Unit = Running Meter.					
		Taking output = 1 cum					
	(i)	Depth below bed level upto 3.0 M					
		Rate of sinking 0.17 m / hour					
		a) Labour					
		Mate	day	0.319	0.319	0.319	
		Sinker (skilled)	day	2.993	2.993	2.993	
		Sinking helper (semi- skilled)	day	4.988	4.988	4.988	
		b) Machinery					
		Hire & running charges of	hour	5.750	5.750	5.750	
		crane with grab bucket of					
		0.75 cum capacity and accessories.					
		Consumables in sinking					
		· · · · · · · · · · · · · · · · ·					

				Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		@ 10 Percent of (b) c) Overhead charges d) Contractor's profit Rate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.15 B	(ii)	Beyond 3m upto 10m depth					
	` ,	Rate of sinking 0.15 m / hour					
		a) Labour					
		Mate	day	0.399	0.399	0.399	
		Sinker	day	3.325	3.325	3.325	
		Sinking helper (semi-	day	6.650	6.650	6.650	
		skilled) b) Machinery	<i>aa</i> ,	0.000	0.000	0.000	
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	6.500	6.500	
		Air compressor with pneumatic chisel attachment for cutting hard clay. Consumables in sinking	hour	3.750	3.750	3.750	
		@ 10 Percent of (b)					
		c) Overhead charges d) Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.15 B	(iii) a b	Beyond 10 m upto 20 m Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter Add for dewatering @ 5					
	~	Percent of cost, if required.					
12.15 B	(iv)	Beyond 20m upto 30 m					
	a	Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for dewatering on the cost, if required					
	С	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).					
12.15 B	(v)	Beyond 30m upto 40 m					
	a	Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					

C:: N -	D-f +- N4	Description	11!4	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	b	Add 5 Percent of cost for					
		dewatering, if required					
	С	Add 20 Percent of cost for					
		Kentledge including supports,					
		loading arrangement and					
42.45	•	Labour).					
12.15	С	Extra over item no. 12.15 (A) or (B) irrespective of depth for					
		sinking in Soft Rock (9 m dia					
		well)					
		Unit = Running Meter.					
		Taking output = 1 m					
		a) Labour					
		Mate	day	0.971	0.971	0.971	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi-	day	2.993	2.993	2.993	
		skilled)	1				
		Diver	day	0.665	0.665	0.665	
		Mazdoor	day	18.620	18.620	18.620	
		b) Machinery	•				
		Air Compressor 250 cfm	hour	63.617	63.617	63.617	
		Pneumatic breaker	hour	127.235	127.235	127.235	
		Consumables in sinking					
		@ 5 Percent of (b)					
		Add for dewatering @ of					
		15 Percent of (a+b), if					
		required					
		Additional Hire & running	hour	3.000	3.000	3.000	
		charges for shifting of					
		crane (rock breaking					
		time) with grab bucket of 0.75 cum capacity and					
		accessories.					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit			@ on (a+b+c)		
		Rate per metre = (a+b+c+d)		C 011 (4 14 15)	C 011 (21210)	e on (avair)	
		. , ,					
12.15	D	Extra over item no. 12.15 (A)					
		or (B) irrespective of depth for					
		sinking in Hard Rock (9 m dia					
		well)					
		Unit = Running Meter					
		Taking output = 1 m					
		a) Material					
		Small dia.Explosive at	kg	12.723	12.723	12.723	
		0.20 kg / cum		a	a= a==	a= a==	
		Electric detonators	no	65.000	65.000	65.000	
		Detonating fuse coil	m	202.000	202.000	202.000	
		b) Labour		0.004	0.004	0.001	
		Mate	day	0.984	0.984	0.984	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi-	day	2.993	2.993	2.993	
		skilled)					

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Diver	day	0.665	0.665	0.665	
			Driller	day	2.660	2.660	2.660	
			Blaster	day	0.333	0.333	0.333	
			Mazdoor	day	15.960	15.960	15.960	
		c)	Machinery					
			Air Compressor 250 cfm	hour	49.828	49.828	49.828	
			Pneumatic breaker	hour	50.894	50.894	50.894	
			Pneumatic breaker for drilling holes (@ 4.5 m per hour)	hour	32.763	32.763	32.763	
			Consumables in protected blasting @ 10 Percent of (c)					
			Add for dewatering @ of 15 Percent of (a+b+c), if required					
			Additional Hire & running charges for shifting of crane (rock breaking	hour	3.000	3.000	3.000	
			time) with grab bucket of 0.75 cum capacity and accessories.					
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Rate	e per metre = (a+b+c+d+e)		. ,	, ,	, ,	
12.15	E	or (I sink (9 m <i>Unit</i>	ra over item no. 12.15 (A) B) irrespective of depth for sing in rock bouldery strata in dia well) t = Running Meter. ing output = 1 m					
		a)	Labour					
			Mate	day	0.865	0.865	0.865	
			Sinker (skilled) Sinking helper (semi- skilled)	day day	1.995 2.993	1.995 2.993	1.995 2.993	
			Diver	day	0.665	0.665	0.665	
		b)	Mazdoor Machinery	day	15.960	15.960	15.960	
			Air Compressor 250 cfm	hour	106.029	106.029	106.029	
			Pneumatic breaker Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of	hour	212.058	212.058	212.058	
			15 Percent of (a+b), if					
			required Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and	hour	3.000	3.000	3.000	
			accessories.					

				Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		c) Overhead charges d) Contractor's profit Rate per metre = (a+b+c+d)	,	@ on (a+b)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.16	1200	Sinking of 10 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.					
		Unit = Running Meter					
		Taking output = 1 m					
	^	Diameter of well - 10 m.					
	A (i)	Sandy Soil Depth below bed level upto 3.0 M					
		Rate of sinking 0.20 m / hour					
		a) Labour					
		Mate	day	0.266	0.266	0.266	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	4.655	4.655	4.655	
		hi) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	5.000	5.000	
		Consumables in sinking @10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.16 A	(ii)	Beyond 3m upto 10m depth					
		Rate of sinking 0.17 m / hour					
		a) Labour	-1	0.222	0.222	0.222	
		Mate	day day	0.333 2.660	0.333 2.660	0.333 2.660	
		Sinker	· ·	5.653	5.653	5.653	
		Sinking helper (semi- skilled) b) Machinery	day	5.055	3.033	3.033	
		 b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @10 Percent of (b) 		5.750	5.750	5.750	

				Quantity	, as per project	category	Ra
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(F
		c) Overhead charges d) Contractor's profit Rate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.16 A	(iii) a	Beyond 10m upto 20m Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
12.16 A	(iv) a	Beyond 20m upto 30 m Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 20 Percent of cost for Kentledge including supports, loading arrangement and Labour.					
12.16 A	(v) a	Beyond 30m upto 40 m Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 20 Percent of cost for Kentledge including supports, loading arrangement, and Labour etc.					
12.16	В	Clayey Soil (10m dia. Well) Unit = Running Meter Taking output = 1 cum					
	(i)	Depth below bed level upto 3.0 M					
		Rate of sinking 0.18m/hour.					
		a) Labour	d	0.426	0.426	0.426	
		Mate Sinker (skilled)	day day	0.426 3.325	0.426 3.325	0.426 3.325	
		Sinking helper (semi-	day	7.315	7.315	7.315	
		skilled) b) Machinery	,				
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @ 10 Percent of (b)	hour	6.000	6.000	6.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+h+c)	@ on (a+b+c)	@ on (a+h+c)	

Sr No	Ref. to M	Description	Unit	Quantit	y as per project	category	Rate
Sr NO	Kei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
42.46 B	/::\	Barrard 200 contact 1000 deputh					
12.16 B	(ii)	Beyond 3m upto 10m depth Rate of sinking 0.15m/hour.					
		a) Labour					
		Mate	day	0.452	0.452	0.452	
		Sinker	day	3.990	3.990	3.990	
		Sinking helper (semi-	day	7.315	7.315	7.315	
		skilled)	aay	7.313	7.515	7.313	
		b) Machinery	h	6.000	6.000	C 000	
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	
		Air compressor with pneumatic chisel attachment for cutting hard clay Consumables in sinking	hour	4.000	4.000	4.000	
		@ 10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit			@ on (a+b+c)		
		Rate per metre = (a+b+c+d)					
12.16 B	(iii)	Beyond 10 m upto 20 m					
	а	Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add for dewatering @ 5 Percent of cost, if required.					
12.16 B	(iv) a	Beyond 20m upto 30 m Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for dewatering on the cost, if required					
	С	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).					
12.16 B	(v) a	Beyond 30m upto 40 m Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for					
	С	dewatering, if required Add 20 Percent of cost for Kentledge including supports, loading arrangement and Labour).					

				Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
12.16	С	Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in Soft Rock (10 m dia well) Unit = Running Meter.					
		Taking output = 1 m					
		a) Labour					
		Mate	day	1.077	1.077	1.077	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		Diver	day	0.665	0.665	0.665	
		Mazdoor	day	21.280	21.280	21.280	
		b) Machinery					
		Air Compressor 250 cfm	hour	78.540	78.540	78.540	
		Pneumatic breaker Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of 15 Percent of (a+b), if required	hour	157.080	157.080	157.080	
		Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.		3.000	3.000	3.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.16	D	Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in Hard Rock (10 m dia well) Unit = Running Meter Taking output = 1 m a) Material					
		Small dia.Explosive at 0.20 kg / cum	kg	15.708	15.708	15.708	
		Electric detonators	no	82.000	82.000	82.000	
		Detonating fuse coil b) Labour	m	255.000	255.000	255.000	
		Mate	day	1.091	1.091	1.091	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		Diver	day	0.665	0.665	0.665	
		Driller	day	2.660	2.660	2.660	
		Blaster	day	0.333	0.333	0.333	
		Mazdoor	day	18.620	18.620	18.620	

C:: No	Def to M		Description	l lada	Quantity	as per project	category
Sr No	Ref. to M		Description	Unit	Large	Medium	Small
		c)	Machinery	h aa	E0 C40	FO C40	FO C40
			Air Compressor 250 cfm	hour	59.640	59.640	59.640
			Pneumatic breaker	hour	62.832	62.832	62.832
			Pneumatic breaker for drilling holes (@ 4.5 m per hour)	hour	40.448	40.448	40.448
			Consumables in protected blasting @ 10 Percent of (c)				
			Add for dewatering @ of 15 Percent of (a+b+c), if required				
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)
		Rat	e per metre = (a+b+c+d+e)		,	, ,	,
12.16	E	or (sink (10 Uni	ra over item no. 12.16 (A) B) irrespective of depth for king in rock bouldery strata m dia well) t = Running Meter.				
			ing output = 1 m				
		a)	Labour				
			Mate	day	0.971	0.971	0.971
			Sinker (skilled)	day	1.995	1.995	1.995
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993
			Diver	day	0.665	0.665	0.665
		b)	Mazdoor Machinery	day	18.620	18.620	18.620
		υj	Air Compressor 250 cfm	hour	130.900	130.900	130.900
			Pneumatic breaker	hour	261.799	261.799	261.799
			Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of 15 Percent of (a+b), if required	noui	201.733	201.733	201.733
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		-			-	@ on (a+b+c)	
		d)	Contractor's profit		e on (a bic)	e on (arbic)	@ Uli (a+b+c)

Sr No	Ref. to M	Description		Quantity as per project category			Rate
	Rei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
12.17 1	1200	Sinking of 11 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. Unit = Running Meter Taking output = 0.50 m Diameter of well - 11 m.					
	Α	Sandy Soil					
	(i)	Depth from bed level upto 3.0					
		M					
		Rate of sinking @ 0.15 m/hour a) Labour					
		Mate	day	0.255	0.255	0.255	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi-	day	4.389	4.389	4.389	
		skilled)	•				
		b) Machinery					
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @10 Percent of (b)	hour	6.000	6.000	6.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for $0.5m = a+b+c+d$ Rate per metre = $(a+b+c+d)/0.5$	٠.				
		Kate per metre = (a+b+c+d)/0.5	O				
12.17 A	(ii)	Beyond 3m upto 10m depth Rate of sinking @ 0.13 m/hour a) Labour					
		Mate	day	0.346	0.346	0.346	
		Sinker	day	2.660	2.660	2.660	
		Sinking helper (semi- skilled)	day	5.985	5.985	5.985	
		b) Machinery					
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories. Consumables in sinking @10 Percent of (b)	hour	4.000	4.000	4.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit Cost for 0.5m = a+b+c+d Rate per metre = (a+b+c+d)/0.5	60	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	

Sr No	Pof to M	Doscrintian	Hait	Quantity	as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
l2.17 A	(iii)	Dayland 10m unto 20m				
12.17 A	• •	Beyond 10m upto 20m Add 5 Percent for every	,			
	а	additional meter depth o				
		sinking over the rate of sinking				
		for the previous meter	3			
	(:. A	•				
2.17 A	(iv)	Beyond 20m upto 30 m				
	а	Add 7.5 Percent for every				
		additional meter depth o				
		sinking over the rate of sinking	3			
		for the previous meter				
	b	Add 20 Percent of cost for				
		Kentledge including supports,				
		loading arrangement and				
		Labour.				
2.17 A	(v)	Beyond 30m upto 40 m				
	а	Add 10 Percent for every				
		additional meter depth o				
		sinking over the rate of sinking	3			
		for the previous meter				
	b	Add 20 Percent of cost fo	r			
		Kentledge including supports	,			
		loading arrangement, and	ł			
		Labour etc.				
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				
	(1)	M				
		Rate of sinking @ 0.10 m/hour				
		a) Labour				
		Mate		0.246	0.246	0.246
			day	0.346	0.346	0.346
		Sinker (skilled)	day	3.325	3.325	3.325
		Sinking helper (semi-	day	5.320	5.320	5.320
		skilled)				
		b) Machinery				
		Hire & running charges o	f hour	5.000	5.000	5.000
		crane with grab bucket				
		of 0.75 cum capacity and				
		accessories.				
		Consumables in sinking				
		@ 10 Percent of (b)				
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit				@ on (a+b+c)
		Cost for 0.5m = a+b+c+d		e on (a 1510)	e on (a)	e on (a 200)
		Rate per metre = $(a+b+c+d)/0$	50			
		David and an experience of a set by				
.2.17 B	(ii)	Beyond 3m upto 10m depth Rate of sinking @ 0.08 m/hour				
		a) Labour				
		Mate	_l _	0.453	0.453	0.453
			day	0.452	0.452	0.452
		Sinker	day	4.655	4.655	4.655
		Sinking helper (semi-	day	6.650	6.650	6.650
		skilled)	•			

Sr No	Ref to M	ef. to M Description	Unit	Quantity	y as per project	category	Rate
31 140	NEI. LU IVI	Description	Jill	Large	Medium	Small	(Rs.
		1)					
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and	hour	6.000	6.000	6.000	
		accessories. Air compressor with pneumatic chisel attachment for cutting hard clay Consumables in sinking @	hour	4.250	4.250	4.250	
		10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for $0.5m = a+b+c+d$	_				
		Rate per metre = $(a+b+c+d)/0.5$	60				
12.17 B	(iii)	Beyond 10 m upto 20 m					
	a	Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add for dewatering @ 5 Percent of cost, if required.					
12.17 B	(iv)	Beyond 20m upto 30 m					
	a	Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for dewatering on the cost, if required					
	С	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).					
12.17 B	(v)	Beyond 30m upto 40 m					
	a	Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the provious meter.					
	b	for the previous meter Add 5 Percent of cost for					
		dewatering, if required Add 20 Percent of cost for					
	С	Kentledge including supports, loading arrangement and Labour).					
12.17	С	Extra over item no. 12.17 (A) or (B) irrespective of depth for sinking in Soft Rock (11 m dia well)					
		Unit = Running Meter. Taking output = 1 m					
		raking output – I iii					

					Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Labour					
			Mate	day	1.184	1.184	1.184	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Mazdoor	day	23.940	23.940	23.940	
		b)	Machinery					
			Air Compressor 250 cfm	hour	95.033	95.033	95.033	
			Pneumatic breaker Consumables in sinking @ 5 Percent of (b)	hour	190.066	190.066	190.066	
			Add for dewatering @ of 15 Percent of (a+b), if required					
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and	hour	3.000	3.000	3.000	
			accessories.					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit				@ on (a+b+c)	
		•	e per metre = (a+b+c+d)		C = (, = 1,	C 1 (1 1 1,	C 1 (1 1 1)	
12.17	D	or (tra over item no. 12.17 (A) B) irrespective of depth for king in Hard Rock (11 m dia					
			t = Running Meter					
			ing output = 1 m					
		a)	Material					
		u,	Small dia.Explosive at 0.20 kg / cum	kg	19.007	19.007	19.007	
			Electric detonators	no	101.000	101.000	101.000	
			Detonating fuse coil	m	314.000	314.000	314.000	
		b)	Labour	•				
		•	Mate	day	1.197	1.197	1.197	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Driller	day	2.660	2.660	2.660	
			Blaster	day	0.333	0.333	0.333	
			Mazdoor	day	21.280	21.280	21.280	
		c)	Machinery					
			Air Compressor 250 cfm	hour	70.484	70.484	70.484	
			Pneumatic breaker	hour	76.027	76.027	76.027	
			Pneumatic breaker for drilling holes (@ 4.5 m per hour)	hour	48.942	48.942	48.942	
			•					

Sr No Ref. to M		/I Description	11	Quantit	y as per project	category	Rate
Sr No	Ket. to IVI	Description	Unit	Large	Medium	Small	(Rs.)
		Consumables in protected blasting @ 10 Percent of (c) Add for dewatering @ of 15 Percent of (a+b+c), if required Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories. d) Overhead charges	hour	3.000 @ on (a+b+c)	3.000 @ on (a+b+c)	3.000 @ on (a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per metre = (a+b+c+d+e)					
12.17	E	Extra over item no. 12.17 (A) or (B) irrespective of depth for sinking inrock bouldery strata (11 m dia well) Unit = Running Meter. Taking output = 1 m a) Labour					
		Mate	day	1.077	1.077	1.077	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		Diver	day	0.665	0.665	0.665	
		Mazdoor	day	21.280	21.280	21.280	
		b) Machinery					
		Air Compressor 250 cfm	hour	158.389	158.389	158.389	
		Pneumatic breaker Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of 15 Percent of (a+b), if required	hour	316.777	316.777	316.777	
		Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit Rate per metre = (a+b+c+d)			@ on (a+b+c)		
12.18	1200	Sinking of 12 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against					

Rate (Rs.)

Cr No	Ref. to M	Docarintian	l lmis	Quantit	y as per project	category
Sr No	Ket. to IVI	Description	Unit	Large	Medium	Small
		each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from be level.				
		Unit = Running Meter				
		Taking output = 0.25 m				
		Diameter of well - 12 m.				
	Α	Sandy Soil				
	(i)	I) Depth below bed level u	pto			
		Rate of sinking @ 0.05 m/h	our			
		a) Labour				
		Mate	day	0.306	0.306	0.306
		Sinker (skilled)	day	2.328	2.328	2.328
		Sinking helper (semi- skilled)	day	5.320	5.320	5.320
		b) Machinery				
		Hire & running charge crane with grab bucke 0.75 cum capacity and accessories.	t of	6.000	6.000	6.000
		Consumables in sinkin @10 Percent of (b)	g			
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		Cost for $0.25m = a+b+c+d$				
		Rate per metre = (a+b+c+d)/0.25			
12.18 A	(ii)	Beyond 3m upto 10m dept	:h			
		Rate of sinking @ 0.038 m/hour				
		a) Labour				
		Mate	day	0.386	0.386	0.386
		Sinker	day	3.325	3.325	3.325
		Sinking helper (semi- skilled)	day	6.318	6.318	6.318
		b) Machinery				
		Hire & running charge crane with grab bucke 0.75 cum capacity and accessories.	t of I	6.500	6.500	6.500
		Consumables in sinkin @10 Percent of (b)	g			
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit Cost for 0.25m = a+b+c+d		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

Rate per metre = (a+b+c+d)/0.25

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category
St NO	Ket. to ivi	Description	Unit	Large	Medium	Small
2 10 A	(iii)	Beyond 10m upto 20m				
2.18 A	(III) a	Add 5 Percent for ever	V			
	d	additional meter depth of	•			
		sinking over the rate of sinkin				
		for the previous meter	5			
		David 2000 conta 20 m				
l2.18 A	(iv) a	Beyond 20m upto 30 m Add 7.5 Percent for ever	v			
	a	additional meter depth of	•			
		sinking over the rate of sinkin				
		for the previous meter				
	b	Add 20 Percent of cost fo	r			
		Kentledge including supports	i,			
		loading arrangement and	b			
		Labour.				
.2.18 A	(v)	Beyond 30m upto 40 m				
	a	Add 10 Percent for ever	•			
		additional meter depth o				
		sinking over the rate of sinkin	g			
		for the previous meter				
	b	Add 20 Percent of cost fo				
		Kentledge including supports loading arrangement, and	_			
		Labour etc.	u .			
12.18	В	Clayey Soil (12 m dia. Well)				
12.10	ь	Unit = Running Meter.				
		Taking output = 0.25 meter.				
	(i)	Depth below bed level upto	n			
	(1)	3.0 M	-			
		Rate of sinking @ 0.04 m/hou				
		a) Labour				
		Mate	day	0.399	0.399	0.399
		Sinker (skilled)	day	3.990	3.990	3.990
		Sinking helper (sem	=	5.985	5.985	5.985
		skilled)	,			
		b) Machinery				
		Hire & running charges of		6.250	6.250	6.250
		crane with grab bucket o				
		0.75 cum capacity and accessories.	u			
		Consumables in sinkin	σ			
		@ 10 Percent of (b)	5			
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit				@ on (a+b+c)
		Cost for $0.25m = a+b+c+d$		G 5 (a. 5. c)	C 0 (a . 5 · c)	G 5 (a. 5)
		Rate per metre = (a+b+c+d)/0	.25			
12.18 B	(ii)	Beyond 3m upto 10m depth				
0	(11)	Rate of sinking @ 0.03 m/hour				
		-				
		a) Labour				
		a) Labour Mate	day	0.519	0.519	0.519

Crr NI =	Dof to M	December :	11	Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Sinking helper (semi- skilled)	day	7.980	7.980	7.980	
		b) Machinery Hire & running charges of crane with grab bucket of 0.75 cum capacity and	hour	8.330	8.330	8.330	
		accessories. Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.500	4.500	4.500	
		Consumables in sinking @ 10 Percent of (b) c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 0.25m = a+b+c+d	_				
		Rate per metre = $(a+b+c+d)/0.2$	25				
12.18 B	(iii) a	Beyond 10 m upto 20 m Add 5 Percent for every					
	d	additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add for dewatering @ 5 Percent of cost, if required.					
12.18 B	(iv)	Beyond 20m upto 30 m					
12.10 0	a	Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking					
	b	for the previous meter Add 5 Percent of cost for dewatering on the cost, if					
	с	required Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).					
12.18 B	(v) a	Beyond 30m upto 40 m Add 10 Percent for every additional meter depth of sinking over the rate of sinking					
	b	for the previous meter Add 5 Percent of cost for					
	С	dewatering, if required Add 20 Percent of cost for					
		Kentledge including supports, loading arrangement and Labour).					
12.18	С	Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in Soft Rock (12 m dia well) Unit = Running Meter.					

Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
						Ju	(113.)
		Taking output = 1 m					
		a) Labour		4.000	4 200	4.000	
		Mate	day	1.290	1.290	1.290	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		Diver	day	0.665	0.665	0.665	
		Mazdoor b) Machinery	day	26.600	26.600	26.600	
		Air Compressor 250 cfm	hour	113.097	113.097	113.097	
		Pneumatic breaker	hour	226.195	226.195	226.195	
		Consumables in sinking @ 5 Percent of (b)					
		Add for dewatering @ of 15 Percent of (a+b), if required					
		Additional Hire & running charges for shifting o	f	3.000	3.000	3.000	
		crane (rock breaking time) with grab bucket o 0.75 cum capacity and accessories.	f				
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit			@ on (a+b+c)		
12.18	D	Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in Hard Rock (12 m dia					
		well)					
		Unit = Running Meter					
		Taking output = 1 m					
		a) Material					
		Small dia.Explosive at 0.20 kg / cum	kg	22.619	22.619	22.619	
		Electric detonators	no	122.000	122.000	122.000	
		Detonating fuse coil	m	379.000	379.000	379.000	
		b) Labour		2,2.00	2.0.000		
		Mate	day	1.303	1.303	1.303	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		Diver	day	0.665	0.665	0.665	
		Driller	day	2.660	2.660	2.660	
		Blaster	day	0.333	0.333	0.333	
		Mazdoor	day	23.940	23.940	23.940	
		c) Machinery	•				
		Air Compressor 250 cfm	hour	82.361	82.361	82.361	
		Pneumatic breaker	hour	90.478	90.478	90.478	
		Pneumatic breaker fo drilling holes (@ 4.5 n per hour)		58.245	58.245	58.245	

		December 1 and 1		Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Consumables in protected blasting @ 10 Percent of (c) Add for dewatering @ of 15 Percent of (a+b+c), if required Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per metre = (a+b+c+d+e)		,	,	,	
12.18	E	Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in rock bouldery strata (12 m dia well) Unit = Running Meter Taking output = 1 m					
		a) Labour					
		Mate	day	1.184	1.184	1.184	
		Sinker (skilled)	day	1.995	1.995	1.995	
		Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
		Diver	day	0.665	0.665	0.665	
		Mazdoor	day	23.940	23.940	23.940	
		b) Machinery					
		Air Compressor 250 cfm	hour	188.496	188.496	188.496	
		Pneumatic breaker Consumables in sinking @ 5 Percent of (b) Add for dewatering @ of 15 Percent of (a+b), if required	hour	376.991	376.991	376.991	
		Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		c) Overhead chargesd) Contractor's profitRate per metre = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
12.19	1200	Sinking of Twin D Type well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as					

Rate (Rs.)

				Quantity	y as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
		shown against each ca				
		complete as per drawing a				
		technical specifications. Dep				
		of sinking is reckoned from bed level.	om			
		Unit = Running Meter				
		Taking output = 1 m				
		Dimensions of well.				
		Overall length = 12 m				
		Overall width = 6 m				
	Α	Sandy Soil				
	(i)	Depth from bed level upto 3 M	3.0			
		Rate of sinking @ 0.18 m/hc	our			
		a) Labour				
		Mate	day	0.266	0.266	0.266
		Sinker (skilled)	day	1.663	1.663	1.663
		Sinking helper (semi- skilled)	day	4.988	4.988	4.988
		b) Machinery				
		Hire & running charges crane with grab bucket 0.75 cum capacity and accessories.		5.500	5.500	5.500
		Consumables in sinking @10 Percent of (b)	S			
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit		-	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)		- , ,	- , ,	- , ,
12.19 A	(ii)	Beyond 3m upto 10m depth	1			
		Rate of sinking @ 0.17 m/hc	our			
		a) Labour				
		Mate	day	0.293	0.293	0.293
		Sinker	day	1.995	1.995	1.995
		Sinking helper (semi- skilled)	day	5.320	5.320	5.320
		b) Machinery				
		Hire & running charges crane with grab bucket 0.75 cum capacity and accessories.		5.880	5.880	5.880
		Consumables in sinking @10 Percent of (b)	S			
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
				0 /	0 / ! \	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)

Sr No	Ref. to M	Description	Unit	Quantity	y as per project	category
Sr NO	Kei. to ivi	Description	Unit	Large	Medium	Small
2.19 A	(iii)	Payand 10m unto 20m				
.Z.15 A	(III) a	Beyond 10m upto 20m Add 5 Percent for every	,			
	a	additional meter depth of				
		sinking over the rate of sinking				
		for the previous meter	•			
.2.19 A	(iv)	Beyond 20m upto 30 m				
	a	Add 7.5 Percent for every	,			
		additional meter depth of				
		sinking over the rate of sinking	3			
		for the previous meter				
	b	Add 20 Percent of cost for	r			
		Kentledge including supports	,			
		loading arrangement and	I			
		Labour.				
2.19 A	(v)	Beyond 30m upto 40 m				
	а	Add 10 Percent for every				
		additional meter depth or sinking over the rate of sinking				
		for the previous meter	3			
	b	Add 20 Percent of cost for	•			
	S	Kentledge including supports				
		loading arrangement, and				
		Labour etc.				
12.19	В	Clayey Soil (Twin D Type				
		Well)				
		Unit = Running Meter				
		Taking output = 1 meter				
	(i)	Depth below bed level upto				
		3.0 M				
		Rate of sinking @ 0.16 m/hour				
		a) Labour Mate	day	0.246	0.246	0.246
			day	0.346	0.346	0.346
		Sinker (skilled) Sinking helper (semi-	day day	3.325 5.320	3.325 5.320	3.325 5.320
		skilled)	uay	5.520	5.520	5.520
		b) Machinery				
		Hire & running charges of	hour	6.250	6.250	6.250
		crane with grab bucket of		0.230	0.230	0.230
		0.75 cum capacity and				
		accessories.				
		Consumables in sinking				
		@ 10 Percent of (b)				
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
		d) Contractor's profit			@ on (a+b+c)	
		Rate per metre = (a+b+c+d)				
12.19 B	(ii)	Beyond 3m upto 10m depth				
		Rate of sinking @ 0.15 m/hour				
		a) Labour	_			
		Mate Sinker	day day	0.492	0.492	0.492
		Circle and		4.323	4.323	4.323

				Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Sinking helper (semi- skilled)	day	7.980	7.980	7.980	
		b) Machinery					
		Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.670	6.670	6.670	
		Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.500	4.500	4.500	
		Consumables in sinking @ 10 Percent of (b)					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per metre = (a+b+c+d)					
12.19 B	(iii)	Beyond 10 m upto 20 m					
	a	Add 5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add for dewatering @ 5 Percent of cost, if required.					
12.19 B	(iv)	Beyond 20m upto 30 m					
	а	Add 7.5 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for dewatering on the cost, if required					
	с	Add 25 Percent of cost for Kentledge including supports, loading arrangement and Labour).					
12.19 B	(v)	Beyond 30m upto 40 m					
	a	Add 10 Percent for every additional meter depth of sinking over the rate of sinking for the previous meter					
	b	Add 5 Percent of cost for dewatering, if required					
	с	Add 20 Percent of cost for Kentledge including supports, loading arrangement and Labour).					

C:: No	Def to M		Description	11	Quantity	y as per project	category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
12.19	c	or (ra over item no. 12.19 (A) B) irrespective of depth for king in Soft Rock t = Running Meter.					
		Tak	ing output = 1 m					
		a)	Labour					
			Mate	day	0.971	0.971	0.971	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Mazdoor	day	18.620	18.620	18.620	
		b)	Machinery					
			Air Compressor 250 cfm	hour	64.274	64.274	64.274	
			Pneumatic breaker	hour	128.549	128.549	128.549	
			Consumables in sinking @ 5 Percent of (b)					
			Add for dewatering @ of 15 Percent of (a+b), if required					
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit			@ on (a+b+c)		
		-	e per metre = (a+b+c+d)		C 011 (01010)	C 011 (21210)	C 011 (21210)	
12.19	D	or (ra over item no. 12.19 (A) B) irrespective of depth for king in Hard Rock t = Running Meter					
			ing output = 1 m					
		a)	Material					
		,	Small dia.Explosive at 0.20 kg / cum	kg	12.855	12.855	12.855	
			Electric detonators	20	72.000		72.000	
			Liectific detoriators	no	72.000	72.000	72.000	
				m		72.000 224.000		
		b)	Detonating fuse coil Labour		72.000 224.000		224.000	
		b)	Detonating fuse coil					
		b)	Detonating fuse coil Labour	m	224.000	224.000	224.000	
		b)	Detonating fuse coil Labour Mate	m day	224.000 0.984	224.000 0.984	224.000 0.984	
		b)	Detonating fuse coil Labour Mate Sinker (skilled) Sinking helper (semi-	m day day	224.000 0.984 1.995	224.000 0.984 1.995	224.000 0.984 1.995	
		b)	Detonating fuse coil Labour Mate Sinker (skilled) Sinking helper (semi-skilled)	m day day day	224.000 0.984 1.995 2.993	224.000 0.984 1.995 2.993	224.000 0.984 1.995 2.993	
		b)	Detonating fuse coil Labour Mate Sinker (skilled) Sinking helper (semi-skilled) Diver	day day day day	224.000 0.984 1.995 2.993 0.665	224.000 0.984 1.995 2.993 0.665	224.000 0.984 1.995 2.993 0.665	
		b)	Detonating fuse coil Labour Mate Sinker (skilled) Sinking helper (semi-skilled) Diver Driller	day day day day day	224.000 0.984 1.995 2.993 0.665 2.660	224.000 0.984 1.995 2.993 0.665 2.660	224.000 0.984 1.995 2.993 0.665 2.660	
		b)	Detonating fuse coil Labour Mate Sinker (skilled) Sinking helper (semi- skilled) Diver Driller Blaster	day day day day day day	224.000 0.984 1.995 2.993 0.665 2.660 0.333	224.000 0.984 1.995 2.993 0.665 2.660 0.333	224.000 0.984 1.995 2.993 0.665 2.660 0.333	
			Detonating fuse coil Labour Mate Sinker (skilled) Sinking helper (semiskilled) Diver Driller Blaster Mazdoor	day day day day day day	224.000 0.984 1.995 2.993 0.665 2.660 0.333	224.000 0.984 1.995 2.993 0.665 2.660 0.333	224.000 0.984 1.995 2.993 0.665 2.660 0.333	

					Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Pneumatic breaker for drilling holes (@ 4.5 m	hour	33.101	33.101	33.101	
			per hour)					
			Consumables in protected blasting @ 10 Percent of (c)					
			Add for dewatering @ of 15 Percent of (a+b+c), if required					
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate	e per metre = (a+b+c+d+e)					
12.19	E	or (a over item no. 12.19 (A) B) irrespective of depth for ing in rock bouldery strata					
		Unit	t = Running Meter					
		Taki	ing output = 1 m					
		a)	Labour					
			Mate	day	0.865	0.865	0.865	
			Sinker (skilled)	day	1.995	1.995	1.995	
			Sinking helper (semi- skilled)	day	2.993	2.993	2.993	
			Diver	day	0.665	0.665	0.665	
			Mazdoor	day	15.960	15.960	15.960	
		b)	Machinery					
			Air Compressor 250 cfm	hour	107.124	107.124	107.124	
			Pneumatic breaker	hour	214.248	214.248	214.248	
			Consumables in sinking @ 5 Percent of (b)					
			Add for dewatering @ of 15 Percent of (a+b), if required					
			Additional Hire & running charges for shifting of crane (rock breaking time) with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate	e per metre = (a+b+c+d)					

C# No	Pof to M		11	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

12.20 1200

Pneumatic sinking of wells with equipment of approved design, drawing and specifications worked by competent and trained personnel and comprising of compression and decompression chambers, reducers, two air locks separately for men and plant & materials, arrangement for supply of fresh air to working chambers, check valves, exhaust valves, shafts made from steel plates of riveted construction not less than 6 mm thick to withstand an air pressure of 0.50 MPa, controlled blasting of hard rock where required, staircases and 1 m wide landing 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 clause1208.8 of MoRTH Specifications.

Unit = cum

Taking output = 5 cum

a) Material

-,	M35 grade RCC corbel provided for supporting of equipment (Dimensions as per ground conditions). Rate for concrete may be adopted vide item no. 12.08 (F)	Cum	8.000	8.000	8.000
	HYSD bar reinforcement in corbel	tonne	0.480	0.480	0.480
	Blasting material				
	Explosives	Kg	1.500	1.500	1.500
	Electric detonators	each	6.000	6.000	6.000
b)	Labour				
	Mate	day	2.500	2.500	2.500
	Driller	day	1.330	1.330	1.330
	Blaster	day	0.665	0.665	0.665
	Mazdoor (for cutting, blasting, cleaning, removal of Material etc.)	day	39.900	39.900	39.900

CHAPTER: 12- FOUNDATIONS

u Nic	Dof to M		Description	I Incia	Quantity	y as per project	category
r No	Ref. to M		Description	Unit	Large	Medium	Small
			Mazdoor (Skilled) (for fixation and removal of adopter for air lock, carrying out mechanical and electrical operations and repairs and other skilled jobs.)	day	13.300	13.300	13.300
			Diver	day	5.320	5.320	5.320
			Medical Officer	day	0.665	0.665	0.665
			Para medical personnel	day	1.330	1.330	1.330
		c)	Machinery	uay	1.550	1.550	1.550
		C)	(i) Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	6.000	6.000	6.000
			Induction and deinduction	L.S			
			Erection at site and commissioning	L.S			
			Usage of plant and equipment for pneumatic method of well sinking	hour	6.000	6.000	6.000
			Air compressor 250 cfm, 2 nos.	hour	12.000	12.000	12.000
			Hire and running charges of crane of 15 tonne capacity	hour	6.000	6.000	6.000
			Motorised barge of 20 tonne capacity	hour	6.000	6.000	6.000
			Boat to carry atleast 20 persons	hour	6.000	6.000	6.000
			Electric generating set 33 KVA	hour	6.000	6.000	6.000
			Tipper 10 tonne capacity	hour	6.000	6.000	6.000
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		Cos	st for 5 cum = a+b+c+d+e				

Cost for 5 cum = $a+b+c+d+\epsilon$ (see notes below)

Rate per cum = (a+b+c+d+e)/5

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.

Cr No	Pof to M		Description	Linit	Quantity as per project category		category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
12.21	1207	7. Sandas p Spec	The necessity and dimension Small equipments like weld extinguishers, hose pipes et minor T&P under overhead Depth of sinking shall be read Filling in Wells complete er Drawing and Technical cifications. I = cum Ing output = 1 cum Material Sand (assuming 20	ing sets, tc., have charges	pumps, vibrator not been includ	rs, pneumatic to	ols, portable lan	
			Percent voids)	•	2.200	1.200	1.200	
		b)	Labour					
			Mate	day	0.016	0.016	0.016	
			Mazdoor	day	0.399	0.399	0.399	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Kate	e per cum (a+b+c+d)					
12.22	1200 & 1900	thick for S Fabi per	viding Steel Liner 10 mm k for Curbs and 6 mm thick Steining of Wells including ricating and Setting out as Detailed Drawing.					
			ng output = 1 MT					
		a)	Material					
		,	i) Structural steel including 5 Percent wastage	tonne	1.050	1.050	1.050	
		b)	Labour	·				
			Mate	day	1.064	1.064	1.064	
			Fitter	day day	5.320 5.320	5.320 5.320	5.320 5.320	
			Blacksmith Welder	day	5.320	5.320	5.320	
			Mazdoor	day	10.640	10.640	10.640	
		۵۱	Electrodes, cutting gas and other consumables @ 5 Percent on cost a (a) above.					
		c)	Machinery Hydra Crane of capacity 10T for lifting shifting	hour	8.000	8.000	8.000	
		۹۱	Overhood shares		@ on (a+h+c)	@ on (a+b+c)	@ on (a+h+c)	
		d) e)	Overhead charges Contractor's profit		@ on	@ on	@ on	
		•	•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate	e for per MT (a+b+c+d+e)					

		Description			Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
12.23	1100 & 1700	R.C. Rein per Spe exce	ed cast-in-situ M35 grade .C. Pile excluding nforcement complete as Drawing and Technical cifications and removal of avated earth with all lifts I lead upto 1000 m.					
		Pile	diameter-750 mm					
		Unit = meter						
		Tak	ing output = 25 m					
		a)	Materials					
			RCC Grade M35 (including additional concreteing of 1m for pile head) Rate for concrete may be adopted vide item no. 12.11 F (iv)	cum	11.490	11.486	11.486	
			Rate for concrete may be adopted same as for pile vide item no. 12.11 F (iv)					
			Concrete to be cast with a tremie pipe 200mm dia.					
			Bentonite	kg	574.500	574.322	574.322	
		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	6.000	6.000	
			Hire and running charges of light crane for lowering reinforcement cage, trime pipe, holding trime pipe for concreting, removal of temporary casing etc	hour	3.138	3.138	3.138	
			Hire and running charges of Bentonite pump	hour	6.000	6.000	6.000	
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	29.07 x L1	29.07 x L1	29.07 x L1	
			For unloading	hour	0.638	0.638	0.638	
			Front end loader for removing muck					
			(i) 3.1 Cum Capacity	hour	0.407			
			(ii) 2.1 Cum Capacity	hour		0.598		
			(iii) 1 Cum Capacity	hour			1.276	

Sr No	Ref. to M		Description	Unit	Quantity as per project category			Rate
					Large	Medium	Small	(Rs.)
			 ·					
			Tipper					
			For Loading time	hour	0.407			
			(i) 18 cum capacity	hour	0.407	0.500		
			(ii) 14 cum capacity	hour		0.598	4 276	
			(iii) 10 cum capacity	hour			1.276	
			For disposal of muck from pile bore hole up to a lead of 1 km					
			(i) 18 cum capacity	t.km	18.384			
			(ii) 14 cum capacity	t.km		18.378		
			(iii) 10 cum capacity	t.km			18.378	
		c)	Labour					
		٠,	Mate/Supervisor	day	0.186	0.186	0.186	
			Mazdoor	day	4.655	4.655	4.655	
		d)	Overhead charges	<i>aa</i> ,	@ on (b+c)	@ on (b+c)	@ on (b+c)	
		e)	Contractor's profit			@ on (b+c+d)	-	
		•	t for 25 m = a+b+c+d+d+e		C 011 (12 12 14 14 14 14 14 14 14 14 14 14 14 14 14	C 011 (2.10.12)	e on (arera)	
			e per metre (a+b+c+d+e)/25					
			o por mono (a a a rora roj) =0					
	1700	Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.						
		Pile	diameter-1000 mm					
		Uni	t = meter					
		Tak	ing output = 25 m					
		a)	Materials					
			RCC Grade M35 (including additional concreteing of 1m for pile head) Rate for concrete may be adopted vide item no. 12.11 F (iv)	cum	20.420	20.420	20.420	
			Rate for concrete may be adopted same as for pile vide item no. 12.11 F (iv)					
			Concrete to be cast with a tremie pipe 200mm dia.					
		b)	Bentonite Machineryb (for boring	kg	1021.018	1021.018	1021.018	
			and construction)					
			Hire and running charges of hydraulic piling rig with	hour	6.000	6.000	6.000	

Sr No	Ref. to M		Doccrintion	l loit	Quantit	y as per project	category	Rate
Sr No	кет. то іхі		Description	Unit	Large	Medium	Small	(Rs.)
			Hire and running charges	hour	3.634	3.634	3.634	
			of light crane for lowering reinforcement cage, trime pipe, holding trime pipe for concreting,					
			removal of temporary casing etc					
			Hire and running charges of Bentonite pump	hour	6.000	6.000	6.000	
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	51.05 x L1	51.05 x L1	51.05 x L1	
			For unloading	hour	1.134	1.134	1.134	
			Front end loader for					
			removing muck					
			(i) 3.1 Cum Capacity	hour	0.724			
			(ii) 2.1 Cum Capacity	hour		1.064		
			(iii) 1 Cum Capacity	hour			2.269	
			Tipper					
			For Loading time					
			(i) 18 cum capacity	hour	0.724			
			(ii) 14 cum capacity	hour		1.064		
			(iii) 10 cum capacity	hour			2.269	
			For disposal of muck from pile bore hole up to a lead of 1 km					
			(i) 18 cum capacity	t.km	32.673			
			(ii) 14 cum capacity	t.km		32.673		
			(iii) 10 cum capacity	t.km			32.673	
		c)	Labour					
			Mate/Supervisor	day	0.186	0.186	0.186	
			Mazdoor	day	4.655	4.655	4.655	
		d)	Overhead charges		@ on (b+c)	@ on (b+c)	@ on (b+c)	
		e)	Contractor's profit		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		•	t for 25 m = a+b+c+d+d+e					
		Rat	e per metre (a+b+c+d+e)/2!	5				
12.25	1100 & 1700	R.C	red cast-in-situ M35 grade .C. Pile excluding					
		per	nforcement complete as Drawing and Technical					
		exc	ecifications and removal of avated earth with all lifts					
	Α		l lead upto 1000 m.					
	A		e diameter-1200 mm it = meter					
		ıak	ing output = 25 m					

C:: No	D-f +- N4		Description	l locit	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Materials					
			RCC Grade M35	cum	29.405	29.405	29.405	
			(including additional concreteing of 1m for pile					
			head) Rate for concrete					
			may be adopted vide					
			item no. 12.11 F (iv)					
			Rate for concrete may be					
			adopted same as for pile vide item no. 12.11 F (iv)					
			Concrete to be cast with					
			a tremie pipe 200mm dia.					
			Bentonite	kg	1470.265	1470.265	1470.265	
		b)	Machinery (for boring and construction)					
			Hire and running charges	hour	7.000	7.000	7.000	
			of hydraulic piling rig with power unit and complete					
			accessories including					
			shifting from one bore					
			location to another.					
			Hire and running charges	hour	4.134	4.134	4.134	
			of light crane for lowering reinforcement cage,					
			trime pipe, holding trime					
			pipe for concreting,					
			removal of temporary					
			casing etc Hire and running charges	hour	7.000	7.000	7.000	
			of Bentonite pump	11041	7.000	7.000	7.000	
			Transit truck agitator					
			For transportation (6 cum		73.53 x L1	73.53 x L1	73.53 x L1	
			Capacity)	km	4.604	4.604	4.604	
			For unloading Front end loader for	hour	1.634	1.634	1.634	
			removing muck					
			(i) 3.1 Cum Capacity	hour	1.043			
			(ii) 2.1 Cum Capacity	hour		1.532		
			(iii) 1 Cum Capacity	hour			3.267	
			Tipper					
			For Loading time					
			(i) 18 cum capacity	hour	1.043	1 522		
			(ii) 14 cum capacity	hour		1.532	2 267	
			(iii) 10 cum capacity For disposal of muck from	hour			3.267	
			pile bore hole up to a					
			lead of 1 km					
			(i) 18 cum capacity	t.km	47.048			
			(ii) 14 cum capacity	t.km		47.048		
			(iii) 10 cum capacity	t.km			47.048	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
31 110	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
		c) d) e)	Labour Mate/Supervisor Mazdoor Overhead charges Contractor's profit	day day	0.186 4.655 @ on (b+c) @ on (b+c+d)	0.186 4.655 @ on (b+c) @ on (b+c+d)	0.186 4.655 @ on (b+c) @ on (b+c+d)	
		Cos	t for 25 m = a+b+c+d+d+e					
		Rat	e per metre (a+b+c+d+e)/25	;				
12.26	1100 & 1700	Pile	diameter-1500 mm					
		_	t = meter					
			ing output = 25 m					
		a)	Materials RCC Grade M35 (including additional concreteing of 1 m for pile head) Rate for concrete may be adopted vide item no. 12.11 F (iv)	cum	45.946	45.946	45.946	
			Rate for concrete may be adopted same as for pile vide item no. 12.11 F (iv) Concrete to be cast with a tremie pipe 200 mm dia.					
			Bentonite	kg	2297.290	2297.290	2297.290	
		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	8.000	8.000	8.000	
			Hire and running charges of light crane for lowering reinforcement cage, trime pipe, holding trime pipe for concreting, removal of temporary casing etc	hour	5.053	5.053	5.053	
			Hire and running charges of Bentonite pump	hour	8.000	8.000	8.000	
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	114.86 x L1	114.86 x L1	114.86 x L1	
			For unloading Front end loader for	hour	2.553	2.553	2.553	
			removing muck					
			(i) 3.1 Cum Capacity	hour	1.629			

Cr N-	Dof to M		Description	l lm!4	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(ii) 2.1 Cum Capacity	hour		2.393		
			(iii) 1 Cum Capacity	hour			5.105	
			Tipper					
			For Loading time					
			(i) 18 cum capacity	hour	1.629			
			(ii) 14 cum capacity	hour		2.393		
			(iii) 10 cum capacity	hour			5.105	
			For disposal of muck from					
			pile bore hole up to a lead					
			of 1 km	t.km	73.513			
			(i) 18 cum capacity	t.km	73.313	73.513		
			(ii) 14 cum capacity	t.km		/3.515	73.513	
		٠,١	(iii) 10 cum capacity	L.KIII			/3.313	
		c)	Labour	da	0.186	0.186	0.186	
			Mate/Supervisor	day	4.655	4.655	4.655	
		-11	Mazdoor	day	4.055 @ on (b+c)			
		d)	Overhead charges			@ on (b+c)@ on (b+c+d)	@ on (b+c)	
		e)	Contractor's profit		@ on (b+c+a)	@ on (b+c+u)	@ on (b+c+u)	
			t for 25 m = a+b+c+d+e e per metre (a+b+c+d+e)/25					
12.27	1100 & 1700		ven cast-in-place vertical 5 grade R.C.C. Pile					
	1700		luding Reinforcement					
			nplete as per Drawing and					
		& T	echnical Specification					
		Pile	diameter - 750 mm					
		Uni	t = Running meter					
		Tak	ing output = 40 metre					
		a)	Materials					
			RCC Grade M35	cum	17.660	17.660	17.660	
			Rate for concrete may be adopted vide item no. 12.11 F (iv)					
			Rate for concrete may be					
			adopted same as for pile					
			vide item no. 12.11 F (iv)					
		b)	Materials Pile shoes					
			i) C.I. shoes for the pile	Kg	160.000	160.000	160.000	
			ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	70.000	70.000	
			iii) Steel helmet and cushion block on top of casing head during driving	Kg	50.000	50.000	50.000	
			~B					
		c)	Machinery					

C:: No	Def to M		Description	11	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
			power unit and accessories. Hiring and running	hour	0.500	0.500	0.500	
			charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	noui	0.500	0.300	0.300	
		d)	Labour					
			Mate/Supervisor	day	0.160	0.160	0.160	
			Mazdoor	day	3.990	3.990	3.990	
		e)	Overhead charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		@ on (b+c+d+e)	@ on (b+c+d+e)	@ on (b+c+d+e)	
		Cos	t for 10 m = 2+h+c+d+e					

Cost for 40 m = a+b+c+d+e

Rate per metre (a+b+c+d+e)/40

- 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.
 - In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 Percent of cost of concrete may be provided to cover its usage.

23.550

cum

23.550

23.550

12.28 1100 & 1700

Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification Pile diameter - 1000 mm Unit = Running meter

Taking output = 30 metre

RCC Grade M35

Rate for concrete may be

Materials

b)

		opted vide item no. 11 F (iv)				
	ado	e for concrete may be opted same as for pile e item no. 12.11 F (iv)				
)	Ma	terials Pile shoes				
	i)	C.I. shoes for the pile	Kg	160.000	160.000	160.000
	ii)	M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	70.000	70.000
	iii)	Steel helmet and cushion block on top of casing head during driving	Kg	50.000	50.000	50.000

	No Ref. to M		December 1	11	Quantity	as per project	category	Rate
NO	Ket. to ivi		Description	Unit	Large	Medium	Small	(Rs
		c)	Machinery Hire and running charges of piling rig Including double acting pile driving hammer complete with	hour	6.000	6.000	6.000	
			power unit and accessories. Hiring and running charges for light crane 5	hour	0.500	0.500	0.500	
			tonnes lifting capacity for lowering reinforcement and handling steel casing.	b =	0.500	0.500	0.500	
			Hire and running charges for light crane for lowering reinforcement cage.	hour	0.500	0.500	0.300	
		d)	Labour					
			Mate/Supervisor	day	0.213	0.213	0.213	
			Mazdoor	day	5.320	5.320	5.320	
		e)	Overhead charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		@ on (b+c+d+e)	@ on (b+c+d+e)	@ on (b+c+d+e)	
		Cos	t for 30 m = a+b+c+d+e					

- 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-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 Percent of cost of concrete may be provided to cover its usage.

12.29 1100 & 1700

Driven cast-in-place vertical M35 grade R.C.C. Pile **excluding Reinforcement** complete as per Drawing and & Technical Specification Pile diameter - 1200 mm Unit = Running meter

Taking output = 20 metre

Rate per metre (a+b+c+d+e)/30

b)

Materials RCC Grade M35 cum 22.610 22.610 22.610 Rate for concrete may be adopted vide item no. 12.11 F (iv) Rate for concrete may be adopted same as for pile vide item no. 12.11 F (iv) **Materials Pile shoes** 160.000 160.000 160.000 Kg i) C.I. shoes for the pile

Cu Na	Dof to M		Description	l lmit	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	70.000	70.000	
			iii) Steel helmet on top of casing head during driving	Kg	50.000	50.000	50.000	
		c)	Machinery Hire and running charges of piling rig Including	hour	6.000	6.000	6.000	
			double acting pile driving hammer complete with power unit and accessories.					
			Hiring and running charges for light crane 5 tonnes lifting capacity for lowering reinforcement and handling steel casing.	hour	0.500	0.500	0.500	
		d)	Labour					
			Mate/Supervisor	day	0.213	0.213	0.213	
			Mazdoor	day	5.320	5.320	5.320	
		e)	Overhead charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		@ on (b+c+d+e)	@ on (b+c+d+e)	@ on (b+c+d+e)	
		Cos	t for 20 m = a+b+c+d+e					

Cost for 20 m = a+b+c+d+e

Rate per metre (a+b+c+d+e)/20

Note 1.

- 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-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 Percent of cost of concrete may be provided to cover its usage.

12.30 1100 & 1700

Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification

Pile Diameter = 500 mm Unit = Running Meter Taking output = 60 m

a) Materials

RCC Grade M35 cum 11.780 11.780 11.780
Rate for concrete may be adopted vide item no.
12.11 F (iv)
Rate for concrete may be adopted same as for pile vide item no. 12.11 F (iv)

					Т	1			
Sr No	Ref. t	о М		Description	Unit		as per project		Rate
					0	Large	Medium	Small	(Rs.)
			L \	Matarial Dila shaqa					
			b)	Material Pile shoes a) C.I Shoes	Kg	240.000	240.000	240.000	
				b) M.S. shoes	Kg	105.000	105.000	105.000	
				c) Steel helmet and	Kg	30.000	30.000	30.000	
				cushion block on top of pile head during driving.	' 'b	30.000	30.000	30.000	
			c)	Machinery					
				Crane20 t capacity	hour	6.000	6.000	6.000	
				Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	
			d)	Labour		0.450	0.460	0.450	
				Mate/Supervisor	day	0.160	0.160	0.160	
				Mazdoor Add 1 Percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.	day	3.990	3.990	3.990	
			e)	Overhead charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
			f)	Contractor's profit		@ on (b+c+d+e)	@ on (b+c+d+e)	@ on (b+c+d+e)	
			Cos	t for 60 m = $a+b+c+d+e+f$					
			Rat	e per metre (a+b+c+d+e+f)/	60				
		Note		quantity of concrete requir , will be provided for in the			the designed to	p level of concre	ete, if
12.31	1100 & 1700		grad Reid per Spe	ven precast vertical M35 de R.C.C. Piles excluding nforcement complete as Drawing and & Technical cification					
			_	Diameter = 750 mm					
				t = Running Meter					
				ing output = 50 m					
			a)	Materials		22.000	22.000	22.000	
				RCC Grade M35 Rate for concrete may be adopted vide item no. 12.11 F (iv)	cum	22.080	22.080	22.080	
				Rate for concrete may be adopted same as for pile					

Kg

Kg

160.000

70.000

160.000

70.000

160.000

70.000

vide item no. 12.11 F (iv)

b) Material Pile shoes

a) C.I. shoes

b) M.S. shoes

C N -	D-6 4- N4		Description		Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			c) Steel helmet and cushion block on top of pile head during driving.	Kg	40.000	40.000	40.000	
		c)	Machinery					
			Crane 35 T capacity	hour	6.000	6.000	6.000	
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	
		d)	Labour					
			Mate/Supervisor	day	0.213	0.213	0.213	
		e) f)	Mazdoor Add 1 Percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation. Overhead charges Contractor's profit	day	5.320 @ on (b+c+d) @ on	5.320 @ on (b+c+d) @ on	5.320 @ on (b+c+d) @ on	
			•		(b+c+d+e)	(b+c+d+e)	(b+c+d+e)	
		Cos	st for 50 m = $a+b+c+d+e+f$					

Rate per metre (a+b+c+d+e+f)/50

Note 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.

12.32	1100 &
	1700

Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical **Specification** Pile Diameter = 1000 mm Unit = Running Meter

Taking output = 40 m a) Materials RCC Grade M35 cum 31.400 31.400 31.400 Rate for concrete may be adopted vide item no. 12.11 F (iv) Rate for concrete may be adopted same as for pile vide item no. 12.11 F (iv) b) Material Pile shoes 160.000 160.000 a) C.I. shoes for the pile Kg 160.000 b) M.S. shoes @ 35 Kg 70.000 70.000 70.000 Kg per pile of 15 m c) Steel helmet and 50.000 50.000 50.000 Kg cushion block on top of pile head during driving.

C: N-	D-f +- 84		Danadatian	1114	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery					
		-,	Crane 50 t capacity.	hour	6.000	6.000	6.000	
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	
		d)	Labour					
		ω,	Mate/Supervisor	day	0.266	0.266	0.266	
			Mazdoor Add 1 Percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.	day	6.650	6.650	6.650	
		e)	Overhead charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		@ on (b+c+d+e)	@ on (b+c+d+e)	@ on (b+c+d+e)	
		Cos	st for $40 \text{ m} = 2 + 6 + 6 + 6 + 6 + 6$		•	•	•	

Cost for 40 m = a+b+c+d+e+f

Rate per metre (a+b+c+d+e+f)/40

Note 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.

12.33 1100&1 700	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification Size of pile - 300 mm x 300 mm Unit = Running Meter
	Taking output = 60 m
	a) Materials
	PCC Grado M 25

RCC Grade M-35 RCC Grade M35 Rate for concrete may be adopted vide item no. 12.11 F (iv) b) Material Pile shoes a) C I shoes

b) M. S shoes c) Steel helmet and cushion block on top of pile head during driving.

Crane 10 tonne capacity Vibrating Pile driving hammer complete with power unit and accessories.

Machinery

c)

5.400

240.000

cum

kg

105.000 105.000 105.000 kg 30.000 30.000 30.000 Kg hour 6.000 6.000 6.000 6.000 6.000 6.000 hour

5.400

240.000

5.400

240.000

C:: No	D (No contestion	Description	l locia	Quantity as per project category			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(R
		d)	Labour					
			Mate/Supervisor	day	0.160	0.160	0.160	
			Mazdoor	day	3.990	3.990	3.990	
			Add 1 Percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.					
		e)	Overhead charges		@ on (b+c+d)	@ on (b+c+d)	@ on (b+c+d)	
		f)	Contractor's profit		@ on (b+c+d+e)	@ on (b+c+d+e)	@ on (b+c+d+e)	
		Cos	t for 60 m = a+b+c+d+e+f					
		Rat	e per metre (a+b+c+d+e+f)/	60				

Note 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.

12.34	1100
	&1700

Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical **Specification** Size of pile - 500 mm x 500

mm

Unit = Running Meter

Taking output = 50 m

a) Materials RCC Grade M-35 12.500 12.500 12.500 cum RCC Grade M35 Rate for concrete may be adopted vide item no. 12.11 F (iv)

b)	Material Pile shoes				
	a) C I shoes	kg	160.000	160.000	160.000
	b) M. S shoes	kg	70.000	70.000	70.000
	 c) Steel helmet and cushion block on top of pile head during driving. 	Kg	30.000	30.000	30.000
c)	Machinery				
	Crane 20 tonne capacity	hour	6.000	6.000	6.000
	Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000
d)	Labour				
	Mate/Supervisor	day	0.213	0.213	0.213
	Mazdoor	day	5.320	5.320	5.320

Add 1 Percent of (a+b+c) for carriage of piles from

C# No	Dof to M	Description	l locia	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		casting yard to work site and stacking, and other imponderables during installation.					

Contractor's profit Cost for 50 m = a+b+c+d+e+f

Overhead charges

Rate per metre (a+b+c+d+e+f)/50

Note 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.

@ on

(b+c+d+e)

12.35	1100 &1700	Driven precast vertical M35 grade R.C.C. Piles excluding Reinforcement complete as per Drawing and & Technical Specification
		Size of pile - 750 mm x 750 mm
		Unit = Running Meter

e) f)

Taking output = 40 m

a)	Materials
	RCC Grade M-35
	RCC Grade M35

22.500 M35 cum Rate for concrete may be adopted vide item no. 12.11 F (iv)

b) Material

Pile shoes

a) C I shoes	kg	160.000
b) M. S shoes	kg	70.000
c) Steel helmet and	Kg	30.000
cushion block on top of		
pile head during		
driving.		

hour

hour

day

day

6.000

6.000

0.213

5.320

c) Machinery

Crane 20 tonne capacity
Vibrating Pile driving
hammer complete with
power unit and
accessories.

d) Labour Mate/Supervisor

Mazdoor

Add 1 Percent of (a+b+c)
for carriage of piles from
casting yard to work site
and stacking, and other
imponderables during
installation.

70.000

30.000

@ on (b+c+d) @ on (b+c+d) @ on (b+c+d)

@ on

(b+c+d+e)

@ on

(b+c+d+e)

22.500 22.500

160.000 160.000 70.000

30.000

6.000 6.000 6.000

6.000

0.213 0.213 5.320 5.320

	_	T T		Quantity	y as per project	categorv	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		e) Overhead charges f) Contractor's profit		@ on (b+c+d) @ on (b+c+d+e)	@ on (b+c+d) @ on (b+c+d+e)	@ on (b+c+d) @ on (b+c+d+e)	
		Cost for 40 m = a+b+c+d+e+f Rate per metre (a+b+c+d+e+f)/	40				
	Note	The quantity of concrete require any, will be provided for in the			the designed to	p level of concre	ete, if
12.36	1100, 1900	Driven Vertical Steel Piles complete as per Drawing and & Technical Specification Section of the pile - H Section steel column 400 x 250 mm					
		(ISHB Series) Unit = Running Meter					
		Taking output = 70 m a) Materials					
		Structural steel including 5 Percent wastage @ 82.20 kg/m	tonnes	6.040	6.040	6.040	
		b) Machinery					
		Crane 10 T capacity	hour	6.000	6.000	6.000	
		Vibrating Pile driving hammer complete with power unit and other accessories.	hour	6.000	6.000	6.000	
		c) Labour		0.450	0.450	0.450	
		Mate/Supervisor Mazdoor Add 0.5 Percent of (a+b+c) for providing	day day	0.160 3.990	0.160 3.990	0.160 3.990	
		steel helmet on top of pile head during driving, stacking of piles at site, providing anti-corrosion treatment and other imponderables during installation.					
		d) Overhead charges e) Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Cost for 70 m = a+b+c+d+e Rate per metre (a+b+c+d+e)/70)				
12.37	1100 &1900	Driven Vertical Steel Piles complete as per Drawing and & Technical Specification Section of the pile - H Section steel column 450 x 250 mm (ISHB Series) Unit = Running Meter Taking output = 60 m					

Taking output = 60 m

				Quantit	Quantity as per project category		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		a) Materials					
		Structural steel including	tonnes	5.830	5.830	5.830	
		5 Percent wastage					
		@92.50 kg/m b) Machinery					
		Crane 10 T capacity	hour	6.000	6.000	6.000	
		Vibrating Pile driving	hour	6.000	6.000	6.000	
		hammer complete with		0.000	0.000	0.000	
		power unit and					
		accessories.					
		c) Labour					
		Mate/Supervisor	day	0.186	0.186	0.186	
		Mazdoor	day	4.655	4.655	4.655	
		Add 0.5 Percent of					
		(a+b+c) for providing steel helmet and cushion					
		block on top of pile head					
		during driving, stacking of	:				
		piles at site, providing					
		anti-corrosive treatment					
		and other imponderables					
		during installation.					
		d) Overhead charges			@ on (a+b+c)		
		e) Contractor's profit		@ on	@ on	@ on	
		Cost for 60 m = $a+b+c+d+e$		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per metre (a+b+c+d+e)/6	0				
		nate per mette (avavevave), e					
12.38	1100	Pile Load Test on single	•				
		Vertical Pile in accordance	•				
		with IS:2911(Part-IV)					
		Unit = 1 MT					
		Taking output = 1 MT		1 000	1.000	4 000	
		a) Initial and routine load test	tonne	1.000	1.000	1.000	
		b) Lateral load test	tonne	1.000	1.000	1.000	
		by Euteral load test	tornic	1.000	1.000	1.000	
	Note	Although, this item is incidenta	ıl to work	and is not requ	ired to be includ	led in BOQ of co	ntract,
		the same is required to be add	ed in the	estimate to asse	ess cost of work.		
12.39		Dismantling of Reinforced					
		Concrete Pile head complete as per Drawing and Technical					
		Specification					
		Unit = cum					
		Taking output = 1.25 cum					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor with Pneumatic	=	0.665	0.665	0.665	
		breaker	1	2.300	2.300	2.300	
		Blacksmith	day	0.333	0.333	0.333	
		Mazdoor for loading and	day	0.333	0.333	0.333	
		unloading	-				

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Ra
31 140	Kei. to W		Description	Oilit	Large	Medium	Small	(R
		b)	Machinery	haur	0.635	0.635	0.635	
			Air Compressor 250 cfm Pneumatic breaker	hour hour	0.625 1.250	0.625 1.250	0.625 1.250	
			Tipper	noui	1.230	1.230	1.230	
			For transportation to					
			dumping yard considering					
			lead @ 1 km					
			(i) 18 cum capacity	t.km	1.875			
			(ii) 14 cum capacity	t.km		1.875		
			(iii) 10 cum capacity	t.km			1.875	
			Loading & unloading time					
			(i) 18 cum capacity	hour	0.208			
			(ii) 14 cum capacity	hour		0.250		
			(iii) 10 cum capacity	hour			0.292	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 1.25 cum = a+b+c+d					
		Rat	e per cum = (a+b+c+d)/ 1.25	5				
	A Case I	RCC bat pur	•					
		Uni	t = cum					
		Tak	ing output = 60 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.06)	cum	60.000	60.000	60.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.198	0.198	0.198	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	3.626	3.626	3.626	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	150 x L1	150 x L1	150 x L1	
			For unloading	hour	1.452	1.452	1.452	
			Hydraulic Boom placer pump	hour	1.452	1.452	1.452	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					

Cn No	Dof to MA		Docariation	l lm!4	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
<u> </u>		ı		<u>I</u>		•	•	
		e)	Overhead charges		@ on	@ on	@ on	
		-,			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		` @ on	. @ on	@ on	
		•	,		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+f					
		Rat	te per cum = (a+b+c+d+e+f)/	60				
		200						
	Case II		C Grade M20 using sching plant & manual					
			= -					
		-	cing it = cum					
		_						
			king output = 60 cum					
		a)	Material Per Cum Basic Cost		CO 000	CO 000	CO 000	
				cum	60.000	60.000	60.000	
			(Rate taken from sub-					
		۳,	analysis 21.06)					
		b)	Labour					
		FOI	pouring and placing Mate	day	0.479	0.479	0.479	
				day				
			Masdaar	day	1.330	1.330	1.330	
		۵۱	Machinery	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator	tonno	150 x L1	150 x L1	150 x L1	
			For transportation (6 cum Capacity)	km	130 X L1	130 X L1	130 X L1	
			For unloading	hour	3.333	3.333	3.333	
		d)	Formwork @ 4 Percent	Hour	3.333	5.555	3.333	
		uj	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		٠,	Overnieau charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		(a+b+c+u) @ on	(a+b+c+u) @ on	(a+b+c+u) @ on	
		',	contractor 3 profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+f		(4.5.6.4.6)	(4.2.0.4.0)	(4.2.0.4.0)	
			te per cum = (a+b+c+d+e+f)/	60				
12.40	В	D.C.	C Grade M25					
12.40	Case I		C Grade M25 using					
	Case i		ching plant & Concrete					
		pur						
			it = cum					
			king output = 60 cum					
		a)	Material		60,000	60,000	60,000	
			Per Cum Basic Cost	cum	60.000	60.000	60.000	
			(Rate taken from sub-					
		L١	analysis 21.07) Labour					
			Lanour					
		b)						
		-	pouring and placing					
		-	pouring and placing Mate	day	0.198	0.198	0.198	
		-	pouring and placing Mate Mason	day	1.330	1.330	1.330	
		-	pouring and placing Mate Mason Mazdoor	-				
		-	pouring and placing Mate Mason	day	1.330	1.330	1.330	

Cu No	Dof += N4		Description	11/2**	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		•						
			For transportation	tonne-	150 x L1	150 x L1	150 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	1.452	1.452	1.452	
			Hydraulic Boom placer	hour	1.452	1.452	1.452	
			pump					
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Con			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			st for 60 cum = $a+b+c+d+e+f$					
		Kat	e per cum = (a+b+c+d+e+f)/	ы				
	Case II	BC.	C Grade M25 using					
	Case II		ching plant & manual					
			cing					
		_	it = cum					
		Tak	sing output = 60 cum					
		a)	Material					
		,	Per Cum Basic Cost	cum	60.000	60.000	60.000	
			(Rate taken from sub-					
			analysis 21.07)					
		b)	Labour					
		For	pouring and placing					
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum	tonne-	150 x L1	150 x L1	150 x L1	
			Capacity)	km				
			For unloading	hour	3.333	3.333	3.333	
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		£١	Cantuantaula mualit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+f		(4.5.0.4.6)	(4.2.0.0.0)	(4.5.6.4.6)	
			e per cum = (a+b+c+d+e+f)/					
12.40	С	RC	C Grade M30					
	Case I		C Grade M30 using					
			ching plant & Concrete					
		pui	= :					
			it = cum					
		Tak	king output = 60 cum					

· N·c	Dof to M		Docariation	linia.	Quantity	as per project	category	F
r No	Ref. to M		Description	Unit	Large	Medium	Small	(
		a)	Material		50.000	60.000	60.000	
			Per Cum Basic Cost	cum	60.000	60.000	60.000	
			(Rate taken from sub-					
		۳,	analysis 21.09)					
		b)	Labour					
		FOI	pouring and placing	da	0.100	0.100	0.100	
			Mate	day	0.198	0.198	0.198	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	3.626	3.626	3.626	
		c)	Machinery					
			Transit truck agitator		45014	450	45014	
			For transportation (6 cum Capacity)	tonne- km	150 x L1	150 x L1	150 x L1	
			For unloading	hour	1.452	1.452	1.452	
			Hydraulic Boom placer	hour	1.452	1.452	1.452	
			pump	- 2	- -		- -	
		d)	Formwork @ 4 Percent					
		•	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
					@ on	@ on	@ on	
		f)	Contractor's profit		_	•	_	
			·		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 60 cum = a+b+c+d+e+		_	•	_	
		Cos	·		_	•	_	
	Casa II	Cos Rat	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f)		_	•	_	
	Case II	Cos Rat	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using		_	•	_	
	Case II	Cos Rat RCC bat	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual		_	•	_	
	Case II	Cos Rat RCC bat plac	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using		_	•	_	
	Case II	Cos Rat RCC bat plac Uni	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing t = cum		_	•	_	
	Case II	RCC bat plac Uni	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing t = cum ting output = 60 cum		_	•	_	
	Case II	Cos Rat RCC bat plac Uni	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material	/60	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
	Case II	RCC bat plac Uni	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing t = cum ting output = 60 cum		_	•	_	
	Case II	RCC bat plac Uni	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum sing output = 60 cum Material Per Cum Basic Cost	/60	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
	Case II	RCC bat plac Uni	ct for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from sub-	/60	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
	Case II	RCC bat place Unit Tak a)	ct for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing tt = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09)	/60	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
	Case II	RCC bat place Unit Tak a)	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour	/60	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
	Case II	RCC bat place Unit Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum ting output = 60 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour pouring and placing	/60	(a+b+c+d+e) 60.000	(a+b+c+d+e) 60.000	(a+b+c+d+e) 60.000	
	Case II	RCC bat place Unit Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing tt = cum ting output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate	cum day	(a+b+c+d+e) 60.000 0.479	(a+b+c+d+e) 60.000 0.479	(a+b+c+d+e) 60.000 0.479	
	Case II	RCC bat place Unit Tak a)	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour pouring and placing Mate Mason	cum day day	(a+b+c+d+e) 60.000 0.479 1.330	(a+b+c+d+e) 60.000 0.479 1.330	60.000 0.479 1.330	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum ting output = 60 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery	cum day day	(a+b+c+d+e) 60.000 0.479 1.330	(a+b+c+d+e) 60.000 0.479 1.330	60.000 0.479 1.330	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum sing output = 60 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour pouring and placing Mate Mason Mazdoor	cum day day	(a+b+c+d+e) 60.000 0.479 1.330	(a+b+c+d+e) 60.000 0.479 1.330	60.000 0.479 1.330	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	cum day day day	(a+b+c+d+e) 60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	
	Case II	Cos Rat RCC bat plac Uni Tak a)	t for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from sub- analysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation	cum day day day day tonne-	(a+b+c+d+e) 60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing t = cum ling output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity)	cum day day day tonne- km	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum ling output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading	cum day day day tonne- km	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) C Grade M30 using ching plant & manual cing it = cum ting output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 4 Percent	cum day day day tonne- km	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) Grade M30 using ching plant & manual cing it = cum cing output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 4 Percent on cost of concrete i.e.	cum day day day tonne- km	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	
	Case II	Cos Rat RCC bat plac Uni Tak a)	tt for 60 cum = a+b+c+d+e+ e per cum = (a+b+c+d+e+f) Grade M30 using ching plant & manual cing t = cum ling output = 60 cum Material Per Cum Basic Cost (Rate taken from subanalysis 21.09) Labour pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator For transportation (6 cum Capacity) For unloading Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour	cum day day day tonne- km	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	60.000 0.479 1.330 10.640	

					Quantity	y as per project	category
Sr No	Ref. to M		Description	Unit	Large	Medium	Small
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
		Cost	for 60 cum = a+b+c+d+e+f	f	,		,
		Rate	e per cum = (a+b+c+d+e+f)	/60			
12.40	D	RCC	Grade M35				
	Case I		Grade M35 using hing plant & Concrete				
		pum	ıp				
		Unit	= cum				
			ng output = 60 cum				
		a)	Material				
		b)	Per Cum Basic Cost (Rate taken from sub- analysis 21.11) Labour	cum	60.000	60.000	60.000
		-	pouring and placing				
		1 51	Mate	day	0.198	0.198	0.198
			Mason	day	1.330	1.330	1.330
			Mazdoor	day	3.626	3.626	3.626
		c)	Machinery	,	0.0_0	3.3_3	3.323
		٠,	Transit truck agitator				
			For transportation (6 cum Capacity)	tonne- km	150 x L1	150 x L1	150 x L1
			For unloading	hour	1.452	1.452	1.452
			Hydraulic Boom placer pump	hour	1.452	1.452	1.452
		·	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery			_	_
			Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
			for 60 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)				
	Case II	bato plac	Grade M35 using hing plant & manual ing = cum				
		Taki	ng output = 60 cum Material				
		•	Per Cum Basic Cost (Rate taken from sub- analysis 21.11)	cum	60.000	60.000	60.000
		b)	Labour				
		•					
		·	For pouring and placing				
		·	For pouring and placing Mate	day	0.479	0.479	0.479
		·		day day	0.479 1.330	0.479 1.330	0.479 1.330

Sr No	Ref. to M		Docarintion	Unit	Quantit	y as per project	category	Rate
Sr NO	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs.
		-1	D. G. a. a. b. Sara a surve					
		c)	Machinery					
			Transit truck agitator For transportation	tonne-	150 x L1	150 x L1	150 x L1	
			(6 cum Capacity)	km	130 X L1	130 X 21	130 X 21	
			For unloading	hour	3.333	3.333	3.333	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+	f				
		Rat	te per cum = (a+b+c+d+e+f)	/60				
12.40	E	RC	C Grade M40					
	Case I	bat pur	=					
			it = cum					
		так а)	king output = 60 cum Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.12)	cum	60.000	60.000	60.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.198	0.198	0.198	
			Mason	day	1.330	1.330	1.330	
			Mazdoor	day	3.626	3.626	3.626	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	150 x L1	150 x L1	150 x L1	
			For unloading	hour	1.452	1.452	1.452	
			Hydraulic Boom placer pump	hour	1.452	1.452	1.452	
		d)	Formwork @ 4 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+	f				
		Rat	te per cum = (a+b+c+d+e+f)	/60				

Cu Nia	Dof +- *4	December	11	Quantit	y as per project	category	Ra
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
	Case II	RCC Grade M40 using					
		batching plant & manual					
		placing					
		Unit = cum Taking output = 60 cum					
		a) Material					
		Per Cum Basic Cost	cum	60.000	60.000	60.000	
		(Rate taken from sub-	cam	00.000	00.000	00.000	
		analysis 21.12)					
		b) Labour					
		For pouring and placing					
		Mate	day	0.479	0.479	0.479	
		Mason	day	1.330	1.330	1.330	
		Mazdoor	day	10.640	10.640	10.640	
		c) Machinery	,				
		Transit truck agitator					
		For transportation	tonne-	150 x L1	150 x L1	150 x L1	
		(6 cum Capacity)	km				
		For unloading	hour	3.333	3.333	3.333	
		d) Formwork @ 4 Percent					
		on cost of concrete i.e.					
		cost of material, labour					
		and machinery					
		e) Overhead charges		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f) Contractor's profit		@ on	@ on	@ on	
		Cost for 60 cum = a+b+c+d+e+	<u>r</u>	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Rate per cum = (a+b+c+d+e+f	760				
12.40	F	RCC Grade M45					
	Case I	RCC Grade M45 using					
		batching plant & Concrete					
		pump					
		Unit = cum					
		Taking output = 60 cum					
		a) Material					
		Per Cum Basic Cost	cum	60.000	60.000	60.000	
		(Rate taken from sub-					
		analysis 21.13)					
		b) Labour					
		For pouring and placing					
			ن مام		0.400	0.400	
		Mate	day	0.198	0.198	0.198	
		Mate Mason	day	1.330	1.330	1.330	
		Mate Mason Mazdoor					
		Mate Mason Mazdoor c) Machinery	day	1.330	1.330	1.330	
		Mate Mason Mazdoor c) Machinery Transit truck agitator	day day	1.330 3.626	1.330 3.626	1.330 3.626	
		Mate Mason Mazdoor c) Machinery	day	1.330	1.330	1.330	

Cu Ni -	Def to se		Dogariatia:	11:4:4	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		•						•
			Hydraulic Boom placer	hour	1.452	1.452	1.452	
			pump					
		d)	Formwork @ 4 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		- \	Overal alternation		0	0	0	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		''	Contractor's profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+f		(4.5.5.4.5)	(4.5.5.4.6)	(4.2.0.4.0)	
			e per cum = (a+b+c+d+e+f)/					
	Case II		C Grade M45 using					
			ching plant & manual					
		-	cing 					
			it = cum					
			king output = 60 cum					
		a)	Material		50.000	60.000	50.000	
			Per Cum Basic Cost	cum	60.000	60.000	60.000	
			(Rate taken from sub-					
		b)	analysis 21.13) Labour					
		D)						
			For pouring and placing	day	0.470	0.470	0.470	
			Mate	day	0.479	0.479	0.479	
			Mason	day	1.330	1.330	1.330	
		۵۱	Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator	tonno	150 × 11	150 x L1	150 v 11	
			For transportation (6 cum Capacity)	tonne- km	150 x L1	130 X L1	150 x L1	
			For unloading	hour	3.333	3.333	3.333	
		d)	For unloading Formwork @ 4 Percent	Houl	3.333	3.333	3.333	
		uj	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		-,	0 100uu 0u800		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		·	·		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 60 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/	'60				
12.41	1100&1 700	Lev	relling Course for Pile cap					
		Pro	viding and laying of PCC					
			5 levelling course 100mm					
			ck below the pile cap.					
	Case I		C Grade M15 using					
	-300	bat	ching plant & Concrete mp					

					Quantit	Quantity as per project category		
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	Rat (Rs
•		•						•
		Uni	it = cum					
		Tak	king output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis 21.03)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
		~,	For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
				day	1.813	1.813	1.813	
		١	Mazdoor	auy	1.013	1.013	1.013	
		c)	Machinery					
			Transit truck agitator	+ 0 ** *	754	75 14	75 14	
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per trip)	1				
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f					
		Rat	te per cum = (a+b+c+d+e+f)/	/30				
	Case II	bat pla	C Grade M15 using tching plant & manual cing					
		_	it = cum					
			king output = 15 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub-	cum	15.000	15.000	15.000	
				ΚI	7.875	7.875	7.875	
			analysis 21.03) Water for curing	Kl	7.875	7.875	7.875	

					Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		•						
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and unloading @ 30 mins per					
			trip) (i) 16 KL capacity	hour	0.109 x L1 +			
			• •		0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f	:				
		Rat	e per cum = (a+b+c+d+e+f),	/15				
12.42	1600	un- Rei con Tec Uni	oplying, Fitting and Placing coated HYSD bar nforcement in Foundation nplete as per Drawing and thnical Specifications. it = MT ting output = 8 MT	· 1				
		a)	Material					
		ω,	MS bars including 5 Percent overlaps and wastage	tonne	8.400	8.400	8.400	
		b)	Binding wire Labour for	Kg	48.000	48.000	48.000	
		~1	straightening, cutting, bending, shifting to site, tying and placing in position Mate Blacksmith	day day	0.213 1.330	0.213 1.330	0.213 1.330	
			Mazdoor	day	3.990	3.990	3.990	
		c)	Machinery		.		-	
			Cutting Machine Bending Machine	hour hour	5.333 5.333	5.333 5.333	5.333 5.333	
			Dending Machine	Houl	J.J33	J.J33	J.333	

				Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	1			, ,		1	
		Electric generator 15	hour	5.333	5.333	5.333	
		KVA					
		Tipper					
		Tipper for Transportation					
		(i) 18 cum capacity	t.km	8 x L1			
		(ii) 14 cum capacity	t.km		8 x L1		
		(iii) 10 cum capacity	t.km			8 x L1	
		Loading & Unloading	hour				
		Time	_				
		(i) 18 cum capacity	hour	1.000			
		(ii) 14 cum capacity	hour		1.280	4 770	
		(iii) 10 cum capacity	hour			1.778	
		Light weight Crane	h	2.000	2.000	2.000	
		At cutting bending yard At site	hour hour	2.000 2.000	2.000 2.000	2.000 2.000	
		d) Overhead charges	Hour	@ on (a+b+c)			
		e) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		c, contractor s pront		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 8 MT (a+b+c+d+e)		(4121214)	(0.10.10.0)	(4.5.5.4)	
		Rate for per MT (a+b+c+d+e)/8	3				
12.43	1600	Supplying, Fitting and Placing					
		un-coated Mild steel					
		reinforcement in Foundation					
		complete as per Drawing and					
		Technical Specifications.					
		Unit = MT					
		Taking output = 8 MT					
		a) MaterialMS bars including 5	tonne	8.400	8.400	8.400	
		Percent overlaps and	torine	6.400	8.400	8.400	
		wastage					
		Binding wire	Kg	48.000	48.000	48.000	
		b) Labour for straightening,		40.000	40.000	40.000	
		cutting, bending,					
		shifting to site, tying and					
		placing in position					
		Mate	day	0.213	0.213	0.213	
		Blacksmith	day	1.330	1.330	1.330	
		Mazdoor	day	3.990	3.990	3.990	
		c) Machinery					
		Cutting Machine	hour	5.333	5.333	5.333	
		Bending Machine	hour	5.333	5.333	5.333	
		Electric generator 15 KVA	hour	5.333	5.333	5.333	
		Tipper					
		Tipper for Transportation	# L	014			
		(i) 18 cum capacity	t.km	8 x L1	0 v 1 1		
		(ii) 14 cum capacity (iii) 10 cum capacity	t.km t.km		8 x L1	8 x L1	
		Loading & Unloading	t.km hour			OXLI	
		Time	Hour				
		(i) 18 cum capacity	hour	1.000			
		(ii) 14 cum capacity	hour	1.000	1.280		
		(iii) 10 cum capacity	hour		- -	1.778	

C:: No	Dof to M	Description	l l m i A	Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Light weight Crane					
		At cutting bending yard	hour	2.000	2.000	2.000	
		At site	hour	2.000	2.000	2.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 8 MT (a+b+c+d+e)		` ,	,	` ,	
		Rate for per MT (a+b+c+d+e)/	8				

CHAPTER - 13

BRIDGE SUBSTRUCTURE

PREAMBLES:

- Although, Substructures are generally constructed in cement concrete, the rate analysis for brick and stone masonry in CM 1:3 have also been included which can be adopted if permitted by design.
- 2 The cost of formwork will vary with the height of the substructure. Provision has accordingly been made.
- 3 As the higher grade of concrete is costlier, the provision made for formwork on percentage basis has been suitably adjusted to make it comparable with other grades.
- Bridge bearing, being commercial items produced by specialized firms with imported technology and parts, the rates for the same are required to be ascertained from the market for the approved design and technical specifications. These rates are not included in the analysis as they can vary from design to design and base on their loading arrangement and span variations, hence if required they maybe analysed for a particular project depending upon the loadings and design.
- 5 Filter media and backfilling behind abutments are required to be provided as per guidelines given in IRC: 78.
- 6 Weep holes shall be provided as per Clause 2706 of MoRT&H Specifications.
- 7 In case of roller-cum-rocker bearings, only full circular rollers are to be provided.
- 8 All bearings shall be set truly level so as to have full and even seating.
- 9 For elastomeric bearing pads, 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.
- The bearing should be procured only from those manufacturers who have been pre-qualified by the Ministry of Road Transport and Highways.
- 11 The bottoms of girders resting on the bearing shall be plane and truly horizontal.
- For spans in grade, the bearing shall be placed horizontal by using sole plates for suitable designed RCC pedestals.

				Quantity	, as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
13.01	1300 & 2200	Brick masonry work in 1:: sub-structure complete excluding pointing and plastering, as per drawing Technical Specifications Unit = cum Taking output = 1 cum a) Material					
		Bricks 1st class	each	500.000	500.000	500.000	
		Cement mortar 1:3 (Rate taken from sub analysis 21.01 A)	cum O-	0.240	0.240	0.240	
		Water for curing b) Labour	KL	0.483	0.483	0.483	
		Mate	day	0.085	0.085	0.085	
		Mason	day	1.064	1.064	1.064	
		Mazdoor	day	1.064	1.064	1.064	
		Add for scaffolding @ Percent of cost of mand labour c) Machinery Water tanker (speed km/hr and return spekm/hr and spreading mins per trip) (i) 16 KL capacity	aterial @ eed @	0.007 x L1 +			
		(ii) 12 KL capacity	hour	0.007 x L1 +	0.009 x L1 +		
		()	noui		0.027		
		(iii) 6 KL capacity	hour			0.018 x L1 + 0.054	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		`@ on (a+b+c+d)	@ on (a+b+c+d)	`@ on (a+b+c+d)	
		Rate per cum (a+b+c+d+e	e)				
13.02	1300 & 2200	Pointing with cement mo (1:3) on brick work in substructure as per Techi Specifications Unit = 10 sqm Taking output = 10 sqm a) Material Cement mortar 1:3		0.030	0.030	0.030	
		(Rate taken from suk analysis 21.01 A) b) Labour		0.050	0.030	0.030	
		Mate	day	0.053	0.053	0.053	
		Mason	day	0.665	0.665	0.665	
		Mazdoor	day	0.665	0.665	0.665	
		c) Overhead chargesd) Contractor's profit	33,	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		Rate per 10 sqm (a+b+c+c	d)	(4.5.6)	(4.5.6)	(4.5.6)	
	Note	Scaffolding is already inclu	uded in item 13	.01			

				Quantity	/ as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
13.03	1300 & 2200	Plastering with cement mortar (1:3) on brick work in substructure as per Technical Specifications Unit = 10 sqm Taking output = 10 sqm					
		a) Material Cement mortar 1:3 (Rate taken from subanalysis 21.01 A)	cum	0.144	0.144	0.144	
		Water for curing b) Labour	KL	0.139	0.139	0.139	
		Mate	day	0.053	0.053	0.053	
		Mason	day	0.665	0.665	0.665	
		Mazdoor c) Machinery Water tanker (speed @ km/hr and return speed @ km/hr and spreading @ 30 mins per trip)	day	0.665	0.665	0.665	
		(i) 16 KL capacity	hour	0.002 x L1 + 0.006			
		(ii) 12 KL capacity	hour		0.003 x L1 + 0.008		
		(iii) 6 KL capacity	hour			0.005 x L1 + 0.015	
		d) Overhead chargese) Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		Rate per 10 sqm (a+b+c+d+e)		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
42.5-	Note	 Scaffolding is already include The number of masons and I taken into account while proplastering. 	Mazdoor viding th	s already catere			
13.04	1400 & 2200	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications Random Rubble Masonry (coursed/uncoursed) Unit = cum Taking output = 1 cum					
		a) Material					
		Stone Through and bond stone (7no.x0.24mx0.24mx0.39m	cum No	1.000 7.000	1.000 7.000	1.000 7.000	
		= 0.16 cu.m) Cement mortar 1:3 (Rate taken from sub-	cum	0.330	0.330	0.330	
		analysis 21.01 A) Water for curing	KL	0.966	0.966	0.966	

Sr No Ref. to M Description Unit Large b) Labour Mate day 0.128 Mason day 1.596 Mazdoor day 1.596 Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour c) Machinery Water tanker (speed @	0.128 1.596 1.596	0.128 1.596 1.596	(Rs.)
Mate day 0.128 Mason day 1.596 Mazdoor day 1.596 Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour c) Machinery	1.596	1.596	
Mate day 0.128 Mason day 1.596 Mazdoor day 1.596 Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour c) Machinery	1.596	1.596	
Mason day 1.596 Mazdoor day 1.596 Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour c) Machinery	1.596	1.596	
Mazdoor day 1.596 Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour c) Machinery			
Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour c) Machinery	1.596	1.596	
Percent of cost of a) Material and b) Labour c) Machinery			
Material and b) Labour c) Machinery			
c) Machinery			
Water tarker (speed @			
km/hr and return speed @			
km/hr and spreading @ 30			
mins per trip)			
(i) 16 KL capacity hour 0.013 x L1 0.04	+		
(ii) 12 KL capacity hour	0.018 x L1 +		
, , ,	0.054		
(iii) 6 KL capacity hour		0.036 x L1 + 0.107	
d) Overhead charges @ on	@ on	@ on	
(a+b+c)	(a+b+c)	(a+b+c)	
e) Contractor's profit @ on (a+b+c+d)	@ on) (a+b+c+d)	@ on (a+b+c+d)	
Rate per cum (a+b+c+d+e)			
13.04 B Coursed rubble masonry (first sort) Unit = cum Taking output = 1 cum			
a) Material			
Stone cum 1.100	1.100	1.100	
Through and bond stone each 7.000	7.000	7.000	
(7 no.x 0.24 m x 0.24 m x 0.39 m = 0.16 cum)			
Cement mortar 1:3 cum 0.300	0.300	0.300	
(Rate taken from sub- analysis 21.01 A)			
Water for curing KL 0.966	0.966	0.966	
b) Labour			
Mate day 0.160	0.160	0.160	
Mason day 1.995	1.995	1.995	
Mazdoor day 1.995	1.995	1.995	
Add for scaffolding @ 5			
Percent of cost of material			
and labour			
c) Machinery			
Water tanker (speed @ km/hr and return speed @			
km/hr and return speed @ km/hr and spreading @ 30			
mins per trip))			
(i) 16 KL capacity hour 0.013 x L1 0.04	+		
(ii) 12 KL capacity hour	0.018 x L1 + 0.054		

6.11	D-6 4- 84		Description		Quantity as per project category			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 6 KL capacity	hour			0.036 x L1 + 0.107	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per cum (a+b+c+d+e)					
13.04	С	Plai	lar masonry (first sort) n ashlar t = cum					
		Tak	ing output = 1 cum					
		a)	Material	611100	1 110	1 110	1 110	
			Stone Through and bond stone	cum each	1.110 7.000	1.110 7.000	1.110 7.000	
			(7no.x0.24mx0.24mx0.39 m = 0.16 cu.m)	Cacii	7.000	7.000	7.000	
			Cement mortar 1:3 (Rate taken from sub- analysis 21.01 A)	cum	0.330	0.330	0.330	
			Water for curing	KL	0.966	0.966	0.966	
		b)	Labour for masonry work		0.266	0.266	0.266	
			Mate Mason	day	0.266 3.325	0.266 3.325	0.266 3.325	
			Mazdoor	day day	3.325	3.325	3.325	
		c)	Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour Machinery Water tanker (speed @ km/hr and return speed @ km/hr and spreading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.013 x L1 + 0.04			
			(ii) 12 KL capacity	hour		0.018 x L1 + 0.054	0.035 14	
		d)	(iii) 6 KL capacity Overhead charges	hour	@ on	@ on	0.036 x L1 + 0.107 @ on	
		e)	Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
			e per cum (a+b+c+d+e)		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
	Note		labours already considered in viding these categories in the			ve been taken i	nto account wh	iile
13.05	1500, 1700 & 2200	con com Tec	n/Reinforced cement crete in sub-structure nplete as per drawing and hnical Specifications					
13.05			Grade M15					
	(p)	PCC	ght upto 5m Grade M15 using batching					
		plar	nt & Concrete pump					

Sr No Ref. to M	Def to M		Description	Linit	Quantity	Rate		
Sr No	Ker. to IVI	Description		Unit	Large	Medium	Small	(Rs.)
			_					
			it = cum					
		Так а)	king output = 30 cum Material					
		aj	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-	cuiii	30.000	30.000	30.000	
			analysis -21.03)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
		For	pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
		٠,١	Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	73 % LI	73 % LI	73 % LI	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @					
			km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(1) TO RE capacity	noui	0.656			
			(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
			., .			0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
		۵١	and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			st for 30 cum = a+b+c+d+e+f te per cum = (a+b+c+d+e+f)/3	0	,	,	,	
13.05	В	PC	C Grade M20					
13.03	(p)		ight upto 5m					
	(P)		C Grade M20 using batching					
			nt transit mixer & Concrete					
		pur	mp					
			it = cum					
			king output = 30 cum					
		a)	Material		00.00-	00.00-	00.00-	
			Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis -21.04)					
			- ,					

	D. (:	Description		Unit	Quantity	category	Rate	
Sr No	Ref. to M				Large	Medium	Small	(Rs.)
			Water for curing	KI	15.750	15.750	15.750	
		b)	Labour					
		For	pouring and placing					
			Mate	day	0.143	0.143	0.143	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.571	1.571	1.571	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour		0.075	0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery				11/3	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/3	0				
13.05	С	pla pur Uni	C Grade M25 using batching nt transit mixer & Concrete np it = cum king output = 30 cum					
		a)	Material					
		•	Per Cum Basic Cost (Rate taken from sub- analysis -21.06)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
		•	For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
				•				

			5		Quantity as per project category			
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		٠,	Overnead charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			it for 30 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)/3	0				
13.05 C	(q)	Hei	ght 5m to 10m					
C		pla pur Uni	C Grade M25 using batching nt transit mixer & Concrete mp it = cum cing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis -21.06)	cum	30.000	30.000	30.000	
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery Transit truck agitator	•				
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate (Rs.
31 140	Kei. to ivi		Description	Jill	Large	Medium	Small	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading) (i) 16 KL capacity (ii) 12 KL capacity	hour	0.219 x L1 + 0.656	0.292 x L1 +		
			(iii) 6 KL capacity	hour		0.875	0.583 x L1 +	
		d) e) f)	Formwork @ 12 Percent on cost of concrete i.e. cost of material, labour and machinery Add 2 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift Overhead charges Contractor's profit		@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	
		_	. 6 - 22 - 1 - 1 - 6		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			t for 30 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)/3	20				
13.05 C	(r)	PC0 pla pur	ght above 10m C Grade M25 using batching nt transit mixer & Concrete mp					
			it = cum ing output = 30 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub-analysis - 21.06) Water for curing	cum KI	30.000 15.750	30.000 15.750	30.000 15.750	
		b)	Labour	131	25.750	25.750	25.750	
		c)	For pouring and placing Mate Mason Mazdoor Machinery Transit truck agitator	day day day	0.152 1.995 1.813	0.152 1.995 1.813	0.152 1.995 1.813	
			For transportation (6 cum Capacity) For unloading Hydraulic Boom placer pump Water tanker (speed @	tonne- km hour hour	75 x L1 0.726 0.726	75 x L1 0.726 0.726	75 x L1 0.726 0.726	
			km/hr and return speed @ km/hr and 30 mins for unloading)					

	-			Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		(i) 16 KL capacity	hour	0.219 x L1 +			
		(ii) 12 KL capacity	hour	0.656	0.292 x L1 +		
		(II) 12 KL Capacity	Hour		0.292 X L1 +		
		(iii) 6 KL capacity	hour			0.583 x L1 +	
						1.75	
		d) Formwork @ 15 Percent on cost of concrete i.e.					
		cost of material, labour					
		and machinery					
		Add 4 Percent of cost of					
		material, Labour and					
		machinery excluding formwork to cater for					
		extra lift					
		e) Overhead charges		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 30 cum = a+b+c+d+e+f		(a+b+c+u+e)	(атытстите)	(атытстите)	
		Rate per cum = $(a+b+c+d+e+f)/3$	30				
13.05							
	(p)	Height upto 5m					
		PCC Grade M30 using batching plant transit mixer & Concrete					
		pump					
		Unit = cum					
		Taking output = 30 cum					
		a) Material		20.000	20.000	20.000	
		Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
		analysis -21.08)					
		Water for curing	KI	15.750	15.750	15.750	
		b) Labour					
		For pouring and placing					
		Mate	day	0.152	0.152	0.152	
		Mason Mazdoor	day day	1.995 1.813	1.995 1.813	1.995 1.813	
		c) Machinery	uay	1.813	1.813	1.813	
		Transit truck agitator					
		For transportation	tonne-	75 x L1	75 x L1	75 x L1	
		(6 cum Capacity)	km				
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
		Water tanker (speed @					
		km/hr and return speed @					
		km/hr and 30 mins for					
		unloading)	L	0.240 +4			
		(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
				0.030			

Sr No	Ref. to M		Description	l lm!s	Quantity	as per project	category	Rate
Sr No	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour		0.873	0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/3	0				
13.05 D	(q)	Hei	ght 5m to 10m					
J		pla pur Uni	t = cum					
			ing output = 30 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis -21.08)	ΚI	15.750	15.750	15.750	
		b)	Water for curing Labour	141	13.730	13.730	13.730	
		IJ,	For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	

Rate (Rs.)

					Quantity	as per project	category
Sr No	Ref. to M		Description	Unit	Large	Medium	Small
<u>l</u>				J.	8-		•
		d)	Formwork @ 12 Percent on cost of concrete i.e. cost of material, labour and machinery Add 2 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift				
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
		Cos	st for 30 cum = a+b+c+d+e+f		(0.0.0.0.0.0)	(0.0.0.0.0.0)	(415101410)
			te per cum = (a+b+c+d+e+f)/3	0			
13.05 D	(r)		ght above 10m				
		pla pur Uni	C Grade M30 using batching nt transit mixer & Concrete mp it = cum king output = 30 cum				
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis -21.08)	cum	30.000	30.000	30.000
			Water for curing	Kl	15.750	15.750	15.750
		b)	Labour				
			For pouring and placing		0.453	0.453	0.453
			Mate	day	0.152	0.152	0.152
			Mason Mazdoor	day day	1.995 1.813	1.995 1.813	1.995 1.813
		c)	Machinery	uay	1.615	1.615	1.015
		۷,	Transit truck agitator				
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1
			For unloading	hour	0.726	0.726	0.726
			Hydraulic Boom placer	hour	0.726	0.726	0.726
			pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)				
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656		
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875	
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75

Rate (Rs.)

	- • • • • •			Quantity	as per project	category
Sr No	Ref. to M	Description	Unit	Large	Medium	Small
		d) Formwork @ 15 Percent on cost of concrete i.e. cost of material, labour and machinery Add 4 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/3		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
13.05	E (p)	RCC Grade M20 Height upto 5m RCC Grade M20 using batching plant transit mixer & Concrete pump Unit = cum Taking output = 30 cum				
		a) Material Per Cum Basic Cost (Rate taken from subanalysis -21.05)	cum	30.000	30.000	30.000
		Water for curing b) Labour	KI	15.750	15.750	15.750
		For pouring and placing		0.205	0.205	0.205
		Mate	day	0.206	0.206	0.206
		Mason	day	1.995	1.995	1.995
		Mazdoor	day	3.143	3.143	3.143
		c) Machinery				
		Transit truck agitator For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1
		For unloading	hour	0.726	0.726	0.726
		Hydraulic Boom placer pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)	hour	0.726	0.726	0.726
		(i) 16 KL capacity	hour	0.219 x L1 + 0.656		
		(ii) 12 KL capacity	hour		0.292 x L1 + 0.875	
		(iii) 6 KL capacity	hour			0.583 x L1 + 1.75

					Quantity	as per project	category	Pato
Sr No	Ref. to M		Description	Unit	Large	as per project Medium	Small	Rate (Rs.)
			Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery Overhead charges Contractor's profit the for 30 cum = a+b+c+d+e+f the per cum = (a+b+c+d+e+f)/36	0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	(113.)
13.05 E	(q)		ght 5m to 10m					
		Per exc form cos made RCC plan pur	height, upto 10m, add 2 cent of cost as above luding formwork. For cost of mwork add 12 Percent of t of material, labour and chinery instead of 4 Percent. C Grade M20 using batching int transit mixer & Concrete mp					
		_	ing output = 30 cum					
		a)	Material					
		٠,	Per Cum Basic Cost (Rate taken from sub- analysis -21.05)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	

C# No	D-6 4- M	Do contestions	11	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

d) Formwork @ 12 Percent on cost of concrete i.e. cost of material, labour and machinery Add 2 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift

Overhead charges e)

@ on @ on @ on (a+b+c+d) (a+b+c+d) (a+b+c+d) @ on @ on @ on (a+b+c+d+e) (a+b+c+d+e) (a+b+c+d+e)

Contractor's profit f)

Cost for 30 cum = a+b+c+d+e+fRate per cum = (a+b+c+d+e+f)/30

(r) Height above 10m 13.05 Ε

Same as Item 12.08 (C) with the following changes: (i) Add 4 Percent of cost of material, labour and machinery excluding form work to cater for extra lift. (ii) The provision of form work shall be 15 Percent instead of 4 Percent of cost of material, labour and machinery.

RCC Grade M20 using batching plant transit mixer & Concrete pump

Unit = cum

Taki	ng output = 30 cum				
a)	Material				
	Per Cum Basic Cost	cum	30.000	30.000	30.000
	(Rate taken from sub-				
	analysis -21.05)				
	Water for curing	Kl	15.750	15.750	15.750
b)	Labour				
	For pouring and placing				
	Mate	day	0.206	0.206	0.206
	Mason	day	1.995	1.995	1.995
	Mazdoor	day	3.143	3.143	3.143
c)	Machinery				
	Transit truck agitator				
	For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1
	Capacity)	km			
	For unloading	hour	0.726	0.726	0.726
	Hydraulic Boom placer	hour	0.726	0.726	0.726
	pump				
	Water tanker (speed @				
	km/hr and return speed @				
	km/hr and 30 mins for				
	unloading)				

Sr No	5 (Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(ii) 42 KLit		0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour		0.875	0.583 x L1 +	
			(III) O KE capacity	Hour			1.75	
			d) Formwork @ 15				1.75	
			Percent on cost of					
			concrete i.e. cost of					
			material, labour and					
			machinery Add 4 Percent of cost					
			of material, Labour and					
			machinery excluding					
			formwork to cater for					
			extra lift					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Coc	t for 30 cum = a+b+c+d+e+f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			e per cum = (a+b+c+d+e+f)/3	n				
		ivat	e per cuiii - (a+b+c+u+e+i)/ 3	J				
13.05	F	RCC	Grade M25					
	(q)		ght upto 5m					
			ne as Item 12.8 (E) upto 5m					
			ght, excluding formwork. For					
			t of formwork, add 10					
			cent of cost of material,					
			our and machinery instead of 5 Percent.					
			Grade M25 using batching					
			nt transit mixer & Concrete					
		pur						
		Uni	t = cum					
		Tak	ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis -21.07)	Κl	15 750	15 750	15 750	
		b)	Water for curing Labour	KI	15.750	15.750	15.750	
		υj	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery	•				
			Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					

6 11	5 () 14	5	T	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)	·				
		(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
		(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
		(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d) Formwork Add @ 10 Percent on cos of concrete i.e. cost o material, labour and machinery (a+b+c) fo Formwork	f d				
		e) Overhead charges f) Contractor's profit		@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	
		i, contractor o prome		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/	30				
13.05 F	(q)	Height 5m to 10m RCC Grade M25 using batching plant transit mixer & Concrete pump Unit = cum Taking output = 30 cum					
		Per Cum Basic Cost (Rate taken from sub- analysis -21.07)	cum	30.000	30.000	30.000	
		Water for curing b) Labour	Kl	15.750	15.750	15.750	
		For pouring and placing					
		Mate	day	0.206	0.206	0.206	
		Mason Mazdoor	day day	1.995 3.143	1.995 3.143	1.995 3.143	
		c) Machinery Transit truck agitator	uay	3.143	3.143	3.143	
		For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
		Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)	1				

Sr No	Ref. to M		Description	linit			Quantity as per project category		
				Unit	Large	Medium	Small	(Rs.)	
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656				
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875			
			(iii) 6 KL capacity	hour		0.073	0.583 x L1 + 1.75		
		d)	Formwork Add @ 11.8 Percent on cost of concrete i.e. cost of material, labour and machinery (a+b+c) for Formwork						
			Add 1.8 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift						
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)		
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)		
13.05 F		(r)	Height above 10m						
		a)	Material						
			Per Cum Basic Cost (Rate taken from sub- analysis -21.07)	cum	30.000	30.000	30.000		
			Water for curing	Kl	15.750	15.750	15.750		
		b)	Labour						
			For pouring and placing						
			Mate	day	0.206	0.206	0.206		
			Mason	day	1.995	1.995	1.995		
			Mazdoor	day	3.143	3.143	3.143		
		c)	Machinery						
			Transit truck agitator						
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1		
			For unloading	hour	0.726	0.726	0.726		
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726		
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)						
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656				
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875			
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75		

Rate (Rs.)

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category
STINO	Kei. to ivi	Description	Unit	Large	Medium	Small
		d) Formwork Add @ 15 Percent on cos of concrete i.e. cost of material, labour and machinery (a+b+c) for Formwork Add 4 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
		Nate per cuiti - (a+b+c+u+e+i)/	30			
13.05	G	RCC Grade M30				
	(p)	Height upto 5m				
		RCC Grade M30 using batching plant transit mixer & Concrete pump				
		Unit = cum				
		Taking output = 30 cum				
		a) Material Per Cum Basic Cost	cum	30.000	30.000	30.000
		(Rate taken from sub- analysis -21.09)	•	33.333	33.333	33.333
		Water for curing	Kl	15.750	15.750	15.750
		b) Labour				
		For pouring and placing				
		Mate	day	0.206	0.206	0.206
		Mason	day	1.995	1.995	1.995
		Mazdoor	day	3.143	3.143	3.143
		c) Machinery				
		Transit truck agitator		7514	7514	7514
		For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1
		For unloading	hour	0.726	0.726	0.726
		Hydraulic Boom placer pump	hour	0.726	0.726	0.726
		Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)		0.240		
		(i) 16 KL capacity	hour	0.219 x L1 + 0.656		
		(ii) 12 KL capacity	hour		0.292 x L1 + 0.875	

Cr. N =	Def to M	Dagarinston	11 %	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
		(iii) 6 KL capacity d) Formwork Add @ 10 Percent of concrete i.e. cost material, labour and machinery (a+b+c) formwork e) Overhead charges f) Contractor's profit Cost for 30 cum = a+b+c+ Rate per cum = (a+b+c+d)	of or d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	0.583 x L1 + 1.75 @ on (a+b+c+d) @ on (a+b+c+d+e)	, .
			,, 30				
13.05 G	(q)	Height 5m to 10m					
G		RCC Grade M30 using bar plant transit mixer & Cor pump Unit = cum Taking output = 30 cum	_				
		a) Material					
		Per Cum Basic Cost (Rate taken from sul analysis -21.09)	cum o-	30.000	30.000	30.000	
		Water for curing	KI	15.750	15.750	15.750	
		b) Labour					
		For pouring and pla	•	0.005	0.005	0.005	
		Mate Mason	day	0.206 1.995	0.206	0.206	
		Mazdoor	day day	3.143	1.995 3.143	1.995 3.143	
		c) Machinery	uay	3.143	3.143	3.143	
		Transit truck agitato	r				
		For transportation (6		75 x L1	75 x L1	75 x L1	
		Capacity)	km	-		-	
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom place pump Water tanker (speece km/hr and return speece km/hr and 30 mins for	I @ eed @	0.726	0.726	0.726	
		unloading)					
		(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
		(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
		(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d) Formwork					
		Add @ 11.5 Percent cost of concrete i.e. material, labour and machinery (a+b+c) f	cost of				

	D. C	_			Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		mater mach formwextra e) Overh f) Contra Cost for 30	.6 Percent of cost of rial, Labour and inery excluding work to cater for	0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
13.05 G	(r)	Height abo	ve 10m					
		plant trans pump Unit = cum	M30 using batching it mixer & Concrete put = 30 cum					
		a) Mater	•					
		(Rate t	m Basic Cost taken from sub- is -21.09)	cum	30.000	30.000	30.000	
			for curing	Kl	15.750	15.750	15.750	
		b) Labou	r ouring and placing					
		Mate	ouring and placing	day	0.206	0.206	0.206	
		Masor	١	day	1.995	1.995	1.995	
		Mazdo	oor	day	3.143	3.143	3.143	
		c) Mach	inery					
			t truck agitator					
			nsportation Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			loading	hour	0.726	0.726	0.726	
			ulic Boom placer	hour	0.726	0.726	0.726	
		Water km/hr km/hr unload						
		(i) 16 I	KL capacity	hour	0.219 x L1 + 0.656			
		(ii) 12	KL capacity	hour	0.030	0.292 x L1 + 0.875		

6. 11	D-4 :		D 111		Quantity		category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork					
			Add @ 14 Percent on cost of concrete i.e. cost of material, labour and					
			machinery (a+b+c) for Formwork					
			Add 3.5 Percent of cost of material, Labour and machinery excluding formwork to cater for					
			extra lift					
		e) f)	Overhead charges Contractor's profit		@ on (a+b+c+d) @ on	@ on (a+b+c+d)	@ on (a+b+c+d)	
		•	•		(a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			st for 30 cum = $a+b+c+d+e+f$	0				
		кат	e per cum = (a+b+c+d+e+f)/3	U				
13.05	н (р)	Hei RCC pla	C Grade M35 ght upto 5m C Grade M35 using batching nt transit mixer & Concrete					
		pur	np it = cum					
		_	ring output = 30 cum					
		a)	Material					
		۳,	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub- analysis -21.11)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason Mazdoor	day day	1.995 3.143	1.995 3.143	1.995 3.143	
		c)	Machinery	uay	3.143	3.143	3.143	
		-,	Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		

6 -:	B (B 1.11		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 6 KL capacity Formwork Add @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery (a+b+c) for Formwork Overhead charges Contractor's profit t for 30 cum = a+b+c+d+e+f e per cum = (a+b+c+d+e+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+c+f)/3(a+b+f)/3(a	hour	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	0.583 x L1 + 1.75 @ on (a+b+c+d) @ on (a+b+c+d+e)	
13.05	(a)	Hei	ght 5m to 10m					
H	(4)		0 0 10 20					
		plai pun Uni Tak	t = cum ing output = 30 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub- analysis -21.11)	cum	30.000	30.000	30.000	
		b)	Water for curing Labour	Kl	15.750	15.750	15.750	
			For pouring and placing		0.005	0.005	0.000	
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	0.726	0.726	0.726	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)	hour	0.726	0.726	0.726	
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork Add @ 11 Percent on cost of concrete i.e. cost of material, labour and					

Sr No	D-6 4- M			Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

machinery (a+b+c) for Formwork Add 1.4 Percent of cost of material, Labour and machinery excluding formwork to cater for extra lift

Overhead charges e) @ on @ on @ on (a+b+c+d) (a+b+c+d) (a+b+c+d) **Contractor's profit** f) @ on @ on @ on (a+b+c+d+e) (a+b+c+d+e) (a+b+c+d+e)

Cost for 30 cum = a+b+c+d+e+fRate per cum = (a+b+c+d+e+f)/30

(4.5.5.4.5.1,755

Note The basic components of this analysis are the same as those of items 13.08 (A to H). The only changes are as under:

- a) Ramps/Stairs: Extra expenditure on structures which are more than 5 m high @ 2 Percent of cost for height upto 10 m and 4 Percent for heights above 10 m will be involved for approaching the work spot by providing higher ramp/stair case for use by the working parties.
- b) The above mentioned percentages have been suitably modified for different categories as cost for various categories varies, whereas effort for access for same height will be similar. As the cost of richer concrete is comparatively more, the percentage to be added has been reduced to maintain the same cost for extra efforts.

13.05 (r) Height above 10m

RCC Grade M35 using batching plant transit mixer & Concrete pump

Unit = cum

Taking output = 30 cum

Так	ing output = 30 cum				
a)	Material				
	Per Cum Basic Cost	cum	30.000	30.000	30.000
	(Rate taken from sub-				
	analysis -21.11)				
	Water for curing	Κl	15.750	15.750	15.750
b)	Labour				
	For pouring and placing				
	Mate	day	0.206	0.206	0.206
	Mason	day	1.995	1.995	1.995
	Mazdoor	day	3.143	3.143	3.143
c)	Machinery				
	Transit truck agitator				
	For transportation	tonne-	75 x L1	75 x L1	75 x L1
	(6 cum Capacity)	km			
	For unloading	hour	0.726	0.726	0.726
	Hydraulic Boom placer	hour	0.726	0.726	0.726
	pump				
	Water tanker (speed @				
	km/hr and return speed @				
	km/hr and 30 mins for				
	unloading)				

					Quantity	as per project	category	Rate
Sr No	Ref. to M	Des	cription	Unit	Large	Medium	Small	(Rs.)
				•		•		
		(i) 16 KL (capacity	hour	0.219 x L1 +			
					0.656			
		(ii) 12 KL	capacity	hour		0.292 x L1 +		
		(;;;) E KI .	canacity	hour		0.875	0.583 x L1 +	
		(iii) 6 KL d	apacity	noui			1.75	
		d) Formwoi	·k				1.73	
		-	3 Percent on cost					
		of concre	ete i.e. cost of					
			, labour and					
		machine Formwo	ry (a+b+c) for					
			ercent of cost of					
			, Labour and					
			ry excluding					
			k to cater for					
		extra lift			_	_	_	
		e) Overhea	d charges		@ on	@ on	@ on	
		f) Contract	or's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
		i) Contract	or a profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost for 30 cu	m = a+b+c+d+e+f		,	,	,	
		Rate per cum	= (a+b+c+d+e+f)/3	0				
13.05	1	RCC Grade M	_					
	(p)	Height upto 5						
			40 using batching nixer & Concrete					
		pump	ilixei & coliciete					
		Unit = cum						
		Taking output	: = 30 cum					
		a) Material						
			Basic Cost	cum	30.000	30.000	30.000	
		-	en from sub-					
		analysis -		ΚI	15.750	15.750	15.750	
		Water fo b) Labour	i curing	KI	13.730	13.730	13.730	
		•	ing and placing					
		Mate	9 aa p.a.e9	day	0.206	0.206	0.206	
		Mason		day	1.995	1.995	1.995	
		Mazdoor		day	3.143	3.143	3.143	
		c) Machine	ry					
			uck agitator					
		For trans		tonne-	75 x L1	75 x L1	75 x L1	
		(6 cum C		km hour	0.726	0.726	0.726	
		For unloa	ding Boom placer	hour	0.726	0.726	0.726	
		pump	. Boom placer	noul	0.720	0.720	0.720	
			nker (speed @					
			d return speed @					
		km/hr an	d 30 mins for					
		unloading						

Cr No	Dof to M		Docarintion	l lesia	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(ii) 12 KL capacity	hour	0.656	0.292 x L1 +		
			(II) 12 KL capacity	nour		0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork					
			Add @ 10 Percent on cost of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
			Formwork					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f		(атытстите)	(атытстите)	(атытстите)	
			e per cum = (a+b+c+d+e+f)/3	0				
13.05 I	(q)		ght 5m to 10m					
			height, upto 10m, add 1.4					
			cent of cost as above luding formwork. For cost of					
			nwork add 11 Percent of					
			t of material, labour and					
			chinery .					
			Grade M40 using batching					
		-	nt transit mixer & Concrete					
		pun	np t = cum					
			t = cum ing output = 30 cum					
		a)	Material					
		Ψ,	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis -21.12)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing		0.000	0.000	0.005	
			Mate	day	0.206	0.206	0.206	
			Mason Mazdoor	day day	1.995 3.143	1.995 3.143	1.995 3.143	
		c)	Machinery	uay	3.143	3.143	3.143	
		٠,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @ km/hr and 30 mins for					
			unloading)					

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
			(111) (2.11)			0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
		d)	Formwork				1.75	
		uj	Add @ 11 Percent on cost					
			of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
			Formwork					
			Add 1.4 Percent of cost of					
			material, Labour and					
			machinery excluding formwork to cater for					
			extra lift					
		e)	Overhead charges		@ on	@ on	@ on	
		•			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			t for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/3	0				
13.05 I	(r)	Hei	ght above 10m					
	• • • • • • • • • • • • • • • • • • • •		height, above 10m, add 3					
		_	cent of cost as above					
			luding formwork. For cost of					
		_	nwork add 13 Percent of tof material, labour and					
			chinery					
			Grade M40 using batching					
			nt transit mixer & Concrete					
		pur	mp					
			t = cum					
			ing output = 30 cum					
		a)	Material		22.222	22.222	22.222	
			Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis -21.12)					
			Water for curing	Κl	15.750	15.750	15.750	
		b)	Labour		2017.00	2017 00	201700	
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km	0.736	0.736	0.736	
			For unloading	hour	0.726	0.726	0.726	

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
l l		ı				l.		
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @					
			km/hr and 30 mins for					
			unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			, ,		0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
			, , ,			0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
			(, = =================================				1.75	
		d)	Formwork					
		•	Add @ 13 Percent on cost					
			of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
			Formwork					
			Add 3 Percent of cost of					
			material, Labour and					
			machinery excluding					
			formwork to cater for extra					
			lift					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/3	0				
13.05	J		Grade M45					
	(p)		ght upto 5m					
			Grade M45 using batching					
		-	nt transit mixer & Concrete					
		pun						
		_	t = cum					
			ing output = 30 cum					
		a)	Material Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis -21.13)					
			Water for curing	Κl	15.750	15.750	15.750	
		b)	Labour	KI	13.730	13.730	13.750	
		IJ,	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
				o o y	J. 4 TJ	3.443	J. 47J	
		c)		•				
		c)	Machinery	•				
		c)	Machinery Transit truck agitator			75 x L1		
		c)	Machinery Transit truck agitator For transportation	tonne-	75 x L1	75 x L1	75 x L1	
		c)	Machinery Transit truck agitator	tonne-		75 x L1 0.726		

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
l_						l	l	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @ km/hr and 30 mins for					
			unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			, ,		0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
			(iii) 6 KL canacity	hour		0.875	0.583 x L1 +	
			(iii) 6 KL capacity	nour			1.75	
		d)	Formwork					
		•	Add @ 10 Percent on cost					
			of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
		e)	Formwork Overhead charges		@ on	@ on	@ on	
		ej	Overneau charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			st for 30 cum = $a+b+c+d+e+f$					
		Rat	e per cum = (a+b+c+d+e+f)/3	0				
13.05 J	(q)	Hei	ght 5m to 10m					
			height, upto 10m, add 1.4					
			cent of cost as above					
			luding formwork. For cost of mwork add 11 Percent of					
			t of material, labour and					
		ma	chinery.					
			C Grade M45 using batching					
		-	nt transit mixer & Concrete					
		pur	πρ it = cum					
			king output = 30 cum					
		a)	Material					
		•	Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis -21.13)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing	dav	0.206	0.206	0.200	
			Mate	day day	1.995	1.995	0.206 1.995	
			Mason Mazdoor	day	3.143	3.143	3.143	
		د)		auy	3.173	3.173	3.173	
		c)	Machinery					
			Transit truck agitator For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	

					Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
				<u>I</u>	-0.80			(/
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @					
			km/hr and 30 mins for					
			unloading)	haur	0.210 v.l.1 .			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour	0.030	0.292 x L1 +		
			(ii) 12 K2 capacity	oui		0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork					
			Add @ 11 Percent on cost					
			of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for Formwork					
			Add 1.4 Percent of cost of					
			material, Labour and					
			machinery excluding					
			formwork to cater for extra					
			lift					
		e)	Overhead charges		@ on	@ on	@ on	
		•			(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Coc	st for 30 cum = a+b+c+d+e+f		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			e per cum = (a+b+c+d+e+f)/3	n				
		Mat	e per cuiti – (arbiciure il)/3	o				
13.05 J	(r)	Hei	ght above 10m					
		For	height, above 10m, add 3					
		Per	cent of cost as above					
			luding formwork. For cost of					
			mwork add 13 Percent of					
			t of material, labour and					
			chinery					
			C Grade M45 using batching nt transit mixer & Concrete					
		pur						
		-	it = cum					
		Tak	ring output = 30 cum					
		a)	Material					
		•	Per Cum Basic Cost (Rate	cum	30.000	30.000	30.000	
			taken from sub-analysis -					
			21.13)					
			Water for curing	Κl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	

					Quantity	, as per project	category	Rate
Sr No	Ref. to M		Description	Unit		Medium	Small	(Rs.)
					Large	Medium	Siliali	(113.)
			Mandage	d	2 1 4 2	2 1 4 2	2 4 4 2	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @					
			km/hr and 30 mins for					
			unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
			, ,			0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
			(, o ne supusity				1.75	
		d)	Formwork					
		ω,	Add @ 13 Percent on cost					
			of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
			Formwork					
			Add 3 Percent of cost of					
			material, Labour and					
			machinery excluding					
			formwork to cater for extra					
			lift					
		e)	Overhead charges		@ on	@ on	@ on	
		c,	Overnead charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		٠,	contractor 3 prome		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f		(a.b.c.a.c)	(a.b.c.a.c)	(a.b.c.a.c)	
				^				
		Kat	te per cum = (a+b+c+d+e+f)/3	U				
40.00								
13.05	K		C Grade M50					
			C Grade M50 using batching					
		-	nt transit mixer & Concrete					
		pui						
			it = cum					
		Tak	king output = 30 cum					
		a)	Material					
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis -21.14)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
		-	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
			111020001	auy	5.175	5.175	5.175	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
Srivo	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L1	75 x L1	75 x L1	
			Capacity)	km	0.726	0.726	0.726	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @					
			km/hr and return speed @					
			km/hr and 30 mins for					
			unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork					
			Add @ 10 Percent on cost of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
			Formwork					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/3	0				
13.05 K	(q)	Hei	ght 5m to 10m					
		For	height, upto 10m, add 1.4					
			neight, upto 10m, add 1.4					
			cent of cost as above					
		Per exc	cent of cost as above luding formwork. For cost of					
		Per exc forr	cent of cost as above luding formwork. For cost of mwork add 11 Percent of					
		Per exc forr cos	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and					
		Per exc forr cos mad	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery.					
		Per exc forr cost mad RCC	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching					
		Per exc forr cos mad RCC plan	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete					
		Per exc forr cos mad RCC plan pur	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp					
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum					
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp					
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sting output = 30 cum	cum	30.000	30.000	30.000	
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sing output = 30 cum Material	cum	30.000	30.000	30.000	
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum ting output = 30 cum Material Per Cum Basic Cost	cum	30.000	30.000	30.000	
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sing output = 30 cum Material Per Cum Basic Cost (Rate taken from sub-	cum	30.000 15.750	30.000 15.750	30.000 15.750	
		Per exc forr cos mad RCC plan pur Uni	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sting output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis -21.14)					
		Per exc forr cos made RCC plan pur Uni Tak	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis -21.14) Water for curing Labour For pouring and placing	ΚI	15.750	15.750	15.750	
		Per exc forr cos made RCC plan pur Uni Tak	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis -21.14) Water for curing Labour		15.750 0.206	15.750 0.206	15.750 0.206	
		Per exc forr cos made RCC plan pur Uni Tak	cent of cost as above luding formwork. For cost of mwork add 11 Percent of t of material, labour and chinery. C Grade M50 using batching nt transit mixer & Concrete mp it = cum sing output = 30 cum Material Per Cum Basic Cost (Rate taken from subanalysis -21.14) Water for curing Labour For pouring and placing	ΚI	15.750	15.750	15.750	

Sr No	Ref. to M	c)	Machinery Transit truck agitator For transportation (6 cum Capacity)	Unit	Large	nas per project Medium	Small	(Rs.)
		c)	Transit truck agitator For transportation (6 cum					
		c)	Transit truck agitator For transportation (6 cum					
			For transportation (6 cum					
				tonne-	75 x L1	75 x L1	75 x L1	
				km			, U A LL	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ km/hr and return speed @ km/hr and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork Add @ 11 Percent on cost of concrete i.e. cost of material, labour and machinery (a+b+c) for					
			Formwork Add 1.4 Percent of cost of material, Labour and machinery excluding formwork to cater for extra					
		e)	lift Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		` @ on ´	(a+b+c+d) @ on (a+b+c+d+e)	@ on	
		Cos	t for 30 cum = a+b+c+d+e+f		(,	, 2 2 3 4 5	
			e per cum = (a+b+c+d+e+f)/30	0				
13.05 K	(r)	Hei	ght above 10m					
		Pero excl form	height, above 10m, add 3 cent of cost as above luding formwork. For cost of mwork add 13 Percent of t of material, labour and					
		mad	chinery C Grade M50 using batching					
			nt transit mixer & Concrete					
			t = cum					
		Tak a)	ing output = 30 cum Material					
			Per Cum Basic Cost (Rate taken from sub- analysis -21.14)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	

CHAPTER: 13- SUB-STRUCTURE

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
Sr No	vei to ivi		Description	Unit	Large	Medium	Small	(Rs.)
		۳,	Labour					
		b)	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery	aay	5.145	5.175	5.175	
		٠,	Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			km/hr and return speed @					
			km/hr and 30 mins for					
			unloading)		0.040			
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(ii) 12 KL capacity	hour	0.656	0.292 x L1 +		
			(II) IZ NE Capacity	noui		0.292 X L1 + 0.875		
			(iii) 6 KL capacity	hour		3.373	0.583 x L1 +	
			(, o ne capacity				1.75	
		d)	Formwork					
		•	Add @ 13 Percent on cost					
			of concrete i.e. cost of					
			material, labour and					
			machinery (a+b+c) for					
			Formwork					
			Add 3 Percent of cost of					
			material, Labour and					
			machinery excluding					
			formwork to cater for extra lift					
		e)	Overhead charges		@ on	@ on	@ on	
		-	-		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f					

Rate per cum = (a+b+c+d+e+f)/30

Note The basic components of this analysis are the same as those of items 13.08 (A to K). The only changes are as under:

- a) Ramps/Stairs: Extra expenditure on structures which are more than 5 m high @ 2 Percent of cost for height upto 10 m and 4 Percent for heights above 10 m will be involved for approaching the work spot by providing higher ramp/stair case for use by the working parties.
- b) The above mentioned percentages have been suitably modified for different categories as cost for various categories varies, whereas effort for access for same height will be similar. As the cost of richer concrete is comparatively more, the percentage to be added has been reduced to maintain the same cost for extra efforts.

				Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
				Laige	Wicaiaiii	3	(1.0.)
13.06	Section	Supplying, fitting and placing					
	1600 &	HYSD bar reinforcement in sub)-				
	2200	structure complete as per					
		drawing and Technical					
		Specifications					
		Unit = MT					
		Taking output = 8 MT					
		a) Material					
		MS bars including 5	tonne	8.400	8.400	8.400	
		Percent overlaps and					
		wastage	14	40.000	40.000	40.000	
		Binding wire	Kg	48.000	48.000	48.000	
		b) Labour for straightening,					
		cutting, bending, shifting to site, tying and placing					
		in position					
		Mate	day	0.213	0.213	0.213	
		Blacksmith	day	1.330	1.330	1.330	
		Mazdoor	day	3.990	3.990	3.990	
		c) Machinery	~~,	0.000	0.000	3.333	
		Cutting Machine	hour	6.667	6.667	6.667	
		Bending Machine	hour	6.667	6.667	6.667	
		Electric generator 15 KVA		6.667	6.667	6.667	
		Tipper					
		Tipper for Transportation					
		(i) 18 cum capacity	t.km	8 x L1			
		(ii) 14 cum capacity	t.km		8 x L1		
		(iii) 10 cum capacity	t.km			8 x L1	
		Loading & Unloading Time	e hour				
		(i) 18 cum capacity	hour	1.000			
		(ii) 14 cum capacity	hour		1.280		
		(iii) 10 cum capacity	hour			1.778	
		Light weight Crane					
		At cutting bending yard	hour	2.000	2.000	2.000	
		At site	hour	2.000	2.000	2.000	
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 8 MT (a+b+c+d+e)	_				
		Rate for per MT (a+b+c+d+e)/8	3				
12.07	Castian	Complains fitting and placing					
13.07	Section 1600 &	Supplying, fitting and placing Mild steel reinforcement					
	2200	complete in sub-structure as					
		per drawing and Technical					
		Specification					
		Unit = MT					
		Taking output = 8 MT					
		a) Material					
		MS bars including 5	tonne	8.400	8.400	8.400	
		Percent overlaps and					

C	Def +- **	D	11**	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		wastage					
		Binding wire	Kg	48.000	48.000	48.000	
		b) Labour for straightening,					
		cutting, bending, shifting					
		to site, tying and placing					
		in position	day	0.212	0.212	0.212	
		Mate	day	0.213	0.213	0.213	
		Blacksmith	day	1.330	1.330	1.330	
		Mazdoor	day	3.990	3.990	3.990	
		c) Machinery		6.667	6.667	6.667	
		Cutting Machine	hour	6.667	6.667	6.667	
		Bending Machine	hour	6.667	6.667	6.667	
		Electric generator 15 KVA	A hour	6.667	6.667	6.667	
		Tipper					
		Tipper for Transportation					
		(i) 18 cum capacity	t.km	8 x L1			
		(ii) 14 cum capacity	t.km		8 x L1		
		(iii) 10 cum capacity	t.km			8 x L1	
		Loading & Unloading Time	e hour				
		(i) 18 cum capacity	hour	1.000			
		(ii) 14 cum capacity	hour		1.280		
		(iii) 10 cum capacity	hour			1.778	
		Light weight Crane					
		At cutting bending yard	hour	2.000	2.000	2.000	
		At site	hour	2.000	2.000	2.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on	@ on	
		Cost for S NAT (subjected is)		(a+b+c+a)	(a+b+c+d)	(a+b+c+d)	
		Cost for 8 MT (a+b+c+d+e)	0				
		Rate for per MT (a+b+c+d+e)/8	8				
13.08	2706 & 2200	Providing weep holes in Brid masonry/Plain/ Reinforce					
		concrete abutment, wing wal	I/				
		return wall with 100 mm dia A	NC				
		pipe, extending through th					
		full width of the structure wit					
		slope of 1V: 20H toward					
		drawing foce. Complete as podrawing and Technic Specifications					
		Unit = Nos.					
		Taking output = 30 Nos.					
		a) Material					
		AC pipe 100 mm dia. (including wastage @ 5 Percent)	metre	31.500	31.500	31.500	
		Average length of weep hole is taken as one metro for the purpose of estimating.	e				

6. 1:	B (: -:		s · · ·		Quantity	/ as per project	category	Rate
Sr No	Ref. to N	1	Description	Unit	Large	Medium	Small	(Rs.)
			MS clamp	each	30.000	30.000	30.000	
			collar for AC pipe (average) taking 10% of above pipe rate	each	10.000	10.000	10.000	
			Per Cum Basic Cost (Rate taken from sub- analysis -21.01 A)	cum	0.050	0.050	0.050	
			b) Labour					
			Mate	day	0.040	0.040	0.040	
			Mason	day	0.665	0.665	0.665	
			Mazdoor	day	0.333	0.333	0.333	
			c) Overhead charges @ on (a+b)					
			d) Contractor's profit @ on (a+b+c)					
			Cost for 30 m = $a+b+c+d$					
			Rate per m (a+b+c+d)/30					
	Note		In case of stone masonry, t with 150 mm diameter.	he size of t	the weep hole	shall be 150 m	m x 80 mm or	circular
			2. For structure in stone maso item of stone masonry wor	-	-		be included i	n the
13.09	710.1.4.of IRC:78 & 2200		Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification					
			Unit = cum					
			Taking output = 10 cum					
		Α	Granular material					
			a) Labour					
			Mate	day	0.372	0.372	0.372	
			Mazdoor b) Material	day	9.310	9.310	9.310	
			Granular material c) Machinery	cum	12.000	12.000	12.000	
			Plate compactor/power rammer	hour	2.500	2.500	2.500	
			Water Tanker 6 Kl capacity	hour	0.050	0.050	0.050	
			d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			Cost for 10 cum of granular back	kfill = a+b+	c+d+e			
			Rate per cum = $(a+b+c+d+e)/10$)				
13.09		В	Sandy material a) Labour					
			Mate	day	0.372	0.372	0.372	
			Mazdoor for filling,	day	9.310	9.310	9.310	
			watering, ramming etc. b) Material	,	-	-	-	
			Sand	cum	12.000	12.000	12.000	

C NI -	Dof to M		Description	l lm!t	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery	haur	2.500	2 500	2.500	
			Plate compactor/ power rammer	hour	2.500	2.500	2.500	
			Water Tanker 6 kl capacity	hour	0.060	0.060	0.060	
		d)	Overhead charges		@ on	@ on	@ on	
		,			(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	st for 10 cum of sandy backfill	= a+b+c-	•	(4.5.6.4)	(a.b.c.a)	
			te per cum = (a+b+c+d+e)/10					
13.10	710.1.4.of	Pro	oviding and laying of Filter					
	IRC:78 and	_	dia with granular					
	2504.2		terials/stone crushed gregates satisfying the					
			regates satisfying the purpose of th					
			use 2504.2.2. of MoRTH					
		spe	ecifications to a thickness of					
			l less than 600 mm with					
			aller size towards the soild bigger size towards the					
			Il and provided over the					
			tire surface behind					
			utment, wing wall and					
			urn wall to the full height					
			npacted to a firm condition nplete as per drawing and					
			chnical Specification.					
			it = cum					
			king output = 10 cum.					
		a)	Labour	d	0.426	0.426	0.426	
			Mate Mazdoor for filling,	day day	0.426 9.310	0.426 9.310	0.426 9.310	
			watering, ramming etc.	uay	5.510	5.510	5.510	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
		b)	Material					
			Filter media of stone	cum	12.000	12.000	12.000	
			aggregate conforming to clause 2504.2.2. of MoRTH					
			specifications.					
		c)	Machinery					
			Water Tanker of 6 KL	hour	0.060	0.060	0.060	
		۱۱ے	capacity		8	8	@	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
		•	•		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 10 cum of Fiter Media = a te per cum = (a+b+c+d+e)/10	a+b+c+d	+e			
13.11	704	Sur	oplying & laying of drainage					
		-	mposite for use behind walls,					
			ween two different fills,					
			ngside drains of road, below					
			ncrete lining of canals etc. ocomposite for planar					
			inage, realized by					
		J. 0	. J-,					

C: No	D-6 4- M			Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

thermobonding a draining core in extruded monofilaments with filtering nonwoven geotextiles that may also be working as separation or protecting layers. The draining three dimensional core will have a "W" configuration as longitudinal parallel channels. Minimum thickness to be 7.2mm, with two filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75 mm having pores of 150 micron and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, geocomposite having in plane flow capacity of 2.1 L / (m.s) at hydraulic gradient of 1.0 & 20 kpa pressure and tensile strength of 18 kN/m, with mass per unit area of 740 gsm, supplied in the form of roll for easy transportation to site of work detailed as per specification all complete as per directions of Engineer in charge.

Unit = Sqm

a)

Taking output = 300 Sqm

Labour

Mazdoor

Mate

	Mazdoor (Skilled)
b)	Material
	Geosynthetic Drainage
	Composite
	Add 10 Percent of the cost
	of synthetic Composits for
	wastage and accessories
	for joining sheets with the
	fascia pannels, overlaps
	and other protective
	elements for synthetic
	Composits and other
	miscelleneus activities
	required to complete the
	item in all respect
	including transpotarion &

c) Overhead chargesd) Contractor's profit

takes.

@ on (a+b) @ on (a+b) @ on (a+b) @ on @ on @ on (a+b+c) (a+b+c) (a+b+c)

0.266

3.990

2.660

300.000

0.266

3.990

2.660

300.000

Cost for 300 sqm = a+b+c+dRate per sqm = (a+b+c+d)/300 day

day

day

sqm

0.266

3.990

2.660

300.000

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
31 140	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
13.12	704	corresponding to the correspon	ength of 13.5 kN/ m , with ss per unit area of 830 gsm, easily accessible location luding top and bottom, with leads and lifts, manpower d machinery, materials, our etc. complete and as ected by Engineer - In - arge. it = Sqm					
		Tak a)	king output = 300 Sqm Labour					
		u,	Mate	day	0.266	0.266	0.266	
			Mazdoor	day	3.990	3.990	3.990	
			Mazdoor (Skilled)	day	2.660	2.660	2.660	
		b)	Material	,				
			Geosynthetic Drainage Composite Add 10 Percent of the cost of synthetic Composits for wastage and accessories for joining sheets with the fascia pannels, overlaps and other protective elements for synthetic Composits and other miscelleneus activities required to complete the item in all respect including transpotarion & takes.	sqm	300.000	300.000	300.000	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			st for sqm = a+b+c+d te per sqm = (a+b+c+d)/300					

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category	R
	itel. to ivi	Description	Oilit	Large	Medium	Small	(
l3.13	2000,	Supplying, fitting and fixing in					
	1000 &	position true to line and level					
	2200	cast steel rocker bearing					
		conforming to IRC: 83(Pt1) section IX and clause 2003 of					
		MoRTH specifications complete					
		including all accessories as per					
		drawing and Technical					
		Specifications.					
		Unit: one tonne capacity					
		Considering a 250 tonne					
		capacity bearing for this					
		analysis					
		a) Labour					
		Mate	day	0.080	0.080	0.080	
		Mazdoor (Skilled)	day	0.665	0.665	0.665	
		Mazdoor	day	1.330	1.330	1.330	
		b) Material					
		Cast steel rocker bearing	each	1.000	1.000	1.000	
		assembly of 250 tonne					
		design load capacity duly					
		painted complete with all					
		its components as per					
		drawing and specifications					
		Add 1 Percent of cost of					
		bearing assembly for foundation anchorage					
		bolts, lifting arrangements,					
		grease and other					
		consumables.					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		cost for 250 tonnes capacity bear	ing = a+l	b+c+d			
		Rate per tonne capacity = (a+b+c	+d)/250				
3.14	2000,	Supplying, fitting and fixing in	+d)/250)			
13.14	1000 &	Supplying, fitting and fixing in position true to line and level	+d)/250	1			
13.14		Supplying, fitting and fixing in position true to line and level forged steel roller bearing	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1)	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. Unit: one tonne capacity	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. Unit: one tonne capacity Considering a 250 tonne	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. Unit: one tonne capacity Considering a 250 tonne capacity bearing for this	+d)/250				
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. Unit: one tonne capacity Considering a 250 tonne capacity bearing for this analysis	+d)/250	0.080	0.080	0.080	
13.14	1000 &	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. Unit: one tonne capacity Considering a 250 tonne capacity bearing for this analysis a) Labour			0.080 1.330	0.080 1.330	

C., N =	Def to \$4	December :-	11	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Forged steel roller bearing of 250 tonne design load capacity duly painted complete with all its components as per drawing and specifications Add 1 Percent of cost of bearing assembly for foundation anchorage bolts, lifting arrangements, grease and other		1.000	1.000	1.000	
		consumables. c) Overhead charges d) Contractor's profit cost for 250 tonnes capacity bear Rate per tonne capacity = (a+b+c	_		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
13.15	2000 & 2200	Supplying, fitting and fixing in position true to line and level sliding plate bearing with PTFE surface sliding on stainless steel complete including all accessories as per drawing and Technical Specifications and BS: 5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of MoRTH Specifications. Unit: one tonne capacity Considering a 80 tonne capacity bearing for this analysis a) Labour					
		Mate Mazdoor Mazdoor (Skilled)	day day day	0.080 1.330 0.665	0.080 1.330 0.665	0.080 1.330 0.665	
		PTFE sliding plate bearing assembly of 80 tonnes design load capacity duly painted complete with all its components as per drawing and Technical Specifications Add 1 Percent for foundation anchorage bolts and consumables.		1.000	1.000	1.000	
		c) Overhead charges d) Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		cost for 80 tonnes capacity beari Rate per tonne capacity = (a+b+c	_	+c+d			

C A.	Dof to M	Description	l l m i h	Quantity	Rate		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
13.16	2000 & 2200	Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. Unit: one cubic centimetre Considering an elastomeric bearing of size 500 x 400 x 96 mm for this analysis. Overall volume - 19200 cu.cm Volume of 6 nos. 488 x 388 x 4 mm size reinforcing steel plates = 4545 cu.cm.					
		Hence volume of elastometer =					
		14655 cu.cm. a) Labour					
		Mate	day	0.080	0.080	0.080	
		Mazdoor	day	1.330	1.330	1.330	
		Mazdoor (Skilled) b) Material	day	0.665	0.665	0.665	
		Elastomeric bearing assembly consisting of 7 layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation, complete with all components as per drawing and Technical Specifications. Add 1 Percent of cost of bearing assembly for foundation anchorage bolts and consumables. c) Overhead charges d) Contractor's profit		<pre>0 on (a+b) @ on (a+b+c) = a+b+c+d</pre>	1.000@ on (a+b)@ on(a+b+c)	<pre>0 on (a+b) @ on (a+b+c)</pre>	
		Cost for 19200 cc of elastomeric bearing Rate per cc of elastomeric bearing					
13.17	2000 & 2200	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and Technical Specifications. Unit: one tonne capacity	3 (2.2				

C	D-f:		B1:11		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
		of 8 this	nsidering the sliding bearing 80 tonnes design capacity for 5 analysis. Labour					
		a)		day	0.050	0.050	0.050	
			Mate	day	0.059	0.059	0.059	
			Mazdoor	day	0.998	0.998	0.998	
		1-1	Mazdoor (Skilled)	day	0.466	0.466	0.466	
		b)	Material Supply of sliding plate bearing of 80 tonne design capacity complete as per drawings and Technical Specifications. Add 1 Percent of cost of bearing assembly for	each.	1.000	1.000	1.000	
			foundation anchorage bolts and consumables.					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	t for 80 tonnes of capacity be	earing =	a+b+c+d			
13.18	2000 & 2200	pos POT a m disc con cyli sea aga surf be stru elas per res con 9.1 Mo con app Spe Uni	pectively and other parts forming to BS: 5400, section & 9.2 and clause 2006 of RTH Specifications applete as per drawing and proved Technical ecifications. t= one tonne capacity					
		ass for	nsidering a Pot bearing embly of 250 tonne capacity this analysis.					
		a)	Labour Mate	day	0.106	0.106	0.106	
			Mazdoor	day	1.995	1.995	1.995	
			Mazdoor	day	1.995 0.665	1.995 0.665	1.995 0.665	

Mazdoor (Skilled)

day

0.665

0.665

0.665

Sr No	Ref. to M		Description	Unit	Quantity as per project category			Rate	
			Description		Large	Medium	Small	(Rs	
		b)	Material Pot type bearing assembly	Each	1.000	1.000	1.000		
			consisting of a metal	Eacii	1.000	1.000	1.000		
			piston supported by a disc,						
			PTFE pads providing sliding						
			surfaces against stainless						
			steel mating together with						
			cast steel						
			assemblies/fabricated						
			structural steel assemblies						
			duly painted with all						
			components as per clause 2006 and complete as per						
			drawings and Technical						
			Specifications.						
			Add 1 Percent of cost of						
			bearing assembly for						
			foundation anchorage						
			bolts and consumables.						
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)		
		d)	Contractor's profit		@ on	@ on	@ on		
		Cos	t for 250 tonnes capacity bear	ing – a±	(a+b+c)	(a+b+c)	(a+b+c)		
			e per tonne capacity = (a+b+c						
				-					
13.19	Suggestive	Pro	tection to substructure by						
		using coal tar epoxy							
		Pro	viding and applying two						
		Pro coa	viding and applying two ts of Two component, high						
		Pro coa buil	viding and applying two ts of Two component, high d, 100 % solid content, low						
		Pro coa buil VO	viding and applying two ts of Two component, high d, 100 % solid content, low						
		Prod coal buil VOO hyd	viding and applying two ts of Two component, high ld, 100 % solid content, low C,, polycyclin aromatic						
		Production	viding and applying two ts of Two component, high d, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120						
		Production	viding and applying two ts of Two component, high d, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy						
		Production	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar						
		Processing	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Procarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6, DFT per coat 80 -120 rons (dry) coal tar epoxyting with Coal tar t = Sqm.						
		Processing	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm						
		Processing	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Procarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6, DFT per coat 80 -120 rons (dry) coal tar epoxyting with Coal tar t = Sqm.	dav	0.360	0.360	0.360		
		Processing	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour	day day	0.360 6.000	0.360 6.000	0.360 6.000		
		Processing	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Procarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 Prons (dry) coal tar epoxy ting with Coal tar t = Sqm. Ing output = 100 Sqm Labour Mate	-					
		Processing	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Procarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 Prons (dry) coal tar epoxy Prons (dry) coal tar The sqm. Ing output = 100 Sqm Labour Mate Painter Mazdoor Material	day	6.000	6.000	6.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @	day	6.000	6.000	6.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter	day day	6.000 3.000	6.000 3.000	6.000 3.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5%	day day	6.000	6.000	6.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Procarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 Prons (dry) coal tar epoxy ting with Coal tar t = Sqm. Ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage	day day	6.000 3.000	6.000 3.000	6.000 3.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Procarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 Prons (dry) coal tar epoxy ting with Coal tar t = Sqm. Ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of	day day	6.000 3.000	6.000 3.000	6.000 3.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic Irocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of abs towards miscellaneous	day day	6.000 3.000	6.000 3.000	6.000 3.000		
		Province coardinate coardinate province coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardinate coardin	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of abs towards miscellaneous (water, painting brush	day day	6.000 3.000	6.000 3.000	6.000 3.000		
		Province coard built VOC hyde hrs hrs mic coard Unital Takes a)	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of abs towards miscellaneous (water, painting brush etc.).	day day	6.000 3.000 52.500	6.000 3.000 52.500	6.000 3.000 52.500		
		Province coardinate coardinate province coardinate province coardinate	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of abs towards miscellaneous (water, painting brush	day day	6.000 3.000	6.000 3.000	6.000 3.000		
		Province coard built VOC hyde hrs hrs mic coard Unit Take a)	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of abs towards miscellaneous (water, painting brush etc.). Overhead charges	day day	6.000 3.000 52.500 @ on (a+b)	6.000 3.000 52.500 @ on (a+b)	6.000 3.000 52.500		
		Provincoa built VOC hyd hrs hrs mic coa Unit Tak a) b) c) d) Cos	viding and applying two ts of Two component, high Id, 100 % solid content, low C,, polycyclin aromatic rocarbon based, Pot life – 2 @ 72 deg. F, Tack free – 4-6 , DFT per coat 80 -120 rons (dry) coal tar epoxy ting with Coal tar t = Sqm. ing output = 100 Sqm Labour Mate Painter Mazdoor Material Coal Tar Epoxy coating @ 0.5 Kg per Square Meter coverage including 5% wastage Add 1 Percent of cost of abs towards miscellaneous (water, painting brush etc.). Overhead charges	day day	6.000 3.000 52.500 @ on (a+b) @ on	6.000 3.000 52.500 @ on (a+b) @ on	6.000 3.000 52.500 @ on (a+b) @ on		

CHAPTER: 13- SUB-STRUCTURE

3.20	Ref. to M	1				/ as per project		Ra
3.20			Description	Unit	Large	Medium	Small	(R
			viding structural steel for -structure complete as per		<u>-</u>			•
		drav	wing and technical cifications					
		Uni	t = MT					
		Tak a)	ing output = 10.00 MT Material					
			Structural steel in plates, angles, etc including 5	tonne	10.500	10.500	10.500	
		b)	Percent wastage Nuts & bolts Labour	Kg	105.000	105.000	105.000	
		-,	(for cutting, bending, making holes, joining, welding and erecting in position)					
			Mate	day	16.327	16.327	16.327	
			Fitter	day	59.850	59.850	59.850	
			Blacksmith	day	59.850	59.850	59.850	
			Welder	day	59.850	59.850	59.850	
			Painter I class	day	23.940	23.940	23.940	
			Mazdoor Electrodes, cutting gas and other consumables @ 10	day	204.687	204.687	204.687	
		c)	Percent of cost of (a) above Machinery					
			Mobile Hydraulic Crane 10 tonne capacity (For Fabrication)	Hrs	40.000	40.000	40.000	
			Crane 35 tonne capacity (For Loading & Unloading @ 1 hr for each operation)	Hrs	2.000	2.000	2.000	
			Crane 35 tonne capacity (For Lifting and Placing in Position @ 2 hrs)	Hrs	2.000	2.000	2.000	
			Trailer 30 tonne capacity for transporting to site.	Hrs	2+L/15	2+L/15	2+L/15	
			Applying 2 coats primer before painting of Truss and Girder (42 sqm/tonne)	Lit	525.000	525.000	525.000	
			Painting of Truss and Girder	Lit	525.000	525.000	525.000	
			Sundries @ 3% of the above					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit t for 10 MT (a+b+c+d+e)		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

CHAPTER - 14

BRIDGE SUPERSTRUCTURE

PREAMBLES:

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

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

- 2 The rate analysis has been done both for RCC Railing and M.S. Railing, which can be adopted as per approved design.
- 3 The length of drainage spout has been provided in such a way that it is connected to the as drainage system on the ground in case of flyovers and there is no splashing of water on the structure in case of bridges.
- 4 The rate for anti-corrosive treatment is required to be ascertained from firms specialized in this work.
- 5 Expansion joints involving movements exceeding 40 mm are specialised readymade items commercially produced by reputed firms with imported technology and parts. The rates for such joints are required to be ascertained from the firms pre-qualified by the Ministry.
- The rate analysis for prestressed cement concrete of M 60 grade has also been included which can be adopted for bridges with innovative design/construction.
- 7 Supply of new type of expansion joint may be obtained on the basis of competitive bidding from amongst the suppliers pre-qualified by the Ministry of Road Transport and Highways. Further, a warranty of 10 years of trouble free performance may be insisted from the suppliers.
- 8 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 joints are required for which firms specialized in this field may be consulted. Such cases will require prior approval of Ministry.

Sr No	Ref. t	- M		Description	Unit		y as per projec		Rate
31 140	Kei. t	.U IVI		Description	Offic	Large	Medium	Small	(Rs.)
14.01	1500 &1600 1700		Rei cen sup dra	nishing and Placing nforced/ Prestressed nent concrete in er-structure as per wing and Technical ecification					
		Α	RCC	C Grade M20					
14.01A				ng Batching Plant,					
			_	nsit Mixer and					
				ncrete Pump it = cum					
			_	it = cum ing output = 120 cum					
			a)	Material					
			aj	Per Cum Basic Cost	cum	120.000	120.000	120.000	
				(Rate taken from	carri	120.000	120.000	120.000	
				sub-analysis -21.05)					
				Water for curing	Kl	63.000	63.000	63.000	
			b)	Labour					
				For pouring and					
				placing Mate	day	0.218	0.218	0.218	
				Mason	day day	1.995	1.995	1.995	
				Mazdoor	day	3.452	3.452	3.452	
			c)	Machinery	aay	3.132	3.132	3.132	
			•	Transit truck					
				agitator					
				For transportation	tonne-	300 x L1	300 x L1	300 x L1	
				(6 cum Capacity) , L1 - lead in Kilometer	km				
				For unloading	hour	2.905	2.905	2.905	
				Hydraulic Boom	hour	2.905	2.905	2.905	
				placer pump Water tanker (speed					
				@ 10 km/hr. and					
				return speed @ 15					
				km/hr. and 30 mins					
				for unloading)					
				(i) 16 KL capacity	hour	0.875 x L1 +			
				(ii) 12 KL connecity		2.625	4.46744		
				(ii) 12 KL capacity	hour		1.167 x L1 + 3.5		
				(iii) 6 KL capacity	hour		3.5	2.333 x L1 + 7	
				formwork and staging I the following:					
14.01A		(i)	stru	solid slab super- ucture, 20-30 Percent					
				a+b+c)					
		(p)		ght upto 5m					
				ic Cost of Labour, terial & Machinery					
				b+c) for 120 cum					
			1	., = ========					

				Quantity	y as per project	t category	Rate
Sr No	Ref. to M	Description	Unit		Medium	Small	(Rs.)
		d) Formwork and staging 20 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	(Rs.)
14.01A	(q)	Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 25 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+Rate per cum = (a+b+c+d+	-	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01A	(r)	Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 30 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+)	-d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01A	(ii) For T-beam & slab, 25-35 Percent of (a+b+c) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 25 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+	-	@ on (a+b+c+d) @ on (a+b+c+d+e) 0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	

C= N=	Dof to M	Description	l lm!±	Quantity	y as per project	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01A	(q)	Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 30 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		@ on (a+b+c+d) @ on (a+b+c+d+e) 0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01A	(r)	Height above 10m					
(ii)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+	d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e) 0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01	В	RCC Grade M25					
	Case II	Using Batching Plant, Transit Mixer and Concrete Pump Unit = cum Taking output = 120 cum a) Material Per Cum Basic Cost (Rate taken from	cum	120.000	120.000	120.000	
		sub-analysis -21.07) Water for curing b) Labour	Kl	63.000	63.000	63.000	
		For pouring and placing Mate Mason Mazdoor c) Machinery Transit truck agitator For transportation (6 cum Capacity), L1 - lead in Kilometer	day day day tonne- km	0.263 1.995 4.592	0.263 1.995 4.592 300 x L1	0.263 1.995 4.592	

	_			Quantity	, as per projec	t category	Ra
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(R
I				. 0-			
		For unloading	hour	2.905	2.905	2.905	
		Hydraulic Boom	hour	2.905	2.905	2.905	
		placer pump					
		Water tanker (speed					
		@ 10 km/hr. and					
		return speed @ 15					
		km/hr. and 30 mins					
		for unloading)					
		(i) 16 KL capacity	hour	0.875 x L1 + 2.625			
		(ii) 12 KL capacity	hour	2.025	1.167 x L1 +		
		(II) 12 KL capacity	noui		3.5		
		(iii) 6 KL capacity	hour			2.333 x L1 + 7	
		For formwork and staging	3				
		add the following:					
14.01B	(i)	For solid slab super-					
		structure, 20-30 Percent					
		of (a+b+c)					
	(p)	Height upto 5m					
		Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum					
		d) Formwork and					
		staging 20 Percent					
		of (a+b+c)		_	_	_	
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on	@ on	@ on	
		,		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost for 120 cum = a+b+c-	+d+e+f				
		Rate per cum = (a+b+c+d-	+e+f)/12	0			
14.01B	(q)	Height 5m to 10m					
(i)							
		Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum					
		d) Formwork and staging 25 Percent					
		of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost for 120 cum = a+b+c-					
		Rate per cum = (a+b+c+d-	+e+f)/12	0			

				Quantity	as per project	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01B (i)	(r)	Height above 10m					
,,		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 30 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+					
		Rate per cum = (a+b+c+d+	e+f)/120	0			
14.01B	(ii)	For T-beam & slab, 25-35 Percent of (a+b+c)					
	(p)	Height upto 5m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 25 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = $a+b+c+$					
		Rate per cum = (a+b+c+d+	e+f)/120)			
14.01B (ii)	(q)	Height 5m to 10m					
		Basic Cost of Labour, Material & Machinery					
		(a+b+c) for 120 cum d) Formwork and					
		staging 30 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+)			
14.01B (ii)	(r)	Height above 10m					
• •		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					

					Quantity	y as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Formwork and staging 35 Percent of (a+b+c) Overhead charges Contractor's profit at for 120 cum = a+b+c+dee per cum = (a+b+c+d+c)	-	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on (a+b+c+d+e)	
		Nac	e per cum – (a b reru	C11// 12	·			
14.01 14.01C	C	Usi Tra Cor Uni Tak	C Grade M 30 ng Batching Plant, nsit Mixer and ncrete Pump. it = cum king output = 120 cum					
		a)	Material Per Cum Basic Cost (Rate taken from sub-analysis -21.09)	cum	120.000	120.000	120.000	
			Water for curing	ΚI	63.000	63.000	63.000	
		b)	Labour					
		For	pouring and placing					
			Mate	day	0.263	0.263	0.263	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	4.592	4.592	4.592	
		c)	Machinery					
		-,	Transit truck agitator					
			For transportation (6 cum Capacity) , L1 - lead in Kilometer	tonne- km	300 x L1	300 x L1	301 x L1	
			For unloading	hour	2.905	2.905	2.905	
			Hydraulic Boom placer pump	hour	2.905	2.905	2.905	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.875 x L1 +			
			(ii) 12 KL capacity	hour	2.625	1.167 x L1 + 3.5		
			(iii) 6 KL capacity	hour			2.333 x L1 + 7	
		sta	formwork and ging add the owing:					

				Quantity	, as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01C	(i) (p)	For solid slab super- structure, 20-30 Percent of (a+b+c) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 20 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+	-	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01C (i)	(q)	Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 25 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+	-	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01C (i)	(r)	Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 30 Percent of (a+b+c) e) Overhead charges @ on (a+b+c+d) e) Overhead charges f) Contractor's profit Rate per cum = (a+b+c+d+		@ on (a+b+c+d) @ on (a+b+c+d+e) 0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01C	(ii) (p)	For T-beam & slab, 25-35 Percent of (a+b+c) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					

				Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Formwork and staging 25 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	, , ,
14.01C	(q)	Height 5m to 10m					
(ii)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 30 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+	/ / -d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01C	(r)	Height above 10m	- 77	-			
(ii)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01	D Case II	Using Batching Plant, Transit Mixer and Concrete Pump Unit = cum Taking output = 120 cum a) Material Per Cum Basic Cost (Rate taken from sub-analysis -21.11) Water for curing b) Labour For pouring and placing	cum Kl	120.000 63.000	120.000 63.000	120.000 63.000	

				Quantity	as per project	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Mate	day	0.263	0.263	0.263	
		Mason	day		1.995	1.995	
		Mazdoor	day	1.995	4.592	4.592	
			day	4.592	4.592	4.592	
		c) Machinery Transit truck agitator For transportation (6 cum Capacity), L1 - lead in Kilometer	tonne- km	300 x L1	300 x L1	300 x L1	
		For unloading	hour	2.905	2.905	2.905	
		Hydraulic Boom			2.905	2.905	
		placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)	hour	2.905	2.303	21303	
		(i) 16 KL capacity	hour	0.875 x L1 +			
		(ii) 12 KL capacity		2.625	1.167 x L1 +		
		(II) 12 KL capacity	hour		3.5		
		(iii) 6 KL capacity	hour			2.333 x L1 + 7	
		For formwork and staging add the following:					
14.01D	(i)	For solid slab super- structure, 18-28 Percent of (a+b+c)					
	(p)	Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 18 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+	-	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01D (i)	(q)	Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 23 Percent of (a+b+c)					

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Sr No	Ref. to M	Description	Unit		y as per project		Rate
				Large	Medium	Small	(Rs.)
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+c Rate per cum = (a+b+c+d+c	d+e+f			,	
14.01D (i)	(r)	Height above 10m					
		Basic Cost of Labour, Material & Machinery					
		(a+b+c) for 120 cum					
		d) Formwork and staging 28 Percent					
		of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+c				,	
		Rate per cum = (a+b+c+d+e	e+f)/120)			
14.01D	(ii)	For T-beam & slab, 23-33 Percent of (a+b+c)					
	(p)	Height upto 5m					
		Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum d) Formwork and					
		staging 23 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+c		,	•	•	
		Rate per cum = (a+b+c+d+e	e+f)/120)			
14.01D (ii)	(q)	Height 5m to 10m					
		Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum					
		d) Formwork and staging 28 Percent					
		of (a+b+c) e) Overhead charges		@ on	@ on	@ on	
		f) Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
				@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+d+c Rate per cum = (a+b+c+d+c	-)			

6.11	D () 14	5		Quantit	y as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01D (ii)	(r)	Height above 10m					
()		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 33 Percent					
		of (a+b+c)		_		_	
		e) Overhead charges		@ on (a+b+c+d) -	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+ Rate per cum =	+d+e+f				
		(a+b+c+d+e+f)/120					
14.01D	(iii)	For box girder and balanced cantilever, 38-58 Percent of cost of concrete.					
	(p)	Height upto 5m					
	,	Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum d) Formwork and					
		staging 38 Percent					
		of (a+b+c) e) Overhead charges		@ on	@ on	@ on	
		f) Contractor's profit		(a+b+c+d) @ on	(a+b+c+d) @ on	(a+b+c+d) @ on	
		Cost for 120 cum = a+b+c+	ıdıaıf	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Rate per cum = (a+b+c+d+		0			
14.01D (iii)	(q)	Height 5m to 10m					
		Basic Cost of Labour,					
		Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and					
		staging 48 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		0			
14.01D (iii)	(r)	Height above 10m					
		Basic Cost of Labour, Material & Machinery					
		(a+b+c) for 120 cum					

					Quantity	, as per projec	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		d)	Formwork and staging 58 Percent of (a+b+c)			0		
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 120 cum = a+b+c+	d+e+f				
		Rat	e per cum = (a+b+c+d+	e+f)/120	0			
14.01	E		C/PSC Grade M-40					
14.01E		Tra	ng Batching Plant, nsit Mixer and					
			crete Pump t = cum					
		_	ing output = 120 cum					
		a)	Material					
		u,	Per Cum Basic Cost (Rate taken from sub-analysis -21.12)	cum	120.000	120.000	120.000	
			Water for curing	ΚI	63.000	63.000	63.000	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.263	0.263	0.263	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	4.592	4.592	4.592	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity) , L1 - lead in Kilometer	tonne- km	300 x L1	300 x L1	300 x L1	
			For unloading	hour	2.905	2.905	2.905	
			Hydraulic Boom placer pump	hour	2.905	2.905	2.905	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.875 x L1 + 2.625			
			(ii) 12 KL capacity	hour		1.167 x L1 + 3.5		
			(iii) 6 KL capacity	hour			2.333 x L1 + 7	
		_	formania in the second					

For formwork and staging add the following:

				Quantity	y as per project	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01E	(i) (p)	For solid/voided slab super-structure, 18-28 Percent of (a+b+c) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 18 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01E (i)	(q)	Rate per cum = (a+b+c+d+ Height 5m to 10m	e+f)/12	0			
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 23 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		@ on (a+b+c+d) @ on (a+b+c+d+e) 0	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01E							
(i)	(r)	Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 28 Percent of (a+b+c) e) Overhead charges f) Contractor's profit		@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	
		Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		(a+b+c+d+e) 0	(a+b+c+d+e)	(a+b+c+d+e)	
14.01E	(ii) (p)	For T-beam & slab, 23-33 Percent of (a+b+c) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					

Sr No	Dof to M	Description	4:مرا ا	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Formwork and staging 23 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+c Rate per cum = (a+b+c+d+c)	d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01E (ii)	(q)	Height 5m to 10m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 28 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+c Rate per cum = (a+b+c+d+c)	d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01E (ii)	(r)	Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 33 Percent					
		of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+c Rate per cum = (a+b+c+d+c)	d+e+f	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
14.01E	(iii)	For cast-in-situ box girder, segment construction and balanced cantilever, 38-58 Percent of cost of concrete.					
	(p)	Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 38 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

				Quantit	y as per project	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+					
		Rate per cum = (a+b+c+d+	-е+т)/12	20			
14.01E (iii)	(q)	Height 5m to 10m					
		Basic Cost of Labour Material & Machinery (a+b+c) for 120 cum	•				
		d) Formwork and staging 48 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+					
		Rate per cum = (a+b+c+d+	-e+f)/12	.0			
14.01E (iii)	(r)	Height above 10m					
		Basic Cost of Labour					
		Material & Machinery	/				
		(a+b+c) for 120 cum d) Formwork and					
		d) Formwork and staging 58 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on	@ on	@ on	
		Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+			(a+b+c+d+e)	(a+b+c+d+e)	
14.01F	F	RCC/PSC Grade M-45 Unit = cum					
		Taking output = 120 cum					
		Per Cum Basic Cost (Rate taken from sub-analysis -21.13)	cum	120.000	120.000	120.000	
		Water for curing b) Labour For pouring and	KI	63.000	63.000	63.000	
		For pouring and placing					
		Mate	day	0.263	0.263	0.263	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	4.592	4.592	4.592	

Sr No	Ref. to M	Description	Unit	Quantit	y as per projec	t category	Rate
31 140	Rei. to ivi	Description	Oilit	Large	Medium	Small	(Rs.)
		c) Machinery Transit truck agitator For transportation (6	tonne-	300 x L	300 x L	300 x L	
		cum Capacity) , L1 - lead in Kilometer	km				
		For unloading	hour	2.905	2.905	2.905	
		Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)	hour	2.905	2.905	2.905	
		(i) 16 KL capacity	hour	0.875 x L1 + 2.625			
		(ii) 12 KL capacity (iii) 6 KL capacity	hour		1.167 x L1 + 3.5	2.333 x L1 + 7	
		For formwork and staging	nour			2.555 X L1 + /	
		add the following:					
14.01F	(i)	For solid slab/voided slab super-structure, 16-26 Percent of cost of concrete (a+b+c)					
	(q)	Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 16 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit Cost for 120 cum = a+b+c+	d+e+f	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Rate per cum = (a+b+c+d+		0			
14.01F (i)	(q)	Height 5m to 10m					
		Basic Cost of Labour,					
		Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 21 Percent					
		of (a+b+c) e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+ Rate per cum = (a+b+c+d+		0			

	_			Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01F (i)	(r)	Height above 10m		J			
(1)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 26 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = $a+b+c+$	d+e+f				
		Rate per cum = (a+b+c+d+	e+f)/12	0			
14.01F	(ii)	For T-beam & slab including launching of precast girders by launching truss upto 40 m span, 21-31 Percent of cost of concrete.					
	(p)	Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 21 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		。 @ on	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+	d+e+f				
		Rate per cum = (a+b+c+d+	e+f)/12	0			
14.01F (ii)	(q)	Height 5m to 10m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and					
		staging 26 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+	d+e+f				
		Rate per cum = (a+b+c+d+	e+f)/12	0			

6.11	56.44	5	Ī	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01F (ii)	(r)	Height above 10m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 31 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+	d+e+f				
		Rate per cum = (a+b+c+d+	e+f)/12	0			
14.01F	(iii)	For cast-in-situ box girder, segmental					
		construction and balanced cantilever, 36-56 Percent of cost of concrete.					
	(p)	Height upto 5m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		d) Formwork and staging 36 Percent of (a+b+c)					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+	d+e+f				
		Rate per cum = (a+b+c+d+	e+f)/12	0			
14.01F (iii)	(q)	Height 5m to 10m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c+	d+e+f				
		Rate per cum = (a+b+c+d+	e+f)/12	0			

Cu No	Def to M	Description	11	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

14.01F	(q)	Height above 10m				
(iii)		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 56 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c Rate per cum = (a+b+c+d)		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)
14.01	G	PSC Grade M-50 Unit = cum Taking output = 120 cum				
		a) Material Per Cum Basic Cost (Rate taken from	cum	120.000	120.000	120.000
		sub-analysis -21.14) Water for curing b) Labour For pouring and	KI	63.000	63.000	63.000
		placing Mate Mason	day day	0.263 1.995	0.263 1.995	0.263 1.995
		Mazdoor c) Machinery Transit truck	day	4.592	4.592	4.592
		agitator For transportation (6 cum Capacity) , L1 - lead in Kilometer	5 tonne- km	300 x L	300 x L	300 x L
		For unloading Hydraulic Boom placer pump Water tanker (spee @ 10 km/hr. an return speed @ 1 km/hr. and 30 min	d 5	2.905 2.905	2.905 2.905	2.905 2.905
		for unloading) (i) 16 KL capacity (ii) 12 KL capacity	hour	0.875 x L1 + 2.625	1.167 x L1 +	
		(iii) 6 KL capacity	hour		3.5	2.333 x L1 + 7

For formwork and staging add the following:

					Quantity	y as per project	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
14.01G	(i)	gird con bala 35-5	cast-in-situ box er, segmental struction and inced cantilever, 55 Percent of cost of crete					
	(p)	Hei	ght upto 5m					
		Mat	c Cost of Labour, erial & Machinery o+c) for 120 cum					
		d)	Formwork and staging 35 Percent of (a+b+c)					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d) @ on	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	(a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 120 cum = a+b+c+	d+e+f				
		Rate	per cum = (a+b+c+d+c	e+f)/120)			
14.01G (i)	(q)	Hei	ght 5m to 10m					
		Ma	ic Cost of Labour, terial & Machinery b+c) for 120 cum					
		d)	Formwork and staging 45 Percent of (a+b+c)		45.000			
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 120 cum = a+b+c-	+d+e+f				
		Rat	e per cum = (a+b+c+d-	+e+f)/12	20			
14.01G (i)	(r)	Hei	ght above 10m					
		Ma	ic Cost of Labour, terial & Machinery b+c) for 120 cum					
		d)	Formwork and staging 55 Percent of (a+b+c)		55.000			
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on	@ on (a+b+c+d+e)	
		Cos	t for 120 cum = a+b+c-	+d+e+f				
		Rat	e per cum = (a+b+c+d-	+e+f)/12	20			

G., 31	D-f : 24	Docarintian		Quantity	, as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
14.01	н	PSC Grade M- 55 Unit = cum Taking output = 120 cum a) Material Per Cum Basic Cost (Rate taken from	cum	120.000	120.000	120.000	
		sub-analysis -21.15) Water for curing b) Labour For pouring and	KI	63.000	63.000	63.000	
		placing Mate Mason	day day	0.263 1.995	0.263 1.995	0.263 1.995	
		Mazdoor c) Machinery Transit truck agitator	day	4.592	4.592	4.592	
		For transportation (6 cum Capacity) , L1 - lead in Kilometer	tonne- km	300 x L	300 x L	300 x L	
		For unloading	hour	2.905	2.905	2.905	
		Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading) (i) 16 KL capacity	hour	2.905 0.875 x L1 + 2.625	2.905 1.167 x L1 + 3.5	2.905	
		(iii) 6 KL capacity For formwork and staging add the following:	hour		3.3	2.333 x L1 + 7	
14.01H	(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 Percent of cost of concrete					
	(p)	Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c) e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	

				Quantity	, as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		f) Contractor's profit Cost for 120 cum = a+b+c	:+d+e+f	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Rate per cum = (a+b+c+d	+e+f)/12	20			
14.01H (i)	(q)	Height 5m to 10m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent of (a+b+c) e) Overhead charges f) Contractor's profit		@ on (a+b+c+d) @ on	@ on (a+b+c+d) @ on	@ on (a+b+c+d)	
		i) Contractor's profit		(a+b+c+d+e)	•	@ on (a+b+c+d+e)	
		Cost for 120 cum = a+b+c Rate per cum = (a+b+c+d			((a.a.c.a.c)	
14.01H (i)	(r)	Height above 10m					
		Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c Rate per cum = (a+b+c+d)		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
	Note	 Cement provided for purpose only. Actu Similarly, the provisi the exact quantity sl The items like needl covered under the separately in the rat 	al quantion for contained to the desired to the des	tity of cement parse and fine a s per the mix d rface vibrators d charges. As	will be as peaggregates is foo esign.	er approved m or estimating pu nor T & P which	ix design. rpose and is already
14.01	I	PSC Grade M- 60 Unit = cum Taking output = 120 cum a) Material Per Cum Basic Cost	cum	120.000	120.000	120.000	
		(Rate taken from sub-analysis -21.16) Water for curing	KI	63.000	63.000	63.000	
		b) Labour For pouring and placing	NI	03.000	03.000	05.000	

Cr. N.	Dof +- *4	Description	11-24	Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Mate	day	0.263	0.263	0.263	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	4.592	4.592	4.592	
		c) Machinery					
		Transit truck					
		agitator					
		For transportation	tonne-	300 x L	300 x L	300 x L	
		(6 cum Capacity), L1	km				
		- lead in Kilometer					
		For unloading	hour	2.905	2.905	2.905	
		Hydraulic Boom	hour	2.905	2.905	2.905	
		placer pump					
		Water tanker (speed					
		@ 10 km/hr. and return speed @ 15					
		km/hr. and 30 mins					
		for unloading)					
		(i) 16 KL capacity	hour	0.875 x L1 +			
		(1) == 11= 00 00000)		2.625			
		(ii) 12 KL capacity	hour		1.167 x L1 +		
		. ,			3.5		
		(iii) 6 KL capacity	hour			2.333 x L1 + 7	
		For formwork and					
		staging add the					
		following:					
14.01H	(i)	For cast-in-situ box					
		girder, segmental					
		construction and					
		balanced cantilever, 35- 55 Percent of cost of					
		concrete					
	(p)	Height upto 5m					
	(P)	Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum					
		d) Formwork and					
		staging 35 Percent					
		of (a+b+c)					
		e) Overhead charges		@ on	@ on	@ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f) Contractor's profit		@ on	@ on	@ on	
				(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cost for 120 cum = a+b+c+		_			
		Rate per cum = (a+b+c+d+	e+f)/12	U			
14.01H (i)	(q)	Height 5m to 10m					
		Basic Cost of Labour,					
		Material & Machinery					
		(a+b+c) for 120 cum					
		d) Formwork and					

					0			Ι
Sr No	Ref. to M		Description	Unit		y as per project		Rate
					Large	Medium	Small	(Rs.)
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 120 cum = a+b+c+	+d+e+f	((*	(3	
		Rat	e per cum = (a+b+c+d+	e+f)/12	20			
14.01H (i)	(r)	Hei	ght above 10m					
.,			ic Cost of Labour, terial & Machinery					
			b+c) for 120 cum					
		d)	Formwork and					
		•	staging 55 Percent					
		۵۱	of (a+b+c)		Ø	Ø	Ø 25	
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		•			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 120 cum = a+b+c+	+d+e+f				
		Rat	e per cum = (a+b+c+d+	e+f)/12	20			
14.01	J	PSC	Grade M- 65					
	•		t = cum					
		Tak	ing output = 120 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from	cum	120.000	120.000	120.000	
			sub-analysis -21.17)					
			Water for curing	Kl	63.000	63.000	63.000	
		b)	Labour					
		For	pouring and placing					
			Mate	day	0.263	0.263	0.263	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	4.592	4.592	4.592	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	300 x L	300 x L	300 x L	
			(6 cum Capacity) , L1 - lead in Kilometer	km				
			For unloading	hour	2.905	2.905	2.905	
			Hydraulic Boom	hour	2.905	2.905	2.905	
			placer pump					
			Water tanker (speed @ 10 km/hr. and					
			return speed @ 15 km/hr. and 30 mins					
			for unloading) (i) 16 KL capacity	hour	0.875 x L1 +			
			/**\		2.625	4.46=		
			(ii) 12 KL capacity	hour		1.167 x L1 + 3.5		

Dof to M	Description	l lm!4	Quantity	Quantity as per project category		
Kei. to IVI	Description	Unit	Large	Medium	Small	(Rs.)
	(iii) 6 KL capacity For formwork and staging add the following:	hour			2.333 x L1 + 7	
(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35- 55 Percent of cost of concrete					
(p)	Height upto 5m					
	Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent					
	e) Overnead charges		_	•	_	
	f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
	Cost for 120 cum = a+b+c+	+d+e+f				
	Rate per cum = (a+b+c+d+	+e+f)/12	20			
(q)	Height 5m to 10m					
	Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent					
	e) Overhead charges		@ on	@ on	@ on	
	f) Contractor's profit		@ on	@ on	@ on	
	Cost for 120 cum = a+b+c+	+d+e+f	(arbrerure)	(атытстите)	(атытстите)	
	Rate per cum = (a+b+c+d+	+e+f)/12	20			
(r)	Height above 10m					
	Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 Percent of (a+b+c) e) Overhead charges f) Contractor's profit		@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	@ on (a+b+c+d) @ on (a+b+c+d+e)	
	(q)	(iii) 6 KL capacity For formwork and staging add the following: (i) For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 Percent of cost of concrete (p) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c-Rate per cum = (a+b+c+d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d-d	(iii) 6 KL capacity hour For formwork and staging add the following: (i) For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 Percent of cost of concrete (p) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/12 (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent of (a+b+c) e) Overhead charges f) Contractor's profit Cost for 120 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/12 (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 Percent of (a+b+c) e) Overhead charges	(iii) 6 KL capacity hour For formwork and staging add the following: (i) For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 Percent of cost of concrete (p) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c) e) Overhead charges @ on (a+b+c+d+e) Cost for 120 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/120 (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent of (a+b+c) e) Overhead charges @ on (a+b+c+d) f) Contractor's profit @ on (a+b+c+d) f) Contractor's p	(iii) 6 KL capacity For formwork and staging add the following: (i) For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 Percent of cost of concrete (p) Height upto 5m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 35 Percent of (a+b+c+d) f) Contractor's profit @ on @ on (a+b+c+d+e) (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent of (a+b+c+d+e) (q) Height 5m to 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent of (a+b+c) e) Overhead charges @ on @ on (a+b+c+d) f) Contractor's profit @ on @ on (a+b+c+d) f) Contractor's profit @ on @ on (a+b+c+d) (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 45 Percent of (a+b+c) Rate per cum = (a+b+c+d+e+f)/120 (r) Height above 10m Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum d) Formwork and staging 55 Percent of (a+b+c) e) Overhead charges @ on @ on (a+b+c+d+e) f) Contractor's profit @ on @ on (a+b+c+d) f) Contractor's profit @ on @ on @ on (a+b+c+d) f) Contractor's profit @ on @ o	(iii) 6 KL capacity

Cu No	Dof 4- 84	5		Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Cost for 120 cum = a+b+c+d+e+fRate per cum = (a+b+c+d+e+f)/120

- Note 1. 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.
 - 2. The items like needle and surface vibrators are part of minor T & P which is already covered under the overhead charges. As such these items have not been added separately in the rate analysis.

14.02	1600	Supplying, fitting and placing HYSD bar reinforcement in super structure complete as per drawing and technical specifications
		Unit = MT
		Taking output = 8 MT
		a) Material
		MS bars including

Uni	t = MT				
Tak	ing output = 8 MT				
a)	Material				
	MS bars including 5	tonne	8.400	8.400	8.400
	Percent overlaps				
	and wastage				
	Binding wire	Kg	48.000	48.000	48.000
b)	Labour for				
	straightening,				
	cutting, bending,				
	shifting to site, tying and placing in				
	position				
	Mate	day	0.213	0.213	0.213
	Blacksmith	day	1.330	1.330	1.330
	Mazdoor	day	3.990	3.990	3.990
c)	Machinery				
	Cutting Machine	hour	8.000	8.000	8.000
	Bending Machine	hour	8.000	8.000	8.000
	Electric generator	hour	8.000	8.000	8.000
	15 KVA				
	Tipper				
	Tipper for				
	Transportation				
	(i) 18 cum capacity	t.km	8 x L		
	(ii) 14 cum capacity	t.km		8 x L	
	(iii) 10 cum capacity	t.km			8 x L
	Loading &	hour			
	Unloading Time				
	(i) 18 cum capacity	hour	1.000	1 200	
	(ii) 14 cum capacity (iii) 10 cum capacity	hour hour		1.280	1.778
	Light weight Crane	noui			1.770
	At cutting bending	hour	2.000	2.000	2.000
	yard	-			
	At site	hour	2.000	2.000	2.000

					Quantit	Quantity as per project category		
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	Rate (Rs.)
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on		@ on (a+b+c) @ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			t for 8 MT (a+b+c+d+e e for per MT (a+b+c+d	-				
14.03	1800	all stre ope com and Spe Unit Taki	es/strands including accessories for ssing, stressing rations and grouting uplete as per drawing Technical cifications t = MT ing output = 0.377					
		stra	ails of cost for 12T13 nd 40 m long cable ight = 0.377 MT) Material					
		•	H.T. Strand @ 9.42 kg/m including 2 Percent for wastage and extra length for jacking	tonne	0.385	0.385	0.385	
			Sheathing duct ID 66 mm along with 5 Percent extra length 40 x 1.05 = 42 m.	metre	42.000	42.000	42.000	
			Tube anchorage set complete with bearing plate, permanent wedges etc	each	2.000	2.000	2.000	
		L	Cement for grouting including 3 Percent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg) Add 0.50 Percent cost of material for Spacers, Insulation tape and miscellaneous items	tonne	0.125	0.125	0.125	
		b)	i) For making and fixing cables, anchorages	day	0.242	0.242	0.242	
			Mate Blacksmith	day day	0.213 1.330	0.213 1.330	0.213 1.330	
			Mazdoor	day	3.990	3.990	3.990	

C. N.	Def to M	Description	l lmia	Quantity as per project category			Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		ii)	For prestressing					
			Mate/Supervisor	day	0.067	0.067	0.067	
			Prestressing operator / Fitter	day	0.333	0.333	0.333	
			Mazdoor	day	1.330	1.330	1.330	
		iii)	For grouting					
		•	Mate/Supervisor	day	0.067	0.067	0.067	
			Mason	day	0.333	0.333	0.333	
			Mazdoor	day	1.330	1.330	1.330	
		c)	Machinery					
		•	Stressing jack with pump	hour	2.500	2.500	2.500	
			Grouting pump with agitator	hour	1.000	1.000	1.000	
			Generator 33 KVA.	hour	3.500	3.500	3.500	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 0.377 MT (a+b+c+	d+e)			•	

Cost for 0.377 MT (a+b+c+d+e) Rate per MT = (a+b+c+d+e)/0.377

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

		c) d)	Overhead charges Contractor's profit		@ on (a+b) @ on (a+b+c+d)	@ on (a+b)	@ on (a+b) @ on (a+b+c+d)	
		b)	Labour Mazdoor for cleaning deck slab concrete surface.	day	1.330	1.330	1.330	
			concrete in Item 14.01 excluding formwork HYSD bar reinforcement Rate as per item No 14.02(Excluding OH & CP)	tonne	0.075	0.075	0.075	
		inclu com and Spec Unit	ring coat M-30 grade uding reinforcement plete as per drawing Technical cifications = 1 cum ng output = 1 cum Material Cement concrete M30 Grade Refer relevant item of		1.000	1.000	1.000	
14.04	2702	Cem						

Rate per cum (a+b+c+d)

C: No	Def to M	5		Quantity as per project category			Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

14.05 516 & 2702

Mastic Asphalt

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 500-39, 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 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 516.

Unit = sqm Taking output = 72.46 sqm (2 tonnes) (0.869 cum) assuming a density of 2.3 tonnes/cum.

	•
a)	Labour

ω,					
	Mate	day	0.652	0.652	0.652
	Mazdoor	day	14.630	14.630	14.630
	Mazdoor (Skilled)	day	1.663	1.663	1.663
b)	Machinery				
	Mechanical broom	hour	0.060	0.060	0.060
	@ 1250 sqm per				
	hour				
	Air compressor 250	hour	0.060	0.060	0.060
	cfm				
	Mastic cooker 1	hour	6.000	6.000	6.000
	tonne capacity				
	Bitumen boiler 1500	hour	6.000	6.000	6.000
	litres capacity				
	Tractor for towing	hour	1.000	1.000	1.000
	and positioning of				
	mastic cooker and				
	bitumen boiler				

c) Material

Base mastic (without coarse aggregates) = 60 Percent Coarse aggregate

Sr No Ref. to M	Dof to M	Description	Unit	Quantity as per project category			Rate	
	Rei. to ivi			Large	Medium	Small	(Rs.)	
		= 40 Properequiaspha aggreddesig	mm to 9.5 mm size) Percent. ortion of material ired for mastic alt with coarse egates (based on mix in done by CRRI for a fic case)					
			Bitumen 80/100 or 60/70 or 30/40 @ 10.2 Percent by weight of mix. 2 x 10.2/100 = 0.204	tonne	0.204	0.204	0.204	
		ii)	Crusher stone dust @ 31.9 Percent by weight of mix = 2 x 31.9/100 = 0.638 tonnes = 0.638/1.625 = 0.39	cum	0.390	0.390	0.390	
		iii)	Lime stone dust filler with calcium carbonate content not less than 80 Percent by weight @ 17.92 Percent by weight of mix = 2 x 17.92/100 = 0.36	tonne	0.360	0.360	0.360	
		iv)	Coarse aggregates 9.5 mm to 3.35 mm size @ 40 Percent by weight of mix = 2 x 40/100 = 0.8 MT = 0.8/1.456 = 0.55	cum	0.550	0.550	0.550	
			Pre-coated stone chips of 9.5 mm nominal size for skid resistance = 72.46x0.005/10 = 0.036	cum	0.036	0.036	0.036	
		vi)	Bitumen for coating of chips @ 2 Percent by weight = 0.036 x 1.456 x 2/100 = 0.001048MT = 1.05kg	kg	1.050	1.050	1.050	
			Overhead charges Contractor's profit		@ on (a+b) @ on (a+b+c+d)	@ on (a+b) @ on (a+b+c+d)	@ on (a+b) @ on (a+b+c+d)	
Cost for 72.46 sam = :			for 72.46 sqm = a+b+	c+d+e	(= = · = /	(= = = = ,	(= = = = =)	

Cost for 72.46 sqm = a+b+c+d+e

Rate per sqm = (a+b+c+d+e)/72.46

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

Sr No Re	D-f +- N4	D	Unit	Quantity as per project category			Rate
	Ref. to M	Description		Large	Medium	Small	(Rs.)

quantities shall be as per mix design.

- This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.
- The quantity of bitumen works out 17 Percent of the mastic asphalt blocks without aggregates and falls within the standards laid down by MoRTH Specifications.

14.06 2703, 1500, 1600 & 1700

Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical for expansion, post complete as per approved drawings and technical specifications. Unit = 1 RM Taking output = 2 x 24 m

span = 48 m

a) Material

> Cement cum 4.092 4.092 4.092

concreteM30 **Grade Refer** relevant item of concrete in Item 14.01(C) by using batching plant, excluding formwork i.e. per cum basic cost

(a+b+c) No. of vertical

posts = (12 + 2)2 =

28 Nos., External

area of vertical

post 0.25x0.275 =

0.069sqm,

Concrete in Vertical

posts = $0.069 \times 28 =$

1.932 cum, Hand

rail in 3 tiers = 3 x24 = 72 m, External

area = 0.170 x

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.

Add 5 Percent of

Sr No Ref. to M		Description	Unit	Quantity as per project category			Rate
		Description		Large	Medium	Small	(Rs.)
		above cost for form work for casting in casting yard. HYSD bar reinforcement Rate as per item No 14.02(Excluding OH & CP)		0.865	0.865	0.865	
		Add 5 Percent of (a) for handling and fixing of precast panels in position b) Overhead charges c) Contractor's profit		@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	
		Rate for 48 m (a+b+c) Rate per metre (a+b+c)/4	.8				
	Note	 Quantities of materia drawing no. SD/202. 48 m length is the tot 	l have b		·		⁄ide
14.07	2703, 1500, 1600 & 1700	Construction of RCC railing of M30 Grade insitu with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications. Unit = 1 RM Taking output = 2 x 24 m span = 48 m. a) Material Cement concreteM30 Grade Refer relevant item of concrete in Item 14.01(C) by using batching plant, excluding		4.092	4.092	4.092	
		formwork i.e. per cum basic cost (a+b+c) No. of vertical					

posts = (12 + 2)2 = 28 Nos., External

- 110	D-f : 50	December 1	11*	Quantity	, as per project	category
No	Ref. to M	Description	Unit	Large	Medium	Small
		anaa af wantiaal				
		area of vertical post 0.25x0.275 =				
		0.069sqm,				
		Concrete in vehicle				
		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.				
		Add 12 Percent of				
		above cost for form				
		work.				
		HYSD bar	tonne	0.865	0.865	0.865
		reinforcement Rate				
		as per item No				
		14.02(Excluding OH & CP)				
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)
		Rate for 48 m (a+b+c)		C 011 (212)	C 011 (414)	C 011 (412)
		Rate per metre (a+b+c)/4	8			
	Not	•				
	Not	te 1. Quantities of materia2. 48 m length is the to				
4.08	Not 2703.2					
4.08		 48 m length is the to Providing, fitting and fixing mild steel railing 				
4.08	2703.2	 48 m length is the to Providing, fitting and fixing mild steel railing complete as per drawing 				
4.08	2703.2	2. 48 m length is the to Providing, fitting and fixing mild steel railing complete as per drawing and Technical				
4.08	2703.2	2. 48 m length is the to Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification				
4.08	2703.2	2. 48 m length is the to Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM				
4.08	2703.2	2. 48 m length is the to Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification				
4.08	2703.2	2. 48 m length is the to Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m				
4.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m				
14.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material:	al linear	length adding	both sides of 2	4 m span.
4.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material: 1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x	al linear	length adding	both sides of 2	4 m span.
4.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material: 1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012 MT	tonne tonne	2.946 1.012	2.946 1.012	2.946 1.012
4.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material: 1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012 MT 3) MS bars = 0.17 x	tonne	length adding	both sides of 2	2.946
4.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material: 1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012 MT 3) MS bars = 0.17 x 1.05 = 0.180 MT	tonne tonne tonne	2.946 1.012 0.180	2.946 1.012 0.180	2.946 1.012 0.180
l.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material: 1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012 MT 3) MS bars = 0.17 x 1.05 = 0.180 MT 4) MS bolts, nuts	tonne tonne	2.946 1.012	2.946 1.012	2.946 1.012
.08	2703.2	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification Unit = 1 RM Taking output = 2 x 50 m span = 100 m a) Material: 1) ISMC 100 = 2.806 x 1.05 = 2.946 MT 2) MS Flat = 0.964 x 1.05 = 1.012 MT 3) MS bars = 0.17 x 1.05 = 0.180 MT	tonne tonne tonne	2.946 1.012 0.180	2.946 1.012 0.180	2.946 1.012 0.180

Add @ 5 Percent of cost of material for painting one shop coat with red oxide primer and three coats of synthetic

					Quantity	, as per project	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
					Luige	Wediam	3	(1101)
			enamel paint and consumables to safeguard against weathering and corrosion. Add for cost of concrete for fixing vertical posts in the performed recess @ 1 Percent of cost of material. Add for electricity charges, welding and drilling equipment, electrodes and other consumables @ 1					
			Percent of cost of					
			material.					
		b)	Labour Mate	day	3.724	3.724	3.724	
			Mazdoor (Skilled)	day	39.900	39.900	39.900	
			Mazdoor	day	53.200	53.200	53.200	
		c) d)	Overhead charges Contractor's profit		@ on (a+b) @ on	@ on (a+b) @ on	@ on (a+b) @ on	
		uj	contractor 3 profit		(a+b+c)	(a+b+c)	(a+b+c)	
	2705	Rat	t for 100 m steel railing e per metre (a+b+c+d) inage Spouts	_	-c+d			
14.09	2703	con and spe Uni	nplete as per drawing Technical cification t = 1 No. ing output = 1 No. Material					
			Corrosion resistant Structural steel including 5 Percent wastage	Kg	4.000	4.000	4.000	
			GI pipe 100mm dia	metre	6.000	6.000	6.000	
			GI bolt 10 mm Dia Galvanised MS flat	each	6.000	6.000	6.000	
		b)	clamp Labour	each	2.000	2.000	2.000	
			For fabrication		.	_	_	
			Mate	day	0.002 0.027	0.002	0.002	
			Skilled (Blacksmith, welder etc.)	day	0.027	0.027	0.027	
			Mazdoor	day	0.027	0.027	0.027	
			For fixing in position					
			Mate	day	0.011	0.011	0.011	
			Mason	day	0.013	0.013	0.013	
			Mazdoor	day	0.266	0.266	0.266	

Sr No	Dof to M	Description	Unit	Quantit	Rate		
	Ref. to M			Large	Medium	Small	(Rs.)
		Add @ 5 Percent of					
		cost of material and					
		labour for					
		electrodes, cutting					

cost of material and labour for electrodes, cutting gas, sealant, anticorrosive bituminous paint, mild steel grating etc.

c) Overhead charges @ on (a+b) @ on (a+b) @ on (a+b)
d) Contractor's profit @ on @ on @ on
(a+b+c) (a+b+c) (a+b+c)

Rate per metre (a+b+c+d)

Note 1.

- In case of viaducts in urban areas, the drainage spouts should be connected with suitably located pipelines to discharge the surface run-off to drains provided at ground level.
- 2. In case of bridges, sufficient length of G.I Pipe shall be provided to ensure that there is no splashing of water from the drainage spout on the structure.

14.10 2700 PCC M15 Grade leveling course below approach slab complete as per

drawing and Technical specification

Unit = 1 cum

Taking output = 1 cum

Material

Case I PCC Grade M15 using

batching plant & Concrete pump

Concrete, Rate as per cum 1.000

item No. 12.08 (A) excluding formworks

Concrete, Rate as per 1.000

item No. 12.08 (A) excluding formworks

Concrete, Rate as per 1.000

item No. 12.08 (A) excluding formworks

Rate per cum

Case II PCC Grade M15 using

batching plant & manual

placing

Concrete, Rate as per cum 1.000

item No. 12.08 (A) excluding formworks

Concrete, Rate as per 1.000

item No. 12.08 (A) excluding formworks

Concrete, Rate as per 1.000

6.31	26.4		T	Quantity	/ as per project	category	Rate
Sr No	Ref. to N	M Description	Unit	Large	Medium	Small	(Rs.)
		item No. 12.08 (A) excluding formworks Rate per cum					
14.11	1500,16 00,1700 & 2704	Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification Unit = 1 cum Taking output = 1 cum a) Material Cement concreteM30 Grade Refe relevant item o concrete in iten 12.08(G)by using batching plant excluding formwork i.e. pe cum basic cos (a+b+c) (Excluding OH & CP) (Refer relevan item of concrete in item No. 13.08 (G except that form work may be added at the rate of 2 Percent of cos against 3.5 Percen provided in the foundation concrete.	f n g ;, r t g t n) n d d 2 t t t	1.000	1.000	1.000	
		HYSD bar reinforcement Rate as per item No 14.02(Excluding OF & CP)		0.050	0.050	0.050	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
14.12	1600	Rate per cum (a+b+c) Note The grade of reinforced of and M25 for moderate concent and meaning anti-corrosive treatment to HYSI reinforcement with Fusion Bonded Epox Coating (FBEC) Unit = MT Taking output = 1 MT	onditions e) n		e adopted as M	30 for severe co	onditions

Cu No	Dof 4- 84	Description Holt	Quantity as per project category			Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

To be taken as per the prevailing market rates.

Note Contractors generally do not have expertise for this item. The job is therefore, got done from specialized firms who have the expertise in the field of construction chemicals. The prevailing rate in the market is required to be ascertained from the market and added in the cost estimate. HYSD reinforcement with Fusion Bonded Epoxy Coating (FBEC) as per MoRTH circular /specification.

14.13 1800 & 2300

Precast - pretensioned Girders

Providing, precasting, transportation and placing in position precast pretensioned concrete girders as per drawing and technical specifications

Unit = cum

Taking output = 1 cum Grade of concrete - M40

Material

Material				
Per Cum Basic Cost (Rate as in sub-	cum	1.000	1.000	1.000
analysis)				
Water for curing	Κl	0.525	0.525	0.525
HYSD steel.	tonne	0.100	0.100	0.100
HT strand with 5	tonne	0.060	0.060	0.060
Percent as wastage				
and extra length for				
anchoring				
LDO for steam	Litre	37.000	37.000	37.000
curing				
Add consumables				

such as binding wire, foam, packing tape, shuttering oil, HDPE pipe for unbonding of strand, bolt & nuts etc @ 1 Percent

of material cost

- b) Labour
- (i) Cutting, bending, making reinforcement cage, placing in position, binding etc. complete

Taking quantity of steel 100 Kg/cum of concrete including laps and wastage

Mate	day	0.093	0.093	0.093
Mazdoor (Skilled)	day	0.466	0.466	0.466
Mazdoor	day	1.862	1.862	1.862

C# No	26.1	D	l locia	Quantity as per project category			Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	
		(ii) Cable cutting and						

threading in position including binding by insulation tape with HDPE pipes etc., prestessing and cutting of extra length of HT strand after de-stressing.

T si

Tak	ing quantity of HT				
stra	nd 60 Kg/cum				
	Mate	day	0.027	0.027	0.027
	Mazdoor (Skilled)	day	0.186	0.186	0.186
	Mazdoor	day	0.500	0.500	0.500
(iii)	Erection and				
	dismantling of				
	shuttering				
	ing shuttering area				
10 5	qm/cum of concrete Mate	day	0.120	0.120	0.120
		day	0.120	0.120	0.120
	Mazdoor (Skilled) Mazdoor	day	1.000	1.000	1.000
/:\		day	2.000	2.000	2.000
(iv)	Concreting by Batching plant and				
	stationary concrete				
	pump				
	Mate	day	0.026	0.026	0.026
	Mazdoor (Skilled)	day	0.050	0.050	0.050
	Mazdoor	day	0.600	0.600	0.600
(v)	Steam curing and	·			
• •	manual curing				
	Mate	day	0.014	0.014	0.014
	Mazdoor	day	0.350	0.350	0.350
(vi)	Handling of precast				
	girder, stacking in				
	stockyard and again				
	loading in trailor				
	Mate	day	0.010	0.010	0.010
	Mazdoor	day	0.250	0.250	0.250
(vii)	Placement of				
	girders in position				
	over pier caps including placement				
	of sand jacks,				
	channel, levelling				
	etc.				
	Mate	day	0.012	0.012	0.012
	Mazdoor (Skilled)	day	0.060	0.060	0.060
	Mazdoor	day	0.240	0.240	0.240
c)	Machinery				
i)	At casting yard				
	Transit truck				

agitator

					Quantity	as per project	t category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
	I			1	. 0			. ,
			For transportation	tonne-	2.5 x L1	2.5 x L1	2.5 x L1	
			(6 cum Capacity),	km				
			L1 - lead in					
			Kilometer					
			For unloading	hour	0.024	0.024	0.024	
			Hydraulic Boom	hour	0.024	0.024	0.024	
			placer pump					
			Water tanker (
			speed @ 10 km/hr.					
			and return speed @					
			15 km/hr. and 30					
			mins for unloading)					
			(i) 16 KL capacity	hour	0.007 x L1 +			
			/::\		0.022	0.04		
			(ii) 12 KL capacity	hour		0.01 x L1 +		
			(iii) 6 Kl. conseits	ha		0.029	0.010 × 14 ·	
			(iii) 6 KL capacity	hour			0.019 x L1 +	
			Crane 35 tonne	hour	0.100	0.100	0.058 0.100	
			capacity	Hour	0.100	0.100	0.100	
			Trailor 30 tonne	hour	0.100	0.100	0.100	
			capacity	noui	0.100	0.100	0.100	
		ii)	For transportation					
		,	and placement at					
			site					
			Crane 35 tonne	hour	0.150	1.150	2.150	
			capacity					
			Trailer 30 tonne	tonne.	2.5xL1	2.5xL1	2.5xL1	
			capacity for	km				
			transporting to					
			site.					
			(L1 - Lead in					
			Kilometer)					
			Trailor 30 tonne	hour	0.150	1.150	2.150	
			capacity during					
			placement.					
			Cost of formwork,					
			steam curing					
			arrangement,					
			pretensioning					
			arrangement etc @					
			5 Percent of cost					
			material, labour					
		d)	and machinery Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		e)	Contractor's profit		@ on	@ on	@ on (a+b)	
		۶,	contractor 3 profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rati	e per cum = (a+b+c+d-	+e)	(4.5.0.4)	(2.2.014)	(
14.14	1700 &		e per cum – (a+b+c+u- viding and fixing	,				
17.17	1800		ical pipes in voided					
	1000		crete slabs					
			t = RM					
			ing output = 1 RM					
		a)	Material					
		•	Helical pipes	metre	1.000	1.000	1.000	
			600mm diameter					

• • •				Quantity	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
	I			,		I	
		Tie rods 20mm	each	1.000	1.000	1.000	
		diameter					
		Consumables for					
		sealing joints etc.@					
		5 Percent of cost of					
		material					
		b) Labour					
		Mate	day	0.010	0.010	0.010	
		Fitter	day	0.050	0.050	0.050	
		Mazdoor	day	0.200	0.200	0.200	
		c) Overhead charges	•	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Rate per cum (a+b+c+d)					
14.15	800	Crash Barriers for Bridge					
		Provision of an					
		Reinforced cement					
		concrete crash barrier at					
		the bridge decks &					
		approaches to bridge					
		structures, constructed					
		with Reinforced Cement					
		Concrete with HYSD					
		reinforcement					
		conforming MoRT&H					
		Specification and as per					
		details given IRC -5					
		including dowel bars ,					
		expansion joints filled					
		with pre-moulded					
		asphalt filler board etc.					
		and approved drawing and at locations directed					
		by the Engineer, all as					
		specified.					
		Unit = Linear metre					
		Taking output = 10 m					
	Α	Crash Barriers for Bridge					
		(Height 950 mm) as per					
		details given IRC -5 (fig					
		1) (Area-0.254 Sqm. for					
		1 meter length)					
		a) M40 grade concrete					
		& HYSD steel					
		reinforcement					
		M 40 grade					
		concrete (Area-					
		0.254 Sqm. /Meter) (Rate taken from		2.540	2.540	2.540	
		item No. 14.01 E	cum	2.340	2.340	2.340	
		(p) including OH &					
		CP)					

				Quantity	y as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		reinforcement including dowel bars(Rate taken from item No. 14.02 including OH & CP) b) Labour Mate Mazdoor c) Material Pre-moulded asphalt filler board d) Overhead charges e) Contractor's profit Cost for 10 metre = a+b+c Rate per metre = (a+b+c+i		0.040 1.000 0.265 @ on (b+c) @ on (b+c+d)	0.040 1.000 0.265 @ on (b+c) @ on (b+c+d)	0.040 1.000 0.265 @ on (b+c) @ on (b+c+d)	
14.15	В	Crash Barriers for Bridge (Height 1100 mm) as per details given IRC -5 (fig2) (Area-0.298 Sqm. for 1 meter length) a) M40 grade concrete & HYSD steel reinforcement M 40 grade concrete (Area-0.298 Sqm. /Meter) (Rate taken from item No. 14.01 E (p)		2.980	2.980	2.980	
		including OH & CP) HYSD steel reinforcement including dowel bars (Rate taken from item No. 14.02 including OH & CP) b) Labour Mate Mazdoor c) Material	tonne day day	0.268 0.040 1.000	0.268 0.040 1.000	0.268 0.040 1.000	
		Pre-moulded asphalt filler board d) Overhead charges e) Contractor's profit	sqm	0.310 @ on (b+c) @ on (b+c+d)	0.310 @ on (b+c) @ on (b+c+d)	0.310 @ on (b+c) @ on (b+c+d)	
14.15	c	Cost for 10 metre = a+b+c Rate per metre = (a+b+c+c Crash Barriers for Bridge (Height 1550 mm) as per details given IRC -5 (fig3) (Surface Area- 0.514 Sqm. for 1 meter length) a) M40 grade concrete & HYSD steel	d+e)/10				

Sr No	Ref. to M	Description	l l min	Quantity as per project category			Rate
Sr No	Ket. to IVI	Description	Unit	Large	Medium	Small	(Rs.)
		reinforcement M 40 grade concre (Area-0.514 Sqm. /Meter) (Rate taken from item No. 14.01 E (including OH & CF	cum p)	5.140	5.140	5.140	
		reinforcement including dowel be (Rate taken from item No. 14.02 including OH & CF	tonne	0.463	0.463	0.463	
		b) Labour	,				
		Mate	day	0.080	0.080	0.080	
		Mazdoor	day	1.995	1.995	1.995	
		c) Material Pre-moulded aspl filler board	nalt sqm	0.540	0.540	0.540	
		d) Overhead charge	s	@ on (b+c)	@ on (b+c)	@ on (b+c)	
		e) Contractor's prof	it	@ on (b+c+d)	@ on (b+c+d)		

Cost for 10 metre = a+b+c+d+e

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

Note:-

The rate analysis for semi-rigid crash barrier with metal beam and flexible crash barrier with wire ropes have been made and included in chapter-8 on Traffic and Transportation.

14.16 800 Painting on concrete surface Providing and applying 2 coats of water based paint cement to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm. Unit = sqm Taking output = 10 sqm a) Labour Mate day 0.020 0.020 0.020 Painter 0.250 0.250 0.250 day Mazdoor (Skilled) day 0.250 0.250 0.250 Material Water based paint Litres 5.000 5.000 5.000 of approved quality for cement concrete surface **Overhead charges** @ on (a+b) c) @ on (a+b) @ on (a+b) d) **Contractor's profit** @ on @ on (a+b+c) @ on (a+b+c)

(a+b+c)

Sr No	Ref. to M	Description	Unit	Quantit	y as per projec	category	Rate
Sr NO	Rei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
		Cost for 10 sqm (a+b+c+d Rate per sqm (a+b+c+d)/					
14.17	2604 (i)	Filler joint Providing & fixing 2 mm thick corrugated copper					
		plate in expansion joint	i				
		complete as per drawing & Technical					
		Specification.					
		Unit = Running meter Taking output = 12 m					
		a) Labour					
		Cutting, bending, carrying & fixing etc.					
		Mate Mazdoor	day day	0.040 0.500	0.040 0.500	0.040 0.500	
		Mazdoor (Skilled)	day	0.500	0.500	0.500	
		b) Material Copper plate - 12m	ka	55.000	55.000	55.000	
		long x 250 mm wide Area = 12 x 0.25 = 3	kg	33.000	33.000	33.000	
		sqm					
		Weight = 3 x 0.002 x					
		8900 = 53.4 kg Wastage @ 2.5					
		Percent = 1.33					
		kg/54.73 kg say = 55 kg.					
		c) Overhead charges		@ on (a+b)		@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 12 m = (a+b+c+d)/1 Rate per m = (a+b+c+d)/1					
14.17	(ii)	Providing & fixing 20 mm thick compressible fibre	ı				
		board in expansion joint complete as per drawing					
		& Technical					
		Specification. Unit = Running meter					
		Taking output = 12 m					
		a) Labour For carrying, placing					
		& fixing.					
		Mate	day	0.008	0.008	0.008	
		Mazdoor Mazdoor (Skilled)	day day	0.100 0.100	0.100 0.100	0.100 0.100	
		b) Material					
		20 mm thick compressible fibre	sqm	3.000	3.000	3.000	
		board 12 m long x					
		25 cm deep. Area = 12 x 0.25 = 3					
		sqm					
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	

Sr No	Ref. to M	Description	Unit	Quantit	y as per project	category	Rate
31 NO	Kei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
		d) Contractor's profit Cost for 12 m = (a+b+c+d) Rate per m = (a+b+c+d)/1		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
14.17	(iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m to cater for a horizontal movement upto 20 mm, covered with sealant complete as per drawing and technical specifications. Unit = Running meter Taking output = 12 m a) Labour Mate Mazdoor Mazdoor (Skilled) b) Material Premoulded joint filler 12 m long, 20 mm thick and 300		0.012 0.200 0.100 3.600	0.012 0.200 0.100 3.600	0.012 0.200 0.100 3.600	
		mm deep. c) Overhead charges d) Contractor's profit		@ on (a+b) @ on (a+b+c)		@ on (a+b) @ on (a+b+c)	
		Cost for 12 m = (a+b+c+d) Rate per m = (a+b+c+d)/1					
14.17	(iv)	Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 Percent bitumen by weight Unit = Running meter Taking output = 12 m 12m long x 100 mm wide x 10mm deep recess a) Labour Mate Mazdoor Mazdoor (Skilled) b) Material Sand Volume 12 x 0.1 x 0.01 = 0.012 cum Weight 0.012 x 1400	day day day cum	0.024 0.500 0.100 0.012	0.024 0.500 0.100 0.012	0.024 0.500 0.100 0.012	

Cr No	D-f +- N4	Description	l lucia	Quantity as per project category			Rate	
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Bitumen 16.8 x 0.06 = 1 kg	cum	0.001	0.001	0.001	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	t for 12 m = (a+b+c+d)					
		Rate per $m = (a+b+c+d)/12$						

Note For arriving at the final rate of filler joints per m length and per cm depth of joint filling compound, the rates at Sl. No. i), ii), iii) & iv) shall be added

14.18 2600 Asphaltic Plug joint

Providing and laying of asphaltic plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of weldable structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/ backer rod, all as per approved drawings and specifications.

Unit = Running meter Taking output = 12 m

a)	Labour				
	Mate	day	0.052	0.052	0.052
	Mazdoor	day	1.000	1.000	1.000
	Mazdoor (Skilled)	day	0.300	0.300	0.300
b)	Material				
	Crushed stone aggregate 12.5 mm nominal size	cum	0.750	0.750	0.750
	Polymer modified bitumen	kg	77.500	77.500	77.500
	Galvanised structural steel plate 200 mm wide,6 mm thick, 12 m long (2.4 sqm) @ 47.10	kg	113.000	113.000	113.000

C# No	Dof to M	D	11	Quantit	Rate		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		lander and the alternative of the					

kg/sqm including 5 Percent wastage Add 1 Percent for welding and foam caulking/backer rod and other incidentals.

Machinery c)

Mastic cooker 1 hour 1.000 1.000 1.000 tonne capacity Smooth 3-wheeled hour 0.500 0.500 0.500 steel roller 8-10

capacity

Overhead charges c) @ on (a+b) @ on (a+b) @ on (a+b) d) **Contractor's profit** @ on @ on (a+b+c) @ on (a+b+c)

(a+b+c)

Cost for 12 m asphalt plug joint = (a+b+c+d+e)

Rate per m = (a+b+c+d+e)/12

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.

14.19 2605 **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 2605 of MoRTH specifications for road & bridge works.

Unit = Running meter Taking output = 12 m

a) Labour

Mate day 0.060 0.060 0.060 Mazdoor day 1.000 1.000 1.000 Mazdoor (Skilled) 0.500 0.500 day 0.500

Material b)

C., N.	Def 4- 24	Danishat'	11**	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		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 2605 of	metre	12.000	12.000	12.000	(1.07)
		MoRT&H Specification Add 5 Percent of cost of material for anchorage reinforcement, welding and other incidentals. c) Overhead charges d) Contractor's profit Cost for 12 m = (a+b+c+d) Rate per m = (a+b+c+d)/1		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
14.20	2608	Compression Seal Joint Providing and laying of compression seal joint consisting of steel armoured nosing at two edges of the joint gap suitably anchored to the deck concrete and a preformed chloroprene elastomer or closed cell foam joint sealer compressed and fixed into the joint gap with special adhesive binder to cater for a horizontal movement upto 40 mm and vertical movement of 3 mm. Unit = Running meter Taking output = 12 m a) Labour					
		Mate Mazdoor Mazdoor (Skilled)	day day day	0.036 0.600 0.300	0.036 0.600 0.300	0.036 0.600 0.300	

Cr No	Dof to M		Description		Quantity	, as per project	category	Rate
2L 140	Kei. (O IVI		Description	Unit	Large	Medium	Small	(Rs.)
Sr No	Ref. to M	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 Percent wastage. Add 5 Percent of cost of above for structural steel for anchorage, welding and other incidentals. Preformed	Unit kg				1
		c) d)	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. Add 1 Percent of cost of sealing element for lubricant-cum- adhesive and other consumables. Overhead charges Contractor's profit t for 12 m = (a+b+c+d)		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	

Rate per m = (a+b+c+d)/12

The installation shall be done by the manufacturer or his authorised representative Note 1. to the satisfaction of the Engineer.

- 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.
- The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.

14.21 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

C:: No	Def to M	Dagawinskian	l linia	Quantit	y as per project	tcategory	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	

installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.

Unit = Running meter

Taking output = 12 m

a) Labour

Mate	day	0.050	0.050	0.050
Mazdoor	day	1.000	1.000	1.000
Mazdoor (Skilled)	day	0.250	0.250	0.250
Material	-			

12.000

12.000

12.000

metre

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. Add 5 Percent of cost of material for anchorage reinforcement, welding and other incidentale

		(a+b+c)	(athte)	(a+b+c)
d)	Contractor's profit	@ on	@ on	@ on
c)	Overhead charges	@ on (a+b)	@ on (a+b)	@ on (a+b)
	incluentais.			

Cost for 12 m = (a+b+c+d)Rate per m = (a+b+c+d)/12

- Note 1. The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.
 - 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.

14.22 **Modular Strip / Box Seal** 2600 **Joint**

Providing and laying of a modular strip Box seal expansion joint including anchorage catering to a movement horizontal beyond 70 mm and upto 140mm, complete as per approved drawings and standard specifications to

6 N	56.44		.		Quantity	y as per project	tcategory	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		be	installed by the					
			nufacturer/supplier or					
		the						
			resentative ensuring					
		•	npliance to the					
			nufacturer's					
			tructions for					
			tallation.					
			it = Running meter					
			ring output = 12 m					
		a)	Labour					
		•	Mate	day	0.056	0.056	0.056	
			Mazdoor	day	1.000	1.000	1.000	
			Mazdoor (Skilled)	day	0.400	0.400	0.400	
		b)	Material					
		-	Supply of a modular	metre	12.000	12.000	12.000	
			strip/box seal joint					
			assembly					
			comprising of edge					
			beams, central					
			beam,2 modules					
			chloroprene seal,					
			anchorage					
			elements, support					
			and control system,					
			all steel sections					
			protected against					
			corrosion and					
			installed by the					
			manufacturer or his					
			authorised					
			representative.					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	

Cost for 12 m Modular strip/box seal joint = (a+b+c+d)

Rate per m = (a+b+c+d)/12

Contractor's profit

Note

1. The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.

@ on

(a+b+c)

@ on

(a+b+c)

@ on

(a+b+c)

- 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.

14.23 2600

Modular Strip / Box Seal

Joint

d)

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

C:: No	Dof to M	Description	11	Quantity	y as per project	category	Rate	l
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	l

to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation. **Unit = Running meter**

Taking output = 12 m

a)	Labour				
	Mate	day	0.077	0.077	0.077
	Mazdoor	day	1.250	1.250	1.250
	Mazdoor (Skilled)	day	0.665	0.665	0.665
b)	Material				
	Supply of a modular	metre	12.000	12.000	12.000
	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.

Overhead charges @ on (a+b) @ on (a+b) @ on (a+b) c) d) Contractor's profit @ on @ on @ on (a+b+c) (a+b+c) (a+b+c)

Cost for 12 m Modular strip/box seal joint = (a+b+c+d)

Rate per m = (a+b+c+d)/12

- 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.

Painting with synthetic enamel paint bridge No. and span arrangements

> Painting two coats after filling the surface with synthetic enamel paint bridge No. and span arrangements as per as directed by Engineer.

Unit = Nos.

Taking output = 1 Nos.

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14.24

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category	Rate
Sr NO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Labour					
			Mate	day	0.008	0.008	0.008	
			Painter	day	0.133	0.133	0.133	
			Mazdoor	day	0.067	0.067	0.067	
		b)	Material					
			Paint conforming to					
			requirement of	Litre	0.300	0.300	0.300	
			clause 803.3.					
			Add for scaffolding					
			@ 1 Percent of labour cost where					
			required					
			Add @ 5 Percent					
			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.					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		Rat	e per Nos. = (a+b+c+d)			-		

14.25 Suggestive

Bipolar corrosion inhibiting admixture in concrete for protection of reinforced steel from corrosion

Admix polydentate, bipolar, migratory, integral, non nitrite base concrete penetrating corrosion inhibiting admixture at a dosage of 3 Kg per cu.m. Of concrete as per manufacturers specification. Inhibitor should conform to following i. ASTM G-109-2005-Long term corrosion test resulting in a corrosion rate of zero coulombs. ii. JIS Z 1535- Accelerated corrosion test showing significant reduction in corrosion using the admixture. iii. ASTM G1- Immersion test for 720 hrs indicating

rebar weight loss less

Sr No	Ref. to M	Description	Unit	Quantity	Quantity as per project category		
JI INU	nei. to ivi		Unit	Large	Medium	Small	
		than 5 mpy iv. ASTM G3- Polarization test by Tafel test indicating Rebar weight loss of less than 5 mpy Unit = Cum. Taking output = 100.00 a) Material Corrosion Inhibitin Admixture @ 3 kg per cubic Meter b) Overhead charges c) Contractor's profit	Cum ng Kg.	300.000 @ on (a) @ on (a+b)	300.000 @ on (a) @ on (a+b)	300.000 @ on (a) @ on (a+b)	
		Cost for 100 cum. = a+b					
26	1700	Providing structural stefor super-structure complete as per drawing and technical specifications Unit = MT	eel				
		Taking output = 17.135 a) Material	IVI I				
		Structural steel in plates, angles, etc including 5 Percen wastage	t tonne	17.992	17.992	17.992	
		Nuts & bolts	Kg	180.000	180.000	180.000	
		b) Labour (for cutting, bending, making holes, joining, welding and erecting in position					
		Mate Fitter	day day	28.058 102.553	28.058 102.553	28.058 102.553	
		Blacksmith	day	102.553	102.553	102.553	
		Welder	day	102.553	102.553	102.553	
		Painter I class	day	43.072	43.072	43.072	
		Mazdoor Electrodes, cutting gas and other consumables @ 10 Percent of cost of (a) above c) Machinery Mobile Hydraulic)	350.731	350.731	350.731	
		Crane 10 tonne capacity (For Fabrication)	Hrs	68.540	68.540	68.540	
		Crane 35 tonne capacity (For	Hrs	4.000	4.000	4.000	

- N	26.26				Quanti	ty as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Loading &					
			Unloading @ 1 hr for each operation)					
			Crane 35 tonne					
			capacity (For Lifting and Placing in	Hrs	4.000	4.000	4.000	
			Position @ 2 hrs)					
			Trailer 30 tonne	Hrs	4+L/15	4+L/15	4+L/15	
			capacity for					
			transporting to site.					
			Applying 2 coats primer before					
			painting of Truss	Lit	899.588	899.588	899.588	
			and Girder (42 sqm/tonne)					
			Painting of Truss and Girder	Lit	899.588	899.588	899.588	
			Sundries @ 5% of the above (a,b & c)					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 17 125 MT (a+b+/	יבאבר/				

Cost for 17.135 MT (a+b+c+d+e) Rate for per MT (a+b+c+d+e)/17.135

CHAPTER - 15

BOX CELL STRUCTURES

PREAMBLES:

- 1 Excavation for structures has been provided both by manual and mechanical means. The rate relevant to a particular situation may be adopted.
- The earth excavated from foundation has been proposed to be backfilled and balance quality utilized for road work locally except for marshy soil where disposal has been provided.
- The rock foundations are required to be prepared which has been analysed.
- 4 In case of rocks, excavation has been considered upto a depth of 3 m only.
- 5 Embedment of foundation in soft and hard rocks has been provided as required by the specifications.
- 6 Mixing of cement concrete has been considered by using batching plant.
- 7 Concrete batching plant is generally placed within one km of the Box Cell site. In case of longer lead, transportation cost may be worked out based on tonne Km
- 8 The coarse and fine aggregate for cement concrete shall be as per IS: 383.
- 9 Description of items has been given very brief. Relevant clauses of MoRT&H Specifications may be referred for detailed specification.
- 10 Filter media and backfilling behind abutments are required to be provided as per guidelines given in IRC: 78.
- 11 Weep holes shall be provided as per Clause 2706 of MoRT&H Specifications.

Cu No	Dof to M	Description	Linit	Quantity as per project category			
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

15.01 304 Excavation for Structures

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

I Ordinary soil

Unit = cum

Taking output = 10 cum

A Manual Means

(i) Depth upto 3 m

a) Labour

b) c)	Overhead charges Contractor's profit		@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)
	Mazdoor	day	4.655	4.655	4.655
	Mate	day	0.186	0.186	0.186

Cost for 10 cum = a+b+c

Rate per cum = (a+b+c)/10

Note 1. Cost of dewatering may be added where required upto, 10 Percent of labour cost Assessment for dewatering shall be made as per site conditions.

- 2. The excavated earth can be used partially for backfilling of foundation pit and partly for road work except for marshy soil. Hence cost of disposal has not been added except for marshy soil. This remark is common to all cases of item 15.01 excluding marshy soil.
- 3. The cost of shoring and shuttering, where needed, may be added @ 1 Percent on cost of excavation for open foundation.

15.01 A (ii) Depth 3 m to 6 m

a) Labour

b) c)

n (a+b) @ on (a+b)
on (a) @ on (a)
985 5.985
239 0.239
(

Cost for 10 cum = a+b+c

Rate per cum = (a+b+c)/10

Note Cost of dewatering may be added where required upto 15 Percent of labour cost. Assessment for dewatering shall be done as per actual ground conditions.

15.01 A (iii) Depth above 6 m

a) Labour

Mate/Supervisor	day	0.319	0.319	0.319
Mazdoor	day	7.980	7.980	7.980

C., N.	D. C.	- 04		Description	11	Quantity	as per project	category	Rat
Sr No	Ref. t	O IVI		Description	Unit	Large	Medium	Small	(Rs.
			b)	Overhead charges		@ on (a)	@ on (a)	@ on (a)	
			c)	Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
			-	t for 10 cum = a+b+c					
			Rate	e per cum = (a+b+c)/10					
		Note		Cost of dewatering ma Assessment for dewater	•	•	•		cost.
15.01	В	(i)		chanical Means (Depth o 3 m)					
			Unit	t = cum					
				ing output = 330 cum					
			a)	Labour					
				Mate	day	0.426	0.426	0.426	
				Mazdoor	day	10.640	10.640	10.640	
			b)	Machinery					
				Hydraulic Excavator					
				For excavation					
				(i) 1.2 cum bucket capacity	hour	5.508			
				(ii) 1.1 cum bucket capacity	hour		6.344		
				(iii) 0.9 cum bucket capacity	hour			8.869	
				For backfilling (considering 60% of the excavated material)					
				(i) 1.2 cum bucket capacity	hour	3.305			
				(ii) 1.1 cum bucket capacity	hour		3.806		
				(iii) 0.9 cum bucket capacity	hour			5.321	
				Tipper for transportation					
				of excess material to dumping yard considering					
				lead @ 1 km (i) 14 cum capacity	t-km	198.000			
				(ii) 14 cum capacity	t-km	130.000	198.000		
				(II) 14 Culli capacity	(-KIII		130.000		

Cost for 330 cum = a+b+c+dRate per cum = (a+b+c+d)/330

Contractor's profit

(iii) 10 cum capacity

c) Overhead charges

d)

t-km

@ on (a+b)

@ on

(a+b+c)

@ on (a+b)

@ on

(a+b+c)

198.000

@ on (a+b)

@ on

(a+b+c)

Sr No	Ref. t	o M		Description	Ini+	Quantity	as per project	category	F
טאו וכ	nei. t	U IVI		Description	Unit	Large	Medium	Small	(
F 01	D	/:: \							
5.01	В	(ii)		chanical Means (Depth to 6 m)					
				: = cum					
				ng output = 300 cum					
			a)	Labour	day	0.426	0.426	0.426	
				Mate	day				
				Mazdoor	day	10.640	10.640	10.640	
			b)	Machinery					
				Hydraulic Excavator					
				For excavation	h	F F C 4			
				(i) 1.2 cum bucket capacity	hour	5.564			
				(ii) 1.1 cum bucket capacity	hour		6.408		
				(iii) 0.9 cum bucket capacity	hour			8.958	
				For backfilling (considering 60% of the					
				excavated material)					
				(i) 1.2 cum bucket capacity	hour	3.338			
				(ii) 1.1 cum bucket capacity	hour		3.845		
				(iii) 0.9 cum bucket capacity	hour			5.375	
				Tipper for transportation of excess material to dumping yard considering lead @					
				1 km		100.000			
				(i) 14 cum capacity	t-km	180.000	190,000		
				(ii) 14 cum capacity (iii) 10 cum capacity	t-km t-km		180.000	180.000	
			c)	Overhead charges	CKIII	@ on (a+b)	@ on (a+b)	@ on (a+b)	
			d)	Contractor's profit		@ on @ on (a+b+c)	@ on @ on (a+b+c)	@ on (a+b+c)	
			Cost	: for 300 cum = a+b+c+d		(a · b+c)	(4.8.0)	(a ··b+c)	
				e per cum = (a+b+c+d)/300					
L5.01	В	(iii)		chanical Means					
				oth above 6 m) : = cum					
				ng output = 270 cum					
			a)	Labour					
			u,	Mate	day	0.426	0.426	0.426	
				Mazdoor	day	10.640	10.640	10.640	
			b)	Machinery	1				
			,	Hydraulic Excavator					
				For excavation					

11	Quantity	as per project	category	Rate
Unit	Large	Medium	Small	(Rs.)
hour	5.634			
hour		6.488		
hour			9.070	
hour	3.380			
hour		3.893		
hour			5.442	
t-km	162.000			
t-km		162.000		
t-km			162.000	
	@ on (a+b)	@ on (a+b)	@ on (a+b)	
	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
day	0.266	0.266	0.266	
day	6.650	6.650	6.650	
) 1)				
,				
	a+b)			cent of Jahour cost may be added, where required

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

	Dof to M		Description:		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
48.64	_							
15.01	В		echanical Means nit = cum					
			king output = 50 cum					
		a)	Labour					
		u,	Mate	day	0.160	0.160	0.160	
			Mazdoor	day	3.990	3.990	3.990	
		b)		uuy	3.330	3.330	3.330	
		-,	Hydraulic Excavator					
			Excavator for excavation					
			(i) 1.2 cum bucket capacity	hour	6.926			
			(ii) 1.1 cum bucket capacity	hour		8.149		
			(iii) 0.9 cum bucket capacity	hour			8.658	
			For loading					
			(i) 1.2 cum bucket capacity	hour	1.039			
			(ii) 1.1 cum bucket capacity	hour		1.196		
			(iii) 0.9 cum bucket capacity	hour			1.672	
			Jack Hammer	hour	6.926	8.149	8.658	
			Tipper					
			For transportation					
			considering lead @ 1km	4 L	75.000			
			(i) 14 cum capacity	t-km	75.000	75 000		
			(ii) 14 cum capacity	t-km		75.000	75 000	
			(iii) 10 cum capacity For loading & unloading	t-km			75.000	
			time					
			(i) 14 cum capacity	hour	1.039			
			(ii) 14 cum capacity	hour		1.196		
			(iii) 10 cum capacity	hour			1.672	
		c)			@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	·		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			st for 50 cum = a+b+c+d					
		Ra	te per cum = (a+b+c+d)/ 50					
15.01	302 & III 303	І На	rd Rock (requiring blasting)					
	А	Ma	anual Means					
			nit = cum					
			king output = 10 cum					
		a)	Labour					
			Mate	day	0.459	0.459	0.459	
			Driller	day	0.500	0.500	0.500	
			Blaster	day	0.333	0.333	0.333	
			Mazdoor	day	10.640	10.640	10.640	

CHAPTER: 15- BOX CELL STRUCTURES

C: No	D-f +- N4		Description	Unit	Quantity	Rate		
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Machinery Air Compressor 250 cfm with 2 jack hammer for	hour	1.000	1.000	1.000	
		c)	drilling. Material					
			Explosives (Blasting Material)	kg	3.500	3.500	3.500	
			Detonator electric	each	14.000	14.000	14.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 10 cum = a+b+c+d+e					

Cost for 10 cum = a+b+c+d+eRate per cum = (a+b+c+d+e)/10

Note Cost of dewatering @ 10 Percent of (a+b) may be added, where required Assessment for dewatering shall be made as per site conditions.

15.01 302 & III Hard Rock (requiring 303 blasting)

Carrying out excavation in hard rock to achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303

B Mechanical Means

Unit = cum

Taking output = 120 cum

Ian	ing output - 120 cum				
a)	Labour				
	Mate	day	0.253	0.253	0.253
	Mazdoor	day	3.990	3.990	3.990
	Driller	day	2.000	2.000	2.000
	Blaster	day	0.333	0.333	0.333
b)	Machinery				
	Air compressor	hour	6.000	6.000	6.000
	Jack Hammer for drilling holes (@ 4.5 m per hour)	hour	24.000	24.000	24.000
	Jack Hammer (consider 5% of the volume for dressing)	hour	1.219	1.219	1.219
	Hydraulic Excavator				
	Excavator for excavation				

Sr No	Ref. to M		Description	Unit	Quantity	y as per project	category	
140	WEI. IO IVI		Description	Unit	Large	Medium	Small	
			(i) 1.2 cum bucket capacity	hour	1.219			
			(ii) 1.1 cum bucket capacity	hour		1.219		
			(iii) 0.9 cum bucket capacity	hour			1.219	
			For loading					
			(i) 1.2 cum bucket capacity	hour	2.493			
			(ii) 1.1 cum bucket capacity	hour		2.871		
			(iii) 0.9 cum bucket capacity	hour			4.013	
			Tipper					
			For transportation considering lead @ 1 km					
			(i) 14 cum capacity	t-km	180.000			
			(ii) 14 cum capacity	t-km		180.000		
			(iii) 10 cum capacity	t-km			180.000	
			For loading & unloading time					
			(i) 14 cum capacity	hour	2.493			
			(ii) 14 cum capacity	hour		2.871		
			(iii) 10 cum capacity	hour			4.013	
		c)	Materials					
		•	Small dia.Explosive at 0.40 kg / cum for 120 cum (120 x 0.40) Explosive at 0.20 kg / cum for secondary blast @ 5%of the total volume (120 x 0.2x5%)	kg	48.000	48.000	48.000	
			Electric detonators at 1 per hole for main blast holes (21x3+20*2)=103 nos	no	69.000	69.000	69.000	
			Ordinary detonators @ 1 per hole for 10 secondary holes (required for 5% of the total quantity @ 0.6 m per hole for I cum)	no	7.000	7.000	7.000	
			Detonating fuse coil	m	213.000	213.000	213.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	t for 120 cum = a+b+c+d+e					

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Sr No	Ref. to M	Description	Heit	Quantity	Quantity as per project category			
Sr NO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.
15 01	IV		15 1 // 1					
15.01	IV		d Rock (blasting hibited)					
		-	t = cum					
			ing output = 35 cum					
	Α		chanical Means					
		a)	Labour					
		aj	Mate	day	0.106	0.106	0.106	
			Mazdoor	day	2.660	2.660	2.660	
		b)	Machinery	uuy				
		۵,	Jack Hammer	hour	7.111	8.889	10.940	
			Hydraulic Excavator	noui				
			Excavator for excavation					
			(i) 1.2 cum bucket	hour	7.111			
			capacity	noui				
			(ii) 1.1 cum bucket	hour		8.889		
			capacity					
			(iii) 0.9 cum bucket	hour			10.940	
			capacity					
			For loading		0.727			
			(i) 1.2 cum bucket capacity	hour	0.727			
			(ii) 1.1 cum bucket capacity	hour		0.837		
			(iii) 0.9 cum bucket capacity	hour			1.171	
			Tipper					
			For transportation to dumping yard considering lead @ 1km					
			(i) 14 cum capacity	t-km	52.500			
			(ii) 14 cum capacity	t-km		52.500		
			(iii) 10 cum capacity	t-km			52.500	
			For loading & unloading time					
			(i) 14 cum capacity	hour	0.727			
			(ii) 14 cum capacity	hour		0.837		
			(iii) 10 cum capacity	hour			1.171	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
			t for 35 cum = a+b+c+d					
		Rat	e per cum = (a+b+c+d)/35					
15.01	v	Ma	rshy Soil					
		Uni	t = cum					
		Tak	ing output = 10 cum					
		Dep	oth upto 3 m					
	Α	Ma	nual means					

Quantity as per project category			
Medium	Small	(Rs.)	
0.532	0.532		
13.300	13.300		
2.670	2.670		
@ on (a+b)	@ on (a+b)		
@ on (a+b+c)	@ on (a+b+c)		
	(a+b+c)	(a+b+c) (a+b+c)	

Cost for 10 cum = a+b+c+d Rate per cum = (a+b+c+d)/ 10

- **Note** 1. Cost of dewatering @ 30 Percent of (a), may be added, where required Assessment for dewatering shall be made as per site conditions.
 - 2. Shoring & strutting 15 Percent of (a), where required may be added
 - 3. It is assumed that Marshy Soil will be available upto 3 m depth only. For deeper excavation below 3 m depth, refer analysis in item15.01 (i) to (iv) for ordinary soil

L B	Me	chanical Means				
	Uni	t = cum				
	Tak	ing output = 260 cum				
	a)	Labour				
		Mate	day	0.053	0.053	0.053
		Mazdoor	day	1.330	1.330	1.330
	b)	Machinery				
		Hydraulic Excavator				
		(i) 1.2 cum bucket capacity	hour	10.126		
		(ii) 1.1 cum bucket capacity	hour		11.662	
		(iii) 0.9 cum bucket capacity	hour			16.304
		Tipper				
		For transportation to				
		dumping yard considering lead @ 1km				
		(i) 14 cum capacity	t-km	390.000		
		(ii) 14 cum capacity	t-km		390.000	
		(iii) 10 cum capacity For loading & unloading time	t-km			390.000
		(i) 14 cum capacity	hour	10.126		
		(ii) 14 cum capacity	hour	10.120	11.662	
		(iii) 10 cum capacity	hour		11.002	16.304
	c)	Material	Houl			10.304
	c)	Selected earth for	cum	156.000	156.000	156.000
		refilling	cum	130.000	130.000	130.000
	d)	Overhead charges		@ on	@ on	@ on
	uj	Overneau charges		_	@்பா (a+b+c)	_
	۵۱	Contractorio profit		(a+b+c)		(a+b+c)
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)

Rate per cum = (a+b+c+d)/260

	_			Quantity as per project category			
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	Rate (Rs.)
15.01	VI	Back Filling in Marshy Foundation Pits Unit = Cum Taking Output = 6 cum a) Labour Mate Mazdoor for dressing sides, bottom and	day day	0.160 3.990	0.160 3.990	0.160 3.990	
		backfilling b) Machinery Tractor-trolley for transportation	hour	2.000	2.000	2.000	
		c) Overhead charges d) Contractor's profit Cost for 6 cum = a+b+c+d Rate per cum = (a+b+c+d)/6		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
15.02	304	Filling Annular Space Around Footing in Rock Unit = cum Taking out put = 1 cum PCC-15 nominal mix. Rate may be taken as per item 15.11.					
15.03	304	Sand Filling in Foundation Trenches as per Drawing & Technical Specification Unit = cum Taking output = 100 cum a) Labour					
		Mate Mazdoor b) Machinery Water tanker (speed @ 20km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)	day day	0.053 1.330	0.053 1.330	0.053 1.330	
		(i) 16 KL capacity	hour	0.125 x L1 + 0.750			
		(ii) 12 KL capacity	hour		0.167 x L1 + 1.000		
		(iii) 6 KL capacity	hour			0.333 x L1 + 2.000	
		c) Material Sand (assuming 20 Percent voids) at site	cum	120.000	120.000	120.000	
		Water d) Overhead charges	KL	18.000 @ on (a+b+c)	18.000 @ on (a+b+c)	18.000 @ on (a+b+c)	

						Quantity as per project category		Rate	
Sr No	Ref. to	M		Description	Unit	Large	Medium	Small	(Rs.)
			e) Rat	Contractor's profit se per 100 cum = a+b+c+d+e		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			Rat	e per cum = (a+b+c+d+e)/1	00				
15.04	1300			ck Masonry Work in ment Mortar 1:3 in indation complete					
			Pla and	luding Pointing and stering, as per Drawing Technical Specifications. it = cum					
			Tak	ring output = 5 cum					
			a)	Material					
				Bricks Ist class	each	2500.000	2500.000	2500.000	
				Cement mortar 1:3 (Rate taken from sub- analysis items 21.01 A)	cum	1.200	1.200	1.200	
			b)	Water for curing Labour	KL	2.415	2.415	2.415	
			•	Mate	day	0.638	0.638	0.638	
				Mason	day	5.320	5.320	5.320	
				Mazdoor	day	10.640	10.640	10.640	
			c)	Machinery Water tanker (speed @ 20km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip) (i) 16 KL capacity	hour	0.017 x L1 +			
						0.101	0.022v11.i		
				(ii) 12 KL capacity	hour		0.022x L1 + 0.134	0.045	
				(iii) 6 KL capacity	hour			0.045 x L1 + 0.268	
			d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
				st for 5 cum = a+b+c+d		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
				e per cum (a+b+c+d)/5					
15.05	Sub- analysis	(A)	(1 d Uni	ment Mortar 1:3 cement : 3 sand) it = cum sing output = 1 cum					
			a)	Materials					
			•	Cement	tonne	0.510	0.510	0.510	
				Sand	cum	1.050	1.050	1.050	
			b)	Labour					
				Mate	day	0.048	0.048	0.048	

C	D-6:		December 11	11*	Quantit	y as per project o	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Mazdoor Total Material and Labour	day = (a+b)	1.197	1.197	1.197	
	Sub- analysis (Addl.)	(B)	Cement Mortar1:2 (1 cement :2 sand)					
			Unit = cum					
			Taking output = 1 cum					
			a) Materials					
			Cement	tonne	0.672	0.672	0.672	
			Sand	cum	0.930	0.930	0.930	
			b) Labour					
			Mate	day	0.048	0.048	0.048	
			Mazdoor	day	1.197	1.197	1.197	
			Total Material and Labour					
	Sub- analysis (Addl.)	(C)	Cement Mortar1:4 (1 cement :4 sand)					
			Unit = cum					
			Taking output = 1 cum					
			a) Materials					
			Cement	tonne	0.403	0.403	0.403	
			Sand	cum	1.120	1.120	1.120	
			b) Labour					
			Mate	day	0.048	0.048	0.048	
			Mazdoor	day	1.197	1.197	1.197	
			Total Material and Labour	= (a+b)				
	Sub- analysis (Addl.)	(D)	Cement Mortar1:6 (1 cement :6 sand)					
	(Unit = cum					
			Taking output = 1 cum					
			a) Materials					
			Cement	tonne	0.288	0.288	0.288	
			Sand	cum	1.337	1.337	1.337	
			b) Labour					
			Mate	day	0.048	0.048	0.048	
			Mazdoor	day	1.197	1.197	1.197	
			Total Material and Labour	= (a+b)				
15.06	1400		Stone Masonry Work Cement Mortar 1:3 Foundation complete as Drawing and Techn Specifications. Unit = cum	=				
	1405.4	(A)	Taking output = 5 cum Square Rubble Coursed Rubble Masonry (first sort a) Material)				

Cr No	Pof to M	Description	Linit	Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Stone	cum	5.500	5.500	5.500	
		Through and bond stone		35.000	35.000	35.000	
		(35no.x0.24mx0.24mx0.3	each	33.000	33.000	33.000	
		9m = 0.79 cu.m)					
		Cement mortar 1:3	cum	1.500	1.500	1.500	
		(Rate taken from sub-					
		analysis items 21.01 A)					
		b) Labour					
		Mate	day	0.878	0.878	0.878	
		Mason	day	9.975	9.975	9.975	
		Mazdoor	day	11.970	11.970	11.970	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 5 cum = a+b+c+d					
		Rate per cum (a+b+c+d)/5					
	1405.3 (B)	Random Rubble Masonry					
	1.00.0 (5)	(coursed/uncoursed)					
		Unit = cum					
		Taking output = 5 cum					
		a) Material					
		Stone	cum	5.500	5.500	5.500	
		Through and bond stone	each	35.000	35.000	35.000	
		(35nos.x0.24mx0.24mx0.	eacii	33.000	33.000	33.000	
		39m = 0.79 cu.m)					
		Cement mortar 1:3	cum	1.550	1.550	1.550	
		(Rate taken from sub-	Cuiii	1.550	1.550	1.330	
		analysis items 21.01 A)					
		b) Labour					
		Mate	day	0.798	0.798	0.798	
		Mason	day	7.980	7.980	7.980	
		Mazdoor	day	11.970	11.970	11.970	
		c) Overhead charges	uay	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b)	@ on (a+b+c)	@ on (a+b) @ on	
		ur Cultiaciul S Diulil		w 011	ש טוו (מדטדנ)	اال س <u>ي</u>	
		υ, σετινιστές μετιν		(a+b+c)		(athte)	
		Cost for 5 cum = a+b+c+d		(a+b+c)		(a+b+c)	

Note The labour already considered in cement mortar has been taken into account while proposing labour for masonry works.

15.07 1300 & 2200 Brick masonry work in 1:3 in sub-structure complete excluding pointing and plastering, as per drawing and Technical Specifications

Unit = cum

Taking output = 1 cum

a) Material

Bricks 1st class each 500.000 500.000 500.000

Cu NI -	Def to MA		Description	11	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
			Cement mortar 1:3 (Rate taken from sub-	cum	0.240	0.240	0.240	
			analysis items 21.01 A)					
			Water for curing	KL	0.483	0.483	0.483	
		b)	Labour					
			Mate	day	0.085	0.085	0.085	
			Mason	day	1.064	1.064	1.064	
			Mazdoor	day	1.064	1.064	1.064	
			Add for scaffolding @ 5 Percent of cost of material and labour					
		c)	Machinery					
		-,	Water tanker (speed @					
			20km/hr and return					
			speed @ 30 km/hr and spreading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.003 x L1 + 0.020			
			(ii) 12 KL capacity	hour		0.004 x L1 + 0.027		
			(iii) 6 KL capacity	hour			0.009 x L1 + 0.054	
		d)	Overhead charges		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per cum (a+b+c+d+e)		, ,	,	, ,	
15.08	1300 & 2200	(1:3 sub	nting with cement mortar B) on brick work in estructure as per Technical ecifications					
		Un	it = 10 sqm					
		Tak	ing output = 10 sqm					
		a)	Material					
			Cement mortar 1:3 (Rate taken from sub- analysis items 21.01 A)	cum	0.030	0.030	0.030	
		b)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mason	day	0.665	0.665	0.665	
			N.A I	day	0.665	0.665	0.665	
			Mazdoor	,				
		c)	Overhead charges	<i>aa,</i>	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		c) d)		,		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
Sr NO	Ket. to IVI		Description	Unit	Large	Medium	Small	(Rs.)
15.09	1300 & 2200	mo sub	stering with cement ortar (1:3) on brick work in o-structure as per Technical ecifications					
		Uni	it = 10 sqm					
		Tak	king output = 10 sqm					
		a)	Material					
			Cement mortar 1:3 (Rate taken from sub- analysis items 21.01 A)	cum	0.144	0.144	0.144	
			Water for curing	KL	0.139	0.139	0.139	
		b)	Labour					
			Mate	day	0.053	0.053	0.053	
			Mason	day	0.665	0.665	0.665	
			Mazdoor	day	0.665	0.665	0.665	
		c)	Machinery					
			Water tanker (speed @ 20km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.001 x L1 + 0.006			
			(ii) 12 KL capacity	hour		0.001 x L1 + 0.008		
			(iii) 6 KL capacity	hour			0.003 x L1 + 0.016	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	te per 10 sqm (a+b+c+d+e)					

Note:- The number of masons and Mazdoors already catered in the cement mortar have been taken into account while providing these categories in brick masonry, pointing and plastering.

7.000

1.000

7.000

1.000

7.000

15.10	1400 &		Stone masonry work in		
	2200		cement mortar 1:3 for		
			substructure complete as per		
			drawing and Technical		
			Specifications		
		Α	Random Rubble Masonry		
			(coursed/uncoursed)		
			Unit = cum		
			Taking output = 1 cum		
			a) Material		
			Stone	cum	1.000

Through and bond stone

(7 no.x 0.24 m x 0.24 m x 0.39 m = 0.16 cum)

No

					Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Cement mortar 1:3 (Rate taken from sub- analysis items 21.01 A)		0.330	0.330	0.330	
			Water for curing		0.966	0.966	0.966	
		b)	Labour					
			Mate		0.128	0.128	0.128	
			Mason		1.596	1.596	1.596	
			Mazdoor		1.596	1.596	1.596	
			Add for scaffolding @ 5 percent of cost of material and labour					
		c)	Machinery					
			Water tanker (speed @ 20km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)					
			(i) 16 KL capacity	hour	0.007 x L1 + 0.040			
			(ii) 12 KL capacity	hour		0.009 x L1 + 0.054		
			(iii) 6 KL capacity	hour			0.018 x L1 + 0.107	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per cum (a+b+c+d+e)					
15.10	В	(fire	ursed rubble masonry st sort)					
			t = cum					
			ing output = 1 cum					
		a)	Material					
			Stone	cum	1.100	1.100	1.100	
			Through and bond stone	each	7.000	7.000	7.000	
			(7 no.x 0.24 m x 0.24 m x 0.39 m = 0.16 cum)					
			Cement mortar 1:3 (Rate taken from sub- analysis items 21.01 A)	cum	0.300	0.300	0.300	
		ل ـ۱	Water for curing	KL	0.966	0.966	0.966	
		b)	Labour	day	0.160	0.160	0.160	
			Mate Mason	day	1.995	1.995	1.995	
				day	1.995	1.995	1.995	
			Mazdoor Add for scaffolding @ 5 Percent of cost of material and labour	uay	1.555	1.555	1.555	

Rate (Rs.)

					Quantity	as per project	category
Sr No	Ref. to M		Description	Unit	Large	Medium	Small
		c)	Machinery Water tanker (speed @				
			20km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)				
			(i) 16 KL capacity	hour	0.007 x L1 + 0.040		
			(ii) 12 KL capacity	hour		0.009 x L1 + 0.054	
			(iii) 6 KL capacity	hour			0.018 x L1 + 0.107
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		Rat	e per cum (a+b+c+d+e)				
15.10	С		nlar masonry (first sort)				
			in ashlar 				
			it = cum				
			ing output = 1 cum Material				
		a)	Stone	cum	1.110	1.110	1.110
			Through and bond stone	each	7.000	7.000	7.000
			(7no.x0.24mx0.24mx0.39 m = 0.16 cu.m)	0.000	7.000	7.000	,,,,,,
			Cement mortar 1:3 (Rate taken from sub- analysis items 21.01 A)	cum	0.330	0.330	0.330
			Water for curing	KL	0.966	0.966	0.966
		b)	Labour for masonry work				
			Mate	day	0.266	0.266	0.266
			Mason	day	3.325	3.325	3.325
			Mazdoor	day	3.325	3.325	3.325
			Add for scaffolding @ 5 Percent of cost of a) Material and b) Labour				
		c)	Machinery				
			Water tanker (speed @ 20km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)				
			(i) 16 KL capacity	hour	0.007 x L1 + 0.040		
			(ii) 12 KL capacity	hour		0.009 x L1 + 0.054	

Sr No	Ref. to M	Description	Unit	Quantity	as per project	category	Rate
Sr NO	Rei. to ivi	Description	Unit	Large	Medium	Small	(Rs.)
		(iii) 6 KL capacity	hour	_	_	0.018 x L1 + 0.107	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rate per cum (a+b+c+d+e)		,	,	, ,	
	Note	The labour already considered providing these categories in				nto account wh	nile
15.11	1500, 1700 & 2100 A Case I	Plain/Reinforced Cement Concrete in Open Foundatio complete as per Drawing an Technical Specifications. PCC Grade M15 PCC Grade M15 using batching plant & Concrete					
		pump Unit = cum					
		Taking output = 30 cum					
		Per Cum Basic Cost (Rate taken from sub- analysis items 21.03)	cum	30.000	30.000	30.000	
		Water for curing	Kl	15.750	15.750	15.750	
		b) LabourFor pouring and placing					
		Mate	day	0.152	0.152	0.152	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	1.813	1.813	1.813	
		c) Machinery	,				
		Transit truck agitator					
		For transportation (6 cu Capacity)	m tonne- km	75 x L1	75 x L1	75 x L1	
		For unloading	hour	0.726	0.726	0.726	
		Hydraulic Boom placer pump Water tanker (speed @ 20km/hr and return speed @ 30 km/hr and 3		0.726	0.726	0.726	
		mins for unloading) (i) 16 KL capacity	h a	0.10011 .			
			hour	0.109 x L1 + 0.656			
		(ii) 12 KL capacity	hour		0.143 x L1 + 0.875		
		(iii) 6 KL capacity	hour			0.292x L1 + 1.750	
		d) Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					

Sr No	Dof to M		Dossrintian	Unit	Quantity	as per project	category	Rate
Sr NO	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f		(a.b.c.a.c)	(4.5.0.4.0)	(4.5.0.4.0)	
			e per cum = (a+b+c+d+e+f),					
	Case II	bat	C Grade M15 using sching plant & manual cing					
		Uni	it = cum					
		Tak	ring output = 15 cum					
		a)	Material					
		-,	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			te taken from sub-analysis ns 21.03)	carr	13.000	13.000	13.000	
			Water for curing	ΚI	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery	·				
		•	Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and	hour	0.833	0.833	0.833	
			30 mins for unloading) (i) 16 KL capacity	hour	0.109 x L1 +			
					0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			st for 15					
15.11	B Case I	PCC PCC bat	C Grade M20 C Grade M20 using ching plant transit cer & Concrete pump					

C# No	o Ref. to M		Description		Quantity	as per project	category	Rate
Sr No	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
		Uni	it = cum					
		Tak	ring output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis items 21.04)					
			Water for curing	KI	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing		0.450	0.450	0.450	
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		f)	Contractor's profit		(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	(a+b+c+d) @ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f	:	,	,	,	
		Rat	e per cum = (a+b+c+d+e+f),	/30				
	Case II	bat	C Grade M20 using ching plant transit mixer nanual placing					
		Uni	it = cum					
		Tak	king output = 15 cum					
		a)	Material					
		•	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub- analysis items 21.04)					
			Water for curing	Kl	7.875	7.875	7.875	

6 21	2 () 24		- · · ·		Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		b)	Labour					
			For pouring and placing		0.505	0.505	0.505	
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator		27.5 14	27.5 14	27.5 14	
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+	f				
		Rat	e per cum = (a+b+c+d+e+f)	/15				
15.11	С	RC	C Grade M20					
	Case I	bat	C Grade M20 using ching plant transit mixer concrete pump					
		Uni	it = cum					
		Tak	ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis items 21.05)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	

				I	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(i) 10 K2 dapadity	noui	0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e. cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		-,	0.0		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			t for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f),	/30				
	Case II	RCO	Grade M20 using					
			ching plant transit mixer					
		& n	nanual placing					
		Uni	t = cum					
		Tak	ring output = 15 cum					
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis items 21.05)					
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing	day	0.550	0.550	0.550	
			Mate Mason	day day	0.559 1.995	0.559 1.995	0.559 1.995	
			Mazdoor	day	11.970	11.970	11.970	
		c)	Machinery	y	_1.570	_1.5,0		
		-,	Transit truck agitator					
					27 5 14	37.5 x L1	27 5 7 11	
			For transportation	tonne-	37.5 x L1	37.3 X LI	37.5 x L1	
			For transportation (6 cum Capacity)	km	37.5 X L1	37.3 X LI	37.3 X LI	
					0.833	0.833	0.833	
			(6 cum Capacity) For unloading Water tanker (speed @	km				
			(6 cum Capacity) For unloading Water tanker (speed @ 10 km/hr. and return	km				
			(6 cum Capacity) For unloading Water tanker (speed @	km				

Cm NI -	Dof +- *4		Description	11	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL canacity	hour	0.100 v.11 .			
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 +		
						0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent				0.873	
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f)/	15				
15.11	D	DC	C Grade M25					
13.11	_		C Grade M25 using					
	cuse i		ching plant transit mixer					
			Concrete pump					
		Uni	it = cum					
		Tak	ring output = 30 cum					
		a)	Material					
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis items 21.06)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing	_				
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
		-1	Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery					
			Transit truck agitator		7514	7514	75 14	
			For transportation (6 cum Capacity)	km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			30 mins for unloading)		0.240 ::			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour	3.030	0.292 x L1 +		
			• •			0.875		

Sr No	Dof to M		Doscription	l lmit	Quantity	as per project	category	Rate
SI NO	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 10					
			Percent on cost of					
			concrete i.e. cost of					
			material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f),	/30				
	Case II	bat	C Grade M25 using ching plant transit mixer nanual placing					
		Uni	it = cum					
		Tak a)	king output = 15 cum Material					
			Per Cum Basic Cost (Rate taken from sub- analysis items 21.06)	cum	15.000	15.000	15.000	
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.505	0.505	0.505	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	10.640	10.640	10.640	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					

					Quantity	as per project	category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
L							I	
		e)	Overhead charges		@ on	@ on	@ on	
		-,	0 101.110aa 011a.1800		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		-,			(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	t for 15 cum = a+b+c+d+e+f	:				
			e per cum = (a+b+c+d+e+f)					
		ivat	e per cum – (arbrerureri),	, 13				
15.11	E	RCC	C Grade M25					
			Grade M25 using					
	Case i		ching plant transit mixer					
			oncrete pump					
			t = cum					
			ing output = 30 cum					
		a)	Material		_	_	_	
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis items 21.07)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
					0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
							1.75	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		(a+b+c+u) @ on	(a+b+c+u) @ on	(a+b+c+u) @ on	
		')	Contractor 3 profit		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Con	t for 30 cum = a+b+c+d+e+f	:	(a.p.c.a+e)	(a.p.c.a+e)	(a.p.c.a+c)	
		COS	t 101 30 tufff = a+b+c+a+e+1					

Rate (Rs.)

Cu Al -	Def +- 84		December 1	11	Quantity	as per project	category
Sr No	Ref. to M		Description	Unit	Large	Medium	Small
	Case II	bat	C Grade M25 using ching plant transit mixer nanual placing				
		Uni	it = cum				
		Tak	king output = 15 cum				
		a)	Material				
			Per Cum Basic Cost (Rate taken from sub- analysis items 21.07)	cum	15.000	15.000	15.000
			Water for curing	Kl	7.875	7.875	7.875
		b)	Labour				
			For pouring and placing				
			Mate	day	0.559	0.559	0.559
			Mason	day	1.995	1.995	1.995
			Mazdoor	day	11.970	11.970	11.970
		c)	Machinery				
			Transit truck agitator				
			For transportation (6 cum Capacity)	tonne- km	37.5 x L1	37.5 x L1	37.5 x L1
			For unloading	hour	0.833	0.833	0.833
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)				
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328		
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438	
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery				
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
		Cos	st for 15 cum = a+b+c+d+e+	f			
		Rat	e per cum = (a+b+c+d+e+f)	/15			
15.11	F	PC	C Grade M30				
	Case	bat	C Grade M30 using sching plant transit mixer Concrete pump				
		Uni	it = cum				

Taking output = 30 cum

C:- NI -	Def to M		D	11	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Material		20.000	20.000	20.000	
			Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
			analysis items 21.08)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
		•	For pouring and placing					
			Mate	day	0.152	0.152	0.152	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	1.813	1.813	1.813	
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @ 10 km/hr. and return					
			speed @ 15 km/hr. and					
			30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 +			
			(1) 4 2 111		0.656	0.202 14		
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent					
			on cost of concrete i.e.					
			cost of material, labour and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		۷,	Overneda charges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Co	st for 30 cum = a+b+c+d+e+f	f				
		Ra	te per cum = (a+b+c+d+e+f),	/30				
	Case II	bat	C Grade M30 using tching plant transit mixer nanual placing					
		Un	it = cum					
		Tal	king output = 15 cum					
		a)	Material					
			Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-					
			analysis items 21.08) Water for curing	KI	7.875	7.875	7.875	
			J					

6.11	56.56		.		Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		L- \	Labarra					
		b)	Labour					
			For pouring and placing	day	0.505	0.505	0.505	
			Mate	day	1.995	1.995	1.995	
			Mason	day	10.640	10.640	10.640	
		٠,١	Mazdoor	uay	10.040	10.040	10.040	
		c)	Machinery					
			Transit truck agitator	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			For transportation (6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour		0.146 x L1 + 0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f					
		Rat	e per cum = (a+b+c+d+e+f),	/15				
15.11	G	RCC	C Grade M30					
	Case I	bat	C Grade M30 using ching plant transit mixer Concrete pump					
		Uni	it = cum					
		Tak	ring output = 30 cum					
		a)	Material					
			Per Cum Basic Cost (Rate taken from sub- analysis items 21.09)	cum	30.000	30.000	30.000	
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	

6 N	5 6 . 14				Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery					
			Transit truck agitator					
			For transportation	tonne-	75 x L1	75 x L1	75 x L1	
			(6 cum Capacity)	km	0.706	0.706	0.706	
			For unloading Hydraulic Boom placer	hour hour	0.726 0.726	0.726	0.726	
			pump	nour	0.726	0.726	0.726	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			30 mins for unloading) (i) 16 KL capacity	hour	0.219 x L1 +			
			(i) TO KE capacity	Hour	0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 +		
						0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 +	
		-11	F				1.75	
		d)	Formwork @ 10 Percent on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		Cos	st for 30 cum = a+b+c+d+e+f	f	(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
			te per cum = (a+b+c+d+e+f)					
	Case II		C Grade M30 using					
			ching plant transit mixer					
			nanual placing					
			it = cum					
		<i>Так</i> а)	king output = 15 cum Material					
		u,	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-	cam	13.000	13.000	13.000	
			analysis items 21.09)					
			Water for curing	Kl	7.875	7.875	7.875	
		b)	Labour					
			For pouring and placing		0.550	0.550	0.550	
			Mate Mason	day day	0.559 1.995	0.559 1.995	0.559 1.995	
			Mazdoor	day	11.970	11.970	11.970	
		c)	Machinery	aay	11.570	11.570	11.570	
		,	Transit truck agitator					
			For transportation	tonne-	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	km				
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @					
			10 km/hr. and return					
			speed @ 15 km/hr. and 30 mins for unloading)					
			55 minis for unioaunig)					

Cm NI =	Dof to M		Description	l lmit	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			(i) 16 KL capacity	hour	0.109 x L1 + 0.328			
			(ii) 12 KL capacity	hour	0.328	0.146 x L1 +		
			(II) 12 KL capacity			0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 + 0.875	
		d)	Formwork @ 10 Percent				0.873	
		ω,	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 15 cum = a+b+c+d+e+f	:				
		Rat	te per cum = (a+b+c+d+e+f),	/15				
15.11	н	RC	C Grade M35					
	Case I		C Grade M35 using					
			ching plant transit mixer					
			Concrete pump it = cum					
			king output = 30 cum					
		a)	Material	cum	30.000	30.000	30.000	
			Per Cum Basic Cost (Rate taken from sub-	Cuiii	30.000	30.000	30.000	
			analysis items 21.11)					
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour					
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L1	75 x L1	75 x L1	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and					
			30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		

	Def to the		Description	11*	Quantity	as per project	category	Ra
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 10 Percent				1./5	
		u,	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
		٠,	o verneda enarges		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
		-,	constants of prome		(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f	:	(4.2.5.4.6)	(4.2.5.4.6)	(415151415)	
			e per cum = (a+b+c+d+e+f)					
			(a a a a a a a	,				
	Case II	RCC	C Grade M35 using					
		bat	ching plant transit mixer					
		& n	nanual placing					
		Uni	it = cum					
		Tak	king output = 15 cum					
		a)	Material					
		u,	Per Cum Basic Cost	cum	15.000	15.000	15.000	
			(Rate taken from sub-	cam	13.000	13.000	13.000	
			analysis items 21.11)					
			Water for curing	ΚI	7.875	7.875	7.875	
		b)	Labour		7.070	7.070	7.070	
		٠,	For pouring and placing					
			Mate	day	0.559	0.559	0.559	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	11.970	11.970	11.970	
		c)	Machinery	uay	11.570	11.570	11.570	
		c,	Transit truck agitator					
			For transportation	tonno	37.5 x L1	37.5 x L1	37.5 x L1	
			(6 cum Capacity)	tonne- km	37.3 X LI	37.3 X LI	37.3 X LI	
			For unloading	hour	0.833	0.833	0.833	
			Water tanker (speed @	Hour	0.833	0.833	0.833	
			10 km/hr. and return					
			speed @ 15 km/hr. and					
			30 mins for unloading)					
			(i) 16 KL capacity	hour	0.109 x L1 +			
			(i) to RE capacity	noai	0.328			
			(ii) 12 KL capacity	hour	0.0_0	0.146 x L1 +		
			(, ==			0.438		
			(iii) 6 KL capacity	hour			0.292 x L1 +	
			. ,				0.875	
		d)	Formwork @ 10 Percent				-	
		•	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d+e)	(a+b+c+d+e)	(a+b+c+d+e)	

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

Rate (Rs.)

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category
31 140	Nei. to ivi		Description	Oilit	Large	Medium	Small
15.11	I Case I	RCC RCC bat	e per cum = (a+b+c+d+e+f), C Grade M40 C Grade M40 using ching plant transit mixer concrete pump	/15			
		Uni	t = cum				
		Tak a)	ing output = 30 cum Material				
			Per Cum Basic Cost (Rate taken from sub- analysis items 21.12)	cum	30.000	30.000	30.000
			Water for curing	KI	15.750	15.750	15.750
		b)	Labour				
			For pouring and placing	al a	0.200	0.200	0.200
			Mate	day	0.206	0.206	0.206
			Mason	day day	1.995 3.143	1.995 3.143	1.995 3.143
		c)	Mazdoor Machinery	uay	3.143	3.143	5.145
		c)	Transit truck agitator				
			For transportation	tonne-	75 x L	75 x L	75 x L
			(6 cum Capacity)	km			
			For unloading	hour	0.726	0.726	0.726
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)				
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656		
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875	
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75
		d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery				
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)
		Cos	t for 30 cum = a+b+c+d+e+f	f			
		Rat	e per cum = (a+b+c+d+e+f),	/30			
	Case II	bat & n	C Grade M40 using ching plant transit mixer nanual placing transit mixer				
		J.II	s – sam				

C# No	Ref. to			Description	Unit	Quantity	, as per project	category	Rate
Sr No	Ker. to	IVI		Description	Unit	Large	Medium	Small	(Rs.)
			Tal	king output = 15 cum					
			a)	Material					
				Per Cum Basic Cost	cum	15.000	15.000	15.000	
				(Rate taken from sub-					
				analysis items 21.12)					
				Water for curing	Kl	7.875	7.875	7.875	
			b)	Labour					
				For pouring and placing					
				Mate	day	0.559	0.559	0.559	
				Mason	day	1.995	1.995	1.995	
			- \	Mazdoor	day	11.970	11.970	11.970	
			c)	Machinery					
				Transit truck agitator	tonne-	37.5 x L	37.5 x L	37.5 x L	
				For transportation (6 cum Capacity)	km	37.3 X L	37.3 X L	37.3 X L	
				For unloading	hour	0.833	0.833	0.833	
				Water tanker (speed @					
				10 km/hr. and return					
				speed @ 15 km/hr. and					
				30 mins for unloading)					
				(i) 16 KL capacity	hour	0.208 x L1 + 0.625			
				(ii) 12 KL capacity	hour		0.278 x L1 + 0.833		
				(iii) 6 KL capacity	hour			0.556 x L1 + 1.667	
			d)	Formwork @ 10 Percent on cost of concrete i.e. cost of material, labour and machinery					
			e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
			Cos	st for 15 cum = a+b+c+d+e+f	f	(= = -,	(2 2 2 2 7	(2 2 2 2 7	
			Rat	:e per cum = (a+b+c+d+e+f),	/15				
15.12	1500, 1700 & 2100		Cor	in/Reinforced Cement ncrete for wall & slab etc. nplete as per Drawing and					
			Tec	chnical Specifications.					
		Α	RC	C Grade M20					
				C Grade M20 using					
				ching plant transit mixer Concrete pump					
			Uni	it = cum					
				king output = 30 cum					
			a)	Material Per Cum Pasis Cost	01155	20.000	20.000	20.000	
				Per Cum Basic Cost (Rate taken from sub- analysis items 21.05)	cum	30.000	30.000	30.000	

C. 21	D-1 : **		D ' ''	11. 11	Quantity	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Water for curing	KI	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum Capacity)	tonne- km	75 x L	75 x L	75 x L	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 25 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	t for 30 cum = a+b+c+d+e+f	f				
		Rat	e per cum = (a+b+c+d+e+f)	/30				
15.12	В	RCC	Grade M25					
		bat	C Grade M25 using ching plant transit mixer concrete pump					
			t = cum					
			ing output = 30 cum					
			Material					
		aj	Per Cum Basic Cost (Rate taken from sub- analysis items 21.07)	cum	30.000	30.000	30.000	
			Water for curing	ΚI	15.750	15.750	15.750	
		b)	Labour		_5.,50	_5.,50	_5.750	
		~1	For pouring and placing					
			Mate	day	0.206	0.206	0.206	

C# NI	Dof to M		Description	I I to ! t	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator					
			For transportation (6	tonne-	75 x L	75 x L	75 x L	
			cum Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump					
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 25 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+	f				
		Rat	te per cum = (a+b+c+d+e+f)	/30				
15.12	С	RC	C Grade M30					
		RC bat	C Grade M30 using tching plant transit mixer Concrete pump					
		Un	it = cum					
		Tal	king output = 30 cum					
		a)	Material					
		aj				22.222	20.000	
		a,	Per Cum Basic Cost (Rate taken from sub-	cum	30.000	30.000	30.000	
		aj	(Rate taken from sub- analysis items 21.09)					
			(Rate taken from sub- analysis items 21.09) Water for curing	cum Kl	15.750	15.750	15.750	
		b)	(Rate taken from sub- analysis items 21.09) Water for curing Labour					
			(Rate taken from sub- analysis items 21.09) Water for curing Labour For pouring and placing	ΚI	15.750	15.750	15.750	
			(Rate taken from sub- analysis items 21.09) Water for curing Labour For pouring and placing Mate	KI day	15.750 0.206	15.750 0.206	15.750 0.206	
			(Rate taken from sub- analysis items 21.09) Water for curing Labour For pouring and placing	ΚI	15.750	15.750	15.750	

C:: NI -	D-f +- N4		Description	11	Quantity	, as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Machinery					
			Transit truck agitator					
			For transportation (6 cum	tonne-	75 x L	75 x L	75 x L	
			Capacity)	km				
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer	hour	0.726	0.726	0.726	
			pump		0.7.20	0.7.20	0.7.20	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and					
			30 mins for unloading)					
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656			
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875		
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 25 Percent				2.7.0	
		•	on cost of concrete i.e.					
			cost of material, labour					
			and machinery					
		e)	Overhead charges		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f	:	(атытстите)	(атытстите)	(атытстите)	
			e per cum = (a+b+c+d+e+f),					
		····	e per cum – (unbrenaren),	, 50				
15.12	D	RC	C Grade M35					
		RC	C Grade M35 using					
		bat	ching plant transit mixer					
		& 0	Concrete pump					
		Uni	it = cum					
		Tak	ing output = 30 cum					
		a)	Material					
			Per Cum Basic Cost	cum	30.000	30.000	30.000	
			(Rate taken from sub-					
			analysis items 21.11)					
			Water for curing	Kl	15.750	15.750	15.750	
		b)	Labour					
			For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
		٦	Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator	to:	75	75!	75!	
			For transportation (6 cum Capacity)	tonne- km	75 x L	75 x L	75 x L	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom	hour	0.726	0.726	0.726	
			placer pump	Houl	0.720	0.720	0.720	
			Pracer Pullip					

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rate
31 140	Rei. to Wi		Description	Oilit	Large	Medium	Small	(Rs.)
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)		2242			
			(i) 16 KL capacity	hour	0.219 x L1 + 0.656	0.202 v.11 v		
			(ii) 12 KL capacity	hour		0.292 x L1 + 0.875	0.50214 .	
			(iii) 6 KL capacity	hour			0.583 x L1 + 1.75	
		d)	Formwork @ 25 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e)	Overhead charges		@ on (a+b+c+d) -	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f)	Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cos	st for 30 cum = a+b+c+d+e+f	f				
		Rat	e per cum = (a+b+c+d+e+f)	/30				
15.12	E	RC0 bat	C Grade M40 C Grade M40 using ching plant transit mixer Concrete pump					
		Uni	it = cum					
		Tak a)	ring output = 30 cum Material					
		aj	Per Cum Basic Cost (Rate taken from sub- analysis items 21.12)	cum	30.000	30.000	30.000	
		b)	Water for curing Labour	KI	15.750	15.750	15.750	
		•	For pouring and placing					
			Mate	day	0.206	0.206	0.206	
			Mason	day	1.995	1.995	1.995	
			Mazdoor	day	3.143	3.143	3.143	
		c)	Machinery					
			Transit truck agitator		75!	751	751	
			For transportation (6 cum Capacity)	tonne- km	75 x L	75 x L	75 x L	
			For unloading	hour	0.726	0.726	0.726	
			Hydraulic Boom placer pump	hour	0.726	0.726	0.726	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)					

				Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		(i) 16 KL capacity	hour	0.219 x L1 +			
		(ii) 12 KL capacity	hour	0.656	0.292 x L1 +		
		(iii) 6 KL capacity	hour		0.875	0.583 x L1 +	
		, , , , ,	noai			1.75	
		d) Formwork @ 25 Percent on cost of concrete i.e. cost of material, labour and machinery					
		e) Overhead charges		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		f) Contractor's profit		@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	@ on (a+b+c+d+e)	
		Cost for 30 cum = a+b+c+d+e+	-f	,	,	,	
		Rate per cum = (a+b+c+d+e+f					
15.13	1600	Supplying, Fitting and Placing un-coated HYSD ba Reinforcement in Foundation complete as per Drawing and Technical Specifications. Unit = MT	r 1				
		Taking output = 8 MT					
		a) Material					
		MS bars including 5 Percent overlaps and wastage	tonne	8.400	8.400	8.400	
		Binding wire	Kg	48.000	48.000	48.000	
		b) Labour for straightening, cutting, bending, shifting to site, tying and placing in position					
		Mate	day	0.213	0.213	0.213	
		Blacksmith	day	1.330	1.330	1.330	
		Mazdoor c) Machinery	day	3.990	3.990	3.990	
		c) Machinery Cutting Machine	hour	5.333	5.333	5.333	
		Bending Machine	hour	5.333	5.333	5.333	
		Electric generator 15	hour	5.333	5.333	5.333	
		KVA		3.333	3.333	3.333	
		Tipper					
		Tipper for Transportation	า				
		(i) 14 cum capacity	t.km	8 x L			
		(ii) 14 cum capacity	t.km		8 x L		
		(iii) 10 cum capacity	t.km			8 x L	
		Loading & Unloading Time	hour				
		(i) 14 cum capacity	hour	1.000			
		(ii) 14 cum capacity	hour		1.280		

Sr No	Ref. to M		Description	Unit	Quantit	y as per project (category	Rat
Sr NO	Kei. to ivi		Description	Unit	Large	Medium	Small	(Rs
			(iii) 10 cum capacity	hour			1.778	
			Light weight Crane					
			At cutting bending yard	hour	2.000	2.000	2.000	
			At site	hour	2.000	2.000	2.000	
		d)	Overhead charges		@ on	@ on (a+b+c)	@ on	
					(a+b+c)		(a+b+c)	
		e)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cos	t for 8 MT (a+b+c+d+e)					
		Rat	e for per MT (a+b+c+d+e)/8	3				
5.14	2706 & 2200	mas	viding weep holes in Brick sonry/Plain/ Reinforced crete abutment, wing					
		wal	I/ return wall with 100					
			dia AC pipe, extending					
			ough the full width of the					
			icture with slope of 1V:					
			I towards drawingface .					
			nplete as per drawing and					
			hnical Specifications					
		_	t = Nos.					
			ing output = 30 Nos.					
		aj	Material		24 500	24 500	24 500	
			AC pipe 100 mm dia. (including wastage @ 5 Percent)	metre	31.500	31.500	31.500	
			Average length of weep					
			hole is taken as one					
			metre for the purpose of					
			estimating.					
			MS clamp	Each	30.000	30.000	30.000	
			collar for AC pipe	Each	10.000	10.000	10.000	
			(average) taking 10% of above pipe rate					
			Cement mortar 1:3	cum	0.050	0.050	0.050	
			(Rate taken from sub-					
			analysis items 21.01 A)					
		b)	Labour					
			Mate	day	0.040	0.040	0.040	
			Mason	day	0.665	0.665	0.665	
			Mazdoor	day	0.333	0.333	0.333	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on	@ on (a+b+c)	@ on	
		-			(a+b+c)		(a+b+c)	
		Cos	t for 30 m = a+b+c+d					
		Rat	e per m (a+b+c+d)/30					

Rate per m (a+b+c+d)/30

Note

- 1. In case of stone masonry, the size of the weep hole shall be 150 mm x 80 mm or circular with 150 mm diameter.
- 2. For structure in stone masonry, the weep holes shall be deemed to be included in the item of stone masonry work and shall not be paid separately.

6.11	26.22	5		Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
15.15	2700 a)	PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification Unit = cum Taking output = 1 cum Material					
	_	PCC Grade M15 using					
		batching plant & Concrete pump					
		a) Material					
		Concrete, Item No - 15.11 (A), Case-I excluding formworks	cum	1.000			
		Concrete, Item No - 15.11 (A), Case-I excluding formworks			1.000		
		Concrete, Item No - 15.11 (A), Case-I excluding formworks				1.000	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Cost for 1 Cum = a+b+c					
		Rate per Cum (a+b+c)					
	b) Case II	Material PCC Grade M15 using batching plant & manual					
		placing Concrete, Item No - 15.11 (A),	cum	1.000			
		Case-II excluding formworks			1 000		
		Concrete, Item No - 15.11 (A), Case-II excluding formworks			1.000		
		Concrete, Item No - 15.11 (A), Case-II excluding formworks				1.000	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Cost for 1 Cum = a+b+c					
		Rate per Cum (a+b+c)					
	1500,160 0,1700 & 2704	Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification Unit = 1 cum Taking output = 1 cum					

C# No	Ref. to M		Description	l lmit	Quantity	y as per project	category	Rate
Sr No	Rei. to ivi		Description	Unit	Large	Medium	Small	(Rs.)
		a)	Material					
			Cement concrete M30 Grade Refer relevant item of concrete in item 9.15 (B)by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c) (Excluding OH & CP) Added at the rate of 2 Percent of cost	cum	1.000	1.000	1.000	
			HYSD bar reinforcement Rate as per item No 9.16 (Excluding OH & CP)	tonne	0.050	0.050	0.050	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rat	e per cum (a+b+c)					

Note The grade of reinforced cement concrete may be adopted as M30 for severe conditions and M25 for moderate conditions.

15.17	2705	pei spe	ainage Spouts complete as r drawing and Technical ecification				
			it = 1 No.				
			king output = 1 No.				
		a)	Material	14	4.000	4.000	4.000
			Corrosion resistant Structural steel including 5 Percent wastage	Kg	4.000	4.000	4.000
			GI pipe 100mm dia	metre	0.320	0.320	0.320
			GI bolt 10 mm Dia	each	6.000	6.000	6.000
			Galvanised MS flat clamp	each	2.000	2.000	2.000
		b)	Labour				
			For fabrication				
			Mate	day	0.002	0.002	0.002
			Skilled (Blacksmith, welder etc.)	day	0.027	0.027	0.027
			Mazdoor	day	0.027	0.027	0.027
			For fixing in position				
			Mate	day	0.011	0.011	0.011
			Mason	day	0.013	0.013	0.013
			Mazdoor	day	0.266	0.266	0.266
			Add @ 5 Percent of cost of material and labour for electrodes, cutting gas, sealant, anti-corrosive bituminous paint, mild steel grating etc.				

6. 5:	p.f		Dec. 1.11		Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
						•		
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		Rat	te per metre (a+b+c+d)					
	Note	1.	In case of viaducts in urbar located pipelines to discha					-
		2.	In case of bridges, sufficien	_		· ·	_	
			splashing of water from the	_	•	•		
15.18	2702	cor gra reii per	oviding and laying Cement ncrete wearing coat M-30 de including nforcement complete as drawing and Technical ecifications					
		Un	it = 1 cum					
		Tak	king output = 1 cum					
		a)	Material					
			Cement concrete M30 Grade Refer relevant item of concrete in Item 15.12 (C) excluding formwork	cum	1.000	1.000	1.000	
			HYSD bar reinforcement Rate as per item No 15.13 (Excluding OH & CP)	tonne	0.075	0.075	0.075	
		b)	Labour					
			Mazdoor for cleaning deck slab concrete surface.	day	0.200	0.200	0.200	
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on	@ on (a+b+c)	@ on	
					(a+b+c)		(a+b+c)	
		Rat	te per cum (a+b+c+d)		, ,		. ,	
15.19	516 & 2702	Ma	stic Asphalt					
		Pro	oviding and laying 12 mm					
			ck mastic asphalt wearing					
			urse on top of deck slab					
		exc	cluding prime coat with					
		pav	ving grade bitumen					
		me	eting the requirements					
		giv	en in Table 500-39,					
		-	pared by using mastic					
			oker and laid to required					
		lev	el and slope after cleaning					

including

the

surface,

providing antiskid surface

C:: N -	D-f +- N4	D	1114	Quantity	as per project	category	Rate	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)	

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. protruding 1 mm to 4 mm over mastic surface, complete as per clause 516.

Unit = sqm

Taking output = 72.46 sqm (2 tonnes)(0.869 cum) assuming a density of 2.3 tonnes/cum.

a) Labour

	Mate	day	0.599	0.599	0.599
	Mazdoor	day	14.630	14.630	14.630
	Mazdoor (Skilled)	day	0.333	0.333	0.333
b)	Machinery				
	Mechanical broom @ 1250 sqm per hour	hour	0.060	0.060	0.060
	Air compressor 250 cfm	hour	0.060	0.060	0.060
	Mastic cooker 1 tonne capacity	hour	6.000	6.000	6.000
	Bitumen boiler 1500 litres capacity	hour	6.000	6.000	6.000
	Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	1.000	1.000

c) Material

Base mastic (without coarse aggregates) = 60 Percent Coarse aggregate (3.35mm to 9.5 mm size)

= 40 Percent .

Proportion of material required for mastic asphalt with coarse aggregates (based on mix design done by CRRI for a specific case)

CHAPTER: 15- BOX CELL STRUCTURES

C., N	D-6 +- 84		Decembel	l l m ! s	Quantity	as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
			i) Bitumen 80/100 or 60/70 or 30/40 @ 10.2 Percent by weight of mix. 2 x 10.2/100 = 0.204	tonne	0.204	0.204	0.204	
			ii) Crusher stone dust @ 31.9 Percent by weight of mix = 2 x 31.9/100 = 0.638 tonnes = 0.638/1.625 = 0.39	cum	0.390	0.390	0.390	
			iii) Lime stone dust filler with calcium carbonate content not less than 80 Percent by weight @ 17.92 Percent by weight of mix = 2 x 17.92/100 = 0.36	tonne	0.360	0.360	0.360	
			iv) Coarse aggregates 9.5 mm to 3.35 mm size @ 40 Percent by weight of mix = 2 x 40/100 = 0.8 MT = 0.8/1.456 = 0.55	cum	0.550	0.550	0.550	
			v) Pre-coated stone chips of 9.5 mm nominal size for skid resistance = 72.46x0.005/10 = 0.036	cum	0.036	0.036	0.036	
			vi) Bitumen for coating of chips @ 2 Percent by weight = 0.036 x 1.456 x 2/100 = 0.001048MT = 1.05kg	kg	1.050	1.050	1.050	
		d)	Overhead charges		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		e)	Contractor's profit at for 72.46 sqm = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	

Rate per sqm = (a+b+c+d+e)/72.46

- 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.

C: N-	D-6 4- 84	Daniel I.	11!4	Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

- 4. This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.
- 5. The quantity of bitumen works out 17 Percent of the mastic asphalt blocks without aggregates and falls within the standards laid down by MoRTH Specifications.

15.20 800 Crash Barriers for Bridge

The rate analysis for semirigid crash barrier with metal beam and flexible crash barrier with wire ropes have been made and included in chapter-8 on Traffic and Transportation.

The rate analysis for rigid crash barrier in reinforced cement concrete, have been made and included in chapter-14 on Super-Structure.

15.21 800

Painting on concrete surface

Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.

Unit = sqm

Taking output = 10 sqm

Rate per sqm (a+b+c+d)/10

a)	Labour				
	Mate	day	0.027	0.027	0.027
	Painter	day	0.333	0.333	0.333
	Mazdoor (Skilled)	day	0.333	0.333	0.333
b)	Material				
	Water based paint of approved quality for cement concrete surface	Litres	5.000	5.000	5.000
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)
d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
Cos	t for 10 sqm (a+b+c+d)				

				Quantit	y as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
15.22	2605	Filler joint					
	(i)	Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & Technical Specification.					
		Unit = Running meter					
		Taking output = 12 m					
		a) LabourCutting, bending, carrying& fixing etc.					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	0.665	0.665	0.665	
		Mazdoor (Skilled) b) Material	day	0.665	0.665	0.665	
		Copper plate - 12m long x 250 mm wide	kg	55.000	55.000	55.000	
		Area = 12 x 0.25 = 3 sqm Weight = 3 x 0.002 x 8900 = 53.4 kg Wastage @ 2.5 Percent = 1.33 kg/54.73 kg say = 55 kg.					
		c) Overhead charges d) Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		Cost for 12 m = $(a+b+c+d)$ Rate per m = $(a+b+c+d)/12$		(2.2.5)		(2.2.5)	
15.22	(ii)	Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.					
		Unit = Running meter					
		Taking output = 12 m					
		 a) Labour For carrying, placing & fixing. 					
		Mate	day	0.011	0.011	0.011	
		Mazdoor	day	0.133	0.133	0.133	
		Mazdoor (Skilled) b) Material	day	0.133	0.133	0.133	
		20 mm thick compressible fibre board	sqm	3.000	3.000	3.000	
		12 m long x 25 cm deep. Area = 12 x 0.25 = 3 sqm					

				Quantity	Rate		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		c) Overhead charges d) Contractor's profit Cost for 12 m = (a+b+c+d) Rate per m = (a+b+c+d)/12		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
15.22	(iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m to cater for a horizontal movement upto 20 mm, covered with sealant complete as per drawing and technical specifications. Unit = Running meter Taking output = 12 m a) Labour Mate Mazdoor Mazdoor (Skilled) b) Material Premoulded joint filler 12 m long,20 mm thick and 300 mm deep. c) Overhead charges d) Contractor's profit	day day day sqm	0.016 0.266 0.133 3.600 @ on (a+b) @ on (a+b+c)	0.016 0.266 0.133 3.600 @ on (a+b) @ on (a+b+c)	0.016 0.266 0.133 3.600 @ on (a+b) @ on (a+b+c)	
		Cost for 12 m = (a+b+c+d) Rate per m = (a+b+c+d)/12					
15.22	(iv)	Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 Percent bitumen by weight Unit = Running meter Taking output = 12 m 12m long x 100 mm wide x 10mm deep recess a) Labour Mate Mazdoor Mazdoor (Skilled) b) Material Sand Volume 12 x 0.1 x 0.01 = 0.012 cum	day day day cum	0.032 0.665 0.133 0.012	0.032 0.665 0.133 0.012	0.032 0.665 0.133 0.012	

C: No	Ref. to M	Description	Unit	Quantit	Rate			
Sr No				Large	Medium	Small	(Rs.)	
			Weight 0.012 x 1400 = 16.8kg Bitumen 16.8 x 0.06 = 1 kg	cum	0.001	0.001	0.001	
		c) d)	Overhead charges Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
			t for 12 m = (a+b+c+d) e per m = (a+b+c+d)/12					

Note For arriving at the final rate of filler joints per m length and per cm depth of joint filling compound, the rates at Sl. No. i), ii), iii) & iv) shall be added.

			, ,		,, ,,,	, , , , , , , , , , , , , , , , , , , ,		
15.23	710.1.4. of IRC:78 & 2200		wir cor Tec Uni	ck filling behind abutment, ng wall and return wall nplete as per drawing and chnical Specification it = cum king output = 10 cum				
		Α		anular material				
			a)	Labour				
			,	Mate	day	0.372	0.372	0.372
				Mazdoor	day	9.310	9.310	9.310
			b)	Material	,			
			•	Granular material	cum	12.000	12.000	12.000
			c)	Machinery				
			•	Plate compactor/power rammer	hour	2.500	2.500	2.500
				Water Tanker 6 Kl capacity	hour	0.050	0.050	0.050
			d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
			e)	Contractor's profit		@ on	@ on	@ on
						(a+b+c+d)	(a+b+c+d)	(a+b+c+d)
				st for 10 cum of granular bac	:kfill =			
				o+c+d+e				
			Rat	te per cum = (a+b+c+d+e)/1	0			
45.22		_	C	. d				
15.23		В	sar a)	ndy material Labour				
			aj	Mate	day	0.372	0.372	0.372
				Mazdoor for filling,	day	9.310	9.310	9.310
				watering, ramming etc.	uay	3.310	9.310	9.310
			b)	Material				
			,	Sand	cum	12.000	12.000	12.000
			c)	Machinery				
			~,	Plate compactor/power	hour	2.500	2.500	2.500
				rammer				

CHAPTER: 15- BOX CELL STRUCTURES

	_			Quantit	y as per project o	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		d) Overhead charges e) Contractor's profit Cost for 10 cum of sandy backf a+b+c+d+e Rate per cum = (a+b+c+d+e)/1		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
15.24	710.1.4. of IRC:78 and 2504.2	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.					
		Unit = cum					
		Taking output = 10 cum.					
		a) Labour					
		Mate	day	0.426	0.426	0.426	
		Mazdoor for filling, watering, ramming etc.	day	9.310	9.310	9.310	
		Mazdoor (Skilled) b) Material	day	1.330	1.330	1.330	
		Filter media of stone aggregate conforming to clause 2504.2.2. of MoRTH specifications.	cum	12.000	12.000	12.000	
		c) Machinery Water Tanker of 6 KL	hour	0.060	0.060	0.060	
		capacity d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		cost for 10 cum = a+b+c+d+e		•	-	•	
		Rate per cum = (a+b+c+d+e)/1	.0				
15.25		Painting with synthetic enamel paint bridge No. and span arrangements Painting two coats after filling the surface with synthetic					

CHAPTER: 15- BOX CELL STRUCTURES

C" No	Dof to M		Description	l lmit	Quantit	y as per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		spa dire	amel paint bridge No. and in arrangements as per as ected by Engineer.					
		Tak	ing output = 1 Nos.					
			Labour					
		•	Mate	day	0.008	0.008	0.008	
			Painter	day	0.133	0.133	0.133	
			Mazdoor	day	0.067	0.067	0.067	
		b)	Material					
			Paint conforming to					
			requirement of clause 803.3.	Litre	0.300	0.300	0.300	
			Add for scaffolding @ 1 Percent of labour cost where required					
			Add @ 5 Percent 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.					
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	

Cost for 1 No. = a+b+c+d Rate per Nos. = (a+b+c+d)

CHAPTER - 16

RIVER TRAINING AND PROTECTION WORKS

PREAMBLES:

- 1 Three types of aprons on riverbed as under have been catered.
 - a) Boulder apron laid dry
 - b) Boulder apron laid in wire crates
 - c) Apron laid in cement concrete blocks on M 15
- A toe wall for toe protection of pitching can be either in dry rubble masonry (uncoursed) or in nominal mix cement concrete M 15. Depending upon the design, the rates may be adopted under respective clauses.
- 3 Flooring has been proposed in dry rubble stone, rubble stone laid in Cement Mortar 1:3 and with cement concrete blocks M 15.
- 4 Curtain walls proposed are of the following two types:
 - a) Course rubble stone masonry (1st sort) in Cement Mortar 1:3.
 - b) Cement concrete M 15 grade.
- 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 in river training works especially for situations where some settlement of foundation in anticipated. These structures can adjust in minor settlements, being flexible structures, without loosing their functional requirement.

C:: No	D-f +- N4	Decembetion	l locit	Quantity a	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
16.01	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.					
	Α	Boulder Laid Dry Without Wire					
		Crates.					
		Unit = cum					
		Taking output = 1 cum					
		a) Material					
		Stone	cum	1.000	1.000	1.000	
		Stone Spalls	cum	0.200	0.200	0.200	
		b) Labour					
		Mate	day	0.059	0.059	0.059	
		Mason	day	0.466	0.466	0.466	
		Mazdoor *	day	0.998	0.998	0.998	
		c) Overhead charges	•	@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per cum = (a+b+c+d)					

Note Nominal excavation required for preparation of bed has been taken into account while making provision for labour.

16.02 2503 **Boulder Apron Laid in Wire Crates**

Providing and laying of boulder apron laid in wire crates made 4mm dia GI conforming to IS: 280 & IS:4826 in 100 mm x 100 mm mesh (weaved diagonally) including 10 Percent extra for laps and joints with stone boulders weighing not less than 40 kg each.

Unit = cum

Taking output = 3 mx1.5mx1.25m = 5.63 cum

a) Material 4mm GI wire crates woven 22.000 22.000 22.000 sqm in mesh size of 100 mm x 100 mm. Stone 5.630 5.630 5.630 cum **Stone Spalls** 1.130 1.130 1.130 cum b) Labour Mate 0.239 0.239 0.239 day Mazdoor (Skilled) 1.995 1.995 1.995 day Mazdoor* 3.990 3.990 3.990 day

Including excavation for trimming for preparation of bed.

		ı		ı				T
Sr No	Ref. to M		Description	Unit		as per projec		Rate
					Large	Medium	Small	(Rs.)
		c) d	_		@ on (a+b) @ on	@ on (a+b) @ on	@ on (a+b) @ on	
		-	, contractor o prome		(a+b+c)	(a+b+c)	(a+b+c)	
			ost for 5.63 cum = a+b+c+d ate per cum = (a+b+c+d)/5.63		, ,	, ,	, ,	
	*	Ν	lazdoor Including excavation for	trimmin	g for prepara	ition of bed.		
	Not	re p	eadymade woven wire crate rolls adymade rolls are not available, rovided. In that case 2 Percent of rates.	GI wire	4mm dia. @	32 kg per 10 s	sqm may be	
16.03	2503		ement Concrete Blocks (size .5 x 0.5 x 0.5 m)					
		w si a N w	roviding and laying of apronith cement concrete blocks of ze 0.5 x 0.5 x 0.5 m cast in-situed made with nominal mix of 1-15 grade cement concrete with minimum cement content of 250 kg/cum.					
		U	nit = cum					
		T	aking out put = 1 cum					
			Concrete Grade M15 (Rate taken from items 12.08 A, Case II) including OH & CP	cum	1.000	1.000	1.000	
			Add 2 Percent of cost to account for excavation for preparation of bed, nominal surface reinforcement and filling of granular material in recesses between blocks.					
16.04	2504		ate per cum roviding and laying Pitching on					
	A	si m la e d si S	opes laid over prepared filter nedia including boulder apron nid dry in front of toe of mbankment complete as per rawing and Technical pecifications tone/Boulder nit = cum aking output = 1 cum					
		а	= -	cum	1.000	1.000	1.000	

CHAPTER: 16- RIVER TRAINING AND PROTECTION WORKS

				Quantity a	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		Stone spalls of minimum 25 mm size b) Labour	cum	0.200	0.200	0.200	
		Mate	day	0.059	0.059	0.059	
		Mason	day	0.466	0.466	0.466	
		Mazdoor	day	0.998	0.998	0.998	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per cum = (a+b+c+d)					
16.04	В	Cement Concrete Blocks of size 0.3x0.3 x0.3 m cast in cement concrete of Grade M15 Unit = cum					
		Taking output = 1 cum Concrete Grade M15 (Rate taken from items 12.08 A, Case II) including OH & CP Add 2 Percent of cost to account for nominal surface reinforcement and filling of granular material in recesses between blocks. Rate per cum	cum	1.000	1.000	1.000	
16.05	2504	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification Unit = cum Taking output = 1 cum a) Material					
		Graded stone aggregate of required size b) Labour	cum	1.200	1.200	1.200	
		Mate	day	0.067	0.067	0.067	
		Mazdoor (Skilled)	day	0.333	0.333	0.333	
		Mazdoor *	day	1.330	1.330	1.330	
		c) Overhead charges	,	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rate per cum = (a+b+c+d)					

Note:- Includes Mazdoor required for trimming of slope to proper profile and preparation of bed.

Sr No	Ref. to M	Description	Unit	Quantity a	as per projec	t category	Rate
31 110	Rei. to ivi	Description	Onit	Large	Medium	Small	(Rs.)
16.06	700 & 2504	Geotextile Filter					
		Laying of a geotextile filte	r				
		between pitching and					
		embankment slopes on which					
		pitching is laid to prevent escape					
		of the embankment materia through the voids of the stone					
		pitching/cement concrete block					
		as well as to allow fre					
		movement of water withou					
		creating any uplift head on the	e				
		pitching.					
		Unit = sqm Taking output = 10 sqm.					
		a) Labour					
		Mate	day	0.021	0.021	0.021	
		Mazdoor	day	0.399	0.399	0.399	
		Mazdoor (Skilled)	day	0.133	0.133	0.133	
		b) Material					
		Permeable synthetic	sqm	11.000	11.000	11.000	
		geotextile including 5 Percent for overlap and					
		wastage					
		c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 sqm = a+b+c+d Rate per sqm = (a+b+c+d)/10					
16.07	2504.4	Toe protection					
10.07	2304.4	A toe wall for toe protection car	n				
		either be in dry rubble masonr					
		in case of dry rubble pitching o					
		pitching with stones in wire					
		crates or it can be in PCC M1 nominal mix if cement concert					
		block have been used fo					
		pitching. Rates for toe wall ca					
		be adopted from respective					
		clauses depending upon					
		approved design. The rate fo excavation for foundation, dr					
		rubble masonry and PCC M1	-				
		have been analysed and given in respective chapters.					
46.00	3505						
16.08	2505	Providing and laying Flooring complete as per drawing and					
		Technical specifications laid					
		over cement concrete bedding.					
	Α	Rubble stone laid in cemen mortar 1:3	t				

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					Quantity	as per projec	t category	Data
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	Rate (Rs.)
					Laige	Wiedidili	Jillali	(113.)
		Hn	it = cum					
			king output = 1 cum					
			Cement mortar 1:3	cum	0.133	0.133	0.133	
		۵,	(Rate taken from items	cam	0.133	0.133	0.100	
			21.01 A)					
		b)	Add for cement concrete bedding (M15 Nominal mix) vide Item 12.08 (A) including OH & CP. Quantity shall be adopted as per design (Assume	cum	0.333	0.333	0.333	
			Rubble stone Flooring thickness 300mm and					
			cement concrete bedding thickness 100mm)					
			Add 1 Percent of cost to account for excavation for preparation of bed.					
		c)	Material					
		•	Stone	cum	1.000	1.000	1.000	
			Stone Spalls	cum	0.200	0.200	0.200	
		d)	Labour					
			Mate	day	0.106	0.106	0.106	
			Mason	day	0.665	0.665	0.665	
			Mazdoor (for laying stones, filling of quarry spalls)	day	1.995	1.995	1.995	
		e)	Overhead charges		@ on (a+c+d)	@ on (a+c+d)	@ on (a+c+d)	
		f)	Contractor's profit		@ on (a+b+d+e)	@ on (a+b+d+e)	@ on (a+b+d+e)	
		Rat	te per cum = (a+b+c+d+e+f)					
	Note:-	*In	cludes cement mortar for laying	g and fil	ling of joints.			
16.08	В	M1	ment Concrete blocks Grade 15 including 100 mm thick dding					
		(Ra	ncrete Grade M15 block. Ite taken from items 12.08 A) Iuding OH & CP	cum	1.000	1.000	1.000	
		CP. Col 300 bed Add for	dding (M15 Nominal mix) vide m 12.08 (A) including OH & Quantity shall be adopted as r design (Assume Cement nerete blocks thickness Omm and cement concrete dding thickness 100mm) d 1 Percent of cost to account excavation for preparation of	cum	0.330	0.330	0.330	

Cm NI =	Dof to M	Docement is in	l lm!4	Quantity a	s per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
16.09	2506	Dry Rubble Flooring Construction of dry rubble flooring at cross drainage works for relatively less important works. Unit = cum Taking output = 1 cum a) Material Stone Stone Spalls b) Labour Mate Mason	cum cum day day	1.000 0.200 0.106 0.665	1.000 0.200 0.106 0.665	1.000 0.200 0.106 0.665	(Rs.)
		mazdoor Add 1 Percent of (b) for trimming and preparation of base.	day	1.995	1.995	1.995	
		c) Overhead chargesd) Contractor's profit		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	
		Rate per cum = (a+b+c+d)					
16.10	2507.2 A	Curtain wall complete as per drawing and Technical specification Stone masonry in cement mortar (1:3) Coursed rubble masonry (1st sort) (Rate taken from items 12.07 A) including OH & CP Rate same as per item No. 12.07 (A) including OH & CP Rate per cum	cum	1.000	1.000	1.000	
16.10	В	Cement concrete Grade M15 Concrete Grade M15 (Rate taken from items 12.08 A) including OH & CP Rate per cum	cum	1.000	1.000	1.000	
	Note	Other items like excavation for for etc. shall be added separately as p		_	d wall, filter r	nedia, weep	holes
16.11	2507.2	Flexible Apron: Construction of flexible apron 1 m thick comprising of loose stone boulders weighing not less than 40 kg beyond curtain wall. Unit = cum Taking Output = 1 cum					

					Quantity a	ıs per project	category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
		l .		l.		· ·	<u>'</u>	
		a)	Material					
			Stone	cum	1.000	1.000	1.000	
			Stone Spalls	cum	0.200	0.200	0.200	
		b)	Labour					
			Mate	day	0.067	0.067	0.067	
			Mason	day	0.333	0.333	0.333	
			Mazdoor	day	1.330	1.330	1.330	
			Add 1 Percent of cost of					
			(a+b) for trimming and					
			preparation of bed.					
		c)	Overhead charges		@ on	@ on	@ on	
			Court no at out on a fit		(a+b)	(a+b)	(a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
		Rati	e per cum = (a+b+c+d)		(a+b+c)	(a+b+c)	(a+b+c)	
		Nati	e per cum - (arbiciu)					
16 43	2502.2	٠.	dan Churchina fan D					
16.12	2503.3	Gab	oion Structure for Retaining					
			viding and construction of a					
			ion structure for retaining					
		eart	th with segments of wire					
		crat	es of size 7 m x 3 m x 0.6 m					
			h divided into 1.5 m					
			partments by cross netting,					
			de from 4 mm galvanised					
			el wire @ 32 kg per 10 sqm					
			ing minimum tensile strength 00 Mpa conforming to IS:280					
			galvanizing coating					
			forming to IS:4826, woven					
			mesh with double twist,					
			sh size not exceeding 100 x					
			mm, filled with boulders					
		with	n least dimension of 200 mm,					
		all l	oose ends to be tied with 4					
			galvanised steel wire					
			t = cum					
			ing output = 7 x 3 x 0.6 = 12.60	cum				
		31	Labour	day	0.372	0.372	0.372	
		a)	Mata	uav	U 5//	0.372	0.572	
		aj	Mate Mazdoor	-		6 650	6 650	
		aj	Mazdoor	day	6.650	6.650 2.660	6.650 2.660	
		•		-		6.650 2.660	6.650 2.660	
		b)	Mazdoor Mazdoor (Skilled)	day	6.650			
		•	Mazdoor Mazdoor (Skilled) Material	day day	6.650 2.660	2.660	2.660	
		•	Mazdoor Mazdoor (Skilled) Material Galvanised steel wire crates	day day	6.650 2.660	2.660	2.660	
		•	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	day day	6.650 2.660	2.660	2.660	
		•	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.	day day sqm	6.650 2.660 61.000	2.660	2.660 61.000	
		•	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. Stone boulders with least	day day	6.650 2.660	2.660	2.660	
		•	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.	day day sqm	6.650 2.660 61.000	2.660	2.660 61.000	

Sr No	Dof to M	Description	I I mile	Quantity as per project category			Rate
	Ref. to M		Unit	Large	Medium	Small	(Rs.)
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 12.60 cum (a+b+c+d)		(2:2:0)	(2:2:0)	(2:2:0)	

Rate per cum (a+b+c+d)/12.60

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 Percent of the cost of GI wire may be added for weaving the wire crates.

16.13 2503.3 Gabion Structure for Erosion Control, River Training Works and Protection works

Providing and constructing gabion 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 compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire.

Unit = cum

Taking output = 2 x 1 x 0.3 x 10 Nos. = 6.00 cum

a)	Labour				
	Mate	day	0.186	0.186	0.186
	Mazdoor	day	3.325	3.325	3.325
	Mazdoor (Skilled)	day	1.330	1.330	1.330
b)	Material				
	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.	sqm	65.000	65.000	65.000
	Stone boulders with least dimension of 200 mm	cum	6.000	6.000	6.000
	Stone spalls of minimum size 25 mm	cum	1.200	1.200	1.200
c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)

		1	<u> </u>				I _
Sr No	Ref. to M	Description	Unit		as per project		Rate
				Large	Medium	Small	(Rs.)
		d) Contractor's profit Cost for 6.00 cum (a+b+c+d) Rate per cum (a+b+c+d)/6.00		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
	Note	Readymade woven wire crate r readymade rolls are not availa provided. In that case 2 Percent crates.	ble, GI v	vire 4mm dia	a. @ 32 kg	per 10 sqm	may be
16.14	2503	Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012, MORT&H Clause 2500, of required size, Mesh Type 10x12 (D=100 mm with tolerance of ± 2%) Zinc coated Mesh wire diameter 3.0 mm mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2 mm, supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per direction of Engineer-in-charge.					
		Taking output = 2 x 1 x 1 m = 2 c a) Material Crates made of Mesh type 10x12 (D=100 mm) Zn coated. (Mesh wire diameter 3.00 mm). Surface area required =	sqm	11.000	11.000	11.000	
		11.00 sqm. Stone boulder with least dimension 200mm	cum	2.000	2.000	2.000	
		b) Labour Mate	day	0.106	0.106	0.100	
		Mason (for plain stone work) 2nd class	day day	0.106 0.665	0.106 0.665	0.106 0.665	
		Mazdoor *	day	1.995	1.995	1.995	
		c) Overhead charges	- /	@ on	@ on	@ on	
		d) Contractor's profit		(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	(a+b) @ on (a+b+c)	
		Cost for 2.0 cum (a+b+c+d) Rate per cum (a+b+c+d)/2					

Rate per cum (a+b+c+d)/2

Sr No	Ref. to M	Description	Unit	Quantity	Quantity as per project category		Rate
31 INU	Kei. to ivi	Description	Ullit	Large	Medium	Small	(Rs.)
16.15		Embankment Erosion Protection using Fine Aggregate Concrete Filled Fabric Form Mattress system Laying of a fine aggregate concrete grade M30 filled fabric form for erosion protection of embankments Unit = Sqm Taking output = 60 Sqm					
		a) Labour					
		Mate	day	0.128	0.128	0.128	
		Mazdoor	day	2.394	2.394	2.394	
		Mazdoor (skilled)	day	0.798	0.798	0.798	
		b) Machinery					
		Transit truck agitator					
		For Transportation Transit truck agitator 6 cum capacity	t.km	13.800 x L	13.800 x L	13.800 x L	
		Unloading time	hour	0.145	0.145	0.145	
		Concrete Pump	hour	0.145	0.145	0.145	
		c) Materials PCC M30 Grade Refer relevant item of concrete in Item 12.08 (F) Case I by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c)	cum	6.000	6.000	6.000	
		Fabric Form mattress with 30% shrinkage Non-Woven Geotextile to be placed under concrete	sqm	78.000	78.000	78.000	
		filled fabric form including 15 Percent for overlap and shrinkage	sqm	9.000	9.000	9.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 60 sqm = $a+b+c+d+e$		·	·		
		D 1 /					

Rate per sqm = (a+b+c+d+e)/60

CHAPTER - 17

REPAIR AND REHABILITATION

PREAMBLES:

- 1 Removal of cement concrete wearing coat and asphaltic wearing coat has been proposed with pneumatic breakers.
- 2 The rate for external pre-stressing has been analysed for three different spans of 25,50 and 100 m.
- 3 Sealing of cranks 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 placement of the following structures has been included:
 - a) Bridge bearings
 - b) Expansion Joints
 - c) Concrete Railing
 - d) Mild steel railing
 - e) Crash barrier

				Quantity	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
17.01	2811	Removal of existing cement concrete wearing coat including its disposal		. 0			
		complete as per Technical Specification without causing any detrimental effect to any part of the bridge structure and					
		removal of dismantled material with all lifts and lead upto 1000 m					
		Unit = Sqm (Thickness 75 mm)					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	1.330	1.330	1.330	
		b) Machinery					
		Air Compressor 250 cfm with pneumatic breaker/jack hammer along with accessories.	hour	1.000	1.000	1.000	
		Tractor-trolley.	hour	0.500	0.500	0.500	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 sqm = $(a+d+c+d)$		(,	(4 5 5)	(4 5 5)	
		Rate per sqm = $(a+b+c+d)/10$					
17.02	2811	Removal of existing asphaltic wearing coat comprising of 50 mm thick asphaltic concrete laid over 12 mm thick mastic asphalt including disposal with all lift and lead upto 1000 m. Unit = Sqm					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.040	0.040	0.040	
		Mazdoor	day	0.998	0.998	0.998	
		b) Machinery	,				
		Air Compressor 250 cfm with pneumatic breaker.	hour	0.750	0.750	0.750	
		Tractor-trolley.	hour	0.400	0.400	0.400	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 sqm = $(a+d+c+d)$					
		Rate per sqm = (a+b+c+d)/10					
17.03	2807	Guniting concrete surface with cement mortar applied with compressor after					
		cleaning surface and spraying with epoxy complete as per Technical					
		Specification Unit = Sqm					
		Taking output = 1 sqm					

Sr No	Ref. to M	/I Description	Unit	Quantity as per project category			
		Description	Unit	Large	Medium	Small	(Rs.
		Assuming thickness 25 mm					
		a) Material Cement	ka	16.000	16.000	16.000	
		Graded sand	kg cum	0.040	0.040	0.040	
		Wire mesh 50mm x 50mm size of		2.000	2.000	2.000	
		3mm wire	kg	2.000	2.000	2.000	
		Ероху	kg	0.670	0.670	0.670	
		Accelerator compound for guniting @ 4 Percent of weight of cement	kg	0.640	0.640	0.640	
		Add 2 Percent of cost of material for miscellaneous consumables like nozzles, wire brush, cotton waste					
		etc.					
		b) Labour		0.040	0.040	0.040	
		Mate	day	0.010	0.010	0.010	
		Mason	day	0.053	0.053	0.053	
		Mazdoor c) Machinery	day	0.186	0.186	0.186	
		Compressor with guniting	hour	0.100	0.100	0.100	
		equipment along with accessories d) Overhead charges		@ on	@ on	@ on	
		e) Contractor's profit		(a+b+c) @ on	(a+b+c) @ on	(a+b+c) @ on	
		e) Contractor's profit		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per sqm = (a+b+c+d+e)		(u.b.c.u)	(a.b.c.a)	(a.b.c.a)	
17.04	2800	Providing and inserting nipples with approved fixing compound after drilling holes for grouting as per Technical Specifications including subsequent cutting/removal and sealing of the hole as necessary of nipples after completion of grouting with Cement/Epoxy Unit = Number					
		Taking output = 1 No.					
		a) Material					
		Nipples	each	1.000	1.000	1.000	
		Cement, fixing compound and consumables @ 15 Percent of cost of nipple					
		b) Labour					
		Mate	day	0.009	0.009	0.009	
		Mazdoor (Skilled) labour for drilling	day	0.106	0.106	0.106	
		Mazdoor (Skilled) labour for fixing nipple and sealing inlets	day	0.106	0.106	0.106	
		Mazdoor for cutting and removing of nipples	day	0.053	0.053	0.053	
		Add 10 Percent of labour cost for drilling holes etc					
		c) Overhead charges		@ on	@ on	@ on	
				(a+b)	(a+b)	(a+b)	

	1				Quantity	as nor project	t catagory	Data
Sr No	Ref. to M		Description	Unit		as per project		Rate
					Large	Medium	Small	(Rs.)
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Rat	e per No. = (a+b+c+d)					
17.05	2806	inje Gro	cling of cracks/porous concrete by ection process through nipples/puting complete as per Technical ecification.					
	Α	Cen	nent Grout					
		Uni	t = kg					
		Tak	ing output = 1 kg					
		a)	Material					
			Cement including 10 Percent wastage	kg	1.100	1.100	1.100	
			Admixtures (anti shrinkage compound) @ 20 Percent of cost of cement					
		b)	Labour					
			Mate	day	0.106	0.106	0.106	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			Mazdoor	day	1.330	1.330	1.330	
		c)	Machinery					
			Grout pump with agitator and accessories	hour	0.100	0.100	0.100	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per kg = (a+b+c+d+e)					
	В		ment Mortar (1:1) Grouting					
			t = kg					
			ing output = 1 kg					
		a)	Material					
			Cement including 10 Percent wastage	kg	0.550	0.550	0.550	
			Sand including 10 Percent wastage Admixtures (anti shrinkage compound) @ 20 Percent of cost of cement	kg	0.550	0.550	0.550	
		b)	Labour					
		•	Mate	day	0.059	0.059	0.059	
			Mazdoor (Skilled)	day	1.330	1.330	1.330	
			Mazdoor	day	0.133	0.133	0.133	
		c)	Machinery					
			Grout pump with agitator and accessories	hour	0.100	0.100	0.100	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Rat	e per kg = (a+b+c+d+e)		•	•	•	

			1	Quantity	as nor projec	t catagory	Data
Sr No	Ref. to M	Description	Unit		as per projec Medium	Small	Rate (Rs.)
				Large	iviealum	Small	(113.)
17.06	2800	Patching of damaged concrete surface with polymer concrete and curing compounds, initiator and promoter, available in present formulations, to be applied as per instructions of manufacturer and as approved by the Engineer. Unit = sqm Taking output = 10 sqm for an average					
		thickness of 25mm.					
		a) Labour					
		Mate	day	0.080	0.080	0.080	
		Mazdoor (Skilled)	day	0.998	0.998	0.998	
		Mazdoor	day	0.998	0.998	0.998	
		b) Material Pre-packed polymer concrete based on epoxy system complete with curing compound, intiator and promoter including 5 Percent wastage.	kg	315.000	315.000	315.000	
		c) Machinery					
		Grout pump with agitator and accessories	hour	2.000	2.000	2.000	
		d) Overhead chargese) Contractor's profit		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
				(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 10 sqm = a+b+c+d+e Rate per sqm = (a+b+c+d+e)/10					
	Note	This item is a proprietory item available in to be applied as per instructions of the ma			polymer conc	rete and is re	equired
17.07	2803	Sealing of crack / porous concrete with Epoxy Grout by injection through nipples complete as per clause 2803.1. Unit = kg Taking output = 1 kg a) Material					
		Epoxy including 10 Percent wastage b) Labour	kg	1.100	1.100	1.100	
		Mate	day	0.011	0.011	0.011	
		Mazdoor (Skilled)	day	0.133	0.133	0.133	
		Mazdoor	day	0.133	0.133	0.133	
		c) Machinery	aay	3.133	3.233	3.133	
		Epoxy Injection gun	hour	0.100	0.100	0.100	
		d) Overhead charges	Hour	@ on	@ on	@ on	
		a, Overnead charges		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Pata par kg = (athtetdia)		•	•	•	

Rate per kg = (a+b+c+d+e)

Sr No	Ref. to M	Description	Unit		as per project	category	Rat
J. 140	Men to IVI	Description	Jiiit	Large	Medium	Small	(Rs
17.08	2804	Applying epoxy mortar over leached, honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical Specification					
		Unit = sqm					
		Taking output = 10 sqm					
		Assume average 10mm thickness of epoxy mortar					
		a) Material					
		Epoxy resin-hardener mix for prime coat	kg	2.500	2.500	2.500	
		Epoxy mortar	kg	2.200	2.200	2.200	
		Epoxy resin -hardener mix for seal coat.	kg	2.000	2.000	2.000	
		Add 3 Percent cost of material for other consumables like acetone etc					
		and to cover wastage.					
		b) Labour Mate	day	0.053	0.053	0.053	
		Mazdoor (Skilled)	day	0.665	0.665	0.665	
		Mazdoor	day	0.665	0.665	0.665	
		c) Overhead charges	aay	@ on	@ on	@ on	
		,		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 sqm = $a+b+c+d$					
		Rate per sqm = (a+b+c+d)/10					
17.09	2807	Removal of defective concrete, cleaning the surface thoroughly, applying the shotcrete mixture mechanically with compressed air under pressure, comprising of cement, sand, coarse aggregates, water and quick setting compound in the proportion as per clause 2807.1., sand and coarse aggregates conforming to IS: 383 and table 1 of IS: 9012 respectively, water cement ratio ranging from 0.35 to 0.50, density of gunite not less than 2000 kg/cum, strength not less than 25 Mpa and workmanship conforming to clause 2807.6. unit: sqm					
		Taking output = 10 sqm					
		40 mm average thickness.					
		a) Labour					
		Mate	day	0.053	0.053	0.053	
		Mazdoor	day	0.665	0.665	0.665	
				0.66=			
		Mazdoor (Skilled)	day	0.665	0.665	0.665	
		Mazdoor (Skilled) b) Machinery	day	0.665	0.665	0.665	
			day	1.000 1.000	0.665 1.000 1.000	0.665 1.000 1.000	

Sr No	Ref. to M		Description	Unit	Quantity	as per projec	t category	Rate
31 140	Kei. to Wi		Description	Oilit	Large	Medium	Small	(Rs.)
					0.000	0.000	0.000	
			water tanker 6 KL capacity	hour	0.020	0.020	0.020	
		c)	Material		100 000	120.000	400.000	
			Cement	kg	120.000	120.000	120.000	
			Sand	cum	0.150	0.150	0.150	
			Coarse aggregate of size 4.75mm	cum	0.150	0.150	0.150	
			Quick setting compound	kg	2.500	2.500	2.500	
			Water	KL	0.100	0.100	0.100	
		d)	Overhead charges		@ on	@ on	@ on	
			6		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Coo	+ for 10 cam - a bush due		(атытста)	(атытсти)	(атртсти)	
			t for 10 sqm = a+b+c+d+e					
		Kat	e per sqm = (a+b+c+d+e)/10					
17.10	2800	Apr	olying pre-packed cement based					
			ymer mortar of strength 45 Mpa at					
		-	days for replacement of spalled					
		con	crete					
		Uni	t = sqm					
		Tak	ing output = 10 sqm					
		Ass	umed thickness - 10 mm					
		a)	Material					
			Acrylic polymer bonding coat	Litre	1.400	1.400	1.400	
			pre-packed cement based polymer	kg	12.000	12.000	12.000	
			mortar of strength 45 Mpa at 28					
			days					
			Add 3 Percent of (a) above for					
		ы	wastage. Labour					
		D)	Mate	day	0.053	0.053	0.053	
			Mazdoor (Skilled)	day day	0.053 0.665	0.665	0.665	
			Mazdoor	-	0.665	0.665		
		c)	Overhead charges	day			0.665	
		c,	Overnead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		(a+b) @ on	(a+b) @ on	(a+b) @ on	
		uj	contractor's profit		(a+b+c)	(a+b+c)	(a+b+c)	
		Cos	t for 10 sqm = a+b+c+d		(arbic)	(arbic)	(a.p.c)	
			e per sqm = (a+b+c+d)/10					
17.11	2805	-	oxy bonding of new concrete to old					
			crete					
			t = sqm					
			ing output = 10 sqm					
		a)	Material		0.000	0.000	0.000	
			Epoxy resin with pot life not less than 60-90 minutes and satisfying	kg	8.000	8.000	8.000	
			testing as per clause 2803.9					
			Add 3 Percent of (a) above for					
			wastage.					
		b)	Labour					
		~,	Mate	day	0.053	0.053	0.053	
			Mazdoor (Skilled)	day	0.665	0.665	0.665	
			Mazdoor	day	0.665	0.665	0.665	

Sr No	Ref. to M		Description	Unit	Quantity	as per project	category	Rat
31 140	Kei. to ivi		Description	Offic	Large	Medium	Small	(Rs.
		c)	Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d)	Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cos	t for 10 sqm = a+b+c+d					
		Rat	e per sqm = (a+b+c+d)/10					
17.12	2812	hig dril all a ope dra Spa	viding external prestressing with h tensile steel wires/strands including ling for passage of prestessing steel, accessories for stressing and stressing eration and grouting complete as per wing and Technical Specification n assumed: 25 m of cables: 4 no.					
			of anchorages : 8 no.					
			t = MT					
		Ass	ing output = 1 MT ume 12.7mm dia. Strand in 12T13 tem. Weight-9.42 kg/m of cable. Material					
		aj	HTS strand including 5 Percent wastage and extra length for jacking	tonne	1.050	1.050	1.050	
			HDPE pipes 75mm dia including 5 Percent wastage	metre	112.000	112.000	112.000	
			Cement for grouting	kg	400.000	400.000	400.000	
			Tube anchorage set complete with bearing plate, permanent wedges etc	each	8.000	8.000	8.000	
			Epoxy MS plates for deviator (where	kg tonne	6.000 2.100	6.000 2.100	6.000 2.100	
			deviator blocks are not provided) Add 20 Percent cost of material for other materials like lead sheet, sleeves, deviator fixtures etc.					
		b)	Labour					
		i)	For making holes in the structure.					
			Mate	day	0.319	0.319	0.319	
			Mazdoor Semi-skilled)	day	3.990	3.990	3.990	
		ii)	Mazdoor For making and fixing anchorages for cables and placement of cables.	day	3.990	3.990	3.990	
			Mate	day	0.585	0.585	0.585	
			Blacksmith	day	3.990	3.990	3.990	
			Mazdoor	day	10.640	10.640	10.640	
		iii)	For prestressing	- /		· -		
		•	Mate/Supervisor	day	0.178	0.178	0.178	
			Fitter	day	0.931	0.931	0.931	
			Mazdoor	day	3.525	3.525	3.525	
		iv)	For grouting	•				
		•	Mate/Supervisor	day	0.178	0.178	0.178	
			Mason	day	0.931	0.931	0.931	

Sr No	Ref. to M	Description	Unit	Quantity	as per projec	t category	Rate
Sr NO	Ref. to IVI	Description	Unit	Large	Medium	Small	(Rs.
		Mazdoor	day	3.525	3.525	3.525	
		c) Machinery					
		Stressing jack with pump	hour	4.000	4.000	4.000	
		Grouting pump with agitator	hour	1.350	1.350	1.350	
		d) Overhead charges		@ on	@ on	@ on	
				(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Rate per MT = (a+b+c+d+e)		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
17.13	2812	Providing external prestressing v	with				
17.13	2012	high tensile steel wires/strands include					
		drilling for passage of prestessing st	_				
		all accessories for stressing and stres	•				
		operation and grouting complete as	per				
		drawing and Technical Specification					
		Span assumed: 50 m					
		No. of cables: 4 no.					
		No. of anchorages : 8 no.					
		Unit = MT					
		Taking output = 3.10 MT					
		Assume 12.7mm dia. Strand in 19T13					
		system. Weight-14.73 kg/m of cable.					
		a) Material					
		HTS strand including 5 Percent wastage and extra length for jacki	tonne	3.100	3.100	3.100	
		HDPE pipes 90mm dia including 5 Percent wastage	metre	224.000	224.000	224.000	
		Cement for grouting	tonne	1.010	1.010	1.010	
		Tube anchorage set complete wit	h each	8.000	8.000	8.000	
		bearing plate, permanent wedges	etc				
		Ероху	kg	10.000	10.000	10.000	
		MS plates for deviator (where	tonne	7.000	7.000	7.000	
		deviator blocks are not provided)					
		Add 20 Percent cost of material	for				
		other materials like lead sheet,					
		sleeves, deviator fixtures etc.					
		b) Labour	_				
		 i) For making holes in the structure Mate 		0.080	0.080	0.080	
			day day	10.640	10.640	10.640	
		Mazdoor Semi-skilled) Mazdoor	=	10.640	10.640	10.640	
			day	10.040	10.040	10.040	
		ii) For making and fixing anchorage for cables and placement of cable					
		Mate	day	1.702	1.702	1.702	
		Blacksmith	day	9.310	9.310	9.310	
		Mazdoor	day	33.250	33.250	33.250	
		iii) For prestressing	uay	33.230	33.230	55.250	
		Mate/Supervisor	day	0.266	0.266	0.266	
		Fitter	day	1.330	1.330	1.330	
		Mazdoor	day	5.320	5.320	5.320	
		IVIUZUOOI	uay	3.320	3.320	3.320	

Cr N-	Dof to M	Description	l lm!A	Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		iv) For grouting					
		Mate/Supervisor	day	0.346	0.346	0.346	
		Mason	day	1.995	1.995	1.995	
		Mazdoor	day	6.650	6.650	6.650	
		c) Machinery					
		Stressing jack with pump	hour	7.000	7.000	7.000	
		Grouting pump with agitator	hour	3.000	3.000	3.000	
		d) Overhead charges		@ on	@ on	@ on	
		\		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Contractor's profit		@ on	@ on	@ on	
		Cost for 3.10 MT = a+b+c+d+e		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Rate per MT = (a+b+c+d+e)/3.10					
17.14	2812	Providing external prestressing with	1				
		high tensile steel wires/strands including					
		drilling for passage of prestessing steel	•				
		all accessories for stressing and stressing					
		operation and grouting complete as per	•				
		drawing and Technical Specification					
		Span assumed: 100 m					
		No. of cables: 6 no.					
		No. of anchorages : 12 no.					
		Unit = MT					
		Taking output = 9.28 MT					
		Assume 12.7mm dia. Strand in 19T13 system. Weight-14.73 kg/m of cable.					
		a) Material					
		HTS strand including 5 Percent	tonne	9.280	9.280	9.280	
		wastage and extra length for jacking					
		HDPE pipes 90 mm dia including 5 Percent wastage	i metre	672.000	672.000	672.000	
		Cement for grouting	tonne	3.040	3.040	3.040	
		Tube anchorage set complete with		12.000	12.000	12.000	
		bearing plate, permanent wedges etc		44.000	44.555	44.000	
		Epoxy	kg	14.000	14.000	14.000	
		MS plates for deviator (where	tonne	20.000	20.000	20.000	
		deviator blocks are not provided)					
		Add 20 Percent cost of material for other materials like lead sheet					
		sleeves, deviator fixtures etc.					
		b) Labour					
		i) For making holes in the structure.					
		Mate	day	2.288	2.288	2.288	
		Mazdoor Semi-skilled)	day	23.940	23.940	23.940	
		Mazdoor	day	33.250	33.250	33.250	
		ii) For making and fixing anchorages	aay	33.230	33.230	33.230	
		for cables and placement of cables.					
		Mate	day	5.320	5.320	5.320	
		Blacksmith	day	26.600	26.600	26.600	
		Mazdoor	day	106.400	106.400	106.400	
			,				

Cr NI-	Dof to M		Doscription	l lm!4	Quantity	as per projec	t category	Rat
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.
		iii)	For prestressing					
			Mate/Supervisor	day	0.399	0.399	0.399	
			Fitter	day	1.995	1.995	1.995	
			Mazdoor	day	7.980	7.980	7.980	
		iv)	For grouting					
			Mate/Supervisor	day	1.330	1.330	1.330	
			Mason	day	6.650	6.650	6.650	
			Mazdoor	day	26.600	26.600	26.600	
		c)	Machinery					
			Stressing jack with pump	hour	10.000	10.000	10.000	
			Grouting pump with agitator	hour	10.000	10.000	10.000	
		d)	Overhead charges		@ on	@ on	@ on	
		- \	Contractorle musik		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on	@ on	
		Cod	st for 9.28 MT = a+b+c+d+e		(a+b+c+u)	(a+b+c+d)	(a+b+c+d)	
			te per MT = (a+b+c+d+e)/9.28					
		Nai	е рег IVII – (атытстите)/ 5.26					
L7.15	2810	Rei	placement of Bearings complete as					
.,.13	2010	-	Technical Specification					
		-	it = Number					
			ing output = 3 No.					
			ing of superstructure span by jacking					
			from below i.e. by placing the jacks on					
			r/abutment caps for span length of					
		30r	m.					
		a)	Labour					
			Mate	day	0.851	0.851	0.851	
			Mazdoor (Skilled)	day	5.320	5.320	5.320	
			Mazdoor	day	15.960	15.960	15.960	
		b)	Machinery					
			i) Hire charges for jack of 40 tonne	Day	3.000	3.000	3.000	
			lifting capacity. (Lifting of span)					
		c)	Material					
			Wooden packing	cum	0.150	0.150	0.150	
			Cost of bearing. (Replacement of	each	3.000	3.000	3.000	
			bearing)		_	_	_	
		d)	Overhead charges		@ on	@ on	@ on	
		-1	Control to the mustice		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	st of repair of 3 bearings = a+b+c+d+e		(arbicia)	(arbicia)	(arbiciu)	
			e of repair per bearing = (a+b+c+d+e)/	3				
	Note	The	e work entails replacement of all the bea	arings on	one side of th	ne span.		
17.16	2811	Red	ctification of Bearings as per Technical					
		Spe	ecifications					
		Uni	t = Number					
			ing output = 3 No.					
			ing of superstructure span by jacking					
		up	from below i.e. by placing the jacks					

6. 11	Sr No Pof to M			l	Quantity as per project category			Rate
Sr No	Ref. to M	to M Description Un		Unit	Large	Medium	Small	(Rs.)
			pier/abutment caps for span length 30m.					
		a)	Labour					
			Mate	day	0.851	0.851	0.851	
			Mazdoor (Skilled)	day	5.320	5.320	5.320	
			Mazdoor	day	15.960	15.960	15.960	
		b)	Machinery					
			i) Hire charges for jack of 40 tonne lifting capacity.	each	3.000	3.000	3.000	
		c)	Material					
			Cost of parts to be replaced for 3 bearings.	each	3.000	3.000	3.000	
			Wooden packing	cum	0.150	0.150	0.150	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cos	st of repair of 3 bearings = a+b+c+d+e					
		Rat	te of repair per bearing = (a+b+c+d+e)/	'3				

The rectification of 3 bearings included in this analysis is on the same side of the span.

17.17 **Replacement of Expansion Joints**

Note

complete as per drawings

Unit - RM

Taking output = 12 RM

a)	Mate	

Epoxy for bonding new concrete to	kg	9.600	9.600	9.600
old concrete @ 0.8 kg/sqm				
M-30 grade cement concrete	cum	3.600	3.600	3.600
excluding OH & CP (Rate taken from				
items 14.01 C (i) (p)				
Labour				

b)

Removal of old expansion joint including breaking of concrete, cutting of lugs and shifting of broken material etc.

d)	Contractor's profit		@ on (a+h+c)	@ on (a+h+c)	@ on (a+h+c)
	6		(a+b)	(a+b)	(a+b)
c)	Overhead charges		@ on	@ on	@ on
	Mazdoor (Skilled)	day	0.665	0.665	0.665
	Mazdoor	day	7.980	7.980	7.980
	Mate	day	0.346	0.346	0.346

Cost for replacement of 12 RM = a+b+c+d

Rate per RM = (a+b+c+d)/12

Note The rate for the installation of new expansion joints may be taken from the chapter on superstructure. Broken concrete will have to be replaced which has been included in this analysis.

Sr No	Ref. to M	to M Description	Unit	Quantity as per project category			Rate	
31 140	itel. to ivi		Description	Oilit	Large	Medium	Small	(Rs.)
17.10		Dav	Jacomont of Boursey d Compared					
17.18			placement of Damaged Concrete ling.					
			t = RM					
			ing output = 10 RM					
		a)	Labour					
		-,	Labour for dismantling old railing					
			and disposal of dismantled material.					
			Mate	day	0.266	0.266	0.266	
			Mazdoor	day	6.650	6.650	6.650	
		b)	Machinery	-				
			Tractor-trolley for disposal of dismantled material	hour	1.000	1.000	1.000	
		c)	Overhead charges		@ on	@ on	@ on	
		•	· ·		(a+b)	(a+b)	(a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
					(a+b+c)	(a+b+c)	(a+b+c)	
		Cos	t for 10 m = a+b+c+d					
		Rat	e per metre = (a+b+c+d)/10					
	Note	The	rate for the provision of new railing ma	ay be ado	pted from the	e chapter on s	uperstructur	e.
17 10		Daw	Jacomont of Crosh Bornion					
17.19		_	placement of Crash Barrier. t = RM					
		_						
		a)	ing output = 10 M Labour					
		aj	Labour for dismantling old railing					
			and disposal of dismantled material.					
			Mate	day	0.532	0.532	0.532	
			Mazdoor	day	13.300	13.300	13.300	
			Machinery	,				
		b)	iviaciiiiei y					
		b)	Tractor-trolley for disposal of	hour	1.000	1.000	1.000	
			Tractor-trolley for disposal of dismantled material	hour				
		b) c)	Tractor-trolley for disposal of	hour	@ on	@ on	@ on	
			Tractor-trolley for disposal of dismantled material	hour				
		c)	Tractor-trolley for disposal of dismantled material Overhead charges	hour	@ on (a+b)	@ on (a+b)	@ on (a+b)	
		c) d)	Tractor-trolley for disposal of dismantled material Overhead charges	hour	@ on (a+b) @ on	@ on (a+b) @ on	@ on (a+b) @ on	
		c) d) Cos	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit	hour	@ on (a+b) @ on	@ on (a+b) @ on	@ on (a+b) @ on	
	Note	c) d) Cos Rat	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
	Note	c) d) Cos Rat	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rat The	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Olacement of Damaged Mild Steel		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rati The Trai Rep Rail	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Olacement of Damaged Mild Steel		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rat The Trai Rep Rail	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Placement of Damaged Mild Steel ling		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rat The Trai Rep Rail	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Clacement of Damaged Mild Steel ling t = RM		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rat The Trai Rep Rail Uni Tak	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Placement of Damaged Mild Steel ling t = RM ing output = 10 M		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rat The Trai Rep Rail Uni Tak	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Placement of Damaged Mild Steel ling t = RM ing output = 10 M Labour		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and
17.20	Note	c) d) Cos Rat The Trai Rep Rail Uni Tak	Tractor-trolley for disposal of dismantled material Overhead charges Contractor's profit t for 10 m = a+b+c+d e per metre = (a+b+c+d)/10 rate for the construction of new crash insportation. Placement of Damaged Mild Steel ling t = RM ing output = 10 M Labour Labour for dismantling old railing		@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	@ on (a+b) @ on (a+b+c)	c and

Sr No	Ref. to M	Description	Unit	Quantity as per project cate		category		
31 140	Nei. to ivi	Description	Oilit	Large	Medium	Small	(Rs.)	
		b) Machinery						
		Tractor-trolley for disposal of	hour	1.000	1.000	1.000		
		dismantled material		Ø	8	0		
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)		
		d) Contractor's profit			-			
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)		
		Cost for 10 m = a+b+c+d		(ατυτί)	(атытс)	(атытс)		
		Rate per metre = (a+b+c+d)/10						
		rate per metre – (a+b+c+u)/ 10						
17.21		Repair of Crash Barrier						
17.121		Repair of concrete crash barrier with						
		cement concrete of M-30 grade by						
		cutting and trimming the damaged						
		portion to a regular shape, cleaning the						
		area to be repaired thoroughly, applying						
		cement concreteafter erection of proper						
		form work.						
		Unit = Running meter						
		Taking output = 10 M.						
		It is assumed that damage is to the						
		extent of 10 percent of the volume of						
		concrete .This will require 0.30 cum of						
		concrete.						
		a) Manpower* Mate	day	0.053	0.053	0.053		
		Mazdoor	day	0.053	0.053	0.053		
	*	For dismantling and trimming the surface	day	1.330	1.330	1.330		
		to a regular shape and removal of						
		damaged material.						
		b) Material						
		M-30 grade cement concrete	cum	0.300	0.300	0.300		
		excluding OH & CP (Rate taken from						
		items 14.01 C (i) (p)						
		This may be priced based on the						
		rate given the chapter of						
		superstructure.						
		c) Overhead charges		@ on	@ on	@ on		
				(a+b)	(a+b)	(a+b		
		d) Contractor's profit		@ on	@ on	@ on		
		0 16 10		(a+b+c)	(a+b+c)	(a+b+c)		
		Cost for 10 m = a+b+c+d						
		Rate per m = (a+b+c+d)/10						
17.22		Repair of RCC Railing						
-,. -		Carrying out repair of RCC M30 railing to						
		bring it to the original shape.						
		Unit = Running meter						
		Taking output = 10 M.						
		It is assumed that damage is to the						
		extent of 10 Percent						
		a) Material						
		M-30 grade cement concrete	cum	0.100	0.100	0.100		
		excluding OH & CP (Rate taken from						

Sr No	Pof to M	Description	I Init	Quantity	as per projec	t category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.
		items 14.01 C (i) (p)					
		HYSD bar reinforcement Rate as per	tonne	0.013	0.013	0.013	
		item No 14.02(Excluding OH & CP)					
		b) Labour*					
		Mate	day	0.011	0.011	0.011	
		mazdoor	day	0.266	0.266	0.266	
	*	For dismantling and trimming the surface					
		to a regular shape and removal of					
		damaged material.		0.00	8	Ø	
		c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit				-	
		u) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		Cost for 10 m = $a+b+c+d$		(a+b+c)	(атытс)	(ατυτί)	
		Rate per m = $(a+b+c+d)/10$					
		nate per m = (a.b.e.a _{jj} 15					
17.23		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 Percent.					
		Unit = Running meter					
		Taking output = 10 M.					
		a) Material	ka	20.000	20,000	20.000	
		Mild steel ISMC series	kg	29.000 10.000	29.000 10.000	29.000 10.000	
		Flat iron	kg	1.000	1.000	1.000	
		MS Bolt and nuts	kg	1.000	1.000	1.000	
		Add 5 Percent of cost of material for					
		painting. b) Labour					
		Mate	day	0.021	0.021	0.021	
		Mazdoor (Skilled)	day	0.266	0.266	0.266	
		Mazdoor	day	0.266	0.266	0.266	
		c) Overhead charges	auy	@ on	@ on	@ on	
		c) Overnead charges		(a+b)	(a+b)	(a+b)	
		d) Contractor's profit		@ on	@ on	@ on	
		а, соли восе с расто		(a+b+c)	(a+b+c)	(a+b+c)	
		Cost of repair for 10 m = a+b+c+d					
		Cost of meter = (a+b+c+d)/10					
17.24		Mobile Bridge Inspection Unit (MBIU)					
-/		Inspection of bridge by using of Mobile					
		Bridge Inspection Unit (MBIU)					
		Unit = Km					
		Taking output = 50 Km					
		a) Labour					
		Mate	day	1.360	1.360	1.360	
		Mazdoor (skilled)	day	34.000	34.000	34.000	
		Mazdoor	day	34.000	34.000	34.000	
		b) Machinery					
		Mobile Bridge Inspection Unit	hour	266.667	266.667	266.667	
		(MBIU)	noui	200.007	200.007	200.007	
		Mobile Bridge Inspection Unit	hour	15.000	15.000	45.000	
		(MBIU) Mobilization &	[]()[][נונונונים	13 000	15.000	

C:: No	Dof to M	Description.	l loit	Quantity a	Quantity as per project category		
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
		demobilization Add 1 Percent of cost of a+b for Miscellaneous work c) Overhead charges		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		d) Contractor's profit		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	

Cost for 50 Km = a+b+c+dRate per Km = (a+b+c+d)/50

Note: (i) Average Distance has been considered 300 km for mobilization at working site and same for demobilization

(ii) Speed of vehicle 40Km/hr. has been considered.

PART – C TUNNEL WORKS

C. TUNNEL WORKS

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

The basic approach for the preparation of Standard Data Book for Tunnel Works is indicated as under:

Description of items

The description of items is given briefly and linked with the relevant IRC-91, which may be referred for detailed description, provisions and interpretation.

Overhead Charges

The overhead charges include the following elements:

- i. Site accommodation, setting up plant, access road, water supply, electricity and general site arrangements.
- ii. Office furniture, equipment and communications
- iii. Expenditure on

Corporate office of contractor

Site supervision

Documentation and "as built" drawings

- iv. Mobilization/de-mobilization 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. Temporary Diversion
- x. Watch and ward
- xi. Traffic management during construction
- xii. Expenditure on 'safeguarding environment
- xiii. Sundries
- xiv. Financing Expenditure
- xv. Work Insurance/compensation
- xvi. Car Policy
- xvii. Employee Insurance
- xviii. Property Insurance (Camp Builtup Area)

For the purpose of calculation of overhead charges

Tunnel Work 25 percent

Contractor Profit: 10 Percent of cost of works

Contractor profit is also added on overhead charges.

C. TUNNEL WORKS

BASIC APPROACH AND GENERAL CONDITIONS FOR THE PREPARATION OF STANDARD DATA BOOK

Basic Inputs

Basic inputs are only given in the standard data book. The rates for material and labour have to be updated by concerned State/UT govt. Officials like E-in-C, CE(NH), State PWDs.

Plants and Equipment

In the analysis of rates, for any items of work, capacity of. Equipment with corresponding output has been indicated which is most common in use for estimation purpose. Seeing the volume of job, different capacity equipment with corresponding output as indicated in Chapter-20 can be provided for preparing the estimate.

Materials

The rates of material should include basic cost at crushing units, cost of carriage including loading and unloading and stacking of material at site of work and shall be determined through market enquiries.

Labour

Highly Skilled labour include mason (1st class), carpenter, Blacksmith (Ist class)/ Welder/ Plumber/ Electrician, (1st class), mechanics and other trades.

One mate has been provided for 25 labours.

Carriage of Materials

The unit for vehicle for carriage has been taken as under:

- a) In hours where lead is defined including time required for loading and unloading
- b) In tonne km where lead is variable. The loading and unloading for such cases have been provided separately.

General:

Most of tunnels works in India is constructed / under construction using NATM technology and Rate has been analysed using the same. However, analysis of rate for tunnel construction with TBM will be incorporated in future.

Various items for tunnel work i.e. firefighting, ventilation, tunnel lighting, safety items etc. has been included in this Chapter.

The testing of materials and finished items of work is covered under overhead charges.

The Standard Data Book is for Department use only. It cannot be produced in Court of law as references/ authority and this is a privilege document.

CHAPTER - 18

TUNNEL WORK

PREAMBLES:

- 1 For drilling, pneumatically and hydraulically powered method is considered.
- 2 The excavated materials suitable for construction shall be stockpiled at approved locations otherwise it should be dumped at the approved disposal location.
- 3 Cement Grouting has been also considered to prevent the seepage of water from the side wall of the tunnel. The grout mix shall have low or no bleedability and low shrinkage characteristics. Guniting to sides and arch of tunnel with cement mortar 1:3 proportion by weight is also considered for analysis.
- 4 Two types of material for shotcrete i.e. welded wire mesh and fiber reinforced micro silica has been considered.
- 5 Rock bolting, steel support and lining items are considered for analysis.
- 6 Permanent structural steel supports i.e. lattice girder has been also consider for analysis.
- 7 The basic rates are inclusive of scaling loose material, removal of under-cuts, cleaning bed and lighting and ventilation inside tunnel during construction.
- The items related to road works, drain, footpath, crash barrier, railing, kerb etc. of tunnel is covered under relevant Chapters. But overhead charges are applicable for tunnel work.
- 9 The basic rates are exclusive of cost of dewatering. Separate provision shall be made in the estimate for dewatering.
- 10 The rate for lighting, ventilation and firefighting items are required to be ascertained from the market, this being a commercially produced item by specialized firms.

Rate (Rs.)

18.01 304 Excavation in Ordinary Rock using Hydraulic Excavator and Tippers with Disposal upto 1000 meters. Excavation for Portal in Ordinary Rock with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output = 60 cum a) Labour	Sr No	Ref. to M	Description	Unit	Quantity
Mate Mazdoor J.330 b) Machinery Excavator 1.1 cum bucket capacity hour 9.778 Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 120.000 & 1 Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d Rate per cum = (a+b+c+d)/60 Excavation in Hard Rock (blasting prohibited) Excavation for Portal in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor b) Machinery Excavator 1.1 cum bucket capacity hour 11.951 Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d	18.01	304	and Tippers with Disposal upto 1000 meters. Excavation for Portal in Ordinary Rock with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum		
Mazdoor b) Machinery Excavator 1.1 cum bucket capacity hour 9.778 Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d)/60 18.02 303 & Excavation in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor b) Machinery Excavator .1.1 cum bucket capacity hour 11.951 Jack Hammer Loading & unloading charges for disposed of cum 60.000 grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d					
b) Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d Rate per cum = (a+b+c+d)/60 Excavation in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor b) Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of cum do.0000 grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			Mate	day	0.053
Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d) Rate per cum = (a+b+c+d)/60 Excavation in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor b) Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			Mazdoor	day	1.330
Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d Rate per cum = (a+b+c+d)/60 18.02 303 & Excavation in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor b) Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of cum 60.000 grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			b) Machinery		
Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 120.000 & 1.20000 & 1.2000 & 1.2000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.20000 & 1.200000 & 1.200000 & 1.200000 & 1.2000000000000000000000000000000000000					
grabbed material (Using by 10 cum capacity Tipper 8.1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d) Rate per cum = (a+b+c+d)/60 18.02 303 & Excavation in Hard Rock (blasting prohibited) Excavation for Portal in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate day 0.053 Mazdoor day 1.330 b) Machinery Excavator 1.1 cum bucket capacity hour 11.951 Jack Hammer hour 11.951 Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 cum capacity Loader) Tipper 10 cum capacity for transportation to t-km 100.000 dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d				hour	9.778
& 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d Rate per cum = (a+b+c+d)/60 18.02 303 & Excavation in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mate Mazdoor Mate Mazdoor Mate Mazdoor b) Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to t-km Credit for excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d				cum	
dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 60 cum = a+b+c+d Rate per cum = (a+b+c+d)/60 18.02 303 & Excavation in Hard Rock (blasting prohibited) Excavation for Portal in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate day 0.053 Machinery Excavator 1.1 cum bucket capacity hour 11.951 Loading & unloading charges for disposed of cum 60.000 grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity Coverhead charges @ on (a+b+c) Cost for 50 cum = a+b+c+d			& 1 Cum capacity Loader)		72.000
Rate per cum = (a+b+c+d)/60 18.02 303 & Excavation in Hard Rock (blasting prohibited) Excavation for Portal in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor Mazdoor Mazdoor Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			dumping yard considering lead @ 1km c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c)	t-km	120.000
18.02 303 & 304 Excavation in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate day 0.053 Mazdoor day 1.330 b) Machinery Excavator 1.1 cum bucket capacity hour 11.951 Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 cum capacity Loader) Tipper 10 cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d					
Excavation for Portal in Hard Rock (blasting prohibited) with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate day 0.053 Mazdoor day 1.330 b) Machinery Excavator 1.1 cum bucket capacity hour 11.951 Jack Hammer hour 11.951 Loading & unloading charges for disposed of cum 60.000 grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to t-km 100.000 dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			Rate per cum = (a+b+c+d)/60		
with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum a) Labour Mate Mazdoor Mazdoor Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to t-km 100.000 dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d	18.02		Excavation in Hard Rock (blasting prohibited)		
Mate Mazdoor Machinery Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity Cost for 50 cum = a+b+c+d d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and and disposal of excavated materials including all lifts and lead upto 1000m Unit = cum Taking output =50 cum		
Machinery Excavator 1.1 cum bucket capacity hour 11.951 Jack Hammer hour 11.951 Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			•	day	0.053
b) Machinery Excavator 1.1 cum bucket capacity hour 11.951 Jack Hammer hour 11.951 Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d				-	
Excavator 1.1 cum bucket capacity Jack Hammer Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d				uay	1.330
Jack Hammer hour 11.951 Loading & unloading charges for disposed of cum 60.000 grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d				hour	11 951
Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader) Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d					
dumping yard considering lead @ 1km Credit for excavated rock found suitable for use @ 50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			grabbed material (Using by 10 cum capacity Tipper	cum	
50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d			dumping yard considering lead @ 1km	t-km	100.000
Rate per cum = $(a+b+c+d)/50$			50 Percent of excavated quantity c) Overhead charges @ on (a+b) d) Contractor's profit @ on (a+b+c) Cost for 50 cum = a+b+c+d	cum	30.000

Sr No	Ref. to M		Description	Unit	Quantity	Rate (Rs.)
18.03	303	Excavation in So	il using Hydraulic Excavator and			
10.03	303		posal upto 1000 meters.			
			portal in soil with hydraulic excavator			
			g and loading in tippers, trimming			
		bottom and	side slopes, in accordance with			
		•	f lines, grades and cross sections, and			
		•	excavated materials including all lifts			
		and lead upto 10 Unit = cum	000111			
		Taking output =	350 cum			
		a) Labour				
		Mate		day	0.053	
		Mazdoor		day	1.330	
		b) Machinery		•		
		Excavator 1	.1 cum bucket capacity	hour	5.981	
		_	inloading charges for disposed of	hour	5.981	
		•	iterial (Using by 10 cum capacity Tipper			
			pacity Loader)	# l.ma	F3F 000	
			um capacity for transportation to rd considering lead @ 1km	t-km	525.000	
			charges @ on (a+b)			
		-	's profit @ on (a+b+c)			
		Cost for 350 cum				
		Rate per cum = ((a+b+c+d)/350			
18.04		Drill steel with I	Drill jumbo			
			tunnel by using drilling & blasting			
			Il types of rock including cost of all			
			inery, labour, scaling excavated surface, ition, lighting, drainage, removing and			
		•	cavated muck outside tunnel upto			
			area and all other ancillary operations			
		etc.	, .			
		Unit = cum				
		Taking output =	480 Cum			
		a) Labour				
		Mate		day	0.426	
		Mazdoor	1.99	day	7.980	
		Mazdoor (S	killed)	day	2.660	
		b) Machinery	a Undraulia Drill Iumba	haur	25.067	
		Excavator fo	n Hydraulic Drill Jumbo	hour hour	25.067 2.000	
			um capacity for transportation	tonne.km	480 x 2 x L	
			inloading charges(Using by 10 cum	tomic.km		
		_	per & 1 Cum capacity Loader)	cum	576.000	
		Dozer (175		hour	9.600	
		c) Materials				
		Explosives		Kg	576.000	
		Delay Detor	nators	Nos.	228.000	
		Electric Det		Nos.	35.000	
		Detonation		Meter	50.000	
		3.7 m long 6	extension rod	Nos	1.043	

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		Drifter rod	Nos	0.505	
		R32 shank adapter	Nos	1.043	
		45 mm Button Bit	Nos	3.692	
		Add 10 Percent of cost of a+b+c towards Other	1103	3.032	
		consumable petty stores such as blasting batteries,			
		galvanometers and sharpening charges of bit etc.			
		d) Overhead charges @ on (a+b+c)			
		e) Contractor's profit @ on (a+b+c+d)			
		Cost for 480 cum = a+b+c+d+e			
		Rate per cum = (a+b+c+d+e)/480			
18.05	304	Dewatering tunnel by pumping out water collected by			
		natural drainage inside tunnel including			
		Dewatering in tunnel by pumping out water collected by			
		natural drainage inside tunnel including providing sump			
		wherever necessary, cost of all materials, machinery,			
		labour, drainage and all other ancillary operations			
		etc.complete. Unit = Hour			
		Taking output = 20000 Hour			
		a) Labour			
		Mate	day	133.000	
		Mazdoor	day	3325.000	
		b) Machinery			
		Water Pump 10 HP	hour	20000.000	
		c) Materials			
		GI Pipe 100 mm Dia	Meter	500.000	
		Flange	Kg.	41.667	
		Nut & Bolt	Kg.	133.333	
		Bracket	Kg.	1125.000	
		Credit for salvage value of GI Pipe @ 30 Percent	Meter	150.000	
		d) Overhead charges @ on (a+b+c)			
		e) Contractor's profit @ on (a+b+c+d)			
		Cost for 20000 hour = $a+b+c+d+e$			
		Rate per hour = (a+b+c+d+e)/20000			
18.06		Providing, Fitting and Placing of Ribs			
		Providing, Fitting and Placing of Ribs including			
		Fabrication, Erection, Temporary fixture, Handling of			
		material inside fabrication workshop, final matching,			
		field welding and complete as per Drawing and			
		Technical Specifications. Unit = Tonne			
		Taking output = 26 Tonne			
		a) Labour			
		Mate	day	1.064	
		Mazdoor	day	13.300	
		Mazdoor(Semi Skilled)	day	6.650	
		Welder	day	6.650	
		b) Machinery	~~,	3.000	
		Rotating Telehandlers	hour	37.180	
		c) Materials			
		ISMB 350 (Including 0.25% Wastage)	Tonne	20.732	
		/			

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		MS Channel ISMC 75 (Including 0.25% Wastage)	Tonne	3.830	
		MS Plate 200 x 200 x 12 mm	Tonne	1.504	
		(Including 0.25% Wastage)			
		Nuts and bolts (M 16X40)	Kg	151.200	
		Add 40 Percent of cost of a+b+c towards of			
		Fabrication Erection, Temporary fixture, Handling of material, final matching and field welding etc.			
		d) Overhead charges @ on (a+b+c)			
		e) Contractor's profit @ on (a+b+c+d)			
		Cost for 26 Tonne = a+b+c+d+e			
		Rate per Tonne = (a+b+c+d+e)/26			
18.07	2807	Shotcreting with Steel fiber reinforced micro silica shotcrete (SFRS)			
		Shotcreting to upper bench / lower bench with steel			
		fiber reinforced shotcrete (SFRS), shotcrete compressive			
		strength shall be 25 N/mm2 and complete as per Drawing and Technical Specifications.			
		Unit = cum			
		Taking output =120 Cum			
		a) Labour			
		Mate	day	0.426	
		Mazdoor	day	10.640	
		b) Machinery			
		Batching Plant of capacity 120 cum/hour	hour	1.429	
		Generator 250 KVA	hour	1.429	
		Loader 3.1 cum capacity	hour	1.429	
		Transit truck agitator	***********	2001	
		For transportation (6 cum Capacity)	tonne.km	300 x L	
		For loading & unloading	hour	11.429	
		Shotcrete Machine @ 12 cum/hour	hour	10.000	
		Compressor 500 cfm	hour	10.000	
		c) Materials	Tana	40.440	
		Cement	Tonne	49.440	
		Sand	Cum	86.850	
		10 mm to 4.76 mm Aggregate	Cum	52.080	
		Steel Fiber	Tonne	6.120	
		Admixture @ 0.4 % of Cement	Kg	197.760	
		Micro silica @ 6 % of Cement	Kg	2966.400	
		Accelerator @ 4.5 % of Cement	Kg	2224.800	
		Add 20 Percent of cost of a+b+c for Wastage due to rebound.			
		d) Overhead charges @ on (a+b+c)			
		e) Contractor's profit @ on (a+b+c+d)			

Rate per Cum = (a+b+c+d+e)/120

Rate (Rs.)

Sr No	Ref. to M	Description	Unit	Quantity
18.08	2807	Shotcreting with welded wire mesh Shotcreting to upper bench / lower bench with welded wire mesh, shotcrete compressive strength shall be 25 N/mm2 and complete as per Drawing and Technical Specifications. Unit = cum Taking output =120 Cum		
		a) Labour		
		Mate	day	0.426
		Mazdoor	day	10.640
		b) Machinery		
		Batching Plant of capacity 120 cum/hour	hour	1.429
		Generator 250 KVA	hour	1.429
		Loader 3.1 cum capacity	hour	1.429
		Transit truck agitator		200 1
		For transportation (6 cum Capacity)	tonne.km	300 x L
		For loading & unloading	hour	11.429
		Shotcrete Machine @ 12 cum/hour	hour	10.000
		Compressor 500 cfm	hour	10.000
		c) Materials	Tonne	49.440
		Cement	Cum	86.850
		Sand	Cum	52.080
		10 mm to 4.76 mm Aggregate	Sqm	1320.000
		Wire mesh (Including 10% for lapping)	Kg	197.760
		Admixture @ 0.4 % of Cement	Kg	2966.400
		Micro silica @ 6 % of Cement Accelerator @ 4.5 % of Cement	Kg	2224.800
		Add 20 Percent of cost of a+b+c for Wastage due to rebound.	1.6	222 11000
		d) Overhead charges @ on (a+b+c)		
		e) Contractor's profit @ on (a+b+c+d)		
		Cost for 120 Cum = a+b+c+d+e		
		Rate per Cum = (a+b+c+d+e)/120		
18.09	2806 & 3200	Providing and fixing 25 mm diameter 3 meter long steel rock bolts including drilling 45 mm dia holes, plate, nuts, cement grout, cost of all materials, machinery, labour, ventilation, lighting, drainage and all other ancillary operations etc. complete as per Drawing and Technical Specifications. Unit = Number Taking output =155 Nos. a) Labour		
		Mate	day	0.638
		Mazdoor	day	10.640
		Mason (IInd class)	day	5.320
		b) Machinery	•	
		Single boom Hydraulic Drill Jumbo	hour	25.833

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		c) Materials			
		3.7 m long extension rod	Nos	1.011	
		R32 shank adapter	Nos	1.011	
		45 mm dia cross bit	Nos	3.577	
		25 mm Tor Steel (Including 2.5% Wastage)	Tonne	1.927	
		Add 15 Percent of cost of a+b+c towards cutting	TOTITIC	1.527	
		,making tip, Threading, nut , plate, grouting and bit sharpening etc			
		d) Overhead charges @ on (a+b+c)			
		e) Contractor's profit @ on (a+b+c+d)			
		Cost for 155 Nos = a+b+c+d+e			
		Rate per Number = (a+b+c+d+e)/155			
18.10	2806 & 3200	Providing and fixing 32 mm diameter 7 meter long steel rock bolts including drilling 51 mm dia holes, plate, nuts, cement grout, cost of all materials, machinery, labour, ventilation, lighting, drainage and all other ancillary operations etc. complete as per Drawing and Technical Specifications. Unit = Number Taking output =70 Nos. a) Labour			
		•	day	0.700	
		Mate Mazdoor	day day	0.798 13.300	
		Mason (IInd class)	day	6.650	
		b) Machinery	uay	0.030	
		Single Boom Hydraulic	hour	17.500	
		c) Materials		27.000	
		3.7 m long extension rod	Nos	1.065	
		R32 shank adapter	Nos	1.065	
		32 mm coupling sleeve	Nos	1.065	
		51 mm dia button bit	Nos	3.769	
		 32 mm Tor Steel (Including 2.5% Wastage) Add 15 Percent of cost of a+b+c towards cutting ,making tip, Threading, nut , plate, grouting and bit sharpening etc d) Overhead charges @ on (a+b+c) e) Contractor's profit @ on (a+b+c+d) Cost for 70 Nos = a+b+c+d+e Rate per Number = (a+b+c+d+e)/70 	Tonne	3.237	
18.11	2806	Grouting with Cement Grouting cement slurry in grout holes under specified pressure for consolidation / contact grouting including cost of all materials, machinery, labour, predrilling wherever necessary, ventilation, lighting, drainage and other ancillary operations etc. complete as per Drawing and Technical Specifications.			

Unit = Tonne

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		Taking output = 1.5 Tonne			
		a) Labour			
		Mate	day	0.106	
		Mazdoor	day	2.660	
		b) Machinery	h	4 200	
		Grouting machine @ 25 Bags Per Hours	hour	1.200	
		Pump 10 HP	hour	1.200	
		Single Boom Hydraulic c) Materials	hour	1.250	
		Cement Including 1% Wastage)	Tonne	1.515	
		Cost of water (Water/Cement Ratio - 0.4)	KL	0.606	
		3.7 m long extension rod	Nos	0.076	
		R32 shank adapter	Nos	0.076	
		32 mm coupling sleeve	Nos	0.076	
		51 mm dia cross bit	Nos	0.269	
		Add 5 Percent of cost of a+b+c towards cutting,			
		making tip, Threading, nut, plate, grouting and bit			
		sharpening etc			
		d) Overhead charges @ on (a+b+c)			
		e) Contractor's profit @ on (a+b+c+d)			
		Cost for 1.5 Tonne = a+b+c+d+e			
		Rate per Tonne = (a+b+c+d+e)/1.5			
18.12	1700	Furnishing and Placing Reinforced cement concrete in Tunnel Work as per drawing and Technical Specification			
18.12	1700 A	RCC Grade M20			
		Using Batching Plant, Transit Mixer and Concrete Pump			
		Unit = Cum			
		Taking output = 120 cum			
		a) Material			
		Per Cum Basic Cost (Rate taken from sub-analysis -21.05)	cum	120.000	
		Water for curing	ΚI	63.000	
		b) Labour	KI	03.000	
		For pouring and placing			
		Mate	day	0.317	
		Mason	day	1.995	
		Mazdoor	day	5.922	
		c) Machinery			
		Transit truck agitator			
		For transportation (6 cum Capacity) , L1 - lead in	tonne-	300 x L1	
		Kilometer	km		
		For unloading	hour	2.905	
		Hydraulic Boom placer pump	hour	2.905	
		Water tanker (speed @ 10 km/hr. and return			
		speed @ 15 km/hr. and 30 mins for unloading)	hour	1 167	
		(i) 12 KL capacity	hour	1.167 x L1 + 3.5	
		d) Formwork and staging 40 Percent of (a+b+c)		L1 T 3.3	
		f) Overhead charges @ on (a+b+c+d)			
		., Sternead dialges & on (arbitra)			

			T			
Sr No	Ref. to	οМ	Description	Unit	Quantity	Rate (Rs.)
			g) Contractor's profit @ on (a+b+c+d+e)			
			Cost for 120 cum = a+b+c+d+e+f			
			Rate per cum = $(a+b+c+d+e+f)/120$			
18.12	1700	В	RCC Grade M25			
10.11	1700		Using Batching Plant, Transit Mixer and Concrete Pump			
			Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.07)			
			Water for curing	KI	63.000	
			b) Labour			
			For pouring and placing Mate	J	0.247	
			Mason	day	0.317	
			Mazdoor	day	1.995	
			c) Machinery	day	5.922	
			Transit truck agitator			
			For transportation (6 cum Capacity) , L1 - lead in	tonne-	300 x L1	
			Kilometer	km	300 X LI	
			For unloading	hour	2.905	
			Hydraulic Boom placer pump	hour	2.905	
			Water tanker (speed @ 10 km/hr. and return			
			speed @ 15 km/hr. and 30 mins for unloading)			
			(i) 12 KL capacity	hour	1.167 x	
					L1 + 3.5	
			d) Formwork and staging 40 Percent of (a+b+c)			
			e) Overhead charges @ on (a+b+c+d) f) Contractor's profit @ on (a+b+c+d+e)			
			Cost for 120 cum = a+b+c+d+e+f			
			Rate per cum = (a+b+c+d+e+f)/120			
18.12	1700	С	RCC Grade M 30			
			Using Batching Plant, Transit Mixer and Concrete			
			Pump. Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.09)	cum	120.000	
			Water for curing	ΚI	63.000	
			b) Labour			
			For pouring and placing			
			Mate	day	0.317	
			Mason	day	1.995	
			Mazdoor	day	5.922	
			c) Machinery			
			Transit truck agitator			
			=			
			For transportation (6 cum Capacity) , L1 - lead in	tonne-	300 x L1	
			=	tonne- km hour	300 x L1 2.905	

Sr No	Ref. to	οМ	Description	Unit	Quantity	Rate (Rs.)
			Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)	hour	2.905	
			(i) 12 KL capacity	hour	1.167 x L1 + 3.5	
			d) Formwork and staging 40 Percent of (a+b+c)			
			e) Overhead charges @ on (a+b+c+d)			
			f) Contractor's profit @ on (a+b+c+d+e)			
			Cost for 120 cum = $a+b+c+d+e+f$			
			Rate per cum = (a+b+c+d+e+f)/120			
18.12	1700	D	RCC Grade M35			
			Using Batching Plant, Transit Mixer and Concrete Pump			
			Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.11)			
			Water for curing	KI	63.000	
			b) Labour			
			For pouring and placing	day	0.217	
			Mate Mason	day day	0.317 1.995	
			Mazdoor	day	5.922	
			c) Machinery	uay	3.322	
			Transit truck agitator			
			For transportation (6 cum Capacity) , L1 - lead in	tonne-	300 x L1	
			Kilometer	km	2.005	
			For unloading Hydraulic Boom placer pump	hour hour	2.905 2.905	
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)	noui	2.903	
			(i) 12 KL capacity	hour	1.167 x	
			,,		L1 + 3.5	
			d) Formwork and staging 40 Percent of (a+b+c)			
			e) Overhead charges @ on (a+b+c+d)			
			f) Contractor's profit @ on (a+b+c+d+e)			
			Cost for 120 cum = a+b+c+d+e+f			
			Rate per cum = (a+b+c+d+e+f)/120			
18.12	1700	E	RCC Grade M-40			
			Using Batching Plant, Transit Mixer and Concrete Pump			
			Unit = Cum			
			Taking output = 120 cum a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.12)			
			Water for curing	KI	63.000	
			b) Labour			
			For pouring and placing			
			Mate	day	0.317	

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		Mason	day	1.995	
		Mazdoor	day	5.922	
		c) Machinery			
		Transit truck agitator	tonno	200 v l 1	
		For transportation (6 cum Capacity) , L1 - lead in Kilometer	n tonne- km	300 x L1	
		For unloading	hour	2.905	
		Hydraulic Boom placer pump	hour	2.905	
		Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading))		
		(i) 12 KL capacity	hour	1.167 x L1 + 3.5	
		d) Formwork and staging 40 Percent of (a+b+c)			
		e) Overhead charges @ on (a+b+c+d)			
		f) Contractor's profit @ on (a+b+c+d+e)			
		Cost for 120 cum = $a+b+c+d+e+f$			
		Rate per cum = (a+b+c+d+e+f)/120			
18.12	1700 F	RCC Grade M-45			
		Unit = Cum			
		Taking output = 120 cum			
		a) Material			
		Per Cum Basic Cost (Rate taken from sub-analysis -21.13)	cum	120.000	
		Water for curing	KI	63.000	
		b) Labour			
		For pouring and placing			
		Mate	day	0.317	
		Mason	day	1.995	
		Mazdoor	day	5.922	
		c) Machinery			
		Transit truck agitator			
		For transportation (6 cum Capacity) , L1 - lead in Kilometer	n tonne- km	300 x L1	
		For unloading	hour	2.905	
		Hydraulic Boom placer pump	hour	2.905	
		Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)		
		(i) 12 KL capacity	hour	1.167 x L1 + 3.5	
		d) Formwork and staging 40 Percent of (a+b+c)			
		e) Overhead charges @ on (a+b+c+d)			
		f) Contractor's profit @ on (a+b+c+d+e)			
		Cost for 120 cum = a+b+c+d+e+f			
		Rate per cum = (a+b+c+d+e+f)/120			

Sr No	Ref. to	м	Description	Unit	Quantity	Rate (Rs.)
18.12	1700	G	RCC Grade M-50			
			Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.14)			
			Water for curing	Kl	63.000	
			b) Labour			
			For pouring and placing			
			Mate	day	0.317	
			Mason	day	1.995	
			Mazdoor	day	5.922	
			c) Machinery			
			Transit truck agitator			
			For transportation (6 cum Capacity) , L1 - lead in Kilometer	tonne-	300 x L1	
				km	2.005	
			For unloading	hour	2.905	
			Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)	hour	2.905	
			(i) 12 KL capacity	hour	1.167 x	
			(i) 12 N2 capacity	noui	L1 + 3.5	
			e) Overhead charges @ on (a+b+c+d) f) Contractor's profit @ on (a+b+c+d+e) Cost for 120 cum = a+b+c+d+e+f Rate per cum = (a+b+c+d+e+f)/120			
18.12	1700	н	RCC Grade M- 55			
			Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.15)	Kl	63.000	
			Water for curing b) Labour	NI	65.000	
			For pouring and placing			
			Mate	day	0.317	
			Mason	day	1.995	
			Mazdoor	day	5.922	
			c) Machinery			
			Transit truck agitator			
			For transportation (6 cum Capacity) , L1 - lead in Kilometer	tonne- km	300 x L1	
			For unloading	hour	2.905	
			Hydraulic Boom placer pump Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading)	hour	2.905	
			(i) 12 KL capacity	hour	1.167 x	
					L1 + 3.5	
			d) Formwork and staging 40 Percent of (a+b+c)			

Sr No	Ref. to	М	Description	Unit	Quantity	Rate (Rs.)
			e) Overhead charges @ on (a+b+c+d)			
			f) Contractor's profit @ on (a+b+c+d+e)			
			Cost for 120 cum = a+b+c+d+e+f			
			Rate per cum = $(a+b+c+d+e+f)/120$			
18.12	1700	- 1	RCC Grade M- 60			
			Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.16)			
			Water for curing	Kl	63.000	
			b) Labour			
			For pouring and placing			
			Mate	day	0.317	
			Mason	day	1.995	
			Mazdoor	day	5.922	
			c) Machinery			
			Transit truck agitator			
			For transportation (6 cum Capacity), L1- lead in	tonne-	300 x L1	
			Kilometer	km		
			For unloading	hour	2.905	
			Hydraulic Boom placer pump	hour	2.905	
			Water tanker (speed @ 10 km/hr. and return			
			speed @ 15 km/hr. and 30 mins for unloading)	haur	1 167 4	
			(i) 12 KL capacity	hour	1.167 x L1 + 3.5	
			d) Formwork and staging 40 percent of (a+b+c)		LI + 3.3	
			e) Overhead charges @ on (a+b+c+d)			
			f) Contractor's profit @ on (a+b+c+d+e)			
			Cost for 120 cum = a+b+c+d+e+f			
			Rate per cum = $(a+b+c+d+e+f)/120$			
40.42	4700		DCC Conductor CC			
18.12	1700	J	RCC Grade M- 65 Unit = Cum			
			Taking output = 120 cum			
			a) Material			
			Per Cum Basic Cost	cum	120.000	
			(Rate taken from sub-analysis -21.17)	Cum	120.000	
			Water for curing	ΚI	63.000	
			b) Labour	IXI	03.000	
			For pouring and placing			
			Mate	day	0.317	
			Mason	day	1.995	
			Mazdoor	day	5.922	
			c) Machinery	1	-	
			Transit truck agitator			
			For transportation (6 cum Capacity) , L1 - lead in	tonne-	300 x L1	
			Kilometer	km		
			For unloading	hour	2.905	
			Hydraulic Boom placer pump	hour	2.905	
			, , , , ,			

Sr No	Ref. to M		Description	Unit	Quantity	Rate (Rs.)
			Water tanker (speed @ 10 km/hr. and return speed @ 15 km/hr. and 30 mins for unloading) (i) 12 KL capacity	hour	1.167 x L1 + 3.5	
		d)	Formwork and staging 40 Percent of (a+b+c)		21 . 3.3	
		-	Overhead charges @ on (a+b+c+d)			
		-	Contractor's profit @ on (a+b+c+d+e)			
		-	st for 120 cum = a+b+c+d+e+f			
			te per cum = (a+b+c+d+e+f)/120			
18.13	1600	in 1	oplying, fitting and placing HYSD bar reinforcement Funnel Work complete as per drawing and technical ecifications			
		Uni	it = MT			
		Tak	king output = 8 MT			
		a)	Material			
			MS bars including 5 Percent overlaps and wastage	tonne	8.400	
			Binding wire	Kg	48.000	
		b)	Labour for straightening, cutting, bending, shifting to site, tying and placing in position			
			Mate	day	0.213	
			Blacksmith	day	1.330	
			Mazdoor	day	3.990	
		c)	Machinery			
			Cutting Machine	hour	8.000	
			Bending Machine	hour	8.000	
			Electric generator 15 KVA	hour	8.000	
			Tipper			
			Tipper for Transportation			
			(i) 14 cum capacity	t.km	8 x L1	
			Loading & Unloading Time	hour		
			(i) 14 cum capacity	hour	2.000	
			Light weight Crane			
			At cutting bending yard	hour	2.000	
			At site	hour	2.000	
		d)	Overhead charges @ on (a+b+c)			
		e)	Contractor's profit @ on (a+b+c+d)			
			st for 8 MT (a+b+c+d+e)			
		Rat	te for per MT (a+b+c+d+e)/8			

CHAPTER - 19

ENVIRONMENTAL MANAGEMENT & BIO ENGINEERING

PREAMBLE:

- 1. The items of Bio-Engineering comprising Bamboo crib wall, Fascines, Brush Layers, Palisades in Rills & Slopes, Seeding and Mulching have been included in the chapter to stabilize hill slopes.
- 2. Seeding and mulching has been included as earth work to stabilize the cut and fill slope in plane
- 3. To attenuate the environmental pollution generated during construction and operation stage, three type of preventive measures have been provided
 - a) Dust suppression
 - b) Noise Barrier
 - c) Silt fencing

The selection of the attenuation factor will be based on site situation and the sensitive receptors.

- 4. The analysis of rates for Environmental Monitoring Air, Water, Noise & Soil has been included to cater with the compliance submission to SPCB & MoEF&CC.
- 5. The rates for consent approval from SPCB & CPCB for Consent to Establish (CtE) and Consent to Operate (CtO) for setting of Plant has been estimate and considered.
- 6. The cost of Environment and Social Workshops to create awareness to the locals, NGOs, etc. has been evaluated.
- 7. The estimates for compensatory afforestation though proposed by the forest authority and those planted in the median by contractor has been analysed and included in rate list.
- 8. The overhead charges will be applicable of Road Works for this chapter.
- 9. The cost of maintenance for plantation has been considered and included for the purpose of estimation.

					Quantity a	s per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
					•			
19.01	Suggestive	Noise Barr	iers					
	(i)	Masonry w	rall					
	(1)	Unit = cum						
			put = 5 Cum					
		a) Mater						
		•	Ist class	each	2500.000	2500.000	2500.000	
		Ceme	nt mortar 1:3 (Rate as	cum	1.200	1.200	1.200	
		sub-ar	nalysis)					
			for curing	KL	2.415	2.415	2.415	
		b) Labou	r					
		Mate		day	0.586	0.586	0.586	
		Masor		day	4.000	4.000	4.000	
		Mazdo c) Machi		day	10.640	10.640	10.640	
			tanker (speed @ 10					
			. and return speed @					
			/hr. and 30 mins for					
		unload						
		(i) 16 I	KL capacity	hour	0.034 x L1 +			
					0.101			
		(ii) 12	KL capacity	hour		0.045 x		
						L1 +		
		/:::\ C I	/L canacity	haum		0.134	0.000 v.11	
		(111) 6 1	KL capacity	hour			0.089 x L1 + 0.268	
		d) Over	head charges		@ on	@ on	@ on	
		<i>u,</i> 010.	au enu geo		(a+b+c)	(a+b+c)	(a+b+c)	
		e) Cont	ractor's profit		@ on	@ on	@ on	
					(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
			Cum = a+b+c+d+e					
		Kate per C	um = (a+b+c+d+e) /5					
	(ii)	Galvanized	steel plain sheet					
		Unit = sqm						
			put = 100 sqm					
		a) Labou	r					
		Mate		day	0.073	0.073	0.073	
		blacks		day	0.500	0.500	0.500	
		Mazdo b) Mate r		day	1.330	1.330	1.330	
		•	nized steel plain sheet	Kg	3.150	3.150	3.150	
) including 5%	ι/β	3.130	3.130	5.150	
		wasta						
		MS Ar		Kg	154.500	154.500	154.500	
			O Percent of cost of					
			owards of drilling , nut					
		& bolt				_	_	
		c) Overh	lead charges		@ on (a+b)	@ on	@ on	
		d) Contr	actor's profit		@ on	(a+b) @ on	(a+b) @ on	
		u, contr	actor 3 profit		(a+b+c)	(a+b+c)	(a+b+c)	
		Cost for 10	0 sqm = a+b+c+d		(3.2.0)	(= : • • •)	(= : = : 0)	
			ım = (a+b+c+d)/100					

Note :- Rate for excavation, cement concrete M-25 and painting may be taken from respective chapters

CHAPTER: 19 - ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sr No. Pef to	D-f 4- 84	Description		11	Quantity a	s per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
	(iii)	Acr	ylic noise barrier sheet					
			t = sqm					
		Tak	ing output = 100 sqm					
		a)	Labour					
			Mate	day	0.073	0.073	0.073	
			blacksmith	day	0.500	0.500	0.500	
			Mazdoor	day	1.330	1.330	1.330	
		b)	Material					
			Acrylic noise barrier sheet	Sqm	105.000	105.000	105.000	
			(3 mm) including 5% wastage					
			_	Vα	154.500	154.500	154.500	
			MS Angle	Kg	154.500	154.500	154.500	
			Add 10 Percent of cost of					
			a+b towards of drilling, nut					
		-1	& bolt etc		0	0	0	
		c)	Overhead charges		@ on	@ on	@ on	
		-11	Cantus stanlanas (t		(a+b)	(a+b)	(a+b)	
		d)	Contractor's profit		@ on	@ on	@ on	
		6	t for 100 come and to a d		(a+b+c)	(a+b+c)	(a+b+c)	
			t for 100 sqm = a+b+c+d					
		Nat	e per sqm = (a+b+c+d) /100					
19.02	Suggestive	wal and	nstruction of bamboo crib I complete as per drawing I additional Technical cification.					
		Uni	t = Rm					
		Tak	ing output = 1 Rm					
		a)	Labour					
		•	Mate	day	0.021	0.021	0.021	
			Mazdoor skilled	day	0.133	0.133	0.133	
			Mazdoor	day	0.399	0.399	0.399	
		b)	Machinery					
			Water tanker 6 KL capacity	hour	0.008	0.008	0.008	
		c)	Materials					
			Bamboos (For Horizontal	Rm	4.000	4.000	4.000	
			Beam) Live Stake Stump / Bamboos	Rm	1.500	1.500	1.500	
			(Vertical)					
			Live Stake Stump / Bamboos	Rm	1.000	1.000	1.000	
			(Horizontal)					
			Binding Material	Rm	2.000	2.000	2.000	
			Cost of Water	KL	0.050	0.050	0.050	
			Grass	Kg	1.500	1.500	1.500	
		d)	Overhead charges		@ on	@ on	@ on	
		۵۱	Contractor's profit		(a+b+c)	(a+b+c)	(a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cor	t for 1 RM = a+b+c+d+e		(a+D+C+Q)	(aTDTC+U)	(a+b+c+u)	
			e per Rm = (a+b+c+d+e)					
		ndl	e per mii - (atututute)					

				Quantity a	s per project	category	Rate
Sr No	Ref. to M	Description	n Unit	Large	Medium	Small	(Rs.)
19.03	Suggestive	Construction of Fascir bundle of sticks comp drawing and addition Technical specificatio Unit = Rm	lete as per al				
		Taking output = 10 Rr	n				
		a) Labour					
		Mate	day	0.133	0.133	0.133	
		Mazdoor skilled	day	0.665	0.665	0.665	
		Mazdoor	day	2.660	2.660	2.660	
		b) Machinery					
		Tractor-trolley	hour	1.000	1.000	1.000	
		c) Material					
		Hard wood sticks	Nr	8.000	8.000	8.000	
		Binding Material	Rm	5.000	5.000	5.000	
		d) Overhead charge) Contractor's pro		@ on (a+b+c) @ on	@ on (a+b+c) @ on	@ on (a+b+c) @ on	
		-,		(a+b+c+d)	(a+b+c+d)	(a+b+c+d)	
		Cost for 10 Rm = a+b+	c+d+e				
		Rate per Rm = (a+b+c	+d+e)/ 10				
19.04	Suggestive	Contraction and layir Layers across the complete as per and additional specification. Unit = sqm	ne slope drawing Technical				
		Taking output = 100 s	am				
		a) Labour	۹				
		Mate	day	0.160	0.160	0.160	
		Mazdoor for prep ground		3.990	3.990	3.990	
		b) Machinery					
		Water tanker 6 K including waterin months		2.000	2.000	2.000	
		Tractor-trolley	hour	0.500	0.500	0.500	
		c) Material					
		Live Sods (.6m Le	ngth) Nr	1000.000	1000.000	1000.000	
		Farm yard manur cum per 100 sqm work		0.180	0.180	0.180	
		Cost of water	KL	12.000	12.000	12.000	
		Grass	Kg	100.000	100.000	100.000	
		d) Overhead charg	es	@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e) Contractor's pro		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
		Cost for 100 sqm = a+					
		Rate per sqm = (a+b+	c+d+e)/ 100				

					Quantity a	s per project	category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
19.05	Suggestive	Pali wo dra Tec Uni	nstruction of vegetative isades in Rills using hard od cutting complete as per wing and additional hnical specification. t = Rm					
			ing output = 2 Rm Labour					
		aj	Mate	day	0.019	0.019	0.019	
			Mazdoor skilled	day	0.133	0.133	0.133	
			Mazdoor	day	0.354	0.354	0.354	
		b)	Machinery					
		c)	Tractor-trolley Material	hour	0.250	0.250	0.250	
		•	Horizontal Live Sods (2M Length)	Nr	2.000	2.000	2.000	
			Vertical Live Sods (2 M Length)	Nr	40.000	40.000	40.000	
			Cost of water	KL	0.100	0.100	0.100	
			Binding Material	Rm	5.000	5.000	5.000	
		d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	
		Cos	t for 2 M = a+b+c+d+e			,		
		Rat	e per Rm = (a+b+c+d+e)/ 2					
19.06	Suggestive	con add spe Uni	ing of Palisades in Slopes nplete as per drawing and litional Technical cification. t = sqm ling output = 100 sqm					
		a)						
			Mate Mazdoor for preparation of ground	day day	0.160 3.990	0.160 3.990	0.160 3.990	
		b)	Machinery Water tanker 6 kl including watering for 3 months	hour	2.000	2.000	2.000	
		c)	Tractor-trolley Material	hour	0.500	0.500	0.500	
		٠,	Live Sods (.6m Length)	Nr	1000.000	1000.000	1000.000	
			Farm yard manure @ 0.18 cum per 100 sqm at site of work	cum	0.180	0.180	0.180	
			Cost of water	KL	12.000	12.000	12.000	
			Grass	Kg	100.000	100.000	100.000	
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	
		e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)	
			t for 100 sqm = a+b+c+d+e e per sqm = (a+b+c+d+e)/ 100					

C:: N -	D-f 4- 84	December 1	11	Quantity a	s per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
19.07	Suggestive	Dust suppression Sprinkling of water in the settlement and working area as per instruction of Engineer. Unit = 6 KL Taking output = 6 KL a) Labour Mate Mazdoor b) Machinery Water tanker 6 KL capacity c) Materials Cost of Water d) Overhead charges e) Contractor's profit Cost for 6 KL = a+b+c+d+e	day day hour KL	0.011 0.266 0.750 6.000 @ on (a+b+c) @ on (a+b+c+d)	0.011 0.266 0.750 6.000 @ on (a+b+c) @ on (a+b+c+d)	0.011 0.266 0.750 6.000 @ on (a+b+c) @ on (a+b+c+d)	(11.5.7)
19.08	Suggestive	Water Quality Monitoring (Grab Sample as per the monitoring locations mention in the EIA/EMP report or one sample/10 km length Unit = Number Taking output = One Number a) Cost of Water Quality Monitoring b) Overhead charges c) Contractor's profit Rate per number = a+b+c	Nos.	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @ on (a+b)	
19.09	Suggestive	Soil Quality Monitoring (Grab Sample as per the monitoring locations mention in the EIA/EMP report or one sample/10 km length Unit = Number Taking output = One Number a) Cost of Soil Quality Monitoring b) Overhead charges c) Contractor's profit Rate per number = a+b+c	Nos.	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @ on (a+b)	

C# No	Dof to M	Description	l lmit	Quantity a	as per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
19.10	Suggestive	Ambient Air Quality Monitoring 24 hrs continuous for location as mention in the EIA/EMP report or one monitoring location within 10 km radius					
		Unit = Number					
		Taking output = One Number					
		a) Cost of Ambient Air Quality	Nos.	1.000	1.000	1.000	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per number = a+b+c					
19.11	Suggestive	Ambient Noise Monitoring 24 hour continuous (To be carried out as per the location mention in the EIA/EMP report Unit = Number					
		Taking output = One Number a) Cost of Ambient Noise Monitoring 24 hour continuous	Nos.	1.000	1.000	1.000	
		b) Overhead chargesc) Contractor's profitRate per number = a+b+c		@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	
		Kate per number – a+b+c					
19.12	Suggestive	Consent Approvals (Once) Unit = Number					
	(i)	 Taking output = One Number a) Consent to Establish (CTE) b) Overhead charges c) Contractor's profit Rate per number = a+b+c 	Nos.	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @on (a+b)	1.000 @ on (a) @ on (a+b)	
	(ii)	 a) Consent to Operate (CTO) b) Overhead charges c) Contractor's profit Rate per number = a+b+c 	Nos.	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @ on (a+b)	1.000 @ on (a) @ on (a+b)	
19.13	Suggestive	Compliance submission for Consent Approvals (Half Yearly) Unit = Number Taking output = One Number					

Cr N-	Dof to M	Description	l lmit	Quantity a	s per project	category	Rat
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs
	(i)	a) compliance submission for Consent to Establish (CTE)	Nos.	1.000	1.000	1.000	
		b) Overhead charges c) Contractor's profit		@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	@ on (a) @ on (a+b)	
		Rate per number = a+b+c					
	(ii)	a) compliance submission for Consent to Operate (CTO)	Nos.	1.000	1.000	1.000	
		b) Overhead charges		@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per number = a+b+c					
19.14	Suggestive	Environmental Clearance Compliance (Half Yearly) Unit = Number					
		Taking output = One Number a) Cost of Workshop	Nos.	1.000	1.000	1.000	
		b) Overhead charges	NOS.	@ on (a)		@ on (a)	
		c) Contractor's profit			@ on (a)		
		c, communication of process		@ on (a+b)	@ on (a+b)	@ on (a+b)	
		Rate per number = a+b+c		(a+D)	(= =,	(2 2)	
19.15	Suggestive	Environmental Workshops (Half Yearly) Unit = Number Taking output = One Number					
		a) Cost of Workshop	Nos.	1.000	1.000	1.000	
		b) Overhead charges	1403.	@ on (a)	@ on (a)	@ on (a)	
		c) Contractor's profit		@ on	@ on	@ on (a)	
		Rate per number = a+b+c		(a+b)	(a+b	(a+b	
		nate per namber – a to te					
19.16	Suggestive	Pollution prevention Silt fencing on either side of the streams and rivers including erection and maintenance for entire construction phase. Unit = Rm Taking output = 100 Rm a) Labour					
		Mate	day	0.106	0.106	0.106	
		Mazdoor	day	2.660	2.660	2.660	
		b) Machinery Tractor-trolley	hour	2.000	2.000	2.000	
		c) Material Silt Fence Sheet	Sqm	100.000	100.000	100.000	
		Hard wood sticks	Nos.	34.000	34.000	34.000	
		d) Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)	

6	D. f	5 · ··		Quantity a	s per project	category	Rate
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)
·		e) Contractor's profit		@ on	@ on (a+b+c+d)	@ on (a+b+vc+d)	
		Cost for 100 Rm= a+b+c+d+e Rate per Rm = (a+b+c+d+e)/100		(a+b+c+d)	(a.b.c.a)	(u.p.vc.u)	
		Kate per Kill – (a+b+C+d+e)/100					
19.17		Road Safety Audit during Construction Period & Maintenance Period Road Safety Audit during Construction Period & Maintenance Period including collection of Road accident	d				
		data and analysis of fatal and grievously injured accident with black spot identification report, submission of GAP report, Road Safety Audit	(1				
		Reports on all activities which were planned, actually executed and planned for the next quarter report Submission of audit report of work	d ,				
		zone safety, workshop report and Final Safety report complete as per IRC-SP-88 and directed by engineer.	ł				
		Unit = Kilometer					
		Upto 50.00 Kilometer a) Experts/Key Personnel Sr. Road Safety/Auditor/ Team					
		Leader Traffic Planner	Montl Montl	-	4 6	4 6	
		b) Boarding & Loading Boarding & Loading and Per Diem for Site Visits.	Days	90.000	90.000	90.000)
		Transportation at site and Head Office	No. of Trip	f 20.000	20.000	20.000	ט
		Duty travel to Site c) Reports and Documents Cost Collection of Road accident data	Days	90.000	90.000	90.000)
		and analysis of fatal and grievously injured accident with black spot identification	No. of Copie:	5	5	5	
		Submission of GAP report	No. of Copies	5	5	5	
		Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of	5	5	5	
		Submission of audit report of work zone safety	No. of Copies		5	5	
		workshop report.	No. of		5	5	
		Final Safety report	No. of	f 5	5	5	

C:: No	Dof to M	Docarintian	l losta	Quantity as per p	as per project	r project category	
Sr No	Ref. to M	Description	Unit	Large	Medium	Small	(Rs.)

Copies

	d)	Add 10 percent of cost of a+b+c as Miscellaneous work Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ on (a+b+c)
	e)	Contractor's profit		@ on (a+b+c+d)	@ on (a+b+c+d)	@ on (a+b+c+d)
	Rat	e for Upto 50.00 Kilometer = (a+b+c+	d+e)			
В	Bet a)	ween 50.00 Km. to 100.00 Km. Experts/Key Personnel				
	aj	Sr. Road Safety/Auditor/ Team Leader	Month	6	6	6
	b)	Traffic Planner	Month	8	8	8
	-	Boarding & Loading and Per Diem for Site Visits.		126.000	126.000	126.000
		Transportation at site and Head Office		20.000	20.000	20.000
	c)	Duty travel to Site Reports and Documents Cost		126.000	126.000	126.000
	-,	Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5
		Submission of GAP report	No. of Copies	5	5	5
		Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter	No. of Copies	5	5	5
		Submission of audit report of work zone safety	No. of Copies	5	5	5
		Workshop report.	No. of Copies	5	5	5
		Final Safety report	No. of Copies	5	5	5
		Add 10 percent of cost of a+b+c as Miscellaneous work				
	d) e)	Overhead charges Contractor's profit		@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)	@ on (a+b+c) @ on (a+b+c+d)

Rate for 50.00 to 100.00 Kilometer = (a+b+c+d+e)

CHAPTER: 19 - ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

C:: No	or No Ref. to M		Description	Unit	Quantity as	per project cat	egory	Rate
Sr NO	Ker. to ivi		Description	Large		Medium	Small	(Rs.)
19.17	С	Mo a)	ore than 100 Km. Experts/Key Personnel					
			Sr. Road Safety/Auditor/ Team Leader	Month	8	8	8	
		b)	Traffic Planner Boarding & Loading	Month	10	10	10	
		-,	Boarding & Loading and Per Diem for Site Visits.		162.000	162.000	162.00	0
			Transportation at site and Head Office		20.000	20.000	20.000)
		c)	Duty travel to Site Reports and Documents Cost		162.000	162.000	162.00	0
		٠,	Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	
			Submission of GAP report	No. of Copies	5	5	5	
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	
			Submission of audit report of work zone safety	No. of Copies	5	5	5	
			workshop report.	No. of Copies	5	5	5	
			Final Safety report	No. of Copies	5	5	5	
			Add 1 percent of cost of a+b+c as Miscellaneous work					
		d)	Overhead charges		@ on (a+b+c)	@ on (a+b+c)	@ or (a+b+c	
		e)	Contractor's profit		@ on (a+b+c+d	@ on	@ or (a+b+c+	1

Rate for More than 100.00 Kilometer = (a+b+c+d+e)

19.18 IRC-SP-88 Road Safety Audit during Maintenance Period

Road Safety Audit during Maintenance Period including collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification report, submission of GAP report, Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter report, submission of audit report of work zone safety (Maintenance work), workshop report and Final Safety report complete as per IRC-SP-88 and directed by engineer.

N	D-f + **	ef. to M Description		l lm²s	Quantity as per project category			
No	Ref. to M		Description	Unit	Large	Medium	Small	(R
		Hni	it = Kilometer					
	Α		to 50.00 Kilometer					
		a)	Experts/Key Personnel Sr. Road Safety/Auditor/ Team					
			Leader	Month	2	2	2	
			Traffic Planner	Month	3	3	3	
		b)	Boarding & Loading					
			Boarding & Loading and Per Diem for Site Visits.	Days	45.000	45.000	45.000)
			Transportation at site and Head	No. of	20.000	20.000	20.000	_
			Office	Trip	20.000	20.000	20.000	J
			Duty travel to Site	Days	45.000	45.000	45.000)
		c)	Reports and Documents Cost					
			Collection of Road accident data					
			and analysis of fatal and	No. of	5	5	5	
			grievously injured accident with black spot identification	Copies		J		
			Submission of GAP report	No. of Copies	5	5	5	
			Road Safety Audit Reports on all	Copics				
			activities which were planned,	No. of	_	_	_	
			actually executed and planned for	Copies	5	5	5	5
			the next quarter					
			Submission of audit report of work	No. of				
			zone safety (Maintenance work)	Copies	5	5	5	
				No. of				
			workshop report.	Copies	5	5	5	
			Final Safety report	No. of	5	5	5	
			, .	Copies	-			
			Add 10 percent of cost of a+b+c as Miscellaneous work					
		ال.			@ on	@ on	@ or	,
		d)	Overhead charges		(a+b+c)	(a+b+c)	(a+b+c	
		e)	Contractor's profit		`@ on	`@ on	`@ or	-
					(a+b+c+d) (a+b+c+d)	(a+b+c+	-d)
		Rat	e for Upto 50.00 Kilometer = (a+b+c	+d+e)				
	В	Bet	ween 50.00 Km. to 100 Km.					
		a)	Experts/Key Personnel					
			Sr. Road Safety/Auditor/ Team	N/an+h	ว	2	า	
			Leader	Month	3	3	3	
			Traffic Planner	Month	4	4	4	
		b)	Boarding & Loading					
			Boarding & Loading and Per Diem for Site Visits.	Days	45.000	45.000	45.000)
			Transportation at site and Head	No. of	20.000	20.000	20.000)
			Office	Trip				
			Duty travel to Site	Days	45.000	45.000	45.000	J

C. N.	D-6 +- 04		Description	11	Quantity as per project categor		category	Rate
Sr No	Ref. to M		Description	Unit	Large	Medium	Small	(Rs.)
		c)	Reports and Documents Cost					
			Collection of Road accident data	NI	£			
			and analysis of fatal and	No. o	5	5	5	
			grievously injured accident with	Copie	5			
			black spot identification	No. o	f			
			Submission of GAP report	Copie	5	5	5	
			Road Safety Audit Reports on all	Соріс	3			
			activities which were planned,	No. o	f			
			actually executed and planned for		5	5	5	
			the next quarter					
			Submission of audit report of	No. o	f			
			work zone safety (Maintenance	Copie	s 5	5	5	
			work)					
				No. o				
			Workshop report.	Copie	s 5	5	5	
				No. o	f			
			Final Safety report	Copie		5	5	
			That surety report	Соріс	3	J	3	
			Add 10 percent of cost of a+b+c as Miscellaneous work					
		d)	Overhead charges		@ on	_	_	
		٠,١	Country at only mustice		(a+b+c	-		-
		e)	Contractor's profit		@ on (a+b+c+	_	_	
		Ra	te for 50.00 to 100.00 Kilometer = (a+b+c+d+e	•	u, (u.b.c.	a, (a.b.c.	u,
					•			
	С	Mo	ore than 100 Km.					
		a)	Experts/Key Personnel					
			Sr. Road Safety/Auditor/ Team	Mont	h 4	4	4	
			Leader					
			Traffic Planner	Mont	h 5	5	5	
		b)	Boarding & Loading					
			Boarding & Loading and Per Diem for Site Visits.	Days	45.000	45.000	45.00	0
			Transportation at site and Head	No. o	f			
			Office	Trip	20 000	20.000	20.00	0
			Duty travel to Site	Days		45.000	45.00	0
		c)	Reports and Documents Cost					
			Collection of Road accident data					
			and analysis of fatal and	No. o	5	5	5	
			grievously injured accident with	Copie	s	3	J	
			black spot identification					
			Submission of GAP report	No. o	f 5	5	5	
			Tabilition of Grif report	Copie		J	3	
				- 1				
			Road Safety Audit Reports on all	No. o	5	5	5	
			activities which were planned,	Copie	s	J	3	
			actually executed and planned for	-				
			P a g e l 76 4	<u> </u>				_

CHAPTER: 19 - ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

C N -	D-f +- 04	D	Unit	Quantity a	s per project cat	egory	Rate
Sr No	Kef. to IVI	Ref. to M Description		Large	Medium	Small	(Rs.)
		the next quarter Submission of audit report of work zone safety (Maintenance	No. oʻ Copie	5	5	5	
		work) Workshop report.	No. o	f 5	5	5	
		Final Safety report	No. o Copie	5	5	5	
		Add 10 percent of cost of a+b+c as Miscellaneous work					
	d)	Overhead charges		@ on (a+b+c)	_	@ on (a+b+c)	
	e)	Contractor's profit		`@ on (a+b+c+c	@ on	@ on	
	R	ate for More than 100.00 Kilometer	= (a+b+c+d	+e)	•	-	-

CHAPTER - 20

USAGE RATES OF PLANT AND MACHINERY

PREAMBLE:

1. The hourly owning and operating cost of equipment comprises the following elements:

a) Ownership Cost

- i) Interest on capital investment;
- ii) Insurance cost; and
- iii) Depreciation cost.
- iv) Taxes and duties: This list is just indicative

b) Operational Cost

- i) Fuel/energy and lubricants charges;
- ii) Operation and maintenance crew charges;
- iii) Repair charges; and
- iv) Miscellaneous supplies

CHAPTER: 20 - USAGE RATES OF PLANT AND MACHINERY

SI. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
1	Dozer - 240 HP	Spreading Cutting Clearing	240	Hour	6446.00
2	Dozer - 175 HP	Spreading Cutting Clearing	175	Hour	4971.00
3	Dozer - 90 HP	Spreading Cutting Clearing	90	Hour	3401.00
4	Motor Grader 4.3 metre blade	Clearing Scarifying Spreading GSB WMM	186	Hour	5991.00
5	Motor Grader 3.7 metre blade	Clearing Scarifying Spreading GSB WMM	171	Hour	5497.00
6	Motor Grader 3.35 metre blade	Clearing Scarifying Spreading GSB WMM	110	Hour	4796.00
7	Hydraulic Excavator of 1.2 cum bucket	Soil Ordinary Soil Marshy Soil Unsuitable	188	Hour	3420.00
8	Hydraulic Excavator of 1.1 cum bucket	Soil Ordinary Soil Marshy Soil Unsuitable	162	Hour	3074.00
9	Hydraulic Excavator of 0.9 cum bucket	Soil Ordinary Soil Marshy Soil Unsuitable	138	Hour	2782.00
10	Jack Hammer (attachment of Hydraulic Excavator)	For Drilling Purpose	-	Hour	206.00
11	Front End loader 3.1 cum bucket capacity	Soil loading Aggregate loading, etc.	221	Hour	4228.00
12	Front End loader 2.1 cum bucket capacity	Soil loading Aggregate loading, etc.	150	Hour	2618.00
13	Backhoe-loader 1 cum bucket capacity	Soil loading Aggregate loading, etc.	92	Hour	1780.00

CHAPTER: 20 - USAGE RATES OF PLANT AND MACHINERY

SI. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
14	Tipper-18 Cum	Transpotation of Soil, GSB,WMM, Hotmix etc.	280	Hour	2845.00
15	Tipper-18 Cum (Surface Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	275	Per Tonne Km	6.10
16	Tipper-18 Cum (Unsurfaced Gravelled Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	275	Per Tonne Km	14.818
17	Tipper-18 Cum (Katcha Track)	Transportation of Soil, GSB,WMM, Hotmix etc.	275	Per Tonne Km	14.82
18	Tipper-14 Cum	Transpotation of Soil, GSB,WMM, Hotmix etc.	220	Hour	2513.00
19	Tipper -14 Cum (Surface Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	220	Per Tonne Km	6.89
20	Tipper -14 Cum (Unsurfaced Gravelled Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	220	Per Tonne Km	16.75
21	Tipper -14 Cum (Katcha Track)	Transportation of Soil, GSB,WMM, Hotmix etc.	220	Per Tonne Km	16.75
22	Tipper-10 Cum	Transpotation of Soil, GSB,WMM, Hotmix etc.	178	Hour	2229.00
23	Tipper -10 Cum (Surface Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	178	Per Tonne Km	8.49
24	Tipper -10 Cum (Unsurfaced Gravelled Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	178	Per Tonne Km	20.64
25	Tipper -10 Cum (Katcha Track)	Transpotation of Soil, GSB,WMM, Hotmix etc.	178	Per Tonne Km	20.64
26	Tipper-5.5 Cum	Transpotation of Soil, GSB,WMM, Hotmix etc.	90	Hour	1681.00
27	Tipper- 5.5 Cum (Surface Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	90	Per Tonne Km	11.53
26	Tipper-5.5 Cum	Transpotation of Soil, GSB,WMM, Hotmix etc. Transpotation of Soil, GSB,WMM, Hotmix etc. Transportation of Soil, GSB,WMM,	90	Hour	1681

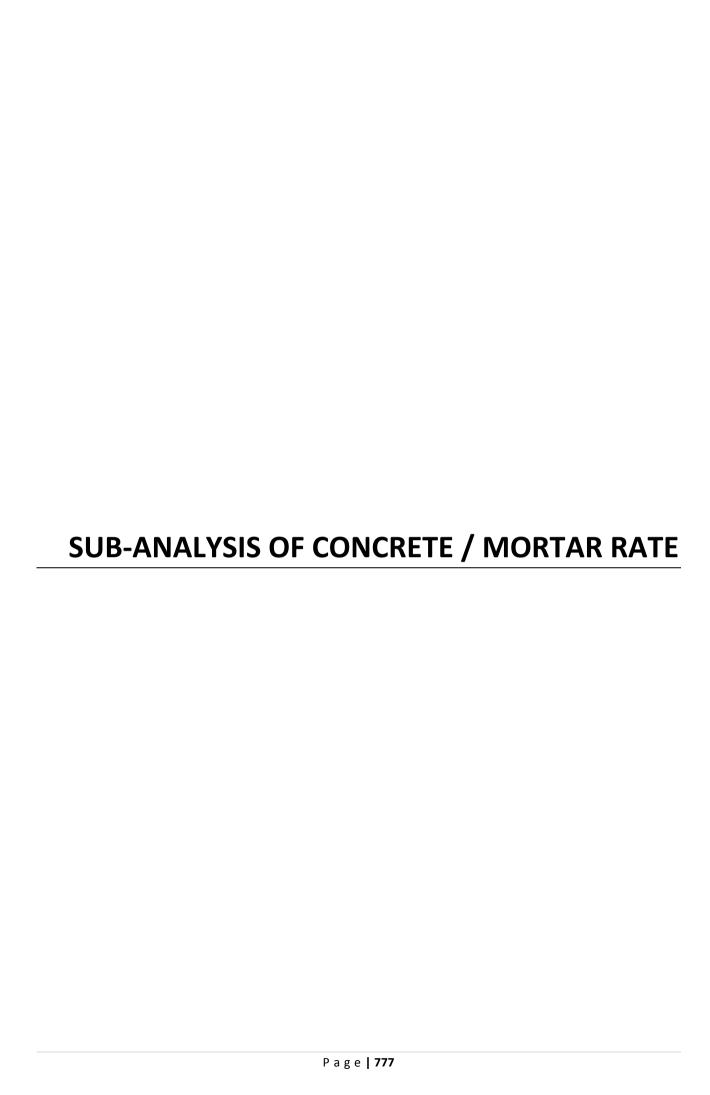
SI. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
28	Tipper- 5.5 Cum (Unsurfaced Gravelled Road)	Transportation of Soil, GSB,WMM, Hotmix etc.	90	Per Tonne Km	28.02
29	Tipper- 5.5 Cum (Katcha Track)	Transportation of Soil, GSB,WMM, Hotmix etc.	90	Per Tonne Km	28.02
30	Vibratory Soil Compactor (10 tonne)	Earth/Soil, GSB, WMM	99	Hour	2511.00
31	Smooth Wheeled Roller 8 tonne	Soil Compaction BM Compaction	98	Hour	2038.00
32	Tandem Roller	Rolling of Asphalt Surface	99	Hour	2501.00
33	Mini Tandem Roller	Earth/Soil	44	Hour	1401.00
34	Pneumatic Road Roller	Rolling of Asphalt Surface	114	Hour	2523.00
35	Water Tanker (16 KL)	Water Transport	150	Hour	1501.00
36	Water Tanker (12 KL)	Water Transport	150	Hour	1327.00
37	Water Tanker (6 KL)	Water Transport	100	Hour	1005.00
38	Tractor-trolley	Pulling, Tranportation,etc.	42	Hour	904.00
39	Rotavator	Scarifying	-	Hour	16.00
40	Ripper	Scarifying	-	Hour	21.00
41	Air Compressor -250 cfm	General Purpose	5	Hour	591.00
42	Air Compressor -500 cfm	General Purpose	148	Hour	2808.00
43	Integrated Stone Crusher Stone (3 Stage) 250 TPH	Crushing of Spalls	-	Hour	14744.00
44	Wet Mix Plant - 250 TPH Capacity	Wet Mix	-	Hour	878.00
45	Wet Mix Plant - 200 TPH Capacity	Wet Mix	-	Hour	583.00
46	Wet Mix Plant - 100 TPH Capacity	Wet Mix	-	Hour	558.00
47	Hotmix Plant - 200 TPH Capacity	DBM / BM / BC / Premix etc.	-	Hour	14553.00
48	Hotmix Plant - 160 TPH Capacity	DBM / BM / BC / Premix etc.	-	Hour	10338.00
49	Hotmix Plant - 120 TPH capacity	DBM / BM / BC / Premix etc.	-	Hour	8343.00
50	Batching and Mixing Plant - 240 cum Capacity	Concrete Mixing	-	Hour	6013.00

Sl. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
51	Batching and Mixing Plant - 120 cum Capacity	Concrete Mixing	-	Hour	3909.00
52	Mobile Concrete Batching / Mixing Plant	Concrete Mixing	60	Hour	960.00
53	Concrete Mixer - 0.4/0.28 cum	Concrete Mixing	10	Hour	492.00
54	Concrete Mixer - 1 cum	Concrete Mixing	15	Hour	533.00
55	Generator 725 KVA	Generation of Electric Energy	777	Hour	12030.00
56	Generator 500 KVA	Generation of Electric Energy	536	Hour	8320.00
57	Generator 400 KVA	Generation of Electric Energy	430	Hour	6707.00
58	Generator 250 KVA	Generation of Electric Energy	303	Hour	4728.00
59	Generator 125 KVA	Generation of Electric Energy	154	Hour	2472.00
60	Generator 100 KVA	Generation of Electric Energy	129	Hour	2108.00
61	Generator 62.5 KVA	Generation of Electric Energy	80	Hour	1351.00
62	Generator 33 KVA	Generation of Electric Energy	42	Hour	771.00
63	Generator 15 KVA	Generation of Electric Energy	20	Hour	431.00
64	Mechanical Broom Hydraulic	Surface Cleaning	50	Hour	1046.00
65	Bitumen Pressure Distributor	Applying bitumen tack coat	170	Hour	1711.00
66	Emulsion Pressure Distributor	Applying bitumen tack coat	170	Hour	1711.00
67	Bitumen Boiler Oil Fired	Bitumen Spraying	50	Hour	727.00
68	Mastic Cooker	Mastic Wearing Coat	10	Hour	640.00
69	Paver Finisher Mechanical	Paving of WMM	123	Hour	2526.00
70	Paver Finisher Hydrostatic with sensor control -240 HP	Paving of DBM / BM / BC / Premix etc.	240	Hour	8916.00
71	Paver Finisher Hydrostatic with sensor control -170 HP	Paving of DBM / BM / BC / Premix etc.	170	Hour	7057.00

Sl. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
72	Paver Finisher Concrete with 300 HP Motor	Paving of Concrete Surface	300	Hour	26922.00
73	Paver Finisher Concrete with 241 HP Motor	Paving of Concrete Surface	241	Hour	17458.00
74	Paver Finisher Concrete with 118 HP Motor	Paving of Concrete Surface	118	Hour	4362.00
75	Texture Curing Machine (TCM) - upto 18 m	Texturing of Concrete Surface	55	Hour	4628.00
76	Texture Curing Machine (TCM) - upto 9 m	Texturing of Concrete Surface	55	Hour	3654.00
77	Hydraulic Chip Spreader	Surface Dressing	200	Hour	2217.00
78	Pot-Hole Repair Machine	Repair of pot-holes	178	Hour	1802.00
79	Transit Mixer - 6 Cum	Mix to Site Transportation of Concrete	178	Hour	2367.00
80	Concrete Pump	Pumping of Concrete	15	Hour	1297.00
81	Boom Placer	Pumping of Concrete	178	Hour	4260.00
82	Kerb Casting Machine	Kerb Making	50	Hour	1889.00
83	Piling Rig with Bentonite Pump	Piling in foundation	360	Hour	19264.00
84	Pneumatic Sinking Plant	Sinking Purpose	250	Hour	6908.00
85	Road marking machine	Road Marking	90	Hour	1973.00
86	Mobile Slurry Seal Equipment	Mixing and laying slurry seat	115	Hour	3852.00
87	Joint Cutting Machine	Cutting Purpose	5	Hour	493.00
88	Bar Bending & Cutting Machine	Bar Cutting & Bending	5	Hour	509.00
89	Needle Vibrator	Concrete pouring	5	Hour	569.00
90	Jack Hammer for air compressor	General Purpose	-	Hour	11.00
91	Plate Compactor	Compaction	8	Hour	575.00
92	Milling Machine with 1 meter Drum Width	Milling of bitumen surface	155	Hour	4635.00
93	Milling Machine with 1.2 meter Drum Width	Milling of bitumen surface	208	Hour	5432.00
94	Milling Machine With 1.3 meter Drum Width	Milling of bitumen surface	330	Hour	7793.00

SI. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
95	Milling Machine With 2 meter Drum Width	Milling of bitumen surface	500	Hour	11665.00
96	Cold in Situ recycling of bitumen's pavement with foam bitumen technology	Recycling of bitumen surface	602	Hour	29649.00
97	In situ stabilisation of WMM/GSB/Sub grade	Stabilisation of WMM/GSB/Sub grade	602	Hour	25774.00
98	Cement spreader	Spreading	350	Hour	8083.00
99	Mobile cold recycling mixing plant	Recycling of bitumen surface	300	Hour	21483.00
100	Hot in place recycling	Recycling of bitumen surface	322	Hour	103644.00
101	Pre heater unit for hot in place recycling	Recycling of bitumen surface	101	Hour	1262.00
102	Single boom Hydraulic Drill Jumbo	Drilling Purpose	78	Hour	5187.00
103	Two boom Hydraulic Drill Jumbo	Drilling Purpose	160	Hour	7880.00
104	Three boom Hydraulic Drill Jumbo	Drilling Purpose	240	Hour	11513.00
105	Hydraulic Rock bolt drill	Drilling Purpose	90	Hour	7445.00
106	Rotating Telehandlers	General Purpose	101	Hour	1185.00
107	Shotcrete Machine	Concreting Purpose	90	Hour	1765.00
108	Grouting machine	Grouting Purpose	8	Hour	762.00
109	Dewatering Pump 10 HP	Dewatering	10	Hour	326.00
110	Concrete cutting machine	Concrete cutting Purpose	5	Hour	216.00
111	Crawler mounted Crane 35 tonne capacity	Lifting Purpose	170	Hour	6137.00
112	Crawler mounted Crane 80 tonne capacity	Lifting Purpose	230	Hour	6413.00
113	Crawler mounted Crane 100 tonne capacity	Lifting Purpose	300	Hour	9693.00
114	Mobile Hydraulic Crane 3 tonne capacity	Lifting Purpose	42	Hour	1059.00
115	Mobile Hydraulic Crane 5 tonne capacity	Lifting Purpose	45	Hour	1104.00
116	Mobile Hydraulic Crane 10 tonne capacity	Lifting Purpose	48	Hour	1212.00
117	Mobile Hydraulic Crane 15 tonne capacity	Lifting Purpose	49	Hour	1249.00

SI. No.	Description of Machine	Activity	Power (in HP)	Unit	Rate
118	Mobile Hydraulic Crane 20 tonne capacity	Lifting Purpose	101	Hour	1573.00
119	Mobile Hydraulic Crane 35 toone capacity	Lifting Purpose	173	Hour	2390.00
120	Concrete Bucket	For Purring Concrete		Hour	146.00
121	Prestressing Jack with Pump & Access (400 tonne)	Stressing of Steel Wires/Stands		Hour	533.00
122	Boat to carry at least 20 persons	General Purpose		hour	941.00
123	Crane with grab 0.75 cum capacity	Lifting Purpose		hour	1068.00
124	Epoxy Injection gun			hour	366.00
125	Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking	Well sinking		hour	9721.00
126	Jack for Lifting 40 tonne lifting capacity	Lifting Purpose		hour	360.00
127	Vibrating Pile driving hammer complete with power unit and accessories	Pile driving		hour	18143.00
128	Transit Mixer - 6 Cum	Mix to Site Transportation of Concrete		Per Tonne Km	26.30
129	Centrifugal water pump	Water Pumping		Hour	389.00
130	Shredding Machine	Shredding of waste Plastic		Hour	549.00
131	Mobile Bridge Inspection Unit (MBIU)	For Inspection of Bridge		Hour	7091.00
132	Network Survey Vehicle (NSV) With SUV	For Pavement Inspection/Survey Purpose		Hour	6415.00
133	Falling weight deflectometer (FWD) Equipment With SUV	For Testing Purpose		Hour	3248.00
134	Retroreflectometer testing equipment with Vehicle With SUV	For Testing Retro reflection		Hour	1888.00
135	Sport utility vehicle (SUV)	General Purpose		Hour	1299.00
136	Automatic Vehicle Counter Classifier (ATCC) System	Traffic Counting		Hour	76.00
Note:-	The usage rates given above are for the Chhattisgarh region. Concerned States				our rate of



Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
21.01	(A)	Cement Mortar 1:3 (1 cement : 3 sand)			
		Unit = cum			
		Taking output = 1 cum			
		a) Materials			
		Cement	tonne	0.510	
		Coarse sand	cum	1.050	
		Cost of water	KL	0.255	
		b) Labour			
		Mate	day	0.048	
		Mazdoor	day	1.197	
		c) Machinery			
		Water tanker 12 KL capacity (speed @ 20km/hr and return speed @ 30 km/hr and 30 mins for unloading)	hour	0.005 x L1 + 0.014	
		Rate per cum = (a+b+c)			
21.01	(B)	Cement Mortar1:2 (1cement :2 sand)			
		Unit = cum			
		Taking output = 1 cum			
		a) Materials			
		Cement	tonne	0.672	
		Coarse sand	cum	0.930	
		Cost of water	KL	0.336	
		b) Labour			
		Mate	day	0.048	
		Mazdoor	day	1.197	
		c) Machinery	•		
		Water tanker 12 KL capacity (speed @ 20km/hr and return speed @ 30 km/hr and 30 mins for unloading)	hour	0.006 x L1 + 0.019	
		Rate per cum = (a+b+c)			
21.01	(C)	Cement Mortar1:4 (1cement :4 sand)			
		Unit =cum			
		Taking output = 1 cum			
		a) Materials			
		Cement	tonne	0.403	
		Coarse sand	cum	1.120	
		Cost of water	KL	0.202	
		b) Labour			
		Mate	day	0.048	
		Mazdoor	day	1.197	
		c) Machinery	-		
		Water tanker 12 KL capacity (speed @ 20km/hr and return speed @ 30 km/hr and 30 mins for unloading)	hour	0.004 x L1 + 0.011	
		Rate per cum = (a+b+c)			

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
21.01	(D)	Cement Mortar1:6 (1cement :6 sand)			
		Unit = cum			
		Taking output = 1 cum			
		a) Materials			
		Cement	tonne	0.288	
		Coarse sand	cum	1.337	
		Cost of water	KL	0.144	
		b) Labour			
		Mate	day	0.048	
		Mazdoor	day	1.197	
		c) Machinery			
		Water tanker 12 KL capacity (speed @ 20km/hr	hour	0.003 x L1	
		and return speed @ 30 km/hr and 30 mins for unloading)		+ 0.008	
		Rate per cum = (a+b+c)			
21.02		PCC 1:3:6 using batching Plant			
		Plain cement concrete 1:3:6 nominal mix with crushed			
		stone aggregate 40 mm nominal size mechanically mixed			
		Unit = cum			
		Taking output = 15 Cum			
		a) Labour			
		Mate	day	0.426	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	9.310	
		b) Material			
		40 mm Aggregate	cum	13.500	
		Coarse sand	cum	6.750	
		cement	tonne	3.450	
		Cost of water	KL	1.380	
		c) Machinery			
		Batching Plant of capacity 120 cum/hour	hour	0.179	
		Generator 250 KVA	hour	0.179	
		Loader 3.1 cum capacity	hour	0.431	
		Transit truck agitator		0.470	
		For loading & Unloading time	hour	0.179	
		Rate per cum = (a+b+c)/15			
	Note	Vibrator is a part of minor T & P which is already included in overhead charges of the contractor.			
21.03		Plain/Reinforced Cement Concrete complete as per			
		Drawing and Technical Specifications.			
		PCC Grade M15 Using Batching Plant Unit = cum			
		Taking output = 360 Cum			
		a) Material			
		Cement	tonne	99.000	
		Coarse sand	cum	162.000	
		40 mm Aggregate	cum	194.400	
		20 mm Aggregate	cum	97.200	

Sr No	Ref. to M		Description	Unit	Quantity	Rate (Rs.)
		10 mm Aggreg	ate	cum	32.400	
			Water/Cement Ratio - 0.4)	KL	39.600	
		b) Labour	,			
		Mate		day	0.213	
		Skilled Mazdoo	or	day	1.330	
		Mazdoor		day	3.990	
		c) Machinery		,		
			of capacity 120 cum/hour	hour	4.286	
		Generator 250		hour	4.286	
		Loader 3.1 cun	n capacity	hour	10.340	
		Transit truck a	gitator			
		For loading & (Jnloading time	hour	4.286	
		Per Cum Basic Co	ost of Labour, Material & Machin /(a+b+c)/	-		
24.04		DOG C d- M20 U-	to a Databilia a Diana			
21.04		PCC Grade M20 Usi Unit = cum	ing Batching Plant			
			0 Cum			
		Taking output = 360 a) Material	Cum			
		Cement		tonne	123.840	
		Coarse sand		cum	162.000	
		40 mm Aggreg	ate	cum	129.600	
		20 mm Aggreg		cum	129.600	
		10 mm Aggreg		cum	64.800	
			Water/Cement Ratio - 0.4)	KL	49.536	
		b) Labour	water, cement nation of the		13.330	
		Mate		day	0.213	
		Skilled Mazdoo	or	day	1.330	
		Mazdoor		day	3.990	
		c) Machinery		,		
			of capacity 120 cum/hour	hour	4.286	
		Generator 250		hour	4.286	
		Loader 3.1 cun		hour	10.340	
		Transit truck a	gitator			
		For loading & I	Unloading time	hour	4.286	
		Per Cum Basic Cos	st of Labour, Material & Machine	ry (a+b+c)/360		
21.05		RCC Grade M20 Usi	ing Batching Plant			
		Unit = cum				
		Taking output = 360	0 Cum			
		a) Material				
		Cement		tonne	124.980	
		Coarse Sand		cum	162.000	
		20 mm Aggreg		cum	194.400	
		10 mm Aggreg	ate	cum	129.600	
		Cost of water		KL	49.992	
		b) Labour		_		
		Mate		day	0.213	
		Skilled Mazdoo	or	day	1.330	

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		Mazdoor	day	3.990	
		c) Machinery	•		
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator			
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Machine		200	
21.06		PCC Grade M25 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum a) Material			
		Cement	tonne	143.850	
		Coarse sand	cum	162.000	
		40 mm Aggregate	cum	129.600	
		20 mm Aggregate	cum	129.600	
		10 mm Aggregate	cum	64.800	
		Cost of water	KL	57.540	
		b) Labour		071010	
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery	aay	3.550	
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator	noui	10.340	
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Machine		4.200	
21.07		RCC Grade M25 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum a) Material			
		Cement	tonne	145.140	
		Coarse sand	cum	162.000	
		20 mm Aggregate	cum	194.400	
		10 mm Aggregate	cum	129.600	
		Admixture @ 0.2 % of Cement	Kg	290.280	
		Cost of water	KL	58.056	
		b) Labour		33.333	
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery	aay	3.330	
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator	Hour	10.540	
		Halloit Huck agitatul			
		For loading & Unloading time	hour	4.286	

Sr No	Ref. to M		Description	Unit	Quantity	Ra (R
21.08		PCC G	irade M30 Using Batching Plant			
		Unit =				
			g output = 360 Cum			
			Material			
		•	Cement	tonne	145.800	
			Coarse sand	cum	162.000	
			10 mm Aggregate	cum	129.600	
			20 mm Aggregate	cum	129.600	
			10 mm Aggregate	cum	64.800	
			Cost of water	KL	58.320	
			abour	KL	36.320	
		•	Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor	day	3.990	
				uay	3.990	
		-	Machinery	hour	4.286	
			Batching Plant of capacity 120 cum/hour	hour	4.286 4.286	
			Generator 250 KVA	hour		
			oader 3.1 cum capacity	hour	10.340	
			Fransit truck agitator	h	4.200	
			For loading & Unloading time	hour	4.286	
		Per Ci	um Basic Cost of Labour, Material & Machinery	/ (a+b+c)/36U		
21.09		RCC G	Grade M30 Using Batching Plant			
		Unit =	= cum			
		Takin	g output = 360 Cum			
		a) N	Material			
		(Cement	tonne	146.400	
		(Coarse sand	cum	162.000	
		2	20 mm Aggregate	cum	194.400	
		1	10 mm Aggregate	cum	129.600	
		A	Admixture @ 0.3 % of Cement	Kg	439.200	
		(Cost of water	KL	58.560	
		b)	Labour			
		ľ	Mate	day	0.213	
		9	Skilled Mazdoor	day	1.330	
		ľ	Mazdoor	day	3.990	
		c) I	Machinery			
		E	Batching Plant of capacity 120 cum/hour	hour	4.286	
		(Generator 250 KVA	hour	4.286	
		L	oader 3.1 cum capacity	hour	10.340	
			Fransit truck agitator			
			For loading & Unloading time	hour	4.286	
			Cum Basic Cost of Labour, Material & Machine			
1.10		PCC G	irade M35 Using Batching Plant			
0		Unit =				
			g output = 360 Cum			
			g output – 300 cum Material			
		aj l'	viaccital			
			Coment	tonno	150 040	
			Cement Coarse sand	tonne cum	150.840 162.000	

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		10 mm Aggregate	cum	129.600	
		Admixture @ 0.3 % of Cement	Kg	452.520	
		Cost of water	KL	60.336	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery			
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator			
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Machin	ery (a+b+c)/360		
21.11		RCC Grade M35 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum			
		a) Material			
		Cement	tonne	151.920	
		Coarse sand	cum	162.000	
		20 mm Aggregate	cum	194.400	
		10 mm Aggregate	cum	129.600	
		Admixture @ 0.4 % of Cement	Kg	607.680	
		Cost of water	KL	60.768	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery			
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator			
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Machin	ery (a+b+c)/360		
21.12		RCC Grade M40 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum			
		a) Material			
		Cement	tonne	154.800	
		Coarse sand	cum	162.000	
		20 mm Aggregate	cum	194.400	
		10 mm Aggregate	cum	129.600	
		Admixture @ 0.8 % of Cement	Kg	1238.400	
		Cost of water	KL	61.920	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	

Sr No	Ref. to M		Description	Unit	Quantity	Rate (Rs.)
		c)	Machinery			
		C)	Batching Plant of capacity 120 cum/hour	hour	4.286	
			Generator 250 KVA	hour	4.286	
			Loader 3.1 cum capacity	hour	10.340	
			Transit truck agitator	noui	10.540	
			For loading & Unloading time	hour	4.286	
		Pe	r Cum Basic Cost of Labour, Material & Machiner		4.200	
21.13		RCC	Grade M45 Using Batching Plant			
			: = cum			
		Taki	ng output = 360 Cum			
		a)	Material			
		-	Cement	tonne	154.800	
			Coarse sand	cum	162.000	
			20 mm Aggregate	cum	194.400	
			10 mm Aggregate	cum	129.600	
			Admixture @ 1 % of Cement	Kg	1548.000	
			Cost of water	KL	61.920	
		b)	Labour	KL	01.320	
		•	Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor	day	3.990	
		c)	Machinery	aay	3.330	
		•	Batching Plant of capacity 120 cum/hour	hour	4.286	
			Generator 250 KVA	hour	4.286	
			Loader 3.1 cum capacity	hour	10.340	
			Transit truck agitator	noai	10.540	
			For loading & Unloading time	hour	4.286	
		Pe	r Cum Basic Cost of Labour, Material & Machiner		200	
21.14		RCC	Grade M50 Using Batching Plant			
		Unit	: = cum			
		Taki	ng output = 360 Cum			
		a)	Material			
			Cement	tonne	154.800	
			Coarse sand	cum	162.000	
			20 mm Aggregate	cum	194.400	
			10 mm Aggregate	cum	129.600	
			Admixture @ 0.8 % of Cement	Kg	1238.400	
			Silica Fume @ 5% of Cement	Kg	7740.000	
			Cost of water	KL	61.920	
		b)	Labour			
			Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor	day	3.990	
		c)	Machinery	•		
			Batching Plant of capacity 120 cum/hour	hour	4.286	
			Generator 250 KVA	hour	4.286	
			Loader 3.1 cum capacity	hour	10.340	
			Transit truck agitator			
			For loading & Unloading time	hour	4.286	
		Per	Cum Basic Cost of Labour, Material & Machinery	/ (a+b+c)/360		

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
21.15		RCC Grade M55 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum			
		a) Material			
		Cement	tonne	158.400	
		Coarse sand	cum	162.000	
		20 mm Aggregate	cum	194.400	
		10 mm Aggregate	cum	129.600	
		Admixture @ 1 % of Cement	Kg	1267.200	
		Silica Fume @ 5% of Cement	Kg	7920.000	
		Cost of water	KL	63.360	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery			
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator			
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Mac	hinery (a+b+c)/360		
21.16		RCC Grade M60 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum			
		a) Material			
		Cement	tonne	160.200	
		Coarse sand	cum	162.000	
		20 mm Aggregate	cum	194.400	
		10 mm Aggregate	cum	129.600	
		Admixture @ 1 % of Cement	Kg	1281.600	
		Silica Fume @ 6% of Cement	Kg	9612.000	
		Cost of water	KL	64.080	
		b) Labour Mate	day	0.212	
		Skilled Mazdoor	day	0.213 1.330	
		Mazdoor	day	3.990	
		c) Machinery	day	3.990	
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator	11001	10.540	
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Mac		200	
21.17		RCC Grade M65 Using Batching Plant			
		Unit = cum			
		Taking output = 360 Cum			

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		a) Material			
		Cement	tonne	162.000	
		Coarse sand	cum	162.000	
		20 mm Aggregate	cum	194.400	
		10 mm Aggregate	cum	129.600	
		Admixture @ 1 % of Cement	Kg	1296.000	
		Silica Fume @ 6% of Cement	Kg	9720.000	
		Cost of water	KL	64.800	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery			
		Batching Plant of capacity 120 cum/hour	hour	4.286	
		Generator 250 KVA	hour	4.286	
		Loader 3.1 cum capacity	hour	10.340	
		Transit truck agitator			
		For loading & Unloading time	hour	4.286	
		Per Cum Basic Cost of Labour, Material & Machine	ry (a+b+c)/360		
21.18	601 A	DLC Using Batching Plant-240 cum capacity Plant			
		Unit = cum			
		Taking output = 450 Cum a) Material			
		Cement @ 150 kg/cum of concrete	tonne	67.500	
		Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	202.500	
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table 600-		405.000	
		@ 0.90 cum/cum of concrete conforming to clau 602.2.6.	ıse		
		Cost of water (Water/Cement Ratio - 0.4)	KL	27.000	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor c) Machinery	day	3.990	
		Batching Plant of capacity 240 cum/hour	hour	2.679	
		Generator 250 KVA	hour	2.679	
		Loader 3.1 cum capacity	hour	12.926	
		Per Cum Basic Cost of Labour, Material & Machine	ry (a+b+c)/450		
21.18	601 B	Dry Lean Cement Concrete Sub- base Flyash (Using Batching Plant)-240 cum capacity Plant			
		Unit = cum			
		Taking output = 450 Cum			
		a) Material			
		Cement @ 129 kg/cum of concrete	tonne	57.860	
		Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	202.500	
		Crushed stone coarse aggregate of 25 mm and		405.000	

Sr No	Ref. to M		Description	Unit	Quantity	Rate (Rs.)
			12.5 mm nominal sizes graded as per table 600-1 @ 0.90 cum/cum of concrete conforming to clause 602.2.6.			
			Fly ash conforming to IS: 3812-1966 (Part-I)	cum	9.640	
			Cost of water (Water/Cement Ratio - 0.4)	KL	23.144	
		b)	Labour			
			Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor	day	3.990	
		c)	Machinery			
			Batching Plant of capacity 240 cum/hour	hour	2.679	
			Generator 250 KVA	hour	2.679	
			Loader 3.1 cum capacity	hour	12.926	

Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)/450

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

*Calculation of cement and fly ash.

Cement @ 150 kg/cum = 450 x 150 = 67.500 tonnes.

20 percent of cement to be replaced by fly ash = 13.50 tonnes.

Balance cement = 54.0 tonnes.

Quantity of fly ash = 13.50 x specific gravity of fly ash /specific gravity of cement = 13.50 x 2.25/3.15 = 9.64 tonnes.

21.18 601 C DLC Using Batching Plant-120 cum capacity Plant

Unit = cum

Taking output = 450 Cum

a) Material

	Cement @ 150 kg/cum of concrete	tonne	67.500
	Coarse Sand as per IS: 383 @ 0.45 cum/cum of	cum	202.500
	concrete		
	Crushed stone coarse aggregate of 25 mm and	cum	405.000
	12.5 mm nominal sizes graded as per table 600-1		
	@ 0.90 cum/cum of concrete conforming to clause		
	602.2.6.		
	Cost of water (Water/Cement Ratio - 0.4)	KL	27.000
b)	Labour		
	Mate	day	0.213
	Skilled Mazdoor	day	1.330
	Mazdoor	day	3.990
c)	Machinery		
	Batching Plant of capacity 120 cum/hour	hour	5.357
	Generator 250 KVA	hour	5.357
	Loader 3.1 cum capacity	hour	12.926

Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)/450

Sr No	Ref. to	М	Description	Unit	Quantity	Rate (Rs.)
21.18	601	D	Dry Lean Cement Concrete Sub- base Flyash (Using Batching Plant) -120 cum capacity Plant Unit = cum Taking output = 450 Cum			
			a) Material			
			Cement @ 150 kg/cum of concrete	tonne	57.860	
			Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	202.500	
			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 602.2.6.	cum	405.000	
			Fly ash conforming to IS: 3812-1966 (Part-I)	cum	9.640	
			Cost of water (Water/Cement Ratio - 0.4)	KL	23.144	
			b) Labour			
			Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor	day	3.990	
			c) Machinery			
			Batching Plant of capacity 120 cum/hour	hour	5.357	
			Generator 250 KVA	hour	5.357	
			Loader 3.1 cum capacity	hour	12.926	
			Per Cum Basic Cost of Labour, Material & Machinery (a	ı+b+c)/450		
		Note	Quantity provided for aggregate is for estimating purposmix design.	se. Exact qu	uantity shall b	e as per
			*Calculation of cement and fly ash.			
			Cement @ 150 kg/cum = 450 x 150 = 67.500 tonnes.			
			20 Percent of cement to be replaced by fly ash = 13.50 to	nnes.		
			Balance cement = 54.0 tonnes.	acific aravity	of coment -	12 EO v
			Quantity of fly ash = $13.50 \times \text{specific gravity of fly ash /spec}$ 2.25/3.15 = 9.64 tonnes.	ecilic gravity	/ Or cement =	15.50 X
21.19	602	Α	PQC M 35 grade Using Batching Plant-240 cum capacity Plant			
			Unit =cum			
			Taking output = 900 Cum a) Material			
			Cement @ 400 kg/cum of concrete	tonne	360.000	
			Coarse sand as per IS: 383 and conforming to clause 602.2.4 @ 0.45 cum/cum of concrete	cum	405.000	
			Crushed stone coarse aggregates of 25mm and 12.5mm nominal size @ 0.90 cum/cum of concrete conforming to clause 602.2.4	cum	810.000	
			Admixture @ 0.5 % of Cement	Kg	1800.000	
			Cost of water	KL	144.000	
			b) Labour			

day

day

day

0.213

1.330

3.990

Mate

Mazdoor

Skilled Mazdoor

Sr No	Ref. to M	Description	Unit	Quantity	Rate (Rs.)
		c) Machinery			
		Batching Plant of capacity 240 cum/hour	hour	5.357	
		Generator 250 KVA	hour	5.357	
		Loader 3.1 cum capacity	hour	25.851	
		Transit truck agitator			
		For loading & Unloading time	hour	5.357	
		Per Cum Basic Cost of Labour, Material & Machinery (d	ı+b+c)/900		
21.19	602 B	PQC M 35 grade Using Batching-240 cum capacity Plant (Cement - Flyash) Unit =cum			
		Taking output = 900 Cum			
		a) Material			
		Cement	tonne	306.000	
		Fly ash conforming to IS: 3812 (Part-I)	tonne	93.000	
		Coarse sand	cum	364.500	
		Crushed stone coarse aggregates of 25mm and	cum	810.000	
		12.5mm nominal size @ 0.90 cum/cum of concrete conforming to clause 602.2.4	cum	810.000	
		Admixture @ 0.5 % of Cement	Kg	1530.000	
		Cost of water	KL	122.400	
		b) Labour			
		Mate	day	0.213	
		Skilled Mazdoor	day	1.330	
		Mazdoor	day	3.990	
		c) Machinery			
		Batching Plant of capacity 240 cum/hour	hour	5.357	
		Generator 250 KVA	hour	5.357	
		Loader 3.1 cum capacity	hour	24.989	
		Transit truck agitator			
		For loading & Unloading time	hour	5.357	

Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)/900

- **Note** 1. The quantities for cement, coarse aggregate and fine aggregates are for estimating only .The exact quantities will be as per mix design.
 - 2. IRC: 68 may be referred for guidelines on the design of cement-fly ash concrete for rigid pavement construction.

*Calculation of cement, sand and fly ash.

Cement @ $400 \text{ kg/cum} = 900 \times 400 = 360 \text{ tonnes}$.

15 Percent of cement to be replaced by fly ash = 54.0 tonnes.

Balance cement = 306.00 tonnes.

Quantity of fly ash = 54.00 x specific gravity of fly ash /specific gravity of cement = 54.00 x 2.25/3.15 = 38.571 tonnes.

Sand @ 0.45 cum / cum of concrete = $900 \times 0.45 = 405 \times 1.6 = 648 \text{ tonnes}$.

10 Percent to be replaced by flyash.

Balance sand = $648 \times 0.9 = 583.2 \times 10^{-2} = 583.02 \times 10^{-2} = 364.5 \times 10^{-2} =$

Quantity of flyash = (648-583.2) x specific gravity of fly ash/specific gravity of sand = 64.8 x 2.25 / 2.687 = 54.26 tonnes

Fly ash Total fly ash = 38.571 + 54.26 = 92.831 tonnes. (Say 93 tonnes)

Sr No	Ref. t	to M	Description	Unit	Quantity	Rate (Rs.)
21.19	602	С	PQC M 35 grade Using Batching Plant-120 cun	n		
			Unit = cum			
			Taking output = 900 Cum			
			a) Material			
			Cement @ 400 kg/cum of concrete	tonne	360.000	
			Coarse sand as per IS: 383 and conforming clause 602.2.4 @ 0.45 cum/cum of concre	=	405.000	
			Crushed stone coarse aggregates of 25mn 12.5mm nominal size @ 0.90 cum/cum of conforming to clause 602.2.4		810.000	
			Admixture @ 0.5 % of Cement	Kg	1800.000	
			Cost of water	KL	144.000	
			b) Labour			
			Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor c) Machinery	day	3.990	
			Batching Plant of capacity 120 cum/hour	hour	10.714	
			Generator 250 KVA	hour	10.714	
			Loader 3.1 cum capacity	hour	25.851	
			Transit truck agitator			
			For loading & Unloading time	hour	10.714	
			Per Cum Basic Cost of Labour, Material & Ma	ichinery (a+b+c)/900		
21.19	602	D	PQC M 35 grade Using Batching Plant-120 cun capacity (Cement - Flyash)	n		
			Unit= cum			
			Taking output = 900 Cum			
			a) Material			
			Cement	tonne	306.000	
			Fly ash conforming to IS: 3812 (Part-I)	tonne	93.000	
			Coarse sand	cum	364.500	
			Crushed stone coarse aggregates of 25mn 12.5mm nominal size @ 0.90 cum/cum of		810.000	
			conforming to clause 602.2.4 Admixture @ 0.4 % of Cement	Va	1224 000	
			Cost of water	Kg KL	1224.000 122.400	
			b) Labour	NL NL	122.400	
			Mate	day	0.213	
			Skilled Mazdoor	day	1.330	
			Mazdoor	day	3.990	
			c) Machinery	auy	3.330	
			Batching Plant of capacity 120 cum/hour	hour	10.714	
			Generator 250 KVA	hour	10.714	
			Loader 3.1 cum capacity	hour	24.989	
			Transit truck agitator			
			For loading & Unloading time	hour	10.714	
			Per Cum Basic Cost of Labour, Material & Mo	achinery (a+b+c)/900		

Sr No Ref. to M Description Unit Quantity (Rs.)

Note

- 1. The quantities for cement, coarse aggregate and fine aggregates are for estimating only .The exact quantities will be as per mix design.
- IRC: 68 may be referred for guidelines on the design of cement-fly ash concrete for rigid pavement construction.

*Calculation of cement, sand and fly ash.

Cement @ 400 kg/cum = 900 x 400 = 360 tonnes.

15 Percent of cement to be replaced by fly ash = 54.0 tonnes.

Balance cement = 306.00 tonnes.

Quantity of fly ash = $54.00 \, x$ specific gravity of fly ash /specific gravity of cement = $54.00 \, x$ 2.25/3.15 = 38.571 tonnes.

Sand @ $0.45 \text{ cum} / \text{ cum of concrete} = 900 \times 0.45 = 405 \times 1.6 = 648 \text{ tonnes}.$

10 Percent to be replaced by flyash.

Balance sand = $648 \times 0.9 = 583.2 \text{ tonnes} = 583.02 / 1.6 = 364.5 \text{ cum}$.

Quantity of flyash = (648-583.2) x specific gravity of fly ash/specific gravity of sand = 64.8 x 2.25 / 2.687 = 54.26 tonnes

Fly ash Total fly ash = 38.571 + 54.26 = 92.831 tonnes. (Say 93 tonnes)

21.20 409

PCC Grade M15 Using Batching Plant for Kerb

Unit = cum

Taking output = 360 Cum

a) Material

	Cement	tonne	99.000
	Coarse sand	cum	162.000
	40 mm Aggregate	cum	194.400
	20 mm Aggregate	cum	97.200
	10 mm Aggregate	cum	32.400
	Cost of water (Water/Cement Ratio - 0.4)	KL	39.600
b)	Labour		
	Mate	day	0.213
	Skilled Mazdoor	day	1.330
	Mazdoor	day	3.990
c)	Machinery		
	Batching Plant of capacity 120 cum/hour	hour	4.286
	Generator 250 KVA	hour	4.286
	Loader 3.1 cum capacity	hour	10.340
	Transit truck agitator		
	For loading & Unloading time	hour	4.286

Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)/360

21.21 409

PCC Grade M20 Using Batching Plant for Kerb

Unit = cum

Taking output = 360 Cum

a) Material

Cement	tonne	123.840
Coarse sand	cum	162.000
40 mm Aggregate	cum	129.600
20 mm Aggregate	cum	129.600
10 mm Aggregate	cum	64.800
Cost of water (Water/Cement Ratio - 0.4)	KL	49.536

Sr No	Ref. to M	Descrip	otion Unit	Quantity	Rate (Rs.)			
		b) Labour						
		Mate	day	0.213				
		Skilled Mazdoor		1.330				
	Mazdoor		day	3.990				
	c) Machinery							
	Batching Plant of capacity 120 cum/hour		ry 120 cum/hour hour	4.286				
	Generator 250 KVA		hour	4.286				
	Loader 3.1 cum capacity		hour	10.340				
	Transit truck agitator							
	For loading & Unloading time		time hour	4.286				
Per Cum Basic Cost of Labour, Material & Machinery (a+b+c)/360								
21.22		Cost of Water						
		Unit = KL						
		Taking output = 12 KL						
		a) Labour						
		Mate	day	0.007				
		Mazdoor	day	0.177				
		b) Machinery						
		Centrifugal water pump	(600 LMP) hour	0.615				
	Water tanker 12 KL		hour	0.615				
		Cost for 12 KL = a+b						

Rate per KL = (a+b)/12

