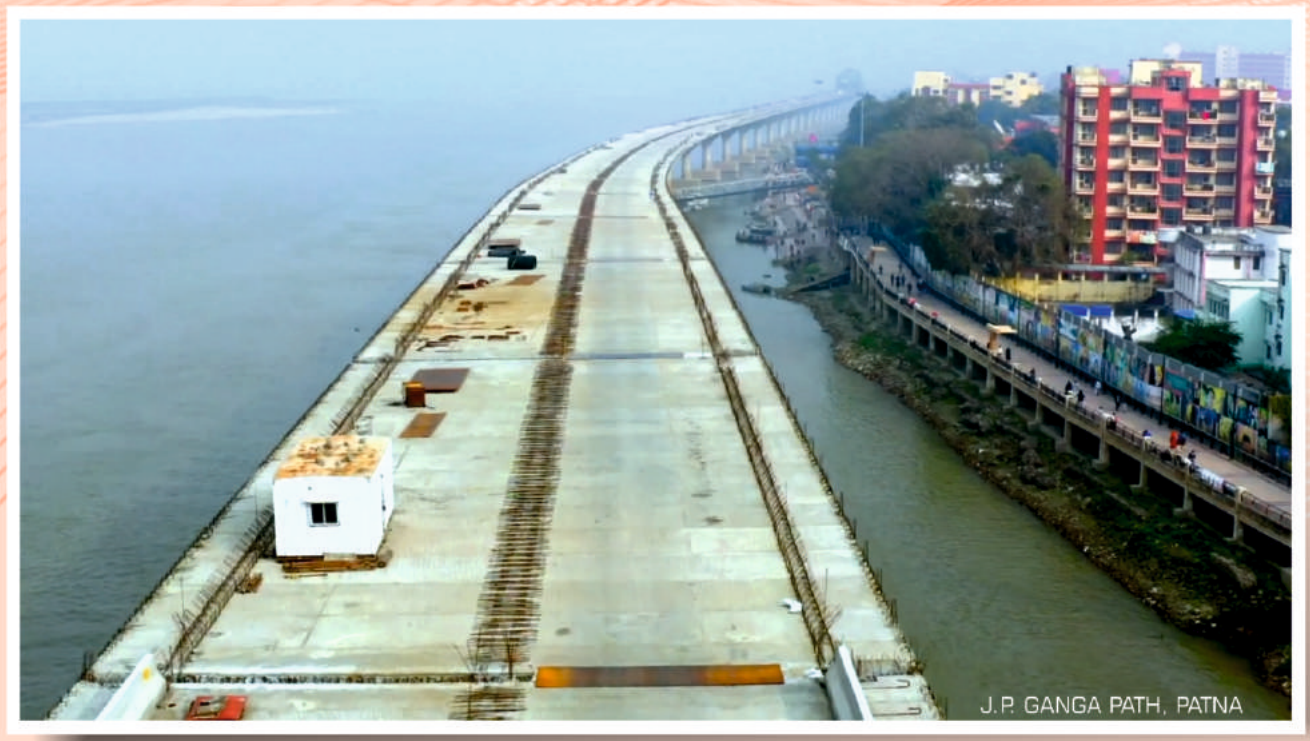
FOR OFFICE USE ONLY

बिहार सरकार

ROAD CONSTRUCTION DEPARTMENT



Schedule of Rates - 2022

Volume - II

(Sixteenth Edition)

Published by :
State Level Schedule Rate Committee
Bihar, Patna

Effective from 01.04.2022

(FOR OFFICE USE ONLY)
Complimentary Copy

बिहार सरकार
GOVERNMENT OF BIHAR

पथ निर्माण विभाग

(राष्ट्रीय उच्च पथ उपभाग सहित)

Road Construction Department

(Including National Highway Wing)

VOLUME-II

(Chapter 12 to 19 & Sub-Analysis)

अनुसूचित दर (दर विश्लेषण सहित)

Schedule of Rates with Analysis

(Sixteenth Edition)

Effective from : 01.04.2022

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.

All rights reserved. No part of this publication may be reproduced in any form without permission, in writing from the Convener, Bihar State Level Schedule Rate Committee, Patna.

First Edition	:	05.12.2006
Second Edition	:	23.05.2007
Third Edition	:	24.03.2008
Fourth Edition	:	01.04.2009
Fifth Edition	:	01.04.2010
Sixth Edition	:	01.05.2011
Seventh Edition	:	02.07.2012
Eighth Edition	:	01.04.2013
Ninth Edition	:	01.04.2014
Tenth Edition	:	01.04.2015
Eleventh Edition	:	01.04.2016
Twelfth Edition	:	01.04.2017
Thirteenth Edition	:	01.04.2018
Fourteenth Edition	:	01.04.2019
Fifteenth Edition	:	01.04.2021
Sixteenth Edition	**:**	**01.04.2022**

ROAD CONSTRUCTION DEPARTMENT BIHAR

Published by :

CONVENER,
STATE LEVEL SCHEDULE RATE COMMITTEE
-CUM-
ENGINEER-IN-CHIEF (HEAD QUARTER),
ROAD CONSTRUCTION DEPARTMENT
BIHAR, PATNA

CONTENTS

Sr. No.	Description	Page
1.	प्रस्तावना	(I-III)
2.	दिनांक–11.03.2022 को आयोजित राज्यस्तरीय अनुसूचित दर निर्धारण समिति की बैठक में अनुसूचित दर पुस्तिका के षोडश संस्करण का राज्यस्तरीय अनुसूचित दर निर्धारण समिति द्वारा अनुमोदन।	(IV-XVI)
3.	श्रम दर से संबंधित राज्य स्तरीय अनुसूचित दर निर्धारण समिति का दिनांक–22.10.2021 की बैठक में अनुमोदित	
	(a) श्रम दर Schedule-I, श्रम दर Schedule-II एवं श्रम दर Schedule-III	(XVII-XXII)
4.	दिनांक–07.12.2021 एवं दिनांक 28.02.2022 को राज्यस्तरीय अनुसूचित दर निर्धारण समिति द्वारा अनुमोदित निर्माण सामग्रियों यथा–सीमेंट, बिटुमेन, स्टील एवं ईंट की सूची M1, M3A, M3B, M3C, M4, M5, M6, M8, M9, M10A, M11	(XXIII-XXXIV)
5.	दिनांक–07.12.2021, दिनांक–28.02.2022 एवं दिनांक–11.03.2022 को राज्यस्तरीय अनुसूचित दर निर्धारण समिति द्वारा अनुमोदित निर्माण सामग्रियों, Plant & Machinery, श्रम दर, Carriage एवं अन्य की सूची (INPUT USED IN SOR)	
	(a) Approved Rate of Stone-aggregate (Stone chips, Sand etc) as per M/MORTH-1	(XXXV-XXXVI)
	(b) Approved Rate of Construction Materials as per M/MORTH-1A	(XXXVII-XLIX)
	(c) Approved Rate of Plant & Machinery as per P&M/MORTH-1A	(L-LIII)
	(d) MORT&H Standard Data Book 2019 के आधार पर दर–विश्लेषण में प्रयुक्त श्रम दर एवं Lead से संबंधित अनुमोदित सूची	(LIV-LV)
	(e) Approved Carriage Rate of Materials by Tipper	(LVI-LXXII)
6.	दिनांक–28.02.2022 को राज्यस्तरीय अनुसूचित दर निर्धारण समिति द्वारा अनुमोदित Carriage rate (By Tractor) की सूची	(LXXIII-LXXXVI)

CONTENTS

Chapter	Item No.	Description	Page
		Basic Approach And General Conditions For The Preparation of Standard Data Book (Bridge/Structure Works)	1 – 3
12 Foundations			
		Preamble	4 – 5
		SUMMARY	6 – 18
	12.01	Excavation for Structures	19
	12.02	Filling Annular Space Around Footing in Rock	27
	12.03	Sand Filling in Foundation Trenches as per Drawing & Technical Specification	28
	12.04	PCC 1:3:6 in Foundation	28
	12.05	Brick masonry work in cement mortar 1:3 in foundation	29
	12.06	Cement mortar 1:3	30
	12.07	Stone masonry work in Cement mortar 1:3 in foundation	30
	12.08	Plain/Reinforced cement concrete in open foundation	31
	12.09	Providing and Constructing temporary island 24 m diameter for construction of well foundation	47
	12.10	Providing and laying cutting edge of mild steel weighing 40 kg per meter for well foundation	48
	12.11	Plain/Reinforced cement concrete, in well foundation	49
	12.12	Sinking of 6 m external diameter well through all types of strata	83
	12.13	Sinking of 7 m external diameter well through all types of strata	89
	12.14	Sinking of 8 m external diameter well through all types of strata	95
	12.15	Sinking of 9 m external diameter well through all types of strata	101
	12.16	Sinking of 10 m external diameter well through all types of strata	106
	12.17	Sinking of 11 m external diameter well through all types of strata	112
	12.18	Sinking of 12 m external diameter well through all types of strata	118
	12.19	Sinking of Twin D Type well through all types of strata namely	124
	12.20	Pneumatic sinking of wells with equipment	130
	12.21	Sand filling in wells	132
	12.22	Providing steel liner 10 mm thick for curbs and 6mm thick for staining of wells	132
	12.23	Bored cast-in-situ M35 grade R.C.C. pile ofdiameter-750mm	133
	12.24	Bored cast-in-situ M35 grade R.C.C. pile ofdiameter-1000mm	134
	12.25	Bored cast-in-situ M35 grade R.C.C. pile ofdiameter-1200mm	135
	12.26	Bored cast-in-situ M35 grade R.C.C. pile ofdiameter-1500mm	136
	12.27	Driven cast-in-place vertical M35 grade R.C.C. pile of diameter-750mm	137
	12.28	Driven cast-in-place vertical M35 grade R.C.C. pile of diameter-1000mm	138
	12.29	Driven cast-in-place vertical M35 grade R.C.C. pile of diameter-1200mm	139
	12.30	Driven precast vertical M35 grade R.C.C. piles of Diameter=500mm	140
	12.31	Driven precast vertical M35 grade R.C.C. piles of Diameter=750mm	141
	12.32	Driven precast vertical M35 grade R.C.C. piles of Diameter=1000mm	142
	12.33	Driven precast vertical M35 grade R.C.C. piles (size of pile-300mm×300mm	143

Chapter	Item No.	Description	Page
	12.34	Driven precast vertical M35 grade R.C.C. piles (size of pile-500mm×500mm	143
	12.35	Driven precast vertical M35 grade R.C.C. piles (size of pile-750mm×750mm	144
	12.36	Driven vertical steel piles H Section steel columm 400×250mm (ISHB Series)	145
	12.37	Driven vertical steel piles H Section steel columm 450×250mm (ISHB Series)	146
	12.38	Pile load test on single vertical pile in accordance with IS:2911 (Part-IV)	146
	12.39	Dismantling of Reinforced Concrete Pile head	147
	12.40	Cement Concrete for reinforced concrete in pile cap	147
	12.41	Levelling course for Pile cap	154
	12.42	Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation	156
	12.43	Supplying, fitting and placing un-coated Mild steel reinforcement complete in foundation	157
13	**SUB-STRUCTURE**		
		Preamble	158
		SUMMARY	159 – 163
	13.01	Brick masonry work in 1:3	164
	13.02	Pointing with cement mortar (1:3) on brick work	165
	13.03	Plastering with cement mortar (1:3) on brick work	165
	13.04	Stone masonry work in cement mortar 1:3	166
	13.05	Plain/Reinforced cement concrete in sub-structure	169
	13.06	Supplying, fitting and placing HYSD bar reinforcement	204
	13.07	Supplying, fitting and placing Mild steel reinforcement	205
	13.08	Providing weep holes in Brick masonry/Plain/Reinforced concrete	206
	13.09	Back filling behind abutment, wing wall and return wall	207
	13.10	Providing and laying of Filter media with granular materials	209
	13.11	Supplying & laying of drainage composite for use behind walls (tensile strength of 18 kN/m)	210
	13.12	Supplying & laying of drainage composite for use behind walls (tensile strength of 13.5 kN/m)	212
	13.13	Supplying, fitting and fixing steel rocker bearing	213
	13.14	Supplying, fitting and fixing forged steel roller bearing	214
	13.15	Supplying, fitting and fixing sliding plate bearing with PTFE surface sliding on stainless steel.	215
	13.16	Supplying, fitting and fixing elastomeric bearing	216
	13.17	Supplying, fitting and fixing sliding plate bearing withstainless steel plate sliding on stainless steel plate with mild steel matrix	217
	13.18	Supplying, fitting and fixing POT-PTFE bearing	218
	13.19	Protection to substructure by using coal tar epoxy	219
	13.20	Providing structural steel for sub-structure	220

Chapter	Item No.	Description	Page
14		**SUPER-STRUCTURE**	
		Preamble	222
		SUMMARY	223 – 228
	14.01	Furnishing and Placing Reinforced/Prestressed cement concrete	229
	14.02	Supplying, fitting and placing HYSD bar reinforcement	251
	14.03	High tensile steel wires/strands including all accessories for stressing	252
	14.04	Providing and laying Cement concrete wearing coat M-30 grade including reinforcement	253
	14.05	Mastic Asphalt	253
	14.06	Construction of precast RCC railling of M30 Grade, aggregate size not exceeding 12mm	255
	14.07	Construction of RCC railling of M30 Grade in-situ with 20 mm nominal size	256
	14.08	Providing, fitting and fixing mild steel railing complete as Per drawing and Technical specification	257
	14.09	Drainage Spouts complete as per drawing and Technical specification	258
	14.10	PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification	259
	14.11	Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification	260
	14.12	Providing, anti-corrosive treatment to HYSD reinforcement with Fusion Bonded Epoxy Coating (FBEC)	260
	14.13	Precast-pre-tensioned Girders	261
	14.14	Providing and fixing Helical pipes in voided concrete slabs	263
	14.15	Crash Barrier for Bridges	263
	14.16	Painting on concrete surface	265
	14.17	Filler joint	265
	14.18	Asphaltic Plug joint	268
	14.19	Elastomeric Slab Steel Expansion Joint	269
	14.20	Compression Seal joint	269
	14.21	Strip Seal Expansion joint	271
	14.22	Modular Strip/Box Seal joint beyond 70 mm and upto 140mm	272
	14.23	Modular Strip/Box Seal joint beyond 140 mm and upto 210mm	272
	14.24	Painting two coats after filling the surface with synthetic enamel paint	273
	14.25	Bipolar Corrosion inhibiting admixture in concrete for protection of reinforced steel from corrosion	274
	14.26	Providing structural steel for super-structure	275
15		**BOX CELL STRUCTURE**	
		Preamble	277
		SUMMARY	278 – 281
	15.01	Excavation for Structures	282
	15.02	Filling Annular Space Around Footing in Rock	290
	15.03	Sand Filling	291
	15.04	Brick Masonry Work in Cement Mortar 1:3	291
	15.05	Cement Mortar	292

Chapter	Item No.	Description	Page
	15.06	Stone Masonry Work in Cement Mortar 1:3	293
	15.07	Brick Masonry Work in 1:3	294
	15.08	Pointing with cement mortar (1:3)	295
	15.09	Plastering with cement mortar (1:3)	295
	15.10	Stone Masonry Work in Cement Mortar 1:3	296
	15.11	Plain/Reinforced Cement Concrete for Open Foundation	298
	15.12	Plain/Reinforced Cement Concrete for wall & slab etc.	314
	15.13	Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation	318
	15.14	Providing weep holes	319
	15.15	PCC M15 Grade leveling course below approach slab	320
	15.16	Reinforced cement concrete approach slab including reinforcement	321
	15.17	Drainage Spouts	321
	15.18	Providing and laying Cement Concrete wearing coat M-30 grade including reinforcement	322
	15.19	Providing and laying 12mm thick mastic asphalt wearing course	322
	15.20	Crash Barriers	324
	15.21	Painting on concrete surface	324
	15.22	Filler joint	325
	15.23	Back filling behind abutment, wing wall and return wall	327
	15.24	Providing and laying of Filter media with granular materials	328
	15.25	Painting with synthetic enamel paint bridge No. and span arrangements	328
16	**RIVER TRAINING AND PROTECTION WORKS**		
		Preamble	330
		SUMMARY	331 – 333
	16.01	Providing and laying boulders apron on river bed	334
	16.02	Boulder apron laid in wire crates	334
	16.03	Cement concrete blocks (size 0.5×0.5×0.5m)	335
	16.04	Providing and laying Pitching on slopes	336
	16.05	Providing and laying Filter material underneath pitching in slopes	337
	16.06	Geotextile Filter	338
	16.07	Toe protection	338
	16.08	Providing and laying Flooring	339
	16.09	Dry rubble Flooring	340
	16.10	curtain wall	341
	16.11	Flexible Apron	341
	16.12	Gabion Structure for Retaining Earth	342
	16.13	Gabioon Structure for Erosion Control, River Training Works and Protection works	343
	16.14	Providing & making Gabion Structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh	344
	16.15	Laying of a fine aggregate concrete grade M30 filled fabric form for erosion protection of embankments	345

Chapter	Item No.	Description	Page
17		**REPAIR AND REHABILITATION**	
		Preamble	347
		SUMMARY	348 – 350
	17.01	Removal of existing cement concrete wearing coat including its disposal	351
	17.02	Removal of existing asphaltic wearing coat	351
	17.03	Guniting concrete surface with cement mortar applied with compressor	352
	17.04	Providing and inserting nipples with approved fixing compound	353
	17.05	Sealing of cracks/porous concrete by injection process	353
	17.06	Patching of damaged concrete surface with polymer concrete	355
	17.07	Sealing of cracks/porous concrete with Epoxy Grout by injection through nipples	355
	17.08	Applying epoxy mortar over leached, honey combed and spalled concrete surface and exposed steel reinforcement	356
	17.09	Removal of defective concrete	357
	17.10	Applying pre-packed cement based Polymer for replacement of spalled concrete	357
	17.11	Epoxy bonding of new concrete to old concrete	358
	17.12	Providing external prestressing with high tensile steel wire/strands span 25m	359
	17.13	Providing external prestressing with high tensile steel wire/strands span 50 m	360
	17.14	Providing external prestressing with high tensile steel wire/strands span 100m	361
	17.15	Replacement of bearings	363
	17.16	Rectification of bearings	363
	17.17	Replacement of Expansion joints	364
	17.18	Replacement of damaged concrete railing	365
	17.19	Replacement of crash barrier	365
	17.20	Replacement of damaged mild steel railing	366
	17.21	Repair of crash barrier	366
	17.22	Repair of RCC Railing	367
	17.23	Repair of steel Railing	367
	17.24	Mobile Bridge Inspection Unit (MBIU)	368
18		**TUNNEL WORKS**	
		Basic Approach And General Conditions For The Preparation of Standard Data Book	370 – 371
		Preamble	372
		SUMMARY	373 – 375
	18.01	Excavation for Portal in Ordinary Rock with hydraulic excavator	376
	18.02	Excavation for Portal in Hard Rock (blasting prohibited) with hydraulic excavator	376
	18.03	Excavation for portal in soil with hydraulic excavator	377
	18.04	Excavation for tunnel by using drilling & blasting methods in all types of rock	378

Chapter	Item No.	Description	Page
	18.05	Dewatering in tunnel by pumping out water collected by natural drainage inside tunnel	379
	18.06	Providing, Fitting and Placing of Ribs including Fabrication, Erection	380
	18.07	Shotcreting to upper bench/lower bench with steel fiber reinforced shotcrete (SFRS)	381
	18.08	Shotcreting to upper bench/lower bench with welded wire mesh	382
	18.09	Providing and fixing 25mm diameter 3 meter long steel rock bolts including drilling 45 mm dia holes	383
	18.10	Providing and fixing 32mm diameter 7 meter long steel rock bolts including drilling 51 mm dia holes	384
	18.11	Grouting cement slurry in grout holes under specified pressure for consolidation/contact grouting	385
	18.12	Furnishing and Placing Reinforced cement concrete in Tunnel work	386
	18.13	Supplying, fitting and placing HYSD bar reinforceement	395
19	**ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING**		
		Preamble	397
		SUMMARY	398 – 400
	19.01	Construction of Noise Barriers	401
	19.02	Construction of bamboo crib wall	403
	19.03	Construction of Fascines with a bundle of sticks	404
	19.04	Contraction and laying of brush Layers across the slope	404
	19.05	Construction of vegetative Palisades in Rills using hard wood cutting	405
	19.06	Laying of Palisades in Slopes	406
	19.07	Dust suppression	406
	19.08	Water Quality Monitoring	407
	19.09	Soil Quality Monitoring	407
	19.10	Ambient Air Quality Monitoring	408
	19.11	Ambient Noise Monitoring	408
	19.12	Consent Approvals, Consent to Establish & Consent to Operate	408
	19.13	Compliance submission for Consent Approvals, Consent to Establish (CTE) & Consent to Operate (CTO) (Half Yearly)	409
	19.14	Environmental Clearance Compliance (Half Yearly)	409
	19.15	Environmental Workshops (Half Yearly)	409
	19.16	Pollution prevention	410
	19.17	Road Safety Audit during Construction Period & Maintenance Period	410
	19.18	Road Safety Audit during Maintenance Period	414
Annexure :			
		SUMMARY of Sub-Analysis	419
		Sub-Analysis of Concrete/MoRTAR Rate	420 – 444

प्रस्तावना

बिहार लोक निर्माण संहिता की कण्डिका–103 के संशोधन के आलोक में बिहार सरकार, पथ निर्माण विभाग द्वारा निर्गत संकल्प सह पठित ज्ञापांक 1/बी–12–2003–5762 (एस) डबलू ई0 पटना दिनांक 05.06.2006 की कंण्डिका 2 (iii) में यह प्रावधान किया गया है कि अनुसूचित दर का निर्धारण के लिए दर विश्लेषण तथा सामग्रियों का दर निर्धारण पथ निर्माण विभाग के संयोजन में गठित राज्य स्तरीय अनुसूचित दर निर्धारण समिति द्वारा किया जायेगा। इसी क्रम में यह प्रावधान किया गया है कि पथ निर्माण विभाग में अनुसूचित दर का निर्धारण सड़क, परिवहन एवं राजमार्ग, मंत्रालय भारत सरकार के स्टैण्डर्ड डाटा बुक के आधार पर किया जायेगा, जबकि अन्य विभागों में इससे संबंधित भारत सरकार के कार्य विभागों में प्रचलित विशिष्टियों या दर विश्लेषण के आधार पर किया जायेगा। वर्तमान में राज्य स्तरीय अनुसूचित दर निर्धारण समिति के सदस्य इस प्रकार है :–

(i)	अभियंता प्रमुख (मुख्यालय), पथ निर्माण विभाग, बिहार, पटना	संयोजक
(ii)	अभियंता प्रमुख, ग्रामीण कार्य विभाग, बिहार, पटना	सदस्य
(iii)	अभियंता प्रमुख, भवन निर्माण विभाग, बिहार, पटना	सदस्य
(iv)	अभियंता प्रमुख, मुख्यालय, जल संसाधन विभाग, बिहार, पटना	सदस्य
(v)	अभियंता प्रमुख, लोक स्वास्थ्य अभियंत्रण विभाग, बिहार, पटना	सदस्य
(vi)	अभियंता प्रमुख, लघु जल संसाधन विभाग, बिहार, पटना	सदस्य
(vii)	अभियंता प्रमुख, तकनीकी परीक्षक कोषांग, निगरानी विभाग, बिहार, पटना	सदस्य
(viii)	मुख्य अभियंता (असैनिक), बिहार स्टेट पावर होल्डिंग कंपनी लि०, पटना	सदस्य
(ix)	मुख्य अभियंता (विद्युत), भवन निर्माण विभाग, बिहार, पटना	सदस्य

बिहार लोक निर्माण संहिता की कण्डिका–103 में संशोधन के आलोक में MORT&H Standard Data Book एवं Software पर आधारित पथ निर्माण विभाग (राष्ट्रीय उच्च पथ सहित) के लिए अनुसूचित दर पुस्त का **प्रथम संस्करण दिनांक–05.12.2006** से लागू किया गया था।

समिति द्वारा पथ निर्माण विभाग (राष्ट्रीय उच्च पथ सहित) के लिए अनुसूचित दर पुस्त (दर विश्लेषण सहित) में आवश्यक संशोधन एवं पुनरीक्षण के पश्चात् निम्नलिखित संस्करण किया गया :–

द्वितीय संस्करण	:	23.05.2007
तृतीय संस्करण	:	24.03.2008
चतुर्थ संस्करण	:	01.04.2009
पंचम संस्करण	:	01.04.2010
षष्ठम् संस्करण	:	01.05.2011
सप्तम् संस्करण	:	02.07.2012
अष्टम् संस्करण	:	01.04.2013
नवम् संस्करण	:	01.04.2014
दशम् संस्करण	:	01.04.2015
एकादश संस्करण	:	01.04.2016

द्वादश संस्करण	:	01.04.2017
त्रयोदश संस्करण	:	01.04.2018
चतुर्दश संस्करण	:	01.04.2019
पंचदश संस्करण	:	01.04.2021

समिति द्वारा चर्तुदश संस्करण में आवश्यक संशोधन एवं पुनरीक्षण के पश्चात् इसका पंचदश संस्करण दिनांक–01.04.2021 को किया गया।

षोड्श संस्करण करने के लिए राज्य अनुसूचित दर निर्धारण समिति की बैठक दिनांक–11.03.2022 को आहूत की गई।

दिनांक– 11.03.2022 की बैठक में उपस्थित सभी सदस्यों द्वारा MORT&H के Standard Data Book 2019 एवं Software के आधार पर संशोधन के साथ अनुसूचित दर पुस्तिका को दिनांक–01.04.2022 से षोड्श संस्करण को लागू करने में अपनी सहमति दी।

इस पुस्तिका के संस्करण के पश्चात् भी समय–समय पर निर्माण सामग्री यथा बिटुमेन, सीमेंट, स्टील इत्यादि के दरों में होनेवाली घटोत्तरी–बढ़ोत्तरी को देखते हुए लगभग तीन माह पर राज्य स्तरीय अनुसूचित दर निर्धारण समिति की बैठक होती है जिसमें उनके द्वारा दरों को अद्यतन किया जाता है। इसके साथ ही साथ विभिन्न विभागों, संस्थाओं एवं कार्यालयों से प्राप्त सुझावों एवं प्रस्तावों के आधार पर समुचित निर्णय लिये जाते हैं जिन्हे विभागीय वेबसाइट state.bihar.gov.in/rcd पर भी उपलब्ध कराये जाते हैं।

अतः इस पुस्तिका का उपयोग करनेवाले सभी पदाधिकारियों, व्यक्तियों, संस्थाओं, निगमों से अनुरोध है कि समय–समय पर विभागीय वेबसाइट का अवलोकन करते रहें।

बिहार लोक निर्माण संहिता की कण्डिका–103 के संशोधन के पश्चात् **MORT&H Standard Data Book 2019 (2nd Revision)** एवं Software पर आधारित अनुसूचित दर पुस्त का यह षोड्श संस्करण है। यद्यपि यह सभी सदस्यों की देख–रेख में तैयार किया गया है, फिर भी ऐसी संभावना है कि इस अनुसूचित दर पुस्त को तैयार करने में कुछ त्रुटियाँ रह गई हो और व्यवहार में लाने के क्रम में कुछ त्रुटियाँ दृष्टिगोचर हो सकती है, ऐसी स्थिति में मेरा अनुरोध है कि उन त्रुटियों को राज्य स्तरीय अनुसूचित दर निर्धारण समिति की जानकारी में E-mail ID-sorrcd2012@gmail.com /पत्र/दूरभाष–0612 2545514 द्वारा अथवा व्यक्तिगत रूप से अविलम्ब दी जाय ताकि सम्यक विचारोपरान्त उन त्रुटियों का समुचित निराकरण किया जा सके।

चूँकि यह दर विश्लेषण सड़क निर्माण के उच्च एवं आधुनिक तकनीक पर आधारित है। अतः Users को परामर्श दिया जाता है कि उनके द्वारा सम्बन्धित कार्यमद का दर विश्लेषण एवं विशिष्टि का गहन अध्ययन अवश्य किया जाय।

वर्तमान अनुसूचित दर पुस्त को तैयार करने तथा उसे प्रभावी बनाने में सहयोग करने के लिए निम्नलिखित पदाधिकारियों एवं कर्मचारियों का कार्य अत्यन्त ही सराहनीय रहा है:–

1. से० नि० ई0 अरविन्द कुमार, अधीक्षण अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग पटना।
2. ई0 श्रीमन नारायण शर्मा, कार्यपालक अभि0, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
3. ई0 अंशुमान कुमार सिंह, कार्यपालक अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
4. ई0 रेजी सिंह, तकनीकी सलाहकार, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
5. ई0 रामनाथ प्रसाद, सहायक अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
6. ई0 दिनेश कुमार, सहायक अभियंता, मुख्यालय निरूपण अंचल,पथ निर्माण विभाग, पटना।
7. ई0 आरिफ जमाल, सहायक अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।

8. ई0 रवि कुमार सुमन, सहायक अभियंता, मुख्यालय निरूपण अंचल,पथ निर्माण विभाग, पटना।
9. ई0 सुश्री तृप्ति जायसवाल, सहायक अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
10. ई0 श्री शोएब उस्मानी, सहायक अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
11. से० नि० ई0 राम दुलार राम, कनीय अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
12. ई0 संजय गुप्ता, कनीय अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग,पटना।
13. ई0 श्री हरिशंकर कुमार, कनीय अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
14. ई0 श्रीमती प्रतिमा कुमारी, कनीय अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
15. ई0 श्रीमती रीना कुमारी, कनीय अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
16. ई0 श्री अजय कुमार, कनीय अभियंता, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
17. श्री मो0 कमालउद्दीन अशरफ, सहायक, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।
18. श्री विपिन कुमार, डाटा इन्ट्री ऑपरेटर, मुख्यालय निरूपण अंचल, पथ निर्माण विभाग, पटना।

राज्य स्तरीय अनुसूचित दर निर्धारण समिति यांत्रिक उपभाग के प्रभारी मुख्य अभियंता, श्री अशोक कुमार एवं कार्यपालक अभियंता, श्री संजीव कुमार सिन्हा के प्रति आभार व्यक्त करता है जिनके सहयोग एवं रचनात्मक सुझाव से अनुसूचित दर पुस्त के इस संस्करण में विशेष सहयोग मिला है।

अनुसूचित दर पुस्त के उपयोग करनेवालों के विशेष सुविधा के लिए इस अनुसूचित दर पुस्तक के साथ Soft Copy (C.D.) भी संलग्न की जा रही है। साथ ही साथ यह अनुसूचित दर पुस्त विभागीय वेबसाइट state.bihar.gov.in/rcd पर भी उपलब्ध है।

यह अनुसूचित दर पुस्त दिनांक 01.04.2022 से प्रभावी होगा।

15-03-22

(हनुमान प्रसाद चौधरी)
संयोजक,
राज्य स्तरीय अनुसूचित दर निर्धारण समिति
–सह– अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

स्थान – पटना
दिनांक – 15.03.2022

MORT&H Standard Data Book 2019 (2nd revision) एवं इसके Software पर आधारित पथ निर्माण विभाग (राष्ट्रीय उच्च पथ सहित) के लिये अनुसूचित दर पुस्तिका (दर विश्लेषण सहित) के षोडश संस्करण–2022 का राज्य स्तरीय अनुसूचित दर निर्धारण समिति द्वारा अनुमोदन :-

बिहार लोक निर्माण संहिता की कण्डिका–103 में संशोधन के आलोक में बिहार सरकार, पथ निर्माण विभाग द्वारा निर्गत संकल्प सह पठित ज्ञापांक 1/बी0–12/2003–5762 (एस) (डब्लू ई) पटना, दिनांक– 05.06.2006 की कंडिका–2 (iii) में यह प्रावधान किया गया है कि अनुसूचित दर, दर विश्लेषण तथा सामग्रियों का दर निर्धारण पथ निर्माण विभाग के संयोजन में गठित राज्य स्तरीय अनुसूचित दर निर्धारण समिति द्वारा किया जायेगा। इसी क्रम में यह प्रावधान किया गया है कि पथ निर्माण विभाग में अनुसूचित दर का निर्धारण सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार के स्टैन्डर्ड डाटा बुक के आधार पर किया जायेगा। राज्य स्तरीय अनुसूचित दर निर्धारण समिति द्वारा श्रमदर, निर्माण सामग्रियों एवं Plant & Machinery के दर में हुए दर पुनरीक्षण के आलोक में पथ निर्माण विभाग (राष्ट्रीय उच्च पथ सहित) के लिये लागू अनुसूचित दर (दिनांक 01.04.2022 से प्रभावी) के पुनरीक्षण के लिए दिनांक–28.02.2022, दिनांक 07.12.2021 एवं दिनांक 11.03.2022 की बैठक में निर्माण सामग्री एवं Plant & Machinery के usage rate के लिए INPUT की स्वीकृति दी गयी है। सदस्यों की सहमति से पथ निर्माण विभाग (राष्ट्रीय उच्च पथ सहित) के लिए दिनांक–01.04.2021 से प्रभावी अनुसूचित दर पुस्त पचदश संस्करण में परिवर्तन करते हुए MORT&H Standard Data Book 2019 (2nd revision) के अनुसार आवश्यक संशोधन एवं पुनरीक्षण के पश्चात् इसके **पोडश** संस्करण (दिनांक–01.04.2022 से प्रभावी) का अनुमोदन किया जाता है। अनुसूचित दर तैयार करने में निम्नलिखित प्रक्रिया अपनाई गई है:–

1. **(i)** राष्ट्रीय राजमार्ग एवं भूतल परिवहन मंत्रालय के लिए लागू Standard Data Book 2019 के Basic Input Parameters के आधार पर Road/Bridge/Structure/Tunnel के लिए 10% Contractor's Profit शामिल किया गया है।

(ii) राष्ट्रीय राजमार्ग एवं भूतल परिवहन मंत्रालय के लिए लागू Standard Data Book 2019 के Basic Approach and General Conditions के आधार पर Road/Bridge/Structure/ Tunnel के लिए Large/Medium/Small Projects को इस प्रकार श्रेणीबद्ध किया गया है :–

(a) Civil works cost up to 200 Crore :-Small Project

(b) Civil works cost > 200 Crore and ≤ 500 Crore :-Medium Project

(c) Civil works cost > 500 Crore :-Large Project

(iii) राष्ट्रीय राजमार्ग एवं भूतल परिवहन मंत्रालय के लिए लागू Standard Data Book 2019 में दिये गये Basic Input Parameters के आधार पर Road/Bridge/Structure/Tunnel के लिए Overhead charge का प्रावधान इस प्रकार किया गया है :–

Sl. No.	Description	Overhead (Percentage)		
		Large Project	Medium Project	Small Project
1	Overheads for Road Works (CH01 to 11)	8%	10%	12%
2	Overheads for New/Widening of Bridge/Structure Works(CH12 to 16)	20%	20%	20%

3	Overheads for Rehabilitation of Bridges/Structure (CH17)	30%	30%	30%
4	Overheads for Road Tunnel Works (CH18)	25%	25%	25%

Note :- For Chapter-19 (Environmental & Safety Management & Bio Engineering), overhead charges will be applicable of Road works.

(iv) भविष्य में परियोजनाओं के DPR तैयार करने के क्रम में यदि किसी परियोजना में पथ कार्य के साथ Bridge/Structure/Tunnel कार्य भी सम्मिलित है, तो पथ कार्य में नियमानुसार लागू overhead (OH) तथा Bridge/Structure/Tunnel में MORT&H के Standard Data Book 2019 के अनुरूप नियमानुसार लागू overhead (OH) मद का प्रावधान करते हुए प्राक्कलन का सृजन किया जाय।

(v) सीमेन्ट के दर में पटना के लिये लागू OPC Grade 43 के दर को व्यवहार में लाया गया है। निरूपण एवं संरचना की आवश्यकतानुसार संबंधित सक्षम पदाधिकारी अन्य प्रकार के सिमेंट का व्यवहार कर सकते हैं।

(vi) दर–विश्लेषण में G.S.T. (Goods & Service Tax) शामिल नहीं है।

(vii) **Goods & Service Tax (G.S.T.) :-** समिति द्वारा सर्वसम्मति से सम्यक् विचारोपरांत G.S.T. की प्रक्रिया निम्न प्रकार से अपनाने का निर्णय लिया गया है :–

(a) दर–विश्लेषण में प्रयुक्त प्रत्येक सामग्री की दर में GST नहीं जोड़ा जाए।

(b) Carriage, overhead charge (excluding VAT/GST), Contractor profit, Royalty को जोड़कर प्रत्येक कार्य मद का दर निर्धारित किया जाए तथा इस निर्धारित दर के आधार पर परियोजना की प्राक्कलित राशि निर्धारित की जए।

(c) Work-Contracts के लिए उपरोक्त कंडिका–(b) में निर्धारित प्राक्कलित राशि/कुल लागत (Labour Cess रहित) पर Contractor Service tax/work contract G.S.T. का प्रावधान वित्त मंत्रालय, भारत सरकार की अधिसूचना संख्या–20/2017–Central Tax (Rate), नई दिल्ली दिनांक–22–08–17 में निर्मित तालिका के कॉलम–4 में निर्धारित G.S.T. (C.G.S.T.& S.G.S.T. मिलाकर जो वर्तमान में 12% है) तथा समय–समय पर भारत सरकार एवं राज्य सरकार द्वारा अधिसूचित कर की दर के अनुसार किया जाय।

परन्तु "For composite supply of work contract as defined in clause (119) of section 2 of the Central Goods & Services Tax Act 2017, involving predominantly earth work (That is, consituting more than 75% of the value of work contract) provided to the central Goverment, Union Territory, State Government, local Authority, a Government Authority or a Government Entity, the Goods & Services Tax (GST) for contract is 5% (CGST=2.5%, SGST=2.5%) only and as per revised GST Rates by the respective Government Authority time to time".

(d) उपरोक्त कंडिका–(b) में निर्धारित प्राक्कलित राशि (G.S.T रहित) पर 1% Labour Cess का प्रावधान निर्धारित मापदण्डों के अनुसार किया जाय।

(e) Bill of Quantity (B.O.Q.) में work value, labour less value एवं G.S.T. value का अलग–अलग उल्लेख किया जाय।

तत्संबंधी उदाहरण तालिका (Model Calculation Sheet) निम्न प्रकार है :–

(a) Estimated Amount (प्राक्कलित राशि) including carriage, overhead charge (excluding VAT/GST), Contractor profit, Royalty but excluding GST & Labour Cess="A"

(b) Contractor Service Tax/Work Contract GST in percentage = "Y"%

(c) Contract Service tax/contract GST Amount

$$= \text{"B"} = \frac{AY}{100}$$

(d) Labour Cess Amount@1% = "C" = A×0.01

(e) Bill of Quantity (B.O.Q.)

Work Value = A

GST Value = B

Labour Cess = C

(viii) **कार्य विभागों द्वारा सरकारी योजनाओं के लिए लघु खनिजों के उपयोग हेतु मालिकाना फीस (Seigniorage Fee)** :-समिति द्वारा सर्वसम्मति से खान एवं भूतत्व विभाग, बिहार, पटना के पत्रांक–कार्य विभाग/Seigniorege-11/19-3947/एम0, पटना दिनांक–15.11.2019 एवं खान एवं भूतत्व विभाग, बिहार की अधिसूचना संख्या–3174/एम0, दिनांक–17.09.2019 के आलोक में निम्नवत् निर्णय लिया गया है :–

(क) निर्माण कार्यों में व्यवहृत लघु खनिजों पर देय मालिकाना फीस उक्त खनिज के निर्धारित स्वामित्व (रॉयल्टी) दर के अतिरिक्त देय है।

(ख) कार्य विभागों द्वारा प्राक्कलन में लघु खनिज का मूल्य वैध खदान पर वर्त्तमान में प्रचलित खनिज मूल्य को रॉयल्टी सहित रखा जाय।

(ग) सभी सरकारी विभाग अपनी स्कीम या परियोजनाओं के लिए किसी लघु खनिज का उपयोग करने हेतु मालिकाना फीस की कटौती अपने आपूर्त्तिकर्त्ता या संवेदक से करेंगे।

(घ) मालिकाना फीस की कटौती प्राक्कलन में लगे वैध खदान पर रॉयल्टी सहित वर्त्तमान में प्रचलित खनिज मूल्य पर 10 प्रतिशत की दर से की जाय। इसमें अन्य मद यथा ढुलाई आदि को शामिल नहीं किया जाय।

(ङ) प्राक्कलन में मालिकाना फीस (Seigniorage Fee) का प्रावधान वैध खदान पर रॉयल्टी सहित वर्त्तमान में खनिज के मूल्य पर 10 (दस) प्रतिशत की दर से किया जाय। इसमें अन्य मद यथा ढुलाई आदि को शामिल नहीं किया जाय।

समिति द्वारा सम्यक विचारोपरांत सर्वसम्मति से प्राक्कलन में मालिकाना फीस का प्रावधान करने की प्रक्रिया निम्न प्रकार से अपनाने का निर्णय लिया गया :–

(a) दर–विश्लेषण में 10 (दस) प्रतिशत मालिकाना फीस (Seigniorage Fee) नहीं जोड़ा जाय।

(b) Carriage, overhead charge (excluding VAT/GST), Contractor Profit, Royalty को जोड़कर प्रत्येक कार्य मद का दर निर्धारित किया जाय तथा इस निर्धारित दर के आधार पर परियोजना की प्राक्कलित राशि निर्धारित की जाय।

(c) Work-Contracts के लिए उपरोक्त कंडिका–(b) में निर्धारित प्राक्कलत राशि/कुल लागत (Labour Cess रहित) पर Contract Service tax/work contract G.S.T. का प्रावधान अधिसूचित/निर्धारित दर के अनुसार किया जाय।

(d) उपरोक्त कंडिका (b) में निर्धारित प्राक्कलित राशि (G.S.T. रहित) पर 1 प्रतिशत Labour Cess का प्रावधान निर्धारित मापदंडों के अनुसार किया जाय।

(e) उपरोक्त कंडिका (b) में निर्धारित प्राक्कलित राशि (G.S.T. रहित एवं Labour Cess रहित) में सम्मिलित रॉयल्टी सहित Basic खनिज मूल्य (ढुलाई रहित) पर 10 (दस) प्रतिशत की दर से मालिकाना फीस (Seigniorage Fee) का प्रावधान अलग से किया जाय।

(f) Bill of Quantity (B.O.Q.) में Work Value, GST Value, Labour Cess Value एवं मालिकाना फीस (Seigniorage Fee) Value का अलग–अलग उल्लेख किया जाय।

तत्संबंधी उदाहरण तालिका (Model Calculation Sheet) निम्न प्रकार है :–

(a) Estimated Amount (प्राक्कलित राशि) including Carriage, overhead charge (excluding VAT/GST), Contractor Profit, Royalty but excluding GST, Labour Cess & Seigniorage Fee ="A"

(b) Work Contract GST in Percentage ="Y" %

(c) Contract GST Amount ="B"=$\frac{AY}{100}$

(d) Labour Cess@1% ="C"=A×0.01

(e) प्राक्कलन में सम्मिलित रॉयल्टी सहित लघु खनिज का Basic मूल्य (ढुलाई रहित) ="D"

(f) मालिकाना फीस (Seigniorage Fee) रॉयल्टी सहित Basic लघु खनिज मूल्य पर 10 प्रतिशत की दर से ="E"=D×0.10

(g) Bill of Quantity (B.O.Q.)

Work Value	=A
GST Value	=B
Labour Cess	=C
Seigniorage Fee	=E

(च) वैध खदान से खनिज क्रय के समर्थन में संवेदक अपने विपत्रों के साथ खनन विभाग द्वारा निर्गत ई0 चालान की प्रति संलग्न करेंगें, जिसकी जाँच संबंधित कार्य विभागों द्वारा ही की जायेगी। विपत्रों के साथ खनिज क्रय के साक्ष्य स्वरूप ई0 चालान संलग्न नहीं किये जाने की स्थिति में संवेदकों के विपत्र से मालिकाना फीस के अतिरिक्त निर्धारित दर पर रॉयल्टी की वसूली भी कार्य विभागों द्वारा की जायेगी। साथ हीं नियमाधीन अन्य कार्रवाई हेतु ऐसे संवेदकों की पूर्ण सूची कार्य विभागों द्वारा खान एवं भूतत्व विभाग को उपलब्ध कराया जायेगा।

(छ) साधारण मिट्टी निजी जमीन अथवा सरकारी भूमि से प्राप्त करने की स्थिति में बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के सारे प्रावधान लागू होंगे।

(ज) निजी/सरकारी भूमि से नियमानुसार साधारण मिट्टी प्राप्त करने की स्थिति में व्यवहृत मिट्टी के संबंध में संवेदक द्वारा समर्पित विपत्र के साथ खान एवं भूतत्व विभाग द्वारा निर्गत परमिट साक्ष्य स्वरूप संलग्न रहने की स्थिति में सत्यापनोपरांत सिर्फ स्वामिस्व की 10 प्रतिशत मालिकाना फीस के रूप में वसूली की जायेगी। जिन विपत्रों के साथ खान एवं भूतत्व विभाग द्वारा निर्गत परमिट संवेदक साक्ष्य स्वरूप विपत्रों के साथ संलग्न नहीं किये होगें या सत्यापनोपरांत गलत पाये जायेगें तो वैसी स्थिति में प्रतिघनमीटर वर्त्तमान स्वामिस्व दर 33/रू0 के अलावे 10 प्रतिशित मालिकाना फीस 3.30/– रू0 की कटौती संवेदक के विपत्र से की जायेगी एवं नियमाधीन अन्य कार्रवाई हेतु ऐसे संवेदकों की पूर्ण सूची कार्य विभागों द्वारा खान एवं भूतत्व विभाग को उपलब्ध कराया जायेगा।

(झ) बिहार खनिज नियमावली, 2019 के नियम 37 (2) में सिंचाई विभाग द्वारा नहर तथा जल निकास प्रणाली के संधारण की प्रक्रिया में निष्कासित खनिजों के लिए खनिज निपटाव परमिट, लघु खनिजों के विनिर्दिष्ट दरों पर रॉयल्टी के पूर्व भुगतान पर दिये जाने का प्रावधान है। साथ हीं उक्त नियमावली के नियम 37 (3) में विनिर्दिष्ट आपात स्थितियों के लिए समाहर्त्ता द्वारा लघु खनिजों के विनिर्दिष्ट दरों पर रॉयल्टी के पूर्व भुगतान पर परमिट दिये जाने का प्रावधान है। ऐसी स्थिति में संवेदक द्वारा समर्पित विपत्र के साथ खान एवं भूतत्व विभाग द्वारा निर्गत परमिट साक्ष्य स्वरूप संलग्न रहने की स्थिति में सत्यापनोपरांत सिर्फ स्वामिस्व की 10 प्रतिशत मालिकाना फीस के रूप में वसूली की जायेगी। जिन विपत्रों के साथ खान एवं भूतत्व विभाग द्वारा निर्गत परमिट संवेदक द्वारा साक्ष्य स्वरूप विपत्रों के साथ संलग्न नहीं किये होंगें या सत्यापनोपरांत गलत पाये जायेगे तो वैसी स्थिति में स्वामित्व एवं मालिकाना फीस की वूसली की जायेगी।

(ix) **<u>पुल निर्माण कार्य हेतु विभिन्न व्यासों के कूपों के 40 मीटर से अधिक कूप गलाई का दर</u>** :– समिति द्वारा सर्वसम्मति से सम्यक् विचारोपरांत Well Foundation के कूप–गलाई के संदर्भ में 30 मी0 से 40 मीटर के गहराई के प्रावधान को 40 मीटर से अधिक गहराई के दर के रूप में अनुमोदित करने का निर्णय लिया गया है।

(x) (a) स्टील के दर में TMT Bar के लिये Fe 500D HYSD के दर को दर विश्लेषण के लिए व्यवहार में लाया गया है।

(b) बिटुमेन के लिए Packed 60/70(VG30) ग्रेड एवं Packed 80/100(VG 10) ग्रेड Ex-Barauni का दर व्यवहार में लाया गया है। Bitumen Emulsion RS1 & SS1 Packed Ex-Patna, Modified Graded Bitumen CRMB-55 Packed Ex-Barauni एवं Bitumen (Cutback) Packed Ex-Barauni के दर को दर विश्लेषण में लिया गया है।

(c) M-327 में Ex- Fatuha VG-40 के दर को विश्लेषण में लिया गया है।

(d) Brick 100 "A" का दर Patna Urban के लिये लागू दर को व्यवहार में लाया गया है।

(xi) (a) Coarse Sand का Schedule-M/MORTH-1 के M-004 एवं M-005 के अनुसार अनुमोदित दर को व्यवहार में लाया गया है।

संबंधित सक्षम पदाधिकारी निर्माण कार्यक्षेत्र के जोन के अनुसार ही Bitumen/Cement/ Brick/Coarse Sand के निर्धारित दर का प्रयोग करेंगे और इसके अनुसार दर में अन्तर की राशि को प्राक्कलन में जोड़ेगे या घटायेगें।

(b) TMT Bars, Mild Steel bars एवं Structural Steel के भिन्न आकार/व्यास का व्यवहार निर्माण कार्यों में किया जाता है। इसे अनुसूचित दर विश्लेषण में अधिसूचित दर के औसत दर को व्यवहार में लिया गया है। संबंधित सक्षम पदाधिकारी द्वारा वास्तविक निरूपण के आधार पर भिन्न व्यास/आकार प्रकार के स्वीकृत दरों को आवश्यकतानुसार व्यवहार में लाया जा सकता है।

(c) TATA, SAIL RINL एवं Shyam Steel Industries Ltd, Kolkata से प्राप्त दर पर राज्यस्तरीय अनुसूचित दर निर्धारण समिति द्वारा विचार–विमर्श कर स्टील का दर अनुमोदित करने का निर्णय लिया गया। इन्हीं चार कम्पनियों यथा TATA, SAIL RINL एवं Shyam Steel Industries Ltd, Kolkata के स्टील का प्रयोग निर्माण कार्यों में किया जाना है।

(xii) Royalty का प्रावधान खान एवं भूतत्व विभाग की अधिसूचना संख्या–3174 पटना दिनांक–17.09.2019 के अनुसार किया गया है। रॉयल्टी की कटौती विपत्रों से Loose Volume of Materials पर की जानी है न कि Finished Volume of Materials (Compacted Volume) पर, जिसका अनुपालन सुनिश्चित करने की जिम्मेवारी क्षेत्रीय पदाधिकारियों की होगी।

(xiii) इसके पूर्व में भी समय–समय पर अनुसूचित दर में ''संशोधित दर'' प्रकाशित किया गया है जिसका समायोजन इस अनुसूचित दर पुस्तिका में कर लिया गया है।

2. <u>बिटुमेन से संबंधित दर</u> :–

अनुसूचित दर के पुनरीक्षण के क्रम में राष्ट्रीयकृत कम्पनी Indian Oil Corporation, Bharat Petroleum एवं Hindustan Petroleum Corporation से दर प्राप्त हुआ है। Emulsion MS/RS-1/SS-1 Packed का दर Hindustan Petroleum Corporation Ltd. से प्राप्त हुआ है। समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, संलग्न अनुसूची "M4" के अनुसार बिटुमेन के विभिन्न Grades/प्रकार के दर को अनुमोदित किया गया है।

3. <u>सीमेन्ट का दर</u> :–

(i) **Ordinary Portland Cement (43 Grade)** का दर विभिन्न कंपनियों से प्राप्त हुआ है। इस दर में शामिल GST को घटाकर प्रति बोरा दर अनुमोदित करने का निर्णय लिया गया। पटना के न्यूनतम दर के आधार पर, पूर्व से निर्धारित दर के अनुपात में अन्य जोनों के लिए दर प्राप्त किया गया। समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, संलग्न अनुसूची "M1" के दर को अनुमोदित करने का निर्णय लिया गया।

(ii) **Ordinary Portland Cement (33 Grade)** का दर किसी भी सीमेन्ट निर्माता कम्पनी से प्राप्त नहीं हुआ है। इसलिए समिति द्वारा OPC-33 grade का दर अनुमोदित नहीं किया गया है।

(iii) **Portland Pozzolona Cement (PPC)** का दर विभिन्न कंपनियों से प्राप्त हुआ है। इस दर में शामिल GST को घटाकर प्रति बोरा दर अनुमोदित करने का निर्णय लिया गया। पटना के न्यूनतम दर के आधार पर, पूर्व से निर्धारित दर के अनुपात में अन्य जोनों के लिए दर प्राप्त किया गया।

समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, संलग्न अनुसूची ''M3A'' के दर को अनुमोदित किया गया।

(iv) **Portland Slag Cement (PSC)** का दर विभिन्न सीमेंट निर्माता कम्पनी से प्राप्त हुआ है। इस दर में शामिल GST को घटाकर प्रति बोरा दर अनुमोदित करने का निर्णय लिया गया। P.S.C. के लिए प्राप्त पटना के न्यूनतम दर के आधार पर, पूर्व से निर्धारित दर के अनुपात में अन्य जोन के दरों को भी निर्धारित करने का निर्णय लिया गया। समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, संलग्न अनुसूची "M3B" के अनुसार P.S.C. के दर को अनुमोदित किया गया।

(v) **Portland Composite Cement PCC (IS 16415:2015)** का दर विभिन्न कम्पनियों से प्राप्त हुआ है। इस दर में शामिल GST को घटाकर प्रति बोरा दर अनुमोदित करने का निर्णय लिया गया। पटना के न्यूनतम दर के आधार पर, पूर्व से निर्धारित दर के अनुपात में अन्य जोनों के लिए दर प्राप्त किया गया। समिति के द्वारा सर्वसम्मति से पूर्ण विचारोपरांत संलग्न अनुसूची "M3C" के अनुसार PCC के दर को अनुमोदित किया गया।

4. श्रमिक कल्याण कोष हेतु 1% (एक प्रतिशत) सेस की कटौती से संबंधित श्रम विभाग, बिहार सरकार के पत्रांक 4984 दिनांक–01.10.2008 एवं संयोजक–सह–अभियंता प्रमुख के पत्रांक–746 (अनु0) दिनांक–25.02.2010 द्वारा दिये गये निर्देश का अनुपालन सुनिश्चित करने की जिम्मेवारी क्षेत्रीय पदाधिकारीयों की होगी।

इस अनुसूचित दर पुस्त के दर विश्लेषण में 1%(एक प्रतिशत) सेस की राशि सम्मिलित नहीं किया गया है।

5. (a) रेलवे द्वारा निर्माण सामग्री की ढुलाई का दर निर्धारण हेतु रेल मंत्रालय (रेलवे बोर्ड) भारत सरकार, महाप्रबंधक (परिचालन)/वाणिज्य के पत्रांक–2014/टी–टी III/S/27/1, नई दिल्ली दिनांक–**02.09.2014** के द्वारा माल ढुलाई हेतु Route Chart उपलब्ध कराया है जिसे क्षेत्रीय पदाधिकारी सभी Corrigendum/Amendment के साथ जाँचोपरांत व्यवहार में लायेगें। Route Chart की छाया प्रति इस अनुसूचित दर पुस्त में संलग्न कर दी गई है। Freight Rate से संबंधित रेल मंत्रालय भारत सरकार के पत्रांक–TCR/1078/2015/07, नई दिल्ली, दिनांक–31–10–2018 (Rate Circular No.-19 of 2018) एवं इस पत्र के साथ संलग्न Annexure-1, II & III के रूप में Freight Rate Table-2018 की प्रति इस अनुसूचित दर पुस्त में Amendments के साथ संलग्न कर दी गई है।

(b) MORT&H Standard Data Book में दिये गये "Carriage of Materials" के Calculation के अलावे रेलवे द्वारा निर्माण सामग्री की ढुलाई पर समिति के सदस्यों द्वारा विचार विमर्श किया गया। सर्वसम्मति से पूर्णविचारोपरान्त, सदस्यों द्वारा यह निर्णय लिया गया कि वैसे स्थल जहाँ पर रेलवे के द्वारा निर्माण सामग्रियों की ढुलाई संभव हो वहाँ पर Road एवं Railway दोनों के द्वारा Carriage of Materials का दर प्राप्त किया जाय तथा दोनों में से न्यूनतम दर को ही प्रयोग में लाया जाय।

The maximum lead to be considered as per T.E.C. Norms is as follows-

(i) **For local Sand 3 Km with 1 km kuchcha road.**

(ii) For brick 8 km with 1 km kuchcha road.

(iii) For Coarse Sand, Stone Metal, Stone chips, Moorum, Stone Boulder, Bitumen as per actual lead with Provision of kuchcha lead as per requirement of site condition.

6. **<u>Steel से संबंधित निर्माण सामग्रियो का दर</u> :–**

a. **G.C. Sheet** का दर :– G.C. Sheet का दर TATA से प्राप्त हुआ है। तद्नुसार समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, अनुसूची "M5" के अनुसार अनुमोदित करने का निर्णय लिया गया।

b. **Wire rod in coil :-** Wire rod in coil के भिन्न भिन्न व्यास का दर RINL से प्राप्त हुआ है। इसपर समिति के सदस्यों द्वारा विचार–विमर्श किया गया तथा RINL से प्राप्त दर बिना GST के समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, अनुसूची "M6" के अनुसार अनुमोदित करने का निर्णय लिया गया।

c. **Steel Channel का दर** :– Steel Channel का दर RINL से प्राप्त हुआ है, तद्नुसार RINL से प्राप्त न्यूनतम दर बिना GST के समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, अनुसूची "M8" के अनुसार अनुमोदित करने का निर्णय लिया गया।

d. **Steel Angles का दर** :– भिन्न–भिन्न आकार वाले Steel Angles का दर RINL से प्राप्त हुआ है। तद्नुसार RINL से प्राप्त न्यूनतम दर बिना GST के समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, Schedule "M9" के अनुसार अनुमोदित करने का निर्णय लिया गया।

e. **TMT Bar (Fe 500D) का दर** :– TMT Bar का दर TATA, RINL SAIL एवं Shyam Steel Industries ltd. से प्राप्त हुआ है। TATA, RINL, SAIL एवं Shyam Steel Industries ltd. से प्राप्त न्यूनतम दर बिना GST के समिति के द्वारा सर्वसम्मति से पूर्णविचारोपरान्त, Schedule "M10A" के अनुसार अनुमोदित करने का निर्णय लिया गया।

f. **Schedule M7:-** यह Steel Joist से संबंधित है। वर्तमान में इसका दर SAIL,TATA, RINL द्वारा नहीं दिया जा रहा है अतः इसका वर्तमान में इस्तेमाल नहीं होने तथा दर के अनुपलब्धता के कारण इस पुस्तिका से विलोपित किया जा रहा है।

7. **<u>Plant & Machinery के दर पुनरीक्षण के संबंध में</u>** :– Plant & Machinery के अन्तर्गत 141 मद है। MORT&H Standard Data Book 2019 (2nd revised) के अनुसार निर्माण कार्यों में प्रयुक्त होनेवाली मशीनों का दर Input के रूप में Oil & Lubricants के दर का प्रयोग कर MORT&H Online SoR Software (based on MORT&H Standard Data Book 2019) से downloaded दर के आधार पर अद्यतन किया गया है। इस आधार पर समिति के सभी सदस्यों द्वारा Plant & Machinery के दर को पूर्ण विचारोपरांत सर्वसम्मति से अनुसूची P&M/MORTH-1A के अनुसार अनुमोदित करने का निर्णय लिया गया।

8. **<u>Carriage का दर पुनरीक्षण के संबंध में</u>** :– Plant & Machinery के अद्यतन अनुमोदित दर (P&M/MORTH-1A) एवं श्रम दर के आधार पर संलग्न अनुसूची "Carriage rate of Materials by Tipper" एवं "Carriage of Materials by Tractor" के अनुसार Carriage के

दर को समिति के सदस्यों द्वारा पूर्ण विचारोपरांत सर्वसम्मति से अनुमोदित करने का निर्णय लिया गया।

9. **<u>ईंट (Brick) एवं ईंट से संबंधित निर्माण सामग्रियों का दर पुनरीक्षण के संबंध में</u>** :– विभिन्न ग्रेड के ईंट एवं ईंट से संबंधित निर्माण सामग्रियों के दर की मांग अभियंता प्रमुख, भवन निर्माण विभाग एवं सभी अधीक्षण अभियंता, पथ निर्माण विभाग से की गयी, लेकिन दर की प्राप्ति नहीं होने के कारण Office of Economic Advisor, Ministry of Commerce & Industry, भारत सरकार द्वारा निर्गत Plain Bricks के Wholesale Price Index के Moving Average के आधार पर ईंट एवं ईंट से निर्मित सामग्रियों के दर को समिति के सदस्यों द्वारा पूर्ण विचारोपरांत सर्वसम्मति से Schedule M 11 के अनुसार अनुमोदित करने का निर्णय लिया गया।

10. **<u>Coarse-Sand, स्टोन एवं स्टोन चीप्स से संबंधित निर्माण सामग्रियों का दर–पुनरीक्षण</u>** :– खान एवं भूतत्व विभाग, बिहार, पटना के पत्रांक–02/एम० एम० (बा०)–01/21–3376, पटना दिनांक 15.11.2021 के आलोक में समिति द्वारा स्टोन–बोल्डर एवं Coarse-Sand का दर क्षेत्रीय पदाधिकारियों के माध्यम से प्राप्त न्यूनतम बाजार मूल्य के आधार पर Schedule-M/MoRTH-1 के Item संख्या M-001 से M-005 तक अद्यतन करने का निर्णय लिया गया।

Schedule-M/MoRTH-1 के Item संख्या M-006 से M-009 (Fine Sand), Moorum, Gravel एवं Hard-moorum) तक का दर क्षेत्रीय पदाधिकारियों से प्राप्त नहीं होने के कारण Office of Economic Advisor, Ministry of Commerce & Industry, भारत सरकार द्वारा निर्गत Wholesale Price Index (Last updated on 14.01.2022) में Stone, Chips मद में रखते हुए Moving Average के आधार पर अद्यतन करने का निर्णय लिया गया।

Schedule-M/MoRTH-1 के मदों यथा Stone-Aggregate 40mm nominal (M-054), 20mm nominal (M-052), 10mm nominal (M-050), Stone-dust (M-020) एवं GSB Crusher run (M-055) का दर क्षेत्रीय पदाधिकारियों के माध्यम से प्राप्त न्यूनतम बाजार मूल्य एवं SoR के मद संख्या–1.06 (Crushing of Stone-Aggregates) के दर–विश्लेषण से प्राप्त दर में से न्यूनतम दर के आधार पर अद्यतन करने का निर्णय लिया गया।

Schedule-M/MoRTh-1 के शेष मदों का दर Item संख्या–M-054, M-052, M-050 एवं M-020 मद के अनुमोदित दरों के आधार पर अथवा इन दरों के Average के आधार पर अद्यतन करने का निर्णय लिया गया।

इस प्रकार समिति द्वारा सम्यक विचारोपरान्त सर्वसम्मति से Coarse Sand, Stone-Boulder एवं Stone-Aggregates से संबंधित निर्माण सामग्रियों का दर अनुसूची M/MoRTH-1 के अनुसार M-001 से M-055 तक अनुमोदित करने का निर्णय लिया गया।

11. **<u>MORT&H Standard Data Book के कार्य मदों में व्यवहृत विभिन्न निर्माण सामग्रियों (Schedule-M/MORTH-1A) के दर निर्धारण के संबंध में</u>** :– Schedule-M/MORTH-1A में निहित विभिन्न निर्माण सामग्रियों (M-056 से M-327 एवं MR-01 से MR 54) का दर क्षेत्रीय पदाधिकारियों द्वारा उपलब्ध नहीं कराने के कारण उनमें से कई मदों को समुचित श्रेणियों में रखते हुए Office of Economic Advisor, Ministry of Commerce and Industry, भारत सरकार द्वारा निर्गत Wholesale Price Index (last updated on

14.01.2022) के moving average के आधार पर दरों को अद्यतन करने का निर्णय लिया गया है, जो निम्नवत है :–

Sl. No.	Item Code	Name of Commodity	% Increase/ Decrease in W.P.I
1	M-193	Alloy steel wire rods	23.785
2	M-61, 158	Aluminium Metal	13.961
3	M-59	Aluminium alloys	19.234
4	M-64, 65, 89, 94, 127, 126, 174, 180	Alloy steel castings	4.776
5	M-56	Asbestos Corrugated sheet	4.148
6	M-62, 71, 91, 92, 93, 96, 99, 111, 112, 119, 140, 143, 133, 139, 153, 156, 160, 161, 162, 163, 166, 164, 167, 169, 229, 189	All Commodities	10.65
7	M-86, 109, 128, 129, 159	Bolt Screws,, nuts & Nails of Iron & steel	11.952
8	M-324, 326	Cement blocks (Concrete)	1.981
9	M-87, 154	Copper metal/copper rings	19.677
10	M-186	Ceramic tiles (vitrified tiles)	5.505
11	M-80	Cast Iron, Castings	6.26
12	M-120	Cordage/ropes/twines of Jute and coir	11.74
13	M-95, 97, 98	Epoxy Liquid	6.95
14	M-85, 132	Fibres	21.747
15	M-155, 101, 102, 239	Galvanized iron pipes	18.161
16	M-215	Gelatine	11.001
17	M-135	Insecticide and pesticide	4.011

18	M-190	Lime & Calcium Carbonate	6.479
19	M-66, 67, 68, 69, 70	Manufacture of Bearing gears, gearing & Driving equipments	4.394
20	M-134, 152	Manufacture of articles of concrete, Cement and Plaster	3.021
21	M-217	Manufacture of electrical equipment	7.32
22	M-57, 58, 130, 131, 145, 192	Manufacture of Paints, Varnishes and Similar Coating, Printing ink and mastics	10.14
23	M-104, 106, 107, 108, 183, 286 to 291	Manufacture of made up textile articles, except apparel	2.917
24	M-90	Manufacture of other non-metallic mineral products	(-) 27.248
25	M-063, 72, 122, 123, 124, 194, 228	MS wire rods	27.287
26	M-182	Plasticizer	34.747
27	M-079	Plain Brick	(-) 0.082
28	M-113, 114, 137, 138	Plastic tube (Flexible/non -Flexible)	18.194
29	M-117, 136, 165, 292	Plastic Components	8.275
30	M-184, 141	Stone chips	2.168
31	M-171, 172, 175, 176, 177	Steel Pipes, tubes & poles	10.674
32	M-173	Steel Drums and Barrels	37.804
33	M-178, 179	Steel Cables	1.818
34	M-118, 157	Stainless Steel bars & rods, including flats.	16.354
35	M-088	Steel structure	6.863
36	M-187, 195, 196, 197, 198	Timber/wooden Plank, Sawn/resawn	6.928

Schedule-M/MORTH-1A कुछ मदों का दर Building Construction Department के SoR के आधार पर एवं भवन निर्माण विभाग से प्राप्त दर के आधार पर अद्यतन किया गया है। इस प्रकार समिति के सदस्यों द्वारा पूर्ण विचारोपरांत सर्वसम्मति से निर्माण सामग्रियों का दर अनुसूची M/MORTH-1A के अनुसार अनुमोदित करने का निर्णय लिया गया।

12. <u>निर्माण कार्यो (सड़के, बाँध तथा सिंचाई कार्य) में नियोजित विभिन्न श्रेणी के मजदूरों का संशोधित न्यूनतम दैनिक मजदूरी के दर पुनरीक्षण हेतु लिये गये निर्णय</u> :–

(a) श्रम संसाधन विभाग, बिहार, पटना की अधिसूचना संख्या–2847, दिनांक–30.09.2021 के आलोक में पथ निर्माण कार्यो में प्रयुक्त 72 प्रकार के विभिन्न कर्मियों तथा बांध निर्माण एवं सिंचाई कार्यो के लिये प्रयुक्त 71 प्रकार के कर्मियों के न्यूनतम दैनिक श्रम दर का अनुमोदन दिनांक–22.10.2021 की बैठक में सदस्यों द्वारा सर्वसम्मति से पूर्णविचारोपरांत अनुसूची–I एवं II के अनुसार करने का निर्णय लिया गया तथा समिति के सदस्यों द्वारा निर्णय लिया गया कि यह दर पथ निर्माण विभाग, भवन निर्माण विभाग, ग्रामीण कार्य विभाग, लोक स्वास्थ्य अभियंत्रण विभाग एवं अन्य कार्य विभाग के अंतर्गत कराये जानेवाले निर्माण कार्यो के उपयोग में भी लाया जा सकेगा।

(b) **<u>MORT&H Standard Data Book 2019 (2nd Revision) के दर–विश्लेषण में व्यवहृत विभिन्न श्रेणी के मजदूरों के दर–पुनरीक्षण हेतु लिये गये निर्णय</u>** :– समिति के सदस्यों द्वारा सर्वसम्मति से पूर्ण विचारोपरांत उक्त वर्णित क्रमांक–12 (a) पर अनुमोदित श्रमदर अनुसूची–I के आधार पर MORT&H Standard Data Book 2019 के दर–विश्लेषण में व्यवहृत विभिन्न श्रेणी के मजदूरों के दरों को INPUT के रूप में प्रयोग करने हेतु अनुसूची–III के अनुसार अनुमोदित करने का निर्णय लिया गया है। समिति के सदस्यों द्वारा सर्वसम्मति से यह निर्णय लिया गया है कि यह दर पथ निर्माण विभाग, भवन निर्माण विभाग, ग्रामीण कार्य विभाग, लोक स्वास्थ्य अभियंत्रण विभाग एवं अन्य कार्य विभाग के अन्तर्गत कराये जानेवाले निर्माण कार्यों के उपयोग में लाया जा सकता है।

13. <u>MORT&H Standard Data Book 2019 के Basic Input Parameters के अन्तर्गत समिति के सदस्यों द्वारा सर्वसम्मति से पूर्ण विचारोपरांत Lead इस प्रकार लेने का निर्णय लिया गया है</u> :–

(1) Lead from Mixing Plant to working site=1Km

(2) Lead for Earth Work borrow area to site=1 Km

14. MORT&H Specification for Roads and Bridges work के fifth revision पर आधारित MORT&H के Standard Data Book 2019 (for analysis of Rates) का 2nd Revision प्राप्त हो गया है। इस अनुसूचित दर पुस्त का दर विश्लेषण Standard Data Book 2019 (2^{nd} revision) के आधार पर करने का निर्णय पूर्णविचारोपरान्त सर्वसम्मति से समिति के सदस्यों द्वारा लिया गया।

15. **<u>Admixture</u> :-** Batching, Plant, Transit Mixture एवं कंक्रीट पम्प के माध्यम से सीमेंट कंक्रीट की ढलाई करने पर आवश्यकतानुसार सक्षम प्राधिकार द्वारा अनुमोदित Design Mix

की विशिष्टियों के अनुरूप Admixture (plasticizer, super plasticizer etc) का उपयोग किया जा सकता है तथा इसे तत्संबंधित मद–विशेष के दर विश्लेषण में पूर्व से Admixture शामिल नहीं रहने की स्थिति में सम्मिलित किया जा सकता है।

16. **<u>नई अनुसूचित दर पुस्त का प्रकाशन के संबंध में विचार विमर्श</u>** :– पिछले वर्ष की भाँति इस वर्ष भी नये अनुसूचित दर पुस्त का प्रकाशन किया जाना है, जिस पर सदस्यों द्वारा विचार विमर्श किया गया तथा इसे दिनांक–01.04.2022 से लागू किये जाने का सर्वसम्मति से निर्णय लिया गया।

11.03.22
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, भवन निर्माण विभाग, बिहार, पटना।

11/3/22
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, ग्रामीण कार्य विभाग, बिहार, पटना।

11/3/22
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, लघु जल संसाधन विभाग, बिहार, पटना।

11.03.22
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–मुख्य अभियंता (असैनिक) बिहार स्टेट पावर होल्डिंग कंपनी लि0, बिहार, पटना।

11/3/22
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–मुख्य अभियंता (विद्युत), भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, तकनीकी परीक्षक कोषांग, निगरानी विभाग, बिहार, पटना।

11/3/22
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, लोक स्वास्थ्य अभियंत्रण विभाग, बिहार, पटना।

11/3/2022
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख मुख्यालय जल संसाधन विभाग, बिहार, पटना।

संयोजक 03.22
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख (मुख्यालय), पथ निर्माण विभाग, बिहार, पटना।

राज्यस्तरीय **अनुसूचित दर निर्धारण समिति की दिनांक– 22. 10. 2021. की बैठक में निर्माण कार्यों (सड़कें, बाँध तथा सिंचाई कार्य) में नियोजित विभिन्न श्रेणी के मजदूरों का संशोधित न्यूनतम दैनिक मजदूरी का अनुमोदन :–**

जुलाई, 2020 से दिसम्बर, 2020 तक का औसत मूल्य सूचकांक श्रम संसाधन विभाग, बिहार सरकार के ज्ञापांक–5/एम॰डब्लू॰–40/07–श्र0सं0–1231 पटना/दिनांक–31.03.2021 के अनुसार 7782.65 है। जनवरी, 2021 से जून, 2021 तक का औसत मूल्य सूचकांक श्रम संसाधन विभाग, बिहार सरकार के अधिसूचना सं॰–5/एम डब्लू0–40–16/2021–श्र0सं0–2847 पटना/दिनांक–30.09.2021 के अनुसार 7879.86 है।

सूचकांक में वृद्धि=7879.86–7782.65=97.21

सूचकांक में प्रतिशत वृद्धि=97.21 /7782.65X100=1.249%

औसत मूल्य सूचकांक (जुलाई, 2020 से दिसम्बर, 2020 तक)पर आधारित न्यूनतम श्रम दर की सूची अनुसूची 'I' एवं 'II' के स्तम्भ '6' पर अंकित है। इसी स्तम्भ के अंकित दर में 1.249% वृद्धि कर न्यूनतम श्रम दर की गणना कर स्तम्भ '7' पर अंकित कर दी गयी है।

श्रम संसाधन विभाग,बिहार,पटना का अधिसूचना सं॰–5/एम॰डब्लू॰–40–16/2021–श्र0सं0–2847 पटना/दिनांक–30.09.2021 के आलोक में अनुसूचित दर पुनरीक्षण हेतु उपरोक्त वृद्धि को सम्मिलित करते हुए निर्माण कार्यों, सड़कें, बाँध निर्माण तथा सिंचाई कार्यों में नियोजित दैनिक मजदूरों के न्यूनतम दैनिक मजदूरी में संशोधन के लिए संलग्न अनुसूची–I तथा II के स्तंभ '7' के अनुसार राज्यस्तरीय अनुसूचित दर निर्धारण समिति द्वारा सहमति प्रदान की जाती है। यह दर पथ निर्माण विभाग, भवन निर्माण विभाग, ग्रामीण कार्य विभाग, लोक स्वास्थ्य अभियंत्रण विभाग एवं अन्य कार्य विभाग के अंतर्गत कराये जाने वाले समरूप कार्यों के उपयोग में भी लाया जा सकेगा। Schedule-I के लिए Serial No 1,2,3,4,5,6,70,71,एवं 72 पर अंकित श्रमदर, श्रम संसाधन विभाग की अधिसूचना सं॰–5/एम डब्लू0–40–16/2021–श्र0सं0–2847 पटना/दिनांक–30.09.2021 में अंकित श्रम दर के अनुसार लिया गया है एवं शेष श्रम दर, श्रम संसाधन विभाग के उक्त अधिसूचना में अंकित औसत मूल्य सूचकांक में परिवर्तन के आधार पर संगणित किया गया है।उसी प्रकार Schedule-II के लिए कमांक1,69,70एवं71पर अंकित श्रमदर,श्रम संसाधन विभाग की अधिसूचना सं॰–5/एमडब्लू0–40–16/2021– श्र0सं0–2847 पटना/दिनांक–30.09.2021 में अंकित श्रम दर के अनुसार लिया गया है एवं शेष श्रम दर श्रम संसाधन विभाग के उक्त अधिसूचना में अंकित औसत मूल्य सूचकांक में परिवर्तन के आधार पर संगणित किया गया है। इसके अतिरिक्त MoRT&H Standard Data Book 2019(2nd Revision) के दर विश्लेषण में प्रयुक्त होनेवाले श्रमदर Schedule III के अनुसार जो Schedule -I पर आधारित है, समिति के सदस्यो के द्वारा सर्वसम्मति से अनुमोदित करने का निर्णय लिया गया।

विशेष जानकारी हेतु श्रम संसाधन विभाग, बिहार सरकार का अधिसूचना सं॰–5/एम डब्लू0–40–16/2021–श्र0सं0–2847 पटना/दिनांक– 30.09.2021 द्रष्टव्य।

उक्त दर (Schedule I, II,III) श्रम संसाधन विभाग, बिहार पटना की अधिसूचना संख्या–5/एम डब्लू0–40–16/2021–श्र0सं0–2847 पटना/दिनांक–30.09.2021 में अंकित तिथि 01.10.2021. से प्रभावी होगा।

अनु॰:– I, II एवं III

22/10/21
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, भवन निर्माण विभाग, बिहार, पटना।

22/10/21
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, ग्रामीण कार्य विभाग, बिहार, पटना

22.10.21
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, लघु जल संसाधन विभाग, बिहार, पटना

सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–मुख्य अभियंता (असैनिक) बिहार स्टेट पावर हो. लिडंग कंपनी लि0,बिहार, पटना

22/10/21
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–मुख्य अभियंता, (विधुत) भवन निर्माण विभाग, बिहार, पटना

22.10.21
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, तकनीकी परीक्षक कोषांग, निगरानी विभाग, बिहार, पटना

22/10/2021
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, लोक स्वास्थ्य अभियंत्रण विभाग, बिहार, पटना

22/10/2021
सदस्य
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख, (मुख्यालय) जल संसाधन विभाग, बिहार, पटना।

22/10/21
संयोजक
राज्य स्तरीय अनुसूचित दर निर्धारण समिति–सह–अभियंता प्रमुख(मुख्यालय) पथ निर्माण विभाग, बिहार, पटना।

SCHEDULE - I					Date:- 22.10.2021	
Approved Schedule of Rates for labour engaged in construction & maintenance of Roads						
Sl. No.	**Category of Employees**	**Minimum Rates of wages per day as per**				
		Lab. Deptt. Noti. No. 4077/ 27.09.19	Lab. Deptt. Memo No. 1050/ 24.03.2020.	Lab. Deptt. Memo No.2620Dated21. 09.2020 .	Lab. Deptt. Notification No.5/MW. 40-16/2021-1231/L&R Dated 31.03.2021.	Lab. Deptt. Notification No.5/MW. 40-16/2021-L&R 2847 Dated 30.09.2021.
1	**2**	**3**	**(1.04236xcl.3) 4**	**(1.01595xcl.4) 5**	**(1.03582xcl.5) 6**	**(1.01249xcl.6) 7**
1	Unskilled labour	277.00	287.00	292.00	304.00	306.00
2	Sweeper	277.00	287.00	292.00	304.00	306.00
3	Mistry	277.00	287.00	292.00	304.00	306.00
4	Cleaner	277.00	287.00	292.00	304.00	306.00
5	Helper	277.00	287.00	292.00	304.00	306.00
6	Khalasi/Chainman	277.00	287.00	292.00	304.00	306.00
7	Marker	349.00	364.00	370.00	383.00	388.00
8	Fitter grade-I	379.00	395.00	401.00	415.00	420.00
	Fitter grade-II	331.00	345.00	351.00	364.00	369.00
9	Turner	331.00	345.00	351.00	364.00	369.00
10	Mechanic grade-I	426.00	444.00	451.00	467.00	473.00
	Mechanic grade-II	396.00	413.00	420.00	435.00	440.00
11	Electrician grade-I	352.00	367.00	373.00	386.00	391.00
	Electrician grade-II	331.00	345.00	351.00	364.00	369.00
12	Lineman/Wireman	319.00	333.00	338.00	350.00	354.00
13	Chargeman	396.00	413.00	420.00	435.00	440.00
14	Foreman	468.00	488.00	496.00	514.00	520.00
15	Welder grade-I	416.00	434.00	441.00	457.00	463.00
	Welder grade-II	352.00	367.00	373.00	386.00	391.00
16	Glazier	310.00	323.00	328.00	340.00	344.00
17	Carpenter	331.00	345.00	351.00	364.00	369.00
18	Head Carpenter	372.00	388.00	394.00	408.00	413.00
19	Checker	335.00	349.00	355.00	368.00	373.00
20	Hammerman	290.00	302.00	307.00	318.00	322.00
21	Tin smith	379.00	395.00	401.00	415.00	420.00
22	Tin plate maker	396.00	413.00	420.00	435.00	440.00
23	Black Smith	331.00	345.00	351.00	364.00	369.00
24	Head black smith	372.00	388.00	394.00	408.00	413.00
25	Tile layer	293.00	305.00	310.00	321.00	325.00
26	Thatcher	293.00	305.00	310.00	321.00	325.00
27	Plumber	352.00	367.00	373.00	386.00	391.00
28	Grader	335.00	349.00	355.00	368.00	373.00
29	Road binder	310.00	323.00	328.00	340.00	344.00
30	Mason	331.00	345.00	351.00	364.00	369.00
31	Head Mason	372.00	388.00	394.00	408.00	413.00
32	Stone layer	331.00	345.00	351.00	364.00	369.00
33	Tarman	290.00	302.00	307.00	318.00	322.00
34	Fireman	293.00	305.00	310.00	321.00	325.00
35	Grinder	331.00	345.00	351.00	364.00	369.00
36	Gas cutter	349.00	364.00	370.00	383.00	388.00
37	Rigger	335.00	349.00	355.00	368.00	373.00
38	Sarang	396.00	413.00	420.00	435.00	440.00
39	Chipper-cum-rivetter	349.00	364.00	370.00	383.00	388.00
40	Tractor operator	396.00	413.00	420.00	435.00	440.00
41	Dozer operator grade-I	468.00	488.00	496.00	514.00	520.00
	Dozer operator grade-II	416.00	434.00	441.00	457.00	463.00
42	Dumper operator	397.00	414.00	421.00	436.00	441.00
43	Viberator Operator	308.00	321.00	326.00	338.00	342.00
44	Pump driver grade-I	352.00	367.00	373.00	386.00	391.00
	Pump driver grade-II	331.00	345.00	351.00	364.00	369.00
45	Dragline operator grade-I	468.00	488.00	496.00	514.00	520.00
	Dragline operator grade-II	416.00	434.00	441.00	457.00	463.00
46	Concrete mixer operator grade-I	352.00	367.00	373.00	386.00	391.00
	Concrete mixer operator grade-II	331.00	345.00	351.00	364.00	369.00
47	Compressor operator grade-I	352.00	367.00	373.00	386.00	391.00
	Compressor operator grade-II	331.00	345.00	351.00	364.00	369.00

Sl. No.	Category of Employees	Minimum Rates of wages per day as per				
		Lab. Deptt. Noti. No. 4077/ 27.09.19	Lab. Deptt. Memo No. 1050/ 24.03.2020.	Lab. Deptt. Memo No.2620Dated21. 09.2020 .	Lab. Deptt. Notification No.5/MW. 40-16/2021-1231/L&R Dated 31.03.2021.	Lab. Deptt. Notification No.5/MW. 40-16/2021-L&R 2847 Dated 30.09.2021.
1	2	3	(1.04236xcl.3) 4	(1.01595xcl.4) 5	(1.03582xcl.5) 6	(1.01249xcl.6) 7
48	Earth excavator					0.00
	(a) For every 110 cu. ft for soft earth	273.00	285.00	290.00	300.00	304.00
	(b) For every 100 cu. ft for hard earth	273.00	285.00	290.00	300.00	304.00
	(c) For every 90 cu. ft for highly hard earth	273.00	285.00	290.00	300.00	304.00
49	Truck driver	396.00	413.00	420.00	435.00	440.00
50	Car/Jeep driver	349.00	364.00	370.00	383.00	388.00
51	Crane operator grade-I	468.00	488.00	496.00	514.00	520.00
	Crane operator grade-II	416.00	434.00	441.00	457.00	463.00
52	Winch operator	352.00	367.00	373.00	386.00	391.00
53	Road roller driver	478.00	498.00	506.00	524.00	531.00
54	Blaster	458.00	477.00	485.00	502.00	508.00
55	Painter grade-I	352.00	367.00	373.00	386.00	391.00
56	Polisher	293.00	305.00	310.00	321.00	325.00
57	Peon / Darvan / Choukidar	290.00	302.00	307.00	318.00	322.00
58	Clerk / Typist / Typist clerk	327.00	341.00	346.00	358.00	362.00
59	Time keeper	327.00	341.00	346.00	358.00	362.00
60	Store Assistant / Storeman	354.00	369.00	375.00	388.00	393.00
61	Store head	337.00	351.00	357.00	370.00	375.00
62	Material chaser	337.00	351.00	357.00	370.00	375.00
63	Mate and Road mate	293.00	305.00	310.00	321.00	325.00
64	Munshi	308.00	321.00	326.00	338.00	342.00
65	Work Supervisor	310.00	323.00	328.00	340.00	344.00
66	Amin	327.00	341.00	346.00	358.00	362.00
67	Surveyer	335.00	349.00	355.00	368.00	373.00
68	Supervisory diploma holder	449.00	468.00	475.00	492.00	498.00
69	Supervisory non-diploma holder	331.00	345.00	351.00	364.00	369.00
70	Any other category of semi-skilled workers not mentioned above	289.00	299.00	304.00	316.00	318.00
71	Any other category of skilled workers not mentioned above	352.00	364.00	370.00	385.00	388.00
72	Highly skilled labour	429.00	444.00	451.00	470.00	474.00

Note :- The above rates has been calculated as 1.249 % increase vide Labour Dept.Notification No.5/M.W. 40-16/2021-L&R 2847, Dtd. 30.09.2021 i.e (1.01249 X column 6).

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभियंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

SCHEDULE - II

Date:-. 22.10.2021

Approved Schedule of Rates for labour engaged in Dam construction & Irrigation works

Sl. No.	Category of Employees	Minimum Rates of wages per day as per				
		Lab. Deptt. Noti. No. 4077/ 27.09.19	Lab. Deptt. Memo. No. 1050/ 24.03.2020	Lab. Deptt. Memo. No. 2620/ 21.09.2020	Lab. Deptt. Notification No.5/MW. 40-16/2021-1231/L&R Dated 31.03.2021	Lab. Deptt. Notification No.5/MW. 40-16/2021 L&R 2847 Dated 30.09.2021
1	2	3	(1.04236 xcl.3) 4	(1.01595 xcl.4) 5	(1.03582 xcl. 5) 6	(1.01249 xcl. 6) 7
1	Unskilled labour	277.00	287.00	292.00	304.00	306.00
2	Mate	298.00	311.00	316.00	327.00	331.00
3	Head Mason	372.00	388.00	394.00	408.00	413.00
4	Mason	331.00	345.00	351.00	364.00	369.00
5	Printer Class-I	352.00	367.00	373.00	386.00	391.00
6	Printer Class-II	331.00	345.00	351.00	364.00	369.00
7	Head Carpenter	372.00	388.00	394.00	408.00	413.00
8	Carpenter	331.00	345.00	351.00	364.00	369.00
9	Head black smith	372.00	388.00	394.00	408.00	413.00
10	Black Smith	331.00	345.00	351.00	364.00	369.00
11	Glazier	293.00	305.00	310.00	321.00	325.00
12	Stone Dresser	352.00	367.00	373.00	386.00	391.00
13	Water Carrier	273.00	285.00	290.00	300.00	304.00
14	Fitter Class-I	379.00	395.00	401.00	415.00	420.00
15	Fitter Class-II	331.00	345.00	351.00	364.00	369.00
16	Helper	290.00	302.00	307.00	318.00	322.00
17	Hammer man	290.00	302.00	307.00	318.00	322.00
18	Bellowman	273.00	285.00	290.00	300.00	304.00
19	Road Roller Driver	478.00	498.00	506.00	524.00	531.00
20	Concrete Mixer Operator, Class-I	352.00	367.00	373.00	386.00	391.00
21	Concrete Mixer Operator, Class-II	331.00	345.00	351.00	364.00	369.00
22	Stone Crusher Driver, Class-I	352.00	367.00	373.00	386.00	391.00
23	Stone Crusher Driver, Class-II	331.00	345.00	351.00	364.00	369.00
24	Truck Driver	396.00	413.00	420.00	435.00	440.00
25	Compresser Operator, Class-I	352.00	367.00	373.00	386.00	391.00
26	Compresser Operator, Class-II	331.00	345.00	351.00	364.00	369.00
27	Pump Driver, Class-I	352.00	367.00	373.00	386.00	391.00
28	Pump Driver, Class-II	331.00	345.00	351.00	364.00	369.00
29	Concrete Mixer Attendant	290.00	302.00	307.00	318.00	322.00
30	Cleaner or Oilman	282.00	294.00	299.00	310.00	314.00
31	TarBoiler Man	331.00	345.00	351.00	364.00	369.00
32	Plumber	352.00	367.00	373.00	386.00	391.00
33	Thatcher	293.00	305.00	310.00	321.00	325.00
34	Khalasi / Chainman	293.00	305.00	310.00	321.00	325.00
35	Sweeper	282.00	294.00	299.00	310.00	314.00
36	Watchman	282.00	294.00	299.00	310.00	314.00
37	Stone Breaker	282.00	294.00	299.00	310.00	314.00
38	Work Sarkar	310.00	323.00	328.00	340.00	344.00
39	Time Keeper	327.00	341.00	346.00	358.00	362.00
40	Welder, Grade-I	416.00	434.00	441.00	457.00	463.00
41	Welder, Grade-II	352.00	367.00	373.00	386.00	391.00
42	Wireman/Lineman	319.00	333.00	338.00	350.00	354.00
43	Mechanic, Grade-I	426.00	444.00	451.00	467.00	473.00
44	Mechanic, Grade-II	396.00	413.00	420.00	435.00	440.00
45	Sarang	396.00	413.00	420.00	435.00	440.00
46	Drill Operator	331.00	345.00	351.00	364.00	369.00
47	Tractor Operator	396.00	413.00	420.00	435.00	440.00
48	Gauge Reader-cum-silt Observer	290.00	302.00	307.00	318.00	322.00
49	Crane Operator, Grade-I	468.00	488.00	496.00	514.00	520.00
50	Crane Operator, Grade-II	416.00	434.00	441.00	457.00	463.00
51	Dragline / Scraper / Showel Operator Grade-I	468.00	488.00	496.00	514.00	520.00
52	Dragline/Scraper/Showel Operator Grade-II	416.00	434.00	441.00	457.00	463.00

Approved Schedule of Rates for labour engaged in Dam construction & Irrigation works						
Sl. No.	Category of Employees	Minimum Rates of wages per day as per				
		Lab. Deptt. Noti. No. 4077/ 27.09.19	Lab. Deptt. Memo. No. 1050/ 24.03.2020	Lab. Deptt. Memo. No. 2620/ 21.09.2020	Lab. Deptt. Notification No.5/MW. 40-16/2021-1231/L&R Dated 31.03.2021	Lab. Deptt. Notification No.5/MW. 40-16/2021 L&R 2847 Dated 30.09.2021
1	2	3	(1.04236 xcl.3) 4	(1.01595 xcl.4) 5	(1.03582 xcl. 5) 6	(1.01249 xcl. 6) 7
53	Dumper Operator	397.00	414.00	421.00	436.00	441.00
54	Foreman	468.00	488.00	496.00	514.00	520.00
55	Junior Forman	416.00	434.00	441.00	457.00	463.00
56	Chargeman	397.00	414.00	421.00	436.00	441.00
57	Electrician, Grade-I	352.00	367.00	373.00	386.00	391.00
58	Electrician, Grade-II	331.00	345.00	351.00	364.00	369.00
59	Electrician, Grade-III	290.00	302.00	307.00	318.00	322.00
60	Turner	331.00	345.00	351.00	364.00	369.00
61	Compounder	331.00	345.00	351.00	364.00	369.00
62	Superviser / (Diploma holder)	449.00	468.00	475.00	492.00	498.00
63	Surveyer / Supervisor	331.00	345.00	351.00	364.00	369.00
64	Blue Printer	290.00	302.00	307.00	318.00	322.00
65	Tracer	290.00	302.00	307.00	318.00	322.00
66	Vibrator Operator	308.00	321.00	326.00	338.00	342.00
67	Clerk / Typist / Typist Clerk	327.00	341.00	346.00	358.00	362.00
68	Earth Excavator,					0.00
	(a) For every 110 cubic feet of soft earth	273.00	285.00	290.00	300.00	304.00
	(b) For every 100 cubic feet of hard earth	273.00	285.00	290.00	300.00	304.00
	(c) For every 90 cubic feet of highly hard earth	273.00	285.00	290.00	300.00	304.00
69	Any other category of semi-skilled workers not mentioned above	289.00	299.00	304.00	316.00	318.00
70	Any other category of skilled workers not mentioned above	352.00	364.00	370.00	385.00	388.00
71	Highly skilled labour	429.00	444.00	451.00	470.00	474.00

Note :- The above rates has been calculated as 1.249 % increase vide Labour Dept.Notification No.5/M.W. 40-16/2021-L&R 2847 Dtd. 30.09.2021 i.e (1.01249 * column 6).

22/10/21
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

22/10/21
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

22/10/21
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

22/10/21
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

22.10.21
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभियंत्रण विभाग,
बिहार, पटना।

22/10/21
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

22/10/21
संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

SCHEDULE -III Date 22.10.2021

Approved Input of new Labour wages for the preparation of Schedule of Rate RCD Bihar in prescribed formate of revised MoRT&H Standerd Data Book-2019.

S.No.	Description of Labour	Unit	Approved Rate
1	2	3	4
L-01	Blacksmith (IInd class)	day	369.00
L-02	Blacksmith (Ist class)/ Welder/ Plumber/ Electrician	day	413.00
L-03	Blaster (Stone cutter)	day	508.00
L-04	Carpenter I Class	day	413.00
L-05	Chiseller (Head Mazdoor)	day	474.00
L-06	Driller (Jumper)	day	318.00
L-07	Diver	day	474.00
L-08	Fitter	day	369.00
L-09	Mali	day	318.00
L-10	Mason (IInd class)	day	369.00
L-11	Mason (Ist class)	day	413.00
L-12	Mate / Supervisor	day	325.00
L-13	Mazdoor	day	306.00
L-14	Mazdoor/Dresser (Semi Skilled)	day	318.00
L-15	Mazdoor/Dresser/Sinker (Skilled)	day	388.00
L-16	Medical Officer	day	474.00
L-17	Operator(grouting)	day	474.00
L-18	Painter I class	day	391.00
L-19	Para medical personnel	day	474.00
L-20	Heavy Plant Operator	day	474.00
L-21	Light Plant Operator.	day	388.00
L-22	Heavy Vehicle Driver.	day	440.00
L-23	Light Vehicle Driver.	day	388.00
L-24	Helper	day	306.00
L-25	Black smith	day	369.00

Note:- 1. The above rates are based on Schedule-I .

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल ससाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषागार, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल ससाधन विभाग, बिहार, पटना।

सयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M1

Date: 07.12.2021

List of Rates of Ordinary Portland Cement approved by State Level Schedule Rate Committee for the year 2021 - 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 28%, Overhead Charges & Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Zones	Approved Rate	
				in figure (₹)	in words
1	2	3	4	5	6
1	Ordinary Portland Cement	Per bag of 50 Kg	Patna	257.80	Rupees Two Hundred Fifty Seven and Paise Eighty Only
	(O.P.C. - 43 Grade)		Muzaffarpur	253.90	Rupees Two Hundred Fifty Three and Paise Ninety Only
			Darbhanga	257.80	Rupees Two Hundred Fifty Seven and Paise Eighty Only
			Bhagalpur	253.90	Rupees Two Hundred Fifty Three and Paise Ninety Only
			Munger	253.90	Rupees Two Hundred Fifty Three and Paise Ninety Only
			Saharsa	257.80	Rupees Two Hundred Fifty Seven and Paise Eighty Only
			Purnea	257.80	Rupees Two Hundred Fifty Seven and Paise Eighty Only
			Gaya	244.10	Rupees Two Hundred Forty Four and Paise Ten Only
			Saran	253.50	Rupees Two Hundred Fifty Three and Paise Fifty Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M3A

Date: 07.12.2021

List of Rates of Portland Pozzolana Cement approved by State Level Schedule Rate Committee for the year 2021- 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 28%, Overhead Charges & Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Zones	Approved Rate	
				in figure (₹)	in words
1	2	3	4	5	6
1	Portland Pozzolana Cement (P.P.C.)	Per bag of 50 Kg	Patna	210.90	Rupees Two Hundred Ten and Paise Ninety Only
			Muzaffarpur	203.70	Rupees Two Hundred Three and Paise Seventy Only
			Darbhanga	203.70	Rupees Two Hundred Three and Paise Seventy Only
			Bhagalpur	210.90	Rupees Two Hundred Ten and Paise Ninety Only
			Munger	209.00	Rupees Two Hundred Nine and Paise Zero Only
			Saharsa	207.40	Rupees Two Hundred Seven and Paise Forty Only
			Purnea	214.40	Rupees Two Hundred Fourteen and Paise Forty Only
			Gaya	185.60	Rupees One Hundred Eighty Five and Paise Sixty Only
			Saran	206.20	Rupees Two Hundred Six and Paise Twenty Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M3B

Date: 07.12.2021

List of Rates of Portland Slag Cement approved by State Level Schedule Rate Committee for the year 2021- 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 28%, Overhead Charges & Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Zones	Approved Rate	
				in figure (₹)	in words
1	2	3	4	5	6
1	Portland Slag Cement (P.S.C.)	Per bag of 50 Kg	Patna	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Muzaffarpur	229.30	Rupees Two Hundred Twenty Nine and Paise Thirty Only
			Darbhanga	224.60	Rupees Two Hundred Twenty Four and Paise Sixty Only
			Bhagalpur	229.90	Rupees Two Hundred Twenty Nine and Paise Ninety Only
			Munger	221.10	Rupees Two Hundred Twenty One and Paise Ten Only
			Saharsa	228.30	Rupees Two Hundred Twenty Eight and Paise Thirty Only
			Purnea	224.60	Rupees Two Hundred Twenty Four and Paise Sixty Only
			Gaya	220.40	Rupees Two Hundred Twenty and Paise Forty Only
			Saran	226.80	Rupees Two Hundred Twenty Six and Paise Eighty Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M3C

Date: 07.12.2021

List of Rates of Portland Composite Cement approved by State Level Schedule Rate Committee for the year 2021 - 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 28%, Overhead Charges & Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Zones	Approved Rate	
				in figure (₹)	in words
1	2	3	4	5	6
1	Portland Composite Cement (P.C.C.)	Per bag of 50 Kg	Patna	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Muzaffarpur	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Darbhanga	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Bhagalpur	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Munger	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Saharsa	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Purnea	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Gaya	230.50	Rupees Two Hundred Thirty and Paise Fifty Only
			Saran	230.50	Rupees Two Hundred Thirty and Paise Fifty Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M4

Date: 07.12.2021

List of Rates of Different Grades of Bitumen approved by State Level Schedule Rate Committee for the year 2021 - 22 (for the preparation of Schedule of Rates only). Materials should confirm to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 18%, Overhead Charges and Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Approved Rate	
			in figure(₹)	in words
1	2	3	4	5
1	**Bitumen Grade VG-40(30/40)Packed**			
	(i) Ex. Barauni	Per MT	59554.00	Rupees Fifty Nine Thousand Five Hundred Fifty Four and Paise Zero Only
	(ii) Ex. Muzaffarpur	Per MT	59535.00	Rupees Fifty Nine Thousand Five Hundred Thirty Five and Paise Zero Only
	(iii) Ex. Fatuha	Per MT	59235.00	Rupees Fifty Nine Thousand Two Hundred Thirty Five and Paise Zero Only
	(iv) Ex. Gaya	Per MT	58998.00	Rupees Fifty Eight Thousand Nine Hundred Ninety Eight and Paise Zero Only
2	**Bitumen Grade VG-30(60/70) Packed**			
	(i) Ex. Barauni	Per MT	56414.00	Rupees Fifty Six Thousand Four Hundred Fourteen and Paise Zero Only
	(ii) Ex. Gaya	Per MT	56048.00	Rupees Fifty Six Thousand Forty Eight and Paise Zero Only
	(iii) Ex. Fatuha	Per MT	56285.00	Rupees Fifty Six Thousand Two Hundred Eighty Five and Paise Zero Only
	(iv) Ex. Muzaffarpur	Per MT	54985.00	Rupees Fifty Four Thousand Nine Hundred Eighty Five and Paise Zero Only
3	**Bitumen Grade VG-10(80/100) Packed**			
	(i) Ex. Barauni	Per MT	55614.00	Rupees Fifty Five Thousand Six Hundred Fourteeen and Paise Zero Only
	(ii) Ex. Gaya	Per MT	55248.00	Rupees Fifty Five Thousand Two Hundred Forty Eight and Paise Zero Only
	(iii) Ex. Fatuha	Per MT	55485.00	Rupees Fifty Five Thousand Four Hundred Eighty Five and Paise Zero Only
	(iv) Ex. Muzaffarpur	Per MT	54185.00	Rupees Fifty Four Thousand One Hundred Eighty Five and Paise Zero Only
4	**Bitumen Grade VG-40(30/40) Bulk**			
	(i) Ex. Barauni	Per MT	52562.00	Rupees Fifty Two Thousand Five Hundred Sixty Two and Paise Zero Only
5	**Bitumen Grade VG-30(60/70) Bulk**			
	(i) Ex. Barauni	Per MT	49702.00	Rupees Forty Nine Thousand Seven Hundred Two and Paise Zero Only
6	**Bitumen Grade VG-10(80/100) Bulk**			
	(i) Ex. Barauni	Per MT	48902.00	Rupees Forty Eight Thousand Nine Hundred Two and Paise Zero Only
7	**Modified Graded Bitumen**			
	(i) CRMB-55 Packed Ex. Gaya	Per MT	53728.00	Rupees Fifty Three Thousand Seven Hundred Twenty Eight and Paise Zero Only
	(ii) CRMB-55 Packed Ex.Fatuha	Per MT	53965.00	Rupees Fifty Three Thousand Nine Hundred Sixty Five and Paise Zero Only
	(iii) CRMB-55 Packed Ex. Muzaffarpur	Per MT	54265.00	Rupees Fifty Four Thousand Two Hundred Sixty Five and Paise Zero Only
8	**Bitumen Emulsion RS1(Packed) HDPE**			
	(i) Ex. Patna	Per MT	52919.00	Rupees Fifty Two Thousand Nine Hundred Nineteen and Paise Zero Only
	(ii) Ex. Gaya	Per MT	52769.00	Rupees Fifty Two Thousand Seven Hundred Sixty Nine and Paise Zero Only
	(iii) Ex. Muzaffarpur	Per MT	53219.00	Rupees Fifty Three Thousand Two Hundred Nineteen and Paise Zero Only
9	**Bitumen Emulsion MS(Packed) HDPE**			
	(i) Ex. Patna	Per MT	55302.00	Rupees Fifty Five Thousand Three Hundred Two and Paise Zero Only
	(ii) Ex. Gaya	Per MT	55152.00	Rupees Fifty Five Thousand One Hundred Fifty Two and Paise Zero Only
	(iii) Ex. Muzaffarpur	Per MT	55602.00	Rupees Fifty Five Thousand Six Hundred Two and Paise Zero Only
10	**Bitumen Emulsion SS1(Packed) HDPE**			
	(i) Ex. Patna	Per MT	54270.00	Rupees Fifty Four Thousand Two Hundred Seventy and Paise Zero Only
	(ii) Ex. Gaya	Per MT	54120.00	Rupees Fiftty Four Thousand One Hundred Twenty and Paise Zero Only
	(iii) Ex. Muzaffarpur	Per MT	54570.00	Rupees Fifty Four Thousand Five Hundred Seventy and Paise Zero Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M5

Date: 07.12.2021

Approved new rate of G.C. Sheet by State Level Schedule Rate Committee for the year 2021- 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 18%, Overhead Charges and Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Approved Rate	
			in figure (₹)	in words
1	2	3	4	5
	G. C. Sheet in mm			
1	0.80	Per MT	94513.56	Rupees Ninety Four Thousand Five Hundred Thirteen and Paise Fifty Six Only
2	0.63	Per MT	93823.73	Rupees Ninety Three Thousand Eight Hundred Twenty Three and Paise Seventy Three Only
3	0.50	Per MT	95415.25	Rupees Ninety Five Thousand Four Hundred Fifteen and Paise Twenty Five Only
4	0.40	Per MT	97272.03	Rupees Ninety Seven Thousand Two Hundred Seventy Two and Paise Three Only
5	0.35	Per MT	99925.42	Rupees Ninety Nine Thousand Nine Hundred Twenty Five and Paise Forty Two Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M6

Date: 07.12.2021

Approved rate of Steel - Wire Rod in Coil by State Level Schedule Rate Committee for the year 2021- 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 18%, Overhead Charges and Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Approved Rate	
			in figure (₹)	in words
1	2	3	4	5
	Wire Rod in Coil			
1	5.5 mm	Per MT	57900.00	Rupees Fifty Seven Thousand Nine Hundred and Paise Zero Only
2	7.0 mm	Per MT	59000.00	Rupees Fifty Nine Thousand and Paise Zero Only
3	8.0 mm	Per MT	58900.00	Rupees Fifty Eight Thousand Nine Hundred and Paise Zero Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M8

Date: 07.12.2021

Approved rate of Steel Channel by State Level Schedule Rate Committee for the year 2021 - 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 18%, Overhead Charges and Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Approved Rate	
			in figure (₹)	in words
1	2	3	4	5
	STEEL CHANNEL			
1	Channel 100 x 50	Per MT	56400.00	Rupees Fifty Six Thousand Four Hundred and Paise Zero Only
2	Channel 150 x 75	Per MT	56400.00	Rupees Fifty Six Thousand Four Hundred and Paise Zero Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M9

Date: 07.12.2021

Approved rate of Steel Angles by State Level Schedule Rate Committee for the year 2021 - 22 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 18%, Overhead Charges and Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Approved Rate	
			in figure (₹)	in words
1	2	3	4	5
	STEEL ANGLES			
1	50 x 50 x 6	Per MT.	56100.00	Rupees Fifty Six Thousand One Hundred and Paise Zero Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule : M10A

Date: 07.12.2021

Approved rate of Steel - TMT BARS (Fe 500D) by State Level Schedule Rate Committee for the year 2021- 2022 (for Preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MORT&H Specifications.

Rates are exclusive of GST @ 18%, Overhead Charges and Contractor's Profit.

Sl. No.	Name & Description of Material	Unit	Approved Rate	
			in figure (₹)	in words
1	2	3	4	5
	STEEL TMT BARS			
1	TMT Fe 500D - 8 mm	Per MT	56441.00	Rupees Fifty Six Thousand Four Hundred Forty One and Paise Zero Only
2	TMT Fe 500D -10 mm	Per MT	55085.00	Rupees Fifty Five Thousand Eighty Five and Paise Zero Only
3	TMT Fe 500D -12 mm	Per MT	54492.00	Rupees Fifty Four Thousand Four Hundred Ninety Two and Paise Zero Only
4	TMT Fe 500D -16 mm	Per MT	54492.00	Rupees Fifty Four Thousand Four Hundred Ninety Two and Paise Zero Only
5	TMT Fe 500D -20 mm	Per MT	54492.00	Rupees Fifty Four Thousand Four Hundred Ninety Two and Paise Zero Only
6	TMT Fe 500D-25 mm	Per MT	54492.00	Rupees Fifty Four Thousand Four Hundred Ninety Two and Paise Zero Only
7	TMT Fe 500D-28 mm	Per MT	54492.00	Rupees Fifty Four Thousand Four Hundred Ninety Two and Paise Zero Only
8	TMT Fe 500D -32 mm	Per MT	54492.00	Rupees Fifty Four Thousand Four Hundred Ninety Two and Paise Zero Only

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule: M11

Date: 28-02-2022

Approved Rate of Bricks & Bricks related materials by the State Level Schedule Rate Committee for the year 2022 - 23

(for preparation of Schedule of Rates only) - Materials should conform to relevant BIS/IRC/MoRT&H Specifications.

Rates are inclusive of Royalty but Exclusive of GST, Seigniorage Fee, Contractor's profit and Overhead charges (Rates at source).				
Sr. No.	Materials	Unit	Approved Rate	
			in figure (₹)	in words
1	**100 A Bricks**			
	(i) For urban Patna	Nos/1000	6069.00	Rupees Six Thousand Sixty Nine and Paise Zero Only
	(ii) For Darbhanga,Bhagalpur, Munger & Muzaffarpur	Nos/1000	5123.00	Rupees Five Thousand One Hundred Twenty Three and Paise Zero Only
	(iii) For Gaya & Saran	Nos/1000	4847.00	Rupees Four Thousand Eight Hundred Forty Seven and Paise Zero Only
	(iv) For Saharsa	Nos/1000	5262.00	Rupees Five THousand Two Hundred Sixty Two and Paise Zero Only
	(v) For Purnea	Nos/1000	5540.00	Rupees Five Thousand Five Hundred Forty and Paise Zero Only
	(vi) For rural Patna	Nos/1000	5055.00	Rupees Five Thousand Fifty Five and Paise Zero Only
2	**100 B Bricks**			
	(i) For urban Patna	Nos/1000	5633.00	Rupees Five Thousand Six Hundred Thirty Three and paise Zero only
	(ii) For Darbhanga, Bhagalpur, Munger & Muzaffarpur	Nos/1000	4707.00	Rupees Four Thousand Seven Hundred Seven and Paise Zero Only
	(iii) For Gaya & Saran	Nos/1000	4432.00	Rupees Four Thousand Four Hundred Thirty Two and Paise Zero Only
	(iv) For Saharsa	Nos/1000	4847.00	Rupees Four Thousand Eight Hundred Forty Seven and Paise Zero Only
	(v) For Purnea	Nos/1000	5123.00	Rupees Five Thousand One Hundred Twenty Three and Paise Zero Only
	(vi) For rural Patna	Nos/1000	4620.00	Rupees Four Thousand Six Hundred Twenty and Paise Zero Only
3	**Brick Tiles (300mmx150mmx50mm)**			
	(i) For urban Patna and rural Patna	Nos/1000	6069.00	Rupees Six Thousand Sixty Nine and Paise Zero Only
	(ii) For Saharsa, Bhagalpur, Darbhanga & Muzaffarpur	Nos/1000	6094.00	Rupees Six Thousand Ninty Four and Paise Zero Only
	(iii) For Purnea	Nos/1000	6372.00	Rupees Six Thousand Three Hundred Seventy Two and Paise Zero Only
	(iv) For other places	Nos/1000	5816.00	Rupees Five Thousand Eight Hundred Sixteen and Paise Zero Only
4	**Picket Jhama Bricks**			
	(i) For urban Patna	Nos/1000	5201.00	Rupees Five Thousand Two Hundred One and Paise Zero Only
	(ii) For Darbhanga, Bhagalpur, Munger & Muzaffarpur	Nos/1000	4293.00	Rupees Four Thousand Two Hundred Ninty Three and Paise Zero Only
	(iii) For Gaya & Saran	Nos/1000	4011.00	Rupees Four Thousand Eleven and Paise Zero Only
	(iv) For Purnea	Nos/1000	4707.00	Rupees Four Thousand Seven Hundred Seven and Paise Zero Only
	(v) For Saharsa	Nos/1000	4432.00	Rupees Four Thousand Four Hundred Thirty Two and Paise Zero Only
	(vi) For rural Patna	Nos/1000	4196.00	Rupees Four Thousand One Hundred Ninty Six and Paise Zero Only
5	**Brick Bats**			
	(i) For urban Patna	Per m^3	1074.00	Rupees One Thousand Seventy Four and Paise Zero Only
	(ii) For Purnea, Saharsa, Bhagalpur, Munger & Darbhanga	Per m^3	1031.00	Rupees One Thousand Thirty One and Paise Zero Only
	(iii) For other places	Per m^3	986.00	Rupees Nine Hundred Eighty Six and Paise Zero Only
	(iv) For rural Patna	Per m^3	1030.00	Rupees One Thousand Thirty and Paise Zero Only
6	**Jhama Metals**			
	(a) 63 mm to 40 mm size			
	(i) For urban Patna	Per m^3	1275.00	Rupees One Thousand Two Hundred Seventy Five and Paise Zero Only
	(ii) For Purnea, Saharsa, Bhagalpur, Munger & Darbhanga	Per m^3	1221.00	Rupees One Thousand Two Hundred Twenty One and Paise Zero Only
	(iii) For other places	Per m^3	1196.00	Rupees One Thousand One Hundred Ninty Six and Paise Zero Only

Sr. No.	Materials	Unit	Approved Rate	
			in figure (₹)	in words
	(iv) For rural Patna	Per m^3	1246.00	Rupees One Thousand Two Hundred Forty six and Paise Zero Only
	(b) 40 mm to 20 mm size			
	(i) For urban Patna	Per m^3	1419.00	Rupees One Thousand Four Hundred Ninteen and Paise Zero Only
	(ii) For Purnea, Saharsa, Bhagalpur, Munger & Darbhanga	Per m^3	1360.00	Rupees One Thousand Three Hundred Sixty and Paise Zero Only
	(iii) For other places	Per m^3	1321.00	Rupees One Thousand Three Hundred Twenty One and Paise Zero Only
	(iv) For rural Patna	Per m^3	1376.00	Rupees One Thousand Three Hundred Seventy Six and Paise Zero Only
	(c) 20 mm and down			
	(i) For urban Patna	Per m^3	1623.00	Rupees One Thousand Six Hundred Twenty Three and Paise Zero Only
	(ii) For Purnea, Saharsa, Bhagalpur, Munger & Darbhanga	Per m^3	1555.00	Rupees One Thousand Five Hundred Fifty Five and Paise Zero Only
	(iii) For other places	Per m^3	1501.00	Rupees One Thousand Five Hundred One and Paise Zero Only
	(iv) For rural Patna	Per m^3	1566.00	Rupees One Thousand Five Hundred Sixty Six and Paise Zero Only
7	**Surkhi**			
	(i) For urban Patna	Per m^3	1680.00	Rupees One Thousand Six Hundred Eighty and Paise Zero Only
	(ii) For Purnea, Saharsa, Bhagalpur, Munger & Darbhanga	Per m^3	1612.00	Rupees One Thousand Six Hundred Twelve and Paise Zero Only
	(iii) For other places	Per m^3	1555.00	Rupees One Thousand Five Hundred Fifty Five and Paise Zero Only
	(iv) For rural Patna	Per m^3	1623.00	Rupees One Thousand Six Hundred Twenty Three and Paise Zero Only

Note: For S.No. 1 to 4, Royalty has been included as Rs. 45.00 per 1000 Nos. & for S.No. 5 to 7 as Rs. 18.00 per m^3 (cum)

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

APPROVED RATES OF MATERIALS, PLANT-MACHINERY, LABOUR & CARRIAGE RATE (INPUT USED IN SOR)

Schedule -M / MORTH-1 Date:-28.02.2022

Approved Rates of Construction Materials by the State Level Schedule Rate Committee for the Preparation of Schedule of Rates for year 2022-23 only (Materials Should confirm to relevant B.I.S., MoRD and MoRT&H Specifications). The rates are inclusive of royalty but exclusive of all taxes, G.S.T, Overhead, Seigniorage fee and Contractor's profit.

"Rates are at source" Quarry/Crusher Plant

Sl. No.	Description of Materials	Unit	Approved Rates inclusive of Royalty for SOR 2022 (Rs)	Royality included in col.4 (Rs)
1	2	3	4	5
M-001	Stone Boulder of size 150 mm and below at Source Quarry	Cum	675.00	150.00
M-002	Supply of quarried Stone 150-200 mm size for Hand Broken at source Quarry	Cum	675.00	150.00
M-003	Boulder with minimum size of 300 mm for Pitching at source Quarry	Cum	675.00	150.00
M-004	Coarse sand i) at source Quarry Koliwar/Sone sand	Cum	494.00	75.00
M-005*	Coarse sand ii) Equivalent to Koliwar / Sone Sand* at Source Quarry.	Cum	494.00	75.00
M-006	Fine sand at Source	Cum	143.32	75.00
M-007	Moorum at Source Quarry	Cum	160.00	83.00
M-008	Gravel/Quarry spall at Source Quarry	Cum	355.79	150.00
M-009	Granular Material or hard murum for GSB works at source Quarry	Cum	165.30	83.00
M-010	Fly ash conforming to IS:3812 (Part II & I) at HMP Plant/Batching Plant/Crushing Plant	Cum	Nil	Nil
M-011	Filter media/Filter Material as per Table 300-3 (MoRT&H Specification) at Crusher.	Cum	678.14	150.00
M-012	Close graded Granular sub-base Material 53 mm to 9.5 mm/4.75mm at Crusher.	Cum	915.67	150.00
M-013	Close graded Granular sub-base Material 37.5 mm to 9.5 mm at Crusher.	Cum	915.67	150.00
M-014	Close graded Granular sub-base Material 26.5 mm to 9.5 mm at Crusher.	Cum	886.00	150.00
M-015	Close graded Granular sub-base Material 9.5 mm to 4.75 mm at Crusher.	Cum	586.00	150.00
M-016	Close graded Granular sub-base Material 9.5 mm to 2.36mm at Crusher.	Cum	424.21	150.00
M-017	Close graded Granular sub-base Material 4.75mm to 2.36mm At Crusher.	Cum	262.42	150.00
M-018	Close graded Granular sub-base Material 4.75mm to 75 micron at Crusher.	Cum	262.42	150.00
M-019	Close graded Granular sub-base Material 2.36 mm & below at Crusher.	Cum	262.42	150.00
M-020	Stone crusher dust finer than 3 mm with not more than 10% passing0.075 sieve at Crusher.	Cum	262.42	150.00
M-021	Coarse graded Granular sub-base Material 2.36 mm & below At Crusher.	Cum	262.42	150.00
M-022	Coarse graded Granular sub-base Material 4.75 mm to 75 micron at Crusher.	Cum	262.42	150.00
M-023	Coarse graded Granular sub-base Material 4.75mm to 2.36 mm at Crusher.	Cum	262.42	150.00
M-024	Coarse graded Granular sub-base Material 9.5mm to 4.75 mm at Crusher.	Cum	586.00	150.00
M-025	Coarse graded Granular sub-base Material 26.5mm to 4.75 mm at Crusher.	Cum	886.00	150.00
M-026	Coarse graded Granular sub-base Material 26.5 mm to 9.5 mm at Crusher.	Cum	886.00	150.00
M-027	Coarse graded Granular sub-base Material 37.5 mm to 9.5 mm at Crusher.	Cum	915.67	150.00
M-028	Coarse graded Granular sub-base Material 53 mm to 26.5 mm at Crusher.	Cum	1080.50	150.00
M-029	Aggregates below 5.6 mm at Crusher.	Cum	424.21	150.00
M-030	Aggregates 22.4 mm to 2.36 mm at Crusher.	Cum	678.14	150.00
M-031	Aggregates 22.4 mm to 5.6 mm at Crusher.	Cum	886.00	150.00
M-032	Aggregates 45 mm to 2.8 mm at Crusher.	Cum	752.36	150.00

1	2	3	4	5
M-033	Aggregates 45 mm to 22.4 mm at Crusher.	Cum	1080.50	150.00
M-034	Aggregates 53 mm to 2.8 mm at Crusher.	Cum	752.36	150.00
M-035	Aggregates 53 mm to 22.4 mm(Grade III) at Crusher.	Cum	1080.50	150.00
M-036	Aggregates 63 mm to 2.8 mm at Crusher.	Cum	752.36	150.00
M-037	Aggregates 63 mm to 45 mm (Grade II)at Crusher.	Cum	975.00	150.00
M-038	Aggregates 90 mm to 45mm(GradeI) at Crusher.	Cum	975.00	150.00
M-039	Aggregates 10 mm to 5 mm at Crusher.	Cum	586.00	150.00
M-040	Aggregates 11.2 mm to 0.09 mm (Key aggregate Type B) at Crusher.	Cum	424.21	150.00
M-041	Aggregates 13.2 mm to 0.09 mm (Key aggregate Type A) at Crusher.	Cum	424.21	150.00
M-042	Aggregates 13.2 mm to 5.6 mm at Crusher.	Cum	586.00	150.00
M-043	Aggregates 13.2 mm to 10 mm at Crusher.	Cum	586.00	150.00
M-044	Aggregates 20 mm to 10 mm at Crusher.	Cum	886.00	150.00
M-045	Aggregates 25 mm to10 mm at Crusher.	Cum	886.00	150.00
M-046	Aggregates 19 mm to 6 mm at Crusher.	Cum	886.00	150.00
M-047	Aggregates 37.5 mm to 19 mm at Crusher.	Cum	1080.50	150.00
M-048	Aggregates 37.5 mm to 25 mm at Crusher.	Cum	1080.50	150.00
M-049	Aggregates 6 mm nominal size at Crusher.	Cum	424.21	150.00
M-050	Aggregates 10 mm nominal size at Crusher plant.	Cum	586.00	150.00
M-051	Aggregates 13.2/12.5 mm nominal size at Crusher plant.	Cum	586.00	150.00
M-052	Aggregates 20 mm nominal size at Crusher plant.	Cum	1186.00	150.00
M-053	Aggregates 25 mm nominal size at Crusher.	Cum	1186.00	150.00
M-054	Aggregates 40 mm nominal size at Crusher.	Cum	975.00	150.00
M-055	Crushing of Stone aggregates (GSB Crusher Run)	Cum	600.00	150.00

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

28.02.22
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

28.02.22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

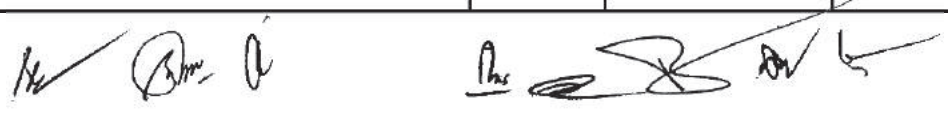
28/02/22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

28.02.22
संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Approved Rates of Construction Materials for by the State Level Schedule Rate Committee the Preparation of Schedule of Rates for year 2022-23 only. (Materials Should conform to relevant B.I.S., MoRD and MoRT&H Specifications). The rates are inclusive of Royalty but exclusive of all taxes, G.S.T.,Overhead, Seigniorage fee and Contractor's profit. "Rates are at Source"

Sl No	Description	Unit	Approved Rates inclusive of Royalty for SOR (20222-23) (Rs)	Royality included in Col. 4 (Rs)
1	2	3	4	5
M-056	AC pipe 100 mm dia	metre	44.28	
M-057	Acrylic polymer bonding coat	litre	131.88	
M-058	Alluminium Paint	litre	124.70	
M-059	Aluminium alloy plate 2mm Thick	sqm	9512.21	
M-060	Aluminium alloy/galvanised steel	tonne	57033.00	
M-061	Aluminium sheeting fixed with encapsulated lens type reflective sheeting including 2% towards lettering, cost of angle iron, cost of drilling holes, nuts, bolts etc.and signs as applicable	sqm	8945.43	
M-062	Road Aluminium Stud with Micro Prismatic lens reflectors (with shank) 100 X 100 mm	each	187.29	
M-063	Barbed wire	kg	73.77	
M-064	Bearing (Cost of parts)	nos	INPUT	
M-065	Bearing (Cast steel rocker bearing assembly of 250 tonne)	nos	85505.67	
M-066	Bearing (Elastomeric bearing assembly consisting of 7 internal layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation)	cubic cm	0.62	
	Taking elastomeric bearing of size 500 X 400 X 96mm, Overall volume=19200 cubic cm @Rs 0.59/cucm= Rs 11904	nos	11904.00	
M-067	Bearing (Forged steel roller bearing of 250 tonne)	nos	47480.35	
M-068	Bearing (Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against stainless steel mating together with cast steel assemblies/ fabricated structural steel assemblies duly painted with all components output=250 tonne)	MT	142.67	
	Do	nos	35667.50	

1	2	3	4	5
	(a) Fixed POT-PTFE Bearing	MT	142.67	
	(b) Free POT-PTFE Bearing	MT	152.87	
	(c) Guide Slide (L) POT-PTFE Bearing	MT	163.06	
	(d) Guide Slide (T) POT-PTFE Bearing	MT	157.97	
M-069	Bearing (PTFE sliding plate bearing assembly of 80 tonnes)	nos	12637.56	
M-070	Bearing (Supply of sliding plate bearing of 80 tonne)	nos	11414.17	
M-071	Bentonite	kg	4.02	
M-072	Binding wire	kg	75.04	
M-073	Bitumen (Cationic Emulsion) Ex- Patna (R.S1) Packed	tonne	52919.00	
M-074	Bitumen (60-70 grade) Packed Ex- Barauni	tonne	56414.00	
M-075	Bitumen (80-100 grade) Packed Ex- Barauni	tonne	55614.00	
M-076	Bitumen (Cutback) Packed Ex- Barauni .	tonne	56414.00	
M-077	Bitumen (emulsion) Packed Ex- Patna (SS1)	tonne	54270.00	
M-078	Bitumen (modified graded) Packed Ex - Fatuha (CRMB - 55)	tonne	53965.00	
M-079	Brick 100A for - Patna Urban	each	6.069	0.045
M-080	C.I. shoes for the pile	kg	47.040	
M-081	Cement - OPC 43 Grade at Patna	tonne	5156.00	
M-082	CGI Sheet 0.8 mm thick	Kg	94.51	
M-083	Cold twisted bars (HYSD Bars) - Fe 500 D Av. of M-10A	tonne	54810.00	
M-084	Coller (RCC) for joints 300 mm dia	nos	56.00	
M-085	Compressible Fibre Board (20mm thick)	sqm	1132.98	
M-086	Connectors / Staples	each	8.33	
M-087	Copper Plate (12m long x 250mm wide)	kg	896.80	
M-088	Corrosion resistant Structural steel	tonne	46827.05	
M-089	Corrugated sheet, 3 mm thick, "Thrie" beam section railing	kg	49.62	
M-090	Credit for excavated rock found suitable for use (add Royality @ 30% of Rate)	cum	101.24	23.36
M-091	Curing compound	litre	136.22	
M-092	Delineators from ISI certified firm as per the standard drawing given in IRC - 79	each	879.05	
M-093	Earth Cost or compensation for earth taken from private land	cum	35.01	33.00
M-094	Elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II)	metre	28508.46	

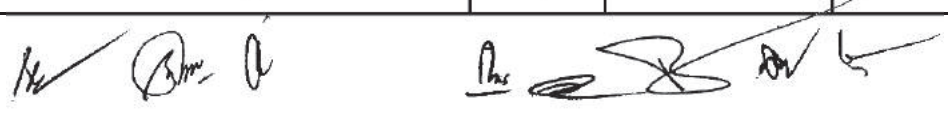


1	2	3	4	5
M-095	Epoxy compound with accessories for preparing epoxy mortar	kg	595.97	
M-096	Epoxy mortar	kg	817.29	
M-097	Epoxy primer	kg	122.02	
M-098	Epoxy resin-hardner mix for prime coat	kg	723.67	
M-099	Flag of red color cloth 600 x 600 mm	each	57.46	
M-100	Flowering Plants	each	9.00	
M-101	Galvanised MS flat clamp	nos	17.17	
M-102	Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	111.88	
M-103	Galvanised structural steel plate 200 mm wide, 6 mm thick, 24 m long	kg	57.03	
M-104	Geo grids	sqm	89.26	
M-105	Geomembrane	sqm	45.00	
M-106	Geonets	sqm	108.16	
M-107	Geotextile	sqm	84.55	
M-108	Geotextile filter fabric	sqm	84.55	
M-109	GI bolt 10 mm Dia	nos	17.88	
M-110	Spherical Dome Nut	nos	#VALUE!	
M-111	Grass (Doob)	kg	4.96	
M-112	Grass (Fine)	kg	4.96	
M-113	HDPE pipes 75mm dia	metre	237.01	
M-114	HDPE pipes 90mm dia	metre	237.01	
M-115	Hedge plants	each	40.00	
M-116	Helical pipes 600mm diameter	metre	INPUT	
M-117	Hot applied thermoplastic compound (Sp. Gravity - 2.10)	litre	198.46	
M-118	HTS strand	tonne	79629.50	
M-119	Joint Sealant Compound	kg	27.24	
M-120	Jute netting, open weave, 2.5 cm square opening for seeding and Mulching	sqm	41.26	
M-121	LDO for steam curing	litre	INPUT	
M-122	M.S. Clamps	nos	43.36	
M-123	M.S. Clamps	kg	78.47	
M-124	M.S.shoes @ 35 Kg per pile of 15 m	kg	30.00	
M-125	Mild Steel bars (Av-M6)	tonne	58600.00	

1	2	3	4	5
M-126	Modular strip/box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm assembly comprising of edge beams, central beam, 2 modules chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	31417.46	
M-127	Modular strip/box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm box/box seal joint assembly containing 3 modules/cells and comprising of edge beams, two central beams, chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative	metre	31417.46	
M-128	Nipples 12mm,300mm long	nos	44.80	
M-129	Nuts and bolts	kg	69.15	
M-130	Paint	litre	246.65	
M-131	Pavement Marking Paint	litre	246.65	
M-132	Paving Fabric	sqm	93.58	
M-133	Perforated geosynthetic pipe 150 mm dia	metre	29.35	
M-134	Perforated pipe of cement concrete, internal dia 100 mm	metre	112.83	
M-135	Pesticide	kg	80.97	
M-136	Pipes 200 mm dia, 2.5 m long for drainage	metre	173.47	
M-137	Plastic sheath, 1.25 mm thick for dowel bars	sqm	17.75	
M-138	Plastic tubes 50 mm dia, 1.2 m high	nos	INPUT	
M-139	Polymer braids	metre	INPUT	
M-140	Pre moulded Joint filler, 25 mm thick for expansion joint.	sqm	1064.18	
M-141	Pre-coated stone chips of 13.2 mm nominal size	cum	644.70	150.00
M-142	Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness.	metre	INPUT	
M-143	Pre-moulded asphalt filler board	sqm	1064.18	
M-144	Pre-packed cement based polymer concrete of strength 45 Mpa at 28 days	kg	INPUT	
M-145	Primer (Wall)	kg	77.60	
M-146	Quick setting compound	kg	INPUT	
M-147	Random Rubble Stone	cum	675.00	150.00
M-148	RCC Pipe NP 4 heavy duty non presure pipe 1000 mm dia with spigot	metre	5570.00	
M-149	RCC Pipe NP 4 heavy duty non presure pipe 1200 mm dia with spigot	metre	6510.00	
M-150	RCC Pipe NP 4 heavy duty non presure pipe 900 mm dia with spigot	metre	4500.00	

1	2	3	4	5
M-151	RCC Pipe NP 4 heavy duty non presure pipe 600 mm dia with spigot	metre	2350.00	
M-152	RCC Pipe NP 4 heavy duty non presure pipe 300 mm dia	metre	532.24	
M-153	Reflectorising glass beads	kg	72.00	
M-154	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Copper Strips)	metre	INPUT	
M-155	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Galvanised carbon steel strips)	metre	INPUT	
M-156	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Glass reinforced polymer/fibre reinforced polymer/polymeric strips)	metre	INPUT	
M-157	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Stainless steel strips)	metre	INPUT	
M-158	Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Aluminium strips)	metre	INPUT	
M-159	Rivets	each	9.08	
M-160	Sand bags (Cost of sand and Empty cement bag)	nos	9.11	2.59
M-161	Sapling 2 m high 25 mm dia	each	25.55	
M-162	Scrap tyres of size 900 x 20	nos	85.14	
M-163	Seeds	kg	38.31	
M-164	Selected earth (Including royalty @ `33.0 per cum & compensation @ `1.81 per cum)	cum	35.01	33.00
M-165	Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	15.24	
M-166	Sheathing duct	metre	93.66	
M-167	Shrubs	each/ (sqft)	2.77	
M-168	Sludge / Farm yard manure @ 0.18 cum per 100 sqm at site of work for turfing	cum	278.90	
M-169	Sodium vapour lamp (70 watt)	each	188.94	
M-170	Square Rubble Coursed Stone	cum	675.00	150.00
M-171	Steel circular hollow pole of standard specification for street lighting to mount light at 5 m height above deck level	each	INPUT	
M-172	Steel circular hollow pole of standard specification for street lighting to mount light at 9 m height above road level	each	INPUT	
M-173	Steel drum 300 mm dia 1.2 m high/empty bitumen drum	nos	170.47	
M-174	Steel helmet and cushion block on top of pile head during driving.	kg	41.93	
M-175	Steel pipe 25 mm external dia as per IS:1239	metre	136.85	
M-176	Steel pipe 50 mm external dia as per IS:1239	metre	244.89	

1	2	3	4	5
M-177	Steel pipe 100 mm external dia as per IS:1239	metre	INPUT	
M-178	Steel wire rope 20 mm	kg	43.42	
M-179	Steel wire rope 40 mm	kg	43.42	
M-180	Strip seal expansion joint	metre	8844.47	
M-181	Structural Steel (Av. of M6, M8 & M9)	tonne	57033.00	
M-182	Super plastisizer admixture IS marked as per 9103-1999	kg	214.86	
M-183	Synthetic Geogrids as per clause 3102.8 and approved design and specifications.	sqm	187.90	
M-184	Through and bond stone	each	10.58	
M-185	Tie rods 20mm diameter (500mm length) @2.47 kg/m	nos	67.30	
M-186	Tiles size 300 x 300 mm and 25 mm thick	each	41.07	
M-187	Timber	cum	44845.72	
M-188	Traffic cones with 150 mm reflective sleeve	nos	INPUT	
M-189	Tube anchorage set complete with bearing plate, permanent wedges etc	nos	51.08	
M-190	Unslaked lime	tonne	3873.95	
M-191	Water	KL	56.20	Sub Analysis 21.22
M-192	Water based cement paint	litre	125.53	
M-193	Welded steel wire fabric	kg	51.18	
M-194	Wire mesh 50mm x 50mm size of 3mm wire	kg	51.66	
M-195	Wooden ballies 2" Dia for bracing (Sal)	each	22.29	
M-196	Wooden ballies 8" Dia and 9 m long	each	538.98	
M-197	Wooden packing	cum	INPUT	
M-198	Wooden staff for fastening of flag 25 mm dia, 1.0 m long	each	27.86	
M-199	Silica fume	kg	28.00	
M-200	Synthetic Geogrids Ultimate tensile Strength 100kN/Metre.	Sqm	200.00	
M-201	Synthetic Geogrids Ultimate tensile Strength 150kN/Metre.	Sqm	210.00	
M-202	Synthetic Geogrids Ultimate tensile Strength 200kN/Metre.	Sqm	340.00	
M-203	Synthetic Geogrids Ultimate tensile Strength 250kN/Metre.	Sqm	350.00	
M-204	Synthetic Geogrids Ultimate tensile Strength 300kN/Metre.	Sqm	360.00	



1	2	3	4	5
M-205	Synthetic Geogrids Ultimate tensile Strength 350kN/Metre.	Sqm	370.00	
M-206	Synthetic Geogrids Ultimate tensile Strength 400kN/Metre.	Sqm	450.00	
M-207	Synthetic Geogrids Ultimate tensile Strength 500kN/Metre.	Sqm	500.00	
M-208	Synthetic Geogrids Ultimate tensile Strength 600kN/Metre.	Sqm	550.00	
M-209	Synthetic Geogrids Ultimate tensile Strength 700kN/Metre.	Sqm	650.00	
M-210	Synthetic Geogrids Ultimate tensile Strength 800kN/Metre.	Sqm	725.00	
M-211	Synthetic Geogrids Ultimate tensile Strength 900kN/Metre.	Sqm	850.00	
M-212	Synthetic Geogrids Ultimate tensile Strength 1000kN/Metre.	Sqm	950.00	
M-213	Synthetic Geogrids Ultimate tensile Strength 1100kN/Metre.	Sqm	1000.00	
M-214	Synthetic Geogrids Ultimate tensile Strength 1200kN/Metre.	Sqm	1050.00	
M-215	Explosive for blasting(Gelatine80%)	Kg	976.21	
M-216	Delay Detonators	Nos	INPUT	
M-217	Electric Detonators @1 detonator for 1/2 gelatin stick of 125 gms each	Nos	6.19	
M-218	Detonation Fuse coil	Meter	INPUT	
M-219	3.7 mlong extension rod boom Hydraulic Drill jumbo	Nos	INPUT	
M-220	32 mm coupling sleeve boom Hydraulic Drill jumbo	Nos	INPUT	
M-221	Difter rod boom Hydraulic Drill jumbo	Nos	INPUT	
M-222	R32 sank adapter boom Hydraulic Drill jumbo	Nos	INPUT	
M-223	45 mm Dia Button Bit boom Hydraulic Drill jumbo	Nos	INPUT	
M-224	51 mm Dia Button Bit Hydraulic Drill Jumbo	Nos	INPUT	
M-225	Steel Fiber	tonne	INPUT	
M-226	Microsilica	Kg	28.00	
M-227	Accelerator	Kg	INPUT	
M-228	Wire mesh	Kg	51.66	
M-229	Bamboos (i) 75mmDia 6m to 8m long (ii) 100mm Dia 6m to 8m long (iii) 50mm Dia Hill Bamboo	Meter	19.65 20.98 13.12	
M-230	Live Stake Stump	Meter	INPUT	
M-231	Hard wood sticks	Meter	INPUT	
M-232	Live Sods(0.6m Length)	Nos	INPUT	
M-233	Live Sods(2.0 m Length)	Nos	INPUT	
M-234	Coal Tar Epoxy	Kg	INPUT	
M-235	Binding Material	Meter	INPUT	

1	2	3	4	5
M-236	Spring post 700mm	each	INPUT	
M-237	Spring post 450 mm	each	INPUT	
M-238	Water Filled Barricades Work zone sheeting (Trapezoidal Shape 800mmto 1000mm in length,700mm in height	each	INPUT	
M-239	GI Pipe 100 mm Dia	Meter	617.50	
M-240	Bracket for G.I Pipe fixing	Kg	INPUT	
M-241	Flange for G.I Pipe fixing	Kg	INPUT	
M-242	Neem Cake	Quintal	4000.00	
M-243	Supplying sludge	Cum	278.90	
M-244	Contol Center Server	Nos	INPUT	
M-245	Hot Standby Backup Server	Nos	INPUT	
M-246	NAS Video Server with storage Minimum 70 TB	Nos	INPUT	
M-247	Backup Video (Only Incidents) Server.	Nos	INPUT	
M-248	Graphic Display(70" LED DLP IN 3X2 matrix)	Set	INPUT	
M-249	Graphic Display Controller and software including Video Switches	Set	INPUT	
M-250	CCTV Monitoring Workstation	Nos	INPUT	
M-251	Emergengy Telephone (1033)Console.	Nos	INPUT	
M-252	VIDS-Workstation.	Nos	INPUT	
M-253	Administrative Workstation	Nos	INPUT	
M-254	ATMS Operator Workstation	Nos	INPUT	
M-255	CCTV joystick	Nos	INPUT	
M-256	Operations Laser Printer(Colour)	Nos	INPUT	
M-257	Operations Laser Printer(Black)	Nos	INPUT	
M-258	Rack 19"	Nos	INPUT	
M-259	ATMS Control Room Software(integrated with VIDS,ATCC,VMS,MOS)	Ls	INPUT	
M-260	Video Management Software with atleast 150 VMS Lic	Ls	INPUT	
M-261	Facility Monitoring System Controller Software	Ls	INPUT	
M-262	Server & Database license	Ls	INPUT	
M-263	Antivirus license	Ls	INPUT	
M-264	PTZ Camera (including CCTV Controller)	Set	INPUT	
M-265	Solar System with UPS, battery & 12mm Pole & Cabinet	Set	INPUT	
M-266	VIDS Camera (including image Prossesing unit)	Set	INPUT	

1	2	3	4	5
M-267	Warning amber lights with hooters, 72 Hrs solar backup,5m poles and foundation	Set	INPUT	
M-268	Cabinet	Nos	INPUT	
M-269	12 m Pole (including manufacturing and galvanizing)	Nos	INPUT	
M-270	Solar System with UPS & batteries	Set	INPUT	
M-271	Equipment,Sensor unit, Processing unit, Solar power supply and civil works for 4 Lanes	Set	INPUT	
M-272	Solar System with UPS , batteries.	Set	INPUT	
M-273	VMS (Variable Message Sine-Mtype)	Nos	INPUT	
M-274	Gantry(including Manufacturing and galvanizing)	Nos	INPUT	
M-275	Solar System with UPS, battery and Cabinet for M type VMS	Set	INPUT	
M-276	Uninterruptible Power supply (UPS)for Server Rack(10KVA)	Set	INPUT	
M-277	Uninterruptible Power supply (UPS) for TMC (30KVA)	Set	INPUT	
M-278	Power Distribution Board (Essential & CriticalSupply)	Set	INPUT	
M-279	MOS sensor Equipment (including MOS Controller)	Set	INPUT	
M-280	Cabinet	Nos	INPUT	
M-281	Pole	Nos	INPUT	
M-282	Steel fence for protection	Set	INPUT	
M-283	24 CoreArmoured OFC + all accessories	Meter	INPUT	
M-284	40 mm PLB HDPE duct as per latest TSEC specification +all accessories	Meter	INPUT	
M-285	Trenching of 1.8 meters,Laying & Back filling for PLB HDPE duct	Meter	INPUT	
M-286	Bi- Axial Extruded Geogrids of Minimum Tensile Strengh 15kN/m	sqm	89.26	
M-287	Bi- Axial Extruded Geogrids of Minimum Tensile Strengh 20kN/m	sqm	102.41	
M-288	Bi- Axial Extruded Geogrids of Minimum Tensile Strengh 30kN/m	sqm	167.23	
M-289	Bi- Axial Extruded Geogrids of Minimum Tensile Strengh 40kN/m	sqm	244.27	
M-290	Geosynthetic Drainage composite (tensile strength of 18 Kn/m)	sqm	473.51	
M-291	Geosynthetic Drainage composite (tensile strength of 13.5 Kn/m)	sqm	563.71	
M-292	Waste Plastic (as per IRC:SP:98-2013)	tonne	15790.14	
M293	RCC Pipe NP 4 heavy duty non presure pipe 1500 mm dia	meter	6510.00	
M294	Acrylic noise barrier sheet	Sqm	INPUT	

1	2	3	4	5
M295	Silt Fence Sheet	Sqm	INPUT	
M296	Fully Threaded Hot Dip galvanised geotechnical bars with casing'	Lm	INPUT	
M297	Centralizer	No	INPUT	
M298	Bearing Plate 200mm x 200mm x 10mm	No	INPUT	
M299	Spherical dome nut	Nos.	INPUT	
M300	Fibre Reinforcement	tonne	INPUT	
M301	Geotextile	Sqm	84.55	
M302	Polyvinyl Chloride Pipe (PVC)-90 mm	meter	70.00	
M303	Polyvinyl Chloride Pipe (PVC)-110 mm	meter	130.00	
M304	Polyvinyl Chloride Pipe (PVC)-135 mm	meter	130.00	
M305	Steel/Iron Scraps	Kg.	INPUT	
M306	Aluminium sheeting fixed with encapsulated lens type reflective sheeting including 2% towards lettering (Class-C Type XI- 2mm thick)	sqm	INPUT	
M307	Geocell	sqm	89.26	
M308	Geosynthetics mat	sqm	45.00	
M309	Natural geotextile	sqm	84.55	
M310	Fabric Form mattress	sqm	84.55	
M311	Non-Woven Geotextile	sqm	84.55	
M312	Sr. Road Safety/Auditor/ Team Leader for Road Safety Audit	Month	INPUT	
M313	Traffic Planner for Road Safety Audit	Month	INPUT	
M314	Boarding & Loading and Per Diem for Site Visits (During Road Safety Audit)	Days	INPUT	
M315	Transportation at site and Head Office (During Road Safety Audit)	No. of Trip	INPUT	
M316	Duty travel to Site (During Road Safety Audit)	Days	INPUT	
M317	Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification (During Road Safety Audit)	No. of Copies	INPUT	
M318	Submission of GAP report (For Road Safety Audit)	No. of Copies	INPUT	
M319	Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	INPUT	
M320	Submission of Audit Report of work zone safety (for Road Safety Audit)	No. of Copies	INPUT	
M321	Workshop Report for Road Safety Audit	No. of Copies	INPUT	
M322	Final Safety Report (for road safety Audit)	No. of Copies	INPUT	

1	2	3	4	5
M-323	Cement Fly Ash Brick (Conforming to IS 12894, size= 230 X 110 X 70 mm, weight of one brick= 3Kg, composition: Fly ash= 60%, Coarse sand= 30%, Cement= 10%) including carriage of sand	each	5.008	
M-324	Paver Block (Excluding GST)			
	(i) M -35 Grade and 60 mm thickness (a) White	sqm	516.79	
	(b) Red	sqm	526.00	
	(C) Yelliw	sqm	542.52	
	(ii) M-40 Grade and 80mm thickness (a) White	sqm	593.06	
	(b) Red	sqm	608.57	
	(C) Yellow	sqm	628.20	
M-325	Kerb-Stone Block- M30 Grade (Size 375mm x 300mm x150mm) inclusive of OH & CP	each	91.50	
M-326	Autoclaved Aerated Concrete (AAC) Block	cum	2506.34	
M-327	Bitumen grade VG 40 (30/40) packed Ex Fatuha.	MT	59235.00	
MR01	Construction of restaurant, workshop, first aid room, shop etc. in truck parking area complete as per drg. and direction of the Engineer.	Sqm	INPUT	
MR02	Providing Telephone booth complete as per specifications and direction of Engineer.	Nos.	INPUT	
MR03	Providing & fixing tube well, complete as per drawing and additional specifictions.	Nr.	INPUT	
MR04	Providing a Drinking Water Kiosk complete as per drawing & specification.	Nr.	INPUT	
MR05	Providing and fixing of litter bins in Truck lay Bye locations complete as per drawing or as directed by the engineer.	Nr.	INPUT	
MR06	Construction of toilet block provided with fittings and fixtures complete in truck parking area complete as per drg. and direction of the Engineer.	Nr.	INPUT	
MR07	Construction of Open lined U - Drain in truck laybye area complete as shown in drawing and technical specification clause 309.	Meter	INPUT	
MR08	Providing shelters for bus passengers as per drawing and MORT&H Specifications section 300, 1500, 1600 and 1700.	Nr.	INPUT	
MR09	Providing & fixing guard railing with tubular steel sections at foot path / medians / islands etc including foundation concrete and painting with approved paint etc. all complete as per drawing & MORT&H Specifications Clauses 808, 300, 1500, 1700 & 1900.	Meter	INPUT	
MR10	Toll Booth at Tollplaza	Nr.	INPUT	
MR11	Barrier gates at Tollplaza For 3.2 m wide toll lane	Nr.	INPUT	

1	2	3	4	5
MR12	Barrier gates at Tollplaza For 4.5 m wide toll lane	Nr.	INPUT	
MR13	Canopy	Sqm	INPUT	
MR14	Canopy Lights Halide lamps 150 watt	Nr.	INPUT	
MR15	Canopy Lights Halogen lamps 1000 watt	Nr.	INPUT	
MR16	Loading Unloading Platform	Sqm	INPUT	
MR17	Traffic Aid Post at Toll Plaza	Nr.	INPUT	
MR18	Medical Aid Post at Toll Plaza	Nr.	INPUT	
MR19	Vehicle Rescue Post at Toll Plaza	Nr.	INPUT	
MR20	Ambulances at Toll Plaza	Nr.	INPUT	
MR21	Cranesat Toll Plaza	Nr.	INPUT	
MR22	Electronic Toll Connection (ETC lanes) at Toll Plaza	Nr.	INPUT	
MR23	Intercom facility at Toll Plaza	Nr.	INPUT	
MR24	Weigh Bridge	Nr.	INPUT	
MR25	Car Parking area	Sqm	INPUT	
MR26	Generator room	Sqm	INPUT	
MR27	Base Maintainance Camp	Sqm	INPUT	
MR28	Toll plaza equipment	Lane	INPUT	
MR29	Electrification And Air conditioning for toll Booth and toll Plaza	LS	INPUT	
MR30	Bull nose crash barrier	Nr.	INPUT	
MR31	Standby Generator at Toll Plaza	Nr.	INPUT	
MR32	CCTV camera installed at each booth	Nr.	INPUT	
MR33	T1 for Toll Road Start	Nr.	INPUT	
MR34	T2 for Toll Gate 1 Km	Nr.	INPUT	
MR35	T3 for Toll Gate 500 m and toll rates	Nr.	INPUT	
MR36	T4 for exempt vehicles at Toll Plaza	Nr.	INPUT	
MR37	T5 for pictorial description of toll rates	Nr.	INPUT	
MR38	T6 for over size vehicle lane direction sign at Toll Plaza	Nr.	INPUT	
MR39	T7 near the Toll booths displaying Toll Rates, exempt vehicles and complaint telephone number & address	Nr.	INPUT	
MR40	T8 for Toll Road End	Nr.	INPUT	
MR41	Picnic Area at Rest Area	Sqm	INPUT	
MR42	Petrol Pump & Pepairing Shop at Rest Area	Sqm	INPUT	

1	2	3	4	5
MR43	Buffer Zone at Rest Area	Sqm	INPUT	
MR44	Traffic blinker Signal (L.E.D.)	Nr	INPUT	
MR45	PVC Roof Sheet at FOB	Sqm	INPUT	
MR46	Cost of Water Quality Monitoring	Nos.	INPUT	
MR47	Cost of Soil Quality Monitoring	Nos.	INPUT	
MR48	Cost of Ambient Air Quality	Nos.	INPUT	
MR49	Cost of Ambient Noise Monitoring 24 hour continuous	Nos.	INPUT	
MR50	Consent to Establish (CTE)	Nos.	INPUT	
MR51	Consent to Operate (CTO)	Nos.	INPUT	
MR52	Compliance submission for Consent to Establish (CTE)	Nos.	INPUT	
MR53	Compliance submission for Consent to Operate (CTO)	Nos.	INPUT	
MR54	Cost of Environmental Workshop	Nos.	INPUT	

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Schedule- P & M / MORTH - 1A **Date :- 07.12.2021**

Approved Usages rate of Plants & Machinery for preparation of Schedule of rate 2022-23 including all charges ,cost of repair,maintaintance,tyre- replacement,running and operating charges such as fuel lubricant,labour etc but excluding GST,Overhead and Contractor's profit.

Sl. No.	Code	Description	Unit	Approved Rate	Remarks
1	PM1001	Dozer - 240 HP	Hour	5,523.00	
2	PM1002	Dozer - 175 HP	Hour	4,249.00	
3	PM1003	Dozer - 90 HP	Hour	2,930.00	
4	PM2001	Motor Grader 4.3 metre blade	Hour	5,450.00	
5	PM2002	Motor Grader 3.7 metre blade	Hour	4,985.00	
6	PM2003	Motor Grader 3.35 metre blade	Hour	4403.00	
7	PM3003	Hydraulic Excavator of 1.2 cum bucket	Hour	2,703.00	
8	PM3004	Hydraulic Excavator of 1.1 cum bucket	Hour	2,432.00	
9	PM3005	Hydraulic Excavator of 0.9 cum bucket	Hour	2,202.00	
10	PM4001	Jack Hammer (attachment of Hydraulic Excavator)	Hour	206.00	
11	PM5001	Front End loader 3.1 cum bucket capacity	Hour	3,433.00	
12	PM5002	Front End loader 2.1 cum bucket capacity	Hour	2,033.00	
13	PM5003	Backhoe-loader 1 cum bucket capacity	Hour	1366.00	
14	PM6001	Tipper-18 Cum	Hour	2239.00	
15	PM6002	Tipper-14 Cum	Hour	1998.00	
16	PM6003	Tipper-10 Cum	Hour	1785.00	
17	PM6004	Tipper-5.5 Cum	Hour	1371.00	
18	PM7001	Vibratory Soil Compactor (10 tonne)	Hour	1988.00	
19	PM8001	Smooth Wheeled Roller 8 tonne	Hour	1518.00	
20	PM9001	Tandem Roller	Hour	1,978.00	Vibratory road Roller
21	PM9002	Mini Tandem Roller	hour	1,048.00	Do
22	PM10001	Pneumatic Road Roller	Hour	1996.00	Do
23	PM11001	Water Tanker (16 KL)	Hour	1,121.00	
24	PM11002	Water Tanker (12 KL)	Hour	947.00	
25	PM11003	Water Tanker (6 KL)	Hour	707.00	
26	PM12001	Tractor-Trolly	Hour	629.00	
27	PM13001	Rotavator	Hour	17.00	
28	PM14001	Ripper	Hour	21.00	
29	PM15001	Air Compressor -250 cfm	Hour	391.00	
30	PM15002	Air Compressor -500 cfm	Hour	1,831.00	
31	PM16001	Integrated Stone Crusher Stone (3 Stage) 250 TPH	Hour	13,481.00	
32	PM17001	Wet Mix Plant - 250 TPH Capacity	Hour	649.00	
33	PM17002	Wet Mix Plant - 200 TPH Capacity	Hour	354.00	
34	**PM17003**	**Wet Mix Plant - 100 TPH Capacity**	**Hour**	**329.00**	
35	**PM18001**	**Hotmix Plant - 200 TPH Capacity**	**Hour**	**44,761.00**	
36	**PM18002**	**Hotmix Plant - 160 TPH Capacity**	**Hour**	**34,660.00**	
37	**PM18003**	**Hotmix Plant - 120 TPH capacity**	**Hour**	**26375.00**	
38	PM19001	Batching and Mixing Plant - 240 cum Capacity	Hour	5681.00	
39	PM19002	Batching and Mixing Plant - 120 cum Capacity	Hour	3635.00	
40	PM20001	Mobile Concrete Batching / Mixing Plant	Hour	617.00	
41	PM21001	Concrete Mixer - 0.4/0.28 cum	Hour	283.00	
42	PM21002	Concrete Mixer - 1 cum	Hour	313.00	
43	PM22001	Generator 725 KVA	Hour	7,759.00	
44	PM22002	Generator 500 KVA	Hour	5,360.00	
45	PM22003	Generator 400 KVA	Hour	4,323.00	
46	PM22004	Generator 250 KVA	Hour	3034.00	
47	PM22005	Generator 125 KVA	Hour	1587.00	
48	PM22006	Generator 100 KVA	Hour	1359.00	
49	PM22007	Generator 62.5 KVA	Hour	869.00	

Sl. No.	Code	Description	Unit	Approved Rate	Remarks
50	PM22008	Generator 33 KVA	Hour	495.00	
51	PM22009	Generator 15 KVA	Hour	274.00	
52	PM23001	Mechanical Broom Hydraulic	Hour	746.00	
53	PM24001	Bitumen Pressure Distributor	Hour	1,299.00	
54	PM25001	Emulsion Pressure Distributor	Hour	1,299.00	
55	PM26001	Bitumen Boiler Oil Fired	Hour	510.00	
56	PM27001	Mastic Cooker	Hour	450.00	
57	**PM28001**	**Paver Finisher Mechanical**	**Hour**	**2078.00**	
58	PM29001	Paver Finisher Hydrostatic with sensor control -240 HP	Hour	8054.00	
59	PM29002	Paver Finisher Hydrostatic with sensor control -170 HP	Hour	6346.00	
60	PM30001	Paver Finisher Concrete with 300 HP Motor	Hour	25929.00	
61	PM30002	Paver Finisher Concrete with 241 HP Motor	Hour	16593.00	
62	PM30003	Paver Finisher Concrete with 118 HP Motor	Hour	3,764.00	
63	PM31001	Texture Curing Machine (TCM) - upto 18 m	Hour	4,328.00	
64	PM31002	Texture Curing Machine (TCM) - upto 9 m	Hour	3,354.00	
65	PM32001	Hydraulic Chip Spreader	Hour	1,602.00	
66	PM33001	Pot-Hole Repair Machine	Hour	1,235.00	
67	PM34001	Transit Mixer - 6 Cum	Hour	1,860.00	
68	PM35001	Concrete Pump	Hour	960.00	
69	PM36001	Boom Placer	Hour	3,695.00	
70	PM37001	Kerb Casting Machine	Hour	1,468.00	
71	PM38001	Piling Rig with Bentonite Pump	Hour	17,135.00	
72	PM39001	Pneumatic Sinking Plant	Hour	5,333.00	
73	PM40001	Road marking machine	Hour	1,349.00	
74	PM41001	Mobile Slurry Seal Equipment	Hour	3,392.00	
75	PM42001	Joint Cutting Machine	Hour	293.00	
76	PM43001	Bar Bending & Cutting Machine	Hour	309.00	
77	PM44001	Needle Vibrator	Hour	325.00	
78	PM45001	Jack Hammer for air compressor	Hour	11.00	
79	PM46001	Plate Compactor	Hour	335.00	
80	PM47001	Milling Machine with 1 meter Drum Width	Hour	4,026.00	
81	PM47002	Milling Machine with 1.2 meter Drum Width	Hour	4,707.00	
82	PM47003	Milling Machine With 1.3 meter Drum Width	Hour	6,803.00	
83	PM47004	Milling Machine With 2 meter Drum Width	Hour	9,824.00	
84	PM48001	Cold in Situ recycling of bitumen's pavement with foam bitumen technology	Hour	27,209.00	
85	PM49001	In situ stabilisation of WMM/GSB/Sub grade	Hour	24,056.00	
86	PM50001	Cement spreader	Hour	6,913.00	
87	PM51001	Mobile cold recycling mixing plant	Hour	20,422.00	
88	PM52001	Hot in place recycling	Hour	1,02,535.00	
89	PM53001	Pre heater unit for hot in place recycling	Hour	634.00	
90	PM54001	Single boom Hydraulic Drill Jumbo	Hour	4,394.00	
91	PM55001	Two boom Hydraulic Drill Jumbo	Hour	6,604.00	
92	PM56001	Three boom Hydraulic Drill Jumbo	Hour	9,638.00	
93	PM57001	Hydraulic Rock bolt drill	Hour	6,572.00	
94	PM58001	Rotating Telehandlers	Hour	887.00	
95	PM59001	Shotcrete Machine	Hour	1,349.00	
96	PM60001	Grouting machine	Hour	525.00	
97	PM61001	Dewatering Pump 10 HP	Hour	195.00	
98	PM61002	Concrete cutting machine	Hour	170.00	
99	PM62001	Crawler mounted Crane 35 tonne capacity	Hour	5,502.00	
100	PM62002	Crawler mounted Crane 80 tonne capacity	Hour	5,615.00	
101	PM62003	Crawler mounted Crane 100 tonne capacity	Hour	8,705.00	
102	PM63001	Mobile Hydraulic Crane 3 tonne capacity	Hour	728.00	
103	PM63002	Mobile Hydraulic Crane 5 tonne capacity	Hour	765.00	
104	PM63003	Mobile Hydraulic Crane 10 tonne capacity	Hour	864.00	
105	PM63004	Mobile Hydraulic Crane 15 tonne capacity	Hour	899.00	

Sl. No.	Code	Description	Unit	Approved Rate	Remarks
106	PM63005	Mobile Hydraulic Crane 20 tonne capacity	Hour	1,125.00	
107	PM63006	Mobile Hydraulic Crane 35 toone capacity	Hour	1,747.00	
108	PM64001	Concrete Bucket	Hour	86.00	
109	PM65001	Prestressing Jack with Pump & Access	Hour	413.00	
110	PM66001	Boat to carry atleast 20 persons	hour	714.00	
111	PM67001	Crane with grab 0.75 cum capacity	hour	738.00	
112	PM68001	Epoxy Injection gun	hour	231.00	
113	PM69001	Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	9,004.00	
114	PM70001	Jack for Lifting 40 tonne lifting capacity.	hour	239.00	
115	PM71001	Vibrating Pile driving hammer complete with power unit and accessories.	hour	16,014.00	
116	PM72001	Tipper 18 Cum (Surface Road)	Per Tonne Km.	4.80	As per Carriage Rate
117	PM72002	Tipper-18 Cum (Unsurfaced Gravelled Road) excluding OH & CP	t.km	5.83	Do
118	PM72003	Tipper-18 Cum (Katcha Track) excluding OH & CP	t.km	11.66	Do
119	PM73001	Tipper -14 Cum (Surface Road) excluding OH & CP	t.km	5.48	Do
120	PM73002	Tipper -14 Cum (Unsurfaced Gravelled Road) excluding OH & CP	t.km	6.66	Do
121	PM73003	Tipper -14 Cum (Katcha Track) excluding OH & CP	t.km	13.32	Do
122	PM74001	Tipper -10 Cum (Surface Road) excluding OH & CP	t.km	6.80	Do
123	PM74002	Tipper -10 Cum (Unsurfaced Gravelled Road) excluding OH & CP	t.km	8.26	Do
124	PM74003	Tipper -10 Cum (Katcha Track) excluding OH & CP	t.km	16.53	Do
125	PM75001	Tipper- 5.5 Cum (Surface Road) excluding OH & CP	t.km	9.41	Do
126	PM75002	Tipper- 5.5 Cum (Unsurfaced Gravelled Road) excluding OH & CP	t.km	11.42	Do
127	PM75003	Tipper- 5.5 Cum (Katcha Track) excluding OH & CP	t.km	22.85	Do
128	PM76001	Transit Mixer - 6 Cum excluding OH & CP	t.km	10.33	Do
129	PM77001	Loading and unloading of stone boulder / stone aggregates / sand / kanker / moorum (Using by 18 cum capacity Tipper & 3.1 Cum capacity Loader) excluding OH & CP	cum	73.42	Do
130	PM77002	Loading and unloading of stone boulder / stone aggregates / sand / kanker / moorum (Using by 14 cum capacity Tipper & 2.1 Cum capacity Loader) excluding OH & CP	cum	71.98	Do
131	PM77003	Loading and unloading of stone boulder / stone aggregates / sand / kanker / moorum (Using by 10 cum capacity Tipper & 1.0 Cum capacity Loader) excluding OH & CP	cum	100.20	Do
132	PM77004	Loading and unloading of stone boulder / stone aggregates / sand / kanker / moorum (Using by 5 cum capacity Tipper & 1.0 Cum capacity Loader) excluding OH & CP	cum	112.96	Do
133	PM77005	Loading and Unloading of Cement or Steel by Manual Means and Stacking	tonne	420.80	Do
134	PM78001	Centrifugal water pump	Hour	240.00	
135	PM79001	Shredding Machine	Hour	391.00	
136	PM80001	Mobile Bridge Inspection Unit (MBIU)	hour	6,549.00	
137	PM81001	Network Survey Vehicle (NSV) With SUV	hour	6,044.00	
138	PM82001	Falling weight deflectometer (FWD) Equipment With SUV	hour	2,884.00	
139	PM83001	Retroreflectometer testing equipment with Vehicle With SUV	hour	1,468.00	

Sl. No.	Code	Description	Unit	Approved Rate	Remarks
140	PM84001	Sport utility vehicle (SUV)	hour	975.00	
141	PM85001	Automatic Vehicle Counter Classifier (ATCC) System	hour	74.00	

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

07.12.21
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

7.12.21
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभियंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

Approved Input of Labour wages, Overhead &Lead for the preparation of Schedule of Rate 2022-2023 in prescribed format of updated MORT&H Standard Data Book 2019 (2nd Revision)

S.No.	Description of Labour	Unit	Approved Rate
1	2	3	4
L-01	Blacksmith (IInd class)	day	369.00
L-02	Blacksmith (Ist class)/ Welder/ Plumber/ Electrician	day	413.00
L-03	Blaster (Stone cutter)	day	508.00
L-04	Carpenter I Class	day	413.00
L-05	Chiseller (Head Mazdoor)	day	474.00
L-06	Driller (Jumper)	day	318.00
L-07	Diver	day	474.00
L-08	Fitter	day	369.00
L-09	Mali	day	318.00
L-10	Mason (IInd class)	day	369.00
L-11	Mason (Ist class)	day	413.00
L-12	Mate / Supervisor	day	325.00
L-13	Mazdoor	day	306.00
L-14	Mazdoor/Dresser (Semi Skilled)	day	318.00
L-15	Mazdoor/Dresser/Sinker (Skilled)	day	388.00
L-16	Medical Officer	day	474.00
L-17	Operator(grouting)	day	474.00
L-18	Painter I class	day	391.00
L-19	Para medical personnel	day	474.00
L-20	Heavy Plant Operator	day	474.00
L-21	Light Plant Operator.	day	388.00
L-22	Heavy Vehicle Driver.	day	440.00
L-23	Light Vehicle Driver.	day	388.00
L-24	Helper	day	306.00
L-25	Black smith	day	369.00

Overhead

	Overheads for Road Works(Large)	0.08	(@ 8%)
	Overheads for Road Works(Medium)	0.10	(@ 10%)

	Overheads for Road Works (Small)	0.12	(@ 12%)
	Contractor's profit for Road Works	0.10	(@ 10%)
	Overheads for New / Widening of Bridge/Structure Works	0.20	(@ 20%)
	Overheads for Rehabilitation of Bridge /Structure	0.30	(@ 30%)
	Contractor's profit for Bridge Works	0.10	(@ 10%)
	Over heads for Road Tunnel Works	0.25	(@ 25%)
	Contractor's profit for Tunnel Works	0.10	(@ 10%)

Lead

L1	Lead from Mixing Plant to working site	1.0	km
L2	Lead for E/W borrow area to site	1.0	km

APPROVED CARRIAGE RATE OF MATERIALS (By TIPPER) Meeting Date 28.02.2022

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
1.01	A	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									
		A.Taking output = 5.5 Cum									
		Time required for									
		i) Positioning of tipper at loading point	Min	1.000	1.000	1.000					
		ii) Loading by front end loader 1 cum bucket capacity	Min	6.633	6.633	6.633					
		iii) Maneuvering, reversing, dumping and turning for return	Min	2.000	2.000	2.000					
		iv) Waiting time, unforeseen contingencies etc	Min	4.000	4.000	4.000					
		Total	Min	13.633	13.633	13.633					
		a) Machinery									
		Tipper-5.5 Cum capacity	Hour	0.227	0.227	0.227	1,371.00	311.217	311.217	311.217	PM6004
		Front end -loader 1 cum bucket capacity	Hour	0.227	0.227	0.227	1,366.00	310.082	310.082	310.082	PM5003
		Total Cost Excluding OH & CP						621.299	621.299	621.299	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		49.704	62.130	74.556	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		67.100	68.343	69.585	
		Total Cost for 5.5 cum = (a+b+c) Including OH & CP						738.103	751.772	765.440	
		Unit Cost= (a+b+c)/5.5 Including OH & CP						134.201	136.686	139.171	
	Note :	**Unloading will be by tipping.**					**Say**	**134.200**	**136.700**	**139.200**	
1.01	B	**Loading and unloading of stone boulder / stone aggregates / sand / kanker / moorum.**									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		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 = 10.00 cum									
		Time required for									
		i) Positioning of tipper at loading point	Min	1.000	1.000	1.000					
		ii) Loading by front end loader 1 cum bucket capacity	Min	12.060	12.060	12.060					
		iii) Maneuvering, reversing, dumping and turning for return	Min	2.000	2.000	2.000					
		iv) Waiting time, unforeseen contingencies etc	Min	4.000	4.000	4.000					
		Total	Min	19.060	19.060	19.060					
		a) Machinery									
		Tipper-10 Cum capacity	Hour	0.318	0.318	0.318	1,785.00	567.63	567.63	567.63	PM6003
		Front end-loder 1 cum bucket capacity	Hour	0.318	0.318	0.318	1,366.00	434.388	434.388	434.388	PM5003
		Total Cost Excluding OH & CP						1,002.02	1,002.02	1,002.02	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		80.161	100.202	120.242	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		108.218	110.222	112.226	
		Total Cost for 10 cum = (a+b+c)Including OH & CP						1190.397	1212.442	1234.486	
		Unit Cost= (a+b+c)/10 Including OH & CP						119.040	121.244	123.449	
	Note :	**Unloading will be by tipping.**					**Say**	**119.000**	**121.200**	**123.400**	
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									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		i) Positioning of tipper at loading point	Min	1.000	1.000	1.000					
		ii) Loading by front end loader 2.1 cum bucket capacity	Min	8.029	8.029	8.029					
		iii) Maneuvering, reversing, dumping and turning for return	Min	2.000	2.000	2.000					
		iv) Waiting time, unforeseen contingencies etc	Min	4.000	4.000	4.000					
		Total	Min	15.029	15.029	15.029					
		a) Machinery									
		Tipper-14 Cum capacity	Hour	0.250	0.250	0.250	1998.000	499.500	499.500	499.500	PM6002
		Front End loader 2.1 cum bucket capacity	Hour	0.250	0.250	0.250	2033.000	508.250	508.250	508.250	PM5002
		Total Cost Excluding OH & CP						1,007.750	1,007.750	1,007.750	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		80.620	100.775	120.930	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		108.837	110.853	112.868	
		Total Cost for 14 cum = (a+b+c)Including OH & CP						1,197.207	1,219.378	1,241.548	
		Unit Cost= (a+b+c)/14 Including OH & CP						85.515	87.098	88.682	
	Note :	**Unloading will be by tipping.**					**Say**	**85.500**	**87.100**	**88.700**	
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 = 18.00 cum									
		Time required for									
		i) Positioning of tipper at loading point	Min	1.000	1.000	1.000					
		ii) Loading by front end loader 3.1 cum bucket capacity	Min	6.996	6.996	6.996					
		iii) Maneuvering, reversing, dumping and turning for return	Min	2.000	2.000	2.000					
		iv) Waiting time, unforeseen contingencies etc	Min	4.000	4.000	4.000					
		Total	Min	13.996	13.996	13.996					

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		a) Machinery									
		Tipper-18 Cum capacity.	Hour	0.233	0.233	0.233	2,239.00	521.687	521.687	521.687	PM6001
		Front End loader 3.1 cum bucket capacity	Hour	0.233	0.233	0.233	3,433.00	799.889	799.889	799.889	PM5001
		Total Cost Excluding OH & CP						1,321.576	1,321.576	1,321.576	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		105.726	132.158	158.589	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		142.730	145.373	148.017	
		Total Cost for 18 cum = (a+b+c)Including OH & CP						1,570.032	1,599.107	1,628.182	
		Unit Cost= (a+b+c)/18 Including OH & CP						87.224	88.839	90.455	
	Note :	**Unloading will be by tipping.**					**Say**	**87.200**	**88.800**	**90.500**	
1.02	Ref. to Morth.	**Loading and Unloading of Boulders by Manual Means**									
		Unit = cum									
		Taking output = 10 Cum									
		a) Labour									
		Mate	day	0.055	0.055	0.055	325.000	17.875	17.875	17.875	L-12
		Mazdoor	day	1.364	1.364	1.364	306.000	417.384	417.384	417.384	L-13
		b) Machinery									
		Tipper-10 Cum capacity	Hour	1.364	1.364	1.364	1,785.00	2434.74	2434.74	2434.74	PM6003
		Total Cost Excluding OH & CP						2,870.00	2,870.00	2,870.00	
		c) Overheads on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		229.600	287.000	344.400	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		309.960	315.700	321.440	
		Total Cost for10 cum=(a+b+c+d)Including OH & CP						3409.559	3472.699	3535.839	
		Unit Cost=(a+b+c+d)/10 Including OH & CP						340.956	347.270	353.584	
	Note :	**Unloading will be by tipping.**					**Say**	**341**	**347.3**	**353.6**	
1.03	Ref.to M.	**Loading and Unloading of Cement or Steel by Manual Means and Stacking.**									
		Unit = tonne									
		Taking Output = 18.00 tonne									
		a) Labour									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Mate	day	0.144	0.144	0.144	325.000	46.800	46.800	46.800	L-12
		Mazdoor	day	3.600	3.600	3.600	306.000	1101.600	1101.600	1101.600	L-13
		b) Machinery									
		Truck-18 tonne capacity.	Hour	3.600	3.600	3.600	1,785.00	6426.000	6426.000	6426.000	PM6003
		Total Cost Excluding OH & CP						7574.400	7574.400	7574.400	
		c) Overheads on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		605.952	757.440	908.928	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		818.035	833.184	848.333	
		Total Cost for 18 tonnes=(a+b+c+d)Including OH & CP						8,998.387	9,165.024	9,331.661	
		Unit Cost=(a+b+c+d)/18 Including OH & CP						499.910	509.168	518.426	
							Say	**499.900**	**509.200**	**518.400**	
1.04	(i) A	**Cost of Haulage Excluding Loading and Unloading**									
		i) A.Case-I : Surfaced 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=100. t.km									
		Speed with load : 25 km / hour.									
		Speed while Returning empty : 35 km / hour.									
		a) Machinery									
		i) Tipper 10 tonnes capacity.									
		Time taken for onward haulage with load.	Hour	0.400	0.400	0.400	1,371.00	548.400	548.400	548.400	PM6004
		Time taken for empty return trip.	Hour	0.286	0.286	0.286	1,371.00	392.106	392.106	392.106	PM6004
		Total Cost Excluding OH & CP						940.506	940.506	940.506	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		75.240	94.051	112.861	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		101.575	103.456	105.337	
		Total Cost for100 t.km = (a+b+c)Including OH & CP						1117.321	1138.012	1158.703	
		Rate per t.km= (a+b+c)/100 Including OH & CP						11.173	11.380	11.587	

Lx

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
							Say	11.200	11.400	11.600	
		Cost of Haulage Excluding Loading and Unloading									
	B	**i) Case-I : Surfaced Road .**									
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking Output =18tonnes load and lead10 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	0.400	0.400	1785.000	714.000	714.000	714.000	PM6003
		Time taken for empty return trip.	Hour	0.286	0.286	0.286	1785.000	510.510	510.510	510.510	PM6003
		Total Cost Excluding OH & CP						1,224.510	1,224.510	1,224.510	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		97.961	122.451	146.941	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		132.247	134.696	137.145	
		Total Cost for180 t.km = (a+b+c)Including OH & CP						1,454.718	1,481.657	1,508.596	
		Rate per t.km= (a+b+c)/180 Including OH & CP						8.082	8.231	8.381	
							Say	**8.100**	**8.200**	**8.400**	
	C	**Case-I : Surfaced Road .**									
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking Output = 25 tonne load and lead 10km=250.t.km									
		Speed with load : 25 km / hour.									
		Speed while Returning empty : 35 km / hour.									
		a) Machinery									
		i) Tipper 25 tonnes capacity									
		Time taken for onward haulage with load.	Hour	0.400	0.400	0.400	1998.000	799.200	799.200	799.200	PM6002
		Time taken for empty return trip.	Hour	0.286	0.286	0.286	1998.000	571.428	571.428	571.428	PM6002
		Total Cost Excluding OH & CP						1370.628	1370.628	1370.628	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		109.650	137.063	164.475	

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		148.028	150.769	153.510	
		Total Cost for250 t.km = (a+b+c)Including OH & CP						1628.306	1658.460	1688.614	
		Rate per t.km= (a+b+c)/250 Including OH & CP						6.513	6.634	6.754	
							Say	**6.500**	**6.600**	**6.800**	
	D	**Case-I : Surfaced Road .**									
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking Output =32tonnes load and lead10km= 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	0.400	0.400	2,239.00	895.6	895.6	895.6	PM6001
		Time taken for empty return trip.	Hour	0.286	0.286	0.286	2,239.00	640.354	640.354	640.354	PM6001
		Total Cost Excluding OH & CP						1,535.954	1,535.954	1,535.954	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		122.876	153.595	184.314	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		165.883	168.955	172.027	
		Total Cost for320 t.km = (a+b+c)Including OH & CP						1,824.713	1,858.504	1,892.295	
		Rate per t.km= (a+b+c)/320 Including OH & CP						5.702	5.808	5.913	
							Say	**5.700**	**5.800**	**5.900**	
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 & lead 10 km= 100 t.km									
		Speed with load: 20 km/hour									
		Speed for empty return trip : 30 km / hour									
		a) Machinery									
		Tipper 10 tonnes capacity									
		Time taken for onward haulage with load	Hour	0.500	0.500	0.500	1371.000	685.500	685.500	685.500	PM6004
		Time taken for empty return trip.	Hour	0.333	0.333	0.333	1371.000	456.543	456.543	456.543	PM6004
		Total Cost Excluding OH & CP						1,142.043	1,142.043	1,142.043	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		91.363	114.204	137.045	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		123.341	125.625	127.909	

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Total Cost for100 t.km = (a+b+c)Including OH & CP						1,356.747	1,381.872	1,406.997	
		Rate per t.km= (a+b+c)/100 Including OH & CP						13.567	13.819	14.070	
							Say	**13.600**	**13.800**	**14.100**	
1.04	(ii) B	**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 & lead10 km=180.t.km									
		Speed with load : 20 km / hour									
		Speed for empty return trip : 30 km / hour									
		a) Machinery									
		Tipper 18 tonnes capacity									
		Time taken for onward haulage with load.	Hour	0.500	0.500	0.500	1,785.00	892.500	892.500	892.500	PM6003
		Time taken for empty return trip.	Hour	0.333	0.333	0.333	1,785.00	594.405	594.405	594.405	PM6003
		Total Cost Excluding OH & CP						1,486.905	1,486.905	1,486.905	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		118.952	148.691	178.429	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		160.586	163.560	166.533	
		Total Cost for180 t.km = (a+b+c)Including OH & CP						1,766.443	1,799.155	1,831.867	
		Rate per t.km= (a+b+c)/180 Including OH & CP						9.814	9.995	10.177	
							Say	**9.800**	**10.000**	**10.200**	
1.04	(ii) C	Case-II : Unsurfaced Gravelled Road .									
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking Output 25 tonnes load & lead10 km =250. t.km									
		Speed with load : 20 km / hour									
		Speed for empty return trip : 30 km / hour									
		a) Machinery									
		Tipper 25 tonnes capacity.									
		Time taken for onward haulage with load	Hour	0.500	0.500	0.500	1,998.00	999.000	999.000	999.000	PM6002
		Time taken for empty return trip.	Hour	0.333	0.333	0.333	1,998.00	665.334	665.334	665.334	PM6002
		Total Cost Excluding OH & CP						1,664.334	1,664.334	1,664.334	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		133.147	166.433	199.720	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		179.748	183.077	186.405	
		Total Cost for250 t.km = (a+b+c)Including OH & CP						1977.229	2013.844	2050.459	

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Rate per t.km= (a+b+c)/250 Including OH & CP						7.909	8.055	8.202	
							Say	**7.900**	**8.100**	**8.200**	
1.04	(ii) D	**Case-II : Unsurfaced Gravelled Road.**									
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking Output 32tonnes load & lead 10 km= 320. t.km									
		Speed with load : 20 km / hour									
		Speed for empty return trip : 30 km / hour									
		a) Machinery									
		i) Tipper 32 tonnes capacity									
		Time taken for onward haulage with load	Hour	0.500	0.500	0.500	2,239.00	1119.5	1119.5	1119.5	PM6001
		Time taken for empty return trip.	Hour	0.333	0.333	0.333	2,239.00	745.587	745.587	745.587	PM6002
		Total Cost Excluding OH & CP						1,865.087	1,865.087	1,865.087	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		149.207	186.509	223.810	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		201.429	205.160	208.890	
		Total Cost for320 t.km = (a+b+c)Including OH & CP						2,215.723	2,256.755	2,297.787	
		Rate per t.km= (a+b+c)/320 Including OH & CP						6.924	7.052	7.181	
							Say	**6.900**	**7.100**	**7.200**	
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 & lead 10km= 100 t.km									
		Speed with load: 10 km / hour									
		Speed while returning empty: 15 km / hour									
		a) Machinery									
		i) Tipper 10 tonnes capacity.									
		Time taken for onward haulage	Hour	1.000	1.000	1.000	1,371.00	1371.000	1371.000	1371.000	PM6004
		Time taken for empty return trip.	Hour	0.667	0.667	0.667	1,371.00	914.457	914.457	914.457	PM6004
		Total Cost Excluding OH & CP						2,285.457	2,285.457	2,285.457	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		182.837	228.546	274.255	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		246.829	251.400	255.971	

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Total Cost for100 t.km = (a+b+c)Including OH & CP						2,715.123	2,765.403	2,815.683	
		Rate per t.km= (a+b+c)/100 Including OH & CP						27.151	27.654	28.157	
							Say	**27.200**	**27.700**	**28.200**	
1.04	(iii) B	iii) B.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 Output18 tonnes load &lead10km=180.00 t.km									
		Speed with load: 10 km / hour									
		Speed while returning empty: 15 km / hour									
		a) Machinery									
		Tipper 18 tonnes capacity									
		Time taken for onward haulage	Hour	1.000	1.000	1.000	1,785.00	1785.000	1785.000	1785.000	PM6003
		Time taken for empty return trip.	Hour	0.667	0.667	0.667	1,785.00	1190.595	1190.595	1190.595	PM6003
		Total Cost Excluding OH & CP						2,975.595	2,975.595	2,975.595	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		238.048	297.560	357.071	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		321.364	327.315	333.267	
		Total Cost for180 t.km = (a+b+c)Including OH & CP						3,535.007	3,600.470	3,665.933	
		Rate per t.km= (a+b+c)/180 Including OH & CP						19.639	20.003	20.366	
							Say	**19.600**	**20.000**	**20.400**	
1.04	(iii) C	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 Output25Tonnes load &lead10 km=250.t.km									
		Speed with load: 10 km / hour									
		Speed while returning empty: 15 km / hour									
		a) Machinery									
		i) Tipper 25 tonnes capacity									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Time taken for onward haulage	Hour	1.000	1.000	1.000	1,998.00	1998.000	1998.000	1998.000	PM6002
		Time taken for empty return trip.	Hour	0.667	0.667	0.667	1,998.00	1332.666	1332.666	1332.666	PM6002
		Total Cost Excluding OH & CP						3,330.666	3,330.666	3,330.666	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		266.453	333.067	399.680	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		359.712	366.373	373.035	
		Total Cost for250 t.km = (a+b+c)Including OH & CP						3,956.831	4,030.106	4,103.381	
		Rate per t.km= (a+b+c)/250 Including OH & CP						15.827	16.120	16.414	
							Say	**15.800**	**16.100**	**16.400**	
1.04	(iii) 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									
		Taking Output32 tonnes load &lead 1 km= 320. t.km									
		Speed with load: 10 km / hour									
		Speed while returning empty: 15 km / hour									
		a) Machinery									
		i) Tipper 32 tonnes capacity									
		Time taken for onward haulage	Hour	1.000	1.000	1.000	2239.000	2239.000	2239.000	2239.000	PM6001
		Time taken for empty return trip	Hour	0.667	0.667	0.667	2239.000	1493.413	1493.413	1493.413	PM6001
		Total Cost Excluding OH & CP						3,732.413	3,732.413	3,732.413	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		298.593	373.241	447.890	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		403.101	410.565	418.030	
		Total Cost for320 t.km = (a+b+c)Including OH & CP						4434.107	4516.220	4598.333	
		Rate per t.km= (a+b+c)/320 Including OH & CP						13.857	14.113	14.370	
							Say	**13.900**	**14.100**	**14.400**	
1.04	(iv)	**Case-IV : Katcha Track in hilly area.**									
		Haulage of materials by tipper excluding cost of loading, unloading and stacking.									
		Unit = t.km									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Taking Output 10 tonnes load & lead 10km= 100. t.km									
		Speed with load: 5 km / hour									
		Speed while returning empty: 7 km / hour									
		a) Machinery									
		i) Tipper 10 tonnes capacity.									
		Time taken for onward haulage	Hour	2.000	2.000	2.000	1,371.00	2742.000	2742.000	2742.000	PM6004
		Time taken for empty return trip.	Hour	1.429	1.429	1.429	1,371.00	1959.159	1959.159	1959.159	PM6004
		Total Cost Excluding OH & CP						4,701.159	4,701.159	4,701.159	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		376.09272	470.1159	564.13908	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		507.725172	517.12749	526.529808	
		Total Cost for100 t.km = (a+b+c)Including OH & CP						5,584.977	5,688.402	5,791.828	
		Rate per t.km= (a+b+c)/100 Including OH & CP						55.850	56.884	57.918	
							Say	**55.800**	**56.900**	**57.900**	
1.04	(v)	**Case-V : Transit Mixture**									
		Haulage of Concrete by transit mixture excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking Output 15Tonnes load & lead 10km= 150 t.km									
		Speed with load : 20 km / hour									
		Speed while returning empty: 30 km / hour									
		a) Machinery									
		i) Transit Mixture 6 cum capacity.									
		Time taken for onward haulage with load	Hour	0.500	0.500	0.500	1,860.00	930.000	930.000	930.000	PM34001
		Time taken for empty return trip.	Hour	0.333	0.333	0.333	1,860.00	619.38	619.38	619.38	PM34001
		Total Cost Excluding OH & CP						1,549.380	1,549.380	1,549.380	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		123.9504	154.938	185.9256	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		167.33304	170.4318	173.53056	
		Total Cost for150 t.km = (a+b+c)Including OH & CP						1,840.663	1,874.750	1,908.836	

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Rate per t.km= (a+b+c)/150 Including OH & CP						12.271	12.498	12.726	
							Say	**12.300**	**12.500**	**12.700**	
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 = 1.00 cum									
		a) Labour									
		Mate	day	0.0600	0.0600	0.0600	325.000	19.500	19.500	19.500	L-12
		Mazdoor	day	1.500	1.500	1.500	306.000	459.000	459.000	459.000	L-13
		b) Material									
		Supply of quarried stone 150 - 200 mm size	cum	1.1000	1.1000	1.1000	675.000	742.500	742.500	742.500	M-001
		Total Cost Excluding OH & CP						1221.000	1221.000	1221.000	
		c) Overheads on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		97.680	122.100	146.520	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		131.868	134.310	136.752	
		Total Cost for1cum = (a+b+c+d)Including OH & CP						1,450.548	1,477.410	1,504.272	
		Rate per cum= (a+b+c+d) Including OH & CP					**Say**	**1,450.500**	**1,477.400**	**1,504.300**	
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.									
	(i)	**1.Crushing Pattern 40 mm (tonne)- Cost Distribution 28.98 %**									
		Unit = cum									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Taking Output = 750.00 cum									
		a) Labour									
		Mate	day	0.320	0.320	0.320	325.000	104.000	104.000	104.000	L-12
		Mazdoor(Skilled)	day	2.000	2.000	2.000	388.000	776.000	776.000	776.000	L-15
		Mazdoor	day	6.000	6.000	6.000	306.000	1836.000	1836.000	1836.000	L-13
		b) Material									
		Stone Boulder of size 150 mm and below at Cruser Plant	cum	750.000	750.000	750.000	675.00	506250.000	506250.000	506250.000	M-001
		c) Machinery									
		Integrated stone crusher of 250 TPH including belt conveyor and vibrating screens	Hour	6.000	6.000	6.000	13,481.00	80886.000	80886.000	80886.000	PM16001
		Generator 725 KVA	Hour	6.000	6.000	6.000	7,759.00	46554.000	46554.000	46554.000	PM22001
		Front end loader 3.1 cum bucket capacity at quarry and crusher	Hour	5.515	5.515	5.515	3,433.00	18932.995	18932.995	18932.995	PM5001
		Tipper 14 cum capacity for loading at quarry site	Hour	5.515	5.515	5.515	1,998.00	11018.970	11018.970	11018.970	PM6002
		Tipper 14 cum capacity for transportation within 1 km	t.km	1,125.000	1,125.000	1,125.000	5.48	6167.826	6167.826	6167.826	1.04(i) C
		d) Total Cost for 750 cum(Excluding OH & CP)						6,72,525.79	6,72,525.79	6,72,525.79	
		e) Crushing pattern 40mm(tonne)	tonne	22.71%	22.71%	22.71%	255.488				
		f) % Cost distribution={(d)x(f)/e)x1.5}	cum	28.98%	28.98%	28.98%	0.2898	1,144.27	1,144.27	1,144.27	
		g) Overheads on (f)		(@ 8%)	(@ 10%)	(@ 12%)		91.542	114.427	137.312	
		h) Contractor's profit on (f+g)		(@ 10%)	(@ 10%)	(@ 10%)		123.581	125.870	128.158	
		i) Total Cost for1cum = (f+g+h) Including OH & CP						1,359.391	1,384.565	1,409.739	
		Rate per cum= (f+g+h) Including OH & CP					**Say**	**1,359.400**	**1,384.600**	**1,409.700**	
	(ii)	**Crushing of stone aggregates (Nominal size)**									
		2.Crushing Pattern 20 mm (tonne)- Cost Distribution 31.95 %									
		d) Total Cost for 750 cum(Excluding OH & CP)						6,72,525.79	6,72,525.79	6,72,525.79	
		e) Crushing pattern 20mm(tonne)	tonne	23.00%			258.75				
		f) % Cost distribution={(d)x(f)/e)x1.5}	cum	31.95%			0.3195	1,245.63	1,245.63	1,245.63	
		g) Overheads on (f)		(@ 8%)	(@ 10%)	(@ 12%)		99.651	124.563	149.476	
		h) Contractor's profit on (f+g)		(@ 10%)	(@ 10%)	(@ 10%)		134.529	137.020	139.511	

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		i)Total Cost for1cum =(f+g+h)Including OH& CP						1,479.814	1,507.218	1,534.622	
		Rate per cum= (f+g+h) Including OH & CP					**Say**	**1,479.800**	**1,507.200**	**1,534.600**	
	(iii)	**Crushing of stone aggregates (Nominal size)**									
		3.Crushing Pattern 10 mm (tonne)- Cost Distribution 30.75 %									
		d) Total Cost for 750 cum(Excluding OH & CP)						6,72,525.79	6,72,525.79	6,72,525.79	
		e) Crushing pattern 20mm(tonne)	tonne	25.86%			290.925				
		f) % Cost distribution={(d)x(f)/e)x1.5}	cum	30.75%			0.3075	1,066.26	1,066.26	1,066.26	
		g) Overheads on (f)		(@ 8%)	(@ 10%)	(@ 12%)		85.301	106.626	127.952	
		h) Contractor's profit on (f+g)		(@ 10%)	(@ 10%)	(@ 10%)		115.156	117.289	119.421	
		i) Total Cost for1cum = (f+g+h)Including OH & CP						1,266.720	1,290.178	1,313.636	
		Rate per cum= (f+g+h) Including OH & CP						**1,266.700**	**1,290.200**	**1,313.600**	
	(iv)	**Crushing of stone aggregates (Nominal size)**									
		4 Crushing Pattern dust (tonne)- Cost Distribution 08.32 %									
		d) Total Cost for 750 cum(Excluding OH & CP)						6,72,525.79	6,72,525.79	6,72,525.79	
		e) Crushing pattern dust (tonne)	tonne	28.43%			319.838				
		f) % Cost distribution={(d)x(f)/e)x1.5}	cum	8.32%			0.0832	262.42	262.42	262.42	
		g) Overheads on (f)		(@ 8%)	(@ 10%)	(@ 12%)		20.993	26.242	31.490	
		h) Contractor's profit on (f+g)		(@ 10%)	(@ 10%)	(@ 10%)		28.341	28.866	29.391	
		i) Total Cost for1cum = (f+g+h)Including OH & CP						311.752	317.526	323.299	
		Rate per cum= (f+g+h) Including OH & CP						**311.800**	**317.500**	**323.300**	
	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)**									

Sl. No	Ref. to M.	Description	Unit	Quantity as per Project Category			Rate	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		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 = 750.00 cum									
		a) Labour									
		Mate	day	0.320	0.320	0.320	325.000	104.000	104.000	104.000	L-12
		Mazdoor (Skilled)	day	2.000	2.000	2.000	388.000	776.000	776.000	776.000	L-15
		Mazdoor	day	6.000	6.000	6.000	306.000	1836.000	1836.000	1836.000	L-13
		b) Material									
		Stone Boulder of size 150 mm and below	cum	750	750	750	675.00	506250.000	506250.000	506250.000	M-001
		c) Machinery									
		Integrated stone crusher of 250 TPH including belt conveyor and vibrating screens (for producing crusher run production capacity will increas by 30%)	Hour	4.615	4.615	4.615	13,481.00	62214.815	62214.815	62214.815	PM16001
		Generator 725 KVA	Hour	4.615	4.615	4.615	7,759.00	35807.785	35807.785	35807.785	PM22001
		Front end loader 3.1 cum bucket capacity at quarry and crusher	Hour	5.515	5.515	5.515	3,433.00	18932.995	18932.995	18932.995	PM5001
		Tipper 14 cum capacity for loading at quarry site	Hour	5.515	5.515	5.515	1,998.00	11018.970	11018.970	11018.970	PM6002
		Tipper 14 cum capacity for transportation within 1 km	t.km	1,125.00	1,125.00	1,125.00	5.48	6167.826	6167.826	6167.826	1.04(i) C
		Total Cost Excluding OH & CP						6,43,108.391	6,43,108.391	6,43,108.391	
		d) Overheadson (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		51448.671	64310.839	77173.007	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		69,455.71	70,741.92	72,028.14	
		Cost for 900 cum =(a+b+c+d+e)						7,64,012.77	7,78,161.15	7,92,309.54	
		Rate per cum =(a+b+c+d+e)/900(Including OH & CP)					**Say**	**848.90**	**864.60**	**880.30**	
	Note:	**Considering Crushed volume will be 1.2 times the volume of boulder.**									

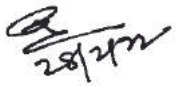
Note:-1. **For local transportation , carriage rate will be given as per provision of different Capacity of vehicle in Large/Medium/Small Projects in rate analysis of particular item of any Chapter.**

Note:-2. **Except Note 1, for transportation/carriage of Stone Aggregate/Stone Boulder/Moorum/Bitumen/Steel/Cement and Other Construction Materials,Loading-Unloading charges&Haulage charges will be allowed by 18 Cum Capacity tipper(18 tonne Capacity Truck in case of loading-unloading of Cement /Steel / Bitumen by manual means) and 32 tonne Capacity tipper respectively only for all types of Projects(Large/Medium/Small) except in cases / circumstances where any limitation/restriction regarding capacity of Vehicle has been imposed by competent Authority(District/State). Incase of restriction, rate of allowed capacity of vehicle will be given.**

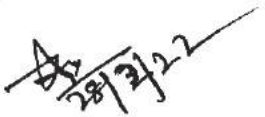
Note:-3. **In case of Loading &Unloading of Boulders by Manual means, loading-unloading charges will be allowed by 10Cum Capacity tipper.**

Note:-4. **Carriage of material will be done by shortest route.**

Note:-5. Rates of item nos 1.06 and 1.07 will be taken as per approved rate of respective items in schedule M/MORT&H-1



सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।



सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।



सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।



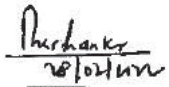
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।



सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

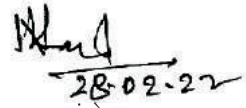


सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।



सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।



संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

APPROVED CARRIAGE RATE OF MATERIALS (By TRACTOR) Date : 28.02.2022

Sr. No.	Ref. to MoRTH Spec.	Description	Unit	Quantity as per Project Category			Rate (Rs)	Amount (Rs)			Remarks/ Input ref.
1.1		**Loading and Unloading of Stone Boulder/ Stone aggregates/Sand /Kanker/Moorum**	cum	Large	Medium	Small		Large	**Medium**	Small	
		Placing Tractor at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip									
		Unit* = *cum									
		Taking output* = *2.25 cum									
		Time required for									
		i) Positioning of Tractor at loading point				1 Min					
		ii) Loading by front end loader 1 cum bucket capacity.				2.71 Min					(6.633/5.5)*2.25
		iii) Maneuvering, reversing, dumping and turning for return				0 Min					
		iv) Waiting time, unforeseen contingencies etc				0 Min					
		Total				**3.71 Min**					
		a) Machinery									
		Tractor 3.60 tonnes capacity	hour	0.060	0.060	0.060	629.00	37.740	37.740	37.740	PM12001
		Front end-loader 1 cum bucket capacity	hour	0.060	0.060	0.060	1366.00	81.960	81.960	81.960	PM5003
		Total Cost Excluding OH & CP						119.70	119.70	119.70	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		9.576	11.970	14.364	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		12.928	13.167	13.406	
		Total Cost for2.25 cum = (a+b+c)Including OH & CP						142.204	144.837	147.470	
	Note	**Rate per cum= (a+b+c)/2.25 Including OH & CP**						63.202	64.372	65.542	
1.2		**Unloading will be done mechanically.**					***say***	**63.200**	**64.400**	**65.500**	
		Loading and Unloading of Boulders by Manual Means									
		Unit* = *cum									
		Taking output* = *2.25 cum									
		a) Labour									
		Mate	day	0.012	0.012	0.012	325.00	3.900	3.900	3.900	L-12

Sr. No.	Ref. to MoRTH Spec.	Description	Unit	Quantity as per Project Category			Rate (Rs)	Amount (Rs)			Remarks/ Input ref.
		Mazdoor for loading and unloading	day	0.310	0.310	0.310	306.00	94.860	94.860	94.860	L-13
		b) Machinery									
		Tractor 3.60 tonne capacity	hour	0.310	0.310	0.310	629.00	194.990	194.990	194.990	PM12001
		Total Cost Excluding OH & CP						293.750	293.750	293.750	
		c) Overheads on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		23.500	29.375	35.250	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		31.725	32.313	32.900	
		Total Cost for2.25 cum = (a+b+c+d)Including OH & CP						348.975	355.438	361.900	
		Rate per cum= (a+b+c+d)/2.25 Including OH & CP						155.100	157.972	160.844	
							Say	**155.100**	**158.000**	**160.800**	
	Note	**Unloading will be done by mechanically.**									
1.3		**Loading and Unloading of Cement or Steel by Manual Means and Stacking.**									
		Unit = tonne									
		Taking output = 3.60 tonnes									
		a) Labour									
		Mate	day	0.030	0.030	0.030	325.00	9.750	9.750	9.750	L-12
		Mazdoor for loading and unloading	day	0.720	0.720	0.720	306.00	220.320	220.320	220.320	L-13
		b) Machinery									
		Tractor 3.60 tonne capacity	hour	0.720	0.720	0.720	629.00	452.880	452.880	452.880	PM12001
		Total Cost Excluding OH & CP						682.950	682.950	682.950	
		c) Overheads on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		54.636	68.295	81.954	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		73.759	75.125	76.490	
		Total Cost for3.6 tonnes= (a+b+c+d)Including OH & CP						811.345	826.370	841.394	
		Rate per tonne= (a+b+c+d)/3.6 Including OH & CP						225.374	229.547	233.721	
							say	**225.400**	**229.500**	**233.700**	
1.4	**(i)**	**Cost of Haulage Excluding Loading and Unloading**									
		Haulage of materials by Tractor excluding cost of loading, unloading and stacking.									
		Unit = t.km									
		Taking output 3.60 tonnes load and lead 10 km = 36.0 t.km									
		Surfaced Road									
		Speed with load : 15 km / hour.									
		Speed while Returning empty :25 km / hour.									

Sr. No.	Ref. to MoRTH Spec.	Description	Unit	Quantity as per Project Category			Rate (Rs)	Amount (Rs)			Remarks/ Input ref.
		a) Machinery.									
		Tractor 3.6 tonne capacity									
		Time taken for onward haulage with load	hour	0.667	0.667	0.667	629.00	419.543	419.543	419.543	PM12001
		Time taken for empty return trip.	hour	0.400	0.400	0.400	629.00	251.600	251.600	251.600	PM12001
		Total Cost Excluding OH & CP						671.143	671.143	671.143	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		53.691	67.114	80.537	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		72.483	73.826	75.168	
		Total Cost for36 t.km = (a+b+c)Including OH & CP						797.318	812.083	826.848	
		Rate per t.km= (a+b+c)/36 Including OH & CP						22.148	22.558	22.968	
							say	**22.100**	**22.600**	**23.000**	
	(ii)	**Unsurfaced Graveled Road**									
		Speed with load: 12 km / hour									
		Speed for empty return trip :20 km / hour									
		a) Machinery									
		Tractor 3.6 tonnes capacity									
		Time taken for onward haulage with load	hour	0.833	0.833	0.833	629.00	523.957	523.957	523.957	PM12001
		Time taken for empty return trip	hour	0.500	0.500	0.500	629.00	314.500	314.500	314.500	PM12001
		Total Cost Excluding OH & CP						838.46	838.46	838.46	
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		67.077	83.846	100.615	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		90.553	92.230	93.907	
		Total Cost for36 t.km = (a+b+c)Including OH & CP						996.087	1,014.533	1,032.979	
		Rate per t.km= (a+b+c)/36 Including OH & CP						27.669	28.181	28.694	
								27.70	***28.20***	***28.70***	
1.4	**(iii)**	**Katcha Track and Track in River Bed/Nallah Bed and Choe Bed.**									
		Speed with load :10 km / hour									
		Speed while returning empty:15 km / hour									
		a) Machinery									
		Tractor 3.6 tonnes capacity									
		Time taken for onward haulage	hour	1.000	1.000	1.000	629.00	629.000	629.000	629.000	PM12001
		Time taken for empty return trip	hour	0.667	0.667	0.667	629.00	419.543	419.543	419.543	PM12001
		Total Cost Excluding OH & CP						1048.54	1048.54	1048.54	

Sr. No.	Ref. to MoRTH Spec.	Description	Unit	Quantity as per Project Category			Rate (Rs)	Amount (Rs)			Remarks/ Input ref.
		b) Overheads on (a)		(@ 8%)	(@ 10%)	(@ 12%)		83.883	104.854	125.825	
		c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		113.243	115.340	117.437	
		Total Cost for36 t.km = (a+b+c)Including OH & CP						1,245.669	1,268.737	1,291.805	
		Rate per t.km= (a+b+c)/36 Including OH & CP						34.602	35.243	35.883	
							say	**34.600**	**35.200**	**35.900**	

Note:- **वैसे स्थल जहाँ पर Truck एवं Tipper के द्वारा ढुलाई किया जाना संभव नहीं है तथा Tractor से ढुलाई economical हो केवल वैसे ही स्थलों के लिए Tractor से ढुलाई का प्रावधान किया जाय।**

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
भवन निर्माण विभाग, बिहार, पटना।

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, ग्रामीण
कार्य विभाग, बिहार, पटना।

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख, लघु
जल संसाधन विभाग, बिहार, पटना।

28.02.22
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(असै०), बिहार स्टेट पावर होल्डिंग
कंपनी लिमिटेड, बिहार, पटना।

28/2/22
सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता,
(विद्युत), भवन निर्माण विभाग,
बिहार, पटना।

28.02.22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख तकनीकी परीक्षक,
कोषांग, निगरानी विभाग, बिहार, पटना।

सदस्य
राज्यस्तरीय अनुसूचित दर
निर्धारण समिति–सह–अभियंता प्रमुख,
लोक स्वास्थ्य अभिंत्रण विभाग,
बिहार, पटना।

28/02/22
सदस्य
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
जल संसाधन विभाग, बिहार, पटना।

28-02-22
संयोजक
राज्यस्तरीय अनुसूचित दर निर्धारण
समिति–सह–अभियंता प्रमुख (मुख्यालय),
पथ निर्माण विभाग, बिहार, पटना।

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 : New/Widening of Bridge/Structure Works 20 percent

Category 2 : Rehabilitation of Bridges/Structure 30 percent

Contractor Profit : 10 percent of cost of works

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 (1sst class), carpenter, Blacksmith (1st 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 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, 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 project and all situations. There may be specialized items for specific case, 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 12m×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

CHAPTER-12
BRIDGE FOUNDATION

PREAMBLE :

1 Excavation for structures has been provided both by manual and mechanical means. The rate relevant to a particular situation may be adopted.

2 The earth excavated from foundation has been proposed to be backfilled and balance quantity utilized for road work locally except for marshy soil where disposal has been provided.

3 The rock foundations are required to be prepared which has been analysed.

4 In case 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

14 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 work is required to be protected with the steel plates of thickness not less than 10mm 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 10mm 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.

20 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.

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.

24 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.

25 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.

26 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 5C 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

33 Concrete in driven cast-in-situ piles shall be cast upto a minimum height of 600 mm above the designated top level of pile, which shall be stripped off to obtain sound concrete either before final set or after 3 days.

CHAPTER-12
FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
12.01	**Excavation for strucutres**				
	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**				
A	**Manual Means**				
(i)	**Depth upto 3 m**	cum	147.40	147.40	147.40
(ii)	**Depth 3 m to 6 m**	cum	189.50	189.50	189.50
(iii)	**Depth above 6 m**	cum	252.60	252.60	252.60
B	**Mechanical Means**				
(i)	**Depth upto 3 m**	cum	94.10	97.50	120.60
(ii)	**Depth 3 m to 6 m**	cum	104.00	107.70	133.30
(iii)	**Depth above 6 m**	cum	116.30	120.50	149.10
II	**Ordinary Rock (not requiring blasting)**				
A	**Manual Means**				
(i)	**Depth upto 3m**	cum	210.50	210.50	210.50
B	**Mechanical Means**	cum	595.30	630.40	649.00
III	**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 excavated rock by a dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000m, all as specified in clause No. 303				
A	**Manual means**	cum	#VALUE!	#VALUE!	#VALUE!
IV	**Hard Rock (blasting prohibited)**				
A	**Mechanical Means**	cum	802.70	827.70	863.50
V	**Marshy Soil**				
A	**Manual means**	cum	642.80	642.80	642.80
B	**Mechanical Means**	cum	252.30	260.50	320.00
VI	**Back Filling in Marshy Foundation Pits**	cum	487.30	487.30	487.30
12.02	**Filling Annular Space around footing in rock**	cum	3781.70	3783.60	3792.20
12.03	**Sand Filling in foundation trenches as per drawing & technical specification**	cum	813.00	814.60	821.80
12.04	**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.	cum	3781.70	3783.60	3792.20

Summary of Rate Analysis

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
12.05	Brick Masonry Work in Cement Mortar 1:3 in Foundation complete excluding Pointing and Plastering, as per Drawing and Technical Specifications.	cum	6252.00	6256.10	6275.50
12.06 (A)	Cement Mortar 1:3 (1 cement : 3 sand)	cum	3467.70	3467.70	3467.70
(B)	Cement Mortar1:2 (1cement :2 sand)	cum	4253.90	4253.90	4253.90
(C)	Cement Mortar1:4 (1cement :4 sand)	cum	2943.80	2943.80	2943.80
(D)	Cement Mortar1:6 (1cement :6 sand)	cum	2451.02	2451.02	2451.02
12.07	Stone masonry work in cement mortar 1:3 in foundation complete as per drawing and technical specifications.				
(A)	Square Rubble Coursed Rubble masonry (first sort)	cum	3965.40	3965.40	3965.40
(B)	Random Rubble masonry (coursed/uncoursed)	cum	3859.90	3859.90	3859.90
12.08	Plain/Reinfoced Cement concrete in open foundation complete as per drwaing and technical specifications.				
A	PCC Grade M15				
Case I	PCC Grade M15 using batching plant & Concrete pump	cum	4069.80	4074.80	4096.60
Case II	PCC Grade M15 using batching plant & manual placing	cum	4286.80	4291.80	4313.60
B	PCC Grade M20				
Case I	PCC Grade M20 using batching plant, transit mixture & Concrete pump	cum	4538.30	4543.30	4565.20
Case II	PCC Grade M20 using batching plant, transit mixer & manual placing	cum	4755.40	4760.40	4782.20
C	RCC Grade M20				
Case I	RCC Grade M20 using batching plant, transit mixture & Concrete pump	cum	4948.10	4953.10	4974.90
Case II	RCC Grade M20 using batching plant, transit mixer & manual placing	cum	5179.80	5184.80	5206.50
D	PCC Grade M25				
Case I	PCC Grade M25 using batching plant, transit mixture & Concrete pump	cum	4933.50	4938.50	4960.30
Case II	PCC Grade M25 using batching plant, transit mixer & manual placing	cum	5150.60	5155.60	5177.30
E	RCC Grade M25				
Case I	RCC Grade M25 using batching plant,transit mixer & Concrete pump	cum	5167.40	5172.40	5194.20
Case II	RCC Grade M25 using batching plant, transit mixer & manual placing	cum	5399.00	5404.00	5425.80
F	PCC Grade M30				
Case I	PCC Grade M30 using batching plant,transit mixer & Concrete pump	cum	4972.00	4977.00	4998.80
Case II	PCC Grade M30 using batching plant, transit mixer & manual placing	cum	5189.00	5194.00	5215.80
G	RCC Grade M30				
Case I	RCC Grade M30 using batching plant,transit mixer & Concrete pump	cum	5314.20	5319.20	5341.10

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
Case II	**RCC Grade M30 using batching plant, transit mixer & manual placing**	cum	5545.90	5550.90	5572.70
H	**RCC Grade M35**				
Case I	**RCC Grade M35 using batching plant,transit mixer & Concrete pump**	cum	5561.30	5566.30	5588.20
Case II	**RCC Grade M35 using batching plant, transit mixer & manual placing**	cum	5793.00	5798.00	5819.80
I	**RCC Grade M40**				
Case I	**RCC Grade M40 using batching plant,transit mixer & Concrete pump**	cum	6135.00	6140.00	6161.90
Case II	**RCC Grade M40 using batching plant, transit mixer & manual placing**	cum	6366.70	6371.70	6393.50
J	**RCC Grade M45**				
Case I	**RCC Grade M45 using batching plant,transit mixer & Concrete pump**	cum	6388.60	6393.60	6415.40
Case II	**RCC Grade M45 using batching plant, transit mixer & manual placing**	cum	6620.30	6625.20	6647.00
12.09	**WELL FOUNDATION**				
	Providing and constructing temporary island 24m diameter for construction of Well foundation for 8m dia. Well.				
A	**Assuming depth of water 1.0 m and height of island to be 1.25m including Royalty for earth @ ₹ 18661.1 for each island.**	no.	79301.60	79301.60	79301.60
B	**Assuming depth of water 4.0 m and height of island to be 4.5m including Royalty for earth @ ₹ 44748.0 for each island**	no.	453566.70	453566.70	453566.70
C	**Providing and constructiing one span service road to reach island location from one pter location to another pier loaction**				
	Assuming span length 30m, width of service road 10m and depth of water 1m including Royalty for earth @ ₹495.00 per m length of span	metre	4209.50	4209.50	4209.50
12.10	**Providing and Laying Cutting Edge of Mild Steel weighing 40 kg permetre for Well Foundation complete as per Drawing and Technical Specification.**	MT	110844.30	110845.20	110847.10
12.11	**Plain/Reinforced Cement Concrete, in Well Foundation complete as per Drawing and Technical Specification.**				
A	**Well curb**				
(i)	**RCC M20 Grade**				
Case I	**RCC Grade M20 using batching plant &concrete pump**	cum	5607.30	5607.30	5607.30
Case II	**RCC Grade M20 using batching plant & manual placing**	cum	5830.70	5830.70	5830.70
(ii)	**RCC M25 Grade**				
Case I	**RCC Grade M25 using batching plant &concrete pump**	cum	5860.20	5860.20	5860.20
Case II	**RCC Grade M25 using batching plant & manual placing**	cum	6083.70	6083.70	6083.70

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(iii)	RCC M30 Grade				
Case I	RCC Grade M30 using batching plant &concrete pump	cum	6029.70	6029.70	6029.70
Case II	RCC Grade M30 using batching plant & manual placing	cum	6253.20	6253.20	6253.20
(iv)	RCC M35 Grade				
Case I	RCC Grade M35 using batching plant &concrete pump	cum	6314.80	6314.80	6314.80
Case II	RCC Grade M35 using batching plant & manual placing	cum	6538.30	6538.30	6538.30
(v)	RCC M40 Grade				
Case I	RCC Grade M40 using batching plant &concrete pump	cum	6976.80	6976.80	6976.80
Case II	RCC Grade M40 using batching plant & manual placing	cum	7200.30	7200.30	7200.30
B	Well steining				
(i)	PCC M15Grade				
Case I	PCC Grade M15 using batching plant & Concrete pump	cum	4211.00	4211.00	4211.00
Case II	PCC Grade M15 using batching plant & manual placing	cum	4431.20	4431.20	4431.20
(ii)	PCC M20 Grade				
Case I	PCC Grade M20 using batching plant & Concrete pump	cum	4706.60	4706.60	4706.60
Case II	PCC Grade M20 using batching plant & manual placing	cum	4926.90	4926.90	4926.90
(iii)	RCC M20 Grade				
Case I	RCC Grade M20 using batching plant &concrete pump	cum	5140.00	5140.00	5140.00
Case II	RCC Grade M20 using batching plant & manual placing	cum	5344.80	5344.80	5344.80
(iV)	PCC M25 Grade				
Case I	PCC Grade M25 using batching plant & Concrete pump	cum	5124.60	5124.60	5124.60
Case II	PCC Grade M25 using batching plant & manual placing	cum	5344.80	5344.80	5344.80
(V)	RCC M25 Grade				
Case I	RCC Grade M25 using batching plant &concrete pump	cum	5371.90	5371.90	5371.90
Case II	RCC Grade M25 using batching plant & manual placing	cum	5576.70	5576.70	5576.70
(vi)	PCC M30 Grade				
Case I	PCC Grade M30 using batching plant & Concrete pump	cum	5165.20	5165.20	5165.20
Case II	PCC Grade M30 using batching plant & manual placing	cum	5385.50	5385.50	5385.50
(vii)	RCC M30 Grade				
Case I	RCC Grade M30 using batching plant &concrete pump	cum	5527.20	5527.20	5527.20
Case II	RCC Grade M30 using batching plant & manual placing	cum	5732.10	5732.10	5732.10
(viii)	RCC M35 Grade				
Case I	RCC Grade M35 using batching plant &concrete pump	cum	5788.60	5788.60	5788.60

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
Case II	RCC Grade M35 using batching plant & manual placing	cum	5993.40	5993.40	5993.40
(ix)	RCC M40 Grade				
Case I	RCC Grade M40 using batching plant &concrete pump	cum	6395.40	6395.40	6395.40
Case II	RCC Grade M40 using batching plant & manual placing	cum	6600.20	6600.20	6600.20
C	Bottom Plug				
(i)	PCC Grade M20				
Case I	PCC Grade M20 using batching plant & concrete pump	cum	4503.80	4503.80	4503.80
Case II	PCC Grade M20 using batching plant & manual placing	cum	4747.80	4747.80	4747.80
(II)	PCC Grade M25				
Case I	PCC Grade M25 using batching plant & concrete pump	cum	4902.80	4902.80	4902.80
Case II	PCC Grade M25 using batching plant & manual placing	cum	5146.70	5146.70	5146.70
(III)	PCC Grade M30				
Case I	PCC Grade M30 using batching plant & concrete pump	cum	4941.60	4941.60	4941.60
Case II	PCC Grade M30 using batching plant & manual placing	cum	5185.50	5185.50	5185.50
(iV)	PCC Grade M35				
Case I	PCC Grade M35 using batching plant & concrete pump	cum	5372.10	5372.10	5372.10
Case II	PCC Grade M35 using batching plant & manual placing	cum	5616.00	5616.00	5616.00
D	Intermediate plug				
(i)	Grade M20 PCC				
Case I	PCC Grade M20 using batching plant & Concrete pump	cum	4299.50	4299.50	4299.50
Case II	PCC Grade M20 using batching plant & Manual placing	cum	4532.30	4532.30	4532.30
(ii)	Grade M25 PCC				
Case I	PCC Grade M25 using batching plant & Concrete pump	cum	4679.50	4679.50	4679.50
Case II	PCC Grade M25 using batching plant & Manual placing	cum	4912.30	4912.30	4912.30
(iii)	Grade M30 PCC				
Case I	PCC Grade M30 using batching plant & Concrete pump	cum	4716.50	4716.50	4716.50
Case II	PCC Grade M30 using batching plant & Manual placing	cum	4949.30	4949.30	4949.30
E	Top Plug				
(i)	Grade M15 PCC				
Case I	PCC Grade M15 using batching plant & concrete pump	cum	3913.20	3918.00	3939.00
Case II	PCC Grade M15 using batching plant & manual placing	cum	4121.90	4126.70	4147.70
(ii)	Grade M20 PCC				
Case I	PCC Grade M20 using batching plant & concrete pump	cum	4363.80	4368.60	4389.60
Case II	PCC Grade M20 using batching plant & manual placing	cum	4572.50	4577.30	4598.20

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(iii)	Grade M25 PCC				
Case I	PCC Grade M25 using batching plant & concrete pump	cum	4743.80	4748.60	4769.60
Case II	PCC Grade M25 using batching plant & manual placing	cum	4952.50	4957.30	4978.20
(iv)	Grade M30 PCC				
Case I	PCC Grade M30 using batching plant & concrete pump	cum	4780.70	4785.50	4806.50
Case II	PCC Grade M30 using batching plant & manual placing	cum	4989.40	4994.20	5015.20
F	Well Cap				
(i)	RCC Grade M20				
Case I	RCC Grade M20 using batching plant, transit mixer & concrete pump	cum	4948.10	4953.10	4974.90
Case II	RCC Grade M20 using batching plant, transit mixer & manual placing	cum	5150.60	5155.60	5177.30
(ii)	RCC Grade M25				
Case I	RCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5167.40	5172.40	5194.20
Case II	RCC Grade M25 using batching plant, transit mixer & manual placing	cum	5369.80	5374.80	5396.60
(iii)	RCC Grade M30				
Case I	RCC Grade M30 using batching plant, transit mixer & concrete pump	cum	5314.20	5319.20	5341.10
Case II	RCC Grade M30 using batching plant, transit mixer & manual placing	cum	5516.70	5521.70	5543.50
(iv)	RCC Grade M35				
Case I	RCC Grade M35 using batching plant, transit mixer & concrete pump	cum	5561.30	5566.30	5588.20
Case II	RCC Grade M35 using batching plant, transit mixer & manual placing	cum	5763.80	5768.80	5790.60
(v)	RCC Grade M40				
Case I	RCC Grade M40 using batching plant, transit mixer & concrete pump	cum	6135.00	6140.00	6161.90
Case II	RCC Grade M40 using batching plant, transit mixer & manual placing	cum	6337.50	6342.50	6364.30
(vi)	RCC Grade M45				
Case I	RCC Grade M45 using batching plant, transit mixer & concrete pump	cum	6388.60	6393.60	6415.42
Case II	RCC Grade M45 using batching plant, transit mixer & manual placing	cum	6591.10	6596.10	6617.80
12.12	Sinking of 6 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.				
(A)	Sandy Soil				
(i)	Depth below bed level upto 3.0m	metre	3546.30	3546.30	3546.30
(ii)	Beyond 3m upto 10m depth	metre	4968.70	4968.70	4968.70
(iii)	Beyond 10m upto 20m	metre			
	Rate may be taken from analysis				
(iv)	Beyond 20m upto 30m	metre			

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
B	**Clayey soil (6m dia. Well)**				
(i)	**Depth below bed level upto 3.0 M**	metre	4991.80	4991.80	4991.80
(ii)	**Beyond 3m upto 10m depth**	metre	11119.00	11119.00	11119.00
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.12 (A) or (B) irrespective of depth for sinking in soft Rock (6m dia well)**	metre	45173.20	45173.20	45173.20
D	**Extra over item no. 12.12 (A) or (B) irrespective of depth for sinking in Hard Rock (6m dia well)**	metre	#VALUE!	#VALUE!	#VALUE!
E	**Extra over item no. 12.12 (A) or (B) irrespective of depth for sinking in Rock bouldery strata (6m dia well)**	metre	68180.60	68180.60	68180.60
12.13	**Sinking of 7 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**				
A	**Sandy Soil**				
(i)	**Depth below bed level upto 3.0m**	metre	5236.60	5236.60	5236.60
(ii)	**Beyond 3m upto 10m depth**	metre	6926.80	6926.80	6926.80
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
B	**Clayey Soil (7 m dia. Well)**				
(I)	**Depth below bed level upto 3.0 M**	metre	6926.80	6926.80	6926.80
(ii)	**Beyond 3m upto 10m depth**	metre	11080.90	11080.90	11080.90
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in soft Rock (7m dia well)**	metre	59128.90	59128.90	59128.90
D	**Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in Hard Rock (7m dia well)**	metre	#VALUE!	#VALUE!	#VALUE!
E	**Extra over item no. 12.13 (A) or (B) irrespective of depth for sinking in Rock bouldery strata (7m dia well)**	metre	90793.90	90793.90	90793.90

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
12.14	**Sinking of 8 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**				
A	**Sandy Soil**				
(i)	**Depth below bed level upto 3.0 M**	metre	6391.00	6391.00	6391.00
(ii)	**Beyond 3m upto 10m depth**	metre	7813.40	7813.40	7813.40
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
B	**Clayey Soil (8 m dia. Well)**				
(i)	**Depth from bed level upto 3.0 M**	metre	8481.50	8481.50	8481.50
(ii)	**Beyond 3m upto 10m depth**	metre	11706.00	11706.00	11706.00
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.14 (A) or (B) irrespective of depth for sinking in soft Rock (8m dia well)**	metre	75081.60	75081.60	75081.60
D	**Extra over item no. 12.14 (A) or (B) irrespective of depth for sinking in Hard Rock (8m dia well)**	metre	#VALUE!	#VALUE!	#VALUE!
E	**Extra over item no. 12.14 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (8m dia well)**	metre	116737.20	116737.20	116737.20
12.15	**Sinking of 9 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**				
A	**Sandy Soil**				
(i)	**Depth below bed level upto 3.0 M**	metre	6500.30	6500.30	6500.30
(ii)	**Beyond 3m upto 10m depth**	metre	8567.70	8567.70	8567.70
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
B	**Clayey Soil (9 m dia. Well)**				
(i)	**Depth from bed level upto 3.0 M**	metre	8991.00	8991.00	8991.00
(ii)	**Beyond 3m upto 10m depth**	metre	12602.10	12602.10	12602.10
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.15 A) or (B) irrespective of depth for sinking in soft Rock (9m dia well)**	metre	93033.20	93033.20	93033.20
D	**Extra over item no. 12.15 (A) or (B) irrespective of depth for sinking in Hard Rock (9m dia well)**	metre	#VALUE!	#VALUE!	#VALUE!

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
E	Extra over item no. 12.15 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (9m dia well)	metre	146010.40	146010.40	146010.40
12.16	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.				
A	Sandy Soil				
(i)	Depth below bed level upto 3.0m	metre	7681.10	7681.10	7681.10
(ii)	Beyond 3m upto 10m depth	metre	9077.10	9077.10	9077.10
(iii)	Beyond 10m upto 20m				
	Rate may be taken from analysis				
(iv)	Beyond 20m upto 30m				
	Rate may be taken from analysis				
(v)	Beyond 30m upto 40m				
	Rate may be taken from analysis				
B	Clayey Soil (10 m dia. Well)				
(I)	Depth below bed level upto 3.0 M	metre	10155.80	10155.80	10155.80
(ii)	Beyond 3m upto 10m depth	metre	12691.40	12691.40	12691.40
(iii)	Beyond 10m upto 20m	metre			
	Rate may be taken from analysis				
(iv)	Beyond 20m upto 30m	metre			
	Rate may be taken from analysis				
(v)	Beyond 30m upto 40m	metre			
	Rate may be taken from analysis				
C	Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in soft Rock (10m dia well)	metre	112982.70	112982.70	112982.70
D	Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in Hard Rock (10m dia well)	metre	#VALUE!	#VALUE!	#VALUE!
E	Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in Rock bouldery strata (10m dia well)	metre	178613.30	178613.30	178613.30
12.17	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.				
A	Sandy Soil				
(i)	Depth from bed level upto 3.0 M	metre	17330.50	17330.50	17330.50
(ii)	Beyond 3m upto 10m depth	metre	14622.20	14622.20	14622.20
(iii)	Beyond 10m upto 20m	metre			
	Rate may be taken from analysis				
(iv)	Beyond 20m upto 30m	metre			
	Rate may be taken from analysis				
(v)	Beyond 30m upto 40m	metre			
	Rate may be taken from analysis				
B	Clayey Soil (11 m dia. Well)				
(i)	Depth from bed level upto 3.0 M	metre	16857.70	16857.70	16857.70
(ii)	Beyond 3m upto 10m depth	metre	26414.50	26414.50	26414.50
(iii)	Beyond 10m upto 20m	metre			
	Rate may be taken from analysis				

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.17 (A) or (B) irrespective of depth for sinking in soft Rock 11m dia well)**	metre	134929.50	134929.50	134929.50
D	**Extra over item no. 12.17 (A) or (B) irrespective of depth for sinking in Hard Rock (11m dia well)**	metre	#VALUE!	#VALUE!	#VALUE!
E	**Extra over item no. 12.17 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (11m dia well)**	metre	214546.50	214546.50	214546.50
12.18	**Sinking of 12m 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.**				
A	**Sandy Soil**				
(i)	**Depth below bed level upto 3.0 M**	metre	36413.80	36413.80	36413.80
(ii)	**Beyond 3m upto 10m depth**	metre	41455.70	41455.70	41455.70
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
B	**Clayey Soil (12 m dia. Well)**				
(i)	**Depth from bed level upto 3.0 M**	metre	41005.80	41005.80	41005.80
(ii)	**Beyond 3m upto 10m depth**	metre	64350.00	64350.00	64350.00
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in soft Rock (12m dia well)**	metre	158874.80	158874.80	158874.80
D	**Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in Hard Rock (12m dia well)**	metre	#VALUE!	#VALUE!	#VALUE!
E	**Extra over item no. 12.18 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (12m dia well)**	metre	253809.60	253809.60	253809.60
12.19	**Sinking of Twin D Type well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**				
A	**Sandy Soil**				
(i)	**Depth from bed level upto 3.0 M**	metre	8193.80	8193.80	8193.80
(ii)	**Beyond 3m upto 10m depth**	metre	8842.50	8842.50	8842.50
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
B	**Clayey Soil (Twin D Type Well)**				
(i)	**Depth below bed level upto 3.0 M**	metre	9768.30	9768.30	9768.30
(ii)	**Beyond 3m upto 10m depth**	metre	14044.00	14044.00	14044.00
(iii)	**Beyond 10m upto 20m**	metre			
	Rate may be taken from analysis				
(iv)	**Beyond 20m upto 30m**	metre			
	Rate may be taken from analysis				
(v)	**Beyond 30m upto 40m**	metre			
	Rate may be taken from analysis				
C	**Extra over item no. 12.19 (A) or (B) irrespective of depth for sinking in soft Rock**	metre	93868.90	93868.90	93868.90
D	**Extra over item no. 12.19 (A) or (B) irrespective of depth for sinking in Hard Rock**	metre	#VALUE!	#VALUE!	#VALUE!
E	**Extra over item no. 12.19 (A) & (B) irrespective of depth for sinking in Rock bouldery strata**	metre	147403.20	147403.20	147403.20
12.20	**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.**	cum	51278.70	51286.70	51321.60
12.21	**Sand Filling in Wells complete as per Drawing and Technical Specifications.**	cum	908.80	908.80	908.80
12.22	**Providing Steel Liner 10 mm thick for Curbs and 6 mm thick for Steining of Wells including Fabricating and Setting out as per Detailed Drawing.**	MT	101775.80	101775.80	101775.80
12.23	**Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.**	metre	8471.50	8479.20	8560.30
12.24	**Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.**	metre	10715.80	10729.70	10873.70
12.25	**Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.**				

Summary of Rate Analysis

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
	Pile diameter-1200 mm	metre	13878.80	13898.90	14106.30
12.26	**Pile diameter-1500 mm**	metre	18940.90	18972.20	19296.30
12.27	**Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Pile diameter-750mm	metre	6279.10	6281.30	6291.00
12.28	**Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Pile diameter-1000mm	metre	9494.10	9498.00	9515.10
12.29	**Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Pile diameter-1200mm	metre	13965.00	13970.70	13995.40
12.30	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Pile diameter-500mm	metre	3757.60	3758.60	3762.90
12.31	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Pile diameter-750mm	metre	5657.00	5659.20	5669.00
12.32	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Pile diameter-1000mm	metre	8404.50	8408.50	8425.80
12.33	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Size of pile-300mm×300mm	metre	3125.60	3126.00	3128.00
12.34	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Size of pile-500mm×500mm	metre	4470.10	4471.40	4476.90
12.35	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and & Technical Specification**				
	Size of pile-750mm×750mm	metre	6997.10	7000.00	7012.40
12.36	**Driven Vertical Steel Piles complete as per Drawing and & Technical Specification**				
	Section of the pile-H Section steel columm 400×250 mm (ISHB Series)	metre	8465.70	8465.70	8465.70
12.37	**Driven Vertical Steel Piles complete as per Drawing and & Technical Specification**				
	Section of the pile-H Section steel columm 450×250 mm (ISHB Series)	metre	9615.30	9615.30	9615.30
12.38	**Pile Load Test on single Vertical Pile in accordance with IS:2911 (Part-IV)**	MT	#VALUE!	#VALUE!	#VALUE!
12.39	**Dismantling of Reinforced Concrete Pile head complete as per Drqwing and Technical Specification**	cum	1384.80	1421.80	1447.30
12.40	**Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification**				

Summary of Rate Analysis

FOUNDATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
A	**RCC Grade M20**				
Case I	**RCC Grade M20 using batching plant & Concrete pump**	cum	4836.30	4836.30	4836.30
Case II	**RCC Grade M20 using batching plant & manual placing**	cum	4852.00	4852.00	4852.00
B	**RCC Grade M25**				
Case I	**RCC Grade M25 using batching plant & Concrete pump**	cum	5055.50	5055.50	5055.50
Case II	**RCC Grade M25 using batching plant & manual placing**	cum	5071.20	5071.20	5071.20
C	**RCC Grade M30**				
Case I	**RCC Grade M30 using batching plant & Concrete pump**	cum	5202.40	5202.40	5202.40
Case II	**RCC Grade M30 using batching plant & manual placing**	cum	5218.10	5218.10	5218.10
D	**RCC Grade M35**				
Case I	**RCC Grade M35 using batching plant & Concrete pump**	cum	5449.50	5449.50	5449.50
Case II	**RCC Grade M35 using batching plant & manual placing**	cum	5465.20	5465.20	5465.20
E	**RCC Grade M40**				
Case I	**RCC Grade M40 using batching plant & Concrete pump**	cum	6023.20	6023.20	6023.20
Case II	**RCC Grade M40 using batching plant & manual placing**	cum	6038.90	6038.90	6038.90
F	**RCC Grade M45**				
Case I	**RCC Grade M45 using batching plant & Concrete pump**	cum	6276.80	6276.80	6276.80
Case II	**RCC Grade M45 using batching plant & manual placing**	cum	6292.40	6292.40	6292.40
12.41	**Levelling Course for Pile cap**				
	Providing and laying of PCC M15 levelling course 100 mm thick below the pile cap.				
Case I	***PCC Grade M15 using batching plant & Concrete pump***	cum	3913.20	3918.00	3939.00
Case II	***PCC Grade M15 using batching plant & manual placing***	cum	4121.90	4126.70	4147.70
12.42	**Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications.**	MT	78423.10	78476.50	78579.90
12.43	**Supplying, Fitting and Placing un-coated Mild steel Reinforcement in Foundation complete as per Drawing and Technical Specifications.**	MT	83676.00	83729.50	83832.90

analysis of Rate

CHAPTER-12

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.01	304		**Excavation for strucutres**									
			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									
			Mate	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		223.30	223.30	223.30	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		133.98	133.98	133.98	
			Cost for 10 cum =(a+b+c)						1473.78	1473.78	1473.78	
			Rate per cum= (a+b+c)/10						147.38	147.38	147.38	
								Say	**147.40**	**147.40**	**147.40**	
		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 12.01 excluding marshy soil.									
			3. The cost of shoring and shuttering, where needed, may be added @ 1 percent on cost of excavation for open foundation.									
12.01 (I)	A	(ii)	**Depth 3 m to 6 m**									
			a) Labour									
			Mate / Supervisor	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Mazdoor	day	4.500	4.500	4.500	306.00	1377.00	1377.00	1377.00	L-13
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		287.10	287.10	287.10	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		172.26	172.26	172.26	
			Cost for 10 cum =(a+b+c)						1894.86	1894.86	1894.86	
			Rate per cum= (a+b+c)/10						189.49	189.49	189.49	
								Say	**189.50**	**189.50**	**189.50**	
		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.									
12.01 (I)	**A**	**(iii)**	**Depth above 6 m**									
			a) Labour									
			Mate / Supervisor	day	0.240	0.240	0.240	325.00	78.00	78.00	78.00	L-12
			Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		382.80	382.80	382.80	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		229.68	229.68	229.68	
			Cost for 10 cum =(a+b+c)						2526.48	2526.48	2526.48	
			Rate per cum= (a+b+c)/10						252.65	252.65	252.65	
								Say	**252.60**	**252.60**	**252.60**	
		Note	Cost of dewatering may be added where required upto 20 percent of labour cost. Assessment for dewatering shall be done as per actual ground conditions.									
12.01 (I)		B	**Mechanical Means**									
		(i)	Depth upto 3 m									
			Unit = cum									
			Taking output = 330cum									
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Hydraulic excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	4.627			2703.00	12506.78			PM3003
			(ii) 1.1 cum bucket capacity	hour		5.329		2432.00		12960.13		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.450	2202.00			16404.90	PM3005
			For backfilling (considering 60% of the excavated material)									
			(i) 1.2 cum bucket capacity	hour	2.776			2703.00	7503.53			PM3003
			(ii) 1.1 cum bucket capacity	hour		3.197		2432.00		7775.10		PM3004
			(iii) 0.9 cum bucket capacity	hour			4.470	2202.00			9842.94	PM3005
			Tipper for transportation of excess material to dumping yard considering lead @ 1km									
			(i) 18 cum capacity	t.km	198.000			4.80	950.40			PM72001
			(ii) 14 cum capacity	t.km		198.000		5.48		1085.04		PM73001
			(iiii) 10 cum capacity	t.km			198.000	6.80			1346.40	PM74001

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Overhaead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		4702.54	4874.45	6029.25	
			d) Contractor's profit @on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		2821.53	2924.67	3617.55	
			Cost for 330 cum= a+b+c+d						31036.78	32171.40	39793.04	
			Rate per cum = (a+b+c+d)/330						94.05	97.49	120.58	
								Say	**94.10**	**97.50**	**120.60**	
		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 = 300cum									
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Hydraulic excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	4.674			2703.00	12633.82			PM3003
			(ii) 1.1 cum bucket capacity	hour		5.383		2432.00		13091.46		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.525	2202.00			16570.05	PM3005
			For backfilling (considering 60% of the excavated material)									
			(i) 1.2 cum bucket capacity	hour	2.804			2703.00	7579.21			PM3003
			(ii) 1.1 cum bucket capacity	hour		3.230		2432.00		7855.36		PM3004
			(iii) 0.9 cum bucket capacity	hour			4.515	2202.00			9942.03	PM3005
			Tipper for transportation of excess material to dumping yard considering lead @ 1km									
			(i) 18 cum capacity	t.km	180.000			4.80	864.00			PM72001
			(ii) 14 cum capacity	t.km		180.000		5.48		986.40		PM73001
			(iiii) 10 cum capacity	t.km			180.000	6.80			1224.00	PM74001
			c) Overhaead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		4725.81	4897.04	6057.62	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		2835.48	2938.23	3634.57	
			Cost for 300 cum= a+b+c+d						31190.32	32320.49	39980.27	
			Rate per cum = (a+b+c+d)/300						103.97	107.73	133.27	
								Say	**104.00**	**107.70**	**133.30**	
		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									
			Mechanical Means									
		(iii)	**Depth above 6 m**									
			Unit = cum									
			Taking output = 270cum									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Hydraulic excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	4.732			2703.00	12790.60			PM3003
			(ii) 1.1 cum bucket capacity	hour		5.450		2432.00		13254.40		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.619	2202.00			16777.04	PM3005
			For backfilling (considering 60% of the excavated material)									
			(i) 1.2 cum bucket capacity	hour	2.839			2703.00	7673.82			PM3003
			(ii) 1.1 cum bucket capacity	hour		3.270		2432.00		7952.64		PM3004
			(iii) 0.9 cum bucket capacity	hour			4.571	2202.00			10065.34	PM3005
			Tipper for transportation of excess material to dumping yard considering lead @ 1km									
			(i) 18 cum capacity	t.km	162.000			4.80	777.60			PM72001
			(ii) 14 cum capacity	t.km		162.000		5.48		887.76		PM73001
			(iiii) 10 cum capacity	t.km			162.000	6.80			1101.60	PM74001
			c) Overhaead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		4758.80	4929.36	6099.20	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		2855.28	2957.62	3659.52	
			Cost for 270 cum= a+b+c+d						31408.10	32533.78	40254.69	
			Rate per cum = (a+b+c+d)/270						116.33	120.50	149.09	
								Say	**116.30**	**120.50**	**149.10**	
		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		**II**	**Ordinary Rock (not requiring blasting)**									
		A	**Manual Means**									
		(i)	**Depth upto 3m**									
			Unit= cum									
			Taking output =10cum									
			a) Labour									
			Mate / Supervisor	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mazdoor	day	5.000	5.000	5.000	306.00	1530.00	1530.00	1530.00	L-13
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		319.00	319.00	319.00	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		191.40	191.40	191.40	
			Cost for 10 cum =(a+b+c)						2105.40	2105.40	2105.40	
			Rate per cum= (a+b+c)/10						210.54	210.54	210.54	
								Say	**210.50**	**210.50**	**210.50**	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		Note	Cost of dewatering upto 10 percent of labour cost may be added, where required. Assessment for dewatering shall be made as per site site conditions.									
12.01 (II)		B	**Mechanical Means**									
			Unit = cum									
			Taking output = 50cum									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Machinery									
			Hydraulic excavator									
			For excavation									
			(i) 1.2 cum bucket capacity	hour	5.818			2703.00	15726.05			PM3003
			(ii) 1.1 cum bucket capacity	hour		6.845		2432.00		16647.04		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.273	2202.00			16015.15	PM3005
			For loading									
			(i) 1.2 cum bucket capacity	hour	0.872			2703.00	2357.02			PM3003
			(ii) 1.1 cum bucket capacity	hour		1.005		2432.00		2444.16		PM3004
			(iii) 0.9 cum bucket capacity	hour			1.405	2202.00			3093.81	PM3005
			Jack Hammer	hour	5.818	6.845	7.273	206.00	1198.51	1410.07	1498.24	PM4001
			Tipper for transportation considering lead @ 1 km									
			(i) 18 cum capacity	t-km	75.000			4.80	360.00			PM72001
			(ii) 14 cum capacity	t-km		75.000		5.48		411.00		PM73001
			(iii) 10 cum capacity	t-km			75.000	6.80			510.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	0.872			2239.00	1952.41			PM6001
			(ii) 14 cum capacity	hour		1.005		1998.00		2007.99		PM6002
			(iii) 10 cum capacity	hour			1.405	1785.00			2507.93	PM6003
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		4510.20	4775.45	4916.42	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		2706.12	2865.27	2949.85	
			Cost for 50 cum = a+b+c+d						29767.30	31517.98	32448.40	
			Rate per cum = (a+b+c+d)/50						595.35	630.36	648.97	
								Say	**595.30**	**630.40**	**649.00**	
		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 beyond 3 m is not dug and hence not included.									
12.01	**302**	**III**	**Hard Rock (requiring blasting)**									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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 1000m, all as specified in clause No. 303									
		A	**Manual means**									
			Unit=cum									
			Taking output=120cum									
			a) Labour									
			Mate	day	0.210	0.210	0.210	325.00	68.25	68.25	68.25	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			b) Machinery									
			Air Compressor	hour	6.000	6.000	6.000	391.00	2346.00	2346.00	2346.00	PM15001
			Jack Hammer for drilling holes @ 4.5 m per hour)	hour	24.000	24.000	24.000	206.00	4944.00	4944.00	4944.00	PM4001
			Jack Hammer (consider 5% of the volume for dressing)	hour	1.024	1.205	1.280	206.00	210.94	248.23	263.68	PM4001
			Hydraulic excavator									
			Excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	1.024			2703.00	2767.87			PM3003
			(ii) 1.1 cum bucket capacity	hour		1.205		2432.00		2930.56		PM3004
			(iii) 0.9 cum bucket capacity	hour			1.280	2202.00			2818.56	PM3005
			For loading									
			(i) 1.2 cum bucket capacity	hour	2.094			2703.00	5660.08			PM3003
			(ii) 1.1 cum bucket capacity	hour		2.411		2432.00		5863.55		PM3004
			(iii) 0.9 cum bucket capacity	hour			3.371	2202.00			7422.94	PM3005
			Tipper for transportation considering lead @ 1 km									
			(i) 18 cum capacity	t-km	180.000			4.80	864.00			PM72001
			(ii) 14 cum capacity	t-km		180.000		5.48		986.40		PM73001
			(iii) 10 cum capacity	t-km			180.000	6.80			1224.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	2.094			2239.00	4688.47			PM6001
			(ii) 14 cum capacity	hour		2.411		1998.00		4817.18		PM6002
			(iii) 10 cum capacity	hour			3.371	1785.00			6017.24	PM6003
			c) Material									
			Small dia Explosive at 0.40 kg/cum for 120 cum (120×0.40) Explosive at 0.20 kg/cum for secondary blast @ 5% of the total volume (120×0.2×5%)	kg	49.200	49.200	49.200	976.21	48029.53	48029.53	48029.53	M-215
			Electric detonators at 1 per hole for main blast holes (21×3+20×2)=103 nos	no.	69.000	69.000	69.000	6.19	427.11	427.11	427.11	M-217

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Ordinary detonators @ 1 per hole for 10 secondary holes (required for 5% of the total quantity @ 0.6 m per hole for 1 cum)	no.	7.000	7.000	7.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-216
			Detonating fuse coil	m	213.000	213.000	213.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 120 cum = a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per cum = (a+b+c+d+e)/120						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
		Note	Cost of dewatering @ 10 percent of (a+b) may be added, where required. Assessment for dewatering shall be made as per site conditions.									
12.01		**IV**	**Hard Rock (blasting prohibited)**									
			Unit* = *cum									
			Taking output* = *35cum									
		A	**Mechanical Means**									
			a) Labour									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mazdoor	day	2.000	2.000	2.000	306.00	612.00	612.00	612.00	L-13
			b) Machinery									
			Jack Hammer	hour	5.973	6.788	7.467	206.00	1230.44	1398.33	1538.20	PM4001
			Hydraulic Excavator Excavator for excavation									
			(i) 1.2 cum bucket capacity	hour	5.973			2703.00	16145.02			PM3003
			(ii) 1.1 cum bucket capacity	hour		6.788		2432.00		16508.42		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.467	2202.00			16442.33	PM3005
			For loading									
			(i) 1.2 cum bucket capacity	hour	0.611			2703.00	1651.53			PM3003
			(ii) 1.1 cum bucket capacity	hour		0.703		2432.00		1709.70		PM3004
			(iii) 0.9 cum bucket capacity	hour			0.983	2202.00			2164.57	PM3005
			Tipper for **transportation** to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t-km	52.500			4.80	252.00			PM72001
			(ii) 14 cum capacity	t-km		52.500		5.48		287.70		PM73001
			(iii) 10 cum capacity	t-km			52.500	6.80			357.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	0.611			2239.00	1368.03			PM6001
			(ii) 14 cum capacity	hour		0.703		1998.00		1404.59		PM6002
			(iii) 10 cum capacity	hour			0.983	1785.00			1754.66	PM6003
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		4257.00	4389.35	4578.95	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		2554.20	2633.61	2747.37	
			Cost for 35 cum = a+b+c+d						28096.23	28969.69	30221.08	
			Rate per cum = (a+b+c+d)/35						802.75	827.71	863.46	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**802.70**	**827.70**	**863.50**	
			1. Cost of dewatering upto10 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 beyond 3 m is not dug and hence not included.									
12.01		**V**	**Marshy Soil**									
			Unit = cum									
			Taking output = 10 cum									
			Depth upto 3 m									
		A	**Manual means**									
			a) Labour									
			Mate/Supervisor	day	0.400	0.400	0.400	325.000	130.000	130.000	130.000	L-12
			Mazdoor	day	10.000	10.000	10.000	306.000	3060.000	3060.000	3060.000	L-13
			b) Machinery									
			Tractor-trolley for removal.	hour	2.670	2.670	2.670	629.000	1679.430	1679.430	1679.430	PM12001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		973.886	973.886	973.886	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		584.332	584.332	584.332	
			Cost for 10 cum = a+b+c+d						6427.648	6427.648	6427.648	
			Rate per cum = (a+b+c+d)/ 10						642.765	642.765	642.765	
								Say	**642.800**	**642.800**	**642.800**	
		Note	1. Cost of dewatering @ 30 per cent 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 item12.01 (i) to (iv) for ordinary soil									
12.01 (V)		**B**	**Mechanical Means**									
			Unit=cum									
			Taking output=260cum									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Machniery									
			Hydraulic Excavator									
			(i) 1.2 cum bucket capacity	hour	8.506			2703.00	22991.72			PM3003
			(ii) 1.1 cum bucket capacity	hour		9.796		2432.00		23823.87		PM3004
			(iii) 0.9 cum bucket capacity	hour			13.695	2202.00			30156.39	PM3005

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Tipper									
			for transportation to dumping yard considering lead @1km									
			(i) 18cum capacity	t-km	390.000			4.80	1872.00			PM72001
			(ii) 14cum capacity	t-km		390.000		5.48		2137.20		PM73001
			(iii) 10cum capacity	t-km			390.000	6.80			2652.00	PM74001
			For loading & unloading time									
			(i) 18cum capacity	hour	8.506			2239.00	19044.93			PM6001
			(ii) 14cum capacity	hour		9.796		1998.00		19572.41		PM6002
			(iii) 10cum capacity	hour			13.695	1785.00			24445.58	PM6003
			c) Material									
			Selected earth for refilling	cum	156.000	156.000	156.000	35.01	5461.56	5461.56	5461.56	M-164
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		9937.84	10262.81	12606.91	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		5962.71	6157.68	7564.14	
			Cost for 260 cum= a+b+c+d+e						65589.76	67734.53	83205.57	
			Rate per cum= (a+b+c+d+e)/260						252.27	260.52	320.02	
								Say	**252.30**	**260.50**	**320.00**	
			1. Cost of dewatering @ 20 percent of (a+b) may be added, where required									
			2. Shoring & strutting @ 10 percent of (a+b), where required may be added.									
			3. It is assumed that marshy soil will be available upto 3 m depth only. For deeper excavation below 3m depth , refer analysis in item 12.01 (i) to (iv) for ordinary soil.									
12.01 (VI)		**VI**	**Back Filling in Marshy Foundation Pits**									
			Unit=cum									
			Taking output= 6 cum									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor for dressing sides, bottom and backfilling	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Machinery									
			Tractor-trolley for transportation	hour	2.000	2.000	2.000	629.00	1258.00	1258.00	1258.00	PM12001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		443.00	443.00	443.00	
			d) Contractor's Profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		265.80	265.80	265.80	
			Cost for 6cum=a=b+c+d						2923.80	2923.80	2923.80	
			Rate per cum= (a+b+c+d)/6						487.30	487.30	487.30	
									487.30	**487.30**	**487.30**	
12.02		**304**	**Filling Annular Space around footing in rock**									
			Unit =cum									
			Taking output=1 cum									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Lean cement concrete 1:3:6 nominal mix. Rate may be taken as per item 12.04					**Say**	**3781.70**	**3783.60**	**3792.20**	
12.03		**304**	**Sand Filling in foundation trenches as per drawing & technical specification**									
			Unit=cum									
			Taking output=100 cum									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Machinery									
			Water tanker (speed @20km/hr and return speed @30km/hr and unloading @ 30 mins per trip)									
			(i) 16kL capacity	hour	0.125×L1+0.75			1121.00	980.88			PM11001
			(ii) 12kL capacity	hour		0.167×L1+1		947.00		1105.15		PM11002
			(iii) 6kL capacity	hour			0.333×L1+2	707.00			1649.43	PM11003
			c) Material									
			Sand (assuming 20 percent voids) at site	cum	120.000	120.000	120.000	494.00	59280.00	59280.00	59280.00	M-005*
			Water	KL	18.000	18.000	18.000	56.20	1011.60	1011.60	1011.60	M-191
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		12318.30	12343.15	12452.01	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		7390.98	7405.89	7471.20	
			Rate per 100cum =a+b+c+d+e						81300.75	81464.79	82183.24	
			Rate per cum= (a+b+c+d+e)/100						813.01	814.65	821.83	
								Say	**813.00**	**814.60**	**821.80**	
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	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
			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	2644.30	39664.50	39664.50	39664.50	21.02
			Water	KL	3.240	3.240	3.240	56.20	182.09	182.09	182.09	M-191
			c) Machinery									
			Plate compactor	hour	1.000	1.000	1.000	335.00	335.00	335.00	335.00	PM46001

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Water tanker (speed @20km/hr and return speed @30km/hr and unloading @ 30 mins per trip)									
			(i) 16kL capacity	hour	0.023 X L1 +0.135			1121.00	177.12			PM11001
			(ii) 12kL capacity	hour		0.03 X L1 +0.18		947.00		198.87		PM11002
			(iii) 6kL capacity	hour			0.06 X L1 + 0.36	707.00			296.94	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		8594.74	8599.09	8618.71	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		5156.84	5159.45	5171.22	
			Cost for 15cum= a+b+c+d+e						56725.29	56754.00	56883.46	
			Rate per cum= (a+b+c+d+e)/15						3781.69	3783.60	3792.23	
								Say	**3781.70**	**3783.60**	**3792.20**	
		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 and Plastering, as per Drawing and Technical Specifications.**									
			Unit = cum									
			Taking output = 5 cum									
			a) Material									
			Bricks Ist class	each	2500.000	2500.000	2500.000	6.069	15172.50	15172.50	15172.50	M-079
			Cement mortar 1:3 (Rate taken from sub-analysis 21.01A)	cum	1.200	1.200	1.200	3467.70	4161.24	4161.24	4161.24	21.01 A
			Water for curing	KL	2.415	2.415	2.415	56.20	135.72	135.72	135.72	M-191
			b) Labour									
			Mate	day	0.480	0.480	0.480	325.00	156.00	156.00	156.00	L-12
			Mason	day	4.000	4.000	4.000	369.00	1476.00	1476.00	1476.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Water tanker (speed@ 20km/hr and return speed @ 30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL Capacity	hour	0.017×L1+ 0.101			1121.00	132.28			PM11001
			(ii) 12 KL Capacity	hour		0.022×L1+ 0.134		947.00		147.73		PM11002
			(iii) 6 KL Capacity	hour			0.045×L1+ 0.268	707.00			221.29	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		4736.35	4739.44	4754.15	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		2841.81	2843.66	2852.49	
			Cost for 5 cum = a+b+c+d+e						31259.90	31280.30	31377.40	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate per cum = (a+b+c+d+e)/5						6251.98	6256.06	6275.48	
								Say	**6252.00**	**6256.10**	**6275.50**	
12.06	**Sub-analysis**	**(A)**	**Cement Mortar 1:3 (1 cement : 3 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			Cement mortar 1:3 (Rate taken from sub-analysis 21.01A)	cum	1.000	1.000	1.000	3467.70	3467.70	3467.70	3467.70	21.01 A
		(B)	**Cement Mortar1:2 (1cement :2 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			Cement mortar 1:2 (Rate taken from sub-analysis 21.01B)	cum	1.000	1.000	1.000	4253.90	4253.90	4253.90	4253.90	21.01 B
		(C)	**Cement Mortar1:4 (1cement :4 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			Cement mortar 1:4 (Rate taken from sub-analysis 21.01C)	cum	1.000	1.000	1.000	2943.80	2943.80	2943.80	2943.80	21.01 C
		(D)	**Cement Mortar1:6 (1cement :6 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			Cement mortar 1:6 (Rate taken from sub-analysis 21.01D)	cum	1.000	1.000	1.000	2451.02	2451.02	2451.02	2451.02	21.01 D
12.07			**Stone masonry work in cement mortar 1:3 in foundation complete as per drawing and technical specifications.**									
			Unit=cum									
			Taking output=5 cum									
		(A)	**Square Rubble Coursed Rubble masonry (first sort)**									
			a) Material									
			Stone	cum	5.500	5.500	5.500	675.00	3712.50	3712.50	3712.50	M-001
			Through and bond stone (35 no. X 0.24m X0.24mX0.39m=0.79cu.m)	each	35.000	35.000	35.000	10.58	370.30	370.30	370.30	M-184
			Cement mortar 1:3 (Rate taken from sub-analysis 21.01A)	cum	1.500	1.500	1.500	3467.70	5201.55	5201.55	5201.55	21.01 A
			b) Labour									
			Mate	day	0.660	0.660	0.660	325.00	214.50	214.50	214.50	L-12
			Mason	day	7.500	7.500	7.500	369.00	2767.50	2767.50	2767.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		3004.07	3004.07	3004.07	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1802.44	1802.44	1802.44	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Cost for 5 cum = a+b+c+d						19826.86	19826.86	19826.86	
			Rate per cum = (a+b+c+d)/5						3965.37	3965.37	3965.37	
								Say	**3965.40**	**3965.40**	**3965.40**	
		(B)	**Random Rubble masonry (coursed/uncoursed)**									
			Unit=cum									
			Taking output=5 cum									
			a) Material									
			Stone	cum	5.500	5.500	5.500	675.00	3712.50	3712.50	3712.50	M001
			Through and bond stone (35 no. X 0.24m X0.24mX0.39m=0.79cu.m)	each	35.000	35.000	35.000	10.58	370.30	370.30	370.30	M-184
			Cement mortar 1:3 (Rate taken from sub-analysis 21.01A)	cum	1.550	1.550	1.550	3467.70	5374.94	5374.94	5374.94	21.01 A
			b) Labour									
			Mate	day	0.600	0.600	0.600	325.00	195.00	195.00	195.00	L-12
			Mason	day	6.000	6.000	6.000	369.00	2214.00	2214.00	2214.00	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2924.15	2924.15	2924.15	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1754.49	1754.49	1754.49	
			Cost for 5 cum = a+b+c+d						19299.37	19299.37	19299.37	
			Rate per cum = (a+b+c+d)/5						3859.87	3859.87	3859.87	
								Say	**3859.90**	**3859.90**	**3859.90**	
		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/Reinfoced Cement concrete in open foundation complete as per drwaing and technical specifications.**									
		A	**PCC Grade M15**									
		Case I	**PCC Grade M15 using batching plant & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.03)	cum	30.000	30.000	30.000	2727.10	81813.00	81813.00	81813.00	21.03
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						3557.48	3561.85	3580.92	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		18498.87	18521.61	18620.79	
			f) Contractor's profit @ on(a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		11099.32	11112.97	11172.47	
			Cost for 30 cum=a+b+c+d+e+f						122092.56	122242.64	122897.20	
			Rate per cum (a+b+c+d+e+f)/30						4069.75	4074.75	4096.57	
								Say	**4069.80**	**4074.80**	**4096.60**	
		Case II	**PCC Grade M15 using batching plant & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.03)	cum	15.000	15.000	15.000	2727.10	40906.50	40906.50	40906.50	21.03
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						1873.61	1875.79	1885.31	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		9742.76	9754.11	9803.60	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		5845.65	5852.46	5882.16	
			Cost for 15 cum=a+b+c+d+e+f						64302.19	64377.11	64703.74	
			Rate per cum (a+b+c+d+e+f)/15						4286.81	4291.81	4313.58	
								Say	**4286.80**	**4291.80**	**4313.60**	
12.08		**B**	**PCC Grade M20**									
		Case I	**PCC Grade M20 using batching plant, transit mixture & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.04)	cum	30.000	30.000	30.000	3068.44	92053.20	92053.20	92053.20	21.04
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						3967.08	3971.46	3990.53	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		20628.83	20651.57	20750.75	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		12377.30	12390.94	12450.45	
			Cost for 30 cum=a+b+c+d+e+f						136150.31	136300.38	136954.94	
			Rate per cum (a+b+c+d+e+f)/30						4538.34	4543.35	4565.16	
								Say	**4538.30**	**4543.30**	**4565.20**	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		Case II	**PCC Grade M20 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.04)	cum	15.000	15.000	15.000	3068.44	46026.60	46026.60	46026.60	21.04
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2078.41	2080.59	2090.11	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		10807.74	10819.09	10868.58	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		6484.64	6491.45	6521.15	
			Cost for 15 cum=a+b+c+d+e+f						71331.06	71405.98	71732.61	
			Rate per cum (a+b+c+d+e+f)/15						4755.40	4760.40	4782.17	
								Say	**4755.40**	**4760.40**	**4782.20**	
12.08		**C**	**RCC Grade M20**									
		Case I	**RCC Grade M20 using batching plant, transit mixture & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4325.28	4329.65	4348.72	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		22491.43	22514.17	22613.35	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13494.86	13508.50	13568.01	
			Cost for 30 cum=a+b+c+d+e+f						148443.46	148593.54	149248.10	
			Rate per cum (a+b+c+d+e+f)/30						4948.12	4953.12	4974.94	
								Say	**4948.10**	**4953.10**	**4974.90**	
		Case II	**RCC Grade M20 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2263.89	2266.07	2275.59	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		11772.21	11783.56	11833.05	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7063.33	7070.14	7099.83	
			Cost for 15 cum=a+b+c+d+e+f						77696.60	77771.52	78098.15	
			Rate per cum (a+b+c+d+e+f)/15						5179.77	5184.77	5206.54	
								Say	**5179.80**	**5184.80**	**5206.50**	
12.08		**D**	**PCC Grade M25**									
		Case I	**PCC Grade M25 using batching plant, transit mixture & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4312.52	4316.89	4335.96	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		22425.08	22447.82	22547.00	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13455.05	13468.69	13528.20	
			Cost for 30 cum=a+b+c+d+e+f						148005.54	148155.61	148810.17	
			Rate per cum (a+b+c+d+e+f)/30						4933.52	4938.52	4960.34	
								Say	**4933.50**	**4938.50**	**4960.30**	
		Case II	**PCC Grade M25 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			water for cuing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2251.13	2253.31	2262.83	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		11705.86	11717.21	11766.70	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7023.52	7030.33	7060.02	
			Cost for 15 cum=a+b+c+d+e+f						77258.68	77333.60	77660.23	
			Rate per cum (a+b+c+d+e+f)/15						5150.58	5155.57	5177.35	
								Say	**5150.60**	**5155.60**	**5177.30**	
12.08		**E**	**RCC Grade M25**									
		Case I	**RCC Grade M25 using batching plant,transit mixer & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum basic cost (rate taken from sub-analysis 21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4516.92	4521.29	4540.36	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23487.96	23510.70	23609.88	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14092.78	14106.42	14165.93	
			Cost for 30 cum=a+b+c+d+e+f						155020.54	155170.62	155825.18	
			Rate per cum (a+b+c+d+e+f)/30						5167.35	5172.35	5194.17	
								Say	**5167.40**	**5172.40**	**5194.20**	
		Case II	**RCC Grade M25 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.07)	cum	15.000	15.000	15.000	3516.00	52740.00	52740.00	52740.00	21.07
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2359.71	2361.89	2371.41	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12270.48	12281.83	12331.32	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7362.29	7369.10	7398.79	
			Cost for 15 cum=a+b+c+d+e+f						80985.14	81060.06	81386.69	
			Rate per cum (a+b+c+d+e+f)/15						5399.01	5404.00	5425.78	
								Say	**5399.00**	**5404.00**	**5425.80**	
12.08		**F**	**PCC Grade M30**									
		Case I	**PCC Grade M30 using batching plant,transit mixer & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.08)	cum	30.000	30.000	30.000	3384.30	101529.00	101529.00	101529.00	21.08
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4346.12	4350.49	4369.56	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		22599.80	22622.54	22721.72	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13559.88	13573.52	13633.03	
			Cost for 30 cum=a+b+c+d+e+f						149158.69	149308.76	149963.33	
			Rate per cum (a+b+c+d+e+f)/30						4971.96	4976.96	4998.78	
								Say	**4972.00**	**4977.00**	**4998.80**	
		Case II	**PCC Grade M30 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.08)	cum	15.000	15.000	15.000	3384.30	50764.50	50764.50	50764.50	21.08
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2267.93	2270.11	2279.63	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		11793.22	11804.57	11854.06	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7075.93	7082.74	7112.44	
			Cost for 15 cum=a+b+c+d+e+f						77835.25	77910.17	78236.80	
			Rate per cum (a+b+c+d+e+f)/15						5189.02	5194.01	5215.79	
								Say	**5189.00**	**5194.00**	**5215.80**	
12.08		**G**	**RCC Grade M30**									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		Case I	**RCC Grade M30 using batching plant,transit mixer & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4645.32	4649.69	4668.76	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		24155.64	24178.38	24277.56	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14493.38	14507.03	14566.53	
			Cost for 30 cum=a+b+c+d+e+f						159427.23	159577.31	160231.87	
			Rate per cum (a+b+c+d+e+f)/30						5314.24	5319.24	5341.06	
								Say	**5314.20**	**5319.20**	**5341.10**	
		Case II	**RCC Grade M30 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.09)	cum	15.000	15.000	15.000	3623.00	54345.00	54345.00	54345.00	21.09
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2423.91	2426.09	2435.61	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12604.32	12615.67	12665.16	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7562.59	7569.40	7599.09	
			Cost for 15 cum=a+b+c+d+e+f						83188.49	83263.40	83590.03	
			Rate per cum= (a+b+c+d+e+f)/15						5545.90	5550.89	5572.67	
								Say	**5545.90**	**5550.90**	**5572.70**	
12.08		**H**	**RCC Grade M35**									
		Case I	**RCC Grade M35 using batching plant,transit mixer & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
		(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
		(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
		d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4861.32	4865.69	4884.76	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25278.84	25301.58	25400.76	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15167.30	15180.95	15240.45	
		Cost for 30 cum=a+b+c+d+e+f						166840.35	166990.43	167644.99	
		Rate per cum (a+b+c+d+e+f)/30						5561.35	5566.35	5588.17	
							Say	**5561.30**	**5566.30**	**5588.20**	
	Case II	**RCC Grade M35 using batching plant, transit mixer & manual placing**									
		Unit=cum									
		Taking output=15cum									
		a) Material									
		Per cum basic cost (rate taken from sub-analysis 21.11)	cum	15.000	15.000	15.000	3803.00	57045.00	57045.00	57045.00	21.11
		water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
		b) Labour									
		for pouring and placing									
		Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
		c) Machinery									
		Transit truck agitator									
		For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
		For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
		Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
		(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
		(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
		(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
		d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2531.91	2534.09	2543.61	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		13165.92	13177.27	13226.76	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7899.55	7906.36	7936.05	
		Cost for 15 cum=a+b+c+d+e+f						86895.05	86969.96	87296.59	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate per cum= (a+b+c+d+e+f)/15						5793.00	5798.00	5819.77	
								Say	**5793.00**	**5798.00**	**5819.80**	
12.08		**I**	**RCC Grade M40**									
		Case I	**RCC Grade M40 using batching plant,transit mixer & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.12
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						5362.80	5367.17	5386.24	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		27886.54	27909.28	28008.45	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16731.92	16745.57	16805.07	
			Cost for 30 cum=a+b+c+d+e+f						184051.14	184201.22	184855.78	
			Rate per cum (a+b+c+d+e+f)/30						6135.04	6140.04	6161.86	
								Say	**6135.00**	**6140.00**	**6161.90**	
		Case II	**RCC Grade M40 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.12)	cum	15.000	15.000	15.000	4220.90	63313.50	63313.50	63313.50	21.12

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30min per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2782.65	2784.83	2794.35	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		14469.76	14481.12	14530.60	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8681.86	8688.67	8718.36	
			Cost for 15 cum=a+b+c+d+e+f						95500.44	95575.36	95901.99	
			Rate per cum= (a+b+c+d+e+f)/15						6366.70	6371.69	6393.47	
								Say	**6366.70**	**6371.70**	**6393.50**	
12.08		**J**	**RCC Grade M45**									
		Case I	**RCC Grade M45 using batching plant,transit mixer & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.13)	cum	30.000	30.000	30.000	4405.60	132168.00	132168.00	132168.00	21.13
			water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						5584.44	5588.81	5607.88	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		29039.07	29061.80	29160.98	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		17423.44	17437.08	17496.59	
			Cost for 30 cum=a+b+c+d+e+f						191657.83	191807.91	192462.47	
			Rate per cum (a+b+c+d+e+f)/30						6388.59	6393.60	6415.42	
								Say	**6388.60**	**6393.60**	**6415.40**	
		Case II	**RCC Grade M45 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.13)	cum	15.000	15.000	15.000	4405.60	66084.00	66084.00	66084.00	21.13
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2893.47	2895.65	2905.17	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		15046.03	15057.38	15106.87	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		9027.62	9034.43	9064.12	
			Cost for 15 cum=a+b+c+d+e+f						99303.78	99378.70	99705.33	
			Rate per cum= (a+b+c+d+e+f)/15						6620.25	6625.25	6647.02	
								Say	**6620.30**	**6625.20**	**6647.00**	
			WELL FOUNDATION									
12.09	**1200**		**Providing and constructing temporary island 24m diameter for construction of Well foundation for 8m dia. Well.**									
		A	**Assuming depth of water 1.0 m and height of island to be 1.25m including Royalty for earth @ ₹ 18661.1 for each island.**									
			Unit=no.									
			Taking output=1 No.									
			a) Material									
			Earth (compacted)	cum	565.487	565.487	565.487	35.01	19797.70	19797.70	19797.70	M-093
			Sand bags	each	1125.000	1125.000	1125.000	9.11	10248.75	10248.75	10248.75	M-160
			b) Labour									
			Mate	day	0.920	0.920	0.920	325.00	299.00	299.00	299.00	L-12
			Mazdoor for filling sand bags,stitching and placing	day	23.000	23.000	23.000	306.00	7038.00	7038.00	7038.00	L-13
			c) Machinery									
			Crane with grab 1 cum capacity	hour	30.000	30.000	30.000	738.00	22140.00	22140.00	22140.00	PM67001
			Consumables @2.5 percent of © above						553.50	553.50	553.50	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		12015.39	12015.39	12015.39	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		7209.23	7209.23	7209.23	
			Rate per no. (a+b+c+d+e)						79301.57	79301.57	79301.57	
								Say	**79301.60**	**79301.60**	**79301.60**	
		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 to be 4.5m including Royalty for earth @ ₹ 44748.0 for each island**									
			Unit=no.									
			Taking output=1 No.									
			a) Material									
			Earth (compacted)	cum	1356.000	1356.000	1356.000	35.01	47473.56	47473.56	47473.56	M-093
			Sand bags	each	9000.000	9000.000	9000.000	9.11	81990.00	81990.00	81990.00	M-160
			Wooden ballies 8" dia and 9m long	each	143.000	143.000	143.000	538.98	77074.14	77074.14	77074.14	M-196
			Wooden ballies 2" dia for bracing	metre	285.000	285.000	285.000	22.29	6352.65	6352.65	6352.65	M-195
			b) Labour									
			Mate	day	8.400	8.400	8.400	325.00	2730.00	2730.00	2730.00	L-12
			Mazdoor for piling 8" dia ballies for piling 8" dia ballies	day	27.000	27.000	27.000	306.00	8262.00	8262.00	8262.00	L-13

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor for bracing with 2" dia ballies	day	18.000	18.000	18.000	306.00	5508.00	5508.00	5508.00	L-13
			Mazdoor for filling sand bags,stitching and placing	day	165.000	165.000	165.000	306.00	50490.00	50490.00	50490.00	L-13
			c) Machinery									
			Crane with grab 1 cum capacity	hour	75.000	75.000	75.000	738.00	55350.00	55350.00	55350.00	PM67001
			Consumables and other arrangements for piling ballies @2.5 percent of (a+b+c)						8380.76	8380.76	8380.76	
			d) Overhead chaerges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		68722.22	68722.22	68722.22	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		41233.33	41233.33	41233.33	
			Rate per no. (a+b+c+d+e)						453566.66	453566.66	453566.66	
								Say	**453566.70**	**453566.70**	**453566.70**	
		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.									
12.09		**C**	**Providing and constructiing one span service road to reach island location from one pier location to another pier loaction**									
			Assuming span length 30m, width of service road 10m and depth of water 1m including Royalty for earth @ ₹495.00 per m length of span									
			Unit=meter									
			Taking output=30 metre									
			a) Material									
			Earth	cum	450.000	450.000	450.000	35.01	15754.50	15754.50	15754.50	M-093
			Sand bags	each	300.000	300.000	300.000	9.11	2733.00	2733.00	2733.00	M-160
			b) Labour									
			Mate	day	0.240	0.240	0.240	325.00	78.00	78.00	78.00	L-12
			Mazdoor for filling sand bags, stitching and placing	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			c) Machinery									
			Front end loader 1 cum capacity	hour	27.000	27.000	27.000	1366.00	36882.00	36882.00	36882.00	PM5003
			Tipper 5.5 cum capacity	hour	28.000	28.000	28.000	1371.00	38388.00	38388.00	38388.00	PM6004
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		19134.30	19134.30	19134.30	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		11480.58	11480.58	11480.58	
			Cost for 30 m (a+b+c+d+e)						126286.38	126286.38	126286.38	
			Rate per m= (a+b+c+d+e)/30						4209.55	4209.55	4209.55	
								Say	**4209.50**	**4209.50**	**4209.50**	
12.10	**1200 & 1900**		**Providing and Laying Cutting Edge of Mild Steel weighing 40 kg permetre for Well Foundation complete as per Drawing and Technical Specification.**									
			Unit=1 MT									
			Taking output=1.0 MT									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			a) Material									
			Structural steel in plates, angles, etc. including 5 percent wastage	tonne	1.050	1.050	1.050	57033.00	59884.65	59884.65	59884.65	M-181
			Nuts & bolts	kg	20.000	20.000	20.000	69.15	1383.00	1383.00	1383.00	M-129
			b) Machinery									
			Hydra Crane of capacity 10T for lifting shifting	hour	8.000	8.000	8.000	864.00	6912.00	6912.00	6912.00	PM63003
			Tipper for									
			Transportation to site									
			(i) 18 cum capacity	t-km	1.05 X L1			4.80	5.04			PM72001
			(ii) 14 cum capacity	t-km		1.05 X L1		5.48		5.75		PM73001
			(iii) 10 cum capacity	t-km			1.05 X L1	6.80			7.14	PM74001
			c) Labour									
			(for cutting , bending, making holes, joining, welding and erecting in position)									
			Mate	day	1.080	1.080	1.080	325.00	351.00	351.00	351.00	L-12
			Fitter	day	4.500	4.500	4.500	369.00	1660.50	1660.50	1660.50	L-08
			Blacksmith	day	4.500	4.500	4.500	369.00	1660.50	1660.50	1660.50	L-25
			Welder	day	4.500	4.500	4.500	413.00	1858.50	1858.50	1858.50	L-02
			Mazdoor	day	13.500	13.500	13.500	306.00	4131.00	4131.00	4131.00	L-13
			Electrodes, cutting gas and other consumables @10 percent of cost of (a) above						6126.77	6126.77	6126.77	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		16794.59	16794.73	16795.01	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		10076.75	10076.84	10077.01	
			Cost for 1 M.T= a+b+c+d+e						110844.30	110845.24	110847.07	
								Say	**110844.30**	**110845.20**	**110847.10**	
12.11	**1200, 1500& 1700**		**Plain/Reinforced Cement Concrete, in Well Foundation complete as per Drawing and Technical Specification.**									
		A	**Well curb**									
		(i)	**RCC M20 Grade**									
12.11 A (i)		**Case I**	**RCC Grade M20 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						21239.64	21239.64	21239.64	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25487.56	25487.56	25487.56	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15292.54	15292.54	15292.54	
			Cost for 30 cum=a+b+c+d+e+f						168217.91	168217.91	168217.91	
			Rate per cum=(a+b+c+d+e+f)/30						5607.26	5607.26	5607.26	
								Say	**5607.30**	**5607.30**	**5607.30**	
12.11 A (i)		**Case II**	**RCC Grade M20 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						11043.05	11043.05	11043.05	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		13251.66	13251.66	13251.66	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7951.00	7951.00	7951.00	
			Cost for 15 cum=a+b+c+d+e+f						87460.96	87460.96	87460.96	
			Rate per cum=(a+b+c+d+e+f)/15						5830.73	5830.73	5830.73	
								Say	**5830.70**	**5830.70**	**5830.70**	
		(ii)	**RCC M25 Grade**									
12.11 A (ii)		**Case I**	**RCC Grade M25 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per Cum basic cost (Rate taken from Sub-analysis 21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						22197.84	22197.84	22197.84	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		26637.40	26637.40	26637.40	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15982.44	15982.44	15982.44	
			Cost for 30 cum=a+b+c+d+e+f						175806.85	175806.85	175806.85	
			Rate per cum=(a+b+c+d+e+f)/30						5860.23	5860.23	5860.23	
								Say	**5860.20**	**5860.20**	**5860.20**	
12.11 A (ii)		**Case II**	**RCC Grade M25 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.07)	cum	15.000	15.000	15.000	3516.00	52740.00	52740.00	52740.00	21.07
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						11522.15	11522.15	11522.15	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		13826.58	13826.58	13826.58	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8295.95	8295.95	8295.95	
			Cost for 15 cum=a+b+c+d+e+f						91255.44	91255.44	91255.44	
			Rate per cum=(a+b+c+d+e+f)/15						6083.70	6083.70	6083.70	
								Say	**6083.70**	**6083.70**	**6083.70**	
		(iii)	**RCC M30 Grade**									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.11 A (iii)		**Case I**	**RCC Grade M30 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						22839.84	22839.84	22839.84	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		27407.80	27407.80	27407.80	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16444.68	16444.68	16444.68	
			Cost for 30 cum=a+b+c+d+e+f						180891.49	180891.49	180891.49	
			Rate per cum=(a+b+c+d+e+f)/30						6029.72	6029.72	6029.72	
								Say	**6029.70**	**6029.70**	**6029.70**	
12.11 A (iii)		**Case II**	**RCC Grade M30 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.09)	cum	15.000	15.000	15.000	3623.000	54345.000	54345.000	54345.000	21.09
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						11843.15	11843.15	11843.15	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		14211.78	14211.78	14211.78	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8527.07	8527.07	8527.07	
			Cost for 15 cum=a+b+c+d+e+f						93797.76	93797.76	93797.76	
			Rate per cum=(a+b+c+d+e+f)/15						6253.18	6253.18	6253.18	
								Say	**6253.20**	**6253.20**	**6253.20**	
		Note	If curb concrete is carried out within steel liner, cost of formwork shall be excluded.									
		(iv)	**RCC M35 Grade**									
12.11 A (iv)		**Case I**	**RCC Grade M35 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						23919.84	23919.84	23919.84	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		28703.80	28703.80	28703.80	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		17222.28	17222.28	17222.28	
			Cost for 30 cum=a+b+c+d+e+f						189445.09	189445.09	189445.09	
			Rate per cum=(a+b+c+d+e+f)/30						6314.84	6314.84	6314.84	
								Say	**6314.80**	**6314.80**	**6314.80**	
12.11 A (iv)		**Case II**	**RCC Grade M35 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.11)	cum	15.000	15.000	15.000	3803.00	57045.00	57045.00	57045.00	21.11
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						12383.15	12383.15	12383.15	
			e) Overhead charges @on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		14859.78	14859.78	14859.78	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8915.87	8915.87	8915.87	
			Cost for 15 cum=a+b+c+d+e+f						98074.56	98074.56	98074.56	
			Rate per cum=(a+b+c+d+e+f)/15						6538.30	6538.30	6538.30	
								Say	**6538.30**	**6538.30**	**6538.30**	
		Note	If curb concrete is carried out within steel line, cost of formwork shall be excluded									
12.11 A		**(v)**	**RCC M40 Grade**									
12.11 A (v)		**Case I**	**RCC Grade M40 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.12
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						26427.24	26427.24	26427.24	
			e) Overhead charges @on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		31712.68	31712.68	31712.68	
			f) Contractor's profit @on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		19027.61	19027.61	19027.61	
			Cost for 30 cum=a+b+c+d+e+f						209303.70	209303.70	209303.70	
			Rate per cum=(a+b+c+d+e+f)/30						6976.79	6976.79	6976.79	
								Say	**6976.80**	**6976.80**	**6976.80**	
12.11 A (v)		**Case II**	**RCC Grade M40 using batching plant & manual placing**									
			Unit= cum									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.12)	cum	15.000	15.000	15.000	4220.90	63313.50	63313.50	63313.50	21.12
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @20 percent on cost of concrete i.e cost of material, labour and machinery						13636.85	13636.85	13636.85	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		16364.22	16364.22	16364.22	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		9818.53	9818.53	9818.53	
			Cost for 15 cum=a+b+c+d+e+f						108003.86	108003.86	108003.86	
			Rate per cum=(a+b+c+d+e+f)/15						7200.26	7200.26	7200.26	
		Note	If curb concrete is carried out within steel liner, cost of formwork shall be excluded					**Say**	**7200.30**	**7200.30**	**7200.30**	
12.11		**B**	**Well steining**									
		(i)	**PCC M15Grade**									
12.11 B (i)		**Case I**	**PCC Grade M15 using batching plant & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.03)	cum	30.000	30.000	30.000	2727.10	81813.00	81813.00	81813.00	21.03
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM77001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						8700.32	8700.32	8700.32	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		19140.70	19140.70	19140.70	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		11484.42	11484.42	11484.42	
			Cost for 30 cum= a+b+c+d+e+f						126328.61	126328.61	126328.61	
			Rate per cum= (a+b+c+d+e+f)/30						4210.95	4210.95	4210.95	
								Say	**4211.00**	**4211.00**	**4211.00**	
12.11 B (i)		**Case II**	**PCC Grade M15 using batching plant & manual placing**									
			unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.03)	cum	15.000	15.000	15.000	2727.10	40906.50	40906.50	40906.50	21.03
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						4577.73	4577.73	4577.73	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		10071.00	10071.00	10071.00	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		6042.60	6042.60	6042.60	
			Cost for 15 cum= a+b+c+d+e+f						66468.57	66468.57	66468.57	
			Rate per cum= (a+b+c+d+e+f)/15						4431.24	4431.24	4431.24	
								Say	**4431.20**	**4431.20**	**4431.20**	
12.11 B		**(ii)**	**PCC M20 Grade**									
12.11 B (ii)		**Case I**	**PCC Grade M20 using batching plant & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.04)	cum	30.000	30.000	30.000	3068.44	92053.20	92053.20	92053.20	21.04
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Transit truck agitator									
		For transportation (6cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
		For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
		Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
		d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						9724.34	9724.34	9724.34	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		21393.54	21393.54	21393.54	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		12836.13	12836.13	12836.13	
		Cost for 30 cum= a+b+c+d+e+f						141197.38	141197.38	141197.38	
		Rate per cum= (a+b+c+d+e+f)/30						4706.58	4706.58	4706.58	
							Say	**4706.60**	**4706.60**	**4706.60**	
12.11 B (ii)	**Case II**	**PCC Grade M20 using batching plant & manual placing**									
		unit=cum									
		Taking output=15cum									
		a) Material									
		Per cum basic cost (Rate taken from sub-analysis 21.04)	cum	15.000	15.000	15.000	3068.44	46026.60	46026.60	46026.60	21.04
		b) Labour									
		For pouring and placing									
		Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
		Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
		Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
		c) Machinery									
		Transit truck agitator									
		For transportation (6cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
		For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM36001
		d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						5089.74	5089.74	5089.74	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		11197.42	11197.42	11197.42	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		6718.45	6718.45	6718.45	
		Cost for 15 cum= a+b+c+d+e+f						73902.96	73902.96	73902.96	
		Rate per cum= (a+b+c+d+e+f)/15						4926.86	4926.86	4926.86	
							Say	**4926.90**	**4926.90**	**4926.90**	
12.11 B	**(iii)**	**RCC M20 Grade**									
12.11 B (iii)	**Case I**	**RCC Grade M20 using batching plant &concrete pump**									
		Unit= cum									
		Taking output=30cum									
		a) Material									
		Per Cum basic cost (Rate taken from Sub-analysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
		b) Labour									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						10619.82	10619.82	10619.82	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23363.60	23363.60	23363.60	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14018.16	14018.16	14018.16	
			Cost for 30 cum=a+b+c+d+e+f						154199.75	154199.75	154199.75	
			Rate per cum=(a+b+c+d+e+f)/30						5139.99	5139.99	5139.99	
								Say	**5140.00**	**5140.00**	**5140.00**	
12.11 B (iii)		**Case II**	**RCC Grade M20 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						5521.53	5521.53	5521.53	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12147.36	12147.36	12147.36	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7288.41	7288.41	7288.41	
			Cost for 15 cum=a+b+c+d+e+f						80172.55	80172.55	80172.55	
			Rate per cum=(a+b+c+d+e+f)/15						5344.84	5344.84	5344.84	
								Say	**5344.80**	**5344.80**	**5344.80**	
		(iV)	**PCC M25 Grade**									
12.11 B (iV)		**Case I**	**PCC Grade M25 using batching plant & Concrete pump**									
			unit=cum									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Taking output=30cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.000	100689.000	100689.000	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.225	30.225	30.225	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.000	369.000	369.000	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.450	405.450	405.450	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.750	774.750	774.750	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.000	1209.000	1209.000	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.750	2401.750	2401.750	PM36001
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						10587.918	10587.918	10587.918	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23293.419	23293.419	23293.419	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13976.051	13976.051	13976.051	
			Cost for 30 cum= a+b+c+d+e+f						153736.562	153736.562	153736.562	
			Rate per cum= (a+b+c+d+e+f)/30						5124.552	5124.552	5124.552	
									5124.600	**5124.600**	**5124.600**	
12.11 B (iV)		**Case II**	**PCC Grade M25 using batching plant & manual placing**									
			unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						5521.53	5521.53	5521.53	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12147.36	12147.36	12147.36	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7288.41	7288.41	7288.41	
			Cost for 15 cum= a+b+c+d+e+f						80172.55	80172.55	80172.55	
			Rate per cum= (a+b+c+d+e+f)/15						5344.84	5344.84	5344.84	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**5344.80**	**5344.80**	**5344.80**	
12.11 B		**(V)**	**RCC M25 Grade**									
12.11 B (V)		**Case I**	**RCC Grade M25 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						11098.92	11098.92	11098.92	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		24417.62	24417.62	24417.62	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14650.57	14650.57	14650.57	
			Cost for 30 cum=a+b+c+d+e+f						161156.28	161156.28	161156.28	
			Rate per cum=(a+b+c+d+e+f)/30						5371.88	5371.88	5371.88	
								Say	**5371.90**	**5371.90**	**5371.90**	
12.11 B (v)		**Case II**	**RCC Grade M25 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.07)	cum	15.000	15.000	15.000	3516.00	52740.00	52740.00	52740.00	21.07
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						5761.08	5761.08	5761.08	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12674.37	12674.37	12674.37	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7604.62	7604.62	7604.62	
			Cost for 15 cum=a+b+c+d+e+f						83650.82	83650.82	83650.82	
			Rate per cum=(a+b+c+d+e+f)/15						5576.72	5576.72	5576.72	
								Say	**5576.70**	**5576.70**	**5576.70**	
12.11B		**(vi)**	**PCC M30 Grade**									
12.11 B (vi)		**Case I**	**PCC Grade M30 using batching plant & Concrete pump**									
			unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.08)	cum	30.000	30.000	30.000	3384.30	101529.00	101529.00	101529.00	21.08
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						10671.92	10671.92	10671.92	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23478.22	23478.22	23478.22	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14086.93	14086.93	14086.93	
			Cost for 30 cum= a+b+c+d+e+f						154956.24	154956.24	154956.24	
			Rate per cum= (a+b+c+d+e+f)/30						5165.21	5165.21	5165.21	
								Say	**5165.20**	**5165.20**	**5165.20**	
12.11 B (vi)		**Case II**	**PCC Grade M30 using batching plant & manual placing**									
			unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.08)	cum	15.000	15.000	15.000	3384.30	50764.50	50764.50	50764.50	21.08
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material, labour and machinery						5563.53	5563.53	5563.53	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12239.76	12239.76	12239.76	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7343.85	7343.85	7343.85	
			Cost for 15 cum= a+b+c+d+e+f						80782.39	80782.39	80782.39	
			Rate per cum= (a+b+c+d+e+f)/15						5385.49	5385.49	5385.49	
								Say	**5385.50**	**5385.50**	**5385.50**	
12.11 B		**(vii)**	**RCC M30 Grade**									
12.11 B (vii)		**Case I**	**RCC Grade M30 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.65	0.65	0.65	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer	hour	0.65	0.65	0.65	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						11419.92	11419.92	11419.92	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25123.82	25123.82	25123.82	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15074.29	15074.29	15074.29	
			Cost for 30 cum=a+b+c+d+e+f						165817.20	165817.20	165817.20	
			Rate per cum=(a+b+c+d+e+f)/30						5527.24	5527.24	5527.24	
								Say	**5527.20**	**5527.20**	**5527.20**	
12.11 B (vii)		**Case II**	**RCC Grade M30 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per Cum basic cost (Rate taken from Sub-analysis 21.09)	cum	15.000	15.000	15.000	3623.00	54345.00	54345.00	54345.00	21.09
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						5921.58	5921.58	5921.58	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		13027.47	13027.47	13027.47	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7816.48	7816.48	7816.48	
			Cost for 15 cum=a+b+c+d+e+f						85981.28	85981.28	85981.28	
			Rate per cum=(a+b+c+d+e+f)/15						5732.09	5732.09	5732.09	
								Say	**5732.10**	**5732.10**	**5732.10**	
12.11 B		**(viii)**	**RCC M35 Grade**									
12.11 B (viii)		**Case I**	**RCC Grade M35 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						11959.92	11959.92	11959.92	
			e) Overhead charges @ on(a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		26311.82	26311.82	26311.82	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15787.09	15787.09	15787.09	
			Cost for 30 cum=a+b+c+d+e+f						173658.00	173658.00	173658.00	
			Rate per cum=(a+b+c+d+e+f)/30						5788.60	5788.60	5788.60	
								Say	**5788.60**	**5788.60**	**5788.60**	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.11 B (viii)		Case II	**RCC Grade M35 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.11)	cum	15.000	15.000	15.000	3803.00	57045.00	57045.00	57045.00	21.11
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						6191.58	6191.58	6191.58	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		13621.47	13621.47	13621.47	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8172.88	8172.88	8172.88	
			Cost for 15 cum=a+b+c+d+e+f						89901.68	89901.68	89901.68	
			Rate per cum=(a+b+c+d+e+f)/15						5993.45	5993.45	5993.45	
								Say	**5993.40**	**5993.40**	**5993.40**	
12.11 B		(ix)	**RCC M40 Grade**									
12.11 B (ix)		Case I	**RCC Grade M40 using batching plant &concrete pump**									
			Unit= cum									
			Taking output=30cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.52
			b) Labour									
			For pouring and placing									
			Mate	day	0.133	0.133	0.133	325.00	43.23	43.23	43.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						13213.62	13213.62	13213.62	

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		29069.96	29069.96	29069.96	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		17441.98	17441.98	17441.98	
			Cost for 30 cum=a+b+c+d+e+f						191861.73	191861.73	191861.73	
			Rate per cum=(a+b+c+d+e+f)/30						6395.39	6395.39	6395.39	
								Say	**6395.40**	**6395.40**	**6395.40**	
12.11 B (ix)		**Case II**	**RCC Grade M40 using batching plant & manual placing**									
			Unit= cum									
			Taking output=15cum									
			a) Material									
			Per Cum basic cost (Rate taken from Sub-analysis 21.12)	cum	15.000	15.000	15.000	4220.90	63313.50	63313.50	63313.50	21.12
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			d) Formwork @10 percent on cost of concrete i.e cost of material, labour and machinery						6818.43	6818.43	6818.43	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		15000.54	15000.54	15000.54	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		9000.32	9000.32	9000.32	
			Cost for 15 cum=a+b+c+d+e+f						99003.54	99003.54	99003.54	
			Rate per cum=(a+b+c+d+e+f)/15						6600.24	6600.24	6600.24	
								Say	**6600.20**	**6600.20**	**6600.20**	
12.11C		**C**	**Bottom Plug**									
		(i)	**PCC Grade M20**									
		Case I	**PCC Grade M20 using batching plant & concrete pump**									
			unit=cum									
			Taking output=30 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from subanalysis 21.04)	cum	30.000	30.000	30.000	3068.44	92053.20	92053.20	92053.20	21.04
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Hydra crane for holding tremie pipe	hour	0.650	0.650	0.650	728.00	473.20	473.20	473.20	PM63001
			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.						4642.89	4642.89	4642.89	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		20471.89	20471.89	20471.89	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		12283.14	12283.14	12283.14	
			Cost for 30cum = a+b+c+d+e						135114.50	135114.50	135114.50	
			Rate per cum= (a+b+c+d+e)/30						4503.82	4503.82	4503.82	
								Say	**4503.80**	**4503.80**	**4503.80**	
		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 subanalysis 21.04)	cum	15.000	15.000	15.000	3068.44	46026.60	46026.60	46026.60	21.04
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Hydra crane for holding tremie pipe	hour	0.833	0.833	0.833	728.00	606.42	606.42	606.42	PM63001
			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.						2448.03	2448.03	2448.03	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		10790.36	10790.36	10790.36	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		6474.22	6474.22	6474.22	
			Cost for 15cum = a+b+c+d+e						71216.39	71216.39	71216.39	
			Rate per cum= (a+b+c+d+e)/15						4747.76	4747.76	4747.76	
								Say	**4747.80**	**4747.80**	**4747.80**	
12.11C		**(II)**	**PCC Grade M25**									
		Case I	**PCC Grade M25 using batching plant & concrete pump**									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			unit=cum									
			Taking output=30 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from subanalysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Hydra crane for holding tremie pipe	hour	0.650	0.650	0.650	728.00	473.20	473.20	473.20	PM63001
			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.						5074.68	5074.68	5074.68	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		22285.41	22285.41	22285.41	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		13371.25	13371.25	13371.25	
			Cost for 30cum = a+b+c+d+e						147083.72	147083.72	147083.72	
			Rate per cum= (a+b+c+d+e)/30						4902.79	4902.79	4902.79	
								Say	**4902.80**	**4902.80**	**4902.80**	
		Case II	**PCC Grade M25 using batching plant & manual placing**									
			unit=cum									
			Taking output=15 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from subanalysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Hydra crane for holding tremie pipe	hour	0.833	0.833	0.833	728.00	606.42	606.42	606.42	PM63001

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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.						2663.93	2663.93	2663.93	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		11697.12	11697.12	11697.12	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		7018.27	7018.27	7018.27	
			Cost for 15cum = a+b+c+d+e						77201.00	77201.00	77201.00	
			Rate per cum= (a+b+c+d+e)/15						5146.73	5146.73	5146.73	
								Say	**5146.70**	**5146.70**	**5146.70**	
12.11C		**(iii)**	**PCC Grade M30**									
		Case I	**PCC Grade M30 using batching plant & concrete pump**									
			unit=cum									
			Taking output=30 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from subanalysis 21.08)	cum	30.000	30.000	30.000	3384.30	101529.00	101529.00	101529.00	21.08
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Hydra crane for holding tremie pipe	hour	0.650	0.650	0.650	728.00	473.20	473.20	473.20	PM63001
			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.						5116.68	5116.68	5116.68	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		22461.81	22461.81	22461.81	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		13477.09	13477.09	13477.09	
			Cost for 30cum = a+b+c+d+e						148247.96	148247.96	148247.96	
			Rate per cum= (a+b+c+d+e)/30						4941.60	4941.60	4941.60	
								Say	**4941.60**	**4941.60**	**4941.60**	
		Case II	**PCC Grade M30 using batching plant & manual placing**									
			unit=cum									
			Taking output=15 cum									
			a) Material									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per Cum Basic Cost (Rate taken from subanalysis 21.08)	cum	15.000	15.000	15.000	3384.30	50764.50	50764.50	50764.50	21.08
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Hydra crane for holding tremie pipe	hour	0.833	0.833	0.833	728.00	606.42	606.42	606.42	PM63001
			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.						2684.93	2684.93	2684.93	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		11785.32	11785.32	11785.32	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		7071.19	7071.19	7071.19	
			Cost for 15cum = a+b+c+d+e						77783.12	77783.12	77783.12	
			Rate per cum= (a+b+c+d+e)/15						5185.54	5185.54	5185.54	
								Say	**5185.50**	**5185.50**	**5185.50**	
12.11C		**(iV)**	**PCC Grade M35**									
		Case I	**PCC Grade M35 using batching plant & concrete pump**									
			unit=cum									
			Taking output=30 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from subanalysis 21.10)	cum	30.000	30.000	30.000	3694.90	110847.00	110847.00	110847.00	21.1
			b) Labour									
			For pouring and placing									
			Mate	day	0.093	0.093	0.093	325.00	30.23	30.23	30.23	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Hydra crane for holding tremie pipe	hour	0.650	0.650	0.650	728.00	473.20	473.20	473.20	PM63001

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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.						5582.58	5582.58	5582.58	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		24418.59	24418.59	24418.59	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		14651.16	14651.16	14651.16	
			Cost for 30cum = a+b+c+d+e						161162.71	161162.71	161162.71	
			Rate per cum= (a+b+c+d+e)/30						5372.09	5372.09	5372.09	
								Say	**5372.10**	**5372.10**	**5372.10**	
		Case II	**PCC Grade M35 using batching plant & manual placing**									
			unit=cum									
			Taking output=15 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from subanalysis 21.10)	cum	15.000	15.000	15.000	3694.90	55423.50	55423.50	55423.50	21.10
			b) Labour									
			For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	t-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Hydra crane for holding tremie pipe	hour	0.833	0.833	0.833	728.00	606.42	606.42	606.42	PM63001
			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.						2917.88	2917.88	2917.88	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		12763.71	12763.71	12763.71	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		7658.23	7658.23	7658.23	
			Cost for 15cum = a+b+c+d+e						84240.49	84240.49	84240.49	
			Rate per cum= (a+b+c+d+e)/15						5616.03	5616.03	5616.03	
								Say	**5616.00**	**5616.00**	**5616.00**	
12.11		**D**	**Intermediate plug**									
		(i)	**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**									

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum basic cost of labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (i)						3257.22	3257.22	3257.22	
			d) Overhead charges @ on **(a+b+c)**		(@ 20%)	(@ 20%)	(@ 20%)		651.44	651.44	651.44	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		390.87	390.87	390.87	
			Rate per cum= (a+b+c+d+e)						4299.53	4299.53	4299.53	
								Say	**4299.50**	**4299.50**	**4299.50**	
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)						3433.59	3433.59	3433.59	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		686.72	686.72	686.72	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		412.03	412.03	412.03	
			Rate per cum= (a+b+c+d+e)						4532.33	4532.33	4532.33	
								Say	**4532.30**	**4532.30**	**4532.30**	
12.11D		**(ii)**	**Grade M25 PCC**									
			Same as in bottom plug concrete, excluding cost of forming sump, protective bunds, chiseling etc.									
12.11 D (i)		**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. 12.11 (C) (ii)						3545.08	3545.08	3545.08	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		709.02	709.02	709.02	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		425.41	425.41	425.41	
			Rate per cum= (a+b+c+d+e)						4679.50	4679.50	4679.50	
								Say	**4679.50**	**4679.50**	**4679.50**	
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)						3721.45	3721.45	3721.45	
			d) Overhead charges @ on (a+b+C)		(@ 20%)	(@ 20%)	(@ 20%)		744.29	744.29	744.29	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		446.57	446.57	446.57	
			Rate per cum= (a+b+c+d+e)						4912.31	4912.31	4912.31	
								Say	**4912.30**	**4912.30**	**4912.30**	
12.11D		**(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**									

analysis of Rate
FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum basic cost of labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.11 (C) (iii)						3573.08	3573.08	3573.08	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		714.62	714.62	714.62	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		428.77	428.77	428.77	
			Rate per cum= (a+b+c+d+e)						4716.46	4716.46	4716.46	
								Say	**4716.50**	**4716.50**	**4716.50**	
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)						3749.45	3749.45	3749.45	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		749.89	749.89	749.89	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		449.93	449.93	449.93	
			Rate per cum= (a+b+c+d+e)						4949.27	4949.27	4949.27	
								Say	**4949.30**	**4949.30**	**4949.30**	
12.11		**E**	**Top Plug**									
		(i)	**Grade M15 PCC**									
			Same as item 12.08 (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)						2964.56	2968.21	2984.10	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		592.91	593.64	596.82	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		355.75	356.18	358.09	
			Rate per cum= (a+b+c+d+e)						3913.22	3918.03	3939.01	
								Say	**3913.20**	**3918.00**	**3939.00**	
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)						3122.68	3126.32	3142.18	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		624.54	625.26	628.44	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		374.72	375.16	377.06	
			Rate per cum= (a+b+c+d+e)						4121.94	4126.74	4147.68	
								Say	**4121.90**	**4126.70**	**4147.70**	
12.11 E		**(ii)**	**Grade M20 PCC**									
			Same as item 12.08 (B) excluding formwork									
12.11 E (ii)		**Case I**	**PCC Grade M20 using batching plant & concrete pump**									

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum basic cost of labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (B)						3305.90	3309.55	3325.44	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		661.18	661.91	665.09	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		396.71	397.15	399.05	
			Rate per cum= (a+b+c+d+e)						4363.79	4368.60	4389.58	
								Say	**4363.80**	**4368.60**	**4389.60**	
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)						3464.02	3467.66	3483.52	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		692.80	693.53	696.70	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		415.68	416.12	418.02	
			Rate per cum= (a+b+c+d+e)						4572.50	4577.31	4598.24	
								Say	**4572.50**	**4577.30**	**4598.20**	
12.11 E		**(iii)**	**Grade M25 PCC**									
			Same as item 12.08 (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)						3593.76	3597.41	3613.30	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		718.75	719.48	722.66	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		431.25	431.69	433.60	
			Rate per cum= (a+b+c+d+e)						4743.77	4748.58	4769.56	
								Say	**4743.80**	**4748.60**	**4769.60**	
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)						3751.88	3755.52	3771.38	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		750.38	751.10	754.28	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		450.23	450.66	452.57	
			Rate per cum= (a+b+c+d+e)						4952.48	4957.28	4978.22	
								Say	**4952.50**	**4957.30**	**4978.20**	
12.11 E (iv)		**(iv)**	**Grade M30 PCC**									
			Same as item 12.08 (F) excluding formwork									
12.11 E (iv)		**Case I**	**PCC Grade M30 using batching plant & concrete pump**									

analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum basic cost of labour, Material & Machinery (a+b+c) Rate for concrete may be adopted vide item no. 12.08 (F)						3621.76	3625.41	3641.30	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		724.35	725.08	728.26	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		434.61	435.05	436.96	
			Rate per cum= (a+b+c+d+e)						4780.73	4785.54	4806.52	
								Say	**4780.70**	**4785.50**	**4806.50**	
12.11 E (iv)		**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. 12.08 (F)						3779.88	3783.52	3799.38	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		755.98	756.70	759.88	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		453.59	454.02	455.93	
			Rate per cum= (a+b+c+d+e)						4989.44	4994.24	5015.18	
								Say	**4989.40**	**4994.20**	**5015.20**	
12.11		**F**	**Well Cap**									
		(i)	**RCC Grade M20**									
		Case I	**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 sub-analysis 21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			Water for curing	Kl	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4325.28	4329.65	4348.72	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		22491.43	22514.17	22613.35	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13494.86	13508.50	13568.01	
			Cost for 30 cum=a+b+c+d+e+f						148443.46	148593.54	149248.10	
			Rate per cum (a+b+c+d+e+f)/30						4948.12	4953.12	4974.94	
								Say	**4948.10**	**4953.10**	**4974.90**	
		Case II	**RCC Grade M20 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.06)	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2251.13	2253.31	2262.83	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		11705.86	11717.21	11766.70	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7023.52	7030.33	7060.02	
			Cost for 15 cum=a+b+c+d+e+f						77258.68	77333.60	77660.23	
			Rate per cum= (a+b+c+d+e+f)/15						5150.58	5155.57	5177.35	
								Say	**5150.60**	**5155.60**	**5177.30**	
12.11 F		**(ii)**	**RCC Grade M25**									
12.11F (ii)		**Case I**	**RCC Grade M25 using batching plant, transit mixer & concrete pump**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unit=cum									
			Taking output=30 cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			Water for curing	Kl	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4516.92	4521.29	4540.36	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23487.96	23510.70	23609.88	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14092.78	14106.42	14165.93	
			Cost for 30 cum=a+b+c+d+e+f						155020.54	155170.62	155825.18	
			Rate per cum (a+b+c+d+e+f)/30						5167.35	5172.35	5194.17	
								Say	**5167.40**	**5172.40**	**5194.20**	
12.11 F (ii)		**Case II**	**RCC Grade M25 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.07)	cum	15.000	15.000	15.000	3516.00	52740.00	52740.00	52740.00	21.07
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2346.95	2349.13	2358.65	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12204.12	12215.48	12264.96	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7322.47	7329.29	7358.98	
			Cost for 15 cum=a+b+c+d+e+f						80547.22	80622.14	80948.77	
			Rate per cum= (a+b+c+d+e+f)/15						5369.81	5374.81	5396.58	
								Say	**5369.80**	**5374.80**	**5396.60**	
12.11 F		**(iii)**	**RCC Grade M30**									
12.11 F (iii)		**Case I**	**RCC Grade M30 using batching plant, transit mixer & concrete pump**									
			Unit=cum									
			Taking output=30 cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			Water for curing	Kl	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4645.32	4649.69	4668.76	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		24155.64	24178.38	24277.56	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14493.38	14507.03	14566.53	
			Cost for 30 cum=a+b+c+d+e+f						159427.23	159577.31	160231.87	
			Rate per cum (a+b+c+d+e+f)/30						5314.24	5319.24	5341.06	
								Say	**5314.20**	**5319.20**	**5341.10**	
12.11 F (iii)		**Case II**	**RCC Grade M30 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.09)	cum	15.000	15.000	15.000	3623.00	54345.00	54345.00	54345.00	21.09
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2411.15	2413.33	2422.85	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		12537.96	12549.32	12598.80	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7522.78	7529.59	7559.28	
			Cost for 15 cum=a+b+c+d+e+f						82750.56	82825.48	83152.11	
			Rate per cum= (a+b+c+d+e+f)/15						5516.70	5521.70	5543.47	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**5516.70**	**5521.70**	**5543.50**	
12.11 F		(iv)	**RCC Grade M35**									
12.11 F (iv)		**Case I**	**RCC Grade M35 using batching plant, transit mixer & concrete pump**									
			Unit=cum									
			Taking output=30 cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			Water for curing	Kl	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						4861.32	4865.69	4884.76	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25278.84	25301.58	25400.76	
			f) Contractor's profit@ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15167.30	15180.95	15240.45	
			Cost for 30 cum=a+b+c+d+e+f						166840.35	166990.43	167644.99	
			Rate per cum (a+b+c+d+e+f)/30						5561.35	5566.35	5588.17	
								Say	**5561.30**	**5566.30**	**5588.20**	
12.11 F (iv)		**Case II**	**RCC Grade M35 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.11)	cum	15.000	15.000	15.000	3803.00	57045.00	57045.00	57045.00	21.11
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2519.15	2521.33	2530.85	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		13099.56	13110.92	13160.40	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		7859.74	7866.55	7896.24	
			Cost for 15 cum=a+b+c+d+e+f						86457.12	86532.04	86858.67	
			Rate per cum= (a+b+c+d+e+f)/15						5763.81	5768.80	5790.58	
								Say	**5763.80**	**5768.80**	**5790.60**	
12.11 F		**(v)**	**RCC Grade M40**									
12.11 F (v)		**Case I**	**RCC Grade M40 using batching plant, transit mixer & concrete pump**									
			Unit=cum									
			Taking output=30 cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.12
			Water for curing	Kl	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						5362.80	5367.17	5386.24	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		27886.54	27909.28	28008.45	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16731.92	16745.57	16805.07	
			Cost for 30 cum=a+b+c+d+e+f						184051.14	184201.22	184855.78	
			Rate per cum (a+b+c+d+e+f)/30						6135.04	6140.04	6161.86	
								Say	**6135.00**	**6140.00**	**6161.90**	
12.11 F (v)		**Case II**	**RCC Grade M40 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.12)	cum	15.000	15.000	15.000	4220.90	63313.50	63313.50	63313.50	21.12
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2769.89	2772.07	2781.59	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		14403.41	14414.76	14464.25	
			f) Contractor's profit @on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8642.05	8648.86	8678.55	
			Cost for 15 cum=a+b+c+d+e+f						95062.52	95137.44	95464.07	
			Rate per cum= (a+b+c+d+e+f)/15						6337.50	6342.50	6364.27	
								Say	**6337.50**	**6342.50**	**6364.30**	
12.11 F		**(vi)**	**RCC Grade M45**									
12.11 F (vi)		**Case I**	**RCC Grade M45 using batching plant, transit mixer & concrete pump**									
			Unit=cum									
			Taking output=30 cum									
			a) Material									
			Per cum basic cost (Rate taken from sub-analysis 21.13)	cum	30.000	30.000	30.000	4405.60	132168.00	132168.00	132168.00	21.13
			Water for curing	Kl	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109 X L1+0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1+0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1+1.75	707.00			1443.69	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						5584.44	5588.81	5607.88	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		29039.07	29061.80	29160.98	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		17423.44	17437.08	17496.59	
			Cost for 30 cum=a+b+c+d+e+f						191657.83	191807.91	192462.47	
			Rate per cum (a+b+c+d+e+f)/30						6388.59	6393.60	6415.42	
								Say	**6388.60**	**6393.60**	**6415.42**	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.11 F (vi)		Case II	**RCC Grade M45 using batching plant, transit mixer & manual placing**									
			Unit=cum									
			Taking output=15cum									
			a) Material									
			Per cum basic cost (rate taken from sub-analysis 21.13)	cum	15.000	15.000	15.000	4405.60	66084.00	66084.00	66084.00	21.13
			water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			for pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5 X L1	37.5 X L1	37.5 X L1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @20km/hr and return speed @30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.055 X L1+0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073 X L1+0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146 X L1 + 0.875	707.00			721.85	PM11003
			d) Formwork @4 percent on cost of concrete i.e. cost of material , labour and machinery						2880.71	2882.89	2892.41	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		14979.68	14991.03	15040.52	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		8987.81	8994.62	9024.31	
			Cost for 15 cum=a+b+c+d+e+f						98865.86	98940.78	99267.41	
			Rate per cum= (a+b+c+d+e+f)/15						6591.06	6596.05	6617.83	
								Say	**6591.10**	**6596.10**	**6617.80**	
12.12	**Section 1200**		**Sinking of 6 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**									
			Unit=Running metre									
			Taking output= 1m									
			Diameter of well=6m									
		(A)	**Sandy Soil**									
		(i)	**Depth below bed level upto 3.0m**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate of sinking =0.50 per hour									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Sinker (skilled)	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
			Sinking helper (semi-skilled)	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	2.000	2.000	2.000	738.00	1476.00	1476.00	1476.00	PM67001
			Consumables in sinking @10 percent of (b)						147.60	147.60	147.60	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		537.32	537.32	537.32	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		322.39	322.39	322.39	
			Rate per metre = (a+b+c+d)						3546.31	3546.31	3546.31	
								Say	**3546.30**	**3546.30**	**3546.30**	
12.12 A		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking =0.33 per hour									
			a) Labour									
			Mate	day	0.150	0.150	0.150	325.00	48.75	48.75	48.75	L-12
			Sinker (skilled)	day	1.250	1.250	1.250	388.00	485.00	485.00	485.00	L-15
			Sinking helper (semi-skilled)	day	2.500	2.500	2.500	318.00	795.00	795.00	795.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	738.00	2,214.00	2,214.00	2,214.00	PM67001
			Consumables in sinking @10 percent of (b)						221.40	221.40	221.40	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		752.83	752.83	752.83	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		451.70	451.70	451.70	
			Rate per metre = (a+b+c+d)						4,968.68	4,968.68	4,968.68	
								Say	**4,968.70**	**4,968.70**	**4,968.70**	
12.12 A		**(iii)**	Beyond 10m upto 20m									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	5217.14	5217.14	5217.14	
			12m					5%	5477.99	5477.99	5477.99	
			13m					5%	5751.89	5751.89	5751.89	
			14m					5%	6039.49	6039.49	6039.49	
			15m					5%	6341.46	6341.46	6341.46	
			16m					5%	6658.53	6658.53	6658.53	
			17m					5%	6991.46	6991.46	6991.46	
			18m					5%	7341.03	7341.03	7341.03	
			19m					5%	7708.08	7708.08	7708.08	
			20m					5%	8093.49	8093.49	8093.49	
12.12 A		**(iv)**	Beyond 20m upto 30m									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	8700.50	8700.50	8700.50	
			22m					7.50%	9353.04	9353.04	9353.04	
			23m					7.50%	10054.52	10054.52	10054.52	
			24m					7.50%	10808.60	10808.60	10808.60	
			25m					7.50%	11619.25	11619.25	11619.25	
			26m					7.50%	12490.69	12490.69	12490.69	
			27m					7.50%	13427.50	13427.50	13427.50	
			28m					7.50%	14434.56	14434.56	14434.56	
			29m					7.50%	15517.15	15517.15	15517.15	
			30m					7.50%	16680.94	16680.94	16680.94	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.12 A		(v)	Beyond 30m upto 40m									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	18349.03	18349.03	18349.03	
			32m					10%	20183.93	20183.93	20183.93	
			33m					10%	22202.33	22202.33	22202.33	
			34m					10%	24422.56	24422.56	24422.56	
			35m					10%	26864.81	26864.81	26864.81	
			36m					10%	29551.30	29551.30	29551.30	
			37m					10%	32506.42	32506.42	32506.42	
			38m					10%	35757.07	35757.07	35757.07	
			39m					10%	39332.77	39332.77	39332.77	
			40m					10%	43266.05	43266.05	43266.05	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.12 B		B	**Clayey soil (6m dia. Well)**									
			Unit=running metre									
			Taking output= 1 metre									
		(i)	**Depth below bed level upto 3.0 M**									
			Rate of sinking = 0.33 m per hour.									
			a) Labour									
			Mate	day	0.150	0.150	0.150	325.00	48.75	48.75	48.75	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			b) Machinery									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	3.000	3.000	3.000	738.00	2214.00	2214.00	2214.00	PM67001
			Consumables in sinking @10 percent of (b)						221.40	221.40	221.40	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		756.33	756.33	756.33	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		453.80	453.80	453.80	
			Rate per metre = (a+b+c+d)						4991.78	4991.78	4991.78	
								Say	**4991.80**	**4991.80**	**4991.80**	
12.12B		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking = 0.17 m per hour.									
			a) Labour									
			Mate	day	0.300	0.300	0.300	325.00	97.50	97.50	97.50	L-12
			Sinker (skilled)	day	3.000	3.000	3.000	388.00	1164.00	1164.00	1164.00	L-15
			Sinking helper (semi-skilled)	day	4.500	4.500	4.500	318.00	1431.00	1431.00	1431.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	2.000	2.000	2.000	391.00	782.00	782.00	782.00	PM15001
			Consumables in sinking @10 percent of (b)						521.00	521.00	521.00	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1684.70	1684.70	1684.70	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1010.82	1010.82	1010.82	
			Rate per metre = (a+b+c+d)						11119.02	11119.02	11119.02	
								Say	**11119.00**	**11119.00**	**11119.00**	
12.12 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	11674.95	11674.95	11674.95	
			12m					5%	12258.70	12258.70	12258.70	
			13m					5%	12871.63	12871.63	12871.63	
			14m					5%	13515.21	13515.21	13515.21	
			15m					5%	14190.97	14190.97	14190.97	
			16m					5%	14900.52	14900.52	14900.52	
			17m					5%	15645.55	15645.55	15645.55	
			18m					5%	16427.83	16427.83	16427.83	
			19m					5%	17249.22	17249.22	17249.22	
			20m					5%	18111.68	18111.68	18111.68	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.12 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			21m					7.50%	19470.06	19470.06	19470.06	
			22m					7.50%	20930.31	20930.31	20930.31	
			23m					7.50%	22500.08	22500.08	22500.08	
			24m					7.50%	24187.59	24187.59	24187.59	
			25m					7.50%	26001.66	26001.66	26001.66	
			26m					7.50%	27951.78	27951.78	27951.78	
			27m					7.50%	30048.17	30048.17	30048.17	
			28m					7.50%	32301.78	32301.78	32301.78	
			29m					7.50%	34724.41	34724.41	34724.41	
			30m					7.50%	37328.74	37328.74	37328.74	
		b	Add 5 percent of cost (on a) for dewatering of the cost, if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.12 B		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	41061.62	41061.62	41061.62	
			32m					10%	45167.78	45167.78	45167.78	
			33m					10%	49684.56	49684.56	49684.56	
			34m					10%	54653.01	54653.01	54653.01	
			35m					10%	60118.31	60118.31	60118.31	
			36m					10%	66130.14	66130.14	66130.14	
			37m					10%	72743.16	72743.16	72743.16	
			38m					10%	80017.48	80017.48	80017.48	
			39m					10%	88019.22	88019.22	88019.22	
			40m					10%	96821.15	96821.15	96821.15	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement 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=1m									
			a) Labour									
			Mate	day	0.490	0.490	0.490	325.00	159.25	159.25	159.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) Machinery									
			Air Compressor 250 cfm	hour	28.274	28.274	28.274	391.00	11055.13	11055.13	11055.13	PM15001
			Pneumatic breaker	hour	56.549	56.549	56.549	206.00	11649.09	11649.09	11649.09	PM4001
			Consumables in sinking @5 percent of (b)						1135.21	1135.21	1135.21	
			Add for dewatering @ of 15 percent of (a+b), if required						4026.90	4026.90	4026.90	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		6844.42	6844.42	6844.42	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		4106.65	4106.65	4106.65	
			Rate per metre = (a+b+c+d)						45173.15	45173.15	45173.15	
								Say	**45173.20**	**45173.20**	**45173.20**	
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=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	5.655	5.655	5.655	976.21	5520.47	5520.47	5520.47	M-215
			Electric detonators	no	25.000	25.000	25.000	6.19	154.75	154.75	154.75	M-217
			Detonating fuse coil	m	78.000	78.000	78.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b) Labour									
			Mate	day	0.500	0.500	0.500	325.00	162.50	162.50	162.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	26.590	26.590	26.590	391.00	10396.69	10396.69	10396.69	PM15001
			Pneumatic breaker	hour	22.619	22.619	22.619	206.00	4659.51	4659.51	4659.51	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	14.561	14.561	14.561	206.00	2999.57	2999.57	2999.57	PM4001
			Consumables in protected blasting @ 10 percent of (c)						1805.58	1805.58	1805.58	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	#VALUE!	#VALUE!	#VALUE!	
12.12		E	**Extra over item no. 12.12 (A) or (B) irrespective of depth for sinking in Rock bouldery strata (6m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.410	0.410	0.410	325.00	133.25	133.25	133.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	47.124	47.124	47.124	391.00	18425.48	18425.48	18425.48	PM15001
			Pneumatic breaker	hour	94.248	94.248	94.248	206.00	19415.09	19415.09	19415.09	PM4001
			Consumables in in sinking @ 5 percent of (b)						1892.03	1892.03	1892.03	
			Add for dewatering @ of 15 percent of (a+b), if required						6201.65	6201.65	6201.65	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		10330.40	10330.40	10330.40	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		6198.24	6198.24	6198.24	
			Rate per metre = (a+b+c+d)						68180.64	68180.64	68180.64	
								Say	**68180.60**	**68180.60**	**68180.60**	
12.13	Section 1200		**Sinking of 7 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**									
			Unit=Running metre									
			Taking output=1m									
			Diameter of well = 7m									
		A	**Sandy Soil**									
		(i)	**Depth below bed level upto 3.0m**									
			Rate of sinking = 0.30 m per hour.									
			a) Labour									
			Mate	day	0.150	0.150	0.150	325.00	48.75	48.75	48.75	L-12
			Sinker (skilled)	day	1.250	1.250	1.250	388.00	485.00	485.00	485.00	L-15
			Sinking helper (semi-skilled)	day	2.500	2.500	2.500	318.00	795.00	795.00	795.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	3.250	3.250	3.250	738.00	2398.50	2398.50	2398.50	PM67001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Consumables in sinking @10 percent of (b)						239.85	239.85	239.85	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		793.42	793.42	793.42	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		476.05	476.05	476.05	
			Rate per metre = (a+b+c+d)						5236.57	5236.57	5236.57	
								Say	**5236.60**	**5236.60**	**5236.60**	
12.13 A		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking = 0.22 m per hour.									
			a) Labour									
			Mate	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	3.000	3.000	3.000	318.00	954.00	954.00	954.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.500	4.500	4.500	738.00	3321.00	3321.00	3321.00	PM67001
			Consumables in sinking @10 percent of (b)						332.10	332.10	332.10	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1049.52	1049.52	1049.52	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		629.71	629.71	629.71	
			Rate per metre = (a+b+c+d)						6926.83	6926.83	6926.83	
								Say	**6926.80**	**6926.80**	**6926.80**	
12.13 A		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	7273.14	7273.14	7273.14	
			12m					5%	7636.80	7636.80	7636.80	
			13m					5%	8018.64	8018.64	8018.64	
			14m					5%	8419.57	8419.57	8419.57	
			15m					5%	8840.55	8840.55	8840.55	
			16m					5%	9282.57	9282.57	9282.57	
			17m					5%	9746.70	9746.70	9746.70	
			18m					5%	10234.04	10234.04	10234.04	
			19m					5%	10745.74	10745.74	10745.74	
			20m					5%	11283.03	11283.03	11283.03	
12.13 A		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	12129.25	12129.25	12129.25	
			22m					7.50%	13038.95	13038.95	13038.95	
			23m					7.50%	14016.87	14016.87	14016.87	
			24m					7.50%	15068.13	15068.13	15068.13	
			25m					7.50%	16198.24	16198.24	16198.24	
			26m					7.50%	17413.11	17413.11	17413.11	
			27m					7.50%	18719.10	18719.10	18719.10	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			28m					7.50%	20123.03	20123.03	20123.03	
			29m					7.50%	21632.26	21632.26	21632.26	
			30m					7.50%	23254.68	23254.68	23254.68	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.13 A		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	25580.14	25580.14	25580.14	
			32m					10%	28138.16	28138.16	28138.16	
			33m					10%	30951.97	30951.97	30951.97	
			34m					10%	34047.17	34047.17	34047.17	
			35m					10%	37451.89	37451.89	37451.89	
			36m					10%	41197.08	41197.08	41197.08	
			37m					10%	45316.78	45316.78	45316.78	
			38m					10%	49848.46	49848.46	49848.46	
			39m					10%	54833.31	54833.31	54833.31	
			40m					10%	60316.64	60316.64	60316.64	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									
12.13 B		B	**Clayey Soil (7 m dia. Well)**									
			Unit= Running metre									
			Taking output= 1 cum									
		(I)	**Depth below bed level upto 3.0 M**									
			Rate of sinking = 0.22 m per hour.									
			a) Labour									
			Mate	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	3.000	3.000	3.000	318.00	954.00	954.00	954.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.500	4.500	4.500	738.00	3321.00	3321.00	3321.00	PM67001
			Consumables in sinking @10 percent of (b)						332.10	332.10	332.10	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1049.52	1049.52	1049.52	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		629.71	629.71	629.71	
			Rate per metre = (a+b+c+d)						6926.83	6926.83	6926.83	
								Say	**6926.80**	**6926.80**	**6926.80**	
12.13 B		(ii)	**Beyond 3m upto 10m depth**									
			Rate of sinking=0.17 m per hour.									
			a) Labour									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.240	0.240	0.240	325.00	78.00	78.00	78.00	L-12
			Sinker	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			Sinking helper (semi-skilled)	day	4.000	4.000	4.000	318.00	1272.00	1272.00	1272.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.250	3.250	3.250	391.00	1270.75	1270.75	1270.75	PM15001
			Consumables in sinking @ 10 percent of (b)						569.88	569.88	569.88	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1678.93	1678.93	1678.93	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1007.36	1007.36	1007.36	
			Rate per metre = (a+b+c+d)						11080.91	11080.91	11080.91	
								Say	**11080.90**	**11080.90**	**11080.90**	
12.13 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	11634.95	11634.95	11634.95	
			12m					5%	12216.69	12216.69	12216.69	
			13m					5%	12827.53	12827.53	12827.53	
			14m					5%	13468.90	13468.90	13468.90	
			15m					5%	14142.35	14142.35	14142.35	
			16m					5%	14849.47	14849.47	14849.47	
			17m					5%	15591.94	15591.94	15591.94	
			18m					5%	16371.54	16371.54	16371.54	
			19m					5%	17190.11	17190.11	17190.11	
			20m					5%	18049.62	18049.62	18049.62	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.13 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	19403.34	19403.34	19403.34	
			22m					7.50%	20858.59	20858.59	20858.59	
			23m					7.50%	22422.98	22422.98	22422.98	
			24m					7.50%	24104.71	24104.71	24104.71	
			25m					7.50%	25912.56	25912.56	25912.56	
			26m					7.50%	27856.00	27856.00	27856.00	
			27m					7.50%	29945.20	29945.20	29945.20	
			28m					7.50%	32191.09	32191.09	32191.09	
			29m					7.50%	34605.43	34605.43	34605.43	
			30m					7.50%	37200.83	37200.83	37200.83	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		b	Add 5 percent of cost (on a) for dewatering of the cost, if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.13 B		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	40920.92	40920.92	40920.92	
			32m					10%	45013.01	45013.01	45013.01	
			33m					10%	49514.31	49514.31	49514.31	
			34m					10%	54465.74	54465.74	54465.74	
			35m					10%	59912.31	59912.31	59912.31	
			36m					10%	65903.55	65903.55	65903.55	
			37m					10%	72493.90	72493.90	72493.90	
			38m					10%	79743.29	79743.29	79743.29	
			39m					10%	87717.62	87717.62	87717.62	
			40m					10%	96489.38	96489.38	96489.38	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost(on a) for Kentledge including supports, loading arranngement and Labour).									
12.13		C	**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=1m									
			a) Labour									
			Mate	day	0.570	0.570	0.570	325.00	185.25	185.25	185.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	38.485	38.485	38.485	391.00	15047.64	15047.64	15047.64	PM15001
			Pneumatic breaker	hour	76.969	76.969	76.969	206.00	15855.61	15855.61	15855.61	PM4001
			Consumables in sinking @5 percent of (b)						1545.16	1545.16	1545.16	
			Add for dewatering @ of 15 percent of (a+b), if required						5352.45	5352.45	5352.45	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		8958.92	8958.92	8958.92	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		5375.35	5375.35	5375.35	
			Rate per metre = (a+b+c+d)						59128.89	59128.89	59128.89	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**59128.90**	**59128.90**	**59128.90**	
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=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	7.697	7.697	7.697	976.21	7513.89	7513.89	7513.89	M-215
			Electric detonators	no	36.000	36.000	36.000	6.19	222.84	222.84	222.84	M-217
			Detonating fuse coil	m	112.000	112.000	112.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b)Labour									
			Mate	day	0.580	0.580	0.580	325.00	188.50	188.50	188.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	33.304	33.304	33.304	391.00	13021.86	13021.86	13021.86	PM15001
			Pneumatic breaker	hour	30.788	30.788	30.788	206.00	6342.33	6342.33	6342.33	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	19.820	19.820	19.820	206.00	4082.92	4082.92	4082.92	PM4001
			Consumables in protected blasting @ 10 percent of ©						2344.71	2344.71	2344.71	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
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=1m									
			a) Labour									
			Mate	day	0.490	0.490	0.490	325.00	159.25	159.25	159.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Air Compressor 250 cfm	hour	64.141	64.141	64.141	391.00	25079.13	25079.13	25079.13	PM15001
			Pneumatic breaker	hour	128.282	128.282	128.282	206.00	26426.09	26426.09	26426.09	PM4001
			Consumables in sinking @5 percent of (b)						2575.26	2575.26	2575.26	
			Add for dewatering @ of 15 percent of (a+b), if required						8347.05	8347.05	8347.05	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		13756.66	13756.66	13756.66	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		8253.99	8253.99	8253.99	
			Rate per metre = (a+b+c+d)						90793.93	90793.93	90793.93	
								Say	**90793.90**	**90793.90**	**90793.90**	
12.14	**Section 1200**		**Sinking of 8 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**									
			Unit=Running Meter.									
			Taking output=1m									
			Diameter of well-8m.									
		A	**Sandy Soil**									
		(i)	**Depth below bed level upto 3.0 M**									
			Rate of sinking @ 0.25 m/ hour.									
			a) Labour									
			Mate	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	3.000	3.000	3.000	318.00	954.00	954.00	954.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	4.000	4.000	738.00	2952.00	2952.00	2952.00	PM67001
			Consumables in sinking @10 percent of (b)						295.20	295.20	295.20	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		968.34	968.34	968.34	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		581.00	581.00	581.00	
			Rate per metre = (a+b+c+d)						6391.04	6391.04	6391.04	
								Say	**6391.00**	**6391.00**	**6391.00**	
12.14 A		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking = 0.20 m per hour.									
			a) Labour									
			Mate	day	0.210	0.210	0.210	325.00	68.25	68.25	68.25	L-12
			Sinker (skilled)	day	1.750	1.750	1.750	388.00	679.00	679.00	679.00	L-15
			Sinking helper (semi-skilled)	day	3.500	3.500	3.500	318.00	1113.00	1113.00	1113.00	L-14
			b) Machinery									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	5.000	5.000	738.00	3690.00	3690.00	3690.00	PM67001
			Consumables in sinking @10 percent of (b)						369.00	369.00	369.00	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1183.85	1183.85	1183.85	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		710.31	710.31	710.31	
			Rate per metre = (a+b+c+d)						7813.41	7813.41	7813.41	
								Say	**7813.40**	**7813.40**	**7813.40**	
12.14 A		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	8204.07	8204.07	8204.07	
			12m					5%	8614.27	8614.27	8614.27	
			13m					5%	9044.99	9044.99	9044.99	
			14m					5%	9497.24	9497.24	9497.24	
			15m					5%	9972.10	9972.10	9972.10	
			16m					5%	10470.70	10470.70	10470.70	
			17m					5%	10994.24	10994.24	10994.24	
			18m					5%	11543.95	11543.95	11543.95	
			19m					5%	12121.15	12121.15	12121.15	
			20m					5%	12727.21	12727.21	12727.21	
12.14 A		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	13681.75	13681.75	13681.75	
			22m					7.50%	14707.88	14707.88	14707.88	
			23m					7.50%	15810.97	15810.97	15810.97	
			24m					7.50%	16996.79	16996.79	16996.79	
			25m					7.50%	18271.55	18271.55	18271.55	
			26m					7.50%	19641.92	19641.92	19641.92	
			27m					7.50%	21115.06	21115.06	21115.06	
			28m					7.50%	22698.69	22698.69	22698.69	
			29m					7.50%	24401.09	24401.09	24401.09	
			30m					7.50%	26231.17	26231.17	26231.17	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.14 A		**(v)**	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	28854.29	28854.29	28854.29	
			32m					10%	31739.72	31739.72	31739.72	
			33m					10%	34913.69	34913.69	34913.69	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			34m					10%	38405.06	38405.06	38405.06	
			35m					10%	42245.56	42245.56	42245.56	
			36m					10%	46470.12	46470.12	46470.12	
			37m					10%	51117.13	51117.13	51117.13	
			38m					10%	56228.85	56228.85	56228.85	
			39m					10%	61851.73	61851.73	61851.73	
			40m					10%	68036.90	68036.90	68036.90	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									
12.14		B	**Clayey Soil (8 m dia. Well)**									
			Unit = Running Meter.									
			Taking output = 1 meter									
		(i)	**Depth from bed level upto 3.0 M**									
			Rate of sinking @ 0.18 m per hour.									
			a) Labour									
			Mate	day	0.220	0.220	0.220	325.00	71.50	71.50	71.50	L-12
			Sinker (skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			Sinking helper (semi-skilled)	day	3.500	3.500	3.500	318.00	1113.00	1113.00	1113.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.500	5.500	5.500	738.00	4059.00	4059.00	4059.00	PM67001
			Consumables in sinking @10 percent of (b)						405.90	405.90	405.90	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1285.08	1285.08	1285.08	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		771.05	771.05	771.05	
			Rate per metre = (a+b+c+d)						8481.53	8481.53	8481.53	
								Say	**8481.50**	**8481.50**	**8481.50**	
12.14 B		(ii)	**Beyond 3m upto 10m depth**									
			Rate of sinking @ 0.17 m/ hour.									
			a) Labour									
			Mate	day	0.280	0.280	0.280	325.00	91.00	91.00	91.00	L-12
			Sinker	day	2.500	2.500	2.500	388.00	970.00	970.00	970.00	L-15
			Sinking helper (semi-skilled)	day	4.500	4.500	4.500	318.00	1431.00	1431.00	1431.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.500	3.500	3.500	391.00	1368.50	1368.50	1368.50	PM15001
			Consumables in sinking @ 10 percent of (b)						579.65	579.65	579.65	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1773.63	1773.63	1773.63	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1064.18	1064.18	1064.18	
			Rate per metre = (a+b+c+d)						11705.96	11705.96	11705.96	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**11706.00**	**11706.00**	**11706.00**	
12.14 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	12291.30	12291.30	12291.30	
			12m					5%	12905.87	12905.87	12905.87	
			13m					5%	13551.16	13551.16	13551.16	
			14m					5%	14228.72	14228.72	14228.72	
			15m					5%	14940.15	14940.15	14940.15	
			16m					5%	15687.16	15687.16	15687.16	
			17m					5%	16471.52	16471.52	16471.52	
			18m					5%	17295.09	17295.09	17295.09	
			19m					5%	18159.85	18159.85	18159.85	
			20m					5%	19067.84	19067.84	19067.84	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.14 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	20497.93	20497.93	20497.93	
			22m					7.50%	22035.27	22035.27	22035.27	
			23m					7.50%	23687.92	23687.92	23687.92	
			24m					7.50%	25464.51	25464.51	25464.51	
			25m					7.50%	27374.35	27374.35	27374.35	
			26m					7.50%	29427.43	29427.43	29427.43	
			27m					7.50%	31634.48	31634.48	31634.48	
			28m					7.50%	34007.07	34007.07	34007.07	
			29m					7.50%	36557.60	36557.60	36557.60	
			30m					7.50%	39299.42	39299.42	39299.42	
		b	Add 5 percent of cost (on a) for dewatering of the cost, if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.14 B		**(v)**	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	43229.36	43229.36	43229.36	
			32m					10%	47552.30	47552.30	47552.30	
			33m					10%	52307.53	52307.53	52307.53	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			34m					10%	57538.28	57538.28	57538.28	
			35m					10%	63292.11	63292.11	63292.11	
			36m					10%	69621.32	69621.32	69621.32	
			37m					10%	76583.45	76583.45	76583.45	
			38m					10%	84241.80	84241.80	84241.80	
			39m					10%	92665.98	92665.98	92665.98	
			40m					10%	101932.58	101932.58	101932.58	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.14		C	**Extra over item no. 12.14 (A) or (B) irrespective of depth for sinking in soft Rock (8m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.650	0.650	0.650	325.00	211.25	211.25	211.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	50.265	50.265	50.265	391.00	19653.62	19653.62	19653.62	PM15001
			Pneumatic breaker	hour	100.531	100.531	100.531	206.00	20709.39	20709.39	20709.39	PM4001
			Consumables in sinking @5 percent of (b)						2018.15	2018.15	2018.15	
			Add for dewatering @ of 15 percent of (a+b), if required						6867.11	6867.11	6867.11	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		11376.00	11376.00	11376.00	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		6825.60	6825.60	6825.60	
			Rate per metre = (a+b+c+d)						75081.62	75081.62	75081.62	
								Say	**75081.60**	**75081.60**	**75081.60**	
12.14		D	**Extra over item no. 12.14 (A) or (B) irrespective of depth for sinking in Hard Rock (8m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	10.053	10.053	10.053	976.21	9813.84	9813.84	9813.84	M-215
			Electric detonators	no	50.000	50.000	50.000	6.19	309.50	309.50	309.50	M-217
			Detonating fuse coil	m	155.000	155.000	155.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b) Labour									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.660	0.660	0.660	325.00	214.50	214.50	214.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	41.050	41.050	41.050	391.00	16050.55	16050.55	16050.55	PM15001
			Pneumatic breaker	hour	40.212	40.212	40.212	206.00	8283.67	8283.67	8283.67	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	25.887	25.887	25.887	206.00	5332.72	5332.72	5332.72	PM4001
			Consumables in protected blasting @ 10 percent of ©						2966.69	2966.69	2966.69	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
12.14		**E**	**Extra over item no. 12.14 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (8m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.570	0.570	0.570	325.00	185.25	185.25	185.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	83.776	83.776	83.776	391.00	32756.42	32756.42	32756.42	PM15001
			Pneumatic breaker	hour	167.552	167.552	167.552	206.00	34515.71	34515.71	34515.71	PM4001
			Consumables in sinking @5 percent of (b)						3363.61	3363.61	3363.61	
			Add for dewatering @ of 15 percent of (a+b), if						10807.78	10807.78	10807.78	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		17687.45	17687.45	17687.45	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		10612.47	10612.47	10612.47	
			Rate per metre = (a+b+c+d)						116737.19	116737.19	116737.19	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**116737.20**	**116737.20**	**116737.20**	
12.15	**Section 1200**		**Sinking of 9 m external diameter well (other than pneumatic method of sinking) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**									
			Unit=Running Meter.									
			Taking output=1m									
			Diameter of well-9m.									
		A	**Sandy Soil**									
		(i)	**Depth below bed level upto 3.0 M**									
			Rate of sinking @ 0.25 m/ hour.									
			a) Labour									
			Mate	day	0.190	0.190	0.190	325.00	61.75	61.75	61.75	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	3.250	3.250	3.250	318.00	1033.50	1033.50	1033.50	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	4.000	4.000	738.00	2952.00	2952.00	2952.00	PM67001
			Consumables in sinking @10 percent of (b)						295.20	295.20	295.20	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		984.89	984.89	984.89	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		590.93	590.93	590.93	
			Rate per metre = (a+b+c+d)						6500.27	6500.27	6500.27	
								Say	**6500.30**	**6500.30**	**6500.30**	
12.15 A		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking = 0.18 m per hour.									
			a) Labour									
			Mate	day	0.230	0.230	0.230	325.00	74.75	74.75	74.75	L-12
			Sinker (skilled)	day	1.750	1.750	1.750	388.00	679.00	679.00	679.00	L-15
			Sinking helper (semi-skilled)	day	4.000	4.000	4.000	318.00	1272.00	1272.00	1272.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.500	5.500	5.500	738.00	4059.00	4059.00	4059.00	PM67001
			Consumables in sinking @10 percent of (b)						405.90	405.90	405.90	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1298.13	1298.13	1298.13	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		778.88	778.88	778.88	
			Rate per metre = (a+b+c+d)						8567.66	8567.66	8567.66	
								Say	**8567.70**	**8567.70**	**8567.70**	
12.15 A		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	8996.09	8996.09	8996.09	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			12m					5%	9445.89	9445.89	9445.89	
			13m					5%	9918.18	9918.18	9918.18	
			14m					5%	10414.09	10414.09	10414.09	
			15m					5%	10934.80	10934.80	10934.80	
			16m					5%	11481.54	11481.54	11481.54	
			17m					5%	12055.61	12055.61	12055.61	
			18m					5%	12658.40	12658.40	12658.40	
			19m					5%	13291.31	13291.31	13291.31	
			20m					5%	13955.88	13955.88	13955.88	
12.15 A		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	15002.57	15002.57	15002.57	
			22m					7.50%	16127.76	16127.76	16127.76	
			23m					7.50%	17337.35	17337.35	17337.35	
			24m					7.50%	18637.65	18637.65	18637.65	
			25m					7.50%	20035.47	20035.47	20035.47	
			26m					7.50%	21538.13	21538.13	21538.13	
			27m					7.50%	23153.49	23153.49	23153.49	
			28m					7.50%	24890.00	24890.00	24890.00	
			29m					7.50%	26756.75	26756.75	26756.75	
			30m					7.50%	28763.51	28763.51	28763.51	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.15 A		**(v)**	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	31639.86	31639.86	31639.86	
			32m					10%	34803.85	34803.85	34803.85	
			33m					10%	38284.23	38284.23	38284.23	
			34m					10%	42112.66	42112.66	42112.66	
			35m					10%	46323.92	46323.92	46323.92	
			36m					10%	50956.31	50956.31	50956.31	
			37m					10%	56051.94	56051.94	56051.94	
			38m					10%	61657.14	61657.14	61657.14	
			39m					10%	67822.85	67822.85	67822.85	
			40m					10%	74605.14	74605.14	74605.14	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.15		**B**	**Clayey Soil (9 m dia. Well)**									
			Unit = Running Meter.									
			Taking output = 1 metre									
		(i)	**Depth from bed level upto 3.0 M**									
			Rate of sinking @ 0.17 m per hour.									
			a) Labour									
			Mate	day	0.240	0.240	0.240	325.00	78.00	78.00	78.00	L-12
			Sinker (skilled)	day	2.250	2.250	2.250	388.00	873.00	873.00	873.00	L-15
			Sinking helper (semi-skilled)	day	3.750	3.750	3.750	318.00	1192.50	1192.50	1192.50	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.750	5.750	5.750	738.00	4243.50	4243.50	4243.50	PM67001
			Consumables in sinking @10 percent of (b)						424.35	424.35	424.35	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1362.27	1362.27	1362.27	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		817.36	817.36	817.36	
			Rate per metre = (a+b+c+d)						8990.98	8990.98	8990.98	
								Say	**8991.00**	**8991.00**	**8991.00**	
12.15 B		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking @ 0.15 m/ hour.									
			a) Labour									
			Mate	day	0.300	0.300	0.300	325.00	97.50	97.50	97.50	L-12
			Sinker	day	2.500	2.500	2.500	388.00	970.00	970.00	970.00	L-15
			Sinking helper (semi-skilled)	day	5.000	5.000	5.000	318.00	1590.00	1590.00	1590.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	6.500	6.500	738.00	4797.00	4797.00	4797.00	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	3.750	3.750	3.750	391.00	1466.25	1466.25	1466.25	PM15001
			Consumables in sinking @ 10 percent of (b)						626.33	626.33	626.33	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1909.42	1909.42	1909.42	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1145.65	1145.65	1145.65	
			Rate per metre = (a+b+c+d)						12602.14	12602.14	12602.14	
								Say	**12602.10**	**12602.10**	**12602.10**	
12.15 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	13232.21	13232.21	13232.21	
			12m					5%	13893.82	13893.82	13893.82	
			13m					5%	14588.51	14588.51	14588.51	
			14m					5%	15317.93	15317.93	15317.93	
			15m					5%	16083.83	16083.83	16083.83	
			16m					5%	16888.02	16888.02	16888.02	
			17m					5%	17732.42	17732.42	17732.42	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			18m					5%	18619.04	18619.04	18619.04	
			19m					5%	19549.99	19549.99	19549.99	
			20m					5%	20527.49	20527.49	20527.49	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.15 B		(iv)	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	22067.05	22067.05	22067.05	
			22m					7.50%	23722.08	23722.08	23722.08	
			23m					7.50%	25501.24	25501.24	25501.24	
			24m					7.50%	27413.83	27413.83	27413.83	
			25m					7.50%	29469.87	29469.87	29469.87	
			26m					7.50%	31680.11	31680.11	31680.11	
			27m					7.50%	34056.12	34056.12	34056.12	
			28m					7.50%	36610.33	36610.33	36610.33	
			29m					7.50%	39356.10	39356.10	39356.10	
			30m					7.50%	42307.81	42307.81	42307.81	
		b	Add 5 percent of cost (on a) for dewatering of the cost, if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.15 B		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	46538.59	46538.59	46538.59	
			32m					10%	51192.45	51192.45	51192.45	
			33m					10%	56311.70	56311.70	56311.70	
			34m					10%	61942.87	61942.87	61942.87	
			35m					10%	68137.15	68137.15	68137.15	
			36m					10%	74950.87	74950.87	74950.87	
			37m					10%	82445.95	82445.95	82445.95	
			38m					10%	90690.55	90690.55	90690.55	
			39m					10%	99759.61	99759.61	99759.61	
			40m					10%	109735.57	109735.57	109735.57	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.15		C	**Extra over item no. 12.15 A) or (B) irrespective of depth for sinking in soft Rock (9m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.730	0.730	0.730	325.00	237.25	237.25	237.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	14.000	14.000	14.000	306.00	4284.00	4284.00	4284.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	63.617	63.617	63.617	391.00	24874.25	24874.25	24874.25	PM15001
			Pneumatic breaker	hour	127.235	127.235	127.235	206.00	26210.41	26210.41	26210.41	PM4001
			Consumables in sinking @5 percent of (b)						2554.23	2554.23	2554.23	
			Add for dewatering @ of 15 percent of (a+b), if required						8571.06	8571.06	8571.06	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		14095.94	14095.94	14095.94	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		8457.56	8457.56	8457.56	
			Rate per metre = (a+b+c+d)						93033.21	93033.21	93033.21	
								Say	**93033.20**	**93033.20**	**93033.20**	
12.15		D	**Extra over item no. 12.15 (A) or (B) irrespective of depth for sinking in Hard Rock (9m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	12.723	12.723	12.723	976.21	12420.32	12420.32	12420.32	M-215
			Electric detonators	no	65.000	65.000	65.000	6.19	402.35	402.35	402.35	M-217
			Detonating fuse coil	m	202.000	202.000	202.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b) Labour									
			Mate	day	0.740	0.740	0.740	325.00	240.50	240.50	240.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	49.828	49.828	49.828	391.00	19482.75	19482.75	19482.75	PM15001
			Pneumatic breaker	hour	50.894	50.894	50.894	206.00	10484.16	10484.16	10484.16	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	32.763	32.763	32.763	206.00	6749.18	6749.18	6749.18	PM4001
			Consumables in protected blasting @ 10 percent of ©						3671.61	3671.61	3671.61	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
12.15		**E**	**Extra over item no. 12.15 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (9m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.650	0.650	0.650	325.00	211.25	211.25	211.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	106.029	106.029	106.029	391.00	41457.34	41457.34	41457.34	PM15001
			Pneumatic breaker	hour	212.058	212.058	212.058	206.00	43683.95	43683.95	43683.95	PM4001
			Consumables in sinking @5 percent of (b)						4257.06	4257.06	4257.06	
			Add for dewatering @ of 15 percent of (a+b), if						13583.86	13583.86	13583.86	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		22122.79	22122.79	22122.79	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		13273.67	13273.67	13273.67	
			Rate per metre = (a+b+c+d)						146010.42	146010.42	146010.42	
								Say	**146010.40**	**146010.40**	**146010.40**	
12.16	**Section 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 metre									
			Taking output=1m									
			Diameter of well = 10m									
		A	**Sandy Soil**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		(i)	**Depth below bed level upto 3.0m**									
			Rate of sinking = 0.20 m per hour.									
			a) Labour									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	3.500	3.500	3.500	318.00	1113.00	1113.00	1113.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	5.000	5.000	738.00	3690.00	3690.00	3690.00	PM67001
			Consumables in sinking @10 percent of (b)						369.00	369.00	369.00	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1163.80	1163.80	1163.80	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		698.28	698.28	698.28	
			Rate per metre = (a+b+c+d)						7681.08	7681.08	7681.08	
								Say	**7681.10**	**7681.10**	**7681.10**	
12.16 A		(ii)	**Beyond 3m upto 10m depth**									
			Rate of sinking = 0.17 m per hour.									
			a) Labour									
			Mate	day	0.250	0.250	0.250	325.00	81.25	81.25	81.25	L-12
			Sinker (skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			Sinking helper (semi-skilled)	day	4.250	4.250	4.250	318.00	1351.50	1351.50	1351.50	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.750	5.750	5.750	738.00	4243.50	4243.50	4243.50	PM67001
			Consumables in sinking @10 percent of (b)						424.35	424.35	424.35	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1375.32	1375.32	1375.32	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		825.19	825.19	825.19	
			Rate per metre = (a+b+c+d)						9077.11	9077.11	9077.11	
								Say	**9077.10**	**9077.10**	**9077.10**	
12.16 A		(iii)	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	9530.96	9530.96	9530.96	
			12m					5%	10007.50	10007.50	10007.50	
			13m					5%	10507.88	10507.88	10507.88	
			14m					5%	11033.27	11033.27	11033.27	
			15m					5%	11584.94	11584.94	11584.94	
			16m					5%	12164.18	12164.18	12164.18	
			17m					5%	12772.39	12772.39	12772.39	
			18m					5%	13411.01	13411.01	13411.01	
			19m					5%	14081.56	14081.56	14081.56	
			20m					5%	14785.64	14785.64	14785.64	
12.16 A		(iv)	**Beyond 20m upto 30m**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	15894.56	15894.56	15894.56	
			22m					7.50%	17086.65	17086.65	17086.65	
			23m					7.50%	18368.15	18368.15	18368.15	
			24m					7.50%	19745.77	19745.77	19745.77	
			25m					7.50%	21226.70	21226.70	21226.70	
			26m					7.50%	22818.70	22818.70	22818.70	
			27m					7.50%	24530.10	24530.10	24530.10	
			28m					7.50%	26369.86	26369.86	26369.86	
			29m					7.50%	28347.60	28347.60	28347.60	
			30m					7.50%	30473.67	30473.67	30473.67	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.16 A		**(v)**	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	33521.04	33521.04	33521.04	
			32m					10%	36873.14	36873.14	36873.14	
			33m					10%	40560.45	40560.45	40560.45	
			34m					10%	44616.50	44616.50	44616.50	
			35m					10%	49078.15	49078.15	49078.15	
			36m					10%	53985.96	53985.96	53985.96	
			37m					10%	59384.56	59384.56	59384.56	
			38m					10%	65323.02	65323.02	65323.02	
			39m					10%	71855.32	71855.32	71855.32	
			40m					10%	79040.85	79040.85	79040.85	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									
12.16 B		**B**	**Clayey Soil (10 m dia. Well)**									
			Unit= Running metre									
			Taking output= 1 cum									
		(I)	**Depth below bed level upto 3.0 M**									
			Rate of sinking = 0.18 m per hour.									
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Sinker (skilled)	day	2.500	2.500	2.500	388.00	970.00	970.00	970.00	L-15
			Sinking helper (semi-skilled)	day	5.500	5.500	5.500	318.00	1749.00	1749.00	1749.00	L-14
			b) Machinery									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Consumables in sinking @10 percent of (b)						442.80	442.80	442.80	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1538.76	1538.76	1538.76	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		923.26	923.26	923.26	
			Rate per metre = (a+b+c+d)						10155.82	10155.82	10155.82	
								Say	**10155.80**	**10155.80**	**10155.80**	
12.16 B		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking=0.15 m per hour.									
			a) Labour									
			Mate	day	0.340	0.340	0.340	325.00	110.50	110.50	110.50	L-12
			Sinker	day	3.000	3.000	3.000	388.00	1164.00	1164.00	1164.00	L-15
			Sinking helper (semi-skilled)	day	5.500	5.500	5.500	318.00	1749.00	1749.00	1749.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.000	4.000	4.000	391.00	1564.00	1564.00	1564.00	PM15001
			Consumables in sinking @ 10 percent of (b)						599.20	599.20	599.20	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1922.94	1922.94	1922.94	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1153.76	1153.76	1153.76	
			Rate per metre = (a+b+c+d)						12691.40	12691.40	12691.40	
								Say	**12691.40**	**12691.40**	**12691.40**	
12.16 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	13325.97	13325.97	13325.97	
			12m					5%	13992.27	13992.27	13992.27	
			13m					5%	14691.88	14691.88	14691.88	
			14m					5%	15426.48	15426.48	15426.48	
			15m					5%	16197.80	16197.80	16197.80	
			16m					5%	17007.69	17007.69	17007.69	
			17m					5%	17858.07	17858.07	17858.07	
			18m					5%	18750.98	18750.98	18750.98	
			19m					5%	19688.53	19688.53	19688.53	
			20m					5%	20672.95	20672.95	20672.95	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.16 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			21m					7.50%	22223.42	22223.42	22223.42	
			22m					7.50%	23890.18	23890.18	23890.18	
			23m					7.50%	25681.95	25681.95	25681.95	
			24m					7.50%	27608.09	27608.09	27608.09	
			25m					7.50%	29678.70	29678.70	29678.70	
			26m					7.50%	31904.60	31904.60	31904.60	
			27m					7.50%	34297.45	34297.45	34297.45	
			28m					7.50%	36869.75	36869.75	36869.75	
			29m					7.50%	39634.99	39634.99	39634.99	
			30m					7.50%	42607.61	42607.61	42607.61	
		b	Add 5 percent of cost for dewatering of the cost (on a), if required									
		c	Add 25 percent of cost (on a) for kentledge including supports, loading arrangement & labour)									
12.16 B		**(v)**	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	46868.37	46868.37	46868.37	
			32m					10%	51555.21	51555.21	51555.21	
			33m					10%	56710.73	56710.73	56710.73	
			34m					10%	62381.80	62381.80	62381.80	
			35m					10%	68619.98	68619.98	68619.98	
			36m					10%	75481.98	75481.98	75481.98	
			37m					10%	83030.18	83030.18	83030.18	
			38m					10%	91333.19	91333.19	91333.19	
			39m					10%	100466.51	100466.51	100466.51	
			40m					10%	110513.17	110513.17	110513.17	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.16		**C**	**Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in soft Rock (10m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.810	0.810	0.810	325.00	263.25	263.25	263.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	16.000	16.000	16.000	306.00	4896.00	4896.00	4896.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	78.540	78.540	78.540	391.00	30709.14	30709.14	30709.14	PM15001
			Pneumatic breaker	hour	157.080	157.080	157.080	206.00	32358.48	32358.48	32358.48	PM4001
			Consumables in sinking @5 percent of (b)						3153.38	3153.38	3153.38	
			Add for dewatering @ of 15 percent of (a+b), if required						10464.21	10464.21	10464.21	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		17118.59	17118.59	17118.59	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		10271.15	10271.15	10271.15	
			Rate per metre = (a+b+c+d)						112982.70	112982.70	112982.70	
								Say	**112982.70**	**112982.70**	**112982.70**	
12.16		**D**	**Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in Hard Rock (10m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	15.708	15.708	15.708	976.21	15334.31	15334.31	15334.31	M-215
			Electric detonators	no	82.000	82.000	82.000	6.19	507.58	507.58	507.58	M-217
			Detonating fuse coil	m	255.000	255.000	255.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b)Labour									
			Mate	day	0.820	0.820	0.820	325.00	266.50	266.50	266.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	14.000	14.000	14.000	306.00	4284.00	4284.00	4284.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	59.640	59.640	59.640	391.00	23319.24	23319.24	23319.24	PM15001
			Pneumatic breaker	hour	62.832	62.832	62.832	206.00	12943.39	12943.39	12943.39	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	40.448	40.448	40.448	206.00	8332.29	8332.29	8332.29	PM4001
			Consumables in protected blasting @ 10 percent of ©						4459.49	4459.49	4459.49	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.16		**E**	**Extra over item no. 12.16 (A) or (B) irrespective of depth for sinking in Rock bouldery strata (10m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.730	0.730	0.730	325.00	237.25	237.25	237.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	14.000	14.000	14.000	306.00	4284.00	4284.00	4284.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	130.900	130.900	130.900	391.00	51181.90	51181.90	51181.90	PM15001
			Pneumatic breaker	hour	261.799	261.799	261.799	206.00	53930.59	53930.59	53930.59	PM4001
			Consumables in sinking @5 percent of (b)						5255.62	5255.62	5255.62	
			Add for dewatering @ of 15 percent of (a+b), if required						16675.24	16675.24	16675.24	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		27062.62	27062.62	27062.62	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		16237.57	16237.57	16237.57	
			Rate per metre = (a+b+c+d)						178613.30	178613.30	178613.30	
									178613.30	**178613.30**	**178613.30**	
12.17	**Section 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=0.5m									
			Diameter of well-11m.									
		A	**Sandy Soil**									
		(i)	**Depth from bed level upto 3.0 M**									
			Rate of sinking @ 0.15 m/ hour.									
			a) Labour									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	3.300	3.300	3.300	318.00	1049.40	1049.40	1049.40	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Consumables in sinking @10 percent of (b)						442.80	442.80	442.80	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1312.92	1312.92	1312.92	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		787.75	787.75	787.75	
			Cost for 0.50m = a+b+c+d						8665.27	8665.27	8665.27	
			Rate per metre = (a+b+c+d)/0.5						17330.54	17330.54	17330.54	
								Say	**17330.50**	**17330.50**	**17330.50**	
12.17 A		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking = 0.13 m per hour.									
			a) Labour									
			Mate	day	0.260	0.260	0.260	325.00	84.50	84.50	84.50	L-12
			Sinker (skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			Sinking helper (semi-skilled)	day	4.500	4.500	4.500	318.00	1431.00	1431.00	1431.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	4.000	4.000	4.000	738.00	2952.00	2952.00	2952.00	PM67001
			Consumables in sinking @10 percent of (b)						295.20	295.20	295.20	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1107.74	1107.74	1107.74	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		664.64	664.64	664.64	
			Cost for 0.50m = a+b+c+d						7311.08	7311.08	7311.08	
			Rate per metre = (a+b+c+d)/0.5						14622.17	14622.17	14622.17	
								Say	**14622.20**	**14622.20**	**14622.20**	
12.17 A		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	15353.31	15353.31	15353.31	
			12m					5%	16120.98	16120.98	16120.98	
			13m					5%	16927.02	16927.02	16927.02	
			14m					5%	17773.38	17773.38	17773.38	
			15m					5%	18662.04	18662.04	18662.04	
			16m					5%	19595.15	19595.15	19595.15	
			17m					5%	20574.90	20574.90	20574.90	
			18m					5%	21603.65	21603.65	21603.65	
			19m					5%	22683.83	22683.83	22683.83	
			20m					5%	23818.02	23818.02	23818.02	
12.17 A		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	25604.37	25604.37	25604.37	
			22m					7.50%	27524.70	27524.70	27524.70	
			23m					7.50%	29589.06	29589.06	29589.06	
			24m					7.50%	31808.23	31808.23	31808.23	
			25m					7.50%	34193.85	34193.85	34193.85	
			26m					7.50%	36758.39	36758.39	36758.39	
			27m					7.50%	39515.27	39515.27	39515.27	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			28m					7.50%	42478.92	42478.92	42478.92	
			29m					7.50%	45664.83	45664.83	45664.83	
			30m					7.50%	49089.70	49089.70	49089.70	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.17 A		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	53998.67	53998.67	53998.67	
			32m					10%	59398.53	59398.53	59398.53	
			33m					10%	65338.39	65338.39	65338.39	
			34m					10%	71872.23	71872.23	71872.23	
			35m					10%	79059.45	79059.45	79059.45	
			36m					10%	86965.39	86965.39	86965.39	
			37m					10%	95661.93	95661.93	95661.93	
			38m					10%	105228.13	105228.13	105228.13	
			39m					10%	115750.94	115750.94	115750.94	
			40m					10%	127326.03	127326.03	127326.03	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									
12.17		B	**Clayey Soil (11 m dia. Well)**									
			Unit = Running Meter.									
			Taking output = 0.5 meter									
		(i)	**Depth from bed level upto 3.0 M**									
			Rate of sinking @ 0.10 m per hour.									
			a) Labour									
			Mate	day	0.260	0.260	0.260	325.00	84.50	84.50	84.50	L-12
			Sinker (skilled)	day	2.500	2.500	2.500	388.00	970.00	970.00	970.00	L-15
			Sinking helper (semi-skilled)	day	4.000	4.000	4.000	318.00	1272.00	1272.00	1272.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.000	5.000	5.000	738.00	3690.00	3690.00	3690.00	PM67001
			Consumables in sinking @10 percent of (b)						369.00	369.00	369.00	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1277.10	1277.10	1277.10	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		766.26	766.26	766.26	
			Cost for 0.5m= a+b+c+d						8428.86	8428.86	8428.86	
			Rate per metre = (a+b+c+d)/0.5						16857.72	16857.72	16857.72	
								Say	**16857.70**	**16857.70**	**16857.70**	
12.17 B		(ii)	**Beyond 3m upto 10m depth**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate of sinking @ 0.08 m/ hour.									
			a) Labour									
			Mate	day	0.370	0.370	0.370	325.00	120.25	120.25	120.25	L-12
			Sinker	day	3.500	3.500	3.500	388.00	1358.00	1358.00	1358.00	L-15
			Sinking helper (semi-skilled)	day	5.750	5.750	5.750	318.00	1828.50	1828.50	1828.50	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.250	4.250	4.250	391.00	1661.75	1661.75	1661.75	PM15001
			Consumables in sinking @ 10 percent of (b)						608.98	608.98	608.98	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2001.10	2001.10	2001.10	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1200.66	1200.66	1200.66	
			Cost for 0.5m= a+b+c+d						13207.23	13207.23	13207.23	
			Rate per metre = (a+b+c+d)/0.5						26414.45	26414.45	26414.45	
								Say	**26414.50**	**26414.50**	**26414.50**	
12.17 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	27735.23	27735.23	27735.23	
			12m					5%	29121.99	29121.99	29121.99	
			13m					5%	30578.09	30578.09	30578.09	
			14m					5%	32106.99	32106.99	32106.99	
			15m					5%	33712.34	33712.34	33712.34	
			16m					5%	35397.96	35397.96	35397.96	
			17m					5%	37167.85	37167.85	37167.85	
			18m					5%	39026.25	39026.25	39026.25	
			19m					5%	40977.56	40977.56	40977.56	
			20m					5%	43026.44	43026.44	43026.44	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.17 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	46253.42	46253.42	46253.42	
			22m					7.50%	49722.43	49722.43	49722.43	
			23m					7.50%	53451.61	53451.61	53451.61	
			24m					7.50%	57460.48	57460.48	57460.48	
			25m					7.50%	61770.01	61770.01	61770.01	
			26m					7.50%	66402.77	66402.77	66402.77	
			27m					7.50%	71382.97	71382.97	71382.97	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			28m					7.50%	76736.70	76736.70	76736.70	
			29m					7.50%	82491.95	82491.95	82491.95	
			30m					7.50%	88678.84	88678.84	88678.84	
		b	Add 5 percent of cost (on a) for dewatering of the cost, if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.17 B		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	97546.73	97546.73	97546.73	
			32m					10%	107301.40	107301.40	107301.40	
			33m					10%	118031.54	118031.54	118031.54	
			34m					10%	129834.70	129834.70	129834.70	
			35m					10%	142818.17	142818.17	142818.17	
			36m					10%	157099.98	157099.98	157099.98	
			37m					10%	172809.98	172809.98	172809.98	
			38m					10%	190090.98	190090.98	190090.98	
			39m					10%	209100.08	209100.08	209100.08	
			40m					10%	230010.09	230010.09	230010.09	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.17		C	**Extra over item no. 12.17 (A) or (B) irrespective of depth for sinking in soft Rock 11m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.890	0.890	0.890	325.00	289.25	289.25	289.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	18.000	18.000	18.000	306.00	5508.00	5508.00	5508.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	95.033	95.033	95.033	391.00	37157.90	37157.90	37157.90	PM15001
			Pneumatic breaker	hour	190.066	190.066	190.066	206.00	39153.60	39153.60	39153.60	PM4001
			Consumables in sinking @5 percent of (b)						3815.57	3815.57	3815.57	
			Add for dewatering @ of 15 percent of (a+b), if required						12546.49	12546.49	12546.49	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		20443.86	20443.86	20443.86	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		12266.32	12266.32	12266.32	
			Rate per metre = (a+b+c+d)						134929.49	134929.49	134929.49	
								Say	**134929.50**	**134929.50**	**134929.50**	
12.17		**D**	**Extra over item no. 12.17 (A) or (B) irrespective of depth for sinking in Hard Rock (11m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	19.007	19.007	19.007	976.21	18554.82	18554.82	18554.82	M-215
			Electric detonators	no	101.000	101.000	101.000	6.19	625.19	625.19	625.19	M-217
			Detonating fuse coil	m	314.000	314.000	314.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b) Labour									
			Mate	day	0.900	0.900	0.900	325.00	292.50	292.50	292.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	16.000	16.000	16.000	306.00	4896.00	4896.00	4896.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	70.484	70.484	70.484	391.00	27559.24	27559.24	27559.24	PM15001
			Pneumatic breaker	hour	76.027	76.027	76.027	206.00	15661.56	15661.56	15661.56	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	48.942	48.942	48.942	206.00	10082.05	10082.05	10082.05	PM4001
			Consumables in protected blasting @ 10 percent of ©						5330.29	5330.29	5330.29	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
12.17		**E**	**Extra over item no. 12.17 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (11m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.810	0.810	0.810	325.00	263.25	263.25	263.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	16.000	16.000	16.000	306.00	4896.00	4896.00	4896.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	158.389	158.389	158.389	391.00	61930.10	61930.10	61930.10	PM15001
			Pneumatic breaker	hour	316.777	316.777	316.777	206.00	65256.06	65256.06	65256.06	PM4001
			Consumables in sinking @5 percent of (b)						6359.31	6359.31	6359.31	
			Add for dewatering @ of 15 percent of (a+b), if						20081.99	20081.99	20081.99	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		32507.04	32507.04	32507.04	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		19504.22	19504.22	19504.22	
			Rate per metre = (a+b+c+d)						214546.47	214546.47	214546.47	
								Say	**214546.50**	**214546.50**	**214546.50**	
12.18	**Section 1200**		**Sinking of 12m 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=0.25m									
			Diameter of well-12m.									
		A	**Sandy Soil**									
		(i)	**Depth below bed level upto 3.0 M**									
			Rate of sinking @ 0.05 m/ hour.									
			a) Labour									
			Mate	day	0.230	0.230	0.230	325.00	74.75	74.75	74.75	L-12
			Sinker (skilled)	day	1.750	1.750	1.750	388.00	679.00	679.00	679.00	L-15
			Sinking helper (semi-skilled)	day	4.000	4.000	4.000	318.00	1272.00	1272.00	1272.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.000	6.000	6.000	738.00	4428.00	4428.00	4428.00	PM67001
			Consumables in sinking @10 percent of (b)						442.80	442.80	442.80	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1379.31	1379.31	1379.31	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		827.59	827.59	827.59	
			Cost for 0.25m= a+b+c+d						9103.45	9103.45	9103.45	
			Rate per metre = (a+b+c+d)/0.25						36413.78	36413.78	36413.78	
								Say	**36413.80**	**36413.80**	**36413.80**	
12.18 A		**(ii)**	**Beyond 3m upto 10m depth**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate of sinking = 0.038 m per hour.									
			a) Labour									
			Mate	day	0.290	0.290	0.290	325.00	94.25	94.25	94.25	L-12
			Sinker (skilled)	day	2.500	2.500	2.500	388.00	970.00	970.00	970.00	L-15
			Sinking helper (semi-skilled)	day	4.750	4.750	4.750	318.00	1510.50	1510.50	1510.50	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.500	6.500	6.500	738.00	4797.00	4797.00	4797.00	PM67001
			Consumables in sinking @10 percent of (b)						479.70	479.70	479.70	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1570.29	1570.29	1570.29	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		942.17	942.17	942.17	
			Cost for 0.25m= a+b+c+d						10363.91	10363.91	10363.91	
			Rate per metre = (a+b+c+d)/0.25						41455.66	41455.66	41455.66	
								Say	**41455.70**	**41455.70**	**41455.70**	
12.18 A		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	43528.49	43528.49	43528.49	
			12m					5%	45704.91	45704.91	45704.91	
			13m					5%	47990.15	47990.15	47990.15	
			14m					5%	50389.66	50389.66	50389.66	
			15m					5%	52909.15	52909.15	52909.15	
			16m					5%	55554.60	55554.60	55554.60	
			17m					5%	58332.33	58332.33	58332.33	
			18m					5%	61248.95	61248.95	61248.95	
			19m					5%	64311.40	64311.40	64311.40	
			20m					5%	67526.97	67526.97	67526.97	
12.18 A		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	72591.49	72591.49	72591.49	
			22m					7.50%	78035.85	78035.85	78035.85	
			23m					7.50%	83888.54	83888.54	83888.54	
			24m					7.50%	90180.18	90180.18	90180.18	
			25m					7.50%	96943.69	96943.69	96943.69	
			26m					7.50%	104214.47	104214.47	104214.47	
			27m					7.50%	112030.56	112030.56	112030.56	
			28m					7.50%	120432.85	120432.85	120432.85	
			29m					7.50%	129465.31	129465.31	129465.31	
			30m					7.50%	139175.21	139175.21	139175.21	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.18 A		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	153092.73	153092.73	153092.73	
			32m					10%	168402.00	168402.00	168402.00	
			33m					10%	185242.20	185242.20	185242.20	
			34m					10%	203766.43	203766.43	203766.43	
			35m					10%	224143.07	224143.07	224143.07	
			36m					10%	246557.37	246557.37	246557.37	
			37m					10%	271213.11	271213.11	271213.11	
			38m					10%	298334.42	298334.42	298334.42	
			39m					10%	328167.87	328167.87	328167.87	
			40m					10%	360984.65	360984.65	360984.65	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									
12.18		B	**Clayey Soil (12 m dia. Well)**									
			Unit = Running Meter.									
			Taking output = 0.25metre									
		(i)	**Depth from bed level upto 3.0 M**									
			Rate of sinking @ 0.04 m per hour.									
			a) Labour									
			Mate	day	0.300	0.300	0.300	325.00	97.50	97.50	97.50	L-12
			Sinker (skilled)	day	3.000	3.000	3.000	388.00	1164.00	1164.00	1164.00	L-15
			Sinking helper (semi-skilled)	day	4.500	4.500	4.500	318.00	1431.00	1431.00	1431.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.250	6.250	6.250	738.00	4612.50	4612.50	4612.50	PM67001
			Consumables in sinking @10 percent of (b)						461.25	461.25	461.25	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1553.25	1553.25	1553.25	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		931.95	931.95	931.95	
			Cost for 0.25m=a+b+c+d						10251.45	10251.45	10251.45	
			Rate per metre = (a+b+c+d)/0.25						41005.80	41005.80	41005.80	
								Say	**41005.80**	**41005.80**	**41005.80**	
12.18 B		(ii)	**Beyond 3m upto 10m depth**									
			Rate of sinking @ 0.03 m/ hour.									
			a) Labour									
			Mate	day	0.390	0.390	0.390	325.00	126.75	126.75	126.75	L-12
			Sinker	day	3.750	3.750	3.750	388.00	1455.00	1455.00	1455.00	L-15

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Sinking helper (semi-skilled)	day	6.000	6.000	6.000	318.00	1908.00	1908.00	1908.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	8.330	8.330	8.330	738.00	6147.54	6147.54	6147.54	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.500	4.500	4.500	391.00	1759.50	1759.50	1759.50	PM15001
			Consumables in sinking @ 10 percent of (b)						790.70	790.70	790.70	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2437.50	2437.50	2437.50	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1462.50	1462.50	1462.50	
			Cost for 0.25m=a+b+c+d						16087.49	16087.49	16087.49	
			Rate per metre = (a+b+c+d)/0.25						64349.97	64349.97	64349.97	
								Say	**64350.00**	**64350.00**	**64350.00**	
12.18 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	67567.50	67567.50	67567.50	
			12m					5%	70945.88	70945.88	70945.88	
			13m					5%	74493.17	74493.17	74493.17	
			14m					5%	78217.83	78217.83	78217.83	
			15m					5%	82128.72	82128.72	82128.72	
			16m					5%	86235.15	86235.15	86235.15	
			17m					5%	90546.91	90546.91	90546.91	
			18m					5%	95074.26	95074.26	95074.26	
			19m					5%	99827.97	99827.97	99827.97	
			20m					5%	104819.37	104819.37	104819.37	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.18 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	112680.82	112680.82	112680.82	
			22m					7.50%	121131.88	121131.88	121131.88	
			23m					7.50%	130216.77	130216.77	130216.77	
			24m					7.50%	139983.03	139983.03	139983.03	
			25m					7.50%	150481.76	150481.76	150481.76	
			26m					7.50%	161767.89	161767.89	161767.89	
			27m					7.50%	173900.48	173900.48	173900.48	
			28m					7.50%	186943.02	186943.02	186943.02	
			29m					7.50%	200963.75	200963.75	200963.75	
			30m					7.50%	216036.03	216036.03	216036.03	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		b	Add 5 percent of cost for dewatering of the cost (on a), if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.18 B		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	237639.63	237639.63	237639.63	
			32m					10%	261403.59	261403.59	261403.59	
			33m					10%	287543.95	287543.95	287543.95	
			34m					10%	316298.35	316298.35	316298.35	
			35m					10%	347928.18	347928.18	347928.18	
			36m					10%	382721.00	382721.00	382721.00	
			37m					10%	420993.10	420993.10	420993.10	
			38m					10%	463092.41	463092.41	463092.41	
			39m					10%	509401.65	509401.65	509401.65	
			40m					10%	560341.82	560341.82	560341.82	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.18		C	**Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in soft Rock (12m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.970	0.970	0.970	325.00	315.25	315.25	315.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	20.000	20.000	20.000	306.00	6120.00	6120.00	6120.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	113.097	113.097	113.097	391.00	44220.93	44220.93	44220.93	PM15001
			Pneumatic breaker	hour	226.195	226.195	226.195	206.00	46596.17	46596.17	46596.17	PM4001
			Consumables in sinking @5 percent of (b)						4540.85	4540.85	4540.85	
			Add for dewatering @ of 15 percent of (a+b), if required						14818.03	14818.03	14818.03	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		24071.95	24071.95	24071.95	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		14443.17	14443.17	14443.17	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate per metre = (a+b+c+d)						158874.84	158874.84	158874.84	
								Say	**158874.80**	**158874.80**	**158874.80**	
12.18		**D**	**Extra over item no. 12.18 (A) or (B) irrespective of depth for sinking in Hard Rock (12m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	22.619	22.619	22.619	976.21	22080.89	22080.89	22080.89	M-215
			Electric detonators	no	122.000	122.000	122.000	6.19	755.18	755.18	755.18	M-217
			Detonating fuse coil	m	379.000	379.000	379.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b) Labour									
			Mate	day	0.980	0.980	0.980	325.00	318.50	318.50	318.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	18.000	18.000	18.000	306.00	5508.00	5508.00	5508.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	82.361	82.361	82.361	391.00	32203.15	32203.15	32203.15	PM15001
			Pneumatic breaker	hour	90.478	90.478	90.478	206.00	18638.47	18638.47	18638.47	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	58.245	58.245	58.245	206.00	11998.47	11998.47	11998.47	PM4001
			Consumables in protected blasting @ 10 percent of ©						6284.01	6284.01	6284.01	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
12.18		**E**	**Extra over item no. 12.18 (A) & (B) irrespective of depth for sinking in Rock bouldery strata (12m dia well)**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.890	0.890	0.890	325.00	289.25	289.25	289.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	18.000	18.000	18.000	306.00	5508.00	5508.00	5508.00	L-13

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) Machinery									
			Air Compressor 250 cfm	hour	188.496	188.496	188.496	391.00	73701.94	73701.94	73701.94	PM15001
			Pneumatic breaker	hour	376.991	376.991	376.991	206.00	77660.15	77660.15	77660.15	PM4001
			Consumables in sinking @5 percent of (b)						7568.10	7568.10	7568.10	
			Add for dewatering @ of 15 percent of (a+b), if						23804.07	23804.07	23804.07	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		38456.00	38456.00	38456.00	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		23073.60	23073.60	23073.60	
			Rate per metre = (a+b+c+d)						253809.61	253809.61	253809.61	
								Say	**253809.60**	**253809.60**	**253809.60**	
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 shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level.**									
			Unit=Running Meter.									
			Taking output=1m									
			Dimensions of well-12m.									
			Overall length=12m									
			Overall width=6m									
		A	**Sandy Soil**									
		(i)	**Depth from bed level upto 3.0 M**									
			Rate of sinking @ 0.18 m/ hour.									
			a) Labour									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Sinker (skilled)	day	1.250	1.250	1.250	388.00	485.00	485.00	485.00	L-15
			Sinking helper (semi-skilled)	day	3.750	3.750	3.750	318.00	1192.50	1192.50	1192.50	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.500	5.500	5.500	738.00	4059.00	4059.00	4059.00	PM67001
			Consumables in sinking @10 percent of (b)						405.90	405.90	405.90	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1241.48	1241.48	1241.48	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		744.89	744.89	744.89	
			Rate per metre = (a+b+c+d)						8193.77	8193.77	8193.77	
								Say	**8193.80**	**8193.80**	**8193.80**	
12.19 A		**(ii)**	**Beyond 3m upto 10m depth**									
			Rate of sinking @ 0.17 m/hour									
			a) Labour									
			Mate	day	0.220	0.220	0.220	325.00	71.50	71.50	71.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Sinking helper (semi-skilled)	day	4.000	4.000	4.000	318.00	1272.00	1272.00	1272.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	5.880	5.880	5.880	738.00	4339.44	4339.44	4339.44	PM67001
			Consumables in sinking @10 percent of (b)						433.94	433.94	433.94	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1339.78	1339.78	1339.78	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		803.87	803.87	803.87	
			Rate per metre = (a+b+c+d)						8842.53	8842.53	8842.53	
								Say	**8842.50**	**8842.50**	**8842.50**	
12.19 A		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5.00%	9284.63	9284.63	9284.63	
			12m					5.00%	9748.86	9748.86	9748.86	
			13m					5.00%	10236.30	10236.30	10236.30	
			14m					5.00%	10748.11	10748.11	10748.11	
			15m					5.00%	11285.52	11285.52	11285.52	
			16m					5.00%	11849.80	11849.80	11849.80	
			17m					5.00%	12442.29	12442.29	12442.29	
			18m					5.00%	13064.40	13064.40	13064.40	
			19m					5.00%	13717.62	13717.62	13717.62	
			20m					5.00%	14403.50	14403.50	14403.50	
12.19 A		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.50%	15483.76	15483.76	15483.76	
			22m					7.50%	16645.05	16645.05	16645.05	
			23m					7.50%	17893.42	17893.42	17893.42	
			24m					7.50%	19235.43	19235.43	19235.43	
			25m					7.50%	20678.09	20678.09	20678.09	
			26m					7.50%	22228.94	22228.94	22228.94	
			27m					7.50%	23896.12	23896.12	23896.12	
			28m					7.50%	25688.32	25688.32	25688.32	
			29m					7.50%	27614.95	27614.95	27614.95	
			30m					7.50%	29686.07	29686.07	29686.07	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour.									
12.19 A		**(v)**	**Beyond 30m upto 40m**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	32654.68	32654.68	32654.68	
			32m					10%	35920.14	35920.14	35920.14	
			33m					10%	39512.16	39512.16	39512.16	
			34m					10%	43463.37	43463.37	43463.37	
			35m					10%	47809.71	47809.71	47809.71	
			36m					10%	52590.68	52590.68	52590.68	
			37m					10%	57849.75	57849.75	57849.75	
			38m					10%	63634.73	63634.73	63634.73	
			39m					10%	69998.20	69998.20	69998.20	
			40m					10%	76998.02	76998.02	76998.02	
		b	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour etc.									
12.19		B	**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 0.16m/ hour.									
			a) Labour									
			Mate	day	0.260	0.260	0.260	325.00	84.50	84.50	84.50	L-12
			Sinker (skilled)	day	2.500	2.500	2.500	388.00	970.00	970.00	970.00	L-15
			Sinking helper (semi-skilled)	day	4.000	4.000	4.000	318.00	1272.00	1272.00	1272.00	L-14
			b) Machinery									
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.250	6.250	6.250	738.00	4612.50	4612.50	4612.50	PM67001
			Consumables in sinking @10 percent of (b)						461.25	461.25	461.25	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1480.05	1480.05	1480.05	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		888.03	888.03	888.03	
			Rate per metre = (a+b+c+d)						9768.33	9768.33	9768.33	
								Say	**9768.30**	**9768.30**	**9768.30**	
12.19 B		(ii)	**Beyond 3m upto 10m depth** Rate of sinking @ 0.15 m/ hour.									
			a) Labour									
			Mate	day	0.370	0.370	0.370	325.00	120.25	120.25	120.25	L-12
			Sinker	day	3.250	3.250	3.250	388.00	1261.00	1261.00	1261.00	L-15
			Sinking helper (semi-skilled)	day	6.000	6.000	6.000	318.00	1908.00	1908.00	1908.00	L-14
			b) Machinery									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Hire & running charges of crane with grab bucket of 0.75 cum capacity and accessories.	hour	6.670	6.670	6.670	738.00	4922.46	4922.46	4922.46	PM67001
			Air compressor with pneumatic chisel attachment for cutting hard clay.	hour	4.500	4.500	4.500	391.00	1759.50	1759.50	1759.50	PM15001
			Consumables in sinking @ 10 percent of (b)						668.20	668.20	668.20	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2127.88	2127.88	2127.88	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1276.73	1276.73	1276.73	
			Rate per metre = (a+b+c+d)						14044.02	14044.02	14044.02	
								Say	**14044.00**	**14044.00**	**14044.00**	
12.19 B		**(iii)**	**Beyond 10m upto 20m**									
		a	Add 5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			11m					5%	14746.20	14746.20	14746.20	
			12m					5%	15483.51	15483.51	15483.51	
			13m					5%	16257.69	16257.69	16257.69	
			14m					5%	17070.57	17070.57	17070.57	
			15m					5%	17924.10	17924.10	17924.10	
			16m					5%	18820.30	18820.30	18820.30	
			17m					5%	19761.32	19761.32	19761.32	
			18m					5%	20749.38	20749.38	20749.38	
			19m					5%	21786.85	21786.85	21786.85	
			20m					5%	22876.20	22876.20	22876.20	
		b	Add for dewatering @ 5 percent of cost (on a), if required.									
12.19 B		**(iv)**	**Beyond 20m upto 30m**									
		a	Add 7.5 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			21m					7.5%	24591.91	24591.91	24591.91	
			22m					7.5%	26436.30	26436.30	26436.30	
			23m					7.5%	28419.03	28419.03	28419.03	
			24m					7.5%	30550.45	30550.45	30550.45	
			25m					7.5%	32841.74	32841.74	32841.74	
			26m					7.5%	35304.87	35304.87	35304.87	
			27m					7.5%	37952.73	37952.73	37952.73	
			28m					7.5%	40799.19	40799.19	40799.19	
			29m					7.5%	43859.13	43859.13	43859.13	
			30m					7.5%	47148.56	47148.56	47148.56	
		b	Add 5 percent of cost (on a) for dewatering of the cost, if required									
		c	Add 25 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.19 B		(v)	**Beyond 30m upto 40m**									
		a	Add 10 percent for every additional meter depth of sinking over the rate of sinking for the previous meter									
			31m					10%	51863.42	51863.42	51863.42	
			32m					10%	57049.76	57049.76	57049.76	
			33m					10%	62754.74	62754.74	62754.74	
			34m					10%	69030.21	69030.21	69030.21	
			35m					10%	75933.23	75933.23	75933.23	
			36m					10%	83526.55	83526.55	83526.55	
			37m					10%	91879.21	91879.21	91879.21	
			38m					10%	101067.13	101067.13	101067.13	
			39m					10%	111173.84	111173.84	111173.84	
			40m					10%	122291.23	122291.23	122291.23	
		b	Add 5 percent of cost (on a) for dewatering, if required									
		c	Add 20 percent of cost (on a) for Kentledge including supports, loading arranngement and Labour).									
12.19		C	**Extra over item no. 12.19 (A) or (B) irrespective of depth for sinking in soft Rock**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.730	0.730	0.730	325.00	237.25	237.25	237.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	14.000	14.000	14.000	306.00	4284.00	4284.00	4284.00	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	64.274	64.274	64.274	391.00	25131.13	25131.13	25131.13	PM15001
			Pneumatic breaker	hour	128.549	128.549	128.549	206.00	26481.09	26481.09	26481.09	PM4001
			Consumables in sinking @5 percent of (b)						2580.61	2580.61	2580.61	
			Add for dewatering @ of 15 percent of (a+b), if required						8650.20	8650.20	8650.20	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		14222.56	14222.56	14222.56	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		8533.53	8533.53	8533.53	
			Rate per metre = (a+b+c+d)						93868.88	93868.88	93868.88	
								Say	**93868.90**	**93868.90**	**93868.90**	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.19		D	**Extra over item no. 12.19 (A) or (B) irrespective of depth for sinking in Hard Rock**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Material									
			small dia Explosive at 0.20 kg/cum	kg	12.855	12.855	12.855	976.21	12549.18	12549.18	12549.18	M-215
			Electric detonators	no	72.000	72.000	72.000	6.19	445.68	445.68	445.68	M-217
			Detonating fuse coil	m	224.000	224.000	224.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			b) Labour									
			Mate	day	0.740	0.740	0.740	325.00	240.50	240.50	240.50	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			c) Machinery									
			Air Compressor 250 cfm	hour	50.260	50.260	50.260	391.00	19651.66	19651.66	19651.66	PM15001
			Pneumatic breaker	hour	51.419	51.419	51.419	206.00	10592.31	10592.31	10592.31	PM4001
			Pneumatic breaker for drilling holes @ 4.5 m per hour)	hour	33.101	33.101	33.101	206.00	6818.81	6818.81	6818.81	PM4001
			Consumables in protected blasting @ 10 percent of ©						3706.28	3706.28	3706.28	
			Add for dewatering @ of 15 percent of (a+b+c), if required						#VALUE!	#VALUE!	#VALUE!	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per metre = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
12.19		E	**Extra over item no. 12.19 (A) & (B) irrespective of depth for sinking in Rock bouldery strata**									
			Unit=Running Meter.									
			Taking output=1m									
			a) Labour									
			Mate	day	0.650	0.650	0.650	325.00	211.25	211.25	211.25	L-12
			Sinker (skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Sinking helper (semi-skilled)	day	2.250	2.250	2.250	318.00	715.50	715.50	715.50	L-14
			Diver	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-07
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			b) Machinery									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Air Compressor 250 cfm	hour	107.124	107.124	107.124	391.00	41885.48	41885.48	41885.48	PM15001
			Pneumatic breaker	hour	214.248	214.248	214.248	206.00	44135.09	44135.09	44135.09	PM4001
			Consumables in sinking @5 percent of (b)						4301.03	4301.03	4301.03	
			Add for dewatering @ of 15 percent of (a+b), if required						13715.75	13715.75	13715.75	
			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	738.00	2214.00	2214.00	2214.00	PM67001
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		22333.82	22333.82	22333.82	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		13400.29	13400.29	13400.29	
			Rate per metre = (a+b+c+d)						147403.21	147403.21	147403.21	
								Say	**147403.20**	**147403.20**	**147403.20**	
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 (H) Case- 1	cum	8.000	8.000	8.000	4213.14 L 4216.93 M 4233.46 S	33705.12	33735.44	33867.67	12.08 H Case-1
			HYSD bar reinforcement in corbel	tonne	0.480	0.480	0.480	54810.00	26308.80	26308.80	26308.80	M-083
			Blasting material									
			Explosives	kg	1.500	1.500	1.500	976.21	1464.32	1464.32	1464.32	M-215
			Electric detonators	each	6.000	6.000	6.000	6.19	37.14	37.14	37.14	M-217
			b) Labour									
			Mate	day	1.880	1.880	1.880	325.00	611.00	611.00	611.00	L-12

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Driller	day	1.000	1.000	1.000	318.00	318.00	318.00	318.00	L-06
			Blaster	day	0.500	0.500	0.500	508.00	254.00	254.00	254.00	L-03
			Mazdoor (for cutting, blasting, cleaning, removal of Material etc.)	day	30.000	30.000	30.000	306.00	9180.00	9180.00	9180.00	L-13
			Mazdoor (Skilled) (for fixation and removal of adopter for air lock, carrying out mechanical and electrical operations and repairs and other skilled jobs.)	day	10.000	10.000	10.000	388.00	3880.00	3880.00	3880.00	L-15
			Diver	day	4.000	4.000	4.000	474.00	1896.00	1896.00	1896.00	L-07
			Medical Officer	day	0.500	0.500	0.500	474.00	237.00	237.00	237.00	L-16
			Para medical personnel	day	1.000	1.000	1.000	474.00	474.00	474.00	474.00	L-19
			c) Machinery									
			(i) Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking.	hour	6.000	6.000	6.000	9004.00	54024.00	54024.00	54024.00	PM69001
			Induction and deinduction	L.S					0.00	0.00	0.00	
			Erection at site and commissioning	L.S					0.00	0.00	0.00	
			Usage of plant and equipment for pneumatic method of well sinking	hour	6.000	6.000	6.000	5333.00	31998.00	31998.00	31998.00	PM39001
			Air compressor 250 cfm, 2 nos.	hour	12.000	12.000	12.000	391.00	4692.00	4692.00	4692.00	PM15001
			Hire and running charges of crane of 15 tonne capacity	hour	6.000	6.000	6.000	899.00	5394.00	5394.00	5394.00	PM63004
			Motorised barge of 20 tonne capacity	hour	6.000	6.000	6.000	714.00	4284.00	4284.00	4284.00	PM66001
			Boat to carry atleast 20 persons	hour	6.000	6.000	6.000	714.00	4284.00	4284.00	4284.00	PM66001
			Electric generating set 33 KVA	hour	6.000	6.000	6.000	495.00	2970.00	2970.00	2970.00	PM22008
			Tipper 10 tonne capacity	hour	6.000	6.000	6.000	1371.00	8226.00	8226.00	8226.00	PM6004
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		38847.48	38853.54	38879.99	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		23308.49	23312.12	23327.99	
			Cost for 5 cum = a+b+c+d+e (see notes below)						256393.34	256433.36	256607.91	
			Rate per cum = (a+b+c+d+e)/5						51278.67	51286.67	51321.58	
								Say	**51278.70**	**51286.70**	**51321.60**	
		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.									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			4.In case pneumatic sinking is involved on a dry bed, the provision of barge and boat may be omitted.									
			5.The necessity and dimensions of the corbel will be as per actual ground conditions.									
			6.Small equipments like welding sets, pumps, vibrators, pneumatic tools, portable lamps, fire extinguishers, hose pipes etc., have not been included as the same are covered as items of minor T&P under overhead charges.									
			7.Depth of sinking shall be restricted to 30 m.									
12.21	**1207**		**Sand Filling in Wells complete as per Drawing and Technical Specifications.**									
			Unit = 1 cum									
			Taking output=1 cum									
			a) Material									
			Sand (assuming 20 percent voids)	cum	1.200	1.200	1.200	494.00	592.80	592.80	592.80	M-005*
			b) Labour									
			Mate	day	0.012	0.012	0.012	325.00	3.90	3.90	3.90	L-12
			Mazdoor	day	0.300	0.300	0.300	306.00	91.80	91.80	91.80	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		137.70	137.70	137.70	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		82.62	82.62	82.62	
			Rate per cum (a+b+c+d)						908.82	908.82	908.82	
								Say	**908.80**	**908.80**	**908.80**	
12.22	**1200 & 1900**		**Providing Steel Liner 10 mm thick for Curbs and 6 mm thick for Steining of Wells including Fabricating and Setting out as per Detailed Drawing.**									
			Unit= MT									
			Taking output= 1 MT									
			a) Material									
			i) Structural steel including 5 percent wastage	tonne	1.050	1.050	1.050	57033.00	59884.65	59884.65	59884.65	M-181
			b) Labour									
			Mate	day	0.800	0.800	0.800	325.00	260.00	260.00	260.00	L-12
			Fitter	day	4.000	4.000	4.000	369.00	1476.00	1476.00	1476.00	L-08
			Blacksmith	day	4.000	4.000	4.000	369.00	1476.00	1476.00	1476.00	L-25
			Welder	day	4.000	4.000	4.000	413.00	1652.00	1652.00	1652.00	L-02
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			Electrodes, cutting gas and other consumables @ 5 percent on cost a (a) above.						2994.23	2994.23	2994.23	
			c) Machinery									
			Hydra Crane of capacity 10T for lifting shifting	hour	8.000	8.000	8.000	864.00	6912.00	6912.00	6912.00	PM63003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		15420.58	15420.58	15420.58	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		9252.35	9252.35	9252.35	
			Rate for per MT (a+b+c+d+e)						101775.80	101775.80	101775.80	
								Say	**101775.80**	**101775.80**	**101775.80**	
12.23	**1100 & 1700**		**Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.**									
			Pile diameter-750 mm									
			Unit = meter									
			Taking output = 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) 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.	cum	11.490	11.490	11.490	4213.14 L 4216.93 M 4233.46 S	48408.98	48452.53	48642.45	12.11 F (iv) Case I
			Bentonite	Kg	574.500	574.322	574.322	4.02	2309.49	2308.77	2308.77	M-071
			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	17135.00	102810.00	102810.00	102810.00	PM38001
			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	728.00	2284.46	2284.46	2284.46	PM63001
			Hire and running charges of Bentonite pump	hour	6.000	6.000	6.000	0.00	0.00	0.00	0.00	Rate included inPM38001
			Transit truck agitator									
			For transportation	tonne-km	29.07×L1	29.07×L1	29.07×L1	10.33	300.29	300.29	300.29	PM76001
			(6 cum Capacity)									
			For unloading	hour	0.638	0.638	0.638	1860.00	1186.68	1186.68	1186.68	PM34001
			Front end loader for removing muck									
			(i) 3.1 Cum Capacity	hour	0.342			3433.00	1174.09			PM5001
			(ii) 2.1 Cum Capacity	hour		0.504		2033.00		1024.63		PM5002
			(iii) 1 Cum Capacity	hour			1.064	1366.00			1453.42	PM5003
			Tipper For Loading time									
			(i) 18 cum Capacity	hour	0.342			2239.00	765.74			PM6001
			(ii) 14 cum Capacity	hour		0.504		1998.00		1006.99		PM6002
			(iii) 10 cum Capacity	hour			1.064	1785.00			1899.24	PM6003
			For disposal of muck from pile bore hole up to a lead of 1 Km									
			(i) 18 cum capacity	t.km	18.384			4.80	88.24			PM72001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		(ii) 14 cum capacity	t.km		18.378		5.48		100.71		PM73001
		(iii) 10 cum capacity	t.km			18.378	6.80			124.97	PM74001
		c) Labour									
		Mate/Supervisor	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
		Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		32088.90	32118.31	32425.36	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		19253.34	19270.99	19455.22	
		Cost for 25 m = a+b+c+d+d+e						211786.71	211980.88	214007.37	
		Rate per metre (a+b+c+d+e)/25						8471.47	8479.24	8560.29	
							Say	**8471.50**	**8479.20**	**8560.30**	
12.24	**1100, 1600 & 1700**	**Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.**									
		Pile diameter-1000 mm									
		Unit = meter									
		Taking output = 25m									
		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) 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.	cum	20.420	20.420	20.420	4213.14 L 4216.93 M 4233.46 S	86032.32	86109.71	86447.24	12.11 F (iv) Case I
		Bentonite	Kg	1021.018	1021.018	1021.018	4.02	4104.49	4104.49	4104.49	M-071
		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	17135.00	102810.00	102810.00	102810.00	PM38001
		Hire and running charges of light crane for lowering reinforcement cage, trime pipe, holding trime pipe for concreting, removal of temporary casing etc.	hour	3.634	3.634	3.634	728.00	2645.55	2645.55	2645.55	PM63001
		Hire and running charges of Bentonite pump	hour	6.000	6.000	6.000	0.00	0.00	0.00	0.00	Rate included inPM38001
		Transit truck agitator									
		For transportation	tonne-km	51.05×L1	51.05×L1	51.05×L1	10.33	527.35	527.35	527.35	PM76001
		(6 cum Capacity)									
		For unloading	hour	1.134	1.134	1.134	1860.00	2109.24	2109.24	2109.24	PM34001
		Front end loader for removing muck									
		(i) 3.1 Cum Capacity	hour	0.608			3433.00	2087.26			PM5001
		(ii) 2.1 Cum Capacity	hour		0.896		2033.00		1821.57		PM5002

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii) 1 Cum Capacity	hour			1.891	1366.00			2583.11	PM5003
			Tipper For Loading time									
			(i) 18 cum Capacity	hour	0.608			2239.00	1361.31			PM6001
			(ii) 14 cum Capacity	hour		0.896		1998.00		1790.21		PM6002
			(iii) 10 cum Capacity	hour			1.891	1785.00			3375.44	PM6003
			For disposal of muck from pile bore hole up to a lead of 1 Km									
			(i) 18 cum capacity	t.km	32.673			4.80	156.83			PM72001
			(ii) 14 cum capacity	t.km		32.673		5.48		179.05		PM73001
			(iii) 10 cum capacity	t.km			32.673	6.80			222.18	PM74001
			c) Labour									
			Mate/Supervisor	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		40590.17	40642.73	41188.22	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		24354.10	24385.64	24712.93	
			Cost for 25 m = a+b+c+d+d+e						267895.14	268242.04	271842.24	
			Rate per metre (a+b+c+d+e)/25						10715.81	10729.68	10873.69	
								Say	**10715.80**	**10729.70**	**10873.70**	
12.25	**1100 & 1700**		**Bored cast-in-situ M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m.**									
		A	**Pile diameter-1200 mm**									
			Unit = meter									
			Taking output = 25m									
			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) 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.	cum	29.405	29.405	29.405	4213.14 L 4216.93 M 4233.46 S	123887.39	123998.83	124484.87	12.11 F (iv) Case I
			Bentonite	Kg	1470.265	1470.265	1470.265	4.02	5910.47	5910.47	5910.47	M-071
			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	7.000	7.000	7.000	17135.00	119945.00	119945.00	119945.00	PM38001
			Hire and running charges of light crane for lowering reinforcement cage, trime pipe, holding trime pipe for concreting, removal of temporary casing etc.	hour	4.134	4.134	4.134	728.00	3009.55	3009.55	3009.55	PM63001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Hire and running charges of Bentonite pump	hour	7.000	7.000	7.000	0.00	0.00	0.00	0.00	Rate included inPM38001
			Transit truck agitator									
			For transportation	tonne-km	73.53×L1	73.53×L1	73.53×L1	10.33	759.56	759.56	759.56	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.634	1.634	1.634	1860.00	3039.24	3039.24	3039.24	PM34001
			Front end loader for removing muck									
			(i) 3.1 Cum Capacity	hour	0.875			3433.00	3003.88			PM5001
			(ii) 2.1 Cum Capacity	hour		1.290		2033.00		2622.57		PM5002
			(iii) 1 Cum Capacity	hour			2.723	1366.00			3719.62	PM5003
			Tipper For Loading time									
			(i) 18 cum Capacity	hour	0.875			2239.00	1959.13			PM6001
			(ii) 14 cum Capacity	hour		1.290		1998.00		2577.42		PM6002
			(iii) 10 cum Capacity	hour			2.723	1785.00			4860.56	PM6003
			For disposal of muck from pile bore hole up to a lead of 1 Km									
			(i) 18 cum capacity	t.km	47.048			4.80	225.83			PM72001
			(ii) 14 cum capacity	t.km		47.048		5.48		257.82		PM73001
			(iii) 10 cum capacity	t.km			47.048	6.80			319.93	PM74001
			c) Labour									
			Mate/Supervisor	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		52571.31	52647.39	53433.06	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		31542.78	31588.44	32059.84	
			Cost for 25 m = a+b+c+d+d+e						346970.63	347472.79	352658.19	
			Rate per metre (a+b+c+d+e)/25						13878.83	13898.91	14106.33	
								Say	**13878.80**	**13898.90**	**14106.30**	
12.26	**1100 &1700**		**Pile diameter-1500 mm**									
			Unit = meter									
			Taking output = 25m									
			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) 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.	cum	45.946	45.946	45.946	4213.14 L 4216.93 M 4233.46 S	193576.94	193751.07	194510.52	12.11 F (iv) Case I
			Bentonite	Kg	2297.290	2297.290	2297.290	4.02	9235.11	9235.11	9235.11	M-071
			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	17135.00	137080.00	137080.00	137080.00	PM38001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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	728.00	3678.58	3678.58	3678.58	PM63001
			Hire and running charges of Bentonite pump	hour	8.000	8.000	8.000	0.00	0.00	0.00	0.00	Rate included inPM38001
			Transit truck agitator									
			For transportation	tonne-km	114.86×L1	114.86×L1	114.86×L1	10.33	1186.50	1186.50	1186.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	2.553	2.553	2.553	1860.00	4748.58	4748.58	4748.58	PM34001
			Front end loader for removing muck									
			(i) 3.1 Cum Capacity	hour	1.367			3433.00	4692.91			PM5001
			(ii) 2.1 Cum Capacity	hour		2.015		2033.00		4096.50		PM5002
			(iii) 1 Cum Capacity	hour			4.254	1366.00			5810.96	PM5003
			Tipper For Loading time									
			(i) 18 cum Capacity	hour	1.367			2239.00	3060.71			PM6001
			(ii) 14 cum Capacity	hour		2.015		1998.00		4025.97		PM6002
			(iii) 10 cum Capacity	hour			4.254	1785.00			7593.39	PM6003
			For disposal of muck from pile bore hole up to a lead of 1 Km									
			(i) 18 cum capacity	t.km	73.513			4.80	352.86			PM72001
			(ii) 14 cum capacity	t.km		73.513		5.48		402.85		PM73001
			(iii) 10 cum capacity	t.km			73.513	6.80			499.89	PM74001
			c) Labour									
			Mate/Supervisor	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
			d) Overhead charges@ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		71745.74	71864.33	73092.01	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		43047.44	43118.60	43855.20	
			Cost for 25 m = a+b+c+d+d+e						473521.88	474304.59	482407.25	
			Rate per metre (a+b+c+d+e)/25						18940.88	18972.18	19296.29	
								Say	**18940.90**	**18972.20**	**19296.30**	
12.27	**1100 &1700**		**Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
			Pile diameter-750mm									
			Unit = Running meter									
			Taking output = 40 meter									
			a) Materials									
			RCC Grade M35. 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)	cum	17.660	17.660	17.660	4213.14 L 4216.93 M 4233.46 S	74404.06	74470.98	74762.89	12.11 F (iv) Case I

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) Materials Pile shoes									
			(i) C.I. shoes for the pile	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080
			(ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
			(iii) Steel helmet and cushion block on top of casing head during driving	Kg	50.000	50.000	50.000	41.93	2096.50	2096.50	2096.50	M-174
			c) Machinery									
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	17135.00	102810.00	102810.00	102810.00	PM38001
			Hire and running charges for light crane 5 tonnes lifting capacity for loweing reinforcement and handling steel casing.	hour	0.500	0.500	0.500	765.00	382.50	382.50	382.50	PM63002
			d) Labour									
			Mate/Supervisor	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		38055.29	38068.68	38127.06	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		22833.17	22841.21	22876.24	
			Cost for 40 m = a+b+c+d+d+e+f						251164.92	251253.27	251638.59	
			Rate per metre (a+b+c+d+e+f)/40						6279.12	6281.33	6290.96	
								Say	**6279.10**	**6281.30**	**6291.00**	
		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 per cent of cost of concrete may be provided to cover its usage.									
12.28	**1100 & 1700**		**Driven cast-in-place vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
			Pile diameter-1000mm									
			Unit = Running meter									
			Taking output = 30 meter									
			a) Materials									
			RCC Grade M35. 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)	cum	23.550	23.550	23.550	4213.14 L 4216.93 M 4233.46 S	99219.45	99308.70	99697.97	12.11 F (iv) Case I
			b) Materials Pile shoes									
			(i) C.I. shoes for the pile	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
			(iii) Steel helmet and cushion block on top of casing head during driving	Kg	50.000	50.000	50.000	41.93	2096.50	2096.50	2096.50	M-174
			c) Machinery									
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	17135.00	102810.00	102810.00	102810.00	PM38001
			Hire and running charges for light crane 5 tonnes lifting capacity for loweing reinforcement and handling steel casing.	hour	0.500	0.500	0.500	765.00	382.50	382.50	382.50	PM63002
			Hire and running charges for light crane for lowering reinforcement cage.	hour	0.500	0.500	0.500	728.00	364.00	364.00	364.00	PM63001
			d) Labour									
			Mate/Supervisor	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
			Mazdoor	day	4.000	4.000	4.000	306.00	1224.00	1224.00	1224.00	L-13
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		43154.97	43172.82	43250.67	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		25892.98	25903.69	25950.40	
			Cost for 30 m = a+b+c+d+d+e+f						284822.80	284940.61	285454.44	
			Rate per metre (a+b+c+d+e+f)/30						9494.09	9498.02	9515.15	
								Say	**9494.10**	**9498.00**	**9515.10**	
		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 per cent 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-1200mm									
			Unit = Running meter									
			Taking output = 20 meter									
			a) Materials									
			RCC Grade M35. 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)	cum	22.610	22.610	22.610	4213.14 L 4216.93 M 4233.46 S	95259.10	95344.79	95718.52	12.11 F (iv) Case I
			b) Materials Pile shoes									
			(i) C.I. shoes for the pile	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(ii) M.S. clamps for shoe @ 35 Kg per pile of 15 m	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
			(iii) Steel helmet on top of casing head during driving	Kg	50.000	50.000	50.000	41.93	2096.50	2096.50	2096.50	M-174
			c) Machinery									
			Hire and running charges of piling rig Including double acting pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	17135.00	102810.00	102810.00	102810.00	PM38001
			Hire and running charges for light crane 5 tonnes lifting capacity for loweing reinforcement and handling steel casing.	hour	0.500	0.500	0.500	728.00	364.00	364.00	364.00	PM63001
			d) Labour									
			Mate/Supervisor	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Mazdoor	day	4.500	4.500	4.500	306.00	1377.00	1377.00	1377.00	L-13
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		42318.30	42335.44	42410.18	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		25390.98	25401.26	25446.11	
			Cost for 20 m = a+b+c+d+d+e+f						279300.78	279413.89	279907.21	
			Rate per metre (a+b+c+d+e+f)/20						13965.04	13970.69	13995.36	
								Say	**13965.00**	**13970.70**	**13995.40**	
		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.									
			2.In case steel lining is included in the design for driven cast-in-situ pile and is planned to be retained, the same may be included in the rate analysis. In case the temporary steel casing used during casting is planned to be removed, an additional cost @ 0.50 per cent of cost of concrete may be provided to cover its usage.									
12.30	**1100 & 1700**		**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
			Pile diameter-500mm									
			Unit = Running meter									
			Taking output = 60m									
			a) Materials									
			RCC Grade M35. 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)	cum	11.780	11.780	11.780	4213.14 L 4216.93 M 4233.46 S	49630.79	49675.44	49870.15	12.11 F (iv) Case I
			b) Materials Pile shoes									
			(i) C.I. shoes	Kg	240.000	240.000	240.000	47.04	11289.60	11289.60	11289.60	M-080
			(ii) M.S. shoes	Kg	105.000	105.000	105.000	30.00	3150.00	3150.00	3150.00	M-124

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii) Steel helmet and cushion block on top of pile head during driving	Kg	30.000	30.000	30.000	41.93	1257.90	1257.90	1257.90	M-174
			c) Machinery									
			Crane 20 t capacity	hour	6.000	6.000	6.000	1125.00	6750.00	6750.00	6750.00	PM63005
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
			d) Labour									
			Mate/Supervisor	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Add 1 percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.						1681.62	1682.07	1684.02	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		34160.18	34169.20	34208.53	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		20496.11	20501.52	20525.12	
			Cost for 60 m = a+b+c+d+d+e+f						225457.21	225516.73	225776.32	
			Rate per metre (a+b+c+d+e+f)/60						3757.62	3758.61	3762.94	
								Say	**3757.60**	**3758.60**	**3762.90**	
		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.									
12.31	**1100 & 1700**		**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
			Pile diameter-750mm									
			Unit = Running meter									
			Taking output = 50m									
			a) Materials									
			RCC Grade M35. 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)	cum	22.080	22.080	22.080	4213.14 L 4216.93 M 4233.46 S	93026.14	93109.81	93474.78	12.11 F (iv) Case I
			b) Materials Pile shoes									
			(i) C.I. shoes	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080
			(ii) M.S. shoes	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
			(iii) Steel helmet and cushion block on top of pile head during driving	Kg	40.000	40.000	40.000	41.93	1677.20	1677.20	1677.20	M-174
			c) Machinery									
			Crane 35 t capacity	hour	6.000	6.000	6.000	1747.00	10482.00	10482.00	10482.00	PM63006
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
			d) Labour									
			Mate/Supervisor	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	4.000	4.000	4.000	306.00	1224.00	1224.00	1224.00	L-13
			Add 1 percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.						2108.96	2109.79	2113.44	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		42856.14	42873.04	42946.77	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		25713.68	25723.83	25768.06	
			Cost for 50 m = a+b+c+d+d+e+f						282850.51	282962.08	283448.65	
			Rate per metre (a+b+c+d+e+f)/50						5657.01	5659.24	5668.97	
								Say	**5657.00**	**5659.20**	**5669.00**	
		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.									
12.32	**1100 & 1700**		**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
			Pile diameter-1000mm									
			Unit = Running meter									
			Taking output = 40m									
			a) Materials									
			RCC Grade M35. 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)	cum	31.400	31.400	31.400	4213.14 L 4216.93 M 4233.46 S	132292.60	132411.60	132930.62	12.11 F (iv) Case I
			b) Materials Pile shoes									
			(i) C.I. shoes for the pile	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080
			(ii) M.S. shoes @ 35 kg per pile of 15 m	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
			(iii) Steel helmet and cushion block on top of pile head during driving	Kg	50.000	50.000	50.000	41.93	2096.50	2096.50	2096.50	M-174
			c) Machinery									
			Crane 50 t capacity	hour	6.000	6.000	6.000	1747.00	10482.00	10482.00	10482.00	PM63006
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
			d) Labour									
			Mate/Supervisor	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mazdoor	day	5.000	5.000	5.000	306.00	1530.00	1530.00	1530.00	L-13
			Add 1 percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.						2505.82	2507.01	2512.20	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		50936.46	50960.50	51065.34	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		30561.88	30576.30	30639.21	
			Cost for 40 m = a+b+c+d+d+e+f						336180.66	336339.31	337031.27	
			Rate per metre (a+b+c+d+e+f)/40						8404.52	8408.48	8425.78	
								Say	**8404.50**	**8408.50**	**8425.80**	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		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.									
12.33	**1100 & 1700**	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
		Size of pile-300mm×300mm									
		Unit = Running meter									
		Taking output = 60m									
		a) Materials									
		RCC Grade M35. Rate for concrete may be adopted vide item no. 12.11 F (iv)	cum	5.400	5.400	5.400	4213.14 L 4216.93 M 4233.46 S	22750.96	22771.42	22860.68	12.11 F (iv) Case I
		b) Materials Pile shoes									
		(i) C.I. shoes	Kg	240.000	240.000	240.000	47.04	11289.60	11289.60	11289.60	M-080
		(ii) M.S. shoes	Kg	105.000	105.000	105.000	30.00	3150.00	3150.00	3150.00	M-124
		(iii) Steel helmet and cushion block on top of pile head during driving	Kg	30.000	30.000	30.000	41.93	1257.90	1257.90	1257.90	M-174
		c) Machinery									
		Crane 10 t capacity	hour	6.000	6.000	6.000	864.00	5184.00	5184.00	5184.00	PM63003
		Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
		d) Labour									
		Mate/Supervisor	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		Add 1 percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.						1397.16	1397.37	1398.26	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		28414.12	28418.26	28436.29	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		17048.47	17050.95	17061.77	
		Cost for 60 m = a+b+c+d+d+e+f						187533.22	187560.50	187679.50	
		Rate per metre (a+b+c+d+e+f)/60						3125.55	3126.01	3127.99	
							Say	**3125.60**	**3126.00**	**3128.00**	
		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.									
12.34	**1100 & 1700**	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
		Size of pile-500mm×500mm									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Unit = Running meter									
		Taking output = 50m									
		a) Materials									
		RCC Grade M35. RCC Grade M35 Rate for concrete may be adopted vide item no. 12.11 F (iv)	cum	12.500	12.500	12.500	4213.14 L 4216.93 M 4233.46 S	52664.25	52711.63	52918.24	12.11 F (iv) Case I
		b) Materials Pile shoes									
		(i) C.I. shoes	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080
		(ii) M.S. shoes	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
		(iii) Steel helmet and cushion block on top of pile head during driving	Kg	30.000	30.000	30.000	41.93	1257.90	1257.90	1257.90	M-174
		c) Machinery									
		Crane 20 t capacity	hour	6.000	6.000	6.000	1125.00	6750.00	6750.00	6750.00	PM63005
		Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
		d) Labour									
		Mate/Supervisor	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Mazdoor	day	4.000	4.000	4.000	306.00	1224.00	1224.00	1224.00	L-13
		Add 1 percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.						1663.83	1664.30	1666.37	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		33864.48	33874.04	33915.78	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		20318.69	20324.43	20349.47	
		Cost for 50 m = a+b+c+d+d+e+f						223505.54	223568.70	223844.16	
		Rate per metre (a+b+c+d+e+f)/50						4470.11	4471.37	4476.88	
							Say	**4470.10**	**4471.40**	**4476.90**	
		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.									
12.35	**1100 & 1700**	**Driven precast vertical M35 grade R.C.C. Pile excluding Reinforcement complete as per Drawing and Technical Specification**									
		Size of pile-750mm×750mm									
		Unit = Running meter									
		Taking output = 40m									
		a) Materials									
		RCC Grade M35. Rate for concrete may be adopted vide item no. 12.11 F (iv) Case-1	cum	22.500	22.500	22.500	4213.14 L 4216.93 M 4233.46 S	94795.65	94880.93	95252.83	12.11 F (iv) Case I
		b) Material Pile shoes									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) C.I. shoes	Kg	160.000	160.000	160.000	47.04	7526.40	7526.40	7526.40	M-080
			(ii) M.S. shoes	Kg	70.000	70.000	70.000	30.00	2100.00	2100.00	2100.00	M-124
			(iii) Steel helmet and cushion block on top of pile head during driving	Kg	30.000	30.000	30.000	41.93	1257.90	1257.90	1257.90	M-174
			c) Machinery									
			Crane 20 tonne capacity	hour	6.000	6.000	6.000	1125.00	6750.00	6750.00	6750.00	PM63005
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
			d) Labour									
			Mate/Supervisor	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Mazdoor	day	4.500	4.500	4.500	306.00	1377.00	1377.00	1377.00	L-13
			Add 1 percent of (a+b+c) for carriage of piles from casting yard to work site and stacking, and other imponderables during installation.						2085.14	2085.99	2089.71	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		42406.92	42424.14	42499.27	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		25444.15	25454.49	25499.56	
			Cost for 40 m = a+b+c+d+d+e+f						279885.66	279999.35	280495.18	
			Rate per metre (a+b+c+d+e+f)/40						6997.14	6999.98	7012.38	
								Say	**6997.10**	**7000.00**	**7012.40**	
		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.									
12.36	**1100 & 1900**		**Driven Vertical Steel Piles complete as per Drawing and Technical Specification**									
			Section of the pile-H Section steel columm 400×250 mm (ISHB Series)									
			Unit = Running meter									
			Taking output = 70m									
			a) Materials									
			Structural steel including 5 percent wastage @ 82.20 kg/m	tonnes	6.040	6.040	6.040	57033.00	344479.32	344479.32	344479.32	M-181
			b) Machinery									
			Crane 10 T capacity	hour	6.000	6.000	6.000	864.00	5184.00	5184.00	5184.00	PM63003
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
			c) Labour									
			Mate/Supervisor	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Add 0.5 percent of (a+b+c) for providing steel helmet on top of pile head during driving, stacking of piles at site, providing anti-corrosion treatment and other imponderables during installation.						2233.52	2233.52	2233.52	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		89787.57	89787.57	89787.57	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		53872.54	53872.54	53872.54	
			Cost for 70 m = a+b+c+d+d+e						592597.95	592597.95	592597.95	
			Rate per metre (a+b+c+d+e)/70						8465.69	8465.69	8465.69	
								Say	**8465.70**	**8465.70**	**8465.70**	
12.37	**1100 & 1900**		**Driven Vertical Steel Piles complete as per Drawing and Technical Specification**									
			Section of the pile-H Section steel columm 450×250 mm (ISHB Series)									
			Unit = Running meter									
			Taking output = 60m									
			a) Materials									
			Structural steel including 5 percent wastage @ 92.50 kg/m	tonnes	5.830	5.830	5.830	57033.00	332502.39	332502.39	332502.39	M-181
			b) Machinery									
			Crane 10 T capacity	hour	6.000	6.000	6.000	864.00	5184.00	5184.00	5184.00	PM63003
			Vibrating Pile driving hammer complete with power unit and accessories.	hour	6.000	6.000	6.000	16014.00	96084.00	96084.00	96084.00	PM71001
			d) Labour									
			Mate/Supervisor	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
			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-corrosion treatment and other imponderables during installation.						2174.43	2174.43	2174.43	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		87412.26	87412.26	87412.26	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		52447.36	52447.36	52447.36	
			Cost for 60 m = a+b+c+d+d+e						576920.95	576920.95	576920.95	
			Rate per metre (a+b+c+d+e)/60						9615.35	9615.35	9615.35	
								Say	**9615.30**	**9615.30**	**9615.30**	
12.38	**1100**		**Pile Load Test on single Vertical Pile in accordance with IS:2911 (Part-IV)**									
			Unit = 1 MT									
			Taking output =1 MT									
			a) Initial and routine load test	tonnes	1.000	1.000	1.000					
			b) Lateral load test	tonnes	1.000	1.000	1.000					
									#VALUE!	#VALUE!	#VALUE!	
		Note	Although, this item is incidental to work and is not required to be included in BOQ of contract, the same is required to be added in the estimate to assess cost of work.									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
12.39			**Dismantling of Reinforced Concrete Pile head complete as per Drqwing and Technical Specification**									
			Unit = 1 cum									
			Taking output =1.250 cum									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor with Pneumatic breaker	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Blacksmith	day	0.250	0.250	0.250	369.00	92.25	92.25	92.25	L-01
			Mazdoor for loading and unloading	day	0.250	0.250	0.250	306.00	76.50	76.50	76.50	L-13
			b) Machinery									
			Air Compressor 250 cfm	hour	0.625	0.625	0.625	391.00	244.38	244.38	244.38	PM15001
			Pneumatic breaker	hour	1.250	1.250	1.250	206.00	257.50	257.50	257.50	PM4001
			Tipper									
			For transportation to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t.km	1.875			4.80	9.00			PM72001
			(ii) 14 cum capacity	t.km		1.875		5.48		10.28		PM73001
			(iii) 10 cum capacity	t.km			1.875	6.80			12.75	PM74001
			Loading & unloading time									
			(i) 18 cum capacity	hour	0.208			2239.00	465.71			PM6001
			(ii) 14 cum capacity	hour		0.250		1998.00		499.50		PM6002
			(iii) 10 cum capacity	hour			0.292	1785.00			521.22	PM6003
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		262.27	269.28	274.12	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		157.36	161.57	164.47	
			Cost for 1.25 cum = a+b+c+d						1730.96	1777.25	1809.19	
			Rate per cum (a+b+c+d)/1.25						1384.77	1421.80	1447.35	
								Say	**1384.80**	**1421.80**	**1447.30**	
12.40	**1100, 1500 & 1700**		**Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification**									
		A	**RCC Grade M20**									
		Case I	**RCC Grade M20 using batching plant & Concrete pump**									
			Unit =cum									
			Taking Output = 60 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.06)	cum	60.000	60.000	60.000	3356.30	201378.00	201378.00	201378.00	21.06
			b) Labour **For pouring and placing**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.146	0.146	0.146	325.00	47.45	47.45	47.45	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.300	1.300	1.300	1860.00	2418.00	2418.00	2418.00	PM34001
			Hydraulic Boom placer pump	hour	1.300	1.300	1.300	3695.00	4803.50	4803.50	4803.50	PM36001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						8455.05	8455.05	8455.05	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		43966.28	43966.28	43966.28	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		26379.77	26379.77	26379.77	
			Cost for 60 cum = a+b+c+d+e+f						290177.45	290177.45	290177.45	
			Rate per cum = (a+b+c+d+e+f)/60						4836.29	4836.29	4836.29	
								Say	**4836.30**	**4836.30**	**4836.30**	
		Case II	**RCC Grade M20 using batching plant & manual placing**									
			Unit =cum									
			Taking Output = 60cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.06)	cum	60.000	60.000	60.000	3356.30	201378.00	201378.00	201378.00	21.06
			b) Labour **For pouring and placing**									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	3.333	3.333	3.333	1860.00	6199.38	6199.38	6199.38	PM34001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						8482.44	8482.44	8482.44	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		44108.66	44108.66	44108.66	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		26465.20	26465.20	26465.20	
			Cost for 60 cum = a+b+c+d+e+f						291117.18	291117.18	291117.18	
			Rate per cum = (a+b+c+d+e+f)/60						4851.95	4851.95	4851.95	
								Say	**4852.00**	**4852.00**	**4852.00**	
12.40		**B**	**RCC Grade M25**									
		Case I	**RCC Grade M25 using batching plant & Concrete pump**									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unit =cum									
			Taking Output = 60 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.07)	cum	60.000	60.000	60.000	3516.00	210960.00	210960.00	210960.00	21.07
			b) Labour For pouring and placing									
			Mate	day	0.146	0.146	0.146	325.00	47.45	47.45	47.45	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery									
			Transit truck agitator For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.300	1.300	1.300	1860.00	2418.00	2418.00	2418.00	PM34001
			Hydraulic Boom placer pump	hour	1.300	1.300	1.300	3695.00	4803.50	4803.50	4803.50	PM36001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						8838.33	8838.33	8838.33	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		45959.34	45959.34	45959.34	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		27575.60	27575.60	27575.60	
			Cost for 60 cum = a+b+c+d+e+f						303331.62	303331.62	303331.62	
			Rate per cum = (a+b+c+d+e+f)/60						5055.53	5055.53	5055.53	
								Say	**5055.50**	**5055.50**	**5055.50**	
		Case II	**RCC Grade M25 using batching plant & manual placing**									
			Unit =cum									
			Taking Output = 60cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.07)	cum	60.000	60.000	60.000	3516.00	210960.00	210960.00	210960.00	21.07
			b) Labour For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	3.333	3.333	3.333	1860.00	6199.38	6199.38	6199.38	PM34001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						8865.72	8865.72	8865.72	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		46101.72	46101.72	46101.72	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		27661.03	27661.03	27661.03	
			Cost for 60 cum = a+b+c+d+e+f						304271.35	304271.35	304271.35	

Analysis of Rate

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate per cum = (a+b+c+d+e+f)/60						5071.19	5071.19	5071.19	
								Say	**5071.20**	**5071.20**	**5071.20**	
12.40		**C**	**RCC Grade M30**									
		Case I	**RCC Grade M30 using batching plant & Concrete pump**									
			Unit =cum									
			Taking Output = 60 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.09)	cum	60.000	60.000	60.000	3623.00	217380.00	217380.00	217380.00	21.09
			b) Labour **For pouring and placing**									
			Mate	day	0.146	0.146	0.146	325.00	47.45	47.45	47.45	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.300	1.300	1.300	1860.00	2418.00	2418.00	2418.00	PM34001
			Hydraulic Boom placer pump	hour	1.300	1.300	1.300	3695.00	4803.50	4803.50	4803.50	PM36001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						9095.13	9095.13	9095.13	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		47294.70	47294.70	47294.70	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		28376.82	28376.82	28376.82	
			Cost for 60 cum = a+b+c+d+e+f						312145.00	312145.00	312145.00	
			Rate per cum = (a+b+c+d+e+f)/60						5202.42	5202.42	5202.42	
								Say	**5202.40**	**5202.40**	**5202.40**	
		Case II	**RCC Grade M30 using batching plant & manual placing**									
			Unit =cum									
			Taking Output = 60cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.09)	cum	60.000	60.000	60.000	3623.00	217380.00	217380.00	217380.00	21.09
			b) Labour **For pouring and placing**									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(6 cum Capacity)									
			For unloading	hour	3.333	3.333	3.333	1860.00	6199.38	6199.38	6199.38	PM34001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						9122.52	9122.52	9122.52	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		47437.08	47437.08	47437.08	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		28462.25	28462.25	28462.25	
			Cost for 60 cum = a+b+c+d+e+f						313084.72	313084.72	313084.72	
			Rate per cum = (a+b+c+d+e+f)/60						5218.08	5218.08	5218.08	
								Say	**5218.10**	**5218.10**	**5218.10**	
12.40		**D**	**RCC Grade M35**									
		Case I	**RCC Grade M35 using batching plant & Concrete pump**									
			Unit =cum									
			Taking Output = 60 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.11)	cum	60.000	60.000	60.000	3803.00	228180.00	228180.00	228180.00	21.11
			b) Labour **For pouring and placing**									
			Mate	day	0.146	0.146	0.146	325.00	47.45	47.45	47.45	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.300	1.300	1.300	1860.00	2418.00	2418.00	2418.00	PM34001
			Hydraulic Boom placer pump	hour	1.300	1.300	1.300	3695.00	4803.50	4803.50	4803.50	PM36001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						9527.13	9527.13	9527.13	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		49541.10	49541.10	49541.10	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		29724.66	29724.66	29724.66	
			Cost for 60 cum = a+b+c+d+e+f						326971.24	326971.24	326971.24	
			Rate per cum = (a+b+c+d+e+f)/60						5449.52	5449.52	5449.52	
								Say	**5449.50**	**5449.50**	**5449.50**	
12.40		**Case II**	**RCC Grade M35 using batching plant & manual placing**									
			Unit =cum									
			Taking Output = 60cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.11)	cum	60.000	60.000	60.000	3803.00	228180.00	228180.00	228180.00	21.11

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) Labour For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	3.333	3.333	3.333	1860.00	6199.38	6199.38	6199.38	PM34001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						9554.52	9554.52	9554.52	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		49683.48	49683.48	49683.48	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		29810.09	29810.09	29810.09	
			Cost for 60 cum = a+b+c+d+e+f						327910.96	327910.96	327910.96	
			Rate per cum = (a+b+c+d+e+f)/60						5465.18	5465.18	5465.18	
								Say	**5465.20**	**5465.20**	**5465.20**	
12.40		**E**	**RCC Grade M40**									
		Case I	**RCC Grade M40 using batching plant & Concrete pump**									
			Unit =cum									
			Taking Output = 60 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.12)	cum	60.000	60.000	60.000	4220.90	253254.00	253254.00	253254.00	21.12
			b) Labour For pouring and placing									
			Mate	day	0.146	0.146	0.146	325.00	47.45	47.45	47.45	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.300	1.300	1.300	1860.00	2418.00	2418.00	2418.00	PM34001
			Hydraulic Boom placer pump	hour	1.300	1.300	1.300	3695.00	4803.50	4803.50	4803.50	PM36001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						10530.09	10530.09	10530.09	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		54756.49	54756.49	54756.49	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		32853.89	32853.89	32853.89	
			Cost for 60 cum = a+b+c+d+e+f						361392.83	361392.83	361392.83	
			Rate per cum = (a+b+c+d+e+f)/60						6023.21	6023.21	6023.21	
								Say	**6023.20**	**6023.20**	**6023.20**	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		Case II	**RCC Grade M40 using batching plant & manual placing**									
			Unit =cum									
			Taking Output = 60cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.12)	cum	60.000	60.000	60.000	4220.90	253254.00	253254.00	253254.00	21.12
			b) Labour For pouring and placing									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	3.333	3.333	3.333	1860.00	6199.38	6199.38	6199.38	PM34001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						10557.48	10557.48	10557.48	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		54898.87	54898.87	54898.87	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		32939.32	32939.32	32939.32	
			Cost for 60 cum = a+b+c+d+e+f						362332.55	362332.55	362332.55	
			Rate per cum = (a+b+c+d+e+f)/60						6038.88	6038.88	6038.88	
								Say	**6038.90**	**6038.90**	**6038.90**	
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 (Rate taken from sub-analysis 21.13)	cum	60.000	60.000	60.000	4405.60	264336.00	264336.00	264336.00	21.13
			b) Labour For pouring and placing									
			Mate	day	0.146	0.146	0.146	325.00	47.45	47.45	47.45	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	1.300	1.300	1.300	1860.00	2418.00	2418.00	2418.00	PM34001
			Hydraulic Boom placer pump	hour	1.300	1.300	1.300	3695.00	4803.50	4803.50	4803.50	PM36001

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						10973.37	10973.37	10973.37	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		57061.54	57061.54	57061.54	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		34236.93	34236.93	34236.93	
			Cost for 60 cum = a+b+c+d+e+f						376606.20	376606.20	376606.20	
			Rate per cum = (a+b+c+d+e+f)/60						6276.77	6276.77	6276.77	
								Say	**6276.80**	**6276.80**	**6276.80**	
12.40		**Case II**	**RCC Grade M45 using batching plant & manual placing**									
			Unit =cum									
			Taking Output = 60cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.13)	cum	60.000	60.000	60.000	4405.60	264336.00	264336.00	264336.00	21.13
			b) Labour **For pouring and placing**									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Mason	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	150×L1	150×L1	150×L1	10.33	1549.50	1549.50	1549.50	PM76001
			(6 cum Capacity)									
			For unloading	hour	3.333	3.333	3.333	1860.00	6199.38	6199.38	6199.38	PM34001
			d) Formwork @ 4 percent on cost of concrete i.e. cost of material, labour and machinery						11000.76	11000.76	11000.76	
			e) Overhead charges @ on (a+b+c+d)						57203.93	57203.93	57203.93	
			f) Contractor's profit @ on (a+b+c+d+e)						34322.36	34322.36	34322.36	
			Cost for 60 cum = a+b+c+d+e+f						377545.92	377545.92	377545.92	
			Rate per cum = (a+b+c+d+e+f)/60						6292.43	6292.43	6292.43	
								Say	**6292.40**	**6292.40**	**6292.40**	
12.41	**1100 & 1700**		**Levelling Course for Pile cap**									
			Providing and laying of PCC M15 levelling course 100 mm thick below the pile cap.									
		Case I	***PCC Grade M15 using batching plant & Concrete pump***									
			Unit=cum									
			Taking output = 30 cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.03)	cum	30.000	30.000	30.000	2727.10	81813.00	81813.00	81813.00	21.03
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	75×L1	75×L1	75×L1	10.33	774.75	774.75	774.75	PM76001
			(6 cum Capacity)									
			For unloading		0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @ 20 km/hr and return speed @ 30 km/hr and unloading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.109×L1+ 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146×L1+ 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292×L1+ 1.75	707.00			1443.69	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		17787.38	17809.24	17904.60	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		10672.43	10685.55	10742.76	
			Cost for 30 cum = a+b+c+d+e						117396.69	117541.00	118170.39	
			Rate per cum = (a+b+c+d+e)/30						3913.22	3918.03	3939.01	
								Say	**3913.20**	**3918.00**	**3939.00**	
		Case II	***PCC Grade M15 using batching plant & manual placing***									
			Unit=cum									
			Taking output = 15cum									
			a) Material									
			Per Cum Basic Cost (Rate taken from sub-analysis 21.03)	cum	15.000	15.000	15.000	2727.10	40906.50	40906.50	40906.50	21.03
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery Transit truck agitator									
			For transportation	tonne-Km	37.5×L1	37.5×L1	37.5×L1	10.33	387.38	387.38	387.38	PM76001
			(6 cum Capacity)									
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker (speed @ 20 km/hr and return speed @ 30 km/hr and unloading @ 30 mins per trip)									

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		(i) 16 KL capacity	hour	0.055×L1+ 0.328			1121.00	429.34			PM11001
		(ii) 12 KL capacity	hour		0.073×L1+ 0.438		947.00		483.92		PM11002
		(iii) 6 KL capacity	hour			0.146×L1+ 0.875	707.00			721.85	PM11003
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		9368.03	9378.95	9426.54	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		5620.82	5627.37	5655.92	
		Cost for 15 cum = a+b+c+d+e						61829.03	61901.07	62215.13	
		Rate per cum = (a+b+c+d+e)/15						4121.94	4126.74	4147.68	
							Say	**4121.90**	**4126.70**	**4147.70**	
12.42	**1600**	**Supplying, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications.**									
		Unit=MT									
		Taking output = 8 MT									
		a) Material									
		HYSD bars including 5 percent overlaps and wastage	tonne	8.400	8.400	8.400	54810.00	460404.00	460404.00	460404.00	M-083
		Binding wire	kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072
		b) Labour for straightening, cutting, bending, shifting to site, tying and placing in position									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-01
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Cutting Machine	hour	5.333	5.333	5.333	309.00	1647.90	1647.90	1647.90	PM43001
		Bending Machine	hour	5.333	5.333	5.333	309.00	1647.90	1647.90	1647.90	PM43001
		Electric generator 15 KVA	hour	5.333	5.333	5.333	274.00	1461.24	1461.24	1461.24	PM22009
		Tipper									
		Tipper for Transportation									
		(i) 18 cum capacity	t.km	8×L1			4.80	38.40			PM72001
		(ii) 14 cum capacity	t.km		8×L1		5.48		43.84		PM73001
		(iii) 10 cum capacity	t.km			8×L1	6.80			54.40	PM74001
		Loading & Unloading Time									
		(i) 18 cum capacity	hour	1.000			2239.00	2239.00			PM6001
		(ii) 14 cum capacity	hour		1.280		1998.00		2557.44		PM6002
		(iii) 10 cum capacity	hour			1.778	1785.00			3173.73	PM6003
		Light weight Crane									
		At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
		At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		95058.27	95123.05	95248.42	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		57034.96	57073.83	57149.05	

Analysis of Rate

FOUNDATIONS

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Cost for 8 MT = (a+b+c+d+e)						627384.59	627812.11	628639.55	
		Rate for per MT = (a+b+c+d+e)/8						78423.07	78476.51	78579.94	
							Say	**78423.10**	**78476.50**	**78579.90**	
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) Material									
		MS bars including 5 percent overlaps and wastage	tonne	8.400	8.400	8.400	58600.00	492240.00	492240.00	492240.00	M-125
		Binding wire	kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072
		b) Labour for straightening, cutting, bending, shifting to site, tying and placing in position									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-01
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Cutting Machine	hour	5.333	5.333	5.333	309.00	1647.90	1647.90	1647.90	PM43001
		Bending Machine	hour	5.333	5.333	5.333	309.00	1647.90	1647.90	1647.90	PM43001
		Electric generator 15 KVA	hour	5.333	5.333	5.333	274.00	1461.24	1461.24	1461.24	PM22009
		Tipper									
		Tipper for Transportation									
		(i) 18 cum capacity	t.km	8×L1			4.80	38.40			PM72001
		(ii) 14 cum capacity	t.km		8×L1		5.48		43.84		PM73001
		(iii) 10 cum capacity	t.km			8×L1	6.80			54.40	PM74001
		Loading & Unloading Time									
		(i) 18 cum capacity	hour	1.000			2239.00	2239.00			PM6001
		(ii) 14 cum capacity	hour		1.280		1998.00		2557.44		PM6002
		(iii) 10 cum capacity	hour			1.778	1785.00			3173.73	PM6003
		Light weight Crane									
		At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
		At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		101425.47	101490.25	101615.62	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		60855.28	60894.15	60969.37	
		Cost for 8 MT = (a+b+c+d+e)						669408.11	669835.63	670663.07	
		Rate for per MT = (a+b+c+d+e)/8						83676.01	83729.45	83832.88	
							Say	**83676.00**	**83729.50**	**83832.90**	

CHAPTER - 13

BRIDGE SUBSTRUCTURE

CHAPTER-13
BRIDGE SUBSTRUCTURE

PREAMBLES :

1 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.

4 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 Specification.

7 In case of roller-cum-rocker bearings, only full circular rollers are to be provided.

8 All bearings shall be set truly level so as to have full and even seating.

9 For elastomeric 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.

10 The bearing should be procured only from those manufacturers who have been pre-qualified by the Ministry of Road Transport and Highways.

11 The bottoms of girders resting on the bearing shall be plane and truly horizontal.

12 For spans in grade, the bearing shall be placed horizontal by using sole plates for suitable designed RCC pedestals.

CHAPTER- 13
SUB-STRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
13.01	Brick masonry work in 1:3 in substructure complete excluding pointing and plastering, as per drawing and Technical Specifications	cum	6208.20	6213.00	6233.00
13.02	Pointing with cement mortar (1:3) on brick work in substrucutre as per technical specifications	sqm	600.00	600.00	600.00
13.03	Plastering with cement mortar (1:3) on brick work in substructure as per technical specifications	sqm	114.20	114.30	114.90
13.04	Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and technical specifications				
A	Random Rubble Masonry (Coursed/uncoursed)	cum	3934.90	3944.20	3982.10
B	Coursed rubble masonry (first sort)	cum	4175.80	4185.00	4222.90
C	Ashlar masonry (first sort)	cum	5300.90	5310.10	5348.00
13.05	Plain/Reinforced cement concrete in sub-strucutre complete as per drawing and Technical specifications				
A	PCC Grade M15				
(p)	Height upto 5m				
	PCC Grade M15 using batching plant & concrete pump	cum	4304.50	4309.80	4332.90
B	PCC Grade M20				
(p)	Height upto 5m				
	PCC Grade M20 using batching plant, transit mixer & concrete pump	cum	4800.10	4805.40	4828.50
C	PCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5218.10	5223.40	5246.50
(q)	Height 5m to 10m				
	PCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5407.90	5413.40	5437.30
(r)	Height above 10m				
	PCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5645.10	5650.80	5675.80
D	PCC Grade M30				
(p)	Height upto 5 m				
	PCC Grade M30 using batching plant, transit mixer & concrete pump	cum	5258.80	5264.10	5287.20
(q)	Height 5m to 10m				
	PCC Grade M30 using batching plant, transit mixer & concrete pump	cum	5450.03	5455.50	5479.40
(r)	Height above 10m				
	PCC Grade M30 using batching plant, transit mixer & concrete pump	cum	5689.10	5694.80	5719.80
E	RCC Grade M20				
(p)	Height upto 5m				
	RCC Grade M20 using batching plant, transit mixer & concrete pump	cum	4792.90	4798.20	4821.30
(q)	Height 5m to 10m				
	RCC Grade M20 using batching plant, transit mixer & concrete pump	cum	4967.20	4972.70	4996.60
(r)	Height above 10m				

SUB-STRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
	RCC Grade M20 using batching plant, transit mixer & concrete pump	cum	5185.00	5190.80	5215.70
F	**RCC Grade M25**				
(p)	**Height upto 5m**				
	RCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5465.47	5470.80	5493.80
(q)	**Height 5 to 10m**				
	RCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5644.30	5649.80	5673.60
(r)	**Height above 10m**				
	RCC Grade M25 using batching plant, transit mixer & concrete pump	cum	5912.60	5918.40	5943.30
G	**RCC Grade M30**				
(p)	**Height upto 5m**				
	RCC Grade M30 using batching plant, transit mixer & concrete pump	cum	5620.80	5626.10	5649.20
(q)	**Height 5m to 10m**				
	RCC Grade M30 using batching plant, transit mixer & concrete pump	cum	5779.20	5784.70	5808.40
(r)	**Height above 10m**				
	RCC Grade M30 using batching plant, transit mixer & concrete pump	cum	6004.10	6009.70	6034.40
H	**RCC Grade M35**				
(p)	**Height upto 5 m**				
	RCC Grade M35 using batching plant, transit mixer & concrete pump	cum	5882.20	5887.50	5910.60
(q)	**Height 5m to 10m**				
	RCC Grade M35 using batching plant, transit mixer & concrete pump	cum	6010.50	6015.90	6039.50
(r)	**Height above 10m**				
	RCC Grade M35 using batching plant, transit mixer & concrete pump	cum	6203.00	6208.60	6233.00
I	**RCC Grade M40**				
(p)	**Height upto 5m**				
	RCC Grade M40 using batching plant, transit mixer & concrete pump	cum	6489.00	6494.30	6517.40
(q)	**Height 5m to 10m**				
	RCC Grade M40 using batching plant, transit mixer & concrete pump	cum	6630.60	6636.00	6659.50
(r)	**Height above 10m**				
	RCC Grade M40 using batching plant, transit mixer & concrete pump	cum	6842.90	6848.50	6872.80
J	**RCC Grade M 45**				
(p)	**Height upto 5m**				
	RCC Grade M45 using batching plant, transit mixer & concrete pump	cum	6757.20	6762.50	6785.50
(q)	**Height 5m to 10m**				
	RCC Grade M45 using batching plant, transit mixer & concrete pump	cum	6904.60	6910.00	6933.60
(r)	**Height above 10m**				
	RCC Grade M45 using batching plant, transit mixer & concrete pump	cum	7125.70	7131.30	7155.70
K	**RCC Grade M50**				
(p)	**Height upto 5m**				

SUB-STRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
	RCC Grade M50 using batching plant, transit mixer & concrete pump	cum	7563.90	7569.30	7593.00
(q)	**Height 5m to 10m**				
	RCC Grade M50 using batching plant, transit mixer & concrete pump	cum	7523.70	7529.10	7552.70
(r)	**Height above 10m**				
	RCC Grade M50 using batching plant, transit mixer & concrete pump	cum	7764.70	7770.30	7794.60
13.06	**Supplying, fitting and placing HYSD bar reinforcement in sub structure complete as per drawing and technical specifications**	MT	78619.40	78672.90	78776.30
13.07	**Supplying, fitting and placing Mild steel reinforcement complete in sub structure as per drawing and technical specifications**	MT	83872.40	83925.80	84029.20
13.08	**Providing weep holes in Brick masonry/ Plain/Reinforced concrete abutment , wing wall/ returen wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V:20 H towards drawing face. Complete as per drawing and technical specifications.**	Nos.	140.10	140.10	140.10
13.09	**Back filling behind abutment, wing wall, return wall complete as per drawing and technical specifications**				
A	**Granular Material**	cum	671.80	671.80	671.80
B	**Sandy material**	cum	1193.40	1193.40	1193.40
13.10	**Providing and laying of filter media with granular materials/stones crushed aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRT&H 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 drwaing and technical specification.**	cum	1427.50	1427.50	1427.50
13.11	**Supplying and 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, realised by thermos bonding a draining core in extruded monofilaments with two filtering nonwoven geotextiles that may also be working as seperation or protecting layers. The draining three dimensional core will have a "W" configuration as longitudinal parallel channels.**	sqm	695.30	695.30	695.30

SUB-STRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
13.12	Supplying and laying of drainage composite for use behind walls between two different fills, along side drains of road, below concrete lining of canals etc having thermos bonding draining core- HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyehtylene film and a nonwoven geotextile having mass per unit area 130g/m2 and tensile strength of 8KN/m that will be working as separation or protecting layer, geocomposite having in plane flow capacity of 0.7 l/(m.s) at hydraulic gradient of 1.0 and 20 kpa pressure and tensile strength of 13.5 KN/m, with mass per unit area of 830 gsm, at easily accesible location including top and bottom, with all leads and lifts, manpower and machinery, materials, labour etc complete and as directed by Engineer in charge	sqm	826.20	826.20	826.20
13.13	Supplying fitting and fixing in positon true to line and level cast steel rocker bearing conforming to IRC: 83 (pt.-1) Section IX and clause 2003 of MoRT&H specifications complete including all accessories as per drawing and technical specification	tonne	458.70	458.70	458.70
13.14	Supplying fitting and fixing in positon true to line and level forged steel roller bearing conforming to IRC: 83 (pt.-1) Section IX and clause 2003 of Mort&h specifications complete including all accessories as per drawing and technical specification	tonne	255.90	255.90	255.90
13.15	Supplying fitting and fixing in positon true to line and level sliding plate bearing with PTFE surface sliding of stainless steel complete including all accessories as per drawing and technical specification and BS:5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of Mort&H specifications	tonne	219.20	219.20	219.20
13.16	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 Mort&H specification complete including all accessories as per drwaing and technical specifications	cubic cm	0.86	0.86	0.86
13.17	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.	tonne	196.50	196.50	196.50

Summary of Rate Analysis

SUB-STRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
13.18	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston saupported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel /fabricated structural steel, metal and elastomer elements to be as per IRC:83 Part I & ii respectively and other parts conforming to BS:5400 section 9.1 & 9.2 and clause 2006 of Mort&h specification complete as per dwrawing and approved technical specificatons	tonne	193.80	193.80	193.80
13.19	Protection to sub strucutre by using coal tar epoxy	sqm	#VALUE!	#VALUE!	#VALUE!
13.20	Providing strucutral steel for sub-structure complete as per drwaing and technical specifications	MT	126358.60	126358.60	126358.60

CHAPTER-13
BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.01	1300 & 2200		**Brick masonry work in 1:3 in substructure complete excluding pointing and plastering, as per drawing and Technical Specifications**									
			Unit=cum									
			Taking output=1cum									
			a) Material									
			Brick Ist class	each	500.000	500.000	500.000	6.07	3034.50	3034.50	3034.50	M-079
			Cement mortar 1:3 (Rate taken from subanalysis 21.01 A)	cum	0.240	0.240	0.240	3467.70	832.25	832.25	832.25	21.01 A
			Water for curing	KL	0.483	0.483	0.483	56.20	27.14	27.14	27.14	M-191
			b) Labour									
			Mate	day	0.064	0.064	0.064	325.00	20.80	20.80	20.80	L-12
			Mason	day	0.800	0.800	0.800	369.00	295.20	295.20	295.20	L-10
			Mazdoor	day	0.800	0.800	0.800	306.00	244.80	244.80	244.80	L-13
			Add for scaffolding @5 percent of cost of material and labour						222.73	222.73	222.73	
			c) Machinery									
			Water tanker (speed @ km/hr and return speed @km/hr and spreading @30 mins per trip)									
			(i) 16 KL capacity	hour	0.003 X L1 +0.02			1121.00	25.78			PM11001
			(ii) 12 KL capacity	hour		0.004 X L1 + 0.027		947.00		29.36		PM11002
			(iii) 6 KL capacity	hour			0.009 X L1 + 0.054	707.00			44.54	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		940.64	941.36	944.39	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		564.39	564.81	566.64	
			Rate per cum (a+b+c+d+e)						6208.24	6212.96	6233.00	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**6208.20**	**6213.00**	**6233.00**	
13.02	**1300 & 2200**		**Pointing with cement mortar (1:3) on brick work in substrucutre as per technical specifications**									
			Unit=sqm									
			Taking output =10 sqm									
			a) Material									
			Cement mortar 1:3 (Rate taken from sub-analysis 21.01 A)	cum	0.030	0.030	0.030	3467.70	104.03	104.03	104.03	21.01 A
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		90.91	90.91	90.91	
			d)Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		54.54	54.54	54.54	
			Rate for 10 sqm (a+b+c+d)						599.98	599.98	599.98	
								Say	**600.00**	**600.00**	**600.00**	
		Note	Scaffolding is already included in item 13.01									
13.03	**1300 & 2200**		**Plastering with cement mortar (1:3) on brick work in substructure as per technical specifications**									
			Unit= 10sqm									
			Taking output=10sqm									
			a) Material									
			Cement mortar 1:3 (Rate taken from sub-analysis 21.01 A)	cum	0.144	0.144	0.144	3467.70	499.35	499.35	499.35	21.01 A
			Water for curing	KL	0.139	0.139	0.139	56.20	7.81	7.81	7.81	M-191
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			c) Machinery									
			Water tanker (speed @km/hr and return speed @ km/hr and spreading @30 mins per trip)									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.001 X L1 + 0.006			1121.00	7.85			PM11001
			(ii) 12 KL capacity	hour		0.001 X L1 + .008		947.00		8.52		PM11002
			(iii) 6 KL capacity	hour			0.003 X L1 + 0.015	707.00			12.73	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		173.10	173.24	174.08	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		103.86	103.94	104.45	
			Cost for 10 sqm= (a+b+c+d+e)						1142.47	1143.36	1148.91	
			Rate per sqm=(a+b+c+d+e)/10						114.25	114.34	114.89	
		Note	1. Scaffolding is already included in item no. 13.01					**Say**	**114.20**	**114.30**	**114.90**	
			2. The number of mason and mazdoors already catered in the cement mortar have been taken into acount while providing these categories in brick masonry, pointing and plastering									
13.04	**1400 2200**		**Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and technical specifications**									
		A	**Random Rubble Masonry (Coursed/uncoursed)**									
			unit=cum									
			Taking output=1cum									
			a) Material									
			Stone	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-001
			Through and bond stone (7no. X 0.24m X 0.24m X 0.39m=0.16cum)	No.	7.000	7.000	7.000	10.58	74.06	74.06	74.06	M-184
			Cement mortar 1:3 (Rate taken from sub analysis 21.01 A)	cum	0.330	0.330	0.330	3467.70	1144.34	1144.34	1144.34	21.01 A
			Water for curing	KL	0.966	0.966	0.966	56.20	54.29	54.29	54.29	M-191
			b) Labour									
			Mate	day	0.096	0.096	0.096	325.00	31.20	31.20	31.20	L-12

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mason	day	1.200	1.200	1.200	369.00	442.80	442.80	442.80	L-10
			Mazdoor	day	1.200	1.200	1.200	306.00	367.20	367.20	367.20	L-13
			Add for scaffolding @5 percent of cost of a) Material and b) Labour)						139.44	139.44	139.44	
			c) Machinery									
			Water tanker (speed @ km/hr and return speed @km/hr and spreading @ 30mins per trip)									
			(i) 16 KL capacity	hour	0.007 X L1 + 0.04			1121.00	52.69			PM11001
			(ii) 12 KL capacity	hour		0.009 X L1 + 0.054		947.00		59.66		PM11002
			(iii) 6 KL capacity	hour			0.018 X L1 + 0.107	707.00			88.38	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		596.20	597.60	603.34	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		357.72	358.56	362.01	
			Rate per cum (a+b+c+d+e)						3934.95	3944.15	3982.06	
								Say	**3934.90**	**3944.20**	**3982.10**	
13.04		**B**	**Coursed rubble masonry (first sort)**									
			unit=cum									
			Taking output=1cum									
			a) Material									
			Stone	cum	1.100	1.100	1.100	675.00	742.50	742.50	742.50	M-001
			Through and bond stone (7no. X 0.24m X 0.24m X 0.39m=0.16cum)	No.	7.000	7.000	7.000	10.58	74.06	74.06	74.06	M-184
			Cement mortar 1:3 (Rate taken from sub analysis 21.01 A)	cum	0.300	0.300	0.300	3467.70	1040.31	1040.31	1040.31	21.01 A
			Water for curing	KL	0.966	0.966	0.966	56.20	54.29	54.29	54.29	M-191
			b) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13
			Add for scaffolding @5 percent of cost of a) Material and b) Labour)						148.13	148.13	148.13	
			c) Machinery									
			Water tanker (speed @ km/hr and return speed @km/hr and spreading @ 30mins per trip)									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.007 X L1 + 0.04			1121.00	52.69			PM11001
			(ii) 12 KL capacity	hour		0.009 X L1 + 0.054		947.00		59.66		PM11002
			(iii) 6 KL capacity	hour			0.018 X L1 + 0.107	707.00			88.38	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		632.70	634.09	639.83	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		379.62	380.45	383.90	
			Rate per cum (a+b+c+d+e)						4175.79	4185.00	4222.90	
								Say	**4175.80**	**4185.00**	**4222.90**	
13.04		**C**	**Ashlar masonry (first sort)**									
			Plain ashlar									
			Unit=cum									
			Taking output=1cum									
			a) Material									
			Stone	cum	1.110	1.110	1.110	675.00	749.25	749.25	749.25	M-001
			Through and bond stone (7no. X 0.24m X 0.24m X 0.39m=0.16cum)	No.	7.000	7.000	7.000	10.58	74.06	74.06	74.06	M-184
			Cement mortar 1:3 (Rate taken from sub analysis 21.01 A)	cum	0.330	0.330	0.330	3467.70	1144.34	1144.34	1144.34	21.01 A
			Water for curing	KL	0.966	0.966	0.966	56.20	54.29	54.29	54.29	M-191
			b) Labour for masonry work									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mason	day	2.500	2.500	2.500	369.00	922.50	922.50	922.50	L-10
			Mazdoor	day	2.500	2.500	2.500	306.00	765.00	765.00	765.00	L-13
			Add for scaffolding @5 percent of cost of a) Material and b) Labour)						188.72	188.72	188.72	
			c) Machinery									
			Water tanker (speed @ km/hr and return speed @km/hr and spreading @ 30mins per trip)									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.007 X L1 + 0.04			1121.00	52.69			PM11001
			(ii) 12 KL capacity	hour		0.009 X L1 + 0.054		947.00		59.66		PM11002
			(iii) 6 KL capacity	hour			0.018 X L1 + 0.107	707.00			88.38	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		803.17	804.56	810.31	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		481.90	482.74	486.18	
			Rate per cum (a+b+c+d+e)						5300.92	5310.13	5348.03	
								Say	**5300.90**	**5310.10**	**5348.00**	
		Note	The labour already considered in the cement mortar have been taken into account while providing these categories in the stone masonry works.									
13.05	**1500, 1700 & 2200**		**Plain/Reinforced cement concrete in sub-strucutre complete as per drawing and Technical speciofications**									
		A	**PCC Grade M15**									
		(p)	**Height upto 5m**									
			PCC Grade M15 using batching plant & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.03)	cum	30.000	30.000	30.000	2727.10	81813.00	81813.00	81813.00	21.03
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @10 percent on cost of concrete i.e. cost of material , labour and machinery						8893.69	8904.62	8952.30	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		19566.12	19590.17	19695.06	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		11739.67	11754.10	11817.04	
			Rate per cum (a+b+c+d+e+f)/30						4304.55	4309.84	4332.91	
								Say	**4304.50**	**4309.80**	**4332.90**	
13.05		**B**	**PCC Grade M20**									
		(p)	**Height upto 5m**									
			PCC Grade M20 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.04)	cum	30.000	30.000	30.000	3068.40	92052.00	92052.00	92052.00	21.04
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @10 percent on cost of concrete i.e. cost of maerial , labour and machinery						9917.59	9928.52	9976.20	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		21818.70	21842.75	21947.64	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13091.22	13105.65	13168.59	
			Cost for 30 cum= a+b+c+d+e+f						144003.39	144162.13	144854.45	
			Rate per cum (a+b+c+d+e+f)/30						4800.11	4805.40	4828.48	
								Say	**4800.10**	**4805.40**	**4828.50**	
13.05		**C**	**PCC Grade M25 using batching plant, transit mixer & concrete pump**									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @10 percent on cost of concrete i.e. cost of maerial , labour and machinery						10781.29	10792.22	10839.90	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23718.84	23742.89	23847.78	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14231.30	14245.73	14308.67	
			Cost for 30 cum=a+b+c+d+e+f						156544.32	156703.05	157395.38	
			Rate per cum (a+b+c+d+e+f)/30						5218.14	5223.44	5246.51	
								Say	**5218.10**	**5223.40**	**5246.50**	
13.05		**C**	**(q) Height 5m to 10m**									
			PCC Grade M25 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (spread @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @12 percent on cost of concrete i.e. cost of maerial , labour and machinery						12937.55	12950.67	13007.88	
			Add 2 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						2156.26	2158.44	2167.98	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		24581.34	24606.26	24714.98	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14748.80	14763.76	14828.99	
			Cost for 30 cum=a+b+c+d+e+f						162236.84	162401.34	163118.84	
			Rate per cum (a+b+c+d+e+f)/30						5407.89	5413.38	5437.29	
								Say	**5407.90**	**5413.40**	**5437.30**	
13.05		**C**	**(r) Height above 10m**									
			PCC Grade M25 using batching plant, transit mixer & concrete pump									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.06)	cum	30.000	30.000	30.000	3356.30	100689.00	100689.00	100689.00	21.06
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @15 percent on cost of concrete i.e. cost of material , labour and machinery						16171.93	16188.33	16259.85	
			Add 4 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4312.52	4316.89	4335.96	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25659.47	25685.49	25798.97	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15395.68	15411.29	15479.38	
			Cost for 30 cum=a+b+c+d+e+f						169352.49	169524.21	170273.18	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate per cum (a+b+c+d+e+f)/30						5645.08	5650.81	5675.77	
								Say	**5645.10**	**5650.80**	**5675.80**	
13.05		**D**	**PCC Grade M30**									
			(p) Height upto 5 m									
			PCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.08)	cum	30.000	30.000	30.000	3384.30	101529.00	101529.00	101529.00	21.08
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @10 percent on cost of concrete i.e. cost of maerial , labour and machinery						10865.29	10876.22	10923.90	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23903.64	23927.69	24032.58	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14342.18	14356.61	14419.55	
			Cost for 30 cum=a+b+c+d+e+f						157764.00	157922.73	158615.06	
			Rate per cum (a+b+c+d+e+f)/30						5258.80	5264.09	5287.17	
								Say	**5258.80**	**5264.10**	**5287.20**	
13.05		**D**	**(q) Height 5m to 10m**									
			PCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.08)	cum	30.000	30.000	30.000	3384.30	101529.00	101529.00	101529.00	21.08
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @12 percent on cost of concrete i.e. cost of material , labour and machinery						13038.35	13051.47	13108.68	
			Add 2 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						2173.06	2175.24	2184.78	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		24772.86	24797.78	24906.50	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14863.72	14878.67	14943.90	
			Cost for 30 cum=a+b+c+d+e+f						163500.87	163665.38	164382.88	
			Rate per cum (a+b+c+d+e+f)/30						5450.03	5455.51	5479.43	
								Say	**5450.03**	**5455.50**	**5479.40**	
13.05		**D**	**(r) Height above 10m**									
			PCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.08)	cum	30.000	30.000	30.000	3384.30	101529.00	101529.00	101529.00	21.08
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 min for unloading)									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @15 percent on cost of concrete i.e. cost of maerial , labour and machinery						16297.93	16314.33	16385.85	
			Add 4 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4346.12	4350.49	4369.56	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25859.39	25885.41	25998.89	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15515.63	15531.24	15599.33	
			Cost for 30 cum= a+b+c+d+e+f						170671.96	170843.68	171592.65	
			Rate per cum (a+b+c+d+e+f)/30						5689.07	5694.79	5719.76	
								Say	**5689.10**	**5694.80**	**5719.80**	
13.05		**E**	**RCC Grade M20**									
			(p) Height upto 5m									
			RCC Grade M20 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.05)	cum	30.000	30.000	30.000	3052.80	91584.00	91584.00	91584.00	21.05
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @10 percent on cost of concrete i.e. cost of material , labour and machinery						9902.69	9913.62	9961.30	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		21785.92	21809.97	21914.86	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13071.55	13085.98	13148.92	
			Cost for 30 cum= a+b+c+d+e+f						143787.04	143945.78	144638.10	
			Rate per cum (a+b+c+d+e+f)/30						4792.90	4798.19	4821.27	
								Say	**4792.90**	**4798.20**	**4821.30**	
13.05		**E**	**(q) Height 5m to 10m**									
			RCC Grade M20 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.05)	cum	30.000	30.000	30.000	3052.80	91584.00	91584.00	91584.00	21.05
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @12 percent on cost of concrete i.e. cost of material , labour and machinery						11883.23	11896.35	11953.56	
			Add 2 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						1980.54	1982.72	1992.26	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		22578.13	22603.06	22711.77	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		13546.88	13561.83	13627.06	
			Cost for 30 cum= a+b+c+d+e+f						149015.66	149180.17	149897.67	
			Rate per cum (a+b+c+d+e+f)/30						4967.19	4972.67	4996.59	
								Say	**4967.20**	**4972.70**	**4996.60**	
13.05		**E**	**(r) Height above 10m**									
			RCC Grade M20 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum Basic cost (Rate taken from sub-analysis-21.05)	cum	30.000	30.000	30.000	3052.80	91584.00	91584.00	91584.00	21.05
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork @15 percent on cost of concrete i.e. cost of material , labour and machinery						14854.03	14870.43	14941.95	
			Add 4 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						3961.08	3965.45	3984.52	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		23568.40	23594.42	23707.90	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14141.04	14156.65	14224.74	
			Cost for 30 cum= a+b+c+d+e+f						155551.44	155723.16	156472.13	
			Rate per cum (a+b+c+d+e+f)/30						5185.05	5190.77	5215.74	
								Say	**5185.00**	**5190.80**	**5215.70**	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.05		F	**RCC Grade M25**									
			(p) Height upto 5m									
			RCC Grade M25 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @ 10 percent on cost of concrete i.e cost of material , labour and machinery (a+b+c) for formwork						11292.29	11303.22	11350.90	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		24843.04	24867.09	24971.98	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		14905.82	14920.25	14983.19	
			Cost for 30 cum= a+b+c+d+e+f						163964.04	164122.77	164815.10	
			Rate per cum (a+b+c+d+e+f)/30						5465.47	5470.76	5493.84	
								Say	**5465.47**	**5470.80**	**5493.80**	
13.05		**F**	**(q) Height 5 to 10m**									
			RCC Grade M25 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add @11.8 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						13324.90	13337.80	13394.06	
			Add 1.8 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						2032.61	2034.58	2043.16	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25656.08	25680.92	25789.25	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15393.65	15408.55	15473.55	
			Cost for 30 cum= a+b+c+d+e+f						169330.13	169494.06	170209.04	
			Rate per cum (a+b+c+d+e+f)/30						5644.34	5649.80	5673.63	
								Say	**5644.30**	**5649.80**	**5673.60**	
13.05		**F**	**(r) Height above 10m**									
			RCC Grade M25 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.07)	cum	30.000	30.000	30.000	3516.00	105480.00	105480.00	105480.00	21.07
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @15 percent on cost of concrete i.e. cost of material , labour and machinery (a+b+c) for formwork						16938.43	16954.83	17026.35	
			Add 4 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4516.92	4521.29	4540.36	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		26875.65	26901.67	27015.15	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16125.39	16141.00	16209.09	
			Cost for 30 cum= a+b+c+d+e+f						177379.28	177551.00	178299.97	
			Rate per cum (a+b+c+d+e+f)/30						5912.64	5918.37	5943.33	
								Say	**5912.60**	**5918.40**	**5943.30**	
13.05		**G**	**RCC Grade M30**									
			(p) Height upto 5m									
			RCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @10 percent on cost of concrete i.e. cost of material , labour and machinery (a+b+c) for formwork						11613.29	11624.22	11671.90	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		25549.24	25573.29	25678.18	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15329.54	15343.97	15406.91	
			Cost for 30 cum= a+b+c+d+e+f						168624.96	168783.69	169476.02	
			Rate per cum (a+b+c+d+e+f)/30						5620.83	5626.12	5649.20	
								Say	**5620.80**	**5626.10**	**5649.20**	
13.05		**G**	**(q) Height 5m to 10m**									
			RCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @11.5 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						13355.28	13367.85	13422.69	
			Add 1.6 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						1858.13	1859.88	1867.50	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		26269.26	26293.99	26401.84	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		15761.56	15776.39	15841.11	
			Cost for 30 cum= a+b+c+d+e+f						173377.11	173540.32	174252.16	
			Rate per cum (a+b+c+d+e+f)/30						5779.24	5784.68	5808.41	
								Say	**5779.20**	**5784.70**	**5808.40**	
13.05		**G**	**(r) Height above 10m**									
			RCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit=cum									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Taking output=30cum									
		a) Material									
		Per cum Basic cost (Rate taken from sub-analysis-21.09)	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
		Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
		b) labour									
		For pouring and placing									
		Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
		c) Machinery									
		Transit truck agitator									
		For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
		For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
		Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
		Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
		(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
		(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
		(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
		d) Formwork									
		Add @14 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						16258.60	16273.91	16340.66	
		Add 3.5percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4064.65	4068.48	4085.17	
		e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		27291.23	27316.92	27428.97	
		f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16374.74	16390.15	16457.38	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Cost for 30 cum= a+b+c+d+e+f						180122.11	180291.67	181031.20	
			Rate per cum (a+b+c+d+e+f)/30						6004.07	6009.72	6034.37	
								Say	**6004.10**	**6009.70**	**6034.40**	
13.05		**H**	**RCC Grade M35**									
			(p) Height upto 5 m									
			RCC Grade M35 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add @10 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						12153.29	12164.22	12211.90	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		26737.24	26761.29	26866.18	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16042.34	16056.77	16119.71	
			Cost for 30 cum= a+b+c+d+e+f						176465.76	176624.49	177316.82	
			Rate per cum (a+b+c+d+e+f)/30						5882.19	5887.48	5910.56	
								Say	**5882.20**	**5887.50**	**5910.60**	
13.05		**H**	**(q) Height 5m to 10m**									
			RCC Grade M35 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @11 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						13368.62	13380.64	13433.09	
			Add 1.4percent of cost of material, labour and machinery excluding formwork to cater for extra lift						1701.46	1702.99	1709.67	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		27320.59	27345.17	27452.36	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16392.36	16407.10	16471.41	
			Cost for 30 cum= a+b+c+d+e+f						180315.92	180478.12	181185.55	
			Rate per cum (a+b+c+d+e+f)/30						6010.53	6015.94	6039.52	
								Say	**6010.50**	**6015.90**	**6039.50**	
		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 5m high @ 2 percent of cost for height upto 10m and 4 percent for heights above 10m will be involved for approaching the work spot by providing higher ramp/stairs 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 comparitively more , the percentage to be added has been reduced to maintaine the same cost for extra efforts.									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.05		H	**(r) Height above 10m**									
			RCC Grade M35 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.11)	cum	30.000	30.000	30.000	3803.00	114090.00	114090.00	114090.00	21.11
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @13 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						15799.28	15813.49	15875.47	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add 3 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						3645.99	3649.27	3663.57	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		28195.63	28220.99	28331.61	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		16917.38	16932.60	16998.97	
			Cost for 30 cum= a+b+c+d+e+f						186091.16	186258.56	186988.64	
			Rate per cum (a+b+c+d+e+f)/30						6203.04	6208.62	6232.95	
								Say	**6203.00**	**6208.60**	**6233.00**	
13.05		**I**	**RCC Grade M40**									
			(p) Height upto 5m									
			RCC Grade M40 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.12
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @10 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						13406.99	13417.92	13465.60	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		29495.38	29519.43	29624.32	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		17697.23	17711.66	17774.59	
			Cost for 30 cum= a+b+c+d+e+f						194669.48	194828.22	195520.54	
			Rate per cum (a+b+c+d+e+f)/30						6488.98	6494.27	6517.35	
								Say	**6489.00**	**6494.30**	**6517.40**	
13.05		**I**	**(q) Height 5m to 10m**									
			RCC Grade M40 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.12
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @11 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						14747.69	14759.71	14812.16	
			Add 1.4 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						1876.98	1878.51	1885.18	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		30138.91	30163.49	30270.67	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		18083.35	18098.09	18162.40	
			Cost for 30 cum= a+b+c+d+e+f						198916.81	199079.01	199786.44	
			Rate per cum (a+b+c+d+e+f)/30						6630.56	6635.97	6659.55	
								Say	**6630.60**	**6636.00**	**6659.50**	
13.05		**I**	**(r) Height above 10m**									
			RCC Grade M40 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.12)	cum	30.000	30.000	30.000	4220.90	126627.00	126627.00	126627.00	21.12
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @13 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						17429.09	17443.30	17505.28	
			Add 3 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4022.10	4025.38	4039.68	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		31104.21	31129.58	31240.20	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		18662.53	18677.75	18744.12	
			Cost for 30 cum= a+b+c+d+e+f						205287.82	205455.21	206185.30	
			Rate per cum (a+b+c+d+e+f)/30						6842.93	6848.51	6872.84	
								Say	**6842.90**	**6848.50**	**6872.80**	
13.05		**J**	**RCC Grade M 45**									
			(p) Height upto 5m									
			RCC Grade M45 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum Basic cost (Rate taken from sub-analysis-21.13)	cum	30.000	30.000	30.000	4405.60	132168.00	132168.00	132168.00	21.13
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @10 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						13961.09	13972.02	14019.70	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		30714.40	30738.45	30843.34	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		18428.64	18443.07	18506.01	
			Cost for 30 cum= a+b+c+d+e+f						202715.01	202873.75	203566.07	
			Rate per cum (a+b+c+d+e+f)/30						6757.17	6762.46	6785.54	
								Say	**6757.20**	**6762.50**	**6785.50**	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.05		J	**(q) Height 5m to 10m**									
			RCC Grade M45 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.13)	cum	30.000	30.000	30.000	4405.60	132168.00	132168.00	132168.00	21.13
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @11 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						15357.20	15369.22	15421.67	
			Add 1.4 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						1954.55	1956.08	1962.76	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		31384.53	31409.10	31516.29	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		18830.72	18845.46	18909.77	
			Cost for 30 cum= a+b+c+d+e+f						207137.89	207300.08	208007.51	
			Rate per cum (a+b+c+d+e+f)/30						6904.60	6910.00	6933.58	
								Say	**6904.60**	**6910.00**	**6933.60**	
13.05		**J**	**(r) Height above 10m**									
			RCC Grade M45 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.13)	cum	30.000	30.000	30.000	4405.60	132168.00	132168.00	132168.00	21.13
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @13 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						18149.42	18163.63	18225.61	
			Add 3 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4188.33	4191.61	4205.91	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		32389.73	32415.09	32525.71	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		19433.84	19449.05	19515.43	
			Cost for 30 cum= a+b+c+d+e+f						213772.19	213939.59	214669.68	
			Rate per cum (a+b+c+d+e+f)/30						7125.74	7131.32	7155.66	
								Say	**7125.70**	**7131.30**	**7155.70**	
13.05		**K**	**RCC Grade M50**									
			(p) Height upto 5m									
			RCC Grade M50 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.14)	cum	30.000	30.000	30.000	4822.90	144687.00	144687.00	144687.00	21.14
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @10 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						15212.99	15223.92	15271.60	
			Add 3 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4563.90	4567.18	4581.48	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		34381.36	34406.06	34513.82	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		20628.81	20643.64	20708.29	
			Cost for 30 cum= a+b+c+d+e+f						226916.94	227080.01	227791.21	
			Rate per cum (a+b+c+d+e+f)/30						7563.90	7569.33	7593.04	
								Say	**7563.90**	**7569.30**	**7593.00**	
13.05		**K**	**(q) Height 5m to 10m**									
			RCC Grade M50 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub-analysis-21.14)	cum	30.000	30.000	30.000	4822.90	144687.00	144687.00	144687.00	21.14
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @11 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						16734.29	16746.31	16798.76	
			Add 1.4percent of cost of material, labour and machinery excluding formwork to cater for extra lift						2129.82	2131.35	2138.02	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		34198.80	34223.37	34330.56	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		20519.28	20534.02	20598.34	
			Cost for 30 cum= a+b+c+d+e+f						225712.08	225874.27	226581.70	
			Rate per cum (a+b+c+d+e+f)/30						7523.74	7529.14	7552.72	
								Say	**7523.70**	**7529.10**	**7552.70**	
13.05		**K**	**(r) Height above 10m**									
			RCC Grade M50 using batching plant, transit mixer & concrete pump									
			Unit=cum									
			Taking output=30cum									
			a) Material									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Per cum Basic cost (Rate taken from sub-analysis-21.14)	cum	30.000	30.000	30.000	4822.90	144687.00	144687.00	144687.00	21.14
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6cum capacity)	tonne-km	75 X L1	75 X L1	75 X L1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @km/hr and return speed @ km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109 X L1 + 0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146 X L1 + 0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292 X L1 +1.75	707.00			1443.69	PM11003
			d) Formwork									
			Add @13 percent on cost of concrete i.e. cost of maerial , labour and machinery (a+b+c) for formwork						19776.89	19791.10	19853.08	
			Add 3 percent of cost of material, labour and machinery excluding formwork to cater for extra lift						4563.90	4567.18	4581.48	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		35294.13	35319.50	35430.12	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		21176.48	21191.70	21258.07	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Cost for 30 cum= a+b+c+d+e+f						232941.29	233108.68	233838.77	
			Rate per cum (a+b+c+d+e+f)/30						7764.71	7770.29	7794.63	
								Say	**7764.70**	**7770.30**	**7794.60**	
		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 5m high @ 2 percent of cost for height upto 10m and 4 percent for heights above 10m will be involved for approaching the work spot by providing higher ramp/stairs case for use by the working parties.									
			(b) The above mentioned percentage 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 comparitively more , the percentage to be added has been reduced to maintain the same cost for extra efforts.									
13.06	**Section 1600 & 2200**		**Supplying, fitting and placing HYSD bar reinforcement in sub structure complete as per drawing and technical specifications**									
			Unit=MT									
			Taking output=8MT									
			a) Material									
			HYSD bars including 5% overlaps and wastage	tonne	8.400	8.400	8.400	54810.00	460404.00	460404.00	460404.00	M-083
			Binding Wire	kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) Labour for straightening, cutting, bending , shifting to site tying and placing in position.									
			Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
			Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-25
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			c) Machinery									
			Cutting Machine	hour	6.667	6.667	6.667	309.00	2060.10	2060.10	2060.10	PM43001
			Bending machine	hour	6.667	6.667	6.667	309.00	2060.10	2060.10	2060.10	PM43001
			Electric generator 15 KVA	hour	6.667	6.667	6.667	274.00	1826.76	1826.76	1826.76	PM22009
			Tipper									
			Tipper for transportation									
			(i) 18 cum capacity	t.km	8 X L1			4.80	38.40			PM72001
			(ii) 14 cum capacity	t.km		8 X L1		5.48		43.84		PM73001
			(iii) 10 cum capacity	t.km			8 X L1	6.80			54.40	PM74001
			Loading & unloading time									
			(i) 18 cum capacity	hour	1.000			2239.00	2239.00			PM6001
			(ii) 14 cum capacity	hour		1.280		1998.00		2557.44		PM6002
			(iii) 10 cum capacity	hour			1.778	1785.00			3173.73	PM6003
			Light weight crane									
			At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		95296.26	95361.03	95486.40	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		57177.75	57216.62	57291.84	
			Cost for 8MT (a+b+c+d+e)						628955.29	629382.82	630210.26	
			Rate per MT= (a+b+c+d+e)/8						78619.41	78672.85	78776.28	
								Say	**78619.40**	**78672.90**	**78776.30**	
13.07	**Section 1600 & 2200**		**Supplying, fitting and placing Mild steel reinforcement complete in sub structure as per drawing and technical specifications**									
			Unit=MT									
			Taking output=8MT									
			a) Material									
			MS bars including 5% overlaps and wastage	tonne	8.400	8.400	8.400	58600.00	492240.00	492240.00	492240.00	M-125

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Binding Wire	kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072
			b) Labour for straightening, cutting, bending , shifting to site tying and placing in position.									
			Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
			Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-25
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			c) Machinery									
			Cutting Machine	hour	6.667	6.667	6.667	309.00	2060.10	2060.10	2060.10	PM43001
			Bending machine	hour	6.667	6.667	6.667	309.00	2060.10	2060.10	2060.10	PM43001
			Electric generator 15 KVA	hour	6.667	6.667	6.667	274.00	1826.76	1826.76	1826.76	PM22009
			Tipper									
			Tipper for transportation									
			(i) 18 cum capacity	t.km	8 X L1			4.80	38.40			PM72001
			(ii) 14 cum capacity	t.km		8 X L1		5.48		43.84		PM73001
			(iii) 10 cum capacity	t.km			8 X L1	6.80			54.40	PM74001
			Loading & unloading time									
			(i) 18 cum capacity	hour	1.000			2239.00	2239.00			PM6001
			(ii) 14 cum capacity	hour		1.280		1998.00		2557.44		PM6002
			(iii) 10 cum capacity	hour			1.778	1785.00			3173.73	PM6003
			Light weight crane									
			At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		101663.46	101728.23	101853.60	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		60998.07	61036.94	61112.16	
			Cost for 8MT (a+b+c+d+e)						670978.81	671406.34	672233.78	
			Rate per MT= (a+b+c+d+e)/8						83872.35	83925.79	84029.22	
								Say	**83872.40**	**83925.80**	**84029.20**	
13.08	**2706 & 2200**		**Providing weep holes in Brick masonry/ Plain/Reinforced concrete abutment , wing wall/ returen wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V:20 H towards drawing face. Complete as per drawing and technical specifications.**									
			Unit=Nos.									
			Taking output=30 nos.									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			a) Material									
			AC pipe 100 mm dia (including wastage @ 5%)	metre	31.500	31.500	31.500	44.28	1394.82	1394.82	1394.82	M-056
			Average length of weep hole is taken as 1m for the purpose of estimating									
			MS Clamp	each	30.000	30.000	30.000	43.36	1300.80	1300.80	1300.80	M-122
			Collar for AC pipe (average)	each	10.000	10.000	10.000	4.43	44.28	44.28	44.28	M056 X0.1
			taking 10 % of above pipe rate									
			Per cum basic cost (rate taken from sub analysis-21.01 A)	cum	0.050	0.050	0.050	3467.70	173.39	173.39	173.39	21.01 A
			b) Labour									
			Mate	day	0.030	0.030	0.030	325.00	9.75	9.75	9.75	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	0.250	0.250	0.250	306.00	76.50	76.50	76.50	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		636.81	636.81	636.81	
			d) Contractors profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		382.08	382.08	382.08	
			Cost for 30 Nos.= (a+b+c+d)						4202.93	4202.93	4202.93	
			Rate per No.=(a+b+c+d)/30						140.10	140.10	140.10	
								Say	**140.10**	**140.10**	**140.10**	
			1. In case of stone masonry, the size of the weep holes shall be 150mm X 80 mm or circular with 150mm diameter.									
			2. For strucutre 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									
13.09	**710.1.4. of IRC:78 & 2200**		**Back filling behind abutment, wing wall, return wall complete as per drawing and technical specifications**									
			Unit=cum									
			Taking output=10 cum									
		A	**Granular Material**									
			a) Labour									
			Mate	day	0.280	0.280	0.280	325.00	91.00	91.00	91.00	L-12
			Mazdoor	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			b) Material									
			Granular material	cum	12.000	12.000	12.000	165.30	1983.60	1983.60	1983.60	M-009
			c) Machinery									
			Plate compactor/power rammer	hour	2.500	2.500	2.500	335.00	837.50	837.50	837.50	PM46001
			Water tanker 6KL capacity	hour	0.050	0.050	0.050	707.00	35.35	35.35	35.35	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		1017.89	1017.89	1017.89	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		610.73	610.73	610.73	
			Cost for 10 cum of granular backfill=a+b+c+d+e						6718.07	6718.07	6718.07	
			Rate per cum= (a+b+c+d+e)/10						671.81	671.81	671.81	
								Say	**671.80**	**671.80**	**671.80**	
13.09		**B**	**Sandy material**									
			a) Labour									
			Mate	day	0.280	0.280	0.280	325.00	91.00	91.00	91.00	L-12
			Mazdoor for filling, watering,ramming, etc	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
			b) Material									
			Sand	cum	12.000	12.000	12.000	494.00	5928.00	5928.00	5928.00	M-005*
			c) Machinery									
			Plate compactor/ power rammer	hour	2.500	2.500	2.500	335.00	837.50	837.50	837.50	PM46001
			Water tanker 6KL capacity	hour	0.060	0.060	0.060	707.00	42.42	42.42	42.42	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		1808.18	1808.18	1808.18	
			e)Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		1084.91	1084.91	1084.91	
			Cost for 10 cum of sandy backfill= a+b+c+d+e						11934.01	11934.01	11934.01	
			Rate per cum= (a+b+c+d+e)/10						1193.40	1193.40	1193.40	
								Say	**1193.40**	**1193.40**	**1193.40**	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.10	710.1.4 of IRC :78 & 2504.2		**Providing and laying of filter media with granular materials/stones crushed aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRT&H 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 drwaing and technical specification.**									
			Unit=cum									
			Taking output=10 cum									
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor for filling, watering , ramming, etc	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
			Mazdoor (skilled)	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
			b) Material									
			Filter media of stone aggregate conforming ito clause 2504.2.2 of MoRT&H specification	cum	12.000	12.000	12.000	678.14	8137.68	8137.68	8137.68	M-011
			c)Machinery									
			Water tanker of 6KL capacity	hour	0.060	0.060	0.060	707.00	42.42	42.42	42.42	PM11003
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		2162.82	2162.82	2162.82	
			e)Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		1297.69	1297.69	1297.69	
			Cost for 10 cum of filter media = a+b+c+d+e						14274.61	14274.61	14274.61	
			Rate per cum= (a+b+c+d+e)/10						1427.46	1427.46	1427.46	
								Say	**1427.50**	**1427.50**	**1427.50**	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.11	704		Supplying and 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, realised by thermos bonding a draining core in extruded monofilaments with two filtering nonwoven geotextiles that may also be working as seperation or protecting layers. The draining three dimensional core will have a "W" configuration as longitudinal parallel channels.									
			Minimum thickness to be 7.2 mm with two filtering UV stabilised polypropylene nonwoven geotextile of minimum thickness of 0.75mm having pores of 150 micron and tensile strength of 8KN/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 and 20 kpa pressure and tensile strength of 18KN/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 direction of Engineer in charge.									
			Unit=sqm									
			Taking output=300 sqm									
			a) Labour									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Mazdoor (skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			b) Material									

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Geosynthetic drainge composite	sqm	300.000	300.000	300.000	473.51	142053.00	142053.00	142053.00	M-290
			Add 10 percent of the cost of synthetic composites for wastage and accessories for joining sheets with the fascia panels, overlap, other protective elements for synthetic composites and other miscellaneous activities required to complete the item in all respect including transportation and takes.						14205.30	14205.30	14205.30	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		31603.46	31603.46	31603.46	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		18962.08	18962.08	18962.08	
			Cost for 300 sqm = a+b+c+d						208582.84	208582.84	208582.84	
			Rate per sqm=(a+b+c+d)/300						695.28	695.28	695.28	
								Say	**695.30**	**695.30**	**695.30**	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.12	704		**Supplying and laying of drainage composite for use behind walls between two different fills, along side drains of road, below concrete lining of canals etc having thermos bonding draining core- HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyehtylene film and a nonwoven geotextile having mass per unit area 130g/m2 and tensile strength of 8KN/m that will be working as separation or protecting layer, geocomposite having in plane flow capacity of 0.7 l/(m.s) at hydraulic gradient of 1.0 and 20 kpa pressure and tensile strength of 13.5 KN/m, with mass per unit area of 830 gsm, at easily accesible location including top and bottom, with all leads and lifts, manpower and machinery, materials, labour etc complete and as directed by Engineer in charge**									
			Unit= sqm									
			Taking output= 300sqm									
			a) Labour									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Mazdoor (skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			b) Material									
			Geosynthetic drainage composite	sqm	300.000	300.000	300.000	563.71	169113.00	169113.00	169113.00	M-291

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add 10 percent of the cost of synthetic composites for wastage and accessories for joining sheets with the fascia panels, overlaps, other protective elements for synthetic composites and other miscellaneous activities required to complete the item in all respect including transportation and takes.						16911.30	16911.30	16911.30	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		37556.66	37556.66	37556.66	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		22534.00	22534.00	22534.00	
			Cost for 300 sqm = a+b+c+d						247873.96	247873.96	247873.96	
			Rate per sqm= (a+b+c+d)/300						826.25	826.25	826.25	
								Say	**826.20**	**826.20**	**826.20**	
13.13	**2000,1000 &2200**		**Supplying fitting and fixing in positon true to line and level cast steel rocker bearing conforming to IRC: 83 (pt.-1) Section IX and clause 2003 of MoRT&H specifications complete including all accessories as per drawing and technical specification**									
			Unit=one Tonne capacity									
			Considering a 250 tonne capacity bearing for the analysis									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor(skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Material									
			Cast steel rocker bearing assembly of 250 tonne design load capacity duly painted complete with all its components as per drawing and specification	each	1.000	1.000	1.000	85505.67	85505.67	85505.67	85505.67	M-065
			Add 1 percent of cost of bearing assembly for foundation anchorage bolts, lifting arrangements, grease and other consumables						855.06	855.06	855.06	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		17376.05	17376.05	17376.05	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		10425.63	10425.63	10425.63	
			Cost for 250 tonnes capacity bearing =a+b+c+d						114681.90	114681.90	114681.90	
			Rate per tonne capacity = (a+b+c+d) /250						458.73	458.73	458.73	
								Say	**458.70**	**458.70**	**458.70**	
13.14	2000,1000 & 2200		**Supplying fitting and fixing in positon true to line and level forged steel roller bearing conforming to IRC: 83 (pt.-1) Section IX and clause 2003 of Mort&h specifications complete including all accessories as per drawing and technical specification**									
			Unit= one tonne capacity									
			Considering a 250 tonne capacity bearing for the analysis									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			forged steel roller bearing of 250 tonne design load capacity duly painted complete with all its component as per drawing and specification	each	1.000	1.000	1.000	47480.35	47480.35	47480.35	47480.35	M-067
			Add 1 percent of cost of bearing assembly for foundation anchorage bolts, lifting arrangements, grease and other consumables						474.80	474.80	474.80	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		9694.93	9694.93	9694.93	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		5816.96	5816.96	5816.96	
			Cost for 250 tonnes capacity bearing =a+b+c+d						63986.54	63986.54	63986.54	
			Rate per tonne capacity =(a+b+c+d)/ 250						255.95	255.95	255.95	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	255.90	255.90	255.90	
13.15	2000 & 2200		**Supplying fitting and fixing in positon true to line and level sliding plate bearing with PTFE surface sliding of stainless steel complete including all accessories as per drawing and technical specification and BS:5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of Mort&H specifications**									
			Unit= one tonne capacity									
			Considering a 80 tonne capacity bearing for the analysis									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			PTFE sliding plate bearing assembly of 80 tonnes design load capacity duly painted complete with all its component as per drawing and specification	each	1.000	1.000	1.000	12637.56	12637.56	12637.56	12637.56	M-069
			Add 1 percent for foundation anchorage bolts, and consumables						126.38	126.38	126.38	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2656.69	2656.69	2656.69	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1594.01	1594.01	1594.01	
			Cost for 80 tonnes capacity bearing =a+b+c+d						17534.13	17534.13	17534.13	
			Rate per tonne capacity =(a+b+c+d)/ 80						219.18	219.18	219.18	
								Say	219.20	219.20	219.20	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	255.90	255.90	255.90	
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 Mort&H specification complete including all accessories as per drwaing 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 X4 mm size reinforcing steel plates= 4545 cu.cm									
			Hence volume of elastomneric = 14655 cu.cm									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			Elastomeric bearing assembly consisting of 7 layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation, complete with all component as per drawing and technical specifications	each	1.000	1.000	1.000	11904.00	11904.00	11904.00	11904.00	M66
			Add 1 percent of cost of bearing assembly for foundation anchorage bolts and consumables.						119.04	119.04	119.04	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2508.51	2508.51	2508.51	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1505.10	1505.10	1505.10	
			Cost for 19200 cc of elastomeric bearing =a+b+c+d						16556.15	16556.15	16556.15	
			Rate per cc of elastomeric bearing = (a+b+c+d)/19200					**Say**	**0.86**	**0.86**	**0.86**	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	255.90	255.90	255.90	
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									
			Considering the sliding bearing of 80 tonnes design capacity for this analysis									
			a) Labour									
			Mate	day	0.044	0.044	0.044	325.00	14.30	14.30	14.30	L-12
			Mazdoor	day	0.750	0.750	0.750	306.00	229.50	229.50	229.50	L-13
			Mazdoor (skilled)	day	0.350	0.350	0.350	388.00	135.80	135.80	135.80	L-15
			b) Material									
			Supplying of sliding plate bearing of 80 tonnes design capacity complete as per drawing and specification	each	1.000	1.000	1.000	11414.17	11414.17	11414.17	11414.17	M-070
			Add 1 percent of cost of bearing assembly for foundation anchorage bolts, and consumables						114.14	114.14	114.14	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		2381.58	2381.58	2381.58	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1428.95	1428.95	1428.95	
			Cost for 80 tonnes of capacity bearing =a+b+c+d						15718.44	15718.44	15718.44	
			Rate per tonne capacity =(a+b+c+d)/80						196.48	196.48	196.48	
								Say	196.50	196.50	196.50	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
13.18	2000 & 2200		**Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston saupported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel /fabricated structural steel, metal and elastomer elements to be as per IRC:83 Part I & ii respectively and other parts conforming to BS:5400 section 9.1 & 9.2 and clause 2006 of Mort&h specification complete as per dwrawing and approved technical specificatons**									
			Unit=one tonne capacity									
			Considering a pot bearing assembly of 250 tonnes capacity for this analysis									
			a) Labour									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mazdoor	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			Pot type bearing assembly consoisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against stainless steel mating together with cast steel assemblies/fabricated structural steel assemblies duly painted with all components as per clause 2006 and complete as per drwaings and technical specifications	each	1.000	1.000	1.000	35667.50	35667.50	35667.50	35667.50	M-068

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add 1 percent of cost of bearing assembly for foundation anchorage bolts and consumables						356.68	356.68	356.68	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		7340.64	7340.64	7340.64	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		4404.38	4404.38	4404.38	
			Cost for 250 tonnes capacity bearing =a+b+c+d						48448.19	48448.19	48448.19	
			Rate per tonne capacity =(a+b+c+d)/ 250						193.79	193.79	193.79	
								Say	**193.80**	**193.80**	**193.80**	
13.19	**suggestive**		**Protection to sub strucutre by using coal tar epoxy**									
			Providing and applying two coats of two components, high build, 100% solid content, low VOC, polycyclin aromatic hydrocarbon based, Pot life= 2hrs @ 72 deg. F, Tack free- 4-6 hrs, DFT per coat 80-120 microns (dry) coal tar epoxy coating with coal tar									
			Unit=sqm									
			Taking output=100sqm									
			a) Labour									
			Mate	day	0.360	0.360	0.360	325.00	117.00	117.00	117.00	L-12
			Painter	day	6.000	6.000	6.000	391.00	2346.00	2346.00	2346.00	L-18
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Material									
			Coal tar epoxy coating @ 0.5kg/sqm coverage including 5% wastage	kg	52.500	52.500	52.500	INPUT	#VALUE!	#VALUE!	#VALUE!	M-234
			Add 1 percent of cost of abs towards miscellaneous (water, painting brush, etc)						#VALUE!	#VALUE!	#VALUE!	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 100 sqm=a+b+c+d						#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Rate per sqm=(a+b+c+d)/100						**#VALUE!**	**#VALUE!**	**#VALUE!**	
13.20		**Providing strucutral steel for sub-structure complete as per drwaing and technical specifications**									
		Unit=MT									
		Taking output=10MT									
		a) Material									
		Structural steel in plates, angles etc including 5 % wastage	tonne	10.500	10.500	10.500	57033.00	598846.50	598846.50	598846.50	M-181
		Nuts and bolts	kg	105.00	105.00	105.00	69.15	7260.75	7260.75	7260.75	M-129
		b) Labour									
		(for cutting, bending, making holes,joining welding and erecting in position)									
		Mate	day	12.312	12.312	12.312	325.00	4001.40	4001.40	4001.40	L-12
		Fitter	day	45.000	45.000	45.000	369.00	16605.00	16605.00	16605.00	L-08
		Blacksmith	day	45.000	45.000	45.000	369.00	16605.00	16605.00	16605.00	L-25
		Welder	day	45.000	45.000	45.000	413.00	18585.00	18585.00	18585.00	L-02
		Painter I class	day	18.900	18.900	18.900	391.00	7389.90	7389.90	7389.90	L-18
		Mazdoor	day	153.900	153.900	153.900	306.00	47093.40	47093.40	47093.40	L-13
		Electodes, cutting gas and other consumables @ 10 percent of cost of (a) above						60610.73	60610.73	60610.73	
		c) Machinery									
		Mobile hydraulic crane 10 tonne capacity (for fabrication)	hrs	40.000	40.000	40.000	864.00	34560.00	34560.00	34560.00	PM63003
		Crane 35 tonne capacity (for loading & unloading@ 1 hr for each operation)	hrs	2.000	2.000	2.000	1747.00	3494.00	3494.00	3494.00	PM63006
		Crane 35 tonne capacity (for lifting and placing in position @ 2 hr)	hrs	2.000	2.000	2.000	1747.00	3494.00	3494.00	3494.00	PM63006
		Trailer 30 tonne capacity for transporting to site	hrs	2+ L/15	2+ L/15	2+ L/15	2239.00	4627.27	4627.27	4627.27	PM6001
		Applying two coats primer before painting of truss and girder (42 sqm/tonne)	lits	525.000	525.000	525.000	77.60	40740.00	40740.00	40740.00	M-145
		Painting of Truss and girder	lits	525.000	525.000	525.000	124.70	65467.50	65467.50	65467.50	M-058

Analysis of Rate

BRIDGE SUBSTRUCUTRE

Sl. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Sundries @ 3% of the above						27881.41	27881.41	27881.41	
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		191452.37	191452.37	191452.37	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		114871.42	114871.42	114871.42	
		Cost for 10 MT=a+b+c+d+e						1263585.65	1263585.65	1263585.65	
		Rate per MT=(a+b+c+d+e)/10						126358.56	126358.56	126358.56	
							Say	**126358.60**	**126358.60**	**126358.60**	

CHAPTER - 14

SUPERSTRUCTURE

CHAPTER-14
BRIDGE SUPERSTRUCTURE

PREAMBLE :

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 drainage system on the ground in case of flyover 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 moments 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.

6 The rate analysis for pre-stressed cement concrete of M60 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 a special type of modular expansion joint such as swivel joists joints are required for which firms specialise in this field may be consulted. Such cases will require prior approval of ministry.

CHAPTER- 14
SUPERSTRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
14.01	Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and Technical Specification				
A	RCC Grade M20				
	Using Batching Plant ,Transit Mixer and Concrete Pump				
(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
(p)	Height upto 5m	cum	5180.70	5186.40	5211.60
(q)	Height 5m to 10m	cum	5396.60	5402.50	5428.80
(r)	Height above 10m	cum	5612.40	5618.60	5645.90
(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
(p)	Height upto 5m	cum	5396.60	5402.50	5428.80
(q)	Height 5m to 10m	cum	5612.40	5618.60	5645.90
(r)	Height above 10m	cum	5828.30	5834.70	5863.10
B	RCC Grade M25 Using Batching Plant, Transit Mixer and Concrete Pump				
(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
(p)	Height upto 5m	cum	5914.40	5920.10	5945.30
(q)	Height 5m to 10m	cum	6160.90	6166.80	6193.00
(r)	Height above 10m	cum	6407.30	6413.50	6440.80
(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
(p)	Height upto 5m	cum	6160.90	6166.80	6193.00
(q)	Height 5m to 10m	cum	6407.30	6413.50	6440.80
(r)	Height above 10m	cum	6653.70	6660.10	6688.50
C	RCC Grade M30 Using Batching Plant,Transite Mixer and Concrete Pump.				
(i)	For solid slab super-structure, 20-30 per cent of (a+b+c)				
(p)	Height upto 5m	cum	6083.90	6089.60	6114.80
(q)	Height 5m to 10m	cum	6337.40	6343.40	6369.60
(r)	Height above 10m	cum	6590.90	6597.10	6624.40
(ii)	For T-beam & slab, 25-35 per cent of (a+b+c)				
(p)	Height upto 5m	cum	6337.40	6343.40	6369.60
(q)	Height 5m to 10m	cum	6590.90	6597.10	6624.40
(r)	Height above 10m	cum	6844.40	6850.80	6879.10
D	RCC/PSC Grade M35				
	Using Batching Plant, Transit Mixer and Concrete Pump				
(i)	For solid slab super-structure, 18-28 per cent of (a+b+c)				
(p)	Height upto 5m	cum	6262.90	6268.50	6293.30
(q)	Height 5m to 10m	cum	6528.30	6534.10	6559.90
(r)	Height above 10m	cum	6793.60	6799.70	6826.60
(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)				
(p)	Height upto 5m	cum	6528.30	6534.10	6559.90
(q)	Height 5m to 10m	cum	6793.60	6799.70	6826.60
(r)	Height above 10m	cum	7059.00	7065.30	7093.20
(iii)	For box girder and balanced cantilever ,38-58 percent of cost concrete.				

SUPERSTRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(p)	Height upto 5m	cum	7324.40	7331.00	7359.90
(q)	Height 5m to 10m	cum	7855.10	7862.20	7893.20
(r)	Height above 10m	cum	8385.90	8393.40	8426.60
E	RCC/PSC Grade M-40				
	Using Batching Plant, Transit Mixer and Concrete Pump				
(i)	For solid slab/voided slab super-structure, 18-28 per cent of (a+b+c)				
(p)	Height upto 5m	cum	6913.80	6919.40	6944.20
(q)	Height 5m to 10m	cum	7206.80	7212.60	7238.40
(r)	Height above 10m	cum	7499.70	7505.80	7532.70
(ii)	For T-beam & slab, 23-33 per cent of (a+b+c)				
(p)	Height upto 5m	cum	7206.80	7212.60	7238.40
(q)	Height 5m to 10m	cum	7499.70	7505.80	7532.70
(r)	Height above 10m	cum	7792.70	7799.00	7826.90
(iii)	For cast-in situ box girder,segmental construction and balanced cantilever ,38-58 percent of cost of concrete.				
(p)	Height upto 5m	cum	8085.60	8092.20	8121.20
(q)	Height 5m to 10m	cum	8671.50	8678.60	8709.60
(r)	Height above 10m	cum	9257.50	9265.00	9298.10
F	RCC/PSC Grade M-45				
(i)	For solid slab / voided slab super-structure, 16-26 per cent of cost of concrete (a+b+c)				
(p)	Height upto 5m	cum	7079.40	7085.00	7109.30
(q)	Height 5m to 10m	cum	7384.60	7390.30	7415.70
(r)	Height above 10m	cum	7689.70	7695.70	7722.20
(ii)	For T-beam & slab including launching of precast girders by launching truss up to 40 m span, 21-31 per cent cost of concrete .				
(p)	Height upto 5m	cum	7384.60	7390.30	7415.70
(q)	Height 5m to 10m	cum	7689.70	7695.70	7722.20
(r)	Height above 10m	cum	7994.90	8001.10	8028.60
(iii)	For cast-in situ box girder,segmental construction and balanced cantilever ,36-56 percent of cost of concrete.				
(p)	Height upto 5m	cum	8300.00	8306.50	8335.00
(q)	Height 5m to 10m	cum	8910.30	8917.30	8947.90
(r)	Height above 10m	cum	9520.60	9528.00	9560.80
G	PSC Grade M-50				
(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete				
(p)	Height upto 5m	cum	8982.60	8989.00	9017.40
(q)	Height 5m to 10m	cum	9648.00	9654.90	9685.30
(r)	Height above 10m	cum	10313.40	10320.80	10353.30
H	PSC Grade M- 55				
(i)	For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete				
(p)	Height upto 5m	cum	9130.30	9136.80	9165.10
(q)	Height 5m to 10m	cum	9806.70	9813.60	9844.00
(r)	Height above 10m	cum	10483.00	10490.40	10522.90
I	PSC Grade M- 60				

SUPERSTRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(i)	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**				
(p)	**Height upto 5m**	cum	9426.30	9432.80	9461.10
(q)	**Height 5m to 10m**	cum	10124.60	10131.50	10161.90
(r)	**Height above 10m**	cum	10822.80	10830.20	10862.70
J	**PSC Grade M- 65**				
(i)	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**				
(p)	**Height upto 5m**	cum	9502.80	9509.20	9537.50
(q)	**Height 5m to 10m**	cum	10206.70	10213.60	10244.00
(r)	**Height above 10m**	cum	10910.60	10918.00	10950.50
14.02	**Supplying, fitting and placing HYSD bar reinforcement in super-structure complete as per drawing and technical specifications**	MT	78815.60	78869.00	78972.50
14.03	**High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications**	MT	143457.80	143457.80	143457.80
14.04	**Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and Technical Specifications**	cum	11041.70	11050.50	11079.20
14.05	**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 to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 516.	sqm	445.50	445.50	445.50
14.06	**Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.**	metre	1967.90	1969.30	1973.20
14.07	**Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.**	metre	1904.40	1905.80	1909.70

SUPERSTRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
14.08	**Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification**	metre	3811.00	3811.00	3811.00
14.09	**Drainage Spouts complete as per drawing and Technical specification**	no.	5705.40	5705.40	5705.40
14.10	**PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification**				
Case I	**PCC Grade M15 using batching plant & Concrete pump**	cum	3913.22	3918.03	3939.01
Case II	**PCC Grade M15 using batching plant & manual placing**	cum	4121.94	4126.74	4147.68
14.11	**Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification**	cum	9152.80	9160.40	9187.00
14.12	**Providing anti-corrosive treatment to HYSD reinforcement with Fusion Bonded Epoxy Coating (FBEC)**				
	To be taken as per the prevailing market rates.	MT			
14.13	**Precast - pretensioned Girders**				
	Providing, precasting, transportation and placing in position precast pretensioned concrete girders as per drawing and technical specifications	cum	#VALUE!	#VALUE!	#VALUE!
14.14	**Providing and fixing Helical pipes in voided concrete slabs**	m	#VALUE!	#VALUE!	#VALUE!
14.15	**Crash Barriers for Bridge**				
	Provision of an Reinforced cement concrete crash barrier at the bridge decks& approaches to bridge structures constructed with Rein forced Cement Concrete With HYSD reinforcement confirming 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 .				
A	**Crash Barriers for Bridge (Height 950 mm) as per detais given IRC-5 (fig.-1) (Area -0.254 sqm. For 1 meter length)**	metre	3640.30	3643.00	3651.60
B	**Crash Barriers for Bridge (Height 1100 mm) as per detais given IRC-5 (fig.-2) (Area -0.298 sqm. For 1 meter length)**	metre	4258.20	4261.30	4271.50
C	**Crash Barriers for Bridge (Height 1550 mm) as per detais given IRC-5 (fig.-3) (Surface Area 0.514 sqm. For 1 meter length)**	metre	7341.90	7347.20	7364.80
14.16	**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.	sqm	109.40	109.40	109.40
14.17	**Filler joint**				
(i)	**Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & Technical Specification.**	metre	5465.20	5465.20	5465.20

SUPERSTRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
(ii)	**Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.**	metre	381.80	381.80	381.80
(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.**	metre	432.80	432.80	432.80
(iv)	**Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 per cent bitumen by weight**	metre	28.80	28.80	28.80
14.18	**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.	metre	1405.70	1405.70	1405.70
14.19	**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 MoRT&H specifications for road & bridge works.	metre	39569.90	39569.90	39569.90
14.20	**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.	metre	#VALUE!	#VALUE!	#VALUE!
14.21	**Strip Seal Expansion Joint**				
	Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.	metre	12304.60	12304.60	12304.60
14.22	**Modular Strip / Box Seal Joint**				

SUPERSTRUCTURE

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
	Providing and laying of a modular strip Box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.	metre	41523.80	41523.80	41523.80
14.23	**Modular Strip / Box Seal Joint**				
	Providing and laying of a modular strip box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.	metre	41537.00	41537.00	41537.00
14.24	**Painting with synthetic enamel paint bridge No. and span arrangements**				
	Painting two coat after filling the surface with synthetic enamel paint bridge No. and span arrangements as per direction by Enginner .	no.	181.40	181.40	181.40
14.25	**Bipolar corrosion inhibiting admixture in concrete for protection of reinforced steel from corrosion**				
	Admix polydentate ,bipolar ,migratory, intergal non nitrate base concrete penetrating corrosion inhibiting admixture at dosage of 3Kg per cu.m. of concrete as per manufactures specification. Inhibitor should conforms to following-	cum	850.80	850.80	850.80
14.26	**Providing structural steel for super- structure complete as per drawing and technical specifications**	MT	129246.60	129246.60	129246.60

Analysis of Rate

CHAPTER-14

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
14.01	1500 &1600 1700		**Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and Technical Specification**									
14.01A		A	**RCC Grade M20**									
		Case I	**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	120.000	120.000	3052.80	366336.00	366336.00	366336.00	21.05
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truk and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+2 .625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+3. 500		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+7 .000	707.00			5774.07	PM11003
			For formwork and staging add the following									
14.01A		(i)	**For solid slab super-structure, 20-30 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						392477.92	392910.90	394818.37	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork and staging 20 percent of (a+b+c)						78495.58	78582.18	78963.67	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		94194.70	94298.62	94756.41	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		56516.82	56579.17	56853.85	
			Cost for 120 cum = a+b+c+d+e+f						621685.03	622370.87	625392.30	
			Rate per cum = (a+b+c+d+e+f)/120						5180.71	5186.42	5211.60	
								Say	**5180.70**	**5186.40**	**5211.60**	
14.01A		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						392477.92	392910.90	394818.37	
			d) Formwork and staging 25 percent of (a+b+c)						98119.48	98227.73	98704.59	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		98119.48	98227.73	98704.59	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		58871.69	58936.64	59222.76	
			Cost for 120 cum = a+b+c+d+e+f						647588.57	648302.99	651450.31	
			Rate per cum = (a+b+c+d+e+f)/120						5396.57	5402.52	5428.75	
								Say	**5396.60**	**5402.50**	**5428.80**	
14.01A		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						392477.92	392910.90	394818.37	
			d) Formwork and staging 30 percent of (a+b+c)						117743.38	117873.27	118445.51	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		102044.26	102156.83	102652.78	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		61226.56	61294.10	61591.67	
			Cost for 120 cum = a+b+c+d+e+f						673492.12	674235.11	677508.32	
			Rate per cum = (a+b+c+d+e+f)/120						5612.43	5618.63	5645.90	
								Say	**5612.40**	**5618.60**	**5645.90**	
14.01A		**(ii)**	**For T-beam & slab, 25-35 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						392477.92	392910.90	394818.37	
			d) Formwork and staging 25 percent of (a+b+c)						98119.48	98227.73	98704.59	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		98119.48	98227.73	98704.59	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		58871.69	58936.64	59222.76	
			Cost for 120 cum = a+b+c+d+e+f						647588.57	648302.99	651450.31	
			Rate per cum = (a+b+c+d+e+f)/120						5396.57	5402.52	5428.75	
								Say	**5396.60**	**5402.50**	**5428.80**	
14.01A		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						392477.92	392910.90	394818.37	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork and staging 30 percent of (a+b+c)						117743.38	117873.27	118445.51	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		102044.26	102156.83	102652.78	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		61226.56	61294.10	61591.67	
			Cost for 120 cum = a+b+c+d+e+f						673492.12	674235.11	677508.32	
			Rate per cum = (a+b+c+d+e+f)/120						5612.43	5618.63	5645.90	
								Say	**5612.40**	**5618.60**	**5645.90**	
14.01A (ii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						392477.92	392910.90	394818.37	
			d) Formwork and staging 35 percent of (a+b+c)						137367.27	137518.82	138186.43	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		105969.04	106085.94	106600.96	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		63581.42	63651.57	63960.58	
			Cost for 120 cum = a+b+c+d+e+f						699395.66	700167.23	703566.33	
			Rate per cum = (a+b+c+d+e+f)/120						5828.30	5834.73	5863.05	
								Say	**5828.30**	**5834.70**	**5863.10**	
14.01	**B**	**Case II**	**RCC Grade M25 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 -21.07)	cum	120.000	120.000	120.000	3516.00	421920.00	421920.00	421920.00	21.07
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truk and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return									
			(i)16 KL capacity	hour	0.438xL1+ 2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+ 3.5		947.00		3866.60		PM11002

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(iii)6 KL capacity	hour			1.167xL1 +7	707.00			5774.07	PM11003
			For formwork and staging add the following									
14.01B		**(i)**	**For solid slab super-structure, 20-30 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						448061.92	448494.90	450402.37	
			d) Formwork and staging 20 percent of (a+b+c)						89612.38	89698.98	90080.47	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		107534.86	107638.78	108096.57	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		64520.92	64583.27	64857.94	
			Cost for 120 cum = a+b+c+d+e+f						709730.09	710415.92	713437.35	
			Rate per cum = (a+b+c+d+e+f)/120						5914.42	5920.13	5945.31	
								Say	**5914.40**	**5920.10**	**5945.30**	
14.01B(i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						448061.92	448494.90	450402.37	
			d) Formwork and staging 25 percent of (a+b+c)						112015.48	112123.73	112600.59	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		112015.48	112123.73	112600.59	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		67209.29	67274.24	67560.36	
			Cost for 120 cum = a+b+c+d+e+f						739302.17	740016.59	743163.91	
			Rate per cum = (a+b+c+d+e+f)/120						6160.85	6166.80	6193.03	
								Say	**6160.90**	**6166.80**	**6193.00**	
14.01B (i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						448061.92	448494.90	450402.37	
			d)Formwork and staging 30 percent of (a+b+c)						134418.58	134548.47	135120.71	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		116496.10	116608.67	117104.62	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		69897.66	69965.20	70262.77	
			Cost for 120 cum = a+b+c+d+e+f						768874.26	769617.25	772890.47	
			Rate per cum = (a+b+c+d+e+f)/120						6407.29	6413.48	6440.75	
								Say	**6407.30**	**6413.50**	**6440.80**	
14.01B		**(ii)**	**For T-beam & slab, 25-35 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						448061.92	448494.90	450402.37	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork and staging 25 percent of (a+b+c)						112015.48	112123.73	112600.59	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		112015.48	112123.73	112600.59	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		67209.29	67274.24	67560.36	
			Cost for 120 cum = a+b+c+d+e+f						739302.17	740016.59	743163.91	
			Rate per cum = (a+b+c+d+e+f)/120						6160.85	6166.80	6193.03	
								Say	**6160.90**	**6166.80**	**6193.00**	
14.01B (ii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						448061.92	448494.90	450402.37	
			d) Formwork and staging 30 percent of (a+b+c)						134418.58	134548.47	135120.71	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		116496.10	116608.67	117104.62	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		69897.66	69965.20	70262.77	
			Cost for 120 cum = a+b+c+d+e+f						768874.26	769617.25	772890.47	
			Rate per cum = (a+b+c+d+e+f)/120						6407.29	6413.48	6440.75	
								Say	**6407.30**	**6413.50**	**6440.80**	
14.01B (ii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						448061.92	448494.90	450402.37	
			d)Formwork and staging 35 percent of (a+b+c)						156821.67	156973.22	157640.83	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		120976.72	121093.62	121608.64	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		72586.03	72656.17	72965.18	
			Cost for 120 cum = a+b+c+d+e+f						798446.35	799217.91	802617.02	
			Rate per cum = (a+b+c+d+e+f)/120						6653.72	6660.15	6688.48	
								Say	**6653.70**	**6660.10**	**6688.50**	
14.01 14.01C		**C**	**RCC Grade M30 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 21.9)	cum	120.000	120.000	120.000	3623.00	434760.00	434760.00	434760.00	21.09
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Transit truk and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+ 2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+ 3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+ 7	707.00			5774.07	PM11003
			For formwork and staging add the following									
14.01C		**(i)**	**For solid slab super-structure, 20-30 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						460901.92	461334.90	463242.37	
			d) Formwork and staging 20 percent of (a+b+c)						92180.38	92266.98	92648.47	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		110616.46	110720.38	111178.17	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		66369.88	66432.23	66706.90	
			Cost for 120 cum = a+b+c+d+e+f						730068.65	730754.48	733775.91	
			Rate per cum = (a+b+c+d+e+f)/120						6083.91	6089.62	6114.80	
								Say	**6083.90**	**6089.60**	**6114.80**	
14.01C(i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						460901.92	461334.90	463242.37	
			d) Formwork and staging 25 percent of (a+b+c)						115225.48	115333.73	115810.59	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		115225.48	115333.73	115810.59	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		69135.29	69200.24	69486.36	
			Cost for 120 cum = a+b+c+d+e+f						760488.17	761202.59	764349.91	
			Rate per cum = (a+b+c+d+e+f)/120						6337.40	6343.35	6369.58	
								Say	**6337.40**	**6343.40**	**6369.60**	
14.01C(i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						460901.92	461334.90	463242.37	
			d) Formwork and staging 30 percent of (a+b+c)						138270.58	138400.47	138972.71	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		119834.50	119947.07	120443.02	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		71900.70	71968.24	72265.81	
			Cost for 120 cum = a+b+c+d+e+f						790907.70	791650.69	794923.91	
			Rate per cum = (a+b+c+d+e+f)/120						6590.90	6597.09	6624.37	
								Say	**6590.90**	**6597.10**	**6624.40**	
14.01C		**(ii)**	**For T-beam & slab, 25-35 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						460901.92	461334.90	463242.37	
			d) Formwork and staging 25 percent of (a+b+c)						115225.48	115333.73	115810.59	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		115225.48	115333.73	115810.59	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		69135.29	69200.24	69486.36	
			Cost for 120 cum = a+b+c+d+e+f						760488.17	761202.59	764349.91	
			Rate per cum = (a+b+c+d+e+f)/120						6337.40	6343.35	6369.58	
								Say	**6337.40**	**6343.40**	**6369.60**	
14.01C (ii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						460901.92	461334.90	463242.37	
			d)Formwork and staging 30 percent of (a+b+c)						138270.58	138400.47	138972.71	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		119834.50	119947.07	120443.02	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		71900.70	71968.24	72265.81	
			Cost for 120 cum = a+b+c+d+e+f						790907.70	791650.69	794923.91	
			Rate per cum = (a+b+c+d+e+f)/120						6590.90	6597.09	6624.37	
								Say	**6590.90**	**6597.10**	**6624.40**	
14.01C (ii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						460901.92	461334.90	463242.37	
			d) Formwork and staging 35 percent of (a+b+c)						161315.67	161467.22	162134.83	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		124443.52	124560.42	125075.44	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		74666.11	74736.25	75045.26	
			Cost for 120 cum = a+b+c+d+e+f						821327.23	822098.79	825497.90	
			Rate per cum = (a+b+c+d+e+f)/120						6844.39	6850.82	6879.15	
								Say	**6844.40**	**6850.80**	**6879.10**	
14.01		**D**	**RCC/PSC Grade M35**									
		casell	**Using Batching Plant, Transit Mixer and Concrete Pump**									
			Unit = cum									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Taking output = 120 cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub - analysis -21.11)	cum	120.000	120.000	120.000	3803.00	456360.00	456360.00	456360.00	21.11
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truk and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+ 2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+ 3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+ 7	707.00			5774.07	PM11003
			For formwork and staging add the following									
14.01 D		**(i)**	**For solid slab super-structure, 18-28 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d) Formwork and staging 18 percent of (a+b+c)						86850.35	86928.28	87271.63	
			e) Overheadcharges @ on(a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		113870.45	113972.64	114422.80	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		68322.27	68383.58	68653.68	
			Cost for 120 cum = a+b+c+d+e+f						751545.00	752219.40	755190.47	
			Rate per cum = (a+b+c+d+e+f)/120						6262.87	6268.50	6293.25	
								Say	**6262.90**	**6268.50**	**6293.30**	
14.01 D(i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d) Formwork and staging 23 percent of (a+b+c)						110975.44	111075.03	111513.74	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		118695.47	118801.99	119271.22	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		71217.28	71281.19	71562.73	
			Cost for 120 cum = a+b+c+d+e+f						783390.12	784093.11	787190.07	
			Rate per cum = (a+b+c+d+e+f)/120						6528.25	6534.11	6559.92	
								Say	**6528.30**	**6534.10**	**6559.90**	
14.01 D(i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d) Formwork and staging 28 percent of (a+b+c)						135100.54	135221.77	135755.86	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		123520.49	123631.33	124119.65	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		74112.30	74178.80	74471.79	
			Cost for 120 cum = a+b+c+d+e+f						815235.25	815966.81	819189.67	
			Rate per cum = (a+b+c+d+e+f)/120						6793.63	6799.72	6826.58	
								Say	**6793.60**	**6799.70**	**6826.60**	
14.01 D		**(ii)**	**For T-beam & slab, 23-33 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d) Formwork and staging 23 percent of (a+b+c)						110975.44	111075.03	111513.74	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		118695.47	118801.99	119271.22	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		71217.28	71281.19	71562.73	
			Cost for 120 cum = a+b+c+d+e+f						783390.12	784093.11	787190.07	
			Rate per cum = (a+b+c+d+e+f)/120						6528.25	6534.11	6559.92	
								Say	**6528.30**	**6534.10**	**6559.90**	
14.01 D(ii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d) Formwork and staging 28 percent of (a+b+c)						135100.54	135221.77	135755.86	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		123520.49	123631.33	124119.65	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		74112.30	74178.80	74471.79	
			Cost for 120 cum = a+b+c+d+e+f						815235.25	815966.81	819189.67	
			Rate per cum = (a+b+c+d+e+f)/120						6793.63	6799.72	6826.58	
								Say	**6793.60**	**6799.70**	**6826.60**	
14.01 D(ii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d)Formwork and staging 33 percent of (a+b+c)						159225.63	159368.52	159997.98	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		128345.51	128460.68	128968.07	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		77007.31	77076.41	77380.84	
			Cost for 120 cum = a+b+c+d+e+f						847080.38	847840.51	851189.26	
			Rate per cum = (a+b+c+d+e+f)/120						7059.00	7065.34	7093.24	
								Say	**7059.00**	**7065.30**	**7093.20**	
14.01 D		**(iii)**	**For box girder and balanced cantilever ,38-58 percent of cost concrete.**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d)Formwork and staging 38 percent of (a+b+c)						183350.73	183515.26	184240.10	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		133170.53	133290.03	133816.49	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		79902.32	79974.02	80289.90	
			Cost for 120 cum = a+b+c+d+e+f						878925.50	879714.22	883188.86	
			Rate per cum = (a+b+c+d+e+f)/120						7324.38	7330.95	7359.91	
								Say	**7324.40**	**7331.00**	**7359.90**	
14.01 D(iii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d)Formwork and staging 48 percent of (a+b+c)						231600.92	231808.75	232724.34	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		142820.57	142948.73	143513.34	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		85692.34	85769.24	86108.00	
			Cost for 120 cum = a+b+c+d+e+f						942615.76	943461.62	947188.05	
			Rate per cum = (a+b+c+d+e+f)/120						7855.13	7862.18	7893.23	
								Say	**7855.10**	**7862.20**	**7893.20**	
14.01 D(iii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						482501.92	482934.90	484842.37	
			d) Formwork and staging 58 percent of (a+b+c)						279851.12	280102.24	281208.57	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		152470.61	152607.43	153210.19	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		91482.36	91564.46	91926.11	
			Cost for 120 cum = a+b+c+d+e+f						1006306.01	1007209.03	1011187.24	
			Rate per cum = (a+b+c+d+e+f)/120						8385.88	8393.41	8426.56	
								Say	**8385.90**	**8393.40**	**8426.60**	
14.01		**E**	**RCC/PSC Grade M-40**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
14.01E			**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 -21.12)	cum	120.000	120.000	120.000	4220.90	506508.00	506508.00	506508.00	21.12
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truck and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+7	707.00			5774.07	PM11003
			For formwork and staging add the following									
14.01E		**(i)**	**For solid slab/voided slab super-structure, 18-28 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d)Formwork and staging 18 percent of (a+b+c)						95876.99	95954.92	96298.27	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		125705.38	125807.56	126257.73	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		75423.23	75484.54	75754.64	
			Cost for 120 cum = a+b+c+d+e+f						829655.52	830329.93	833301.00	
			Rate per cum = (a+b+c+d+e+f)/120						6913.80	6919.42	6944.17	
								Say	**6913.80**	**6919.40**	**6944.20**	
14.01E(i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork and staging 23 percent of (a+b+c)						122509.48	122609.07	123047.78	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		131031.88	131138.39	131607.63	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		78619.13	78683.04	78964.58	
			Cost for 120 cum = a+b+c+d+e+f						864810.41	865513.40	868610.36	
			Rate per cum = (a+b+c+d+e+f)/120						7206.75	7212.61	7238.42	
								Say	**7206.80**	**7212.60**	**7238.40**	
14.01E(i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d) Formwork and staging 28 percent of (a+b+c)						149141.98	149263.21	149797.30	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		136358.38	136469.22	136957.53	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		81815.03	81881.53	82174.52	
			Cost for 120 cum = a+b+c+d+e+f						899965.31	900696.87	903919.73	
			Rate per cum = (a+b+c+d+e+f)/120						7499.71	7505.81	7532.66	
								Say	**7499.70**	**7505.80**	**7532.70**	
14.01E		**(ii)**	**For T-beam & slab, 23-33 per cent of (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d)Formwork and staging 23 percent of (a+b+c)						122509.48	122609.07	123047.78	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		131031.88	131138.39	131607.63	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		78619.13	78683.04	78964.58	
			Cost for 120 cum = a+b+c+d+e+f						864810.41	865513.40	868610.36	
			Rate per cum = (a+b+c+d+e+f)/120						7206.75	7212.61	7238.42	
								Say	**7206.80**	**7212.60**	**7238.40**	
14.01E (ii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d) Formwork and staging 28 percent of (a+b+c)						149141.98	149263.21	149797.30	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		136358.38	136469.22	136957.53	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		81815.03	81881.53	82174.52	
			Cost for 120 cum = a+b+c+d+e+f						899965.31	900696.87	903919.73	
			Rate per cum = (a+b+c+d+e+f)/120						7499.71	7505.81	7532.66	
								Say	**7499.70**	**7505.80**	**7532.70**	
14.01E (ii)		**(r)**	**Height above 10m**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d) Formwork and staging 33 percent of (a+b+c)						175774.47	175917.36	176546.82	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		141684.88	141800.05	142307.44	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		85010.93	85080.03	85384.46	
			Cost for 120 cum = a+b+c+d+e+f						935120.20	935880.34	939229.09	
			Rate per cum = (a+b+c+d+e+f)/120						7792.67	7799.00	7826.91	
								Say	**7792.70**	**7799.00**	**7826.90**	
14.01E		**(iii)**	**For cast-in situ box girder,segmental 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						532649.92	533082.90	534990.37	
			d) Formwork and staging 38 percent of (a+b+c)						202406.97	202571.50	203296.34	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		147011.38	147130.88	147657.34	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		88206.83	88278.53	88594.41	
			Cost for 120 cum = a+b+c+d+e+f						970275.10	971063.81	974538.46	
			Rate per cum = (a+b+c+d+e+f)/120						8085.63	8092.20	8121.15	
								Say	**8085.60**	**8092.20**	**8121.20**	
14.01E (iii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d) Formwork and staging 48 percent of (a+b+c)						255671.96	255879.79	256795.38	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		157664.38	157792.54	158357.15	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		94598.63	94675.52	95014.29	
			Cost for 120 cum = a+b+c+d+e+f						1040584.89	1041430.76	1045157.18	
			Rate per cum = (a+b+c+d+e+f)/120						8671.54	8678.59	8709.64	
								Say	**8671.50**	**8678.60**	**8709.60**	
14.01E (iii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						532649.92	533082.90	534990.37	
			d)Formwork and staging 58 percent of (a+b+c)						308936.96	309188.08	310294.41	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		168317.38	168454.20	169056.96	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		100990.43	101072.52	101434.17	
			Cost for 120 cum = a+b+c+d+e+f						1110894.68	1111797.70	1115775.91	
			Rate per cum = (a+b+c+d+e+f)/120						9257.46	9264.98	9298.13	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**9257.50**	**9265.00**	**9298.10**	
14.01		**F**	**RCC/PSC Grade M-45**									
			Unit = 1cum									
			Taking output = 120 cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub - analysis -21.13)	cum	120.000	120.000	120.000	4405.60	528672.00	528672.00	528672.00	21.13
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truck and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+7	707.00			5774.07	PM11003
			For formwork and staging add the following									
14.01F		**(i)**	**For solid slab / voided slab super-structure, 16-26 per cent of cost of concrete (a+b+c)**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d) Formwork and staging 16 percent of (a+b+c)						88770.23	88839.50	89144.70	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		128716.83	128817.28	129259.81	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		77230.10	77290.37	77555.89	
			Cost for 120 cum = a+b+c+d+e+f						849531.08	850194.05	853114.77	
			Rate per cum = (a+b+c+d+e+f)/120						7079.43	7084.95	7109.29	
								Say	**7079.40**	**7085.00**	**7109.30**	
14.01F(i)		**(q)**	**Height 5m to 10m**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d)Formwork and staging 21 percent of (a+b+c)						116510.92	116601.85	117002.42	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		134264.97	134369.75	134831.36	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		80558.98	80621.85	80898.81	
			Cost for 120 cum = a+b+c+d+e+f						886148.80	886840.35	889886.96	
			Rate per cum = (a+b+c+d+e+f)/120						7384.57	7390.34	7415.72	
								Say	**7384.60**	**7390.30**	**7415.70**	
14.01F(i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d) Formwork and staging 26 percent of (a+b+c)						144251.62	144364.19	144860.14	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		139813.11	139922.22	140402.90	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		83887.87	83953.33	84241.74	
			Cost for 120 cum = a+b+c+d+e+f						922766.52	923486.65	926659.15	
			Rate per cum = (a+b+c+d+e+f)/120						7689.72	7695.72	7722.16	
								Say	**7689.70**	**7695.70**	**7722.20**	
14.01F		**(ii)**	**For T-beam & slab including launching of precast girders by launching truss up to 40 m span, 21-31 per cent cost of concrete .**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d) Formwork and staging 21 percent of (a+b+c)						116510.92	116601.85	117002.42	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		134264.97	134369.75	134831.36	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		80558.98	80621.85	80898.81	
			Cost for 120 cum = a+b+c+d+e+f						886148.80	886840.35	889886.96	
			Rate per cum = (a+b+c+d+e+f)/120						7384.57	7390.34	7415.72	
								Say	**7384.60**	**7390.30**	**7415.70**	
14.01F(ii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d) Formwork and staging 26 percent of (a+b+c)						144251.62	144364.19	144860.14	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		139813.11	139922.22	140402.90	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		83887.87	83953.33	84241.74	
			Cost for 120 cum = a+b+c+d+e+f						922766.52	923486.65	926659.15	
			Rate per cum = (a+b+c+d+e+f)/120						7689.72	7695.72	7722.16	
								Say	**7689.70**	**7695.70**	**7722.20**	
14.01F(ii)		**(r)**	**Height above 10m**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d) Formwork and staging 31 percent of (a+b+c)						171992.32	172126.54	172717.85	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		145361.25	145474.69	145974.44	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		87216.75	87284.81	87584.67	
			Cost for 120 cum = a+b+c+d+e+f						959384.24	960132.94	963431.33	
			Rate per cum = (a+b+c+d+e+f)/120						7994.87	8001.11	8028.59	
								Say	**7994.90**	**8001.10**	**8028.60**	
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						554813.92	555246.90	557154.37	
			d)Formwork and staging 36 percent of (a+b+c)						199733.01	199888.88	200575.57	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		150909.39	151027.16	151545.99	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		90545.63	90616.29	90927.59	
			Cost for 120 cum = a+b+c+d+e+f						996001.95	996779.24	1000203.52	
			Rate per cum = (a+b+c+d+e+f)/120						8300.02	8306.49	8335.03	
								Say	**8300.00**	**8306.50**	**8335.00**	
14.01F (iii)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d)Formwork and staging 46 percent of (a+b+c)						255214.40	255413.57	256291.01	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		162005.67	162132.10	162689.08	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		97203.40	97279.26	97613.45	
			Cost for 120 cum = a+b+c+d+e+f						1069237.39	1070071.83	1073747.90	
			Rate per cum = (a+b+c+d+e+f)/120						8910.31	8917.27	8947.90	
								Say	**8910.30**	**8917.30**	**8947.90**	
14.01F (iii)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						554813.92	555246.90	557154.37	
			d) Formwork and staging 56 percent of (a+b+c)						310695.80	310938.26	312006.45	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		173101.94	173237.03	173832.16	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		103861.17	103942.22	104299.30	
			Cost for 120 cum = a+b+c+d+e+f						1142472.83	1143364.42	1147292.28	
			Rate per cum = (a+b+c+d+e+f)/120						9520.61	9528.04	9560.77	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
								Say	**9520.60**	**9528.00**	**9560.80**	
14.01		G	**PSC Grade M-50**									
			Unit = cum									
			Taking output = 120 cum									
			a) Material									
			Per cum Basic cost (Rate taken from sub - analysis -21.14)	cum	120.000	120.000	120.000	4822.90	578748.00	578748.00	578748.00	21.14
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truck and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+ 2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+ 3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+ 7	707.00			5774.07	PM11003
			For formwork and staging add the following:									
14.01G		(i)	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						604889.92	605322.90	607230.37	
			d) Formwork and staging 35 per cent of (a+b+c)						211711.47	211863.02	212530.63	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		163320.28	163437.18	163952.20	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		97992.17	98062.31	98371.32	
			Cost for 120 cum = a+b+c+d+e+f						1077913.84	1078685.41	1082084.52	
			Rate per cum = (a+b+c+d+e+f)/120						8982.62	8989.05	9017.37	
								Say	**8982.60**	**8989.00**	**9017.40**	
14.01G (i)		(q)	**Height 5m to 10m**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						604889.92	605322.90	607230.37	
			d) Formwork and staging 45 per cent of (a+b+c)						272200.47	272395.31	273253.67	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		175418.08	175543.64	176096.81	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		105250.85	105326.18	105658.08	
			Cost for 120 cum = a+b+c+d+e+f						1157759.31	1158588.03	1162238.93	
			Rate per cum = (a+b+c+d+e+f)/120						9647.99	9654.90	9685.32	
								Say	**9648.00**	**9654.90**	**9685.30**	
14.01G (i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						604889.92	605322.90	607230.37	
			d) Formwork and staging 55 per cent of (a+b+c)						332689.46	332927.60	333976.70	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		187515.88	187650.10	188241.41	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		112509.53	112590.06	112944.85	
			Cost for 120 cum = a+b+c+d+e+f						1237604.78	1238490.66	1242393.33	
			Rate per cum = (a+b+c+d+e+f)/120						10313.37	10320.76	10353.28	
								Say	**10313.40**	**10320.80**	**10353.30**	
14.01		**H**	**PSC Grade M- 55**									
			Unit = 1 cum									
			Taking output = 120 cum									
			a) Material									
			Per cum Basic Cost (Rate taken from sub - analysis -21.15)	cum	120.000	120.000	120.000	4905.80	588696.00	588696.00	588696.00	21.15
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truk and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+ 2.625			1121.00	3433.62			PM11001

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(ii)12 KL capacity	hour		0.583xL1+3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+7	707.00			5774.07	PM11003
			For formwork and staging add the following:									
14.01H		**(i)**	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						614837.92	615270.90	617178.37	
			d) Formwork and staging 35 percent of (a+b+c)						215193.27	215344.82	216012.43	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		166006.24	166123.14	166638.16	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		99603.74	99673.89	99982.90	
			Cost for 120 cum = a+b+c+d+e+f						1095641.18	1096412.75	1099811.85	
			Rate per cum = (a+b+c+d+e+f)/120						9130.34	9136.77	9165.10	
								Say	**9130.30**	**9136.80**	**9165.10**	
14.01H (i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						614837.92	615270.90	617178.37	
			d) Formwork and staging 45 percent of (a+b+c)						276677.07	276871.91	277730.27	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		178303.00	178428.56	178981.73	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		106981.80	107057.14	107389.04	
			Cost for 120 cum = a+b+c+d+e+f						1176799.78	1177628.50	1181279.40	
			Rate per cum = (a+b+c+d+e+f)/120						9806.66	9813.57	9843.99	
								Say	**9806.70**	**9813.60**	**9844.00**	
14.01H (i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						614837.92	615270.90	617178.37	
			d) Formwork and staging 55 percent of (a+b+c)						338160.86	338399.00	339448.10	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		190599.76	190733.98	191325.29	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		114359.85	114440.39	114795.18	
			Cost for 120 cum = a+b+c+d+e+f						1257958.39	1258844.26	1262746.94	
			Rate per cum = (a+b+c+d+e+f)/120						10482.99	10490.37	10522.89	
								Say	**10483.00**	**10490.40**	**10522.90**	
		Note	1. Cement provided for various components of the super structure is for estimating purpose .									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			2. Actual quantity of cement will be as per approved mix design. Similarly, the provision for coarse and fine aggregates is for estimating purpose and the exact quantity shall be as per the mix design.									
			3. The items like needle and surface vibrators are part of minor T & P which is already covered under the overhead charges. As such these items have not been added separately in the rate analysis.									
14.01		I	**PSC Grade M- 60**									
			Unit = 1 cum									
			Taking output = 120 cum									
			a) Material									
			Per cum Basic Cost (Rate taken from sub - analysis -21.16)	cum	120.000	120.000	120.000	5071.90	608628.00	608628.00	608628.00	21.16
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13
			c) Machinery									
			Transit truk and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+7	707.00			5774.07	PM11003
			For formwork and staging add the following:									
14.01H		(i)	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**									
		(p)	**Height upto 5m**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						634769.92	635202.90	637110.37	
			d) Formwork and staging 35 percent of (a+b+c)						222169.47	222321.02	222988.63	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		171387.88	171504.78	172019.80	
			f) Contractor's profit @on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		102832.73	102902.87	103211.88	
			Cost for 120 cum = a+b+c+d+e+f						1131160.00	1131931.57	1135330.68	
			Rate per cum = (a+b+c+d+e+f)/120						9426.33	9432.76	9461.09	
								Say	**9426.30**	**9432.80**	**9461.10**	
14.01H (i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						634769.92	635202.90	637110.37	
			d) Formwork and staging 45 percent of (a+b+c)						285646.47	285841.31	286699.67	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		184083.28	184208.84	184762.01	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		110449.97	110525.30	110857.20	
			Cost for 120 cum = a+b+c+d+e+f						1214949.63	1215778.35	1219429.25	
			Rate per cum = (a+b+c+d+e+f)/120						10124.58	10131.49	10161.91	
								Say	**10124.60**	**10131.50**	**10161.90**	
14.01H (i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						634769.92	635202.90	637110.37	
			d) Formwork and staging 55 percent of (a+b+c)						349123.46	349361.60	350410.70	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		196778.68	196912.90	197504.21	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		118067.21	118147.74	118502.53	
			Cost for 120 cum = a+b+c+d+e+f						1298739.26	1299625.14	1303527.81	
			Rate per cum = (a+b+c+d+e+f)/120						10822.83	10830.21	10862.73	
								Say	**10822.80**	**10830.20**	**10862.70**	
14.01		**J**	**PSC Grade M- 65**									
			Unit = 1 cum									
			Taking output = 120 cum									
			a) Material									
			Per cum Basic Cost (Rate taken from sub - analysis -21.17)	cum	120.000	120.000	120.000	5114.80	613776.00	613776.00	613776.00	21.17
			Water for curing	kl	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.192	0.192	0.192	325.00	62.40	62.40	62.40	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	3.300	3.300	3.300	306.00	1009.80	1009.80	1009.80	L-13

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			c) Machinery									
			Transit truck and agitator									
			For transportation (6 cum Capacity),L1-lead in kilometer	tonne-km	300xL1	300xL1	300xL1	10.33	3099.00	3099.00	3099.00	PM76001
			For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
			Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
			Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
			(i)16 KL capacity	hour	0.438xL1+ 2.625			1121.00	3433.62			PM11001
			(ii)12 KL capacity	hour		0.583xL1+ 3.5		947.00		3866.60		PM11002
			(iii)6 KL capacity	hour			1.167xL1+ 7	707.00			5774.07	PM11003
			For formwork and staging add the following:									
14.01		**(i)**	**For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55 per cent of cost of concrete**									
		(p)	**Height upto 5m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						639917.92	640350.90	642258.37	
			d) Formwork and staging 35 percent of (a+b+c)						223971.27	224122.82	224790.43	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		172777.84	172894.74	173409.76	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		103666.70	103736.85	104045.86	
			Cost for 120 cum = a+b+c+d+e+f						1140333.74	1141105.31	1144504.41	
			Rate per cum = (a+b+c+d+e+f)/120						9502.78	9509.21	9537.54	
								Say	**9502.80**	**9509.20**	**9537.50**	
14.01H (i)		**(q)**	**Height 5m to 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						639917.92	640350.90	642258.37	
			d) Formwork and staging 45 percent of (a+b+c)						287963.07	288157.91	289016.27	
			e) Overheadcharges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		185576.20	185701.76	186254.93	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		111345.72	111421.06	111752.96	
			Cost for 120 cum = a+b+c+d+e+f						1224802.90	1225631.62	1229282.52	
			Rate per cum = (a+b+c+d+e+f)/120						10206.69	10213.60	10244.02	
								Say	**10206.70**	**10213.60**	**10244.00**	
14.01H (i)		**(r)**	**Height above 10m**									
			Basic Cost of Labour, Material & Machinery (a+b+c) for 120 cum						639917.92	640350.90	642258.37	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork and staging 55 percent of (a+b+c)						351954.86	352193.00	353242.10	
			e) Overhead charges @ on (a+b+c+d)		(@ 20%)	(@ 20%)	(@ 20%)		198374.56	198508.78	199100.09	
			f) Contractor's profit @ on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		119024.73	119105.27	119460.06	
			Cost for 120 cum = a+b+c+d+e+f						1309272.07	1310157.94	1314060.62	
			Rate per cum = (a+b+c+d+e+f)/120						10910.60	10917.98	10950.51	
								Say	**10910.60**	**10918.00**	**10950.50**	
		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									
			HYSD bars including 5 per cent overlaps and wastage	tonne	8.400	8.400	8.400	54810.00	460404.00	460404.00	460404.00	M-083
			Binding wire	Kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072
			b) Labour for straightening, cutting, bending, shifting to site , tying and placing in position									
			Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
			Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-01
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			C) Machinery									
			Cutting Machine	hour	8.000	8.000	8.000	309.00	2472.00	2472.00	2472.00	PM43001
			Bending Machine	hour	8.000	8.000	8.000	309.00	2472.00	2472.00	2472.00	PM43001
			Electric generator 15 KVA	hour	8.000	8.000	8.000	274.00	2192.00	2192.00	2192.00	PM22009
			Tipper									
			Tipper for Transportation									
			(i) 18 cum capacity	t-km	8xL1			4.80	38.40			PM72001

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			(ii) 14 cum capacity	t-km		8xL1		5.48		43.84		PM73001
			(iii) 10 cum capacity	t-km			8xL1	6.80			54.40	PM74001
			Loading & Unloading Time	hour								
			(i) 18 cum capacity	hour	1.000			2239.00	2239.00			PM6001
			(ii) 14 cum capacity	hour		1.280		1998.00		2557.44		PM6002
			(iii) 10 cum capacity	hour			1.778	1785.00			3173.73	PM6003
			Light weight Crane									
			At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		95534.06	95598.84	95724.21	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		57320.44	57359.30	57434.53	
			Cost for 8 MT (a+b+c+d+e)						630524.82	630952.34	631779.79	
			Rate for per MT(a+b+c+d+e) /8						78815.60	78869.04	78972.47	
								Say	**78815.60**	**78869.00**	**78972.50**	
14.03	**1800**		**High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications**									
			Unit = MT									
			Taking output = 0.377 MT									
			Details of cost for 12T13 strand 40 m long cable (weight = 0.377 MT)									
			a) Material									
			H.T. Strand @ 9.42 kg/m including 2 per cent for wastage and extra length for jacking	tonne	0.385	0.385	0.385	79629.50	30657.36	30657.36	30657.36	M-118
			Sheathing duct ID 66 mm along with 5 per cent extra length 40 x 1.05 = 42 m.	metre	42.000	42.000	42.000	93.66	3933.72	3933.72	3933.72	M-166
			Tube anchorage set complete with bearing plate, permanent wedges etc	each	2.000	2.000	2.000	51.08	102.16	102.16	102.16	M-189
			Cement for grouting including 3 per cent wastage @ 3.00 kg/m = 3 x 1.03 x 40 = 123.60 kg (say, = 125 kg)	tonne	0.125	0.125	0.125	5156.00	644.50	644.50	644.50	M-081
			Add 0.50 per cent cost of material for Spacers, Insulation tape and miscellaneous items						176.69	176.69	176.69	
			b) Labour									
			i) For making and fixing cables, anchorages									
			Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
			Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-01
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			ii) For prestressing									
			Mate/Supervisor	day	0.050	0.050	0.050	325.00	16.25	16.25	16.25	L-12

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Prestressing operator / Fitter	day	0.250	0.250	0.250	369.00	92.25	92.25	92.25	L-08
		Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
		iii) For grouting									
		Mate/Supervisor	day	0.050	0.050	0.050	325.00	16.25	16.25	16.25	L-12
		Mason	day	0.250	0.250	0.250	369.00	92.25	92.25	92.25	L-10
		Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
		c) Machinery									
		Stressing jack with pump	hour	2.500	2.500	2.500	413.00	1032.50	1032.50	1032.50	PM65001
		Grouting pump with agitator	hour	1.000	1.000	1.000	525.00	525.00	525.00	525.00	PM60001
		Generator 33 KVA.	hour	3.500	3.500	3.500	495.00	1732.50	1732.50	1732.50	PM22008
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		8194.49	8194.49	8194.49	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		4916.69	4916.69	4916.69	
		Cost for 0.377 MT (a+b+c+d +e)						54083.60	54083.60	54083.60	
		Rate per MT = (a+b+c+d+e)/0.377						143457.83	143457.83	143457.83	
							Say	**143457.80**	**143457.80**	**143457.80**	
14.04	**2702**	**Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and Technical Specifications**									
		Unit = 1 cum									
		Taking output = 1 cum									
		a) Material									
		Cement concrete M30 Grade Refer relevant item of concrete in Item 14.01 excluding formwork	cum	1.000	1.000	1.000	3840.85 L 3844.46 M 3860.35 S	3840.85	3844.46	3860.35	14.01 C
		HYSD bar reinforcement Rate as per item No 14.02(Excluding OH & CP)	tonne	0.075	0.075	0.075	59708.79 L 59749.27M 59827.63 S	4478.16	4481.20	4487.07	14.02 excluding OH & CP
		b) Labour									
		Mazdoor for cleaning deck slab concrete surface.	day	0.150	0.150	0.150	306.00	45.90	45.90	45.90	L-13
		c) Overheadcharges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		1672.98	1674.31	1678.67	
		d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1003.79	1004.59	1007.20	
		Rate per cum (a+b+c+d)						11041.68	11050.45	11079.19	
							Say	**11041.70**	**11050.50**	**11079.20**	
14.05	**516 & 2702**	**Mastic Asphalt**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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 to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 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	0.490	0.490	0.490	325.00	159.25	159.25	159.25	L-12
			Mazdoor	day	11.000	11.000	11.000	306.00	3366.00	3366.00	3366.00	L-13
			Mazdoor (Skilled)	day	1.250	1.250	1.250	388.00	485.00	485.00	485.00	L-15
			b) Machinery									
			Mechanical broom @ 1250 sqm per hour	hour	0.060	0.060	0.060	746.00	44.76	44.76	44.76	PM23001
			Air compressor 250 cfm	hour	0.060	0.060	0.060	391.00	23.46	23.46	23.46	PM15001
			Mastic cooker 1 tonne capacity	hour	6.000	6.000	6.000	450.00	2700.00	2700.00	2700.00	PM27001
			Bitumen boiler 1500 litres capacity	hour	6.000	6.000	6.000	510.00	3060.00	3060.00	3060.00	PM26001
			Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	1.000	1.000	629.00	629.00	629.00	629.00	PM12001
			c) Material									
			Base mastic (without coarse aggregates) = 60 per cent									
			Coarse aggregate(3.35mm to 9.5 mm size) = 40 per cent .									
			Proportion of material required for mastic asphalt with coarse aggregates (based on mix design done by CRRI for a specific case)									
			i) Bitumen 80/100 or60 /70 or 30/40 @ 10.2 per cent by weight of mix. 2 x 10.2/100 = 0.204	tonne	0.204	0.204	0.204	59235.00	12083.94	12083.94	12083.94	M-327
			ii) Crusher stone dust @ 31.9 per cent by weight of mix = 2 x 31.9/100 = 0.638 tonnes = 0.638/1.625 = 0.39	cum	0.390	0.390	0.390	262.42	102.34	102.34	102.34	M-020

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			iii) Lime stone dust filler with calcium carbonate content not less than 80 per cent by weight @ 17.92 per cent by weight of mix = 2 x 17.92/100 = 0.36	tonne	0.360	0.360	0.360	3873.95	1394.62	1394.62	1394.62	M-190
			iv) Coarse aggregates 9.5 mm to 3.35 mm size @ 40 per cent by weight of mix = 2 x 40/100 = 0.8 MT = 0.8/1.456 = 0.55	cum	0.550	0.550	0.550	586.00	322.30	322.30	322.30	M-050
			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	644.70	23.21	23.21	23.21	M-141
			vi) Bitumen for coating of chips @ 2 per cent by weight = 0.036 x 1.456 x 2/100 = 0.001048MT = 1.05kg	kg	1.050	1.050	1.050	59.24	62.20	62.20	62.20	M-327/1000
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		4891.22	4891.22	4891.22	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		2934.73	2934.73	2934.73	
			Cost for 72.46 sqm = a+b+c+d+e						32282.03	32282.03	32282.03	
			Rate per sqm = (a+b+c+d+e)/72.46						445.52	445.52	445.52	
								Say	**445.50**	**445.50**	**445.50**	
		Note	**1.**The rates for 6 mm or any other thickness may be worked out on pro-data basis.									
			2. Where tack coat is required to be provided before laying mastic asphalt, the same is required to be measured and paid separately.									
			3.The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design.									
			4.This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.									
			5.The quantity of bitumen works out 17 per cent of the mastic asphalt blocks without aggregates and falls within the standards laid down by MoRT&H 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 post for expansion, complete as per approved drawings and technical specifications.**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unit = 1 RM									
			Taking output = 2 x 24 m									
			span= 48 m.									
			a) Material									
			Cement concrete M30 Grade refer relevent item of concrete in Item 14.01 (C) by using batching plant, excluding form work i.e. per cum basic cost (a+b+c) No. of vertical posts =(12+2)2=28 Nos., External area of vertical posts=0.25x0.275 =0.069sqm, Concrete in Vertical posts =0.069x28 =1.932 cum, Hand rail in 3 tiers =3x24= 72 m, External area =0.170x0.175 =0.03 sqm, Concrete in hand rails = 0.03 x 72 = 2.16 cum, Total Concrete = 1.932 + 2.16 = 4.092 cum.	cum	4.092	4.092	4.092	3840.85 L 3844.45 M 3860.35 S	15716.76	15731.52	15796.56	14.01 C excluding formwork
			Add 5 percent of above cost for form work for casting in casting yard						785.84	786.58	789.83	
			HYSD bar reinforcement Rate as per item No 14.02	tonne	0.865	0.865	0.865	59708.79 L 59749.27 M 59827.63 S	51648.10	51683.12	51750.90	14.02 (excluding OH & CP)
			Add 5 per cent of (a) for handling and fixing of precast panels in position						3407.53	3410.06	3416.86	
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		14311.65	14322.26	14350.83	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		8586.99	8593.35	8610.50	
			Rate for 48 m (a+b+c)						94456.87	94526.89	94715.49	
			Rate per metre (a+b+c) / 48						1967.85	1969.31	1973.24	
								Say	**1967.90**	**1969.30**	**1973.20**	
		Note	1. Quantities of material have been adopted from standard plans of MoRTH vide drawing no. SD/202.									
			2. 48 m length is the total linear length adding both sides of 24 m span.									
14.07	**2703, 1500, 1600 & 1700**		**Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.**									
			Unit = 1 RM									
			Taking output = 2 x 24 m									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			span= 48 m.									
			a) Material									
			Cement concrete M30 Grade refer relevent item of concrete in Item 14.01 (C) by using batching plant, excluding form work 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 verticle 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.	cum	4.092	4.092	4.092	3840.85 L 3844.45 M 3860.35 S	15716.76	15731.52	15796.56	Same as 14.01 (C) excluding formwork
			Add 12 per cent of above cost for form work.						1886.01	1887.78	1895.59	
			HYSD bar reinforcement Rate as per item No 14.02 (Excluding OH & CP)	tonne	0.865	0.865	0.865	59708.79 L 59749.27 M 59827.63 S	51648.10	51683.12	51750.90	Same as 14.02 excluding OH & CP
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		13850.17	13860.49	13888.61	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		8310.10	8316.29	8333.17	
			Rate for 48 m (a+b+c)						91411.15	91479.20	91664.83	
			Rate per metre (a+b+c) / 48						1904.40	1905.82	1909.68	
								Say	**1904.40**	**1905.80**	**1909.70**	
		Note	**1.** Quantities of material have been calculated as per above assumption .									
			2. 48 m length is the total linear length adding both sides of 24 m span.									
14.08	**2703.2 & 1900**		**Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification**									
			Unit = RM									
			Taking output = 2 x 50 m span = 100 m									
			a) Material:									
			1) ISMC 100 = 2.806 x 1.05 = 2.946 MT	tonne	2.946	2.946	2.946	57033.00	168019.22	168019.22	168019.22	M-181
			2) MS Flat = 0.964 x 1.05 = 1.012 MT	tonne	1.012	1.012	1.012	57033.00	57717.40	57717.40	57717.40	M-181
			3) MS bars = 0.17 x 1.05 = 0.180 MT	tonne	0.180	0.180	0.180	58600.00	10548.00	10548.00	10548.00	M-125
			4) MS bolts, nuts and washers	tonne	0.150	0.150	0.150	69150.00	10372.50	10372.50	10372.50	M-129
			Add @ 5 per cent of cost of material for painting one shop coat with red oxide primer and three coats of synthetic enamel paint and consumables to safeguard against weathering and corrosion.						12332.86	12332.86	12332.86	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add for cost of concrete for fixing vertical posts in the performed recess @ 1 per cent of cost of material.						2466.57	2466.57	2466.57	
			Add for electricity charges, welding and drilling equipment, electrodes and other consumables @ 1 per cent of cost of material.						2466.57	2466.57	2466.57	
			b) Labour									
			Mate	day	2.800	2.800	2.800	325.00	910.00	910.00	910.00	L-12
			Mazdoor (Skilled)	day	30.000	30.000	30.000	388.00	11640.00	11640.00	11640.00	L-15
			Mazdoor	day	40.000	40.000	40.000	306.00	12240.00	12240.00	12240.00	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		57742.62	57742.62	57742.62	
			d) Contractor's profit @ on(a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		34645.57	34645.57	34645.57	
			Cost for 100 m steel railing = (a+b+c+d)						381101.31	381101.31	381101.31	
			Rate per metre (a+b+c+d) /100						3811.01	3811.01	3811.01	
								Say	**3811.00**	**3811.00**	**3811.00**	
14.09	**2705**		**Drainage Spouts complete as per drawing and Technical specification**									
			Unit = 1 No.									
			Taking output = 1 No.									
			a) Material									
			Corrosion resistant Structural steel including 5 per cent wastage	Kg	4.000	4.000	4.000	46.83	187.31	187.31	187.31	M-088
			GI pipe 100mm dia	metre	6.000	6.000	6.000	617.50	3705.00	3705.00	3705.00	M-239
			GI bolt 10 mm Dia	each	6.000	6.000	6.000	17.88	107.28	107.28	107.28	M-109
			Galvanised MS flat clamp	each	2.000	2.000	2.000	17.17	34.34	34.34	34.34	M-101
			b) Labour									
			For fabrication									
			Mate	day	0.002	0.002	0.002	325.00	0.65	0.65	0.65	L-12
			Skilled (Blacksmith, welder etc.)	day	0.020	0.020	0.020	413.00	8.26	8.26	8.26	L-02
			Mazdoor	day	0.020	0.020	0.020	306.00	6.12	6.12	6.12	L-13
			For fixing in position									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mason	day	0.010	0.010	0.010	369.00	3.69	3.69	3.69	L-10
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			Add @ 5 per cent of cost of material and labour for electrodes, cutting gas, sealant, anti-corrosive bituminous paint, mild steel grating etc.						205.82	205.82	205.82	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		864.45	864.45	864.45	
			d) Contractor's profit @ on(a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		518.67	518.67	518.67	
			Rate per No. = (a+b+c+d)						5705.40	5705.40	5705.40	
								Say	**5705.40**	**5705.40**	**5705.40**	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		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**									
			a) Concrete, Rate as per item No. 12.08 (A) excluding formworks	cum	1.000			2964.56	2964.56			12.08 (A) Case I (Large)
			Concrete, Rate as per item No. 12.08 (A) excluding formworks	cum		1.000		2968.21		2968.21		12.08 (A) Case I (Medium)
			Concrete, Rate as per item No. 12.08 (A) excluding formworks	cum			1.000	2984.10			2984.10	12.08 (A) Case I (small)
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		592.91	593.64	596.82	
			c) Contractor profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		355.75	356.18	358.09	
			Rate per cum= (a+b+c)						**3913.22**	**3918.03**	**3939.01**	
		Case II	**PCC Grade M15 using batching plant & manual placing**									
			a) Concrete, Rate as per item No. 12.08 (A) excluding formworks	cum	1.000			3122.68	3122.68			12.08 (A) Case II (large)
			Concrete, Rate as per item No. 12.08 (A) excluding formworks	cum		1.000		3126.32		3126.32		12.08 (A) Case II (Medium)
			Concrete, Rate as per item No. 12.08 (A) excluding formworks	cum			1.000	3142.18			3142.18	12.08 (A) Case II (small)
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		624.54	625.26	628.44	
			c) Contractor profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		374.72	375.16	377.06	
			Rate per cum= (a+b+c)						**4121.94**	**4126.74**	**4147.68**	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
14.11	1500,1600 ,1700 & 2704		Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification									
			Unit = 1 cum									
			Taking output = 1 cum									
			a) Material									
			Cement concrete M30 Grade Refer relevant item of concrete in item 12.08(G)by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c) (Excluding OH & CP)	cum	1.000	1.000	1.000	3871.09 L 3874.74 M 3890.63 S	3871.10	3874.74	3890.63	12.08 G Case I
			(Refer relevant item of concrete in item No. 12.8 (G) except that form work may be added at the rate of 2 per cent of cost against 3.5 per cent provided in the foundation concrete.						77.42	77.49	77.81	
			HYSD bar reinforcement Rate as per item No 14.02(Excluding OH & CP)	tonne	0.050	0.050	0.050	59708.79 L 59749.27 M 59827.63 S	2985.44	2987.46	2991.38	14.02 excluding OH &CP
			b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		1386.79	1387.94	1391.97	
			c) Contractor's profit @ on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		832.07	832.76	835.18	
			Rate per cum (a+b+c)						9152.82	9160.40	9186.97	
								Say	**9152.80**	**9160.40**	**9187.00**	
		Note	The grade of reinforced cement concrete may be adopted as M30 for severe conditions and M25 for moderate conditions.									
14.12	1600		Providing anti-corrosive treatment to HYSD reinforcement with Fusion Bonded Epoxy Coating (FBEC)									
			Unit = 1 MT									
			Taking output = 1 MT									
			To be taken as per the prevailing market rates.									
		Note	Contractors generally do not have expertise for this item . The job is therefore, got done from specialised firms who have the expertise in the field of construction chemicals. The prevailing rate in the market is required to be ascertained from the market and added in the cost estimate. HYSD reinforcement with Fusion Bonded Epoxy Coating(FBEC) as per MoRT&H circular / specification.									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
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 = 1 cum									
			Taking output = 1 cum									
			Grade of concrete - M40									
			a) Material									
			Per Cum Basic Cost (Rate as in sub -analysis-21.12)	cum	1.000	1.000	1.000	4220.90	4220.90	4220.90	4220.90	21.12
			Water for curing	KL	0.525	0.525	0.525	56.20	29.51	29.51	29.51	M-191
			HYSD steel .	tonne	0.100	0.100	0.100	54810.00	5481.00	5481.00	5481.00	M-083
			HT strand with 5 per cent as wastage and extra length for anchoring	tonne	0.060	0.060	0.060	79629.50	4777.77	4777.77	4777.77	M-118
			LDO for steam curing	Litre	37.000	37.000	37.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-121
			Add consumables such as binding wire, foam, packing tape, shuttering oil, HDPE pipe for unbonding of strand, bolt & nuts etc @ 1 per cent of material cost						#VALUE!	#VALUE!	#VALUE!	
			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	0.070	0.070	0.070	325.00	22.75	22.75	22.75	L-12
			Mazdoor (Skilled)	day	0.350	0.350	0.350	388.00	135.80	135.80	135.80	L-15
			Mazdoor	day	1.400	1.400	1.400	306.00	428.40	428.40	428.40	L-13
			(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.									
			Taking quantity of HT strand 60 Kg/cum									
			Mate	day	0.026	0.026	0.026	325.00	8.45	8.45	8.45	L-12
			Mazdoor (Skilled)	day	0.140	0.140	0.140	388.00	54.32	54.32	54.32	L-15
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			(iii) Erection and dismantling of shuttering									
			Taking shuttering area 10 sqm/cum of concrete									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor (Skilled)	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Mazdoor	day	2.000	2.000	2.000	306.00	612.00	612.00	612.00	L-13
		(iv) Concreting by Batching plant and stationary concrete pump									
		Mate	day	0.026	0.026	0.026	325.00	8.45	8.45	8.45	L-12
		Mazdoor (Skilled)	day	0.050	0.050	0.050	388.00	19.40	19.40	19.40	L-15
		Mazdoor	day	0.600	0.600	0.600	306.00	183.60	183.60	183.60	L-13
		(v) Steam curing and manual curing									
		Mate	day	0.014	0.014	0.014	325.00	4.55	4.55	4.55	L-12
		Mazdoor	day	0.350	0.350	0.350	306.00	107.10	107.10	107.10	L-13
		(vi) Handling of precast girder, stacking in stockyard and again loading in trailor									
		Mate	day	0.010	0.010	0.010	325.00	3.25	3.25	3.25	L-12
		Mazdoor	day	0.250	0.250	0.250	306.00	76.50	76.50	76.50	L-13
		(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	325.00	3.90	3.90	3.90	L-12
		Mazdoor (Skilled)	day	0.060	0.060	0.060	388.00	23.28	23.28	23.28	L-15
		Mazdoor	day	0.240	0.240	0.240	306.00	73.44	73.44	73.44	L-13
		c) Machinery									
		i) At casting yard Transit truck agitator									
		For transportation (6 cum capacity) ,L1 -lead in Kilometer	tonne-km	2.5xL	2.5xL	2.5xL	10.33	25.83	25.83	25.83	PM76001
		For unloading	hour	0.022	0.022	0.022	1860.00	40.92	40.92	40.92	PM34001
		Hydraulic Boom placer pump	hour	0.022	0.022	0.022	3695.00	81.29	81.29	81.29	PM36001
		Water tanker (speed @ 20km /hr and return speed @ 30 km /hr and 30 mins for uploading)									
		(i)16 KL capacity	hour	0.004XL1+ 0.022			1121.00	29.15			PM11001
		(ii)12 KL capacity	hour		0.005xL1+0. 029		947.00		32.20		PM11002
		(iii)6 KL capacity	hour			0.01xL1+0. 058	707.00			48.08	PM11003
		Crane 35 tonne capacity	hour	0.100	0.100	0.100	5502.00	550.20	550.20	550.20	PM62001
		Trailer 30 tonne capacity	hour	0.100	0.100	0.100	2239.00	223.90	223.90	223.90	PM6001
		ii) For transportation and placement at site							0.00	0.00	
		Crane 35 tonne capacity	hour	0.150	1.150	2.15	5502.00	825.30	6327.30	11829.30	PM62001
		Trailer 30 tonne capacity for transporting to site.	tonne.km	2.5xL	2.5xL	2.5xL	4.80	12.00	12.00	12.00	PM72001
		(L - Lead in Kilometer)									
		Trailor 30 tonne capacity during placement.	hour	0.150	1.15	2.150	2239.00	335.85	2574.85	4813.85	PM6001

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Cost of formwork, steam curing arrangement, pretensioning arrangement etc @ 5 per cent of cost material, labour and machinery						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per cum = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
14.14	**1700 & 1800**		**Providing and fixing Helical pipes in voided concrete slabs**									
			Unit = 1 RM									
			Taking output = 1 RM									
			a) Material									
			Helical pipes 600mm diameter	metre	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-116
			Tie rods 20mm diameter	each	1.000	1.000	1.000	67.30	67.30	67.30	67.30	M-185
			Consumables for sealing joints etc.@ 5 per cent of cost of material						#VALUE!	#VALUE!	#VALUE!	
			b) Labour									
			Mate	day	0.010	0.010	0.010	325.00	3.25	3.25	3.25	L-12
			Fitter	day	0.050	0.050	0.050	369.00	18.45	18.45	18.45	L-08
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per m = (a+b+c+d)						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
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 Rein forced Cement Concrete With HYSD reinforcement confirming 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 meter									
			Taking output 10 m									
		A	**Crash Barriers for Bridge (Height 950 mm) as per detais given IRC-5 (fig.-1) (Area -0.254 sqm. For 1 meter length)**									
			a) M 40 grade concrete &HYSD steel reinforcment									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			M 40 grade concrete (Area -0.254 Sqm. /Meter) (Rate taken from item No. 14.01 E (p) including OH&CP)	cum	2.540	2.540	2.540	6913.8 L 6919.4 M 6944.20 S	17561.05	17575.28	17638.27	14.01 E (i) (p)
			HYSD steel reinforcement including dowel bars (Rate taken from item No. 14.02 including OH & CP)	tonne	0.229	0.229	0.229	78815.60 L 78869.00M 78972.50 S	18048.77	18061.00	18084.70	14.02 including OH & CP
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			c) Material									
			Pre-moulded ashphalt filler board	sqm	0.265	0.265	0.265	1064.18	282.01	282.01	282.01	M-143
			d) Overhead charges @ on (b+c)		(@ 20%)	(@ 20%)	(@ 20%)		120.20	120.20	120.20	
			e) Contractor's profit @ on (b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		72.12	72.12	72.12	
			Cost for 10 metre =a+b+c+d+e						36403.15	36429.61	36516.30	
			Rate per metre =(a+b+c+d+e) /10						3640.32	3642.96	3651.63	
								Say	**3640.30**	**3643.00**	**3651.60**	
14.15		**B**	**Crash Barriers for Bridge (Height 1100 mm) as per detais given IRC-5 (fig.-2) (Area -0.298 sqm. For 1 meter length)**									
			a) M 40 grade concrete &HYSD steel reinforcment									
			M 40 grade concrete (Area 0.298 Sqm. /Meter) (Rate taken from item No. 14.01 E (p) including OH&CP)	cum	2.980	2.980	2.980	6913.8 L 6919.4 M 6944.2 S	20603.12	20619.81	20693.72	14.01 E (i) (p)
			HYSD steel reinforcement including dowel bars (Rate taken from item No. 14.02 including OH & CP)	tonne	0.268	0.268	0.268	78815.60 L 78869.0 M 78972.5 S	21122.58	21136.89	21164.63	14.02 including OH & CP
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			c) Material									
			Pre-moulded ashphalt filler board	sqm	0.310	0.310	0.310	1064.18	329.90	329.90	329.90	M-143
			d) Overhead charges @ on (b+c)		(@ 20%)	(@ 20%)	(@ 20%)		129.78	129.78	129.78	
			e) Contractor's profit @ on (b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		77.87	77.87	77.87	
			Cost for 10 metre =a+b+c+d+e						42582.25	42613.25	42714.89	
			Rate per metre =(a+b+c+d+e) /10						4258.22	4261.32	4271.49	
								Say	**4258.20**	**4261.30**	**4271.50**	
14.15		**C**	**Crash Barriers for Bridge (Height 1550 mm) as per detais given IRC-5 (fig.-3) (Surface Area 0.514 sqm. For 1 meter length)**									
			a) M 40 grade concrete &HYSD steel reinforcment									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			M 40 grade concrete (Area 0.514 Sqm. /Meter) (Rate taken from item No. 14.01 E (p) including OH&CP)	cum	5.140	5.140	5.140	6913.80 L 6919.40M 6944.20 S	35536.93	35565.72	35693.19	14.01 E (i) (p)
			HYSD steel reinforcement including dowel bars (Rate taken from item No. 14.02 including OH & CP)	tonne	0.463	0.463	0.463	78815.60 L 78869.00M 78972.50 S	36491.62	36516.35	36564.27	14.02 including OH & CP
			b) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13
			c) Material									
			Premoulded ashphalt filler board	sqm	0.540	0.540	0.540	1064.18	574.66	574.66	574.66	M-143
			d) Overhead charges @ on (b+c)		(@ 20%)	(@ 20%)	(@ 20%)		210.63	210.63	210.63	
			e) Contractor's profit @ (b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		126.38	126.38	126.38	
			Cost for 10 metre =a+b+c+d+e						73418.72	73472.23	73647.62	
			Rate per metre =(a+b+c+d+e) /10						7341.87	7347.22	7364.76	
								Say	**7341.90**	**7347.20**	**7364.80**	
		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 cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.									
			Unit = sqm									
			Taking output = 10 sqm									
			a) Labour									
			Mate	day	0.020	0.020	0.020	325.00	6.50	6.50	6.50	L-12
			Painter	day	0.250	0.250	0.250	391.00	97.75	97.75	97.75	L-18
			Mazdoor (Skilled)	day	0.250	0.250	0.250	388.00	97.00	97.00	97.00	L-15
			b) Material									
			Water based paint of approved quality for cement concrete surface	Litres	5.000	5.000	5.000	125.53	627.65	627.65	627.65	M-192
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		165.78	165.78	165.78	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		99.47	99.47	99.47	
			Cost for 10 sqm =a+b+c+d						1094.15	1094.15	1094.15	
			Rate per sqm =(a+b+c+d) /10						109.41	109.41	109.41	
								Say	**109.40**	**109.40**	**109.40**	
14.17	**2604**		**Filler joint**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		(i)	**Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & Technical Specification.**									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			Cutting, bending, carrying & fixing etc.									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Mazdoor (Skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			Copper plate - 12m long x 250 mm wide	kg	55.000	55.000	55.000	896.80	49324.00	49324.00	49324.00	M-087
			Area = 12 x 0.25 = 3 sqm									
			Weight = 3 x 0.002 x 8900 = 53.4 kg									
			Wastage @ 2.5 per cent = 1.33 kg/54.73 kg say = 55 kg.									
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		9936.80	9936.80	9936.80	
			d) Contractor's profit @on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		5962.08	5962.08	5962.08	
			Cost for 12 m =a+b+c+d						65582.88	65582.88	65582.88	
			Rate per m =(a+b+c+d) /12						5465.24	5465.24	5465.24	
								Say	**5465.20**	**5465.20**	**5465.20**	
14.17		(ii)	**Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.**									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			For carrying, placing & fixing.									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mazdoor	day	0.100	0.100	0.100	306.00	30.60	30.60	30.60	L-13
			Mazdoor (Skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									
			20 mm thick compressible fibre board 12 m long x 25 cm deep.	sqm	3.000	3.000	3.000	1132.98	3398.94	3398.94	3398.94	M-085
			Area = 12 x 0.25 = 3 sqm									
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		694.19	694.19	694.19	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		416.51	416.51	416.51	
			Cost for 12 m =a+b+c+d						4581.64	4581.64	4581.64	
			Rate per m =(a+b+c+d) /12						381.80	381.80	381.80	
								Say	**381.80**	**381.80**	**381.80**	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
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	day	0.012	0.012	0.012	325.00	3.90	3.90	3.90	L-12
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			Mazdoor (Skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									
			Pre-moulded joint filler 12 m long,20 mm thick and 300 mm deep.	sqm	3.600	3.600	3.600	1064.18	3831.05	3831.05	3831.05	M-140
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		786.99	786.99	786.99	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		472.19	472.19	472.19	
			Cost for 12 m =a+b+c+d						5194.13	5194.13	5194.13	
			Rate per m =(a+b+c+d) /12						432.84	432.84	432.84	
								Say	**432.80**	**432.80**	**432.80**	
14.17		(iv)	**Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 per cent bitumen by weight**									
			Unit = Running meter									
			Taking output = 12 m									
			12m long x 100 mm wide x 10mm deep recess									
			a) Labour									
			Mate	day	0.024	0.024	0.024	325.00	7.80	7.80	7.80	L-12
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Mazdoor (Skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									
			Sand	cum	0.012	0.012	0.012	494.00	5.93	5.93	5.93	M-005*
			Volume 12 x 0.1 x 0.01 = 0.012 cum									
			Weight 0.012 x 1400 = 16.8kg									
			Bitumen	tonne	0.001	0.001	0.001	56414.00	56.41	56.41	56.41	M-074
			16.8 x 0.06 = 1 kg									
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		52.39	52.39	52.39	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		31.43	31.43	31.43	
			Cost for 12 m =a+b+c+d						345.76	345.76	345.76	
			Rate per m =(a+b+c+d) /12						28.81	28.81	28.81	
								Say	**28.80**	**28.80**	**28.80**	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		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	**2608**	**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	325.00	16.90	16.90	16.90	L-12
		Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
		Mazdoor (Skilled)	day	0.300	0.300	0.300	388.00	116.40	116.40	116.40	L-15
		b) Material									
		Crushed stone aggregate 12.5 mm nominal size	cum	0.750	0.750	0.750	586.00	439.50	439.50	439.50	M-051
		Polymer modified bitumen	kg	77.500	77.500	77.500	53.97	4182.29	4182.29	4182.29	M-078/1000
		Galvanised structural steel plate 200 mm wide,6 mm thick, 12 m long (2.4 sqm) @ 47.10 kg/sqm including 5 per cent wastage	kg	113.000	113.000	113.000	57.03	6444.39	6444.39	6444.39	M-103
		Add 1 per cent for welding and foam caulking/backer rod and other incidentals.						64.44	64.44	64.44	
		c) Machinery									
		Mastic cooker 1 tonne capacity	hour	1.000	1.000	1.000	450.00	450.00	450.00	450.00	PM27001
		Smooth 3-wheeled steel roller 8-10 capacity	hour	0.500	0.500	0.500	1518.00	759.00	759.00	759.00	PM8001
		d) Overhead charges @ on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		2555.78	2555.78	2555.78	
		e) Contractor's profit @ on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		1533.47	1533.47	1533.47	
		Cost for 12 m asphalt plug joint =a+b+c+d +e						16868.18	16868.18	16868.18	
		Rate per m =(a+b+c+d+e) /12						1405.68	1405.68	1405.68	
							Say	**1405.70**	**1405.70**	**1405.70**	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description		Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
		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 MoRT&H specifications for road & bridge works.									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Mazdoor (Skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			Supply of elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II), complete as per approved drawings and standard specification conforming to clause 2605 of MoRT&H Specification	metre	12.000	12.000	12.000	28508.46	342101.52	342101.52	342101.52	M-094
			Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals.						17105.08	17105.08	17105.08	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		71945.22	71945.22	71945.22	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		43167.13	43167.13	43167.13	
			Cost for 12 m =a+b+c+d						474838.45	474838.45	474838.45	
			Rate per m =(a+b+c+d) /12						39569.87	39569.87	39569.87	
								Say	**39569.90**	**39569.90**	**39569.90**	
14.20	2600		**Compression Seal Joint**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Providing and laying of compression seal joint consisting of steel armoured nosing at two edges of the joint gap suitably anchored to the deck concrete and a preformed chloroprene elastomer or closed cell foam joint sealer compressed and fixed into the joint gap with special adhesive binder to cater for a horizontal movement upto 40 mm and vertical movement of 3 mm.									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
			Mazdoor	day	0.600	0.600	0.600	306.00	183.60	183.60	183.60	L-13
			Mazdoor (Skilled)	day	0.300	0.300	0.300	388.00	116.40	116.40	116.40	L-15
			b) Material									
			1. Galvanised angle sections 100mm x 100mm of 12mm thickness weldable structural steel as per IS: 2062, 2 nos. of 12 m length each @ 17.7 kg/m and 5 per cent wastage.	kg	446.000	446.000	446.000	57.03	25435.38	25435.38	25435.38	M-103
			Add 5 per cent of cost of above for structural steel for anchorage, welding and other incidentals.						1271.77	1271.77	1271.77	
			Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness.	metre	12.000	12.000	12.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-142
			Add 1 per cent of cost of sealing element for lubricant-cum-adhesive and other consumables.						#VALUE!	#VALUE!	#VALUE!	
			c) Overhead charges @ on on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		#VALUE!	#VALUE!	#VALUE!	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 12 m =a+b+c+d						#VALUE!	#VALUE!	#VALUE!	
			Rate per m =(a+b+c+d) /12						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
		Note	**1.** The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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.									
14.21	**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 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	325.00	16.25	16.25	16.25	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Mazdoor (Skilled)	day	0.250	0.250	0.250	388.00	97.00	97.00	97.00	L-15
			b) Material									
			Supply of complete assembly of strip seal expansion joint comprising of edge beams, anchorage, strip seal element and complete accessories as per approved specifications and drawings.	metre	12.000	12.000	12.000	8844.47	106133.64	106133.64	106133.64	M-180
			Add 5 per cent of cost of material for anchorage reinforcement, welding and other incidentals						5306.68	5306.68	5306.68	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		22371.91	22371.91	22371.91	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		13423.15	13423.15	13423.15	
			Cost for 12 m =a+b+c+d						147654.64	147654.64	147654.64	
			Rate per m =(a+b+c+d) /12						12304.55	12304.55	12304.55	
								Say	**12304.60**	**12304.60**	**12304.60**	
		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.									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
14.22	**2600**		**Modular Strip / Box Seal Joint**									
			Providing and laying of a modular strip Box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			Mate	day	0.056	0.056	0.056	325.00	18.20	18.20	18.20	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Mazdoor (Skilled)	day	0.400	0.400	0.400	388.00	155.20	155.20	155.20	L-15
			b) Material									
			Supply of a modular strip/box seal joint assembly comprising of edge beams, central beam,2 modules chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative.	metre	12.000	12.000	12.000	31417.46	377009.52	377009.52	377009.52	M-126
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		75497.78	75497.78	75497.78	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		45298.67	45298.67	45298.67	
			Cost for 12 m Modular strip/ box seal joint =a+b+c+d						498285.37	498285.37	498285.37	
			Rate per m =(a+b+c+d) /12						41523.78	41523.78	41523.78	
								Say	**41523.80**	**41523.80**	**41523.80**	
		Note	**1.** The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.									
			2. The concreting for joining the expansion joint assembly with the deck has not been included in this analysis as the same is catered in the quantities of RCC deck.									
			3. The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.									
14.23	**2600**		**Modular Strip / Box Seal Joint**									

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Providing and laying of a modular strip box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			Mate	day	0.070	0.070	0.070	325.00	22.75	22.75	22.75	L-12
			Mazdoor	day	1.250	1.250	1.250	306.00	382.50	382.50	382.50	L-13
			Mazdoor (Skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			Supply of a modular box/box seal joint assembly containing 3 modules/cells and comprising of edge beams, two central beams, chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative.	metre	12.000	12.000	12.000	31417.46	377009.52	377009.52	377009.52	M-127
			c) Overhead charges @on(a+b)		(@ 20%)	(@ 20%)	(@ 20%)		75521.75	75521.75	75521.75	
			d) Contractor's profit @on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		45313.05	45313.05	45313.05	
			Cost for 12 m =a+b+c +d						498443.58	498443.58	498443.58	
			Rate per m =(a+b+c +d) /12						41536.96	41536.96	41536.96	
								Say	**41537.00**	**41537.00**	**41537.00**	
		Note	**1.** The installation shall be done by the manufacturer or his authorised representative to the satisfaction of the Engineer.									
			2. The concreting for joining the expansion joint assembly with the deck has not been included in this analysis as the same is catered in the quantities of RCC deck.									
			3. The anchoring bars of the expansion joint assembly shall be welded to the main reinforcement of the deck.									
14.24			**Painting with synthetic enamel paint bridge No. and span arrangements**									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Painting two coat after filling the surface with synthetic enamel paint bridge No. and span arrangements as per direction by Enginner .									
			Unit = Nos.									
			Taking output = 1 Nos									
			a) Labour									
			Mate	day	0.006	0.006	0.006	325.00	1.95	1.95	1.95	L-12
			Painter	day	0.100	0.100	0.100	391.00	39.10	39.10	39.10	L-18
			Mazdoor	day	0.05	0.05	0.05	306.00	15.30	15.30	15.30	L-13
			b) Material									
			Paint confirming to requirement of clause 803.3	Litre	0.300	0.300	0.300	246.65	74.00	74.00	74.00	M-130
			Add for scaffolding @ 1 percent of labour cost where required						0.56	0.56	0.56	
			Add @ 5 percent cost of labour and materials to prepare the surface by filling minutes roughness on the surface and priming the surface before laying 2 coats of painting.						6.52	6.52	6.52	
			c) Overhead charges @ on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		27.49	27.49	27.49	
			d) Contractor's profit @ on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		16.49	16.49	16.49	
			Cost for 1 No. =a+b+c+d						181.40	181.40	181.40	
			Rate per Nos.=(a+b+c+d)						181.40	181.40	181.40	
								Say	**181.40**	**181.40**	**181.40**	
14.25	**Suggestive**		**Bipolar corrosion inhibiting admixture in concrete for protection of reinforced steel from corrosion**									
			Admix polydentate ,bipolar ,migratory, intergal non nitrate base concrete penetrating corrosion inhibiting admixture at dosage of 3Kg per cu.m. of concrete as per manufactures specification. Inhibitor should conforms to following-									
			i. ASTM G-109-2005-Long term corrosion test resulting in a corrosion rate of zero coulombs.									
			ii JIS Z1535- Accelerated corrosion test showing significant reduction in corrosion using the admixture.									
			iii ASTM G1-Immersion test for 720 hrs indicating rebar weight loss less than 5 mpy.									
			iv ASTM G3-Polarization test by Tafel test indicating Rebar weight loss less than 5 mpy.									
			Unit =Cum									
			Taking output =100.000 cum									

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		a) Material									
		Corrosion inhibiting Admixture @3 kg per cubic meter	kg.	300.000	300.000	300.000	214.86	64458.00	64458.00	64458.00	M-182
		b) Overhead charges @ on (a)		(@ 20%)	(@ 20%)	(@ 20%)		12891.60	12891.60	12891.60	
		c) Contractor's profit @ (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		7734.96	7734.96	7734.96	
		Cost for 100 cum. =a+b+c						85084.56	85084.56	85084.56	
		Rate per cum.=(a+b+c)/100						850.85	850.85	850.85	
							Say	**850.80**	**850.80**	**850.80**	
14.26	**1700**	**Providing structural steel for super- structure complete as per drawing and technical specifications**									
		Unit = MT									
		Taking output =17.135 MT									
		a) Material									
		Structural steel in plates ,angles, etc. including 5 percent wastage	Tonne	17.992	17.992	17.992	57033.00	1026137.74	1026137.74	1026137.74	M-181
		Nuts & bolts	kg.	180.000	180.000	180.000	69.15	12447.00	12447.00	12447.00	M-129
		b) Labour									
		(for cutting, bending , marking holes ,joining, welding, and erecting in position)									
		mate	day	21.097	21.097	21.097	325.00	6856.53	6856.53	6856.53	L-12
		Filter	day	77.108	77.108	77.108	369.00	28452.85	28452.85	28452.85	L-08
		Blacksmith	day	77.108	77.108	77.108	369.00	28452.85	28452.85	28452.85	L-25
		Welder	day	77.108	77.108	77.108	413.00	31845.60	31845.60	31845.60	L-02
		Painter 1st class	day	32.385	32.385	32.385	391.00	12662.54	12662.54	12662.54	L-18
		Mazdoor	day	263.708	263.708	263.708	306.00	80694.65	80694.65	80694.65	L-13
		Electrode, cutting gas and other consummables @10 percent of cost of **(a) above**						103858.47	103858.47	103858.47	
		c) Machinery									
		Mobile Hydraulic Crane 10 tonne capacity (for fabrication)	Hrs	68.540	68.540	68.540	864.00	59218.56	59218.56	59218.56	PM63003
		Crane 35 tonne capacity (for Loading &Unloading @1 hr for each operation)	Hrs	4.000	4.000	4.000	1747.00	6988.00	6988.00	6988.00	PM63006
		Crane 35 tonne capacity (for Lifting and placing in position @2 hr)	Hrs	4.000	4.000	4.000	1747.00	6988.00	6988.00	6988.00	PM63006
		Trailer30 tonne capacity for transporting to site	Hrs	4+L /15	4+L /15	4+L /15	2239.00	11272.80	11272.80	11272.80	PM6001
		Applying 2 coats primer before painting of Truss and Girder (42 sqm /tonne)	Lit	899.598	899.598	899.598	77.60	69808.80	69808.80	69808.80	M-145
		Painting of Truss and Girder	Lit	899.598	899.598	899.598	124.70	112179.87	112179.87	112179.87	M-058
		Sundries @5% of the above (a,b,&c)						79893.21	79893.21	79893.21	
		d) Overhead charges on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		335551.49	335551.49	335551.49	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		201330.90	201330.90	201330.90	

Analysis of Rate

BRIDGE SUPERSTRUCUTRE

Sr. No	Ref. to M.	Description	Unit	Quantity as per peroject category			Rate (Rs)	Amount			Input_ Ref
				Large	Medium	Small		Large	Medium	Small	
		Cost for 17.135MT =a+b+c+d+e						2214639.87	2214639.87	2214639.87	
		Rate for per MT.=(a+b+c +d+e) /17.135						129246.56	129246.56	129246.56	
							Say	**129246.60**	**129246.60**	**129246.60**	

CHAPTER - 15

BOX CELL STRUCTURES

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.

2 The earth excavated from Foundation has been proposed to be backfilled and balance quality utilised for road work locally except for marshy soil where disposal has been provided

3 The rock Foundation are required to be prepared which has been analysed.

4 In case of rocks, excavation has been considered up to a depth of 3M only

5 Embedment of foundation is soft and hard rocks has been provided as required by specifications.

6 Mixing of cement concrete has been considered by using batching plant.

7 Concrete batching plant is generally placed within 1 km of the Box Cell site. In case of longer lead, transportation cost may be worked out based on tone km.

8 The Course 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.



CHAPTER - 15
BOX CELL STRUCTURE

Sl. No.		Description	Unit	Rate		
				Large	Medium	Small
15.01		**Excavation for structures**				
		Earth work in excavation of foundation of structures as per drawing and technical specifications, 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**				
	A	**Manual Means**				
	(i)	**Depth upto 3 m**	Cum	147.40	147.40	147.40
	(ii)	**Depth 3 m to 6 m**	Cum	189.50	189.50	189.50
	(iii)	**Depth above 6 m**	Cum	252.60	252.60	252.60
	(i)	**Mechanical Means (Depth upto 3 m)**	Cum	94.10	97.50	120.60
	(ii)	**Mechanical Means (Depth 3 m to 6 m)**	Cum	104.00	107.70	133.30
	(iii)	**Mechanical Means (Depth above 6 m)**	Cum	116.30	120.50	149.10
	II	**Ordinary Rock (not requiring blasting)**				
	A	**Manual Means**	Cum	210.50	210.50	210.50
	B	**Mechanical Means**	Cum	595.30	630.40	649.00
	III	**Hard Rock (requiring blasting)**				
	A	**Manual Means**	Cum	892.90	892.90	892.90
	III	**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 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**	Cum	#VALUE!	#VALUE!	#VALUE!
	IV	**Hard Rock (blasting prohibited)**				
	A	**Mechanical Means**	Cum	802.70	895.30	1019.90
	V	**Marshy soil**				
		Depth upto 3 m				
	A	**Manual Means**	Cum	642.80	642.80	642.80
	B	**Mechanical Means**	Cum	252.30	260.50	320.00
	VI	**Back filling in Marshy foundation pits**	Cum	487.30	487.30	487.30
15.02		**Filling Annular space Around Footing in Rock**				
		PCC-15 nominal mix. Rate may be taken as per item 15.11				
15.03		**Sand Filling in Foundation Trenches as per Drawing and Technical Specification**	Cum	257.50	259.20	266.40
15.04		**Brick Masonary Work in Cement Mortar 1:3 in Foundation complete excluding pointing and plastering, as per Drawing and Technical specifications.**	Cum	6252.00	6256.10	6275.50
15.05	**(A)**	**Cement Mortar 1:3 (1 cement:3 sand)**	Cum	3435.40	3435.40	3435.40
	(B)	**Cement Mortar 1:2 (1 cement:2 sand)**	Cum	4211.40	4211.40	4211.40
	(C)	**Cement Mortar 1:4 (1 cement:4 sand)**	Cum	2918.20	2918.20	2918.20
	(D)	**Cement Mortar 1:6 (1 cement:6 sand)**	Cum	2432.50	2432.50	2432.50
15.06		**Stone Masonary Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical specifications.**				
	(A)	Square Rubble Coursed Rubble Masonary(first sort)	Cum	3965.40	3965.40	3965.40
	(B)	Random Rubble Masonary	Cum	3859.90	3859.90	3859.90
15.07		**Brick Masonary Work in 1:3 in sub-structure complete excluding pointing and plastering, as per Drawing and Technical specifications.**	Cum	6208.20	6213.00	6233.00

Summary of Rate Analysis

BOX CELL STRUCTURE

Sl. No.	Description		Unit	Rate		
				Large	Medium	Small
15.08		**Pointing with cement mortar (1:3) on brick work in sub-structure as per Technical specifications.**	10 Sm	600.00	600.00	600.00
15.09		**Plastering with cement mortar (1:3) on brick work in sub-structure as per Technical specifications.**	10 Sqm	1142.50	1143.40	1149.80
15.10		**Stone Masonary Work in Cement Mortar 1:3 for substructure complete as per Drawing and Technical specifications.**				
	A	**Random Rubble Masonary**	Cum	3934.90	3944.20	3982.10
	B	**Coursed Rubble Masonary**	Cum	4175.80	4185.00	4222.90
	C	**Ashlar Masonary**	Cum	5300.90	5310.10	5348.00
15.11		**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	Cum	4304.50	4309.70	4332.90
	Case II	PCC Grade M15 using batching plant & manual placing	Cum	4534.10	4539.40	4562.40
	B	**PCC Grade M20**				
	Case I	PCC Grade M20 using batching plant, transit mixer & concrete pump	Cum	4800.20	4805.50	4828.50
	Case II	PCC Grade M20 using batching plant,transit mixer & manual placing	Cum	5029.80	5035.00	5058.10
	C	**RCC Grade M20**				
	Case I	RCC Grade M20 using batching plant, transit mixer & concrete pump	Cum	4792.90	4798.20	4821.30
	Case II	RCC Grade M20 using batching plant,transit mixer & manual placing	Cum	5037.90	5043.20	5066.20
	D	**PCC Grade M25**				
	Case I	PCC Grade M25 using batching plant, transit mixer & concrete pump	Cum	5218.10	5223.40	5246.50
	Case II	PCC Grade M25 using batching plant,transit mixer & manual placing	Cum	5447.70	5453.00	5476.00
	E	**RCC Grade M25**				
	Case I	RCC Grade M25 using batching plant, transit mixer & concrete pump	Cum	5465.50	5470.80	5493.80
	Case II	RCC Grade M25 using batching plant,transit mixer & manual placing	Cum	5710.50	5715.80	5738.80
	F	**PCC Grade M30**				
	Case I	PCC Grade M30 using batching plant, transit mixer & concrete pump	Cum	5258.80	5264.10	5287.20
	Case II	PCC Grade M30 using batching plant,transit mixer & manual placing	Cum	5488.40	5493.70	5516.70
	G	**RCC Grade M30**				
	Case I	RCC Grade M30 using batching plant, transit mixer & concrete pump	Cum	5620.80	5626.10	5649.20
	Case II	RCC Grade M30 using batching plant,transit mixer & manual placing	Cum	5865.90	5871.10	5894.20
	H	**RCC Grade M35**				
	Case I	RCC Grade M35 using batching plant, transit mixer & concrete pump	Cum	5882.20	5887.50	5910.60
	Case II	RCC Grade M35 using batching plant,transit mixer & manual placing	Cum	6127.20	6132.50	6155.50
	I	**RCC Grade M40**				
	Case I	RCC Grade M40 using batching plant, transit mixer & concrete pump	Cum	6489.00	6494.30	6517.40
	Case II	RCC Grade M40 using batching plant,transit mixer & manual placing	Cum	6771.60	6781.50	6825.60
15.12		**Plain/Reinforced cement concrete for wall & slab etc. complete as per Drawing and Technical specifications.**				
	A	**RCC Grade M20**				

BOX CELL STRUCTURE

Sl. No.		Description	Unit	Rate		
				Large	Medium	Small
		RCC Grade M20 using batching plant, transit mixer & concrete pump	Cum	5446.50	5452.50	5478.70
	B	**RCC Grade M25**				
		RCC Grade M25 using batching plant, transit mixer & concrete pump	Cum	6210.80	6216.80	6243.00
	C	**RCC Grade M30**				
		RCC Grade M30 using batching plant, transit mixer & concrete pump	Cum	6387.30	6393.30	6419.50
	D	**RCC Grade M35**				
		RCC Grade M35 using batching plant, transit mixer & concrete pump	Cum	6684.30	6690.30	6716.50
	E	**RCC Grade M40**				
		RCC Grade M40 using batching plant, transit mixer & concrete pump	Cum	7373.80	7379.90	7406.10
15.13		**Supplying, fitting and placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical specifications**	MT	78423.10	78476.50	78579.90
15.14		**Providing weep holes in Brick masonary/ plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V:20H towards drawing face. Complete as per drawing and Technical specifications.**	Number	140.10	140.10	140.10
15.15		**PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specifications.**				
	Case I	PCC Grade M15 using batching plant & concrete pump	Cum	3913.20	3917.90	3939.00
	Case II	PCC Grade M15 using batching plant & manual placing	Cum	4121.90	4126.70	4147.70
15.16		**Reinforced cement concrete approach slab including reinforcement and formwork complete as per Drawing and Technical specifications.**	Cum	9031.00	9038.50	9064.60
15.17		**Drainage spouts complete as per Drawing and Technical Specifications.**	Number	844.10	844.10	844.10
15.18		**Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and Technical specifications.**	Cum	11052.10	11061.00	11089.70
15.19		**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 0.005 cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 516.	Sqm	445.50	445.50	445.50
15.20		**Crash Barriers for Bridge**				
		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. The rate analysis for rigid crash barrier in reinforced cement concrete, have been made and included in chapter-14 on Super-structure.				
15.21		**Painting on concrete surface**				

Summary of Rate Analysis

BOX CELL STRUCTURE

Sl. No.		Description	Unit	Rate		
				Large	Medium	Small
		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.	Sqm	109.40	109.40	109.40
15.22		**Filler joint**				
	(i)	Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & Technical Specification.	Running Metre	5465.20	5465.20	5465.20
	(ii)	Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.	Running Metre	381.80	381.80	381.80
	(iii)	Providing and fixing in position 20 mm thick pre moulded 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.	Running Metre	432.80	432.80	432.80
	(iv)	Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 percent bitumen by weight	Running Metre	28.80	28.80	28.80
15.23		**Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specifications.**				
	A	Granular material	Cum	671.80	671.80	671.80
	B	Sandy material	Cum	637.90	637.90	637.90
15.24		**Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRT&H specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.**	Cum	1427.50	1427.50	1427.50
15.25		**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.	Number	181.40	181.40	181.40

Analysis of Rate

CHAPTER - 15

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
15.01	304		**Excavation for structures**									
			Earth work in excavation of foundation of structures as per drawing and technical specifications, 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									
			Mate	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	3.500	3.500	3.500	306.00	1071.00	1071.00	1071.00	L-13
			Total Cost Without OH & CP						1116.50	1116.50	1116.50	
			b) Overhead charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		223.30	223.30	223.30	
			c) Contractor's profit @ on (a + b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		133.98	133.98	133.98	
			Cost for 10 cum = a+b+c						1473.78	1473.78	1473.78	
			Rate per cum = a+b+c/10						147.38	147.38	147.38	
								Say	**147.40**	**147.40**	**147.40**	
		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									
			Mate/Supervisor	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	4.500	4.500	4.500	306.00	1377.00	1377.00	1377.00	L-13
			Total Cost Without OH & CP						1435.50	1435.50	1435.50	
			b) Overhead charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		287.10	287.10	287.10	
			c) Contractor's profit @ on (a + b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		172.26	172.26	172.26	
			Cost for 10 cum = a+b+c						1894.86	1894.86	1894.86	
			Rate per cum = (a+b+c)/10						189.49	189.49	189.49	
								Say	**189.50**	**189.50**	**189.50**	
		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	0.240	0.240	0.240	325.00	78.00	78.00	78.00	L-12
			Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			Total Cost Without OH & CP						1914.00	1914.00	1914.00	
			b) Overhead charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		382.80	382.80	382.80	
			c) Contractor's profit @ on (a + b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		229.68	229.68	229.68	
			Cost for 10 cum = a+b+c						2526.48	2526.48	2526.48	
			Rate per cum = (a+b+c)/10						252.65	252.65	252.65	
								Say	**252.60**	**252.60**	**252.60**	
		Note	1. Cost of dewatering may be added where required upto 20 percent of labour cost. Assessment for dewatering shall be made as per site conditions.									
15.01	**B**	**(i)**	**Mechanical Means (Depth upto 3 m)**									
			Unit = cum									
			Taking Output = 330 cum									
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Hydraulic Excavator									
			For excavation									
			(i) 1.2 cum bucket capacity	hour	4.627			2703.00	12506.78			PM3003
			(ii) 1.1 cum bucket capacity	hour		5.329		2432.00		12960.13		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.450	2202.00			16404.90	PM3005
			For backfilling (considering 60% of the excavated material									
			(i) 1.2 cum bucket capacity	hour	2.776			2703.00	7503.53			PM3003
			(ii) 1.1 cum bucket capacity	hour		3.197		2432.00		7775.10		PM3004
			(iii) 0.9 cum bucket capacity	hour			4.470	2202.00			9842.94	PM3005

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Tipper for transportation of excess material to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t-km	198.000			4.80	950.40			PM72001
			(ii) 14 cum capacity	t-km		198.000		5.48		1085.04		PM73001
			(iii)10 cum capacity	t-km			198.000	6.80			1346.40	PM74001
			Total Cost Without OH & CP						23512.71	24372.27	30146.24	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4702.54	4874.45	6029.25	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2821.53	2924.67	3617.55	
			Cost for 330 cum = a+b+c+d						31036.78	32171.40	39793.04	
			Rate per cum =(a+b+c+d)/330						94.05	97.49	120.58	
								Say	**94.10**	**97.50**	**120.60**	
15.01	**B**	**(ii)**	**Mechanical Means (Depth 3 m to 6 m)**									
			Unit = cum									
			Taking Output = 300 cum									
			a) Labour									
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Hydraulic Excavator									
			For excavation									
			(i) 1.2 cum bucket capacity	hour	4.674			2703.00	12633.82			PM3003
			(ii) 1.1 cum bucket capacity	hour		5.383		2432.00		13091.46		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.525	2202.00			16570.05	PM3005
			For backfilling (considering 60% of the excavated material									
			(i) 1.2 cum bucket capacity	hour	2.804			2703.00	7579.21			PM3003
			(ii) 1.1 cum bucket capacity	hour		3.230		2432.00		7855.36		PM3004
			(iii) 0.9 cum bucket capacity	hour			4.515	2202.00			9942.03	PM3005
			Tipper for transportation of excess material to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t-km	180.000			4.80	864.00			PM72001
			(ii) 14 cum capacity	t-km		180.000		5.48		986.40		PM73001
			(iii)10 cum capacity	t-km			180.000	6.80			1224.00	PM74001
			Total Cost Without OH & CP						23629.03	24485.22	30288.08	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4725.81	4897.04	6057.62	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2835.48	2938.23	3634.57	
			Cost for 300 cum = a+b+c+d						31190.32	32320.49	39980.27	
			Rate per cum =(a+b+c+d)/300						103.97	107.73	133.27	
								Say	**104.00**	**107.70**	**133.30**	
15.01	**B**	**(iii)**	**Mechanical Means (Depth above 6 m)**									
			Unit = cum									
			Taking Output = 270 cum									
			a) Labour									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Hydraulic Excavator									
			For excavation									
			(i) 1.2 cum bucket capacity	hour	4.732			2703.00	12790.60			PM3003
			(ii) 1.1 cum bucket capacity	hour		5.450		2432.00		13254.40		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.619	2202.00			16777.04	PM3005
			For backfilling (considering 60% of the excavated material									
			(i) 1.2 cum bucket capacity	hour	2.839			2703.00	7673.82			PM3003
			(ii) 1.1 cum bucket capacity	hour		3.270		2432.00		7952.64		PM3004
			(iii) 0.9 cum bucket capacity	hour			4.571	2202.00			10065.34	PM3005
			Tipper for transportation of excess material to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t-km	162.000			4.80	777.60			PM72001
			(ii) 14 cum capacity	t-km		162.000		5.48		887.76		PM73001
			(iii)10 cum capacity	t-km			162.000	6.80			1101.60	PM74001
			Total Cost Without OH & CP						23794.01	24646.80	30495.98	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4758.80	4929.36	6099.20	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2855.28	2957.62	3659.52	
			Cost for 270 cum = a+b+c+d						31408.10	32533.78	40254.69	
			Rate per cum =(a+b+c+d)/270						116.33	120.50	149.09	
								Say	**116.30**	**120.50**	**149.10**	
15.01		**II**	**Ordinary Rock (not requiring blasting)**									
		A	**Manual Means**									
		(i)	**Depth upto 3 m**									
			Unit = cum									
			Taking output = 10 cum									
			a) Labour									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mazdoor	day	5.000	5.000	5.000	306.00	1530.00	1530.00	1530.00	L-13
			Total Cost Without OH & CP						1595.00	1595.00	1595.00	
			b) Overhead charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		319.00	319.00	319.00	
			c) Contractor's profit @ on (a+b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		191.40	191.40	191.40	
			Cost for 10 cum = a+b+c						2105.40	2105.40	2105.40	
			Rate per cum = (a+b+c)/10						210.54	210.54	210.54	
								Say	**210.50**	**210.50**	**210.50**	
		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.									
15.01		**B**	**Mechanical Means**									
			Unit = cum									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Taking Output = 50 cum									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Machinery									
			Hydraulic Excavator									
			Excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	5.818			2703.00	15726.05			PM3003
			(ii) 1.1 cum bucket capacity	hour		6.845		2432.00		16647.04		PM3004
			(iii) 0.9 cum bucket capacity	hour			7.273	2202.00			16015.15	PM3005
			For loading									
			(i) 1.2 cum bucket capacity	hour	0.872			2703.00	2357.02			PM3003
			(ii) 1.1 cum bucket capacity	hour		1.005		2432.00		2444.16		PM3004
			(iii) 0.9 cum bucket capacity	hour			1.405	2202.00			3093.81	PM3005
			Jack Hammer	hour	5.818	6.845	7.273	206.00	1198.51	1410.07	1498.24	PM4001
			Tipper for transportation considering lead @ 1 km									
			(i) 18 cum capacity	t-km	75.000			4.80	360.00			PM72001
			(ii) 14 cum capacity	t-km		75.000		5.48		411.00		PM73001
			(iii)10 cum capacity	t-km			75.000	6.80			510.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	0.872			2239.00	1952.41			PM6001
			(ii) 14 cum capacity	hour		1.005		1998.00		2007.99		PM6002
			(iii)10 cum capacity	hour			1.405	1785.00			2507.93	PM6003
			Total Cost Without OH & CP						22550.99	23877.26	24582.12	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4510.20	4775.45	4916.42	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2706.12	2865.27	2949.85	
			Cost for 50 cum= a+b+c+d						29767.30	31517.98	32448.40	
			Rate per cum =(a+b+c+d)/50						595.35	630.36	648.97	
								Say	**595.30**	**630.40**	**649.00**	
15.01	**302 & 303**	**III**	**Hard Rock (requiring blasting)**									
		A	**Manual Means**									
			Unit = cum									
			Taking Output = 10 cum									
			a) Labour									
			Mate	day	0.350	0.350	0.350	325.00	113.75	113.75	113.75	L-12
			Driller	day	0.500	0.500	0.500	318.00	159.00	159.00	159.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			b) Machinery									
			Air Compressor 250 cfm with 2 jack hammer for drilling	hour	1.000	1.000	1.000	413.00	413.00	413.00	413.00	PM15001 +2*45001
			c) Material									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Explosives (Blasting Material)	kg	3.500	3.500	3.500	976.21	3416.74	3416.74	3416.74	M-215
			Detonator electric	each	14.000	14.000	14.000	6.19	86.66	86.66	86.66	M-217
			Total Cost Without OH & CP						6764.15	6764.15	6764.15	
			d) Overhead charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		1352.83	1352.83	1352.83	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		811.70	811.70	811.70	
			Cost for 10 cum = a+b+c+d+e						8928.67	8928.67	8928.67	
			Rate per cum =(a+b+c+d+e)/10						892.87	892.87	892.87	
								Say	**892.90**	**892.90**	**892.90**	
		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 & 303**	**III**	**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 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									
			a) Labour									
			Mate	day	0.210	0.210	0.210	325.00	68.25	68.25	68.25	L-12
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Driller	day	2.000	2.000	2.000	318.00	636.00	636.00	636.00	L-06
			Blaster	day	0.250	0.250	0.250	508.00	127.00	127.00	127.00	L-03
			b) Machinery									
			Air Compressor	hour	6.000	6.000	6.000	391.00	2346.00	2346.00	2346.00	PM15001
			Jack Hammer for drilling holes (@ 4.5 m per hour)	hour	24.000	24.000	24.000	206.00	4944.00	4944.00	4944.00	PM4001
			Jack hammer (consider 5% of the volume for dressing)	hour	1.024	1.024	1.024	206.00	210.94	210.94	210.94	PM4001
			Hydraulic Excavator									
			Excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	1.024			2703.00	2767.87			PM3003
			(ii) 1.1 cum bucket capacity	hour		1.024		2432.00		2490.37		PM3004
			(iii) 0.9 cum bucket capacity	hour			1.024	2202.00			2254.85	PM3005
			For loading									
			(i) 1.2 cum bucket capacity	hour	2.094			2703.00	5660.08			PM3003
			(ii) 1.1 cum bucket capacity	hour		2.411		2432.00		5863.55		PM3004
			(iii) 0.9 cum bucket capacity	hour			3.371	2202.00			7422.94	PM3005

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Tipper for transportation considering lead @ 1 km									
			(i) 18 cum capacity	t-km	180.000			4.80	864.00			PM72001
			(ii) 14 cum capacity	t-km		180.000		5.48		986.40		PM73001
			(iii)10 cum capacity	t-km			180.000	6.80			1224.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	2.094			2239.00	4688.47			PM6001
			(ii) 14 cum capacity	hour		2.411		1998.00		4817.18		PM6002
			(iii)10 cum capacity	hour			3.371	1785.00			6017.24	PM6003
			c) Materials									
			Small dia Explosive at 0.40 kg/cum for 120 cum (120 x0.40) Explosive at 0.20 kg/cum for secondary blast @ 5% of the total volume (120x0.2x5%)	kg	48.000	48.000	48.000	976.21	46858.08	46858.08	46858.08	M-215
			Electric detonators at 1 per hole for main blast holes (21x3+20*2)= 103 nos.	no	69.000	69.000	69.000	6.19	427.11	427.11	427.11	M-217
			Ordinary detonators @ 1 per hole for 10 secondary holes (required for 5% of the total quantity @ 0.6 m per hole for 1 cum)	no	7.000	7.000	7.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-216
			Detonating fuse coil	m	213.000	213.000	213.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
			Total Cost Without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		#VALUE!	#VALUE!	#VALUE!	
			Cost for 120 cum = a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per cum = (a+b+c+d+e)/120						#VALUE!	#VALUE!	#VALUE!	
								Say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
15.01		**IV**	**Hard Rock (blasting prohibited)**									
			Unit = cum									
			Taking Output = 35 cum									
		A	**Mechanical Means**									
			a) Labour									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mazdoor	day	2.000	2.000	2.000	306.00	612.00	612.00	612.00	L-13
			b) Machinery									
			Jack Hammer	hour	5.973	7.467	9.190	206.00	1230.44	1538.20	1893.14	PM4001
			Hydraulic Excavator									
			Excavator For excavation									
			(i) 1.2 cum bucket capacity	hour	5.973			2703.00	16145.02			PM3003
			(ii) 1.1 cum bucket capacity	hour		7.467		2432.00		18159.74		PM3004
			(iii) 0.9 cum bucket capacity	hour			9.190	2202.00			20236.38	PM3005
			For loading									
			(i) 1.2 cum bucket capacity	hour	0.611			2703.00	1651.53			PM3003
			(ii) 1.1 cum bucket capacity	hour		0.703		2432.00		1709.70		PM3004
			(iii) 0.9 cum bucket capacity	hour			0.983	2202.00			2164.57	PM3005

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Tipper									
			For transportation to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t-km	52.500			4.80	252.00			PM72001
			(ii) 14 cum capacity	t-km		52.500		5.48		287.70		PM73001
			(iii)10 cum capacity	t-km			52.500	6.80			357.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	0.611			2239.00	1368.03			PM6001
			(ii) 14 cum capacity	hour		0.703		1998.00		1404.59		PM6002
			(iii)10 cum capacity	hour			0.983	1785.00			1754.66	PM6003
			Total Cost Without OH & CP						21285.02	23737.94	27043.74	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4257.00	4747.59	5408.75	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2554.20	2848.55	3245.25	
			Cost for 35 cum= a+b+c+d						28096.23	31334.08	35697.74	
			Rate per cum = (a+b+c+d)/35						802.75	895.26	1019.94	
								Say	**802.70**	**895.30**	**1019.90**	
15.01		**V**	**Marshy soil**									
			Unit = cum									
			Taking output = 10 cum									
			Depth upto 3 m									
		A	**Manual Means**									
			a) Labour									
			Mate/ Supervisor	day	0.400	0.400	0.400	325.00	130.00	130.00	130.00	L-12
			Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
			b) Machinery									
			Tractor-trolley for removal	hour	2.670	2.670	2.670	629.00	1679.43	1679.43	1679.43	PM12001
			Total Cost Without OH & CP						4869.43	4869.43	4869.43	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		973.89	973.89	973.89	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		584.33	584.33	584.33	
			Cost for 10 cum = a+b+c+d						6427.65	6427.65	6427.65	
			Rate per cum = (a+b+c+d)/10						642.76	642.76	642.76	
								Say	**642.80**	**642.80**	**642.80**	
		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 and 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 item 15.01 (i) to (iv) for ordinary soil.									
15.01		**B**	**Mechanical Means**									
			Unit = cum									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Taking Output = 260 cum									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Machinery									
			Hydraulic Excavator									
			(i) 1.2 cum bucket capacity	hour	8.506			2703.00	22991.72			PM3003
			(ii) 1.1 cum bucket capacity	hour		9.796		2432.00		23823.87		PM3004
			(iii) 0.9 cum bucket capacity	hour			13.695	2202.00			30156.39	PM3005
			Tipper									
			For transportation to dumping yard considering lead @ 1 km									
			(i) 18 cum capacity	t-km	390.000			4.80	1872.00			PM72001
			(ii) 14 cum capacity	t-km		390.000		5.48		2137.20		PM73001
			(iii)10 cum capacity	t-km			390.000	6.80			2652.00	PM74001
			For loading & unloading time									
			(i) 18 cum capacity	hour	8.506			2239.00	19044.93			PM6001
			(ii) 14 cum capacity	hour		9.796		1998.00		19572.41		PM6002
			(iii) 10 cum capacity	hour			13.695	1785.00			24445.58	PM6003
			c) Material									
			Selected earth for refilling	cum	156.000	156.000	156.000	35.01	5461.56	5461.56	5461.56	M-164
			Total Cost Without OH & CP						49689.21	51314.04	63034.53	
			d) Overhead charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		9937.84	10262.81	12606.91	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		5962.71	6157.68	7564.14	
			Cost for 260 cum = a+b+c+d						65589.76	67734.53	83205.57	
			Rate per cum = (a+b+c+d)/260						252.27	260.52	320.02	
								Say	**252.30**	**260.50**	**320.00**	
15.01		**VI**	**Back filling in Marshy foundation pits**									
			Unit= cum									
			Taking Output = 6 cum									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor for dressing sides, bottom and backfilling	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Machinery									
			Tractor-trolley for transportation	hour	2.000	2.000	2.000	629.00	1258.00	1258.00	1258.00	PM12001
			Total Cost Without OH & CP						2215.00	2215.00	2215.00	
			c) Overhead charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		443.00	443.00	443.00	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		265.80	265.80	265.80	
			Cost for 6 cum = a+b+c+d						2923.80	2923.80	2923.80	
			Rate per cum = (a+b+c+d)/6						487.30	487.30	487.30	
								Say	**487.30**	**487.30**	**487.30**	
15.02	**304**		**Filling Annular Space around Footing in Rock**									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Unit= cum									
			Taking Output = 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 and Technical Specification**									
			Unit= cum									
			Taking output= 100 cum									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Machinery									
			Water tanker (speed @ 20 km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.125xL1 +0.750			1121.00	980.88			PM11001
			(ii) 12 KL capacity	hour		0.167xL1+ 1.000		947.00		1105.15		PM11002
			(iii) 6 KL capacity	hour			0.333xL1 +2.000	707.00			1649.43	PM11003
			c) Material									
			Sand (assuming 20 percent voids) at site	cum	120.000	120.000	120.000	143.32	17198.40	17198.40	17198.40	M-006
			Water	KL	18.000	18.000	18.000	56.20	1011.60	1011.60	1011.60	M-191
			Total Cost Without OH & CP						19509.88	19634.15	20178.43	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		3901.98	3926.83	4035.69	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2341.19	2356.10	2421.41	
			Rate per 100 cum= a+b+c+d+e						25753.04	25917.08	26635.53	
			Rate per cum = (a+b+c+d+e)/100						257.53	259.17	266.36	
								Say	**257.50**	**259.20**	**266.40**	
15.04	**1300**		**Brick Masonary Work in Cement Mortar 1:3 in Foundation complete excluding pointing and plastering, as per Drawing and Technical specifications.**									
			Unit = cum									
			Taking output =5 cum									
			a) Material									
			Brick 1st class	each	2500.000	2500.000	2500.000	6.07	15172.50	15172.50	15172.50	M-079
			Cement mortar 1:3 (Rate taken from sub-analysis items 21.01A)	cum	1.200	1.200	1.200	3467.70	4161.24	4161.24	4161.24	21.01A
			Water for curing	KL	2.415	2.415	2.415	56.20	135.72	135.72	135.72	M-191
			b) Labour									
			Mate	day	0.480	0.480	0.480	325.00	156.00	156.00	156.00	L-12

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Mason	day	4.000	4.000	4.000	369.00	1476.00	1476.00	1476.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.017xL1 +0.101			1121.00	132.28			PM11001
			(ii) 12 KL capacity	hour		0.022xL1 +0.134		947.00		147.73		PM11002
			(iii) 6 KL capacity	hour			0.045xL1 +0.268	707.00			221.29	PM11003
			Total Cost Without OH & CP						23681.74	23697.20	23770.75	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4736.35	4739.44	4754.15	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2841.81	2843.66	2852.49	
			Cost for 5 cum= a+b+c+d+e						31259.90	31280.30	31377.40	
			Rate per cum = (a+b+c+d+e)/5						6251.98	6256.06	6275.48	
								Say	**6252.00**	**6256.10**	**6275.50**	
15.05	**Sub-analysis**	**(A)**	**Cement Mortar 1:3 (1 cement:3 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			a) Materials									
			Cement	tonne	0.510	0.510	0.510	5156.00	2629.56	2629.56	2629.56	M-081
			Sand	cum	1.050	1.050	1.050	494.00	518.70	518.70	518.70	M-004
			b) Labour									
			Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
			Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
			Total Material and Labour = (a+b)						3435.36	3435.36	3435.36	
								Say	**3435.40**	**3435.40**	**3435.40**	
	Sub-analysis (Addl.)	**(B)**	**Cement Mortar 1:2 (1 cement:2 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			a) Materials									
			Cement	tonne	0.672	0.672	0.672	5156.00	3464.83	3464.83	3464.83	M-081
			Sand	cum	0.930	0.930	0.930	494.00	459.42	459.42	459.42	M-004
			b) Labour									
			Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
			Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
			Total Material and Labour = (a+b)						4211.35	4211.35	4211.35	
								Say	**4211.40**	**4211.40**	**4211.40**	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
	Sub-analysis (Addl.)	(C)	**Cement Mortar 1:4 (1 cement:4 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			a) Materials									
			Cement	tonne	0.403	0.403	0.403	5156.00	2077.87	2077.87	2077.87	M-081
			Sand	cum	1.120	1.120	1.120	494.00	553.28	553.28	553.28	M-004
			b) Labour									
			Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
			Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
			Total Material and Labour = (a+b)						2918.25	2918.25	2918.25	
								Say	**2918.20**	**2918.20**	**2918.20**	
	Sub-analysis (Addl.)	(D)	**Cement Mortar 1:6 (1 cement:6 sand)**									
			Unit = 1 cum									
			Taking output = 1 cum									
			a) Materials									
			Cement	tonne	0.288	0.288	0.288	5156.00	1484.93	1484.93	1484.93	M-081
			Sand	cum	1.337	1.337	1.337	494.00	660.48	660.48	660.48	M-004
			b) Labour									
			Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
			Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
			Total Material and Labour = (a+b)						2432.51	2432.51	2432.51	
								Say	**2432.50**	**2432.50**	**2432.50**	
15.06	**1400**		**Stone Masonary Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical specifications.**									
			Unit = cum									
			Taking output = 5 cum									
	1405.4	**(A)**	**Square Rubble Coursed Rubble Masonary(first sort)**									
			a) Material									
			Stone	cum	5.500	5.500	5.500	675.00	3712.50	3712.50	3712.50	M-170
			Through and bond stone	each	35.000	35.000	35.000	10.58	370.30	370.30	370.30	M-184
			(35 nos.x0.24mx0.24mx0.39m=0.79 cu.m)									
			. Cement mortar 1:3	cum	1.500	1.500	1.500	3467.70	5201.55	5201.55	5201.55	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			b) Labour									
			Mate	day	0.660	0.660	0.660	325.00	214.50	214.50	214.50	L-12
			Mason	day	7.500	7.500	7.500	369.00	2767.50	2767.50	2767.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Total Cost Without OH & CP						15020.35	15020.35	15020.35	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		3004.07	3004.07	3004.07	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		1802.44	1802.44	1802.44	
			Cost for 5 cum = a+b+c+d						19826.86	19826.86	19826.86	
			Rate per cum = (a+b+c+d)/5						3965.37	3965.37	3965.37	
								Say	**3965.40**	**3965.40**	**3965.40**	
	1405.3	**(B)**	**Random Rubble Masonary**									
			(Coursed/uncoursed)									
			Unit = cum									
			Taking output = 5 cum									
			a) Material									
			Stone	cum	5.500	5.500	5.500	675.00	3712.50	3712.50	3712.50	M-147
			Through and bond stone	each	35.000	35.000	35.000	10.58	370.30	370.30	370.30	M-184
			(35 nos.x0.24mx0.24mx0.39m=0.79 cu.m)									
			. Cement mortar 1:3	cum	1.550	1.550	1.550	3467.70	5374.94	5374.94	5374.94	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			b) Labour									
			Mate	day	0.600	0.600	0.600	325.00	195.00	195.00	195.00	L-12
			Mason	day	6.000	6.000	6.000	369.00	2214.00	2214.00	2214.00	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			Total Cost Without OH & CP						14620.74	14620.74	14620.74	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		2924.15	2924.15	2924.15	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		1754.49	1754.49	1754.49	
			Cost for 5 cum = a+b+c+d						19299.37	19299.37	19299.37	
			Rate per cum = (a+b+c+d)/5						3859.87	3859.87	3859.87	
		Note	The labour already considered in cement mortar has been taken into account while proposing labour for masonary works.					**Say**	**3859.90**	**3859.90**	**3859.90**	
15.07	**1300 & 2200**		**Brick Masonary 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									
			Brick 1st class	each	500.000	500.000	500.000	6.07	3034.50	3034.50	3034.50	M-079
			Cement mortar 1:3	cum	0.240	0.240	0.240	3467.70	832.25	832.25	832.25	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			Water for curing	KL	0.483	0.483	0.483	56.20	27.14	27.14	27.14	M-191
			b) Labour									
			Mate	day	0.064	0.064	0.064	325.00	20.80	20.80	20.80	L-12
			Mason	day	0.800	0.800	0.800	369.00	295.20	295.20	295.20	L-10
			Mazdoor	day	0.800	0.800	0.800	306.00	244.80	244.80	244.80	L-13

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Add for scaffolding @ 5 percent of cost of material and labour						222.73	222.73	222.73	
			c) Machinery									
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.003xL1 +0.020			1121.00	25.78			PM11001
			(ii) 12 KL capacity	hour		0.004xL1+ 0.027		947.00		29.36		PM11002
			(iii) 6 KL capacity	hour			0.009xL1 +0.054	707.00			44.54	PM11003
			Total Cost Without OH & CP						4703.21	4706.78	4721.97	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		940.64	941.36	944.39	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		564.39	564.81	566.64	
			Rate per cum = (a+b+c+d+e)						6208.24	6212.96	6233.00	
								Say	**6208.20**	**6213.00**	**6233.00**	
15.08	**1300 & 2200**		**Pointing with cement mortar (1:3) on brick work in sub-structure as per Technical specifications.**									
			Unit =10 sqm									
			Taking output =10 sqm									
			a) Material									
			Cement mortar 1:3	cum	0.030	0.030	0.030	3467.70	104.03	104.03	104.03	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Total Cost Without OH & CP						454.53	454.53	454.53	
			c) Overhead Charges @ on (a+b)						90.91	90.91	90.91	
			d) Contractor's profit @ on (a+b+c)						54.54	54.54	54.54	
			Rate per 10 sqm (a+b+c+d)						599.98	599.98	599.98	
								Say	**600.00**	**600.00**	**600.00**	
15.09	**1300 & 2200**		**Plastering with cement mortar (1:3) on brick work in sub-structure as per Technical specifications.**									
			Unit = 10 sqm									
			Taking output =10 sqm									
			a) Material									
			Cement mortar 1:3	cum	0.144	0.144	0.144	3467.70	499.35	499.35	499.35	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			Water for curing	KL	0.139	0.139	0.139	56.20	7.81	7.81	7.81	M-191

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			c) Machinery									
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.001xL1 +0.006			1121.00	7.85			PM11001
			(ii) 12 KL capacity	hour		0.001xL1+ 0.008		947.00		8.52		PM11002
			(iii) 6 KL capacity	hour			0.003xL1 +0.016	707.00			13.43	PM11003
			Total Cost Without OH & CP						865.51	866.18	871.09	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		173.10	173.24	174.22	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		103.86	103.94	104.53	
			Rate per 10 sqm=(a+b+c+d+e)						1142.47	1143.36	1149.84	
								say	**1142.50**	**1143.40**	**1149.80**	
		Note	The number of masons and mazdoors already catered in the cement mortar have been taken into account while providing these categories in brick masonary, pointing and plastering.									
15.10	**1400 & 2200**		**Stone Masonary Work in Cement Mortar 1:3 for substructure complete as per Drawing and Technical specifications.**									
		A	**Random Rubble Masonary**									
			(coursed/uncoursed)									
			Unit = cum									
			Taking output = 1 cum									
			a) Material									
			Stone	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-147
			Through and bond stone	No	7.000	7.000	7.000	10.58	74.06	74.06	74.06	M-184
			(7 no.x0.24mx0.24mx0.39m=0.16 cu.m)									
			. Cement mortar 1:3	cum	0.330	0.330	0.330	3467.70	1144.34	1144.34	1144.34	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			Water for curing	KL	0.966	0.966	0.966	56.20	54.29	54.29	54.29	M-191
			b) Labour									
			Mate	day	0.096	0.096	0.096	325.00	31.20	31.20	31.20	L-12
			Mason	day	1.200	1.200	1.200	369.00	442.80	442.80	442.80	L-10
			Mazdoor	day	1.200	1.200	1.200	306.00	367.20	367.20	367.20	L-13
			Add for scaffolding @ 5 percent of cost of a) material and b) Labour						139.44	139.44	139.44	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			c) Machinery									
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.007xL1 +0.040			1121.00	52.69			PM11001
			(ii) 12 KL capacity	hour		0.009xL1 +0.054		947.00		59.66		PM11002
			(iii) 6 KL capacity	hour			0.018xL1 +0.107	707.00			88.38	PM11003
			Total Cost Without OH & CP						2981.02	2988.00	3016.71	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		596.20	597.60	603.34	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		357.72	358.56	362.01	
			Rate per cum (a+b+c+d+e)						3934.95	3944.15	3982.06	
								Say	**3934.90**	**3944.20**	**3982.10**	
15.10		**B**	**Coursed Rubble Masonary**									
			(first sort)									
			Unit = cum									
			Taking output = 1 cum									
			a) Material									
			Stone	cum	1.100	1.100	1.100	675.00	742.50	742.50	742.50	M-170
			Through and bond stone	each	7.000	7.000	7.000	10.58	74.06	74.06	74.06	M-184
			(7 no.x0.24mx0.24mx0.39m=0.16 cu.m)									
			. Cement mortar 1:3	cum	0.300	0.300	0.300	3467.70	1040.31	1040.31	1040.31	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			Water for curing	KL	0.966	0.966	0.966	56.20	54.29	54.29	54.29	M-191
			b) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13
			Add for scaffolding @ 5 percent of cost of material and labour						148.13	148.13	148.13	
			c) Machinery									
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and soreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.007xL1 +0.040			1121.00	52.69			PM11001
			(ii) 12 KL capacity	hour		0.009xL1 +0.054		947.00		59.66		PM11002
			(iii) 6 KL capacity	hour			0.018xL1 +0.107	707.00			88.38	PM11003
			Total Cost Without OH & CP						3163.48	3170.45	3199.17	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		632.70	634.09	639.83	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		379.62	380.45	383.90	
			Rate per cum (a+b+c+d+e)						4175.79	4185.00	4222.90	
								Say	**4175.80**	**4185.00**	**4222.90**	
15.10		**C**	**Ashlar Masonary**									
			(first sort)									
			Plain ashlar									
			Unit = cum									
			Taking output = 1 cum									
			a) Material									
			Stone	cum	1.110	1.110	1.110	675.00	749.25	749.25	749.25	M-170
			Through and bond stone	each	7.000	7.000	7.000	10.58	74.06	74.06	74.06	M-184
			(7 no.x0.24mx0.24mx0.39m=0.16 cu.m)									
			. Cement mortar 1:3	cum	0.330	0.330	0.330	3467.70	1144.34	1144.34	1144.34	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			Water for curing	KL	0.966	0.966	0.966	56.20	54.29	54.29	54.29	M-191
			b) Labour for masonary work									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mason	day	2.500	2.500	2.500	369.00	922.50	922.50	922.50	L-10
			Mazdoor	day	2.500	2.500	2.500	306.00	765.00	765.00	765.00	L-13
			Add for scaffolding @ 5 percent of cost of a)material and b) Labour						188.72	188.72	188.72	
			c) Machinery									
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and spreading @ 30 mins per trip)									
			(i) 16 KL capacity	hour	0.007xL1 +0.040			1121.00	52.69			PM11001
			(ii) 12 KL capacity	hour		0.009xL1 +0.054		947.00		59.66		PM11002
			(iii) 6 KL capacity	hour			0.018xL1 +0.107	707.00			88.38	PM11003
			Total Cost Without OH & CP						4015.85	4022.82	4051.54	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		803.17	804.56	810.31	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		481.90	482.74	486.18	
			Rate per cum (a+b+c+d+e)						5300.92	5310.13	5348.03	
								Say	**5300.90**	**5310.10**	**5348.00**	
		Note	The labour already considered in the cement mortar have been taken into account while providing these categories in the stone masonary works.									
15.11	**1500, 1700 & 2100**		**Plain/Reinforced Cement concrete in open Foundation complete as per Drawing and Technical specifications.**									
		A	**PCC Grade M15**									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
		Case I	**PCC Grade M15 using batching plant & concrete pump**									
			Unit = cum									
			Taking output = 30 cum									
			a) Material									
			Per cum Basic cost	cum	30.000	30.000	30.000	2727.10	81813.00	81813.00	81813.00	21.03
			(Rate taken from sub-analysis items 21.03)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.143xL1 +0.875		947.00		964.05		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						8893.69	8904.34	8952.30	
			Total Cost Without OH & CP						97830.58	97947.71	98475.32	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		19566.12	19589.54	19695.06	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		11739.67	11753.72	11817.04	
			Cost for 30 cum= a+b+c+d+e+f						129136.36	129290.97	129987.42	
			Rate per cum = (a+b+c+d+e+f)/30						4304.55	4309.70	4332.91	
								Say	**4304.50**	**4309.70**	**4332.90**	
		Case II	**PCC Grade M15 using batching plant & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	2727.10	40906.50	40906.50	40906.50	21.03
			(Rate taken from sub-analysis items 21.03)									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						4684.02	4689.47	4713.27	
			Total Cost Without OH & CP						51524.19	51584.22	51845.94	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		10304.84	10316.84	10369.19	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		6182.90	6190.11	6221.51	
			Cost for 15 cum= a+b+c+d+e+f						68011.93	68091.17	68436.65	
			Rate per cum = (a+b+c+d+e+f)/15						4534.13	4539.41	4562.44	
								Say	**4534.10**	**4539.40**	**4562.40**	
15.11		**B**	**PCC Grade M20**									
		Case I	**PCC Grade M20 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	3068.44	92053.20	92053.20	92053.20	21.04
			(Rate taken from sub-analysis items 21.04)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						9917.71	9928.64	9976.32	
			Total Cost Without OH & CP						109094.80	109215.05	109739.54	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		21818.96	21843.01	21947.91	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		13091.38	13105.81	13168.74	
			Cost for 30 cum= a+b+c+d+e+f						144005.13	144163.87	144856.19	
			Rate per cum = (a+b+c+d+e+f)/30						4800.17	4805.46	4828.54	
								Say	**4800.20**	**4805.50**	**4828.50**	
		Case II	**PCC Grade M20 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	3068.44	46026.60	46026.60	46026.60	21.04
			(Rate taken from sub-analysis items 21.04)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						5196.03	5201.48	5225.28	
			Total Cost Without OH & CP						57156.30	57216.33	57478.05	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		11431.26	11443.27	11495.61	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		6858.76	6865.96	6897.37	
			Cost for 15 cum= a+b+c+d+e+f						75446.31	75525.56	75871.03	
			Rate per cum = (a+b+c+d+e+f)/15						5029.75	5035.04	5058.07	
								Say	**5029.80**	**5035.00**	**5058.10**	
15.11		**C**	**RCC Grade M20**									
		Case I	**RCC Grade M20 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	3052.80	91584.00	91584.00	91584.00	21.05
			(Rate taken from sub-analysis items 21.05)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						9902.69	9913.62	9961.30	
			Total Cost Without OH & CP						108929.58	109049.83	109574.32	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		21785.92	21809.97	21914.86	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		13071.55	13085.98	13148.92	
			Cost for 30 cum= a+b+c+d+e+f						143787.04	143945.78	144638.10	
			Rate per cum = (a+b+c+d+e+f)/30						4792.90	4798.19	4821.27	
								Say	**4792.90**	**4798.20**	**4821.30**	
		Case II	**RCC Grade M20 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	3052.80	45792.00	45792.00	45792.00	21.05
			(Rate taken from sub-analysis items 21.05)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading))									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						5204.47	5209.92	5233.72	
			Total Cost Without OH & CP						57249.14	57309.17	57570.89	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		11449.83	11461.83	11514.18	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		6869.90	6877.10	6908.51	
			Cost for 15 cum= a+b+c+d+e+f						75568.87	75648.11	75993.58	
			Rate per cum = (a+b+c+d+e+f)/15						5037.92	5043.21	5066.24	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
								Say	**5037.90**	**5043.20**	**5066.20**	
15.11		**D**	**PCC Grade M25**									
		Case I	**PCC Grade M25 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	3356.30	100689.00	100689.00	100689.00	21.06
			(Rate taken from sub-analysis items 21.06)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						10781.29	10792.22	10839.90	
			Total Cost Without OH & CP						118594.18	118714.43	119238.92	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		23718.84	23742.89	23847.78	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		14231.30	14245.73	14308.67	
			Cost for 30 cum= a+b+c+d+e+f						156544.32	156703.05	157395.38	
			Rate per cum = (a+b+c+d+e+f)/30						5218.14	5223.44	5246.51	
								Say	**5218.10**	**5223.40**	**5246.50**	
		Case II	**PCC Grade M25 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Per cum Basic cost	cum	15.000	15.000	15.000	3356.30	50344.50	50344.50	50344.50	21.06
			(Rate taken from sub-analysis items 21.06)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						5627.82	5633.27	5657.07	
			Total Cost Without OH & CP						61905.99	61966.02	62227.74	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		12381.20	12393.20	12445.55	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		7428.72	7435.92	7467.33	
			Cost for 15 cum= a+b+c+d+e+f						81715.91	81795.15	82140.62	
			Rate per cum = (a+b+c+d+e+f)/15						5447.73	5453.01	5476.04	
								Say	**5447.70**	**5453.00**	**5476.00**	
15.11		**E**	**RCC Grade M25**									
		Case I	**RCC Grade M25 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	3516.00	105480.00	105480.00	105480.00	21.07
			(Rate taken from sub-analysis items 21.07)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						11292.29	11303.22	11350.90	
			Total Cost Without OH & CP						124215.18	124335.43	124859.92	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		24843.04	24867.09	24971.98	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		14905.82	14920.25	14983.19	
			Cost for 30 cum= a+b+c+d+e+f						163964.04	164122.77	164815.10	
			Rate per cum = (a+b+c+d+e+f)/30						5465.47	5470.76	5493.84	
								Say	**5465.50**	**5470.80**	**5493.80**	
		Case II	**RCC Grade M25 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	3516.00	52740.00	52740.00	52740.00	21.07
			(Rate taken from sub-analysis items 21.07)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						5899.27	5904.72	5928.52	
			Total Cost Without OH & CP						64891.94	64951.97	65213.69	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		12978.39	12990.39	13042.74	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		7787.03	7794.24	7825.64	
			Cost for 15 cum= a+b+c+d+e+f						85657.36	85736.60	86082.08	
			Rate per cum = (a+b+c+d+e+f)/15						5710.49	5715.77	5738.81	
								Say	**5710.50**	**5715.80**	**5738.80**	
15.11		**F**	**PCC Grade M30**									
		Case I	**PCC 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	3384.30	101529.00	101529.00	101529.00	21.08
			(Rate taken from sub-analysis items 21.08)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.113	0.113	0.113	325.00	36.73	36.73	36.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	1.325	1.325	1.325	306.00	405.45	405.45	405.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						10865.29	10876.22	10923.90	
			Total Cost Without OH & CP						119518.18	119638.43	120162.92	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		23903.64	23927.69	24032.58	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		14342.18	14356.61	14419.55	
			Cost for 30 cum= a+b+c+d+e+f						157764.00	157922.73	158615.06	
			Rate per cum = (a+b+c+d+e+f)/30						5258.80	5264.09	5287.17	
								Say	**5258.80**	**5264.10**	**5287.20**	
		Case II	**PCC Grade M30 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	3384.30	50764.50	50764.50	50764.50	21.08
			(Rate taken from sub-analysis items 21.08)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.380	0.380	0.380	325.00	123.50	123.50	123.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						5669.82	5675.27	5699.07	
			Total Cost Without OH & CP						62367.99	62428.02	62689.74	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		12473.60	12485.60	12537.95	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		7484.16	7491.36	7522.77	
			Cost for 15 cum= a+b+c+d+e+f						82325.75	82404.99	82750.46	
			Rate per cum = (a+b+c+d+e+f)/15						5488.38	5493.67	5516.70	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
								Say	**5488.40**	**5493.70**	**5516.70**	
15.11		**G**	**RCC Grade M30**									
		Case I	**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	3623.00	108690.00	108690.00	108690.00	21.09
			(Rate taken from sub-analysis items 21.09)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						11613.29	11624.22	11671.90	
			Total Cost Without OH & CP						127746.18	127866.43	128390.92	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		25549.24	25573.29	25678.18	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		15329.54	15343.97	15406.91	
			Cost for 30 cum= a+b+c+d+e+f						168624.96	168783.69	169476.02	
			Rate per cum = (a+b+c+d+e+f)/30						5620.83	5626.12	5649.20	
								Say	**5620.80**	**5626.10**	**5649.20**	
		Case II	**RCC Grade M30 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Per cum Basic cost	cum	15.000	15.000	15.000	3623.00	54345.00	54345.00	54345.00	21.09
			(Rate taken from sub-analysis items 21.09)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						6059.77	6065.22	6089.02	
			Total Cost Without OH & CP						66657.44	66717.47	66979.19	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		13331.49	13343.49	13395.84	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		7998.89	8006.10	8037.50	
			Cost for 15 cum= a+b+c+d+e+f						87987.82	88067.06	88412.54	
			Rate per cum = (a+b+c+d+e+f)/15						5865.85	5871.14	5894.17	
								Say	**5865.90**	**5871.10**	**5894.20**	
15.11		**H**	**RCC Grade M35**									
		Case I	**RCC Grade M35 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	3803.00	114090.00	114090.00	114090.00	21.11
			(Rate taken from sub-analysis items 21.11)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL1	75xL1	75xL1	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker (speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						12153.29	12164.22	12211.90	
			Total Cost Without OH & CP						133686.18	133806.43	134330.92	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		26737.24	26761.29	26866.18	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		16042.34	16056.77	16119.71	
			Costfor 30 cum= a+b+c+d+e+f						176465.76	176624.49	177316.82	
			Rate per cum = (a+b+c+d+e+f)/30						5882.19	5887.48	5910.56	
								Say	**5882.20**	**5887.50**	**5910.60**	
		Case II	**RCC Grade M35 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	3803.00	57045.00	57045.00	57045.00	21.11
			(Rate taken from sub-analysis items 21.11)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL1	37.5xL1	37.5xL1	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.055xL1 +0.328			1121.00	429.34			PM11001
			(ii) 12 KL capacity	hour		0.073xL1 +0.438		947.00		483.92		PM11002
			(iii) 6 KL capacity	hour			0.146xL1 +0.875	707.00			721.85	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						6329.77	6335.22	6359.02	
			Total Cost Without OH & CP						69627.44	69687.47	69949.19	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		13925.49	13937.49	13989.84	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		8355.29	8362.50	8393.90	
			Cost for 15 cum= a+b+c+d+e+f						91908.22	91987.46	92332.94	
			Rate per cum = (a+b+c+d+e+f)/15						6127.21	6132.50	6155.53	
								Say	**6127.20**	**6132.50**	**6155.50**	
15.11		**I**	**RCC Grade M40**									
		Case I	**RCC Grade M40 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	4220.90	126627.00	126627.00	126627.00	21.12
			(Rate taken from sub-analysis items 21.12)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL	75xL	75xL	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						13406.99	13417.92	13465.60	
			Total Cost Without OH & CP						147476.88	147597.13	148121.62	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		29495.38	29519.43	29624.32	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		17697.23	17711.66	17774.59	
			Cost for 30 cum= a+b+c+d+e+f						194669.48	194828.22	195520.54	
			Rate per cum = (a+b+c+d+e+f)/30						6488.98	6494.27	6517.35	
								Say	**6489.00**	**6494.30**	**6517.40**	
		Case II	**RCC Grade M40 using batching plant,transit mixer & manual placing**									
			Unit = cum									
			Taking output = 15 cum									
			a) Material									
			Per cum Basic cost	cum	15.000	15.000	15.000	4220.90	63313.50	63313.50	63313.50	21.12
			(Rate taken from sub-analysis items 21.12)									
			Water for curing	KL	7.875	7.875	7.875	56.20	442.58	442.58	442.58	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.420	0.420	0.420	325.00	136.50	136.50	136.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	9.000	9.000	9.000	306.00	2754.00	2754.00	2754.00	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	37.5xL	37.5xL	37.5xL	10.33	387.38	387.38	387.38	PM76001
			For unloading	hour	0.833	0.833	0.833	1860.00	1549.38	1549.38	1549.38	PM34001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.104xL1 +0.625			1121.00	817.21			PM11001
			(ii) 12 KL capacity	hour		0.139xL1 +0.833		947.00		920.48		PM11002
			(iii) 6 KL capacity	hour			0.278xL1 +1.667	707.00			1375.12	PM11003
			d) Formwork @ 10 percent on cost of concrete i.e. cost of material,labour and machinery						6995.40	7005.73	7051.19	
			Total Cost Without OH & CP						76949.44	77063.05	77563.14	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		15389.89	15412.61	15512.63	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		9233.93	9247.57	9307.58	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Cost for 15 cum= a+b+c+d+e+f						101573.26	101723.22	102383.34	
			Rate per cum = (a+b+c+d+e+f)/15						6771.55	6781.55	6825.56	
								Say	**6771.60**	**6781.50**	**6825.60**	
15.12	**1500,1700 &2100**		**Plain/Reinforced cement concrete for wall & slab etc. complete as per Drawing and Technical specifications.**									
		A	**RCC Grade M20**									
			RCC Grade M20 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	3052.80	91584.00	91584.00	91584.00	21.05
			(Rate taken from sub-analysis items 21.05)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL	75xL	75xL	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 25 percent on cost of concrete i.e. cost of material,labour and machinery						24756.72	24784.05	24903.25	
			Total Cost Without OH & CP						123783.61	123920.27	124516.27	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		24756.72	24784.05	24903.25	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		14854.03	14870.43	14941.95	
			Cost for 30 cum= a+b+c+d+e+f						163394.37	163574.75	164361.48	
			Rate per cum = (a+b+c+d+e+f)/30						5446.48	5452.49	5478.72	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
								Say	**5446.50**	**5452.50**	**5478.70**	
15.12		**B**	**RCC Grade M25**									
			RCC Grade M25 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	3516.00	105480.00	105480.00	105480.00	21.07
			(Rate taken from sub-analysis items 21.07)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL	75xL	75xL	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 25 percent on cost of concrete i.e. cost of material,labour and machinery						28230.72	28258.05	28377.25	
			Total Cost Without OH & CP						141153.61	141290.27	141886.27	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		28230.72	28258.05	28377.25	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		16938.43	16954.83	17026.35	
			Cost for 30 cum= a+b+c+d+e+f						186322.77	186503.15	187289.88	
			Rate per cum = (a+b+c+d+e+f)/30						6210.76	6216.77	6243.00	
								Say	**6210.80**	**6216.80**	**6243.00**	
15.12		**C**	**RCC Grade M30**									
			RCC Grade M30 using batching plant, transit mixer & concrete pump									
			Unit = cum									
			Taking output = 30 cum									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			a) Material									
			Per cum Basic cost	cum	30.000	30.000	30.000	3623.00	108690.00	108690.00	108690.00	21.09
			(Rate taken from sub-analysis items 21.09)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL	75xL	75xL	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 25 percent on cost of concrete i.e. cost of material,labour and machinery						29033.22	29060.55	29179.75	
			Total Cost Without OH & CP						145166.11	145302.77	145898.77	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		29033.22	29060.55	29179.75	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		17419.93	17436.33	17507.85	
			Cost for 30 cum= a+b+c+d+e+f						191619.27	191799.65	192586.38	
			Rate per cum = (a+b+c+d+e+f)/30						6387.31	6393.32	6419.55	
								Say	**6387.30**	**6393.30**	**6419.50**	
15.12		**D**	**RCC Grade M35**									
			RCC Grade M35 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	3803.00	114090.00	114090.00	114090.00	21.11
			(Rate taken from sub-analysis items 21.11)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									
			For transportation (6 cum capacity)	tonne-km	75xL	75xL	75xL	10.33	774.75	774.75	774.75	PM76001
			For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
			Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
			Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
			(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
			(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
			(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
			d) Formwork @ 25 percent on cost of concrete i.e. cost of material,labour and machinery						30383.22	30410.55	30529.75	
			Total Cost Without OH & CP						151916.11	152052.77	152648.77	
			e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		30383.22	30410.55	30529.75	
			f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		18229.93	18246.33	18317.85	
			Cost for 30 cum= a+b+c+d+e+f						200529.27	200709.65	201496.38	
			Rate per cum = (a+b+c+d+e+f)/30						6684.31	6690.32	6716.55	
								Say	**6684.30**	**6690.30**	**6716.50**	
15.12		**E**	**RCC Grade M40**									
			RCC Grade M40 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	4220.90	126627.00	126627.00	126627.00	21.12
			(Rate taken from sub-analysis items 21.12)									
			Water for curing	KL	15.750	15.750	15.750	56.20	885.15	885.15	885.15	M-191
			b) Labour									
			For pouring and placing									
			Mate	day	0.153	0.153	0.153	325.00	49.73	49.73	49.73	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	2.325	2.325	2.325	306.00	711.45	711.45	711.45	L-13
			c) Machinery									
			Transit truck agitator									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.	Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
				Large	Medium	Small		Large	Medium	Small	
		For transportation (6 cum capacity)	tonne-km	75xL	75xL	75xL	10.33	774.75	774.75	774.75	PM76001
		For unloading	hour	0.650	0.650	0.650	1860.00	1209.00	1209.00	1209.00	PM34001
		Hydraulic Boom placer pump	hour	0.650	0.650	0.650	3695.00	2401.75	2401.75	2401.75	PM36001
		Water tanker(speed @ 20 km/hr and return speed @ 30 km/hr and 30 mins for unloading)									
		(i) 16 KL capacity	hour	0.109xL1 +0.656			1121.00	857.57			PM11001
		(ii) 12 KL capacity	hour		0.146xL1 +0.875		947.00		966.89		PM11002
		(iii) 6 KL capacity	hour			0.292xL1 +1.750	707.00			1443.69	PM11003
		d) Formwork @ 25 percent on cost of concrete i.e. cost of material,labour and machinery						33517.47	33544.80	33664.00	
		Total Cost Without OH & CP						167587.36	167724.02	168320.02	
		e) Overhead Charges @ on (a+b+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		33517.47	33544.80	33664.00	
		f) Contractor's profit @ on (a+b+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		20110.48	20126.88	20198.40	
		Cost for 30 cum= a+b+c+d+e+f						221215.32	221395.70	222182.43	
		Rate per cum = (a+b+c+d+e+f)/30						7373.84	7379.86	7406.08	
							Say	**7373.80**	**7379.90**	**7406.10**	
15.13	**1600**	**Supplying, fitting and placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical specifications**									
		Unit = MT									
		Taking output = 8 MT									
		a) Material									
		HYSD bars including 5 percent overlaps and wastage	tonne	8.400	8.400	8.400	54810.00	460404.00	460404.00	460404.00	M-083
		Binding wire	kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072
		b) Labour for straightening, cutting, bending,shifting to site, tying and placing in position									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-25
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Cutting machine	hour	5.333	5.333	5.333	309.00	1647.90	1647.90	1647.90	PM43001
		Bending machine	hour	5.333	5.333	5.333	309.00	1647.90	1647.90	1647.90	PM43001
		Electric generator 15 KVA	hour	5.333	5.333	5.333	274.00	1461.24	1461.24	1461.24	PM22009
		Tipper									
		Tipper for transportation									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			(i) 18 cum capacity	t.km	8 x L			4.80	38.40			PM72001
			(ii) 14 cum capacity	t.km		8 x L		5.48		43.84		PM73001
			(iii) 10 cum capacity	t.km			8 x L	6.80			54.40	PM74001
			Loading and Unloading Time									
			(i) 18 cum capacity	hour	1.000			2239.00	2239.00			PM6001
			(ii) 14 cum capacity	hour		1.280		1998.00		2557.44		PM6002
			(iii) 10 cum capacity	hour			1.778	1785.00			3173.73	PM6003
			Light Weight Crane									
			At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
			Total Cost Without OH & CP						475291.36	475615.24	476242.09	
			d) Overhead Charges on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		95058.27	95123.05	95248.42	
			e) Contractor's profit on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		57034.96	57073.83	57149.05	
			Cost for 8 MT= a+b+c+d+e						627384.59	627812.11	628639.55	
			Rate for per MT = (a+b+c+d+e)/8						78423.07	78476.51	78579.94	
								Say	**78423.10**	**78476.50**	**78579.90**	
15.14	**2706 & 2200**		**Providing weep holes in Brick masonary/ plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V:20H towards drawing face. Complete as per drawing and Technical specifications.**									
			Unit = Nos.									
			Taking output = 30 Nos.									
			a) Material									
			AC pipe 100 mm dia	metre	31.500	31.500	31.500	44.28	1394.82	1394.82	1394.82	M-056
			(including wastage @ 5 percent)									
			Average length of weep hole is taken as one metre for the purpose of estimating.									
			MS clamp	each	30.000	30.000	30.000	43.36	1300.80	1300.80	1300.80	M-122
			Collar for AC pipe	each	10.000	10.000	10.000	4.43	44.28	44.28	44.28	M056*0.1
			(average) taking 10% of above pipe rate									
			Cement mortar 1:3	cum	0.050	0.050	0.050	3467.70	173.39	173.39	173.39	21.01A
			(Rate taken from sub-analysis items 21.01 A)									
			b) Labour									
			Mate	day	0.030	0.030	0.030	325.00	9.75	9.75	9.75	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	0.250	0.250	0.250	306.00	76.50	76.50	76.50	L-13
			Total Cost Without OH & CP						3184.04	3184.04	3184.04	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		636.81	636.81	636.81	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		382.08	382.08	382.08	
			Cost for 30 nos. = a+b+c+d						4202.93	4202.93	4202.93	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Rate per nos. = (a+b+c+d)/30						140.10	140.10	140.10	
								Say	**140.10**	**140.10**	**140.10**	
	Note		1. In case of stone masonary, the size of the weep hole shall be 150 mm x 80 mm or circular with 150 mm diameter									
			2. For structure in stone masonary, the weep holes shall be deemed to be included in the item of stone masonary work and shall not be paid separately.									
15.15	**2700**		**PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specifications.**									
			Unit = cum									
			Taking output = 1 cum									
		a)	**Material**									
		Case I	**PCC Grade M15 using batching plant & concrete pump**									
			a) Material									
			Concrete, item no- 15.11(A), Case-I excluding formworks	cum	1.000			2964.56	2964.56			
			Concrete, item no- 15.11(A), Case-I excluding formworks	cum		1.000		2968.11		2968.11		
			Concrete, item no- 15.11(A), Case-I excluding formworks	cum			1.000	2984.10			2984.10	
			Total Cost Without OH & CP						2964.56	2968.11	2984.10	
			b) Overhead Charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		592.91	593.62	596.82	
			c) Contractor's profit @ on (a+b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		355.75	356.17	358.09	
			Cost for 1 cum = a+b+c						3913.22	3917.91	3939.01	
			Rate per cum = (a+b+c)						3913.22	3917.91	3939.01	
								Say	**3913.20**	**3917.90**	**3939.00**	
		b)	**Material**									
		Case II	**PCC Grade M15 using batching plant & manual placing**									
			Concrete, item no- 15.11(A), Case-II excluding formworks	cum	1.000			3122.68	3122.68			
			Concrete, item no- 15.11(A), Case-II excluding formworks	cum		1.000		3126.32		3126.32		
			Concrete, item no- 15.11(A), Case-II excluding formworks	cum			1.000	3142.18			3142.18	
			Total Cost Without OH & CP						3122.68	3126.32	3142.18	
			b) Overhead Charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		624.54	625.26	628.44	
			c) Contractor's profit @ on (a+b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		374.72	375.16	377.06	
			Cost for 1 cum = a+b+c						4121.94	4126.74	4147.68	
			Rate per cum = (a+b+c)						4121.94	4126.74	4147.68	
								Say	**4121.90**	**4126.70**	**4147.70**	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
15.16	**1500,1600, 1700 & 2704**		**Reinforced cement concrete approach slab including reinforcement and formwork complete as per Drawing and Technical specifications.**									
			Unit = cum									
			Taking output = 1 cum									
			a) Material									
			Cement concrete M30 Grade refer relevant item of concrete in item 15.11 G Case -I by using batching plant, excluding formwork i.e. per cum basic cost (a+b+c) (Excluding OH and CP)	cum	1.000	1.000	1.000	3871.10-L 3874.64-M 3890.63-S	3871.10	3874.74	3890.63	15.11G case 1
			HYSD bar (Reinforcement rate as per item no. 15.13 excluding OH & CP)	tonne	0.050	0.050	0.050	59411.42-L 59451.90-M 59530.26-S	2970.57	2972.60	2976.51	
			Total Cost Without OH & CP						6841.67	6847.34	6867.15	
			b) Overhead Charges @ on (a)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		1368.33	1369.47	1373.43	
			c) Contractor's profit @ on (a+b)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		821.00	821.68	824.06	
			Rate per cum = (a+b+c)						9031.00	9038.48	9064.63	
								Say	**9031.00**	**9038.50**	**9064.60**	
		Note	The grade of reinforced cement concrete may be adopted as M30 for severe conditions and M25 for moderate conditions.									
15.17	**2705**		**Drainage spouts complete as per Drawing and Technical Specifications.**									
			Unit = No.									
			Taking output = 1 No.									
			a) Material									
			Corrosion resistant structural steel including 5 percent wastage	kg	4.000	4.000	4.000	46.83	187.31	187.31	187.31	M-088
			GI pipe 100mm dia	metre	0.320	0.320	0.320	617.50	197.60	197.60	197.60	M-239
			GI bolt 10mm dia	each	6.000	6.000	6.000	17.88	107.28	107.28	107.28	M-109
			Galvanised MS flat clamp	each	2.000	2.000	2.000	17.17	34.34	34.34	34.34	M-101
			b) Labour									
			For fabrication									
			Mate	day	0.002	0.002	0.002	325.00	0.65	0.65	0.65	L-12
			Skilled (Blacksmith, Welder etc.)	day	0.020	0.020	0.020	413.00	8.26	8.26	8.26	L-02
			Mazdoor	day	0.020	0.020	0.020	306.00	6.12	6.12	6.12	L-13
			For fixing in position									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mason	day	0.010	0.010	0.010	369.00	3.69	3.69	3.69	L-10
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			Add @ 5 percent of cost of material and labour for electrodes, cutting gas, sealant, anti-corrosive bituminous paint, mild steel grating etc.						30.45	30.45	30.45	
			Total Cost Without OH & CP						639.50	639.50	639.50	

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		127.90	127.90	127.90	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		76.74	76.74	76.74	
			Rate per metre (a+b+c+d)						844.14	844.14	844.14	
								Say	**844.10**	**844.10**	**844.10**	
		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.									
15.18	**2702**		**Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and Technical specifications.**									
			Unit = cum									
			Taking output = 1 cum									
			a) Material									
			Cement concrete M30	cum	1.000	1.000	1.000	3871.09-L 3874.74-M 3890.64-S	3871.09	3874.74	3890.64	15.12(c)
			Grade Refer relevant item of concrete in item 15.12(C) excluding formwork									
			HYSD bar	tonne	0.075	0.075	0.075	59411.42-L 59451.90-M 59530.26-S	4455.85	4458.89	4464.76	15.13
			reinforcement Rate as per item No 15.13									
			(Excluding OH & CP)									
			b) Labour									
			Mazdoor for cleaning deck slab concrete surface	day	0.150	0.150	0.150	306.00	45.90	45.90	45.90	L-13
			Total Cost Without OH & CP						8372.84	8379.53	8401.30	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		1674.57	1675.91	1680.26	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		1004.74	1005.54	1008.16	
			Rate per cum (a+b+c+d)						11052.15	11060.98	11089.72	
								Say	**11052.10**	**11061.00**	**11089.70**	
15.19	**516 & 2702**		**Mastic Asphalt**									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			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 0.005 cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 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	0.490	0.490	0.490	325.00	159.25	159.25	159.25	L-12
			Mazdoor	day	11.000	11.000	11.000	306.00	3366.00	3366.00	3366.00	L-13
			Mazdoor (Skillled)	day	1.250	1.250	1.250	388.00	485.00	485.00	485.00	L-15
			b) Machinery									
			Mechanical broom @ 1250 sqm per hour	hour	0.060	0.060	0.060	746.00	44.76	44.76	44.76	PM23001
			Air compressor 250 cfm	hour	0.060	0.060	0.060	391.00	23.46	23.46	23.46	PM15001
			Mastic cooker 1 tonne capacity	hour	6.000	6.000	6.000	450.00	2700.00	2700.00	2700.00	PM27001
			Bitumen boiler 1500 litres capacity	hour	6.000	6.000	6.000	510.00	3060.00	3060.00	3060.00	PM26001
			Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.000	1.000	1.000	629.00	629.00	629.00	629.00	PM12001
			c) Material									
			Base mastic (without coarse aggregates) = 60 percent									
			Coarse aggregate (3.35 mm to 9.5 mm size)= 40 percent									
			Proportion of material required for mastic ashphalt with coarse aggregates (based on mix design done by CRRI for a specific case)									
			i) Bitumen 80/100 or 60/70 or 30/40 @ 10.2 percent by weight of mix.	tonne	0.204	0.204	0.204	59235.00	12083.94	12083.94	12083.94	M-327
			2 x 10.2/100 = 0.204	.								
			ii) Crusher stone dust @ 31.9 percent by weight of mix= 2x31.9/100=0.638 tonnes= 0.638/1.625=0.39	cum	0.390	0.390	0.390	262.42	102.34	102.34	102.34	M-020

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			iii) Lime stone dust filler with calcium carbonate content not less than 80 percent by weight @ 17.92 percent by weight of mix =2x17.92/100=0.36	tonne	0.360	0.360	0.360	3873.95	1394.62	1394.62	1394.62	M-190
			iv) Coarse aggregates 9.5 mm to 3.35 mm size @ 40 percent by weight of mix=2x40/100=0.8 MT=0.8/1.456=0.55	cum	0.550	0.550	0.550	586.00	322.30	322.30	322.30	M-024
			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	644.70	23.21	23.21	23.21	M-141
			vi) Bitumen for coating of chips @ 2 percent by weight= 0.036x1.456x2/100=0.001048 MT= 1.05 kg	kg	1.050	1.050	1.050	59.24	62.20	62.20	62.20	M-327
			Total Cost Without OH & CP						24456.08	24456.08	24456.08	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		4891.22	4891.22	4891.22	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		2934.73	2934.73	2934.73	
			Cost for 72.46 sqm = a+b+c+d+e						32282.03	32282.03	32282.03	
			Rate per sqm = (a+b+c+d+e)/72.46						445.52	445.52	445.52	
								Say	**445.50**	**445.50**	**445.50**	
		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 ashphalt, the same is required to be measured and paid separately.									
			3. The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design									
			4. This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case									
			5. The quantity of bitumen works out 17 percent of the mastic asphalt blocks without aggregates and falls within the standards laid down by MoRT&H Specifications									
15.20	**800**		**Crash Barriers for Bridge**									
			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. 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									
			a) Labour									
			Mate	day	0.020	0.020	0.020	325.00	6.50	6.50	6.50	L-12
			Painter	day	0.250	0.250	0.250	391.00	97.75	97.75	97.75	L-18
			Mazdoor (skilled)	day	0.250	0.250	0.250	388.00	97.00	97.00	97.00	L-15
			b) Material									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Water based paint of approved quality for cement concrete surface	Litres	5.000	5.000	5.000	125.53	627.65	627.65	627.65	M-192
			Total Cost Without OH & CP						828.90	828.90	828.90	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		165.78	165.78	165.78	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		99.47	99.47	99.47	
			Cost for 10 sqm (a+b+c+d)						1094.15	1094.15	1094.15	
			Rate per sqm (a+b+c+d)/10						109.41	109.41	109.41	
								Say	**109.40**	**109.40**	**109.40**	
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) Labour									
			cutting, bending, carrying & fixing etc.									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Material									
			Copper plate- 12 m long x 250 mm wide	kg	55.000	55.000	55.000	896.80	49324.00	49324.00	49324.00	M-087
			Area = 12x0.25=3 sqm									
			weight = 3x0.002x8900=53.4 kg									
			wastage @ 2.5 percent=1.33 kg/54.73 kg say=55 kg									
			Total Cost Without OH & CP						49684.00	49684.00	49684.00	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		9936.80	9936.80	9936.80	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		5962.08	5962.08	5962.08	
			Cost for 12 m= a+b+c+d						65582.88	65582.88	65582.88	
			Rate per m= (a+b+c+d)/12						5465.24	5465.24	5465.24	
								Say	**5465.20**	**5465.20**	**5465.20**	
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	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mazdoor	day	0.100	0.100	0.100	306.00	30.60	30.60	30.60	L-13
			Mazdoor (skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			20 mm thick compressible fibre board 12 m longx 25 cm deep.	sqm	3.000	3.000	3.000	1132.98	3398.94	3398.94	3398.94	M-085
			Area = 12x0.25 = 3 sqm									
			Total Cost Without OH & CP						3470.94	3470.94	3470.94	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		694.19	694.19	694.19	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		416.51	416.51	416.51	
			Cost for 12 m= a+b+c+d						4581.64	4581.64	4581.64	
			Rate per m= (a+b+c+d)/12						381.80	381.80	381.80	
								Say	**381.80**	**381.80**	**381.80**	
15.22		**(iii)**	**Providing and fixing in position 20 mm thick pre moulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m to cater for a horizontal movement upto 20 mm, covered with sealant complete as per drawing and technical specifications.**									
			Unit = Running meter									
			Taking output = 12 m									
			a) Labour									
			Mate	day	0.012	0.012	0.012	325.00	3.90	3.90	3.90	L-12
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			Mazdoor (skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									
			Pre-moulded joint filler 12 m long, 20 mm thick and 300 mm deep	sqm	3.600	3.600	3.600	1064.18	3831.05	3831.05	3831.05	M-140
			Total Cost Without OH & CP						3934.95	3934.95	3934.95	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		786.99	786.99	786.99	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		472.19	472.19	472.19	
			Cost for 12 m= a+b+c+d						5194.13	5194.13	5194.13	
			Rate per m= (a+b+c+d)/12						432.84	432.84	432.84	
								Say	**432.80**	**432.80**	**432.80**	
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 10 mm deep recess									
			a) Labour									
			Mate	day	0.024	0.024	0.024	325.00	7.80	7.80	7.80	L-12
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Mazdoor (skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			sand	cum	0.012	0.012	0.012	494.00	5.93	5.93	5.93	M-004
			volume 12 x 0.1 x 0.01 = 0.012 cum									
			Weight 0.012 x 1400 = 16.8 kg									
			Bitumen	tonne	0.001	0.001	0.001	56414.00	56.41	56.41	56.41	M-074
			16.8 x 0.06 = 1 kg									
			Total Cost Without OH & CP						261.94	261.94	261.94	
			c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		52.39	52.39	52.39	
			d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		31.43	31.43	31.43	
			Cost for 12 m= a+b+c+d						345.76	345.76	345.76	
			Rate per m= (a+b+c+d)/12						28.81	28.81	28.81	
								Say	**28.80**	**28.80**	**28.80**	
		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**		**Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specifications.**									
			Unit = cum									
			Taking output = 10 cum									
		A	**Granular material**									
			a) Labour									
			Mate	day	0.280	0.280	0.280	325.00	91.00	91.00	91.00	L-12
			Mazdoor	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
			b) Material									
			Granular material	cum	12.000	12.000	12.000	165.30	1983.60	1983.60	1983.60	M-009
			c) Machinery									
			Plate	hour	2.500	2.500	2.500	335.00	837.50	837.50	837.50	PM46001
			Compactor/power rammer									
			Water tanker 6 KL capacity	hour	0.050	0.050	0.050	707.00	35.35	35.35	35.35	PM11003
			Total Cost Without OH & CP						5089.45	5089.45	5089.45	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		1017.89	1017.89	1017.89	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		610.73	610.73	610.73	
			Cost for 10 cum of granular backfill= a+b+c+d+e						6718.07	6718.07	6718.07	
			Rate per cum = (a+b+c+d+e)/10						671.81	671.81	671.81	
								Say	**671.80**	**671.80**	**671.80**	
15.23		**B**	**Sandy material**									
			a) Labour									
			Mate	day	0.280	0.280	0.280	325.00	91.00	91.00	91.00	L-12
			Mazdoor for filling,watering,ramming etc.	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
			b) Material									
			Sand	cum	12.000	12.000	12.000	143.32	1719.84	1719.84	1719.84	M-006
			c) Machinery									
			Plate	hour	2.500	2.500	2.500	335.00	837.50	837.50	837.50	PM46001
			Compactor/power rammer									
			Water tanker 6 KL capacity	hour	0.060	0.060	0.060	707.00	42.42	42.42	42.42	PM11003

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.		Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
					Large	Medium	Small		Large	Medium	Small	
			Total Cost Without OH & CP						4832.76	4832.76	4832.76	
			d) Overhead Charges @ on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		966.55	966.55	966.55	
			e) Contractor's profit @ on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		579.93	579.93	579.93	
			Cost for 10 cum of sandy backfill= a+b+c+d+e						6379.24	6379.24	6379.24	
			Rate per cum = (a+b+c+d+e)/10						637.92	637.92	637.92	
								Say	**637.90**	**637.90**	**637.90**	
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 MoRT&H 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	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
			Mazdoor for filling,watering,ramming etc.	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
			Mazdoor (skilled)	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
			b) Material									
			Filter media of stone aggregate conforming to clause 2504.2.2. of MoRT&H specifications.	cum	12.000	12.000	12.000	678.14	8137.68	8137.68	8137.68	M-011
			c) Machinery									
			Water tanker of 6 KL capacity	hour	0.060	0.060	0.060	707.00	42.42	42.42	42.42	PM11003
			Total Cost Without OH & CP						10814.10	10814.10	10814.10	
			d) Overhead Charges on (a+b+c)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		2162.82	2162.82	2162.82	
			e) Contractor's profit on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		1297.69	1297.69	1297.69	
			Cost for 10 cum of Filter media= a+b+c+d+e						14274.61	14274.61	14274.61	
			Rate per cum = (a+b+c+d+e)/10						1427.46	1427.46	1427.46	
								Say	**1427.50**	**1427.50**	**1427.50**	
15.25			**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.									
			a) Labour									
			Mate	day	0.006	0.006	0.006	325.00	1.95	1.95	1.95	L-12

Analysis of Rate

BOX CELL STRUCTURE

Sr. No.	Ref. to MoRTH Spec.	Description	Unit	Quantity as per project category			Rate (₹)	Amount (₹)			Remarks/ Input ref.
				Large	Medium	Small		Large	Medium	Small	
		Painter	day	0.100	0.100	0.100	391.00	39.10	39.10	39.10	L-18
		Mazdoor	day	0.050	0.050	0.050	306.00	15.30	15.30	15.30	L-13
		b) Material									
		Paint conforming to requirement of clause 803.3.	Litre	0.300	0.300	0.300	246.65	74.00	74.00	74.00	M-130
		Add for scaffolding @ 1 percent of labour cost where required						0.56	0.56	0.56	
		Add @ 5 percent cost of labour and materials to prepare the surface by filling minutes roughness on the surface and priming the surface before laying 2 coats of painting.						6.52	6.52	6.52	
		Total Cost Without OH & CP						137.43	137.43	137.43	
		c) Overhead Charges @ on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		27.49	27.49	27.49	
		d) Contractor's profit @ on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		16.49	16.49	16.49	
		Cost for 1 No.= a+b+c+d						181.40	181.40	181.40	
		Rate per Nos. = (a+b+c+d)					**Say**	**181.40**	**181.40**	**181.40**	

CHAPTER - 16

RIVER TRAINING AND PROTECTION WORKS

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

2 A toe wall for toe protection of pitching can be either in dry rubble masonary (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 wall proposed are of the following two types :

a) Course rubble stone masonry (1st sort) in CM 1: 3.

b) Cement concrete M 15 grade.

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

CHAPTER 16
RIVER TRAINING AND PROTECTION WORKS

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
16.01	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.	Cum	**1477.20**	**1477.20**	**1477.20**
16.02	**Boulder Apron Laid in Wire Crates.** Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10 percent extra for laps and joints laid with stone boulders weighing not less than 40 kg each.	Cum	1927.80	1927.80	1927.80
16.03	**Cement Concrete Blocks (size 0.5 x 0.5 x 0.5 m).** Providing and laying of apron with cement concrete blocks of size 0.5x0.5x0.5 m cast in-situ and made with nominal mix of M-15 grade cement concrete with minimum cement content of 250 kg/cum.	Cum	4372.50	4377.60	4399.90
16.04	Providing and laying pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications.				
A	Stone/Boulder	Cum	1477.20	1477.20	1477.20
B	Cement Concrete Blocks of size 0.3x0.3 x0.3 m cast in cement concrete of Grade M15	Cum	4372.50	4377.60	4399.90
16.05	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	Cum	1627.60	1627.60	1627.60
16.06	**Geotextile Filter.** (Laying of a geotextile filter between pitching and embankment slopes on which pitching is laid to prevent escape of the embankment material through the voids of the stone pitching/cement concrete blocks as well as to allow free movement of water without creating any uplift head on the pitching.)	Sqm	140.70	140.70	140.70
16.07	**Toe Protection**.(A toe wall for toe protection can either be in dry rubble masonry in case of dry rubble pitching or pitching with stones in wire crates or it can be in PCC M15 nominal mix if cement concrete block have been used for pitching . Rates for toe wall can be adopted from respective clauses depending upon approved design. The rate for excavation for foundation, dry rubble masonry and PCC M15 have been analysed and given in respective chapters.)				

RIVER TRAINING AND PROTECTION WORKS

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
16.08	**Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concrete bedding.**				
A	Rubble stone laid in cement mortar 1:3	Cum	3850.90	3852.50	3859.90
B	Cement Concrete blocks Grade M15 including 100 mm thick bedding.	Cum	5466.96	5473.68	5502.96
16.09	**Dry Rubble Flooring.** (Construction of dry rubble flooring at cross drainage works for relatively less important works.)	Cum	1877.50	1877.50	1877.50
16.10	**Curtain wall complete as per drawing and Technical specification**				
A	Stone masonry in cement mortar (1:3)	Cum	3965.40	3965.40	3965.40
B	Cement concrete Grade M15	Cum	4069.80	4074.80	4096.60
16.11	**Flexible Apron :Construction of flexible apron 1 m thick comprising of loose stone boulders weighing not less than 40 kg beyond curtain wall.**	Cum	1547.40	1547.40	1547.40
16.12	**Gabion Structure for Retaining Earth**. (Providing and construction of a gabion structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire)	Cum	1951.00	1951.00	1951.00
16.13	**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 1m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire)	Cum	2848.50	2848.50	2848.50

RIVER TRAINING AND PROTECTION WORKS

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
16.14	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 reuired size, Mesh Type 10x12 (D=100 mm with Tolerance of+/- 2%) Zinc Coated Mesh Wire diameter 3.0 mm, mechanically edged/ selvedge with partitions at every 1m interval and shall have minimum 10 number 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.	Cum	2145.10	2145.10	2145.10
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)	Sqm	669.00	669.50	671.60

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
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.									
		A	Boulder Laid Dry without wire crates									
			Unit = cum									
			Taking output= 1 cum									
			a) Material									
			Stone	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-003
			Stone Spalls	cum	0.200	0.200	0.200	355.79	71.16	71.16	71.16	M-008
			b) Labour									
			Mate	day	0.044	0.044	0.044	325.00	14.30	14.30	14.30	L-12
			Mason	day	0.350	0.350	0.350	369.00	129.15	129.15	129.15	L-10
			Mazdoor*	day	0.750	0.750	0.750	306.00	229.50	229.50	229.50	L-13
			Total cost without OH & CP (a+b)						1119.11	1119.11	1119.11	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**223.82**	**223.82**	**223.82**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**134.29**	**134.29**	**134.29**	
			Rate per cum= (a+b+c+d)						**1477.22**	**1477.22**	**1477.22**	
								Say	**1477.20**	**1477.20**	**1477.20**	
		*	Including excavation for trimming for preparation of bed.									
		Note	Nominal excavation required for preparation of bed has been taken into account while making provision for labour.									
16.02	2503		**Boulder Apron Laid in Wire Crates**									

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10 percent extra for laps and joints laid with stone boulders weighing not less than 40 kg each.									
			Unit = cum									
			Taking output = 3 mx1.5mx1.25m = 5.63 cum									
			a) Material									
			4mm GI wire crates woven in mesh size of 100 mm x 100 mm.	sqm	22.000	22.000	22.000	111.88	2461.36	2461.36	2461.36	M-102
			Stone	cum	5.630	5.630	5.630	675.00	3800.25	3800.25	3800.25	M-003
			Stone Spalls	cum	1.130	1.130	1.130	355.79	402.04	402.04	402.04	M-008
			b) Labour									
			Mate	day	0.180	0.180	0.180	325.00	58.50	58.50	58.50	L-12
			Mazdoor (Skilled)	day	1.500	1.500	1.500	388.00	582.00	582.00	582.00	L-15
			Mazdoor*	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			Total cost without OH & CP (a+b)						8222.15	8222.15	8222.15	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**1644.43**	**1644.43**	**1644.43**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**986.66**	**986.66**	**986.66**	
			Cost for 5.63 cum = a+b+c+d						10853.24	10853.24	10853.24	
			Rate per cum = (a+b+c+d)/5.63						**1927.75**	**1927.75**	**1927.75**	
								Say	**1927.80**	**1927.80**	**1927.80**	
		*	Mazdoor Including excavation for trimming for preparation of bed.									
		Note	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.									
16.03	**2503**		**Cement Concrete Blocks (size 0.5 x 0.5 x 0.5 m)**									

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Providing and laying of apron with cement concrete blocks of size 0.5x0.5x0.5 m cast in-situ and made with nominal mix of M-15 grade cement concrete with minimum cement content of 250 kg/cum.									
			Unit = cum									
			Taking 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	4286.80-L 4291.80-M 4313.60-S	4286.80	4291.80	4313.60	12.08 A Case II
			Add 2 per cent of cost to account for excavation for preparation of bed, nominal surface reinforcement and filling of granular material in recesses between blocks.						85.74	85.84	86.27	
			Rate per cum						4372.54	4377.64	4399.87	
								say	**4372.50**	**4377.60**	**4399.90**	
16.04	**2504**		Providing and laying pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications.									
		A	**Stone/Boulder**									
			Unit = cum									
			Taking output = 1 cum									
			a) Material									
			Stone weighing not less than 40kg	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-003
			Stone spalls of minimum 25 mm size	cum	0.200	0.200	0.200	355.79	71.16	71.16	71.16	M-008
			b) Labour									
			Mate	day	0.044	0.044	0.044	325.00	14.30	14.30	14.30	L-12
			Mason	day	0.350	0.350	0.350	369.00	129.15	129.15	129.15	L-10
			Mazdoor	day	0.750	0.750	0.750	306.00	229.50	229.50	229.50	L-13
			Total cost without OH & CP (a+b)						1119.11	1119.11	1119.11	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**223.82**	**223.82**	**223.82**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**134.29**	**134.29**	**134.29**	

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Rate per cum = (a+b+c+d)						**1477.22**	**1477.22**	**1477.22**	
								Say	**1477.20**	**1477.20**	**1477.20**	
16.04		**B**	**Cement Concrete Blocks of size 0.3x0.3 x0.3 m cast in cement concrete of Grade M15**									
			Unit = cum									
			Taking output = 1 cum									
			Concrete Grade M15 (Rate taken from items 12.08 A, Case II) including OH & CP	cum	1.000	1.000	1.000	4286.80-L 4291.80-M 4313.60-S	4286.80	4291.80	4313.60	12.08 A Case II
			Add 2 per cent of cost to account for nominal surface reinforcement and filling of granular material in recesses between blocks.						85.74	85.84	86.27	
			Rate per cum						4372.54	4377.64	4399.87	
								Say	**4372.50**	**4377.60**	**4399.90**	
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	cum	1.200	1.200	1.200	678.14	813.77	813.77	813.77	M-011
			b) Labour									
			Mate	day	0.050	0.050	0.050	325.00	16.25	16.25	16.25	L-12
			Mazdoor (Skilled)	day	0.250	0.250	0.250	388.00	97.00	97.00	97.00	L-15
			Mazdoor*	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Total cost without OH & CP (a+b)						1233.02	1233.02	1233.02	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**246.60**	**246.60**	**246.60**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**147.96**	**147.96**	**147.96**	
			Rate per cum = (a+b+c+d)						**1627.58**	**1627.58**	**1627.58**	
								Say	**1627.60**	**1627.60**	**1627.60**	
			* Includes Mazdoor required for trimming of slope to proper profile and preparation of bed.									

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
16.06	700 & 2504		**Geotextile Filter**									
			Laying of a geotextile filter between pitching and embankment slopes on which pitching is laid to prevent escape of the embankment material through the voids of the stone pitching/cement concrete blocks as well as to allow free movement of water without creating any uplift head on the pitching.									
			Unit = sqm									
			Taking output = 10 sqm.									
			a) Labour									
			Mate	day	0.016	0.016	0.016	325.00	5.20	5.20	5.20	L-12
			Mazdoor	day	0.300	0.300	0.300	306.00	91.80	91.80	91.80	L-13
			Mazdoor (Skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			b) Material									
			Permeable synthetic geotextile including 5 percent for overlap and wastage	sqm	11.000	11.000	11.000	84.55	930.05	930.05	930.05	M301
			Total cost without OH & CP (a+b)						1065.85	1065.85	1065.85	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**213.17**	**213.17**	**213.17**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**127.90**	**127.90**	**127.90**	
			Cost for 10 sqm = a+b+c+d						1406.92	1406.92	1406.92	
			Rate per sqm = (a+b+c+d)/10						**140.69**	**140.69**	**140.69**	
								Say	**140.70**	**140.70**	**140.70**	
16.07	2504.4		**Toe protection**									

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			A toe wall for toe protection can either be in dry rubble masonry in case of dry rubble pitching or pitching with stones in wire crates or it can be in PCC M15 nominal mix if cement concrete block have been used for pitching . Rates for toe wall can be adopted from respective clauses depending upon approved design. The rate for excavation for foundation, dry rubble masonry and PCC M15 have been analysed and given in respective chapters.									
16.08	2505		**Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concrete bedding.**									
		A	**Rubble stone laid in cement mortar 1:3**									
			Unit = cum									
			Taking output = 1 cum									
			a) Cement mortar 1:3 (Rate taken from Items 21.01 A)	cum	0.133	0.133	0.133	3467.70	461.20	461.20	461.20	21.01A
			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 Rubble stone Flooring thickness 300 mm and cement concrete bedding thickness 100 mm)	cum	0.333	0.333	0.333	4069.80-L 4074.80-M 4096.60-S	1355.24	1356.91	1364.17	12.08 A Case I
			Add 1 per cent of cost to account for excavation for preparation of bed.						18.16	18.18	18.25	
			c) Material									
			Stone	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-003
			Stone Spalls	cum	0.200	0.200	0.200	355.79	71.16	71.16	71.16	M-008
			d) Labour									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor (for laying stones, filling of quarry spalls)	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13
								(a+c+d)	1876.86	1876.86	1876.86	
			e) Overhead charges on (a+c+d)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		**375.37**	**375.37**	**375.37**	
			f) Contractor's profit on (a+c+d+e)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**225.22**	**225.22**	**225.22**	
			Rate per cum = (a+b+c+d+e+f)						**3850.87**	**3852.55**	**3859.88**	
								Say	**3850.90**	**3852.50**	**3859.90**	
		*	Includes cement mortar for laying and filling of joints.									
16.08		**B**	**Cement Concrete blocks Grade M15 including 100 mm thick bedding.**									
			Concrete Grade M15 block. (Rate taken from items 12.8 A case- (i) including OH & CP.	cum	1.000	1.000	1.000	4069.80-L 4074.80-M 4096.60-S	4069.80	4074.80	4096.60	12.08 A Case I
			Add for cement concrete bedding (M15 Nominal mix) vide Item 12.08 (A) case-(i) including OH & CP. Quantity shall be adopted as per design (Assume Cement Concrete blocks thickness 300mm and cement concrete bedding thickness 100mm)	cum	0.330	0.330	0.330	4069.80-L 4074.80-M 4096.60-S	1343.03	1344.68	1351.88	12.08 A Case I
			Add 1 per cent of cost to account for excavation for preparation of bed.						54.13	54.19	54.48	
			Rate per cum						**5466.96**	**5473.68**	**5502.96**	
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	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-003
			Stone Spalls	cum	0.200	0.200	0.200	355.79	71.16	71.16	71.16	M-008
			b) Labour									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mason	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			mazdoor	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Add 1 per cent of (b) for trimming and preparation of base.						6.70	6.70	6.70	
			Total cost without OH & CP						1422.35	1422.35	1422.35	
			c) Overhead charges on (a+b)		**(@ 20%)**	**(@ 20%)**	**(@ 20%)**		**284.47**	**284.47**	**284.47**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**170.68**	**170.68**	**170.68**	
			Rate per cum = (a+b+c+d)						**1877.51**	**1877.51**	**1877.51**	
								Say	**1877.50**	**1877.50**	**1877.50**	
16.10	**2507.2**		**Curtain wall complete as per drawing and Technical specification**									
			Unit =Cum									
			Taking output = 1 cum									
		A	**Stone masonry in cement mortar (1:3)**									
			Coursed rubble masonry (1st sort) (Rate taken from items 12.07 A) including OH & CP	cum	1.000	1.000	1.000	3965.40	3965.40	3965.40	3965.40	12.07 (A)
			Rate same as per item No. 12.07 (A) including OH & CP									
			Rate per cum						**3965.40**	**3965.40**	**3965.40**	
			or									
16.10		**B**	**Cement concrete Grade M15**									
			Concrete Grade M15 (Rate taken from items 12.08 A) including OH & CP	cum	1.000	1.000	1.000	4069.80-L 4074.80-M 4096.60-S	4069.80	4074.80	4096.60	12.08 A Case I
			Rate per cum						4069.80	4074.80	4096.60	
		Note	Other items like excavation for foundation, filling behind wall, filter media, weep holes etc. shall be added separately as per approved design.									
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									
			a) Material									
			Stone	cum	1.000	1.000	1.000	675.00	675.00	675.00	675.00	M-003
			Stone Spalls	cum	0.200	0.200	0.200	355.79	71.16	71.16	71.16	M-008
			b) Labour									
			Mate	day	0.050	0.050	0.050	325.00	16.25	16.25	16.25	L-12

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mason	day	0.250	0.250	0.250	369.00	92.25	92.25	92.25	L-10
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			Add 1 per cent of cost of (a+b) for trimming and preparation of bed.						11.61	11.61	11.61	
			Total cost without OH & CP						1172.26	1172.26	1172.26	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**234.45**	**234.45**	**234.45**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**140.67**	**140.67**	**140.67**	
			Rate per cum = (a+b+c+d)						**1547.39**	**1547.39**	**1547.39**	
								Say	**1547.40**	**1547.40**	**1547.40**	
16.12	**2503.3**		**Gabion Structure for Retaining Earth**									
			Providing and construction of a gabion structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire								
			Unit = cum									
			Taking output = 7 x 3 x 0.6 = 12.60 cum									
			a) Labour									
			Mate	day	0.280	0.280	0.280	325.00	91.00	91.00	91.00	L-12
			Mazdoor	day	5.000	5.000	5.000	306.00	1530.00	1530.00	1530.00	L-13
			Mazdoor (Skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
			b) Material									
			Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size.	sqm	61.000	61.000	61.000	111.88	6824.68	6824.68	6824.68	M-102

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Stone boulders with least dimension of 200 mm	cum	12.600	12.600	12.600	675.00	8505.00	8505.00	8505.00	M-003
			Stone spalls of minimum size 25 mm	cum	2.520	2.520	2.520	355.79	896.59	896.59	896.59	M-008
			Total cost without OH & CP (a+b)						18623.27	18623.27	18623.27	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**3724.65**	**3724.65**	**3724.65**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**2234.79**	**2234.79**	**2234.79**	
			Cost for 12.60 cum (a+b+c+d)						24582.72	24582.72	24582.72	
			Rate per cum (a+b+c+d)/12.60						**1951.01**	**1951.01**	**1951.01**	
		Note	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.					**Say**	**1951.00**	**1951.00**	**1951.00**	
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 1m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire.								
			Unit = cum									
			Taking output = 2 x 1 x 0.3 x 10 Nos. = 6.00 cum									
			a) Labour									
			Mate	day	0.140	0.140	0.140	325.00	45.50	45.50	45.50	L-12
			Mazdoor	day	2.500	2.500	2.500	306.00	765.00	765.00	765.00	L-13

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor (Skilled)	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
			b) Material									
			Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size to cover 6.00 cum.	sqm	65.000	65.000	65.000	111.88	7272.20	7272.20	7272.20	M-102
			Stone boulders with least dimension of 200 mm	cum	6.000	6.000	6.000	675.00	4050.00	4050.00	4050.00	M-003
			Stone spalls of minimum size 25 mm	cum	1.200	1.200	1.200	355.79	426.95	426.95	426.95	M-008
			Total cost without OH & CP (a+b)						12947.65	12947.65	12947.65	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		**2589.53**	**2589.53**	**2589.53**	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		**1553.72**	**1553.72**	**1553.72**	
			Cost for 6.00 cum (a+b+c+d)						17090.90	17090.90	17090.90	
			Rate per cum (a+b+c+d)/6.00						**2848.48**	**2848.48**	**2848.48**	
		Note	Readymade woven wire crate rolls have been considered in the rate analysis. In case readymade rolls are not available, GI wire 4mm dia. @ 32 kg per 10 sqm may be provided. In that case 2 per cent of the cost of GI wire may be added for weaving the wire crates.					**Say**	**2848.50**	**2848.50**	**2848.50**	
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 reuired size, Mesh Type 10x12 (D=100 mm with Tolerance of+/- 2%) Zinc Coated Mesh Wire diameter 3.0 mm, mechanically edged/ selvedge with partitions at every 1m interval and shall have minimum 10 number 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.									

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unit = cum									
			Taking output = 2 x 1 x1 m = 2 cum									
			a) Material									
			Crates made of Mesh Type 10 x12 (D= 100mm) Zn coated. (Mesh wire diameter 3.00 mm). Surface Area reuired= 11.00 sqm.	sqm	11.000	11.000	11.000	111.88	1230.68	1230.68	1230.68	M-102
			Stone boulder with least dimension 200mm	cum	2.000	2.000	2.000	675.00	1350.00	1350.00	1350.00	M-003
			b) Labour									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mason (for plain stone work) 2nd class	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-10
			Mazdoor	day	1.500	1.500	1.500	306.00	459.00	459.00	459.00	L-13
			Total cost without OH & CP (a+b)						3250.18	3250.18	3250.18	
			c) Overhead charges on (a+b)		(@ 20%)	(@ 20%)	(@ 20%)		650.04	650.04	650.04	
			d) Contractor's profit on (a+b+c)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		390.02	390.02	390.02	
			Cost for 2 cum= (a+b+c+d)						4290.24	4290.24	4290.24	
			Rate per cum = (a+b+c+d)/2						2145.12	2145.12	2145.12	
								Say	**2145.10**	**2145.10**	**2145.10**	
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	0.096	0.096	0.096	325.00	31.20	31.20	31.20	L-12
			Mazdoor	day	1.800	1.800	1.800	306.00	550.80	550.80	550.80	L-13
			Mazdoor (skilled)	day	0.600	0.600	0.600	388.00	232.80	232.80	232.80	L-15
			b) Machinery									
			Transit Truck agitator									
			For Transportation Transit truck agitator 6 cum capacity	t.km	13.800x L	13.800x L	13.800x L	10.33	142.55	142.55	142.55	PM76001

Analysis of Rate

RIVER TRAINING AND PROTECTION WORKS

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate (Rs.)	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unloading time	hour	0.130	0.130	0.130	1860.00	241.80	241.80	241.80	PM34001
			Concrete Pump	hour	0.130	0.130	0.130	960.00	124.80	124.80	124.80	PM35001
			c) Materials									
			PCC M30 Grade Refer relevent 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	3621.76-L 3625.41-M 3641.30-S	21730.58	21752.44	21847.80	12.08 (F) Case I
			Fabric Form Mattress with 30% Shrinkage	sqm	78.000	78.000	78.000	84.55	6594.90	6594.90	6594.90	M-108
			Non-woven Geotextile to be placed under concrete filled fabric form including 15 percent for overlap and shrinkage	sqm	9.000	9.000	9.000	84.55	760.95	760.95	760.95	M-107
			Total cost without OH & CP						30410.38	30432.25	30527.61	
			d) Overhead charges on (a+b+c)		(@ 20%)	(@ 20%)	(@ 20%)		6082.08	6086.45	6105.52	
			e) Contractor's profit on (a+b+c+d)		**(@ 10%)**	**(@ 10%)**	**(@ 10%)**		3649.25	3651.87	3663.31	
			Cost for 60 sqm= (a+b+c+d+e)						40141.70	40170.57	40296.44	
			Rate per sqm = (a+b+c+d+e)/60						669.03	669.51	671.61	
								Say	**669.00**	**669.50**	**671.60**	

CHAPTER - 17

REPAIR AND REHABILITATION

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

CHAPTER - 17
REPAIR AND REHABILITATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
17.01	**Removal of existing cement concrete wearing coat including its disposal complete as per technical specification without causing any detrimental effect to any part of the bridge structure and removal of dismantled material with all lifts and lead upto 1000 m**	Sqm	148.10	148.10	148.10
17.02	**Removal of existing asphaltic wearing coat comprising of 50 mm thick asphaltic concrete laid over 12 mm thick mastic asphalt including disposal with all lifts and lead upto 1000 m.**	Sqm	113.30	113.30	113.30
17.03	**Guniting concrete surface with cement mortar applied with compressor after cleaning surface and spraying with epoxy complete as per Technical Specification.**	Sqm	#VALUE!	#VALUE!	#VALUE!
17.04	**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**	No.	193.60	193.60	193.60
17.05	**Sealing of cracks/porous concrete by injection process through nipples/Grouting complete as per Technical Specification.**				
A	Cement Grout	Kg	187.80	187.80	187.80
B	Cement Mortar (1:1) Grouting	Kg	183.20	183.20	183.20
17.06	**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.**	Sqm	#VALUE!	#VALUE!	#VALUE!
17.07	**Sealing of crack/porous concrete with Epoxy Grout by injection through nipples complete as per clause 2803.1**	Kg	1073.50	1073.50	1073.50
17.08	**Applying epoxy mortar over leached, honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical Specification.**	Sqm	796.00	796.00	796.00

REPAIR AND REHABILITATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
17.09	**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, stength not less than 25 Mpa and workmanship conforming to clause 2807.6.**	Sqm	#VALUE!	#VALUE!	#VALUE!
17.10	**Applying pre-packed cement based polymer mortar of strength 45 Mpa at 28 days for replacement of spalled concrete**	Sqm	#VALUE!	#VALUE!	#VALUE!
17.11	**Epoxy bonding of new concrete to old concrete**	Sqm	904.20	904.20	904.20
17.12	**Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification.**	MT	419563.40	419563.40	419563.40
17.13	**Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification.**	MT	404485.80	404485.80	404485.80
17.14	**Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification.**	MT	391936.80	391936.80	391936.80
17.15	**Replacement of Bearings complete as per Technical Specification** (Lifting of superstructure span by jacking up from below i.e by placing the jacks on pier/abutment caps for span length of 30m)	No.	#VALUE!	#VALUE!	#VALUE!
17.16	**Rectification of Bearings as per Technical Specifications** (Lifting of superstructure span by jacking up from below i.e by placing the jacks on pier/abutment caps for span length of 30m)	No.	#VALUE!	#VALUE!	#VALUE!

REPAIR AND REHABILITATION

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
17.17	**Replacement of expansion joints complete as per drawings**	RM	2911.00	2912.90	2921.10
17.18	**Replacement of Damaged Concrete Railing.**	RM	318.00	318.00	318.00
17.19	**Replacement of Crash barrier.**	RM	546.10	546.10	546.10
17.20	**Replacement of Damaged mild Steel Railing**	RM	272.40	272.40	272.40
17.21	**Repair of Crash Barrier** (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 concrete after erection of proper form work)	RM	243.30	243.50	244.30
17.22	**Repair of RCC Railing** (Carrying out repair of RCC M-30 railing to bring it to the original shape)	RM	186.00	186.20	186.60
17.23	**Repair of Steel Railing** (Repair of Steel Railing to bring it to the original shape)	RM	365.00	365.00	365.00
17.24	**Mobile Bridge Inspection Unit (MBIU)** (Inspection of bridge by using of Mobile Bridge Inspection Unit(MBIU))	Km	53978.60	53978.60	53978.60

CHAPTER - 17
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
17.01	2811		**Removal of existing cement concrete wearing coat including its disposal complete as per technical specification without causing any detrimental effect to any part of the bridge structure and removal of dismantled material with all lifts and lead upto 1000 m**									
			Unit = Sqm (Thickness 75 mm)									
			Taking output = 10 sqm									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Machinery									
			Air Compressor 250 cfm with pneumatic breaker/jack hammer along with accessories.	hour	1.000	1.000	1.000	402.00	402.00	402.00	402.00	PM15001+ PM45001
			Tractor-trolley	hour	0.500	0.500	0.500	629.00	314.50	314.50	314.50	PM12001
			Total cost without OH & CP						1035.50	1035.50	1035.50	
			c) Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		310.65	310.65	310.65	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		134.62	134.62	134.62	
			cost for 10sqm=(a +b+c+d)						1480.77	1480.77	1480.77	
			Rate per sqm=(a+b+c+d)/10						148.08	148.08	148.08	
								Say	**148.10**	**148.10**	**148.10**	
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 lifts and lead upto 1000 m.**									
			Unit=Sqm									
			Taking output=10 Sqm									
			a) Labour									
			Mate	day	0.030	0.030	0.030	325.00	9.75	9.75	9.75	L-12
			Masdoor	day	0.750	0.750	0.750	306.00	229.50	229.50	229.50	L-13
			b) Machinery									

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			Air Compressor 250 cfm with pneumatic breaker	hour	0.750	0.750	0.750	402.00	301.50	301.50	301.50	PM15001+ PM45001
			Tractor-trolley	hour	0.400	0.400	0.400	**629.00**	251.60	251.60	251.60	**PM12001**
			Total cost without OH & CP						792.35	792.35	792.35	
			c) Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		237.71	237.71	237.71	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		103.01	103.01	103.01	
			Cost for 10 sqm=(a+b+c+d)						1133.06	1133.06	1133.06	
			Rate per sqm=(a+b+c+d)/10						113.31	113.31	113.31	
								Say	**113.30**	**113.30**	**113.30**	
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									
			Assuming thickness 25mm									
			a) Material									
			Cement	kg	16.000	16.000	16.000	5.16	82.50	82.50	82.50	M081/ 1000
			Graded sand	cum	0.040	0.040	0.040	494.00	19.76	19.76	19.76	M-004
			Wire mesh 50mm x 50mm size of 3mm wire	kg	2.000	2.000	2.000	51.66	103.32	103.32	103.32	M-194
			Epoxy	kg	0.670	0.670	0.670	595.97	399.30	399.30	399.30	M-095
			Accelerator compound for guniting @ 4 percent of weight of cement	kg	0.640	0.640	0.640	INPUT	#VALUE!	#VALUE!	#VALUE!	M-227
			Add 2 percent of cost of material for miscelleneous consumables like nozzles,wire brush,cotton waste etc.						#VALUE!	#VALUE!	#VALUE!	
			b) Labour									
			Mate	day	0.007	0.007	0.007	325.00	2.28	2.28	2.28	L-12
			Mason	day	0.040	0.040	0.040	369.00	14.76	14.76	14.76	L-10
			Mazdoor	day	0.140	0.140	0.140	306.00	42.84	42.84	42.84	L-13
			c) Machinery									
			Compressor with guniting equipment along with	hour	0.100	0.100	0.100	391.00	39.10	39.10	39.10	PM15001
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			d) Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm=(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
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	44.80	44.80	44.80	44.80	M-128
			Cement,fixing compound and consumables@15 percent of cost of nipple						6.72	6.72	6.72	
			b) Labour									
			Mate	day	0.006	0.006	0.006	325.00	1.95	1.95	1.95	L-12
			Mazdoor(Skilled) labour for drilling	day	0.080	0.080	0.080	388.00	31.04	31.04	31.04	L-15
			Mazdoor (skilled) labour for fixing nipple and sealing inlets	day	0.080	0.080	0.080	388.00	31.04	31.04	31.04	L-15
			Mazdoor for cutting and removing of nipples	day	0.040	0.040	0.040	306.00	12.24	12.24	12.24	L-13
			Add 10 percent of labour cost for drilling holes etc						7.63	7.63	7.63	
			Total cost without OH & CP						135.42	135.42	135.42	
			c) Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		40.63	40.63	40.63	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		17.60	17.60	17.60	
			Rate per no=(a+b+c+d)						193.65	193.65	193.65	
								Say	**193.60**	**193.60**	**193.60**	
17.05	**2806**		**Sealing of cracks/porous concrete by injection process through nipples/Grouting complete as per Technical Specification.**									
		A	**Cement Grout**									
			Unit= kg									
			Taking output= 1kg									
			a) Material									

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			Cement including 10 percent wastage	kg	1.100	1.100	1.100	5.16	5.67	5.67	5.67	M081/ 1000
			Admixtures (anti shrinkage compound) @ 20 percent of cost of cement						1.13	1.13	1.13	
			b) Labour									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mazdoor(Skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			Mazdoor	day	0.100	0.100	0.100	306.00	30.60	30.60	30.60	L-13
			c) Machinery									
			Grout pump with agitator and accessories	hour	0.100	0.100	0.100	525.00	52.50	52.50	52.50	PM60001
			Total cost without OH & CP						131.31	131.31	131.31	
			d) overhead Charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		39.39	39.39	39.39	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		17.07	17.07	17.07	
			Rate per kg =(a+b+c+d+e)						187.77	187.77	187.77	
								Say	**187.80**	**187.80**	**187.80**	
		B	**Cement Mortar (1:1) Grouting**									
			Unit=kg									
			Taking output=1kg									
			a) Material									
			Cement including 10 percent wastage	kg	0.550	0.550	0.550	5.16	2.84	2.84	2.84	M081/ 1000
			Sand including 10 percent wastage	kg	0.550	0.550	0.550	0.33	0.18	0.18	0.18	M005 /1500
			Admixtures (anti shrinkage compound) @ 20 percent of cost of cement						0.57	0.57	0.57	
			b) Labour									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mazdoor(skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			Mazdoor	day	0.100	0.100	0.100	306.00	30.60	30.60	30.60	L-13
			c) Machinery									
			Grout pump with agitator and accessories	hour	0.100	0.100	0.100	525.00	52.50	52.50	52.50	PM60001
			Total cost without OH & CP						128.08	128.08	128.08	
			d) overhead Charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		38.43	38.43	38.43	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		16.65	16.65	16.65	
			Rate per kg =(a+b+c+d+e)						183.16	183.16	183.16	
								Say	**183.20**	**183.20**	**183.20**	

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
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=10sqm for an average thickness of 25mm									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Mazdoor(skilled)	day	0.750	0.750	0.750	388.00	291.00	291.00	291.00	L-15
			Mazdoor	day	0.750	0.750	0.750	306.00	229.50	229.50	229.50	L-13
			b) Material									
			Pre-packed polymer concrete based on epoxy system complete with curing compound, initiator and promotor including 5 percentage wastage.	kg	315.000	315.000	315.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-144
			c) Machinery									
			Grout pump with agitator and accessories	hour	2.000	2.000	2.000	525.00	1050.00	1050.00	1050.00	PM60001
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead Charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 10 sqm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm=(a+b+c+d+e)/10						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
		Note	This item is a proprietary item available in market as pre-packed polymer concrete and is required to be applied as per instructions of the manufacturer.									
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=1kg									
			a) Material									
			Epoxy including 10 percent wastage	kg	1.100	1.100	1.100	595.97	655.57	655.57	655.57	M-095
			b) Labour									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			Mazdoor(skilled)	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			Mazdoor	day	0.100	0.100	0.100	306.00	30.60	30.60	30.60	L-13
			c) Machinery									
			Epoxy injection gun	hour	0.100	0.100	0.100	231.00	23.10	23.10	23.10	PM68001
			Total cost without OH & CP						750.67	750.67	750.67	
			d) Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		225.20	225.20	225.20	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		97.59	97.59	97.59	
			Rate per kg= (a+b+c+d+e)						1073.45	1073.45	1073.45	
								Say	**1073.50**	**1073.50**	**1073.50**	
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									
			Assuming average 10mm thickness of epoxy mortar									
			a) Material									
			Epoxy resin-hardener mix for prime coat	kg	2.500	2.500	2.500	723.67	1809.18	1809.18	1809.18	M-098
			Epoxy mortar	kg	2.200	2.200	2.200	817.29	1798.04	1798.04	1798.04	M-096
			Epoxy resin-hardener mix for seal coat.	kg	2.000	2.000	2.000	723.67	1447.34	1447.34	1447.34	M-098
			Add 3 percent cost of material for other consumables like acetone etc and to cover wastage.						151.64	151.64	151.64	
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor(skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Total cost without OH & CP						5566.19	5566.19	5566.19	
			c) Overhead charge on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		1669.86	1669.86	1669.86	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		723.60	723.60	723.60	
			Cost for 10 sqm=a+b+c+d						7959.65	7959.65	7959.65	
			Rate per sqm=(a+b+c+d)/10						795.97	795.97	795.97	
								Say	**796.00**	**796.00**	**796.00**	

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
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, stength not less than 25 Mpa and workmanship conforming to clause 2807.6.**									
			Unit=sqm									
			Taking output=10sqm,									
			40mm average thickness									
			a) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Mazdoor(skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			b) Machinery									
			Air compressor 250 cfm	hour	1.000	1.000	1.000	391.00	391.00	391.00	391.00	PM15001
			shotcreting equipment	hour	1.000	1.000	1.000	1349.00	1349.00	1349.00	1349.00	PM59001
			water tanker 6KL capacity	hour	0.020	0.020	0.020	707.00	14.14	14.14	14.14	PM11003
			c) Material									
			Cement	kg	120.000	120.000	120.000	5.16	618.72	618.72	618.72	M081/ 1000
			Sand	cum	0.150	0.150	0.150	494.00	74.10	74.10	74.10	M-005*
			Coarse aggregate of size 4.75mm	cum	0.150	0.150	0.150	262.42	39.36	39.36	39.36	M-018
			Quick setting compound	kg	2.500	2.500	2.500	INPUT	#VALUE!	#VALUE!	#VALUE!	M-146
			Water	KL	0.100	0.100	0.100	56.20	5.62	5.62	5.62	M-191
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 10 sqm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm=(a+b+c+d+e)/10						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
17.10	2800		**Applying pre-packed cement based polymer mortar of strength 45 Mpa at 28 days for replacement of spalled concrete**									

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			Unit=sqm									
			Taking output=10sqm									
			Assumed thickness-10mm									
			a) Material									
			Acrylic polymer bonding coat	Litre	1.400	1.400	1.400	131.88	184.63	184.63	184.63	M-057
			Pre-packed cement based polymer mortar of strength 45 Mpa at 28 days	Kg	12.000	12.000	12.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-144
			Add 3 percent of (a) above for wastage						#VALUE!	#VALUE!	#VALUE!	
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			c) Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		#VALUE!	#VALUE!	#VALUE!	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 10 sqm=a+b+c+d						#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm=(a+b+c+d)/10						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
17.11	**2805**		**Epoxy bonding of new concrete to old concrete**									
			Unit= sqm									
			Taking output=10sqm									
			a) Material									
			Epoxy resin with pot life not less than 60-90 minutes and satisfying testing as per clause 2803.9	kg	8.000	8.000	8.000	723.67	5789.36	5789.36	5789.36	M-098
			Add 3 percent of (a) above for wastage						173.68	173.68	173.68	
			b) Labour									
			Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			Mazdoor	day	0.500	0.500	0.500	306.00	153.00	153.00	153.00	L-13
			Total cost without OH & CP						6323.04	6323.04	6323.04	
			c) Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		1896.91	1896.91	1896.91	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		822.00	822.00	822.00	
			Cost for 10 sqm=a+b+c+d						9041.95	9041.95	9041.95	
			Rate per sqm=(a+b+c+d)/10						904.19	904.19	904.19	
								Say	**904.20**	**904.20**	**904.20**	

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
17.12	2812		**Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification.**									
			Span assumed: 25m									
			No. of cables:4 no.									
			No. of anchorages:8 no.									
			Unit=MT									
			Taking output = 1MT									
			Assume 12.7mm dia.Strand in 12T13 system Weight-9.42 kg/m of cable.									
			a) Material									
			HTS strand including 5 percent wastage and extra length of jacking	tonne	1.050	1.050	1.050	79629.50	83610.98	83610.98	83610.98	M-118
			HDPE pipes 75mm dia including 5 percent wastage	meter	112.000	112.000	112.000	237.01	26545.12	26545.12	26545.12	M-113
			cement for grouting	kg	400.000	400.000	400.000	5.16	2062.40	2062.40	2062.40	M081 /1000
			Tube anchorage set complete with bearing plate,permanent wedges etc.	each	8.000	8.000	8.000	51.08	408.64	408.64	408.64	M-189
			Epoxy	kg	6.000	6.000	6.000	595.97	3575.82	3575.82	3575.82	M-095
			MS plates for deviator(where deviator blocks are not provided)	tonne	2.100	2.100	2.100	57033.00	119769.30	119769.30	119769.30	M-181
			Add 20 percent cost of material for other materials like lead sheet,sleeves,deviator fixture etc.						47194.45	47194.45	47194.45	
			b) Labour									
			i) For making holes in the structure									
			Mate	day	0.240	0.240	0.240	325.00	78.00	78.00	78.00	L-12
			Mazdoor(Semi-skilled)	day	3.000	3.000	3.000	318.00	954.00	954.00	954.00	L-14
			Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			ii) For making and fixing anchorages for cables and placement of cables.									
			Mate	day	0.440	0.440	0.440	325.00	143.00	143.00	143.00	L-12
			Blacksmith	day	3.000	3.000	3.000	369.00	1107.00	1107.00	1107.00	L-25
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			iii) For prestressing									
			Mate/Supervisor	day	0.134	0.134	0.134	325.00	43.55	43.55	43.55	L-12

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			Fitter	day	0.700	0.700	0.700	369.00	258.30	258.30	258.30	L-08
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			iv) For grouting									
			Mate/Supervisor	day	0.134	0.134	0.134	325.00	43.55	43.55	43.55	L-12
			Mason	day	0.700	0.700	0.700	369.00	258.30	258.30	258.30	L-10
			Mazdoor	day	2.650	2.650	2.650	306.00	810.90	810.90	810.90	L-13
			c) Machinery									
			stressing jack with pump	hour	4.000	4.000	4.000	413.00	1652.00	1652.00	1652.00	PM65001
			Grouting pump with agitator	hour	1.350	1.350	1.350	525.00	708.75	708.75	708.75	PM60001
			Total cost without OH & CP						293400.96	293400.96	293400.96	
			d) Overhead charge on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		88020.29	88020.29	88020.29	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		38142.12	38142.12	38142.12	
			Rate per MT=(a+b+c+d+e)						419563.37	419563.37	419563.37	
								Say	**419563.40**	**419563.40**	**419563.40**	
17.13	**2812**		**Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification.**									
			Span assumed: 50 m									
			No.of cables:4 no									
			No.of anchorages:8 no.									
			Unit=MT									
			Taking output = 3.10MT									
			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 jacking	tonne	3.100	3.100	3.100	79629.50	246851.45	246851.45	246851.45	M118
			HDPE pipes 90mm dia including 5 percent wastage	meter	224.000	224.000	224.000	237.01	53090.24	53090.24	53090.24	M114
			Cement for grouting	tonne	1.010	1.010	1.010	5156.00	5207.56	5207.56	5207.56	M081
			Tube anchorage set complete with bearing plate, permanent wedges etc	each	8.000	8.000	8.000	51.08	408.64	408.64	408.64	M189
			Epoxy	kg	10.000	10.000	10.000	595.97	5959.70	5959.70	5959.70	M095

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			MS plates for deviator(where deviator blocks are not provided)	tonne	7.000	7.000	7.000	57033.00	399231.00	399231.00	399231.00	M181
			Add 20 percent cost of material for other materials like lead sheet,sleeves,deviator fixture etc.						142149.72	142149.72	142149.72	
			b)Labour									
			i)For making holes in the structure									
			Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mazdoor(Semi-skilled)	day	8.000	8.000	8.000	318.00	2544.00	2544.00	2544.00	L-14
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			ii)For making and fixing anchorages for cables and placement of cables.									
			Mate	day	1.280	1.280	1.280	325.00	416.00	416.00	416.00	L-12
			Blacksmith	day	7.000	7.000	7.000	369.00	2583.00	2583.00	2583.00	L-25
			Mazdoor	day	25.000	25.000	25.000	306.00	7650.00	7650.00	7650.00	L-13
			iii) For prestressing									
			Mate/Supervisor	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Fitter	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-08
			Mazdoor	day	4.000	4.000	4.000	306.00	1224.00	1224.00	1224.00	L-13
			iv) For grouting									
			Mate/Superviser	day	0.260	0.260	0.260	325.00	84.50	84.50	84.50	L-12
			Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
			Mazdoor	day	5.000	5.000	5.000	306.00	1530.00	1530.00	1530.00	L-13
			c) Machinery									
			Stressing jack with pump	hour	7.000	7.000	7.000	413.00	2891.00	2891.00	2891.00	PM65001
			Grouting pump with agitator	hour	3.000	3.000	3.000	525.00	1575.00	1575.00	1575.00	PM60001
			Total cost without OH & CP						876857.31	876857.31	876857.31	
			d) Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		263057.19	263057.19	263057.19	
			e)Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		113991.45	113991.45	113991.45	
			Cost for 3.10 MT=a+b+c+d+e						1253905.95	1253905.95	1253905.95	
			Rate per MT=(a+b+c+d+e)/3.10						404485.79	404485.79	404485.79	
								Say	**404485.80**	**404485.80**	**404485.80**	
17.14	**2812**		**Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestressing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical Specification.**									
			Span assumed:100 m									

Analysis of Rate
REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			No. of cables:6 No.									
			No. of anchorages:12 no.									
			Unit=MT									
			Taking output = 9.28MT									
			Assume 12.7mm dia Strand in 19T13 system.Weight - 14.73kg/m of cable.									
			a) Material									
			HTS strand including 5 percent wastage and extra length for jacking	tonne	9.280	9.280	9.280	79629.50	738961.76	738961.76	738961.76	M-118
			HDPE pipes 90 mm dia including 5 percent wastage	meter	672.000	672.000	672.000	237.01	159270.72	159270.72	159270.72	M-114
			Cement for grouting	tonne	3.040	3.040	3.040	5156.00	15674.24	15674.24	15674.24	M-081
			Tube anchorage set complete with bearing plate,permanent wedges etc.	each	12.000	12.000	12.000	51.08	612.96	612.96	612.96	M-189
			Epoxy	kg	14.000	14.000	14.000	595.97	8343.58	8343.58	8343.58	M-095
			MS plates for deviator(where deviator blocks are not provided)	tonne	20.000	20.000	20.000	57033.00	1140660.00	1140660.00	1140660.00	M-181
			Add 20 percent cost of material for other materials like lead sheet,sleeves,deviator fixture etc.						412704.65	412704.65	412704.65	
			b)Labour									
			i) For making holes in the structure									
			Mate	day	1.720	1.720	1.720	325.00	559.00	559.00	559.00	L-12
			Mazdoor(Semi-skilled)	day	18.000	18.000	18.000	318.00	5724.00	5724.00	5724.00	L-14
			Mazdoor	day	25.000	25.000	25.000	306.00	7650.00	7650.00	7650.00	L-13
			ii) For making and fixing anchorages for cables and placement of cables.									
			Mate	day	4.000	4.000	4.000	325.00	1300.00	1300.00	1300.00	L-12
			Blacksmith	day	20.000	20.000	20.000	369.00	7380.00	7380.00	7380.00	L-25
			Mazdoor	day	80.000	80.000	80.000	306.00	24480.00	24480.00	24480.00	L-13
			iii) For prestressing									
			Mate/Supervisor	day	0.300	0.300	0.300	325.00	97.50	97.50	97.50	L-12
			Fitter	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-08
			Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			iv) For grouting									
			Mate/Supervisor	day	1.000	1.000	1.000	325.00	325.00	325.00	325.00	L-12
			Mason	day	5.000	5.000	5.000	369.00	1845.00	1845.00	1845.00	L-10
			Mazdoor	day	20.000	20.000	20.000	306.00	6120.00	6120.00	6120.00	L-13
			c) Machinery									
			stressing jack with pump	hour	10.000	10.000	10.000	413.00	4130.00	4130.00	4130.00	PM65001

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			Grouting pump with agitator	hour	10.000	10.000	10.000	525.00	5250.00	5250.00	5250.00	PM60001
			Total cost without OH & CP						2543477.91	2543477.91	2543477.91	
			d) Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		763043.37	763043.37	763043.37	
			e)Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		330652.13	330652.13	330652.13	
			Cost for 9.28MT=a+b+c+d+e						3637173.41	3637173.41	3637173.41	
			Rate per MT=(a+b+c+d+e)/9.28						391936.79	391936.79	391936.79	
								Say	**391936.80**	**391936.80**	**391936.80**	
17.15	**2810**		**Replacement of Bearings complete as per Technical Specification**									
			Unit=No									
			Taking output=3No.									
			Lifting of superstructure span by jacking up from below i.e by placing the jacks on pier/abutment caps for span length of 30m									
			a)Labour									
			Mate	day	0.640	0.640	0.640	325.00	208.00	208.00	208.00	L-12
			Mazdoor(skilled)	day	4.000	4.000	4.000	388.00	1552.00	1552.00	1552.00	L-15
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			b)Machinery									
			i)Hire charges for jack of 40 tonne lifting capacity(Lifting of span)	hour	3.000	3.000	3.000	239.00	717.00	717.00	717.00	PM70001
			c)Material									
			Wooden packing	cum	0.150	0.150	0.150	INPUT	#VALUE!	#VALUE!	#VALUE!	M-197
			Cost of bearing (Replacement of bearing)	each	3.000	3.000	3.000	85505.67	256517.01	256517.01	256517.01	M-065
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d)Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		#VALUE!	#VALUE!	#VALUE!	
			e)Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost of repair of 3 bearings =a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate of repair per bearing=(a+b+c+d+e)/3						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
		Note	The work entails replacement of all the bearings on one side of the span.									
17.16	**2811**		**Rectification of Bearings as per Technical Specifications**									
			Unit=1 No									
			Taking output=3 No.									
			Lifting of superstructure span by jacking up from below i.e by placing the jacks on pier/abutment caps for span length of 30m									

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			a)Labour									
			Mate	day	0.640	0.640	0.640	325.00	208.00	208.00	208.00	L-12
			Mazdoor(skilled)	day	4.000	4.000	4.000	388.00	1552.00	1552.00	1552.00	L-15
			Mazdoor	day	12.000	12.000	12.000	306.00	3672.00	3672.00	3672.00	L-13
			b)Machinery									
			i)Hire charges for jack of 40 tonne lifting capacity.	hour	3.000	3.000	3.000	239.00	717.00	717.00	717.00	PM70001
			c)Material									
			Cost of parts to be replaced for 3 bearings	each	3.000	3.000	3.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-064
			Wooden packing	cum	0.150	0.150	0.150	INPUT	#VALUE!	#VALUE!	#VALUE!	M-197
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d)Overhead charges on (a+b+c)		(@ 30%)	(@ 30%)	(@ 30%)		#VALUE!	#VALUE!	#VALUE!	
			e)Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost of repair of 3 bearings=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate of repair per bearing =(a+b+c+d+e)/3						#VALUE!	#VALUE!	#VALUE!	
		Note	The rectification of 3 bearings included in this analysis are on the same side of the span .									
17.17			**Replacement of expansion joints complete as per drawings**									
			Unit=1 RM									
			Taking output=12 RM									
			a)Material									
			Epoxy for bonding new concrete to old concrete @ 0.8 kg/sqm	kg	9.600	9.600	9.600	595.97	5721.31	5721.31	5721.31	M-095
			M-30 grade cement concrete excluding OH&CP (Rate taken from item 14.01c (i) (p)	cum	3.600	3.600	3.600	4609.02-L 4613.35-M 4632.42-S	16592.47	16608.06	16676.73	14.01 C (i) (P)
			b)Labour									
			Removal of old expansion joint including breaking of concrete, cutting of lugs and shifting of broken material etc.									
			Mate	day	0.260	0.260	0.260	325.00	84.50	84.50	84.50	L-12
			Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
			Mazdoor (skilled)	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			Total cost without OH & CP						24428.28	24443.87	24512.54	
			c)Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		7328.48	7333.16	7353.76	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		3175.68	3177.70	3186.63	
			Cost for replacement of 12 RM=a+b+c+d						34932.44	34954.73	35052.93	
			Rate per RM=(a+b+c+d)/12						2911.04	2912.89	2921.08	
								Say	**2911.00**	**2912.90**	**2921.10**	

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
		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.									
17.18			**Replacement of Damaged Concrete Railing.**									
			Unit =RM									
			Taking output = 10 RM									
			a)Labour									
			Labour for dismantling old railing and disposal of dismantled material.									
			Mate	day	0.200	0.200	0.200	325.00	65.00	65.00	65.00	L-12
			Mazdoor	day	5.000	5.000	5.000	306.00	1530.00	1530.00	1530.00	L-13
			b)Machinery									
			Tractor-trolly for disposal of dismantled material	hour	1.000	1.000	1.000	629.00	629.00	629.00	629.00	PM12001
			Total cost without OH & CP						2224.00	2224.00	2224.00	
			c)Overhead charge on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		667.20	667.20	667.20	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		289.12	289.12	289.12	
			Cost for 10 M =a+b+c+d						3180.32	3180.32	3180.32	
			Rate per metre = (a+b+c+d)/10						318.03	318.03	318.03	
								Say	**318.00**	**318.00**	**318.00**	
		Note	The rate for the provision of new railing may be adopted from the chapter on superstructure									
17.19			**Replacement of Crash barrier.**									
			Unit =RM									
			Taking output = 10M									
			a) Labour									
			Labour for dismantaling old railing and disposal of dismantled material.									
			Mate	day	0.400	0.400	0.400	325.00	130.00	130.00	130.00	L-12
			Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
			b) Machinery									
			Tractor-trolley for disposal of dismantled material.	hour	1.000	1.000	1.000	629.00	629.00	629.00	629.00	PM12001
			Total cost without OH & CP						3819.00	3819.00	3819.00	
			c) Overhead charged on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		1145.70	1145.70	1145.70	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		496.47	496.47	496.47	
			Cost for 10m = a+b+c+d						5461.17	5461.17	5461.17	
			Rate per metre = (a+b+c+d)/10						546.12	546.12	546.12	
								Say	**546.10**	**546.10**	**546.10**	

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
		Note	The rate for the construction of new crash barrier may be adopted from chapter 8 0n Traffic and Transportation.									
17.20			**Replacement of Damaged mild Steel Railing**									
			Unit = RM									
			Taking output = 10M									
			a) Labour									
			Labour for dismantling old railing and disposal of dismantled material.									
			Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
			Mazdoor	day	4.000	4.000	4.000	306.00	1224.00	1224.00	1224.00	L-13
			b) Machinery									
			Tractor-trolley for disposal of dismantled material	hour	1.000	1.000	1.000	629.00	629.00	629.00	629.00	PM12001
			Total cost without OH & CP						1905.00	1905.00	1905.00	
			c)Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		571.50	571.50	571.50	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		247.65	247.65	247.65	
			Cost for 10 m=a+b+c+d						2724.15	2724.15	2724.15	
			Rate per metre = (a+b+c+d)/10						272.42	272.42	272.42	
								Say	**272.40**	**272.40**	**272.40**	
17.21			**Repair of Crash Barrier**									
			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 concrete after 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	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			*For dismantling and trimming the surface to a regular shape and removal of damaged material.									
			b)Material									
			M-30 grade cement concrete excluding OH &CP (Rate taken from item 14.01c(i)(p)	cum	0.300	0.300	0.300	4609.02-L 4613.35-M 4632.42-S	1382.71	1384.00	1389.73	14.01 C (i) (P)

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
			This may be priced based on the rate given the chapter of superstructure									
			Total cost without OH & CP						1701.71	1703.00	1708.73	
			c)Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		510.51	510.90	512.62	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		221.22	221.39	222.13	
			Cost for 10m = a+b+c+d						2433.44	2435.30	2443.48	
			Rate per meter = (a+b+c+d)/10						243.34	243.53	244.35	
								Say	**243.30**	**243.50**	**244.30**	
17.22			**Repair of RCC Railing**									
			Carrying out repair of RCC M-30 railing to bring it to the original shape									
			Unit = Running meter									
			Taking output = 10M									
			It is assumed that damage is to the extent of 10 percent									
			a)Material									
			M - 30 grade cement concrete excluding OH & CP (Rate taken from items 14.01 C (i)(p)	cum	0.100	0.100	0.100	4609.02-L 4613.35-M 4632.42-S	460.90	461.33	463.24	14.01 C (i) (P)
			HYSD bar reinforcement Rate as per item No 14.02(Excluding OH & CP)A	tonne	0.013	0.013	0.013	59708.79-L 59749.28-M 59827.63-S	776.21	776.74	777.76	14.02
			b)Labour*									
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			*For dismantling and trimming the surface to a regular shape and removal of damaged material.									
			Total cost without OH & CP						1300.92	1301.88	1304.80	
			c)Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		390.27	390.56	391.44	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		169.12	169.24	169.62	
			Cost of 10m = a+b+c+d						1860.31	1861.68	1865.87	
			Rate per meter = (a+b+c+d)/10						186.03	186.17	186.59	
								Say	**186.00**	**186.20**	**186.60**	
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									

Analysis of Rate

			Taking output = 10 M								
			a) Material								
			Mild steel ISMC series	kg	29.000	29.000	29.000	57.03	1653.96	1653.96	1653.96	M181/ 1000
			Flat iron	kg	10.000	10.000	10.000	57.03	570.33	570.33	570.33	M181/ 1000
			MS bolt and nuts	kg	1.000	1.000	1.000	69.15	69.15	69.15	69.15	M-129
			Add 5 percent of cost of material for painting						114.67	114.67	114.67	
			b)Labour									
			Mate	day	0.016	0.016	0.016	325.00	5.20	5.20	5.20	L-12
			Mazdoor(Skilled)	day	0.200	0.200	0.200	388.00	77.60	77.60	77.60	L-15
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			Total cost without OH & CP						2552.11	2552.11	2552.11	
			c)Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		765.63	765.63	765.63	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		331.77	331.77	331.77	
			Cost of repair for 10m =a+b+c+d						3649.52	3649.52	3649.52	
			Cost per meter = (a+b+c+d)/10						364.95	364.95	364.95	
								Say	**365.00**	**365.00**	**365.00**	
17.24			**Mobile Bridge Inspection Unit (MBIU)**									
			Inspection of bridge by using of Mobile Bridge Inspection Unit(MBIU)									
			Unit = Km									
			Taking Output = 50km									
			a) Labour									
			Mate	day	1.360	1.360	1.360	325.00	442.00	442.00	442.00	L-12
			Mazdoor(skilled)	day	34.000	34.000	34.000	388.00	13192.00	13192.00	13192.00	L-15
			Mazdoor	day	34.000	34.000	34.000	306.00	10404.00	10404.00	10404.00	L-13
			b)Machinery									
			Mobile Bridge Inspection Unit (MBIU)	hour	266.667	266.667	266.667	6549.00	1746402.18	1746402.18	1746402.18	PM80001
			Mobile Bridge Inspection Unit (MBIU) Mobilization & demobilization	hour	15.000	15.000	15.000	6549.00	98235.00	98235.00	98235.00	PM80001
			Add 1 percent of cost of a+b for Miscellaneous work						18686.75	18686.75	18686.75	
			Total cost without OH & CP						1887361.93	1887361.93	1887361.93	
			c) Overhead charges on (a+b)		(@ 30%)	(@ 30%)	(@ 30%)		566208.58	566208.58	566208.58	
			d)Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		245357.05	245357.05	245357.05	
			Cost for 50 km = a+b+c+d						2698927.57	2698927.57	2698927.57	
			Rate per km = (a+b+c+d)/50						53978.55	53978.55	53978.55	
								Say	**53978.600**	**53978.600**	**53978.600**	

Analysis of Rate

REPAIR AND REHABILITATION

Sr No.	Ref. to M		Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
					Large	Medium	Small		Large	Medium	Small	
		Note	(i)Average Distance has been considered 300 km for mobilization at working site and same for demobilization.									
			(ii) Speed of vehicle 40km/ hour has been considered.									

PART - C
TUNNEL WORK

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 Works	25 percent
Contractor Profit	10 percent of cost of works

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 (1sst class), carpenter, Blacksmith (1st 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 WORKS

CHAPTER-18
TUNNEL WORKS

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 proporation 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.

8 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 marked, this being a commercially produced item by specialized firms.

CHAPTER - 18
TUNNEL WORK

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
18.01	**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)	Cum	714.70	714.70	714.70
18.02	**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 disposal of excavated materials including all lifts and lead upto 1000m)	Cum	1004.60	1004.60	1004.60
18.03	**Excavation in Soil using Hydraulic Excavator and Tippers with Disposal upto 1000 meters.** (Excavation for portal 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 disposal of excavated materials including all lifts and lead upto 1000m.)	Cum	65.30	65.30	65.30
18.04	**Drill steel with Drill jumbo** (Excavation for tunnel by using drilling & blasting methods in all types of rock including cost of all materials,machinery, labour, scaling excavated surface, marking, ventilation, lighting, drainage, removing and hauling the excavated muck outside tunnel upto specified dump area and all other ancillary operations etc.)	Cum	#VALUE!	#VALUE!	#VALUE!
18.05	**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.)	hour	#VALUE!	#VALUE!	#VALUE!

TUNNEL WORK

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
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.)	Tonne	113799.40	113799.40	113799.40
18.07	**Shotcreting with Steel fibre 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.)	Cum	#VALUE!	#VALUE!	#VALUE!
18.08	**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.)	Cum	#VALUE!	#VALUE!	#VALUE!
18.09	**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.**	No.	#VALUE!	#VALUE!	#VALUE!
18.10	**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.**	No.	#VALUE!	#VALUE!	#VALUE!
18.11	**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.)	Tonne	#VALUE!	#VALUE!	#VALUE!
18.12	**Furnishing and Placing Reinforced cement concrete in Tunnel Work as per drawing and Technical Specification**				
A	**RCC Grade M 20** (Using Batching Plant ,Transit Mixer and Concrete Pump.)	Cum	6308.10	6308.10	6308.10

Summary of Rate Analysis

TUNNEL WORK

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
B	**RCC Grade M 25** (Using Batching Plant ,Transit Mixer and Concrete Pump.)	Cum	7199.70	7199.70	7199.70
C	**RCC Grade M 30** (Using Batching Plant ,Transit Mixer and Concrete Pump.)	Cum	7405.70	7405.70	7405.70
D	**RCC Grade M35** (Using Batching Plant ,Transit Mixer and Concrete Pump.)	Cum	7752.20	7752.20	7752.20
E	**RCC Grade M-40** (Using Batching Plant ,Transit Mixer and Concrete Pump.)	Cum	8556.70	8556.70	8556.70
F	**RCC Grade M-45**	Cum	8912.20	8912.20	8912.20
G	**RCC Grade M-50**	Cum	9715.50	9715.50	9715.50
H	**RCC Grade M-55**	Cum	9875.10	9875.10	9875.10
I	**RCC Grade M-60**	Cum	10194.80	10194.80	10194.80
J	**RCC Grade M-65**	Cum	10277.40	10277.40	10277.40
18.13	**Supplying, Fitting and placing HYSD bar reinforcement in Tunnel Work complete as per drawing and technical specifications.**	MT	82402.50	82402.50	82402.50

Analysis of Rate

CHAPTER 18

TUNNEL WORK

Sr. No	Ref.to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
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									
		Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
		Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
		b) Machinery									
		Excavator 1.1 cum bucket capacity	hour	8.214	8.214	8.214	2432.00	19976.45	19976.45	19976.45	PM3004
		Jack hammer	hour	8.214	8.214	8.214	206.00	1692.08	1692.08	1692.08	PM4001
		Loading & unloading charges for disposed of grabbed material (Using by 10 cum capacity Tipper & 1 Cum capacity Loader)	cum	72.000	72.000	72.000	100.20	7214.40	7214.40	7214.40	PM77003
		Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1 km	t.km	120.000	120.000	120.000	16.53	1983.60	1983.60	1983.60	PM74003
		Total cost Without O.H.&C.P.						31185.53	31185.53	31185.53	
		C) Overhead charge on (a+b)		(@ 25%)	(@ 25%)	(@ 25%)		7796.38	7796.38	7796.38	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		3898.19	3898.19	3898.19	
		Cost for 60 cum = (a+b+c+d)						42880.11	42880.11	42880.11	
		Rate per cum= (a+b+c+d) / 60						714.67	714.67	714.67	
							Say	**714.70**	**714.70**	**714.70**	
18.02	303& 304	**Excavation in Hard Rock (blasting prohibited)**									

Analysis of Rate

TUNNEL WORK

Sr. No	Ref.to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		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 disposal of excavated materials including all lifts and lead upto 1000m									
		Unit = cum									
		Taking Output = 50 cum									
		a) Labour									
		Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
		Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
		b) Machinery									
		Excavator 1.1 cum bucket capacity	hour	10.039	10.039	10.039	2432.00	24414.85	24414.85	24414.85	PM3004
		Jack hammer	hour	10.039	10.039	10.039	206.00	2068.03	2068.03	2068.03	PM4001
		Loading & unloading charges for disposed of grabbed material (using by 10 cum capacity Tipper & 1 Cum capacity Loader)	cum	60.000	60.000	60.000	100.20	6012.00	6012.00	6012.00	PM77003
		Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1 km	t.km	100.000	100.000	100.000	6.80	680.00	680.00	680.00	PM74001
		Credit for excavated rock found suitable for use @ 50 percent of excavated quantity.	cum	30.000	30.000	30.000	101.24	3037.20	3037.20	3037.20	M-090
		Total cost Without O.H.&C.P.						36531.08	36531.08	36531.08	
		C) Overhead charge on (a+b)		(@ 25%)	(@ 25%)	(@ 25%)		9132.77	9132.77	9132.77	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		4566.39	4566.39	4566.39	
		Cost for 50 cum = (a+b+c+d)						50230.24	50230.24	50230.24	
		Rate per cum= (a+b+c+d) / 50						1004.60	1004.60	1004.60	
							Say	**1004.60**	**1004.60**	**1004.60**	
18.03	**304**	**Excavation in Soil using Hydraulic Excavator and Tippers with Disposal upto 1000 meters.**									

Analysis of Rate

TUNNEL WORK

Sr. No	Ref.to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Excavation for portal 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 disposal of excavated materials including all lifts and lead upto 1000m.									
		Unit = cum									
		Taking Output = 350 cum									
		a) Labour									
		Mate	day	0.040	0.040	0.040	325.00	13.00	13.00	13.00	L-12
		Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
		b) Machinery									
		Excavator 1.1 cum bucket capacity	hour	5.024	5.024	5.024	2432.00	12218.37	12218.37	12218.37	PM3004
		Loading & unloading charges for disposal of grabbed material (using by 10 cum capacity Tipper & 1 Cum capacityLoader)	cum	5.024	5.024	5.024	100.20	503.40	503.40	503.40	PM77003
		Tipper 10 cum capacity for transportation to dumping yard considering lead @ 1 km	t.km	525.000	525.000	525.000	6.80	3570.00	3570.00	3570.00	PM74001
		Total cost Without O.H.&C.P.						16610.77	16610.77	16610.77	
		c) Overhead charge on (a+b)		(@ 25%)	(@ 25%)	(@ 25%)		4152.69	4152.69	4152.69	
		d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		2076.35	2076.35	2076.35	
		Cost for 350 cum = (a+b+c+d)						22839.81	22839.81	22839.81	
		Rate per cum= (a+b+c+d) / 350						65.26	65.26	65.26	
							Say	**65.30**	**65.30**	**65.30**	
18.04		**Drill steel with Drill jumbo**									
		Excavation for tunnel by using drilling & blasting methods in all types of rock including cost of all materials,machinery, labour, scaling excavated surface, marking, ventilation, lighting, drainage, removing and hauling the excavated muck outside tunnel upto specified dump area and all other ancillary operations etc.									
		Unit = cum									
		Taking Output = 480 cum									
		a) Labour									
		Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Mazdoor	day	6.000	6.000	6.000	306.00	1836.00	1836.00	1836.00	L-13
		Mazdoor (Skilled)	day	2.000	2.000	2.000	388.00	776.00	776.00	776.00	L-15
		b) Machinery									
		Three boom hydraulic Drill jumbo	hour	25.067	25.067	25.067	9638.00	241595.75	241595.75	241595.75	PM56001
		Excavator for Scaling	hour	2.000	2.000	2.000	2432.00	4864.00	4864.00	4864.00	PM3004
		Tipper 10 cum capacity for transportation	t.km	480x2xL	480x2xL	480x2xL	6.80	6528.00	6528.00	6528.00	PM74001
		Loading & unloading charges (Using by 10 cum capacity tipper & 1 cum capacity Loader)	cum	576.000	576.000	576.000	100.20	57715.20	57715.20	57715.20	PM77003
		Dozer(175HP)	hour	9.600	9.600	9.600	4249.00	40790.40	40790.40	40790.40	PM1002
		c) Materials									
		Explosives	kg	576.000	576.000	576.000	976.21	562296.96	562296.96	562296.96	M-215
		Delay Detonators	Nos	228.000	228.000	228.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-216
		Electric Detonators	Nos	35.000	35.000	35.000	6.19	216.65	216.65	216.65	M-217
		Detonation fuse coil	Meter	50.000	50.000	50.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-218
		3.7 meter long extension rod	Nos	1.043	1.043	1.043	INPUT	#VALUE!	#VALUE!	#VALUE!	M-219
		Drifter rod	Nos	0.505	0.505	0.505	INPUT	#VALUE!	#VALUE!	#VALUE!	M-221
		R 32 shank adapter	Nos	1.043	1.043	1.043	INPUT	#VALUE!	#VALUE!	#VALUE!	M-222
		45 mm Button Bit	Nos	3.692	3.692	3.692	INPUT	#VALUE!	#VALUE!	#VALUE!	M-223
								#VALUE!	#VALUE!	#VALUE!	
		Add 10 percent of cost of a+b+c towards Other consumable petty stores such as blasting batteries,galvanometers and sharpening charges of bit etc...						#VALUE!	#VALUE!	#VALUE!	
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 480 cum=(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per cum=(a+b+c+d+e)/480						#VALUE!	#VALUE!	#VALUE!	
18.05	**304**	**Dewatering tunnel by pumping out water collected by natural drainage inside tunnel including**									

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		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	100.00	100.00	100.00	325.00	32500.00	32500.00	32500.00	L-12
		Mazdoor	day	2500.00	2500.00	2500.00	306.00	765000.00	765000.00	765000.00	L-13
		b) Machinery									
		Water Pump 10 HP	hour	20000.00	20000.00	20000.00	195.00	3900000.00	3900000.00	3900000.00	PM61001
		C) Materials									
		GI Pipe 100 mm Dia	Meter	500.00	500.00	500.00	617.50	308750.00	308750.00	308750.00	M-239
		Flange	Kg	41.667	41.667	41.667	INPUT	#VALUE!	#VALUE!	#VALUE!	M-241
		Nut & Bolt	Kg	133.333	133.333	133.333	69.15	9219.98	9219.98	9219.98	M-129
		Bracket	Kg	1125.00	1125.00	1125.00	INPUT	#VALUE!	#VALUE!	#VALUE!	M-240
		Credit for salvage value of GI Pipe @ 30 percent	Meter	150.00	150.00	150.00	617.50	92625.00	92625.00	92625.00	M-239
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 20000 hour =(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per hour = (a+b+c+d+e) / 20000						#VALUE!	#VALUE!	#VALUE!	
								#VALUE!	#VALUE!	#VALUE!	
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	0.800	0.800	0.800	325.00	260.00	260.00	260.00	L-12

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
		Mazdoor(Semi-Skilled)	day	5.000	5.000	5.000	318.00	1590.00	1590.00	1590.00	L-14
		Welder	day	5.000	5.000	5.000	413.00	2065.00	2065.00	2065.00	L-02
		b) Machinery									
		Rotating Telehandlers	hour	37.180	37.180	37.180	887.00	32978.66	32978.66	32978.66	PM58001
		C) Materials									
		ISMB 350 (Including 0.25% Wastage)	Tonne	20.732	20.732	20.732	57033.00	1182408.16	1182408.16	1182408.16	M-181
		MS Channel ISMC 75 (Including 0. 25% Wastage)	Tonne	3.830	3.830	3.830	57033.00	218436.39	218436.39	218436.39	M-181
		MS Plate 200x200x12mm (Including 0.25% Wastage)	Tonne	1.504	1.504	1.504	57033.00	85777.63	85777.63	85777.63	M-181
		Nuts & Bolts (M 16x40)	Kg	151.200	151.200	151.200	69.15	10455.48	10455.48	10455.48	M-129
		Add 40 percent of cost of a+b+c towards of Fabrication, Erection,Temporary fixture, Handling of material, final matching and field welding etc.						614812.53	614812.53	614812.53	
		Total cost Without O.H.&C.P.						2151843.85	2151843.85	2151843.85	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		537960.96	537960.96	537960.96	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		268980.48	268980.48	268980.48	
		Cost for 26 Tonne =(a+b+c+d+e)						2958785.29	2958785.29	2958785.29	
		Rate per Tonne = (a+b+c+d+e) / 26						113799.43	113799.43	113799.43	
							Say	**113799.40**	**113799.40**	**113799.40**	
18.07	**2807**	**Shotcreting with Steel fibre 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	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
		Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		b) Machinery									
		Batching Plant of capacity 120 cum / hour	hour	1.333	1.333	1.333	3635.00	4845.46	4845.46	4845.46	PM19002
		Generator 250 KVA	hour	1.333	1.333	1.333	3034.00	4044.32	4044.32	4044.32	PM22004
		Loader 3.1 cum capacity	hour	1.333	1.333	1.333	3433.00	4576.19	4576.19	4576.19	PM5001
		Transit Truck agitator									
		For transportation (6 cum capacity)	t.km.	300xL	300xL	300xL	10.33	3099.00	**3099.00**	**3099.00**	PM76001
		For Loading & unloading	hour	11.333	11.333	11.333	1860.00	21079.38	21079.38	21079.38	PM34001
		Shotcrete Machine @ 12 cum /hour	hour	10.000	10.000	10.000	1349.00	13490.00	13490.00	13490.00	PM59001
		Compressor 500 cfm	hour	10.000	10.000	10.000	1831.00	18310.00	18310.00	18310.00	PM15002
		c) Materials									
		Cement	Tonne	49.440	49.440	49.440	5156.00	254912.64	254912.64	254912.64	M-081
		Sand	Cum	86.850	86.850	86.850	494.00	42903.90	42903.90	42903.90	M-005*
		10mm to 4.76 mm Aggregate	Cum	52.080	52.080	52.080	586.00	30518.88	30518.88	30518.88	M-039
		Steel Fiber	Tonne	6.120	6.120	6.120	INPUT	#VALUE!	#VALUE!	#VALUE!	M-225
		Admixture @ 0.4 % of Cement	Kg	197.760	197.760	197.760	214.86	42490.71	42490.71	42490.71	M-182
		Micro Silica @ 6 % of Cement	Kg	2966.400	2966.400	2966.400	28.00	83059.20	83059.20	83059.20	M-226
		Accelerator @ 4.5 % of Cement	Kg	2224.800	2224.800	2224.800	INPUT	#VALUE!	#VALUE!	#VALUE!	M-227
		Add 20 Percent of cost of a+b+c for Wastage due to rebound.						#VALUE!	#VALUE!	#VALUE!	
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 120 Cum =(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per Cum = (a+b+c+d+e) / 120						#VALUE!	#VALUE!	#VALUE!	
								#VALUE!	#VALUE!	#VALUE!	
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	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
		Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
		b) Machinery									

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Batching Plant of capacity 120 cum / hour	hour	1.333	1.333	1.333	3635.00	4845.46	4845.46	4845.46	PM19002
		Generator 250 KVA	hour	1.333	1.333	1.333	3034.00	4044.32	4044.32	4044.32	PM22004
		Loader 3.1 cum capacity	hour	1.333	1.333	1.333	3433.00	4576.19	4576.19	4576.19	PM5001
		Transit Truck agitator									
		For transportation (6 cum capacity)	t.km.	300xL	300xL	300xL	10.33	3099.00	3099.00	3099.00	PM76001
		For Loading & unloading	hour	11.333	11.333	11.333	1860.00	21079.38	21079.38	21079.38	PM34001
		Shotcrete Machine @ 12 cum /hour	hour	10.000	10.000	10.000	1349.00	13490.00	13490.00	13490.00	PM59001
		Compressor 500 cfm	hour	10.000	10.000	10.000	1831.00	18310.00	18310.00	18310.00	PM15002
		c) Materials									
		Cement	Tonne	49.440	49.440	49.440	5156.00	254912.64	254912.64	254912.64	M-081
		Sand	Cum	86.850	86.850	86.850	494.00	42903.90	42903.90	42903.90	M-004
		10mm to 4.76 mm Aggregate	Cum	52.080	52.080	52.080	586.00	30518.88	30518.88	30518.88	M-039
		Wire mesh (Including 10 % for lapping.)	Sqm	1320.000	1320.000	1320.000	111.88	147681.60	147681.60	147681.60	M-102
		Admixture @ 0.4 % of Cement	Kg	197.760	197.760	197.760	214.86	42490.71	42490.71	42490.71	M-182
		Micro Silica @ 6 % of Cement	Kg	2966.400	2966.400	2966.400	28.00	83059.20	83059.20	83059.20	M-226
		Accelerator @ 4.5 % of Cement	Kg	2224.800	2224.800	2224.800	INPUT	#VALUE!	#VALUE!	#VALUE!	M-227
								#VALUE!	#VALUE!	#VALUE!	
		Add 20 Percent of cost of a+b+c for Wastage due to rebound.						#VALUE!	#VALUE!	#VALUE!	
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 120 Cum =(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per cum = (a+b+c+d+e) / 120						#VALUE!	#VALUE!	#VALUE!	
								#VALUE!	#VALUE!	#VALUE!	
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	0.480	0.480	0.480	325.00	156.00	156.00	156.00	L-12
		Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
		Mason (IInd class)	day	4.000	4.000	4.000	369.00	1476.00	1476.00	1476.00	L-10

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		b) Machinery									
		Single boom Hydraulic Drill Jumbo.	hour	25.833	25.833	25.833	4394.00	113510.20	113510.20	113510.20	PM54001
		c) Materials									
		3.7 m long extension rod.	Nos	1.011	1.011	1.011	INPUT	#VALUE!	#VALUE!	#VALUE!	M-219
		R32 shank adapter.	Nos	1.011	1.011	1.011	INPUT	#VALUE!	#VALUE!	#VALUE!	M-222
		45mm Dia cross bit.	Nos	3.577	3.577	3.577	INPUT	#VALUE!	#VALUE!	#VALUE!	M-223
		25mm Tor Steel (Including 2.5% Wastage)	Tonne	1.927	1.927	1.927	54810.00	105618.87	105618.87	105618.87	M-083
								#VALUE!	#VALUE!	#VALUE!	
		Add 15 % of cost of a+b+c towards cutting,making tip, Threading,nut,plate,grouting and bit sharpening etc..						#VALUE!	#VALUE!	#VALUE!	
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 155 Nos =(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per Number = (a+b+c+d+e) /155						#VALUE!	#VALUE!	#VALUE!	
								#VALUE!	#VALUE!	#VALUE!	
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									
		Mate	day	0.600	0.600	0.600	325.00	195.00	195.00	195.00	L-12
		Mazdoor	day	10.000	10.000	10.000	306.00	3060.00	3060.00	3060.00	L-13
		Mason (IInd class)	day	5.000	5.000	5.000	369.00	1845.00	1845.00	1845.00	L-10
		b) Machinery									
		Single boom Hydraulic	hour	17.500	17.500	17.500	4394.00	76895.00	76895.00	76895.00	PM54001
		c) Materials									
		3.7 m long extension rod.	Nos	1.065	1.065	1.065	INPUT	#VALUE!	#VALUE!	#VALUE!	M-219
		R32 shank adapter.	Nos	1.065	1.065	1.065	INPUT	#VALUE!	#VALUE!	#VALUE!	M-222
		32mm coupling sleeve	Nos	1.065	1.065	1.065	INPUT	#VALUE!	#VALUE!	#VALUE!	M-220
		51mm Dia button bit	Nos	3.769	3.769	3.769	INPUT	#VALUE!	#VALUE!	#VALUE!	M-224
		32mm Tor Steel (Including 2.5% Wastage)	Tonne	3.237	3.237	3.237	54810.00	177419.97	177419.97	177419.97	M-083

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
								#VALUE!	#VALUE!	#VALUE!	
		Add 15 % of cost of a+b+c towards cutting,making tip, Threading,nut,plate,grouting and bit sharpening etc..						#VALUE!	#VALUE!	#VALUE!	
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 70 Nos =(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per Number = (a+b+c+d+e) / 70						#VALUE!	#VALUE!	#VALUE!	
								#VALUE!	**#VALUE!**	**#VALUE!**	
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									
		Taking output=1.5 Tonne									
		a) Labour									
		Mate	day	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
		Mazdoor	day	2.000	2.000	2.000	306.00	612.00	612.00	612.00	L-13
		b) Machinery									
		Grouting Machine @ 25 Bags Per Hours	hour	1.200	1.200	1.200	525.00	630.00	630.00	630.00	PM60001
		Pump 10 HP.	hour	1.200	1.200	1.200	195.00	234.00	234.00	234.00	PM61001
		Single boom Hydraulic .	hour	1.250	1.250	1.250	4394.00	5492.50	5492.50	5492.50	PM54001
		c) Materials									
		Cement (Including 1% Wastage)	Tonne	1.515	1.515	1.515	5156.00	7811.34	7811.34	7811.34	M-081
		Cost of Water (Water /Cement Ratio-0.4)	KL	0.606	0.606	0.606	56.20	34.06	34.06	34.06	M-191
		3.7 m long extension rod.	Nos	0.076	0.076	0.076	INPUT	#VALUE!	#VALUE!	#VALUE!	M-219
		R32 shank adapter.	Nos	0.076	0.076	0.076	INPUT	#VALUE!	#VALUE!	#VALUE!	M-222
		32mm coupling sleeve	Nos	0.076	0.076	0.076	INPUT	#VALUE!	#VALUE!	#VALUE!	M-220
		51mm Dia cross bit	Nos	0.269	0.269	0.269	INPUT	#VALUE!	#VALUE!	#VALUE!	M-224
								#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Add 5 % of cost of a+b+c towards cutting,making tip, Threading,nut,plate,grouting and bit sharpening etc..						#VALUE!	#VALUE!	#VALUE!	
		Total cost Without O.H.&C.P.						#VALUE!	#VALUE!	#VALUE!	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		#VALUE!	#VALUE!	#VALUE!	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
		Cost for 1.5 Tonne =(a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
		Rate per Tonne = (a+b+c+d+e) /1.5						#VALUE!	#VALUE!	#VALUE!	
								#VALUE!	#VALUE!	#VALUE!	
18.12	**1700**	**Furnishing and Placing Reinforced cement concrete in Tunnel Work as per drawing and Technical Specification**									
	A	**RCC Grade M 20**									
		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	120.000	120.000	3052.80	366336.00	366336.00	366336.00	21.05
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	393229.90	393229.90	393229.90	
		d) Formwork and staging 40 percent of (a+b+c)						157291.96	157291.96	157291.96	
		Total cost Without O.H.&C.P.						550521.86	550521.86	550521.86	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		137630.47	137630.47	137630.47	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		68815.23	68815.23	68815.23	
		Cost for 120 cum =(a+b+c+d+e+f)						756967.56	756967.56	756967.56	
		Rate per cum = (a+b+c+d+e+f) /120						6308.06	6308.06	6308.06	
							Say	**6308.10**	**6308.10**	**6308.10**	
18.12	**1700 B**	**RCC Grade M 25**									
		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 -21.07	cum	120.000	120.000	120.000	3516.00	421920.00	421920.00	421920.00	21.07
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	448813.90	448813.90	448813.90	
		d) Formwork and staging 40 percent of (a+b+c)						179525.56	179525.56	179525.56	
		Total cost Without O.H.&C.P.						628339.46	628339.46	628339.46	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		157084.87	157084.87	157084.87	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		78542.43	78542.43	78542.43	
		Cost for 120 cum =(a+b+c+d+e+f)						**863966.76**	**863966.76**	**863966.76**	
		Rate per cum = (a+b+c+d+e+f) /120						7199.72	7199.72	7199.72	
							Say	**7199.70**	**7199.70**	**7199.70**	
18.12	**1700 C**	**RCC Grade M 30**									
		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 -21.09	cum	120.000	120.000	120.000	3623.00	434760.00	434760.00	434760.00	21.09
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	461653.90	461653.90	461653.90	
		d) Formwork and staging 40 percent of (a+b+c)						184661.56	184661.56	184661.56	
		Total cost Without O.H.&C.P.						646315.46	646315.46	646315.46	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		161578.87	161578.87	161578.87	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		80789.43	80789.43	80789.43	
		Cost for 120 cum =(a+b+c+d+e+f)						888683.76	888683.76	888683.76	
		Rate per cum = (a+b+c+d+e+f) /120						7405.70	7405.70	7405.70	
							Say	**7405.70**	**7405.70**	**7405.70**	
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									
		(Rate taken from sub-analysis -21.11)	cum	120.000	120.000	120.000	3803.00	456360.00	456360.00	456360.00	21.11
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
							a+b+c=	483253.90	483253.90	483253.90	
		d) Formwork and staging 40 percent of (a+b+c)						193301.56	193301.56	193301.56	
		Total cost Without O.H.&C.P.						676555.46	676555.46	676555.46	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		169138.87	169138.87	169138.87	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		84569.43	84569.43	84569.43	
		Cost for 120 cum =(a+b+c+d+e+f)						930263.76	930263.76	930263.76	
		Rate per cum = (a+b+c+d+e+f) /120						7752.20	7752.20	7752.20	
							Say	**7752.20**	**7752.20**	**7752.20**	
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									
		(Rate taken from sub-analysis -21.12	cum	120.000	120.000	120.000	4220.90	506508.00	506508.00	506508.00	21.12
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
							a+b+c=	533401.90	533401.90	533401.90	
		d) Formwork and staging 40 percent of (a+b+c)						213360.76	213360.76	213360.76	
		Total cost Without O.H.&C.P.						746762.66	746762.66	746762.66	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		**186690.67**	**186690.67**	**186690.67**	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		93345.33	93345.33	93345.33	
		Cost for 120 cum =(a+b+c+d+e+f)						1026798.66	1026798.66	1026798.66	
		Rate per cum = (a+b+c+d+e+f) /120						8556.66	8556.66	8556.66	
							Say	**8556.70**	**8556.70**	**8556.70**	
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	120.000	120.000	4405.60	528672.00	528672.00	528672.00	21.13
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	555565.90	555565.90	555565.90	
		d) Formwork and staging 40 percent of (a+b+c)						222226.36	222226.36	222226.36	
		Total cost Without O.H.&C.P.						777792.26	777792.26	777792.26	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		**194448.07**	**194448.07**	**194448.07**	

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		97224.03	97224.03	97224.03	
		Cost for 120 cum =(a+b+c+d+e+f)						1069464.36	1069464.36	1069464.36	
		Rate per cum = (a+b+c+d+e+f) /120						8912.20	8912.20	8912.20	
							Say	**8912.20**	**8912.20**	**8912.20**	
18.12	**1700 G**	**RCC Grade M-50**									
		Unit=Cum									
		Taking output=120 Cum									
		a) Material									
		Per Cum Basic Cost									
		(Rate taken from sub-analysis -21.14	cum	120.000	120.000	120.000	4822.90	578748.00	578748.00	578748.00	21.14
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	605641.90	605641.90	605641.90	
		d) Formwork and staging 40 percent of (a+b+c)						242256.76	242256.76	242256.76	
		Total cost Without O.H.&C.P.						847898.66	847898.66	847898.66	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		**211974.67**	**211974.67**	**211974.67**	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		105987.33	105987.33	105987.33	
		Cost for 120 cum =(a+b+c+d+e+f)						1165860.66	1165860.66	1165860.66	
		Rate per cum = (a+b+c+d+e+f) /120						9715.51	9715.51	9715.51	
							Say	**9715.50**	**9715.50**	**9715.50**	

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
18.12	1700 H	**RCC Grade M-55**									
		Unit=Cum									
		Taking output=120 Cum									
		a) Material									
		Per Cum Basic Cost									
		(Rate taken from sub-analysis -21.15)	cum	120.000	120.000	120.000	4905.80	588696.00	588696.00	588696.00	21.15
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	615589.90	615589.90	615589.90	
		d) Formwork and staging 40 percent of (a+b+c)						246235.96	246235.96	246235.96	
		Total cost Without O.H.&C.P.						861825.86	861825.86	861825.86	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		215456.47	215456.47	215456.47	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		107728.23	107728.23	107728.23	
		Cost for 120 cum =(a+b+c+d+e+f)						1185010.56	1185010.56	1185010.56	
		Rate per cum = (a+b+c+d+e+f) /120						9875.09	9875.09	9875.09	
							Say	**9875.10**	**9875.10**	**9875.10**	
18.12	1700 I	**RCC Grade M-60**									
		Unit=Cum									
		Taking output=120 Cum									

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		a) Material									
		Per Cum Basic Cost									
		(Rate taken from sub-analysis -21.16)	cum	120.000	120.000	120.000	5071.90	608628.00	608628.00	608628.00	21.16
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6 cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	635521.90	635521.90	635521.90	
		d) Formwork and staging 40 percent of (a+b+c)						254208.76	254208.76	254208.76	
		Total cost Without O.H.&C.P.						889730.66	889730.66	889730.66	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		222432.67	222432.67	222432.67	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		111216.33	111216.33	111216.33	
		Cost for 120 cum =(a+b+c+d+e+f)						1223379.66	1223379.66	1223379.66	
		Rate per cum = (a+b+c+d+e+f) /120						10194.83	10194.83	10194.83	
							Say	**10194.80**	**10194.80**	**10194.80**	
18.12	**1700 J**	**RCC Grade M-65**									
		Unit=Cum									
		Taking output=120 Cum									
		a) Material									
		Per Cum Basic Cost									
		(Rate taken from sub-analysis -21.17)	cum	120.000	120.000	120.000	5114.80	613776.00	613776.00	613776.00	21.17
		Water for curing	KL	63.000	63.000	63.000	56.20	3540.60	3540.60	3540.60	M-191

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		b) Labour									
		For pouring and placing									
		Mate	day	0.232	0.232	0.232	325.00	75.40	75.40	75.40	L-12
		Mason	day	1.500	1.500	1.500	369.00	553.50	553.50	553.50	L-10
		Mazdoor	day	4.300	4.300	4.300	306.00	1315.80	1315.80	1315.80	L-13
		c) Machinery									
		Transit Truck agitator									
		For Transportation (6cum Capacity),L1-Lead in Kilometer.	t.km	300xL1	300xL2	300xL3	10.33	3099.00	3099.00	3099.00	PM76001
		For unloading	hour	2.600	2.600	2.600	1860.00	4836.00	4836.00	4836.00	PM34001
		Hydraulic Boom placer pump	hour	2.600	2.600	2.600	3695.00	9607.00	9607.00	9607.00	PM36001
		Water tanker (Speed @ 20km /hour and return speed @ 30 km /hr.and 30 mins for unloading)									
		(i)12KL capacity.	hour	0.583x L1+3.5	0.583x L1+3.5	0.583x L1+3.5	947.00	3866.60	3866.60	3866.60	PM11002
							a+b+c=	640669.90	640669.90	640669.90	
		d) Formwork and staging 40 percent of (a+b+c)						256267.96	256267.96	256267.96	
		Total cost Without O.H.&C.P.						896937.86	896937.86	896937.86	
		e) Overhead charges on (a+b+c+d)		(@ 25%)	(@ 25%)	(@ 25%)		224234.47	224234.47	224234.47	
		f) Contractor's profit on (a+b+c+d+e)		(@ 10%)	(@ 10%)	(@ 10%)		112117.23	112117.23	112117.23	
		Cost for 120 cum =(a+b+c+d+e+f)						**1233289.56**	**1233289.56**	**1233289.56**	
		Rate per cum = (a+b+c+d+e+f) /120						10277.41	10277.41	10277.41	
							Say	**10277.40**	**10277.40**	**10277.40**	
18.13	**1600**	**Supplying, Fitting and placing HYSD bar reinforcement in Tunnel Work complete as per drawing and technical specifications.**									
		Unit=MT									
		Taking out put =8 MT									
		a) Material									
		HYSD bars including 5 % overlaps and Wastage	Tonne	8.400	8.400	8.400	54810.0	460404.00	460404.00	460404.00	M-083
		Binding wire	Kg	48.000	48.000	48.000	75.04	3601.92	3601.92	3601.92	M-072

Analysis of Rate

TUNNEL WORK

Sr. No	Ref. to M	Description	Unit	Quantity as per Project Category			Rate	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		b) Labour for straightening,cutting,bending, shifting to site ,tying and placing in position									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Blacksmith	day	1.000	1.000	1.000	369.00	369.00	369.00	369.00	L-25
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Cutting Machine	hour	8.000	8.000	8.000	309.00	2472.00	2472.00	2472.00	PM43001
		Bending Machine	hour	8.000	8.000	8.000	309.00	2472.00	2472.00	2472.00	PM43001
		Electric Generator 15 KVA	hour	8.000	8.000	8.000	274.00	2192.00	2192.00	2192.00	PM22009
		Tipper									
		Tipper forTtransportation									
		(i) 14 cum capacity	t.km	8xL	8xL	8xL	5.48	43.84	43.84	43.84	PM73001
		Loading and Unloading Time									
		(i) 14 cum capacity	hour	2.000	2.000	2.000	1998.00	3996.00	3996.00	3996.00	PM6002
		Light weight Crane									
		At cutting bending yard	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
		At site	hour	2.000	2.000	2.000	728.00	1456.00	1456.00	1456.00	PM63001
		Total cost Without O.H.&C.P.						479432.76	479432.76	479432.76	
		d) Overhead charges on (a+b+c)		(@ 25%)	(@ 25%)	(@ 25%)		119858.19	119858.19	119858.19	
		e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		59929.10	59929.10	59929.10	
		Cost for 8MT =(a+b+c+d+e)						659220.05	659220.05	659220.05	
		Rate per MT = (a+b+c+d+e) / 8						82402.51	82402.51	82402.51	
							Say	**82402.50**	**82402.50**	**82402.50**	

CHAPTER - 19

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

CHAPTER-19
ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

PREAMBLES :

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.

CHAPTER:19
ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
19.01 Suggestive	**Noise Barriers**				
(i)	**Masonry wall**	Cum	5626.80	5734.70	5857.10
(ii)	**Galvanized steel plain sheet**	Sqm	124.20	126.50	128.80
(iii)	**Acrylic noise barrier sheet**	Sqm	#VALUE!	#VALUE!	#VALUE!
19.02 Suggestive	**Construction of bamboo crib wall complete as per drawing and additional Technical specification.**	RM	#VALUE!	#VALUE!	#VALUE!
19.03 Suggestive	**Construction of Fascines with a bundle of sticks complete as per drawing and additional Technical specification.**	RM	#VALUE!	#VALUE!	#VALUE!
19.04 Suggestive	**Contraction and laying of brush layers across the slope complete as per drawing and additional Technical specification.**	Sqm	#VALUE!	#VALUE!	#VALUE!
19.05 Suggestive	**Construction of vegetative Palisades in Rills using hard wood cutting complete as per drawing and additional Technical specification.**	RM	#VALUE!	#VALUE!	#VALUE!
19.06 Suggestive	**Laying of Palisades in Slopes complete as per drawing and additional Technical specification.**	Sqm	#VALUE!	#VALUE!	#VALUE!
19.07 Suggestive	**Dust suppression** (Sprinkling of water in the settlement and working area as per instruction of Engineer.)	6 KL	1106.30	1126.80	1147.30
19.08 Suggestive	**Water Quality Monitoring** (Grab Sample as per the monitoring locations mention in the EIA/EMP report or one sample/ 10km length)	No.	#VALUE!	#VALUE!	#VALUE!
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**	No.	#VALUE!	#VALUE!	#VALUE!
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**	No.	#VALUE!	#VALUE!	#VALUE!
19.11 Suggestive	**Ambient Noise Monitoring 24 hour continuous (To be carried out as per the location mention in the EIA/EMP report**	No.	#VALUE!	#VALUE!	#VALUE!

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
19.12 Suggestive	**Consent Approvals (Once)**				
	(i)	No.	#VALUE!	#VALUE!	#VALUE!
	(ii)	No.	#VALUE!	#VALUE!	#VALUE!
19.13 Suggestive	**Compliance submission for Consent Approvals (Half Yearly)**				
	(i)	No.	#VALUE!	#VALUE!	#VALUE!
	(ii)	No.	#VALUE!	#VALUE!	#VALUE!
19.14 Suggestive	**Environmental Clearance Compliance (Half Yearly)**	No.	#VALUE!	#VALUE!	#VALUE!
19.15 Suggestive	**Environmental Workshops (Half Yearly)**	No.	#VALUE!	#VALUE!	#VALUE!
19.16 Suggestive	**Pollution prevention** (Silt fencing on either side of the streams and rivers including erection and maintenance for entire construction phase.)	RM	#VALUE!	#VALUE!	#VALUE!
19.17	**Road Safety Audit during Construction Period & Maintenance Period** (Road Safety Audit during Construction Period & 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, workshop report and Final Safety report complete as per IRC-SP-88 and directed by engineer)				
A	**Upto 50.00 Kilometer**	Km	#VALUE!	#VALUE!	#VALUE!
B	**Between 50.00 Km. to 100.00 Km.**	Km	#VALUE!	#VALUE!	#VALUE!
C	**More than 100 Km.**	Km	#VALUE!	#VALUE!	#VALUE!

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Item No.	Description	Unit	Rate as per project category		
			Large	Medium	Small
19.18	**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)				
A	**Upto 50.00 Kilometer**	Km	#VALUE!	#VALUE!	#VALUE!
B	**Between 50.00 Km. to 100 Km.**	Km	#VALUE!	#VALUE!	#VALUE!
C	**More than 100 Km.**	Km	#VALUE!	#VALUE!	#VALUE!

Analysis of Rate

CHAPTER:19

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
19.01	Suggestive		**Noise Barriers**									
		(i)	**Masonry wall**									
			Unit = cum									
			Taking output= 5 cum									
			a) Material									
			Brick 1st class	each	2500.000	2500.000	2500.000	6.069	15172.50	15172.50	15172.50	M-079
			Cement mortar 1:3 (Rate as sub analysis)	cum	1.200	1.200	1.200	3467.70	4161.24	4161.24	4161.24	21.01(A)
			water for curing	KL	2.415	2.415	2.415	56.20	135.72	135.72	135.72	M-191
			b) Labour									
			Mate	day	0.480	0.480	0.480	325.00	156.00	156.00	156.00	L-12
			Mason	day	4.000	4.000	4.000	369.00	1476.00	1476.00	1476.00	L-10
			Mazdoor	day	8.000	8.000	8.000	306.00	2448.00	2448.00	2448.00	L-13
			c) Machinery									
			Water tanker (speed @ 20km/hr and return speed @ 30km/hr and 30 mins for unloading)									
			(i) 16KL capacity	hour	0.017xL1 +0.101			1121.00	132.28			PM11001
			(ii) 12 KL capacity	hour		0.022xL1 +0.134		947.00		147.73		PM11002
			(iii) 6 KL capacity	hour			0.045xL1 +0.268	707.00			221.29	PM11003
			Total cost without OH & CP						23681.74	23697.20	23770.75	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		1894.54	2369.72	2852.49	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		2557.63	2606.69	2662.32	
			Cost for 5 Cum=a+b+c+d+e						28133.91	28673.61	29285.57	
			Rate per Cum= (a+b+c+d+e)/5						5626.78	5734.72	5857.11	
								Say	**5626.80**	**5734.70**	**5857.10**	
		(ii)	**Galvanized steel plain sheet**									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Unit= sqm									
			Taking output= 100 sqm									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Blacksmith	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-25
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Material									
			Galvanized steel plain sheet (5 mm) including 5% wastage	kg	3.150	3.150	3.150	57.03	179.65	179.65	179.65	M181 /1000
			MS Angle	kg	154.500	154.500	154.500	57.03	8811.60	8811.60	8811.60	M181/1000
			Add 10 percent of cost of (a+b) towards of drilling, nut & bolt etc.						950.13	950.13	950.13	
			Total cost without OH & CP						10451.38	10451.38	10451.38	
			c) Overhead charges on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		836.11	1045.14	1254.17	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		1128.75	1149.65	1170.55	
			Cost for 100 sqm=a+b+c+d						12416.24	12646.17	12876.10	
			Rate per sqm= (a+b+c+d)/100						124.16	126.46	128.76	
								Say	**124.20**	**126.50**	**128.80**	
		Note:	Rate for excavation, cement concrete M-25 and painting may be taken from respective chapters.									
		(iii)	**Acrylic noise barrier sheet**									
			Unit= sqm									
			Taking output= 100 sqm									
			a) Labour									
			Mate	day	0.060	0.060	0.060	325.00	19.50	19.50	19.50	L-12
			Blacksmith	day	0.500	0.500	0.500	369.00	184.50	184.50	184.50	L-25
			Mazdoor	day	1.000	1.000	1.000	306.00	306.00	306.00	306.00	L-13
			b) Material									
			Acrylic noise barrier sheet (3 mm) including 5% wastage	sqm	105.000	105.000	105.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M294

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			MS Angle	kg	154.500	154.500	154.500	57.03	8811.60	8811.60	8811.60	M181/1000
			Add 10 percent of cost of (a+b) towards of drilling, nut & bolt etc.						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			c) Overhead charges on (a+b)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			d) Contractor's profit on (a+b+c)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 100 sqm=a+b+c+d						#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm= (a+b+c+d)/100						#VALUE!	#VALUE!	#VALUE!	
		Note:	Rate for excavation, cement concrete M-25 and painting may be taken from respective chapters.						#VALUE!	#VALUE!	#VALUE!	
19.02	Suggestive		**Construction of bamboo crib wall complete as per drawing and additional Technical specification.**									
			Unit= Rm									
			Taking output= 1 Rm									
			a) Labour									
			Mate	day	0.016	0.016	0.016	325.00	5.20	5.20	5.20	L-12
			Mazdoor skilled	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			Mazdoor	day	0.300	0.300	0.300	306.00	91.80	91.80	91.80	L-13
			b) Machinery						0.00	0.00	0.00	
			Water tanker 6 KL capacity	hour	0.008	0.008	0.008	707.00	5.66	5.66	5.66	PM11003
			c) Materials									
			Bamboos (For Horizontal Beam)	Rm	4.000	4.000	4.000	13.12	52.48	52.48	52.48	M-229
			Live stake stump/ Bamboos (vertical)	Rm	1.500	1.500	1.500	INPUT	#VALUE!	#VALUE!	#VALUE!	M-230
			Live Stake Stump/ Bamboos (Horizontal)	Rm	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-230
			Binding Material	Rm	2.000	2.000	2.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-235
			Cost of water	KL	0.050	0.050	0.050	56.20	2.81	2.81	2.81	M-191
			Grass	Kg	1.500	1.500	1.500	4.96	7.44	7.44	7.44	M-111
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 1 Rm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per Rm= (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
19.03	Suggestive		**Construction of Fascines with a bundle of sticks complete as per drawing and additional Technical specification.**									
			Unit= Rm									
			Taking output= 10 Rm									
			a) Labour									
			Mate	day	0.100	0.100	0.100	325.00	32.50	32.50	32.50	L-12
			Mazdoor skilled	day	0.500	0.500	0.500	388.00	194.00	194.00	194.00	L-15
			Mazdoor	day	2.000	2.000	2.000	306.00	612.00	612.00	612.00	L-13
			b) Machinery									
			Tractor-trolley	hour	1.000	1.000	1.000	629.00	629.00	629.00	629.00	PM12001
			c) Material									
			Hard wood sticks	Nos	8.000	8.000	8.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-231
			Binding Material	Rm	5.000	5.000	5.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-235
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 10 Rm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per Rm= (a+b+c+d+e)/10						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
19.04	Suggestive		**Contraction and laying of brush layers across the slope complete as per drawing and additional Technical specification.**									
			Unit= sqm									
			Taking output= 100 sqm									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor for preparation of ground	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Machinery									
			Water tanker 6KL capacity including watering for 3 months	hour	2.000	2.000	2.000	707.00	1414.00	1414.00	1414.00	PM11003

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Tractor-trolley	hour	0.500	0.500	0.500	629.00	314.50	314.50	314.50	PM12001
			c) Material									
			Live Sods (0.6m length)	Nos.	1000.000	1000.000	1000.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-232
			Farm yard manure @ 0.18 cum per 100 sqm at site of work	cum	0.180	0.180	0.180	278.90	50.20	50.20	50.20	M-168
			Cost of water	KL	12.000	12.000	12.000	56.20	674.40	674.40	674.40	M-191
			Grass	kg	100.000	100.000	100.000	4.96	496.00	496.00	496.00	M-111
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 100 sqm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm = (a+b+c+d+e)/100						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
19.05	Suggestive		**Construction of vegetative Palisades in Rills using hard wood cutting complete as per drawing and additional Technical specification.**									
			Unit= Rm									
			Taking output= 2 Rm									
			a) Labour									
			Mate	day	0.012	0.012	0.012	325.00	3.90	3.90	3.90	L-12
			Mazdoor skilled	day	0.100	0.100	0.100	388.00	38.80	38.80	38.80	L-15
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			b) Machinery									
			Tractor-trolley	hour	0.250	0.250	0.250	629.00	157.25	157.25	157.25	PM12001
			c) Material									
			Horizontal Live Sods (2M Length)	Nos.	2.000	2.000	2.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-233
			Vertical Live Sods (2M Length)	Nos.	40.000	40.000	40.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-233
			Cost of water	KL	0.100	0.100	0.100	56.20	5.62	5.62	5.62	M-191
			Binding Material	Rm	5.000	5.000	5.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-235
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 2 Rm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per Rm= (a+b+c+d+e)/2						#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
									#VALUE!	#VALUE!	#VALUE!	
19.06	Suggestive		**Laying of Palisades in Slopes complete as per drawing and additional Technical specification.**									
			Unit= sqm									
			Taking output= 100 sqm									
			a) Labour									
			Mate	day	0.120	0.120	0.120	325.00	39.00	39.00	39.00	L-12
			Mazdoor for preparation of ground	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
			b) Machinery									
			Water tanker 6KL including watering for 3 months	hour	2.000	2.000	2.000	707.00	1414.00	1414.00	1414.00	PM11003
			Tractor-trolley	hour	0.500	0.500	0.500	629.00	314.50	314.50	314.50	PM12001
			c) Material									
			Live Sods (0.6m length)	Nos.	1000.000	1000.000	1000.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-232
			Farm yard manure @ 0.18 cum per 100 sqm at site of work	cum	0.180	0.180	0.180	278.90	50.20	50.20	50.20	M-168
			Cost of water	KL	12.000	12.000	12.000	56.20	674.40	674.40	674.40	M-191
			Grass	kg	100.000	100.000	100.000	4.96	496.00	496.00	496.00	M-111
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 100 sqm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per sqm = (a+b+c+d+e)/100						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
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									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Mate	day	0.008	0.008	0.008	325.00	2.60	2.60	2.60	L-12
			Mazdoor	day	0.200	0.200	0.200	306.00	61.20	61.20	61.20	L-13
			b) Machinery									
			Water tanker 6 KL capacity	hour	0.750	0.750	0.750	707.00	530.25	530.25	530.25	PM11003
			c) Materials									
			Cost of Water	KL	6.000	6.000	6.000	56.20	337.20	337.20	337.20	M-191
			Total cost without OH & CP						931.25	931.25	931.25	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		74.50	93.13	111.75	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		100.58	102.44	104.30	
			Cost for 6 KL =a+b+c+d+e						1106.33	1126.81	1147.30	
								Say	**1106.30**	**1126.80**	**1147.30**	
19.08	Suggestive		**Water Quality Monitoring**									
			(Grab Sample as per the monitoring locations mention in the EIA/EMP report or one sample/ 10km length)									
			Unit=Number									
			Taking output= One Number									
			a) Cost of Water Quality monitoring	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR46
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
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	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR47
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
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	INPUT	#VALUE!	#VALUE!	#VALUE!	MR48
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
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	INPUT	#VALUE!	#VALUE!	#VALUE!	MR49
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
19.12	Suggestive		**Consent Approvals (Once)**									
			Unit=Number									
			Taking output= One Number									
19.12		**(i)**	a) Consent to Establish (CTE)	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR50
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
19.12		**(ii)**	a) Consent to Operate (CTO)	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR51
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
19.13	Suggestive		**Compliance submission for Consent Approvals (Half Yearly)**									
			Unit=Number									
			Taking output= One Number									
19.13		**(i)**	**a)** compliance submission for Consent to Establish (CTE)	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR52
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
19.13		**(ii)**	**a)** compliance submission for Consent to Operate (CTO)	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR53
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
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	INPUT	#VALUE!	#VALUE!	#VALUE!	MR54
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
19.15	Suggestive		**Environmental Workshops (Half Yearly)**									
			Unit=Number									
			Taking output= One Number									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			a) Cost of Workshop	Nos.	1.000	1.000	1.000	INPUT	#VALUE!	#VALUE!	#VALUE!	MR54
			b) Overhead charges on (a)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			c) Contractor's profit on (a+b)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate per number = a+b+c						#VALUE!	#VALUE!	#VALUE!	
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	0.080	0.080	0.080	325.00	26.00	26.00	26.00	L-12
			Mazdoor	day	2.000	2.000	2.000	306.00	612.00	612.00	612.00	L-13
			b) Machinery									
			Tractor-trolley	hour	2.000	2.000	2.000	629.00	1258.00	1258.00	1258.00	PM12001
			c) Materials									
			Silt Fence Sheet	Sqm	100.000	100.000	100.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M295
			Hard wood sticks	Nos	34.000	34.000	34.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M-231
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Cost for 100 Rm=a+b+c+d+e						#VALUE!	#VALUE!	#VALUE!	
			Rate per Rm= (a+b+c+d+e)/100						#VALUE!	#VALUE!	#VALUE!	
									#VALUE!	#VALUE!	#VALUE!	
19.17	IRC-SP-88		**Road Safety Audit during Construction Period & Maintenance Period**									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Road Safety Audit during Construction Period & 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, workshop report and Final Safety report complete as per IRC-SP-88 and directed by engineer									
			Unit= Kilometer									
19.17		**A**	**Upto 50.00 Kilometer**									
			a) Experts/ key Personnel									
			Sr. Road Safety/ Auditor / Team Leader	Month	4	4	4	INPUT	#VALUE!	#VALUE!	#VALUE!	M312
			Traffic Planner	Month	6	6	6	INPUT	#VALUE!	#VALUE!	#VALUE!	M313
			b) Boarding & Loading									
			Boarding & Loading and Per Diem for Site Visits	Days	90.000	90.000	90.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M314
			Transportation at site and Head Office	No. of Trip	20.000	20.000	20.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M315
			Duty travel to Site	Days	90.000	90.000	90.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M316
			c) Reports and Documents Cost									
			Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M317

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Submission of GAP report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M318
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M319
			Submission of audit report of work zone safely	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M320
			workshop report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M321
			Final safety report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M322
			Add 10 percent of cost of a+b+c as Miscellaneous work						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate for upto 50.00 kilometer = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
19.17		**B**	**Between 50.00 Km. to 100.00 Km.**									
			a) Experts/ key Personnel									
			Sr. Road Safety/ Auditor / Team Leader	Month	6	6	6	INPUT	#VALUE!	#VALUE!	#VALUE!	M312
			Traffic Planner	Month	8	8	8	INPUT	#VALUE!	#VALUE!	#VALUE!	M313
			b) Boarding & Loading									
			Boarding & Loading and Per Diem for Site Visits	Days	126.000	126.000	126.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M314
			Transportation at site and Head Office	No. of Trip	20.000	20.000	20.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M315

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Duty travel to Site	Days	126.000	126.000	126.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M316
			c) Reports and Documents Cost									
			Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M317
			Submission of GAP report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M318
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M319
			Submission of audit report of work zone safely	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M320
			workshop report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M321
			Final safety report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M322
			Add 10 percent of cost of a+b+c as Miscellaneous work						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate for 50.00 to 100.00 kilometer = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
19.17		**C**	**More than 100 Km.**									
			a) Experts/ key Personnel									
			Sr. Road Safety/ Auditor / Team Leader	Month	8	8	8	INPUT	#VALUE!	#VALUE!	#VALUE!	M312
			Traffic Planner	Month	10	10	10	INPUT	#VALUE!	#VALUE!	#VALUE!	M313
			b) Boarding & Loading									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Boarding & Loading and Per Diem for Site Visits	Days	162.000	162.000	162.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M314
			Transportation at site and Head Office	No. of Trip	20.000	20.000	20.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M315
			Duty travel to Site	Days	162.000	162.000	162.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M316
			c) Reports and Documents Cost									
			Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M317
			Submission of GAP report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M318
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M319
			Submission of audit report of work zone safely	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M320
			workshop report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M321
			Final safety report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M322
			Add 10 percent of cost of a+b+c as Miscellaneous work						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate for more than 100.00 kilometer = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
19.18	IRC-SP-88		**Road Safety Audit during Maintenance Period**									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			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									
			Unit= Kilometer									
19.18		**A**	**Upto 50.00 Kilometer**									
			a) Experts/ key Personnel									
			Sr. Road Safety/ Auditor / Team Leader	Month	2	2	2	INPUT	#VALUE!	#VALUE!	#VALUE!	M312
			Traffic Planner	Month	3	3	3	INPUT	#VALUE!	#VALUE!	#VALUE!	M313
			b) Boarding & Loading									
			Boarding & Loading and Per Diem for Site Visits	Days	45.000	45.000	45.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M314
			Transportation at site and Head Office	No. of Trip	20.000	20.000	20.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M315
			Duty travel to Site	Days	45.000	45.000	45.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M316
			c) Reports and Documents Cost									
			Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M317
			Submission of GAP report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M318

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M319
			Submission of audit report of work zone safely	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M320
			workshop report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M321
			Final safety report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M322
			Add 10 percent of cost of a+b+c as Miscellaneous work						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate for upto 50.00 kilometer = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
19.18		**B**	**Between 50.00 Km. to 100 Km.**									
			a) Experts/ key Personnel									
			Sr. Road Safety/ Auditor / Team Leader	Month	3	3	3	INPUT	#VALUE!	#VALUE!	#VALUE!	M312
			Traffic Planner	Month	4	4	4	INPUT	#VALUE!	#VALUE!	#VALUE!	M313
			b) Boarding & Loading									
			Boarding & Loading and Per Diem for Site Visits	Days	45.000	45.000	45.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M314
			Transportation at site and Head Office	No. of Trip	20.000	20.000	20.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M315
			Duty travel to Site	Days	45.000	45.000	45.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M316
			c) Reports and Documents Cost									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M317
			Submission of GAP report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M318
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M319
			Submission of audit report of work zone safety (Maintenance Work)	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M320
			workshop report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M321
			Final safety report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M322
			Add 10 percent of cost of a+b+c as Miscellaneous work						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate for 50.00 to 100.00 kilometer = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	
19.18		**C**	**More than 100 Km.**									
			a) Experts/ key Personnel									
			Sr. Road Safety/ Auditor / Team Leader	Month	4	4	4	INPUT	#VALUE!	#VALUE!	#VALUE!	M312
			Traffic Planner	Month	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M313
			b) Boarding & Loading									
			Boarding & Loading and Per Diem for Site Visits	Days	45.000	45.000	45.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M314
			Transportation at site and Head Office	No. of Trip	20.000	20.000	20.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M315
			Duty travel to Site	Days	45.000	45.000	45.000	INPUT	#VALUE!	#VALUE!	#VALUE!	M316
			c) Reports and Documents Cost									

Analysis of Rate

ENVIRONMENTAL & SAFETY MANAGEMENT AND BIO ENGINEERING

Sl. No	Ref. to M.		Description	Unit	Quantity as per peroject category			Rate	Amount			Input_ Ref
					Large	Medium	Small		Large	Medium	Small	
			Collection of Road accident data and analysis of fatal and grievously injured accident with black spot identification	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M317
			Submission of GAP report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M318
			Road Safety Audit Reports on all activities which were planned, actually executed and planned for the next quarter.	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M319
			Submission of audit report of work zone safety (Maintenance Work)	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M320
			workshop report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M321
			Final safety report	No. of Copies	5	5	5	INPUT	#VALUE!	#VALUE!	#VALUE!	M322
			Add 10 percent of cost of a+b+c as Miscellaneous work						#VALUE!	#VALUE!	#VALUE!	
			Total cost without OH & CP						#VALUE!	#VALUE!	#VALUE!	
			d) Overhead charges on (a+b+c)		(@ 8%)	(@ 10%)	(@ 12%)		#VALUE!	#VALUE!	#VALUE!	
			e) Contractor's profit on (a+b+c+d)		(@ 10%)	(@ 10%)	(@ 10%)		#VALUE!	#VALUE!	#VALUE!	
			Rate for more than 100.00 kilometer = (a+b+c+d+e)						#VALUE!	#VALUE!	#VALUE!	

SUB-ANALYSIS OF CONCRETE/MORTAR RATE (Excluding O.H&C.P)

SUB-ANALYSIS OF CONCRTE/MORTAR RATE(Excluding O.H&C.P)

Sl No.	Ref. to M.	Description	Unit	Rate as per Projet Category		
				Large	Medium	Small
21.01		**(A) Cement Mortar 1:3 (1 cement: 3 sand)**	**cum**	**3467.70**	**3467.70**	**3467.70**
21.01		**(B) Cement Mortar 1:2 (1 cement: 2 sand)**	**cum**	**4253.90**	**4253.90**	**4253.90**
21.01		**(C) Cement Mortar 1:4 (1 cement: 4 sand)**	**cum**	**2943.80**	**2943.80**	**2943.80**
21.01		**(D) Cement Mortar 1:6 (1 cement: 6 sand)**	**cum**	**2451.00**	**2451.00**	**2451.00**
21.02		**PCC 1:3:6 using batching plant**				
		Plain Cement concrete 1:3:6 nominal mix with crushedstone aggregate 40 mm nominal size mechanically mixed	cum	**2644.30**	**2644.30**	**2644.30**
21.03		**Plain/Reinforced cement concrete complete as per Drawing and Technical specefication.**				
		PCC Grade M15 Using Batching Plant	**cum**	**2727.10**	**2727.10**	**2727.10**
21.04		**PCC Grade M20 Using Batching Plant**	cum	3068.40	3068.40	3068.40
21.05		**RCC Grade M20 Using Batching Plant**	cum	3052.80	3052.80	3052.80
21.06		**PCC Grade M25 Using Batching Plant**	cum	3356.30	3356.30	3356.30
21.07		**RCC Grade M25 Using Batching Plant**	cum	3516.00	3516.00	3516.00
21.08		**PCC Grade M30 Using Batching Plant**	cum	3384.30	3384.30	3384.30
21.09		**RCC Grade M30 Using Batching Plant**	cum	3623.00	3623.00	3623.00
21.10		**PCC Grade M35 Using Batching Plant**	cum	3694.90	3694.90	3694.90
21.11		**RCC GradeM35 Using Batching plant**	**cum**	**3803.00**	**3803.00**	**3803.00**
21.12		**RCC Grade M40 Using Batching Plant**	cum	4220.90	4220.90	4220.90
21.13		**RCC Grade M45 Using Batching Plant**	cum	4405.60	4405.60	4405.60
21.14		**RCC Grade M50 Using Batching Plant**	cum	4822.90	4822.90	4822.90
21.15		**RCC Grade M55 Using Batching Plant**	cum	4905.80	4905.80	4905.80
21.16		**RCC Grade M60 Using Batching Plant**	cum	5071.90	5071.90	5071.90
21.17		**RCC Grade M65 Using Batching Plant**	cum	5114.80	5114.80	5114.80
21.18	**601**	**A DLC Using Batching Plant -240 cum capacity Plant**	cum	1930.70	1930.70	1930.70
21.18	**601**	**B Dry Lean Concrete Sub -base Fly ash (Using Batching Plant) -240 cum capacity Plant**	cum	#VALUE!	#VALUE!	#VALUE!
21.18	**601**	**C DLC Using Batching Plant -120 cum capacity Plant**	cum	1956.30	1956.30	1956.30
21.18	**601**	**D Dry Lean Concrete Sub -base Fly ash (Using Batching Plant) -120 cum capacity Plant**	cum	#VALUE!	#VALUE!	#VALUE!
21.19	**602**	**A PQC M 35 grade Using Batching Plant-240 cum capacity plant**	cum	3663.80	3663.80	3663.80
21.19	**602**	**B PQC M 35 grade Using Batching Plant-240 cum capacity(Cement-Fly ash)**	cum	#VALUE!	#VALUE!	#VALUE!
21.19	**602**	**C PQC M 35 grade Using Batching Plant-120 cum capacity**	cum	3699.80	3699.80	3699.80
21.19	**602**	**D PQC M 35 grade Using Batching Plant-120 cum capacity(Cement-Fly ash)**	cum	#VALUE!	#VALUE!	#VALUE!
21.20	**409**	**PCC Grade M15 grade Using Batching Plant for Kerb**	cum	2727.10	2727.10	2727.10
21.21	**409**	**PCC Grade M20 grade Using Batching Plant for Kerb**	cum	3068.40	3068.40	3068.40
21.22		**Cost of water**	KL	56.20	56.20	56.20

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
21.01		**(A) Cement Mortar 1:3 (1 cement: 3 sand)**									
		Unit =cum									
		Taking output =1 cum									
		a) Materials									
		Cement	tonne	0.510	0.510	0.510	5156.00	2629.56	2629.56	2629.56	M-081
		coarse sand	cum	1.050	1.050	1.050	494.00	518.70	518.70	518.70	M-005*
		Cost of water	KL	0.255	0.255	0.255	56.20	14.33	14.33	14.33	M-191
		b) Labour									
		Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
		Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
		c)Machinery									
		Water tanker 12 KL capacity (speed @20 km /hr and return speed @ 30 km / hr and 30 mins for unloading)	hour	0.019	0.019	0.019	947.00	17.99	17.99	17.99	PM11002
		Rate per cum= (a+b+c)						3467.68	3467.68	3467.68	
								3467.70	**3467.70**	**3467.70**	
21.01		**(B) Cement Mortar 1:2 (1 cement: 2 sand)**									
		Unit =cum									
		Taking output =1 cum									
		a) Materials									
		Cement	tonne	0.672	0.672	0.672	5156.00	3464.83	3464.83	3464.83	M-081
		coarse sand	cum	0.930	0.930	0.930	494.00	459.42	459.42	459.42	M-005*
		Cost of water	KL	0.336	0.336	0.336	56.20	18.88	18.88	18.88	M-191
		b) Labour									
		Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
		Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
		c) Machinery									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Water tanker 12 KL capacity (speed @20 km / hr and return speed @ 30 km / hr and 30 mins for unloading)	hour	0.025	0.025	0.025	947.00	23.68	23.68	23.68	PM11002
		Rate per cum= (a+b+c)						4253.91	4253.91	4253.91	
							say	**4253.90**	**4253.90**	**4253.90**	
21.01		**(C) Cement Mortar 1:4 (1 cement: 4 sand)**									
		Unit =cum									
		Taking output =1 cum									
		a) Materials									
		Cement	tonne	0.403	0.403	0.403	5156.00	2077.87	2077.87	2077.87	M-081
		coarse sand	cum	1.120	1.120	1.120	494.00	553.28	553.28	553.28	M-005*
		Cost of water	KL	0.202	0.202	0.202	56.20	11.35	11.35	11.35	M-191
		b) Labour									
		Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
		Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
		c)Machinery									
		Water tanker 12 KL capacity (speed @20 km / hr and return speed @ 30 km /hr and 30 mins for unloading)	hour	0.015	0.015	0.015	947.00	14.21	14.21	14.21	PM11002
		Rate per cum= (a+b+c)						2943.81	2943.81	2943.81	
							say	**2943.80**	**2943.80**	**2943.80**	
21.01		**(D) Cement Mortar 1:6 (1 cement: 6 sand)**									
		Unit =cum									
		Taking output =1 cum									
		a) Materials									
		Cement	tonne	0.288	0.288	0.288	5156.00	1484.93	1484.93	1484.93	M-081
		coarse sand	cum	1.337	1.337	1.337	494.00	660.48	660.48	660.48	M-005*
		Cost of water	KL	0.144	0.144	0.144	56.20	8.09	8.09	8.09	M-191
		b) Labour									
		Mate	day	0.036	0.036	0.036	325.00	11.70	11.70	11.70	L-12
		Mazdoor	day	0.900	0.900	0.900	306.00	275.40	275.40	275.40	L-13
		c)Machinery									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Water tanker 12 KL capacity (speed @20 km / hr and return speed @ 30 km /hr and 30 mins for unloading)	hour	0.011	0.011	0.011	947.00	10.42	10.42	10.42	PM11002
		Rate per cum= (a+b+c)						2451.02	2451.02	2451.02	
							Say	**2451.00**	**2451.00**	**2451.00**	
21.02		**PCC 1:3:6 using batching plant**									
		Plain Cement concrete 1:3:6 nominal mix with crushedstone aggregate 40 mm nominal size mechanically mixed									
		Unit =cum									
		Taking output =15 cum									
		a) Labour									
		Mate	day	0.320	0.320	0.320	325.00	104.00	104.00	104.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	7.000	7.000	7.000	306.00	2142.00	2142.00	2142.00	L-13
		b) Materials									
		40 mm Aggregate	cum	13.500	13.500	13.500	975.00	13162.50	13162.50	13162.50	M-054
		coarse sand	cum	6.750	6.750	6.750	494.00	3334.5	3334.5	3334.5	M-005*
		Cement	tonne	3.450	3.450	3.450	5156.00	17788.2	17788.2	17788.2	M-081
		Cost of water	KL	1.380	1.380	1.380	56.20	77.56	77.56	77.56	M-191
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	0.167	0.167	0.167	3635.00	607.05	607.05	607.05	PM19002
		Generator 250 KVA	hour	0.167	0.167	0.167	3034.00	506.68	506.68	506.68	PM22004
		Loader 3.1cum capacity	hour	0.362	0.362	0.362	3433.00	1242.75	1242.75	1242.75	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	0.167	0.167	0.167	1860.00	310.62	310.62	310.62	PM34001
								39663.85	39663.85	39663.85	
		Rate per cum= (a+b+c) /15						2644.26	2644.26	2644.26	
							Say	**2644.30**	**2644.30**	**2644.30**	
	Note	Vibrator is part of minor T& P which is already included in overhead charges of the contractor.									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
21.03		**Plain/Reinforced cement concrete complete as per Drawing and Technical specefication.**									
		PCC Grade M15Using Batching Plant									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	99.000	99.000	99.000	5156.00	510444.00	510444.00	510444.00	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		40 mm Aggregate	cum	194.400	194.400	194.400	975.00	189540.00	189540.00	189540.00	M-054
		20 mm Aggregate	cum	97.200	97.200	97.200	1186.00	115279.20	115279.20	115279.20	M-052
		10 mm Aggregate	cum	32.400	32.400	32.400	586.00	18986.40	18986.40	18986.40	M-050
		Cost of water (Water /cement Ratio-0.4)	KL	39.600	39.600	39.600	56.20	2225.52	2225.52	2225.52	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								981772.13	981772.13	981772.13	
		Per cum Basic cost of Labour, Material & Machinery (a+b+c)/360						2727.14	2727.14	2727.14	
							say	**2727.10**	**2727.10**	**2727.10**	
21.04		**PCC Grade M20 Using Batching Plant**									
		Unit = cum									
		Taking output = 360 cum									
		a) Materials									
		Cement	tonne	123.840	123.840	123.840	5156.00	638519.04	638519.04	638519.04	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028	80028	80028	M-005*
		40 mm Aggregate	cum	129.600	129.600	129.600	975.00	126360	126360	126360	M-054
		20 mm Aggregate	cum	129.600	129.600	129.600	1186.00	153705.6	153705.6	153705.6	M-052

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		10 mm Aggregate	cum	64.800	64.800	64.800	586.00	37972.8	37972.8	37972.8	M-050
		Cost of water (Water /cement Ratio-0.4)	KL	49.536	49.536	49.536	56.20	2783.9232	2783.9232	2783.9232	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1104638.4	1104638.37	1104638.4	
		Per cum Basic cost of Labour, Material & Machinery (a+b+c)/360						**3068.44**	**3068.44**	**3068.44**	
							Say	**3068.40**	**3068.40**	**3068.40**	
21.05		**RCC Grade M20 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	124.980	124.980	124.980	5156.00	644396.88	644396.88	644396.88	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Cost of water	KL	49.952	49.952	49.952	56.20	2807.30	2807.30	2807.30	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.0	29795.01	29795.01	29795.01	PM5001

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1099005.19	1099005.19	1099005.19	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						3052.79	3052.79	3052.79	
							say	**3052.80**	**3052.80**	**3052.80**	
21.06		**PCC Grade M25 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	143.850	143.850	143.850	5156.00	741690.60	741690.60	741690.60	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		40 mm Aggregate	cum	129.600	129.600	129.600	975.00	126360.00	126360.00	126360.00	M-054
		20 mm Aggregate	cum	129.600	129.600	129.600	1186.00	153705.60	153705.60	153705.60	M-052
		10 mm Aggregate	cum	64.800	64.800	64.800	586.00	37972.80	37972.80	37972.80	M-050
		Cost of water	KL	57.540	57.540	57.540	56.20	3233.75	3233.75	3233.75	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1208259.76	1208259.76	1208259.8	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						3356.28	3356.28	3356.28	
							say	**3356.30**	**3356.30**	**3356.30**	
21.07		**RCC Grade M25 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Cement	tonne	145.140	145.140	145.140	5156.00	748341.84	748341.84	748341.84	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture @ 0.2% of cement	kg	290.280	290.280	290.280	214.86	62369.56	62369.56	62369.56	M-182
		Cost of water	KL	58.056	58.056	58.056	56.20	3262.75	3262.75	3262.75	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						1265775.16	1265775.16	1265775.16	
								3516.04	3516.04	3516.04	
							say	**3516.00**	**3516.00**	**3516.00**	
21.08		**PCC Grade M30 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	145.800	145.800	145.800	5156.00	751744.80	751744.80	751744.80	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		40 mm Aggregate	cum	129.600	129.600	129.600	975.00	126360.00	126360.00	126360.00	M-054
		20 mm Aggregate	cum	129.600	129.600	129.600	1186.00	153705.60	153705.60	153705.60	M-052
		10 mm Aggregate	cum	64.800	64.800	64.800	586.00	37972.80	37972.80	37972.80	M-050
		Cost of water	KL	58.320	58.320	58.320	56.20	3277.58	3277.58	3277.58	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1218357.79	1218357.79	1218357.79	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						3384.33	3384.33	3384.33	
							say	**3384.30**	**3384.30**	**3384.30**	
21.09		**RCC Grade M30 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	146.400	146.400	146.400	5156.00	754838.4	754838.4	754838.4	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028	80028	80028	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.4	230558.4	230558.4	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.6	75945.6	75945.6	M-050
		Admixture **@ 0.3**% of cement	kg	439.200	439.200	439.200	214.86	94366.512	94366.512	94366.512	M-182
		Cost of water	KL	58.560	58.560	58.560	56.20	3291.072	3291.072	3291.072	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1304296.99	1304296.99	1304296.99	

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						3623.05	3623.05	3623.05	
							say	**3623.00**	**3623.00**	**3623.00**	
21.10		**PCC Grade M35 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	150.840	150.840	150.840	5156.00	777731.04	777731.04	777731.04	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028	80028	80028	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.4	230558.4	230558.4	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.6	75945.6	75945.6	M-050
		Admixture **@ 0.3**% of cement	kg	452.520	452.520	452.520	214.86	97228.447	97228.4472	97228.447	M-182
		Cost of water	KL	60.336	60.336	60.336	56.20	3390.8832	3390.8832	3390.8832	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1330151.38	1330151.38	1330151.38	
		Per cum Basic cost of						3694.86	3694.86	3694.86	
		Labour,Material&Machinery(a+b+c)/360					**say**	**3694.90**	**3694.90**	**3694.90**	
21.11		**RCC GradeM35 Using Batching plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	151.920	151.920	151.920	5156.00	783299.52	783299.52	783299.52	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture @ **0.4**% of cement	kg	607.680	607.680	607.680	214.86	130566.12	130566.12	130566.12	M-182
		Cost of water	KL	60.768	60.768	60.768	56.20	3415.16	3415.16	3415.16	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1369081.81	1369081.81	1369081.81	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						3803.01	3803.01	3803.01	
							say	**3803.00**	**3803.00**	**3803.00**	
21.12		**RCC Grade M40 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	154.800	154.800	154.800	5156.00	798148.80	798148.80	798148.80	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture @ **0.8**% of cement	kg	1238.400	1238.400	1238.400	214.86	266082.62	266082.62	266082.62	M-182
		Cost of water	KL	61.920	61.920	61.920	56.20	3479.90	3479.90	3479.90	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /cum	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1519512.34	1519512.34	1519512.34	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						4220.87	4220.87	4220.87	
							say	**4220.90**	**4220.90**	**4220.90**	
21.13		**RCC Grade M45 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	154.800	154.800	154.800	5156.00	798148.80	798148.80	798148.80	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture @ 1 % of cement	kg	1548.000	1548.000	1548.000	214.86	332603.28	332603.28	332603.28	M-182
		Cost of water	KL	61.920	61.920	61.920	56.20	3479.90	3479.90	3479.90	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1586032.99	1586032.99	1586032.99	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						4405.65	4405.65	4405.65	
							say	**4405.60**	**4405.60**	**4405.60**	
21.14		**RCC Grade M50 Using Batching Plant**									
		Unit= cum									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Taking output = 360 cum									
		a) Materials									
		Cement	tonne	154.800	154.800	154.800	5156.00	798148.80	798148.80	798148.80	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture **@ 0.8** % of cement	kg	1238.400	1238.400	1238.400	214.86	266082.62	266082.62	266082.62	M-182
		Silica Fume @ 5% of cement	kg	7740.000	7740.000	7740.000	28.00	216720.00	216720.00	216720.00	M-199
		Cost of water	KL	61.920	61.920	61.920	56.20	3479.90	3479.90	3479.90	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1736232.34	1736232.34	1736232.34	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						4822.87	4822.87	4822.87	
							say	**4822.90**	**4822.90**	**4822.90**	
21.15		**RCC Grade M55 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	158.400	158.400	158.400	5156.00	816710.40	816710.40	816710.40	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture **@ 1** % of cement	kg	1267.200	1267.200	1267.200	214.86	272270.59	272270.59	272270.59	M-182
		Silica Fume @ 5% of cement	kg	7920.000	7920.000	7920.000	28.00	221760.00	221760.00	221760.00	M-199
		Cost of water	KL	63.360	63.360	63.360	56.20	3560.83	3560.83	3560.83	M-191

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1766102.83	1766102.83	1766102.83	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						4905.84	4905.84	4905.84	
							say	**4905.80**	**4905.80**	**4905.80**	
21.16		**RCC Grade M60 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	160.200	160.200	160.200	5156.00	825991.20	825991.20	825991.20	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture **@ 1** % of cement	kg	1281.600	1281.600	1281.600	214.86	275364.58	275364.58	275364.58	M-182
		Silica Fume @ 5% of cement	kg	9612.000	9612.000	9612.000	28.00	269136.00	269136.00	269136.00	M-199
		Cost of water	KL	64.080	64.080	64.080	56.20	3601.30	3601.30	3601.30	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1825894.08	1825894.08	1825894.08	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						5071.93	5071.93	5071.93	
							say	**5071.90**	**5071.90**	**5071.90**	
21.17		**RCC Grade M65 Using Batching Plant**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	162.000	162.000	162.000	5156.00	835272.00	835272.00	835272.00	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		20 mm Aggregate	cum	194.400	194.400	194.400	1186.00	230558.40	230558.40	230558.40	M-052
		10 mm Aggregate	cum	129.600	129.600	129.600	586.00	75945.60	75945.60	75945.60	M-050
		Admixture @ 1 % of cement	kg	1296.000	1296.000	1296.000	214.86	278458.56	278458.56	278458.56	M-182
		Silica Fume @ 5% of cement	kg	9720.000	9720.000	9720.000	28.00	272160.00	272160.00	272160.00	M-199
		Cost of water	KL	64.800	64.800	64.800	56.20	3641.76	3641.76	3641.76	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1841333.33	1841333.33	1841333.33	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						5114.81	5114.81	5114.81	
							say	**5114.80**	**5114.80**	**5114.80**	
21.18	**601**	**A DLC Using Batching Plant -240 cum capacity Plant**									
		Unit= cum									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Taking output= 450 cum									
		a) Materials									
		Cement @150 kg /cum of concrete	tonne	67.500	67.500	67.500	5156.00	348030.00	348030.00	348030.00	M-081
		coarse sand as per IS: 383 @0.45 cum /cum of concrete	cum	202.500	202.500	202.500	494.00	100035.00	100035.00	100035.00	M-005*
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table600-1@0.90cum/cum of concrete confirming to clause602.2.6	cum	405.000	405.000	405.000	886.00	358830.00	358830.00	358830.00	M-045
		Cost of water(Water /cement Ratio -0.4)	KL	27.000	27.000	27.000	56.20	1517.40	1517.40	1517.40	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 240 cum /hour	hour	2.500	2.500	2.500	5681.00	14202.50	14202.50	14202.50	PM19001
		Generator 250 KVA	hour	2.500	2.500	2.500	3034.00	7585.00	7585.00	7585.00	PM22004
		Loader 3.1cum capacity	hour	10.848	10.848	10.848	3433.00	37241.18	37241.18	37241.18	PM5001
								868799.08	868799.084	868799.08	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/450						1930.66	1930.66	1930.66	
							say	**1930.70**	**1930.70**	**1930.70**	
21.18	**601**	**B Dry Lean Concrete Sub -base Fly ash (Using Batching Plant) -240 cum capacity Plant**									
		Unit= cum									
		Taking output= 450 cum									
		a) Materials									
		Cement @129 kg /cum of concrete	tonne	57.860	57.860	57.860	5156.00	298326.16	298326.16	298326.16	M-081
		coarse sand as per IS: 383 @0.45 cum /cum of concrete	cum	202.500	202.500	202.500	494.00	100035.00	100035.00	100035.00	M-005*

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table600-1@0.90cum/cum of concrete confirming to clause602.2.6	cum	405.000	405.000	405.000	886.00	358830.00	358830.00	358830.00	M-045
		Fly ash conforming to IS:3812-1966 (Part -I)	cum	9.640	9.640	9.640	Nil	#VALUE!	#VALUE!	#VALUE!	M-010
		Cost of water(Water /cement Ratio -0.4)	KL	23.144	23.144	23.144	56.20	1300.69	1300.69	1300.69	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 240 cum /hour	hour	2.500	2.500	2.500	5681.00	14202.50	14202.50	14202.50	PM19001
		Generator 250 KVA	hour	2.500	2.500	2.500	3034.00	7585.00	7585.00	7585.00	PM22004
		Loader 3.1cum capacity	hour	10.848	10.848	10.848	3433.00	37241.18	37241.18	37241.18	PM5001
								#VALUE!	#VALUE!	#VALUE!	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/450						#VALUE!	#VALUE!	#VALUE!	
							say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
	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= 450x150 =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 =13.50x specific gravity of fly ash /specific gravity of cement =13.50x 2.25/3.15 =9.64 tonnes									
21.18	**601**	**C DLC Using Batching Plant -120 cum capacity Plant**									
		Unit= cum									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Taking output= 450 cum									
		a) Materials									
		Cement @150 kg /cum of concrete	tonne	67.500	67.500	67.500	5156.00	348030.00	348030.00	348030.00	M-081
		coarse sand as per IS: 383 @0.45 cum /cum of concrete	cum	202.500	202.500	202.500	494.00	100035.00	100035.00	100035.00	M-005*
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table600-1@0.90 cum/cum of concrete confirming to clause602.2.6	cum	405.000	405.000	405.000	886.00	358830.00	358830.00	358830.00	M-045
		Cost of water(Water /cement Ratio -0.4)	KL	27.000	27.000	27.000	56.20	1517.40	1517.40	1517.40	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	5.000	5.000	5.000	3635.00	18175.00	18175.00	18175.00	PM19002
		Generator 250 KVA	hour	5.000	5.000	5.000	3034.00	15170.00	15170.00	15170.00	PM22004
		Loader 3.1cum capacity	hour	10.848	10.848	10.848	3433.00	37241.18	37241.18	37241.18	PM5001
								880356.58	880356.584	880356.58	
		Per cum Basic cost of						1956.35	1956.35	1956.35	
		Labour,Material&Machinery(a+b+c)/450					**say**	**1956.30**	**1956.30**	**1956.30**	
21.18	**601**	**D Dry Lean Concrete Sub -base Fly ash (Using Batching Plant) -120 cum capacity Plant**									
		Unit= cum									
		Taking output= 450 cum									
		a) Materials									
		Cement @150 kg /cum of concrete	tonne	57.860	57.860	57.860	5156.00	298326.16	298326.16	298326.16	M-081
		coarse sand as per IS: 383 @0.45 cum /cum of concrete	cum	202.500	202.500	202.500	494.00	100035.00	100035.00	100035.00	M-005*
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table600-1@0.90 cum/cum of concrete confirming to clause 602.2.6	cum	405.000	405.000	405.000	886.00	358830.00	358830.00	358830.00	M-045
		Fly ash conforming to IS:3812-1966 (Part -I)	cum	9.640	9.640	9.640	Nil	#VALUE!	#VALUE!	#VALUE!	M-010

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Cost of water(Water /cement Ratio -0.4)	KL	23.144	23.144	23.144	56.20	1300.69	1300.69	1300.69	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	5.000	5.000	5.000	3635.00	18175.00	18175.00	18175.00	PM19002
		Generator 250 KVA	hour	5.000	5.000	5.000	3034.00	15170.00	15170.00	15170.00	PM22004
		Loader 3.1cum capacity	hour	10.848	10.848	10.848	3433.00	37241.18	37241.18	37241.18	PM5001
								#VALUE!	#VALUE!	#VALUE!	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/450						#VALUE!	#VALUE!	#VALUE!	
							say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
	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 450x150 =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 =13.50x specific gravity of fly ash /specific gravity of cement =13.50x 2.25/3.15 =9.64 tonnes									
21.19	**602**	**A PQC M 35 grade Using Batching Plant-240 cum capacity plant**									
		Unit= cum									
		Taking output= 900 cum									
		a) Materials									
		Cement @4000 kg /cum of concrete	tonne	360.000	360.000	360.000	5156.00	1856160.00	1856160.00	1856160.00	M-081
		coarse sand as per IS: 383 and confirming to clause 602.2.4 @0.45 cum /cum of concrete	cum	405.000	405.000	405.000	494.00	200070.00	200070.00	200070.00	M-005*

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal size @0.90 cum/cum of concrete confirming to clause 602.2.4	cum	810.000	810.000	810.000	886.00	717660.00	717660.00	717660.00	M-045
		Admixture @ 0.5% of cement	kg	1800.000	1800.000	1800.000	214.86	386748.00	386748.00	386748.00	M-182
		Cost of water	KL	144.000	144.000	144.000	56.20	8092.80	8092.80	8092.80	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 240 cum /hour	hour	5.000	5.000	5.000	5681.00	28405.00	28405.00	28405.00	PM19001
		Generator 250 KVA	hour	5.000	5.000	5.000	3034.00	15170.00	15170.00	15170.00	PM22004
		Loader 3.1cum capacity	hour	21.696	21.696	21.696	3433.00	74482.37	74482.37	74482.37	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	5.000	5.000	5.000	1860.00	9300.00	9300.00	9300.00	PM34001
								3297446.17	3297446.17	3297446.17	
								3663.83	3663.83	3663.83	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/900					**say**	**3663.80**	**3663.80**	**3663.80**	
21.19	**602**	**B PQC M 35 grade Using Batching Plant-240 cum capacity(Cement-Fly ash)**									
		Unit= cum									
		Taking output= 900 cum									
		a) Material									
		Cement	tonne	306.000	306.000	306.000	5156.00	1577736	1577736	1577736	M-081
		Fly ash confirming to IS 3812(Part-I)	tonne	93.000	93.000	93.000	Nil	#VALUE!	#VALUE!	#VALUE!	M-010
		coarse sand	cum	364.500	364.500	364.500	494.00	180063	180063	180063	M-005*
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal size @0.90 cum/cum of concrete confirming to clause 602.2.4	cum	810.000	810.000	810.000	886.00	717660	717660	717660	M-045
		Admixture @ 0.5% of cement	kg	1530.000	1530.000	1530.000	214.86	328735.8	328735.8	328735.8	M-182

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Cost of water	KL	122.400	122.400	122.400	56.20	6878.88	6878.88	6878.88	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 240 cum /hour	hour	5.000	5.000	5.000	5681.00	28405.00	28405.00	28405.00	PM19001
		Generator 250 KVA	hour	5.000	5.000	5.000	3034.00	15170.00	15170.00	15170.00	PM22004
		Loader 3.1cum capacity	hour	20.973	20.973	20.973	3433.00	72000.31	72000.31	72000.31	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	5.000	5.000	5.000	1860.00	9300.00	9300.00	9300.00	PM34001
								#VALUE!	#VALUE!	#VALUE!	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/900						#VALUE!	#VALUE!	#VALUE!	
							say	**#VALUE!**	**#VALUE!**	**#VALUE!**	
	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 refferred for guidelines on the design of cement-fly ash concrete rigid pavement construction.									
		***Calculation of cement and fly ash**									
		Cement @ 400 kg /cum= 900x 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 =54.000x specific gravity of fly ash /specificgravity of cement =54.00x 2.25/3.15 =38.571 tonnes.									
		Sand @0.45 cum /of concrete =900x0.45 =405x1.6 =648 tonnes.10 percent to be replaced by Fly ash									
		Balanced sand = 648x0.9=583.2 tonnes=583.2/1.6=364.5cum									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Quantity of fly ash =(648-583.2) x specific gravity of fly ash /specificgravity of sand=64.8 x 2.687 =54.26 tonnes.									
		Total fly ash=38.571+54.26=92.831 tonnes.(Say 93 toones)									
21.19	**602**	**C PQC M 35 grade Using Batching Plant-120 cum capacity**									
		Unit= cum									
		Taking output= 900 cum									
		a) Materials									
		Cement @4000 kg /cum of concrete	tonne	360.000	360.000	360.000	5156.00	1856160.00	1856160.00	1856160.00	M-081
		coarse sand as per IS: 383 and confirming to clause602.2.4 @0.45 cum /cum of concrete	cum	405.000	405.000	405.000	494.00	200070.00	200070.00	200070.00	M-005*
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal size @0.90 cum/cum of concrete confirming to clause 602.2.4	cum	810.000	810.000	810.000	886.00	717660.00	717660.00	717660.00	M-045
		Admixture @ 0.5% of cement	kg	1800.000	1800.000	1800.000	214.86	386748.00	386748.00	386748.00	M-182
		Cost of water	KL	144.000	144.000	144.000	56.20	8092.80	8092.80	8092.80	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	10.000	10.000	10.000	3635.00	36350.00	36350.00	36350.00	PM19002
		Generator 250 KVA	hour	10.000	10.000	10.000	3034.00	30340.00	30340.00	30340.00	PM22004
		Loader 3.1cum capacity	hour	21.696	21.696	21.696	3433.00	74482.37	74482.37	74482.37	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	10.000	10.000	10.000	1860.00	18600.00	18600.00	18600.00	PM34001
								3329861.17	3329861.17	3329861.17	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/900						3699.85	3699.85	3699.85	
							say	**3699.80**	**3699.80**	**3699.80**	

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
21.19	602	**D PQC M 35 grade Using Batching Plant-120 cum capacity(Cement-Fly ash)**									
		Unit= cum									
		Taking output= 900 cum									
		a) Materials									
		Cement	tonne	306.000	306.000	306.000	5156.00	1577736.00	1577736.00	1577736.00	M-081
		Fly ash confirming to IS :3812(Part-I)	tonne	93.000	93.000	93.000	Nil	#VALUE!	#VALUE!	#VALUE!	M-010
		coarse sand	cum	364.500	364.500	364.500	494.00	180063.00	180063.00	180063.00	M-005*
		Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal size @0.90 cum/cum of concrete confirming to clause 602.2.4	cum	810.000	810.000	810.000	886.00	717660.00	717660.00	717660.00	M-045
		Admixture @ 0.4% of cement	kg	1224.000	1224.000	1224.000	214.86	262988.64	262988.64	262988.64	M-182
		Cost of water	KL	122.400	122.400	122.400	56.20	6878.88	6878.88	6878.88	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	10.000	10.000	10.000	3635.00	36350.00	36350.00	36350.00	PM19002
		Generator 250 KVA	hour	10.000	10.000	10.000	3034.00	30340.00	30340.00	30340.00	PM22004
		Loader 3.1cum capacity	hour	20.973	20.973	20.973	3433.00	72000.31	72000.31	72000.31	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	10.000	10.000	10.000	1860.00	18600.00	18600.00	18600.00	PM34001
								#VALUE!	#VALUE!	#VALUE!	
		Per cum Basic cost of						#VALUE!	#VALUE!	#VALUE!	
		Labour,Material&Machinery(a+b+c)/900					**say**	**#VALUE!**	**#VALUE!**	**#VALUE!**	
	Note	1.The quantities for cement ,coarse aggregate and fine aggregate are for estimating only. The exact quantities will be as per mix design.									
		2.IRC: 68 may be refferred for guidelines on the design of cement -fly ash concrete for rigid pavement construction.									
		***Calculation of cement and fly ash**									
		Cement @ 400 kg /cum= 900x 400 =360 tonnes.									
		15 percent of cement to be replaced by fly ash =54.0 tonnes.									
		Balance cement =306.00 tonnes.									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Quantity of fly ash =54.000x specific gravity of fly ash /specific gravity of cement =54.000x 2.25/3.15 =38.571 tonnes.									
		Sand @0.45 cum /cum of concrete =900x0.45 =405x1.6 =648 tonnes.									
		10 percent to be replaced by Fly ash.									
		Balance sand = 648x0.9=583.2. tonnes =583.2/1.6 =364.5 cum.									
		Quantity of fly ash =(648-583.2)x specific gravity of fly ash /specfic gravity of sand =64.8x2.25/2.687=54.26 tonnes									
		Total fly ash =38.571+54.26= 92.831 tonnes.(Say 93tonnes)									
21.20	**409**	**PCC Grade M15 grade Using Batching Plant for Kerb**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	99.000	99.000	99.000	5156.00	510444.00	510444.00	510444.00	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		40 mm Aggregate	cum	194.400	194.400	194.400	975.00	189540.00	189540.00	189540.00	M-054
		20 mm Aggregate	cum	97.200	97.200	97.200	1186.00	115279.20	115279.20	115279.20	M-052
		10 mm Aggregate	cum	32.400	32.400	32.400	586.00	18986.40	18986.40	18986.40	M-050
		Cost of water (Water /cement Ratio-0.4)	KL	39.600	39.600	39.600	56.20	2225.52	2225.52	2225.52	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /hour	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								981772.13	981772.13	981772.13	
		Per cum Basic cost of Labour,Material&Machinery(a+b+c)/360						2727.14	2727.14	2727.14	
							say	**2727.10**	**2727.10**	**2727.10**	
21.21	**409**	**PCC Grade M20 grade Using Batching Plant for Kerb**									
		Unit= cum									
		Taking output= 360 cum									
		a) Materials									
		Cement	tonne	123.840	123.840	123.840	5156.00	638519.04	638519.04	638519.04	M-081
		coarse sand	cum	162.000	162.000	162.000	494.00	80028.00	80028.00	80028.00	M-005*
		40 mm Aggregate	cum	129.600	129.600	129.600	975.00	126360.00	126360.00	126360.00	M-054
		20 mm Aggregate	cum	129.600	129.600	129.600	1186.00	153705.60	153705.60	153705.60	M-052
		10 mm Aggregate	cum	64.800	64.800	64.800	586.00	37972.80	37972.80	37972.80	M-050
		Cost of water (Water /cement Ratio-0.4)	KL	49.536	49.536	49.536	56.20	2783.92	2783.92	2783.92	M-191
		b) Labour									
		Mate	day	0.160	0.160	0.160	325.00	52.00	52.00	52.00	L-12
		Skilled Mazdoor	day	1.000	1.000	1.000	388.00	388.00	388.00	388.00	L-15
		Mazdoor	day	3.000	3.000	3.000	306.00	918.00	918.00	918.00	L-13
		c) Machinery									
		Batching plant of capacity 120 cum /cum	hour	4.000	4.000	4.000	3635.00	14540.00	14540.00	14540.00	PM19002
		Generator 250 KVA	hour	4.000	4.000	4.000	3034.00	12136.00	12136.00	12136.00	PM22004
		Loader 3.1cum capacity	hour	8.679	8.679	8.679	3433.00	29795.01	29795.01	29795.01	PM5001
		Transit truck agitator									
		For loading & unloading time	hour	4.000	4.000	4.000	1860.00	7440.00	7440.00	7440.00	PM34001
								1104638.37	1104638.37	1104638.37	
		Per cum Basic cost of						3068.44	3068.44	3068.44	
		Labour,Material&Machinery(a+b+c)/360					**say**	**3068.40**	**3068.40**	**3068.40**	
21.22		**Cost of water**									
		Unit =KL									
		Taking output= 12 KL									
		a) Labour									

Analysis of Rate

SUB-ANALYSIS OF CONCERTE /MORTAR RATE

Sr. No	Ref. to M.	Description	Unit	Quantity as per project category			Rate (Rs.)	Amount			Remarks
				Large	Medium	Small		Large	Medium	Small	
		Mate	day	0.005	0.005	0.005	325.00	1.63	1.63	1.63	L-12
		Mazdoor	day	0.133	0.133	0.133	306.00	40.70	40.70	40.70	L-13
		b) Machinery									
		Centrifugal water pump (600LMP)	hour	0.533	0.533	0.533	240.00	127.92	127.92	127.92	PM78001
		Water tanker 12 KL	hour	0.533	0.533	0.533	947.00	504.75	504.75	504.75	PM11002
		Cost for 12 KL =a+b						674.99	674.99	674.99	
		Rate per KL= (a+b) /12						56.25	56.25	56.25	
							say	**56.20**	**56.20**	**56.20**	

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति –सह–अभियंता
प्रमुख भवन निर्माण विभाग,
बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति–सह अभियंता
प्रमुख ग्रामीण कार्य विभाग,
बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति–सह अभियंता
प्रमुख लघु जल संसाधन विभाग,
बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता
(असै०) बिहार स्टेट पावर होल्डिग,
कम्पनी लि., बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति–सह–मुख्य अभियंता
(विधुत) भवन निर्माण विभाग,
बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति –सह– अभियंता
प्रमुख तकनीकी परीक्षक कोषांग निगरानी
विभाग, बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति –सह– अभियंता
प्रमुख लोक स्वास्थ्य अभियंत्रण
विभाग, बिहार, पटना ।

सदस्य,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति –सह– अभियंता प्रमुख
(मुख्यालय), जल संसाधन विभाग,
बिहार, पटना ।

सयोजक,
राज्य स्तरीय अनुसूचित दर
निर्धारण समिति –सह– अभियंता
प्रमुख (मुख्यालय), पथ निर्माण
विभाग, बिहार, पटना ।

J.P. GANGA PATH, PATNA

Printed by : Kishori Ent., Patna # 9431003479, 9431623376