RURAL WORKS DEPARTMENT

GOVT OF BIHAR

NAME OF WORKS :- Chargharia to Rangdaha via Madhopara

BLOCK :- ARARIA

FDR

Phase-I

5,79,390

YEAR(2024-25)

R.W.D., WORKS CIRCLE, KISHANGANJ

R.W.D., WORKS DIVISION, ARARIA

प्रतिवेदन

Chargharia to Rangdaha via Madhopara

थ का नाम :–

कार्य का नाम :– Chargharia to Rangdaha via Madhopara

में बाढ से क्षतिग्रस्त भाग में यातायात चालू करने का कार्य।

संलग्न प्राक्कलन 2024 को प्रखण्ड में आयी भीषण बाढ़ से क्षतिग्रस्त पथ ..... में बाढ़ क्षतिग्रस्त मरम्मति मद से यातायात चालू करने हेतु तैयार किया गया है जिसकी प्राक्कलित लागत ₹ Five lakh Seventy Nine thousand three hundred and Eighty है। उक्त पथ का निर्माण ..... योनान्तर्गत हुआ है एवं योजना अनुरक्षण अवधि में .....। पथ के कटे (क्षतिग्रस्त) भाग में आवश्यकता अनुसार Hume Pipe, Bamboo, लोकल बालू एवं Brick Bats देने के बाद यातायात चालू कराया गया है। पथ के विभिन्न हिस्से में कराये गये कार्य का विवरणी स्पष्ट रूप से प्राक्कलन में दर्शाया गया है।
प्राक्कलन मदो का दर वर्त्तमान अनुसुचित दर के अनुरूप है।

11/11/24

कनीय अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रशाखा, Araria

11/11/24

सहायक अभियंता,
ग्रामीण कार्य विभाग,
कार्य अवर प्रमण्डल, Araria

11/11/24

कार्यपालक अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रमण्डल, Araria

SUMMARY OF COST ESTIMATE FOR THE PROJECT

NAME OF ROAD :-	Chargharia to Rangdaha via Madhopara
DISTRICT :-	ARARIA
BLOCK :-	ARARIA
Length of Road:-	0.00KM
Length of Cutting in mtr :-	15.000

Sl. No.	DESCRIPTION	AMOUNT (LAKHS)
1	Filling of local sand	0.00
2	Labour for cutting 62mm to 75mm dia bamboo	19925.57
3	Labour for fitting 62mm to 75mm dia bamboo	4314.00
4	Labour for filling empty cement bags with local sand Nylon crate	0.00
5	Supplying of EC bag,of local sand	24196.04
6	Supply and Carriage of brick bats	515954.51
7	Supply,laying and carriage of 1000 mm HPC	0.00
8	Drone Videography Charj Three times	15000.00
	SUB TOTAL COST =	579390.11
	TOTAL (RS.) =	5,79,390

J.E 11/11/24

A.E 11/11/24

E.E 11/11/24

S.E

Technically ~~Sanctioned~~ Approved for ₹ 5,79,390=00 (Rupees Five Lakh Seventy-nine thousand three hundred Ninety) only

11/11/24

Superintending Engineer
RWD Work Circle
Kishanganj

Bill of Quantity

NAME OF ROAD :-	Chargharia to Rangdaha via Madhopara
DISTRICT :-	ARARIA
BLOCK :-	ARARIA

Sl. No.	DESCRIPTION OF ITEMS	QUANTITY	UNIT	RATE (Rs.)	AMOUNT (Rs.)
1	Filling of local sand obtained from river bed, watering & ramming, all complete job as per specification & direction of Engineer-in-incharge	0.00	CUM	1272.78	0.00
2	Construction of embankment with approved materials obtained from excavation for raod way in soil using manual means for carriying of cut earth to embankment site 1.5 mt and lead upto 50 m, graded and compacted to meet requirement of table 300.1, 300.2with lift up to	0.00	CUM	549.74	0.00
3	Labour for cutting 62 mm to 75mm dia bamboo piles to size and making shoes & driving by jet machine etc. all complete job as per specfication & direction of Engineer- in -charge.	288.00	MTR	69.19	19925.57
4	Labour for fitting & fixing 62 mm to 75 mm dia bamboo runners in position at every vertical pile with 150 mm long nails or 38 swg G.I wire including cost of G.I wire or nails etc all complete job as per specification & direction of Engineer-in-charge.	120.00	MTR	35.95	4314.00
5	Labour for fiting empty cement bags with loocal sand, stitching the bags and placing in Nylon crate of size (1 m X 1 m X 1 m)with lead of 150 M including supply of sutli etc. at site in dry portion all complete as per approved design, specification and direction of E/I	0.00	Each	1151.80	0.00
6	Supplying of EC bag, filling of local sand stitching and placing in position as the direction of Engineer-in-charge.	433.00	Each	55.88	24196.04
7	Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.	187.00	CUM	2759.12	515954.51
8	Supplaying and carriage of hume pipe 1000 mm dia , all complete job	0.00	RM	5172.30	0.00
			A) SUB TOTAL =		564390.11

		TOTAL COST =	564390

J.E

A.E

E.E

ESTIMATE FOR REPAIRING / RESTORATION/ MAKING MOTORABLE ROADS DAMAGED DURING FLOOD

NAME OF ROAD :-	**Chargharia to Rangdaha via Madhopara**								
DISTRICT :-	**ARARIA**								
BLOCK :-	**ARARIA**								
Length of Cutting:-	**15.00 mtr**								
Sl. No.	**DESCRIPTION OF ITEMS**	**Unit**	**Nos.**	**L(m)**	**B(m)**	**D(m)**	**QUANTITY**	**RATE (Rs.)**	**AMOUNT (Rs.)**
1	**Labour for cutting 62 mm to 75mm dia bamboo piles to size and making shoes & driving by jet machine etc. all complete job as per specfication & direction of Engineer- in -charge.**								
	At ch:-5.500 km		2	12/0.25	3.00		288.00		
		Mtr.	**toal qty:-**				**288.00**	**69.19**	**19,925.57**

2	Labour for fitting & fixing 62 mm to 75 mm dia bamboo runners in position at every vertical pile with 150 mm long nails or 38 swg G.I wire including cost of G.I wire or nails etc all complete job as per specification & direction of Engineer-in-charge.								
	At ch:-5.500 km		2	12.00	2.5/0.5		120.00		
		Mtr.	total qty :-				120.00	35.95	4314.00
3	Supplying of EC bag, filling of local sand stitching and placing in position as the direction of Engineer-in-charge.								
	At ch:-5.500 km	cum	2	12.00	0.40	(1.5+1.85+1.25)/3	14.72		
	Total No of E C Bags(0.034cum=100Bags)		14.72		/	0.034	433.00		
		Each	Say No of Bage :-				433.00	55.88	24196.040
4	Providing laying & filling Geo bags of size 1m X 0.700m (Type A) 300 GSM nonwoven) weight 420 gm volume of filled bag 0.070 cum Weight of filled Geo bag 126 kg with local sand including stiching in four lines by approved Ntlon thread with Staching machine and generator, stacking and placing after loading, Unloading and carriage with the help of Trolly within 150 mtr. lead and all complete as per specification and direction of E/I.								
	At ch:-23500 m	cum	0	12.00	4.50	2.73	0.00		
	(0.07m3=1 no. of Geo Bags)		0.00		/	0.07	0.00		
		Each					0.00	332.74	0.000

5	Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.								
	At ch:-5.500 km	cum	1	15.00	(6.5+5.25+5.25)/3	(1.5+2.85+2.25)/3	187.00		
		cum	**total qty :-**				**187.00**	**2,759.12**	**515954.51**
							A) SUB TOTAL =		**564390.11**
							TOTAL COST =		**564390.11**

11/11/24

Junior Engineer

11/11/24

Asstt. Engineer

11/11/24

Executive Engineer

S.E
KISHANGANJ

FINAL RATE UNDER WORKS CIRCLE KISHANGANJ

S..No	Discription of Item	Unit	Final Rate (Excluding GST,Seigniorage & L.Cess)	Final Rate (Including GST,Seigniorage & L.Cess)	S.F. Per Cum / Per Bag BAG
1	EARTH WORK	CUM	459.003	549.740	3.530
2	BRICK BAT	CUM	2209.576	2759.115	129.720
3	G.S.B	CUM	4328.501	5172.300	21.380
4	SAND BAG (Cement Bag)	Each	46.550	55.880	0.490
5	BAMBOO PILE	Per Mtr.	58.140	69.186	
6	BAMBOO CHACHRI	Per Mtr.	302.258	359.690	
7	BAMBOO RUNNER	Per Mtr.	30.210	35.950	
8	HUME PIPE (1000 mm Div)	Per Mtr.	6206.598	7385.850	
9	HUME PIPE (600 mm Div)	Per Mtr.	2492.260	2965.790	
10	STEEL DRUM SHEET	Per Sqr.Mtr.	215.352	256.270	
11	GEO BAG WITH SAND	EACH	967.490	1152.320	1.010
12	EACH N.C. BAG WITH SAND (Cement Bag)	Each E.C	967.490	1151.800	0.490
13	LOCAL SAND	CUM	721.110	1272.780	0.490

11/11/24
Junior Engineer

11/11/24
Assistant Engineer

11/11/24
Executive Engineer

Superintending Engineer
Rural Works Department
Works Circle Kishanganj

BASIC RATES
(A) Labour

Sl. No.	Description of Labour	Unit	Rate (Rs.)
L-01	Bhisti	day	373
L-02	Bitumen Sprayer(semi skilled)	day	393
L-03	Blacksmith,special	day	503
L-04	Blaster, 2nd class	day	619
L-05	Carpenter 1st Class	day	503
L-06	Chips spreader, semi-skilled	day	449
L-07	Chiseller (Skilled)	day	577
L-08	Dresser (Skilled)	day	472
L-09	Driller, 2nd class	day	449
L-10	Electrician,skilled	day	476
L-11	Fitter, skilled	day	511
L-12	Mason (1st class)	day	503
L-13	Mason (2nd Class)	day	449
L-14	Mate, Semi skilled	day	397
L-15	Mazdoor (Unskilled)	day	373
L-16	Mazdoor (Semi skilled)	day	388
L-17	Mazdoor (Skilled)	day	472
L-18	Painter (1st class)	day	476
L-19	Plumber, Special	day	476
L-20	Surveyor	day	454
L-21	White Washer	day	476
L-22	Head blacksmith	day	531
L-23	Welder 1 St Class	day	584
	Carpenter Head	day	531
	Night Gurad	day	415

(Basic Rates Taken From SOR, Seventeenth Edition, Road Construction Department, Govt. of Bihar effective from 01/04/2023

BASIC RATES
(B) Material

	Description	Unit	Basic Rate as per SOR	Add Royality	Final Rate With Royality
	Bamboo (1st Class) 100 mm - 100 mm dia. 6.0 m -8.0 m long (per mtr.- 23.52 Rs.)	No.	188.00		188.00
	Bamboo (1st Class) 100 mm - 100 mm dia. 6.0 m -8.0 m long (per mtr.- 23.52 Rs.)	No.	188.00		188.00
	Bamboo (1st Class) 50 mm - 100 mm dia. 6.0 m -8.0 m long (per mtr.- 14.71 Rs.)	No.	118.00		118.00
	Bamboo (1st Class) 50 mm - 100 mm dia. 6.0 m -8.0 m long (per mtr.- 14.71 Rs.)	No.	118.00		118.00
	Bamboo (2nd Class) 75mm dia. 1.8 m - 6.0 m -8.0 m long (per mtr.- 22.03 Rs.)	No.	176.00		176.00
	Bamboo (2nd Class) 75mm dia. 6.0 m -8.0 m long (per mtr.- 22.03 Rs.)	No.	176.00		176.00
7	Brick Bats	cum	1063.00	18.00	1081.00
8	Selected earth (Including @ Rs. 33.00 per cum & compensation @ Rs. 2.25 Per Cum	cum	2.25	33.00	35.25
9	Empety Cement Bag IS 11652:2000	Nos.	11.11		11.11
10	Steel Drum 300 mm dia 1.2 m high / empty bitumen drum	Nos.	170.13		170.13
11	Sand bags (Cost of sand and Empty cement bag)	Nos.	7.31	2.59	9.90
12	Sutli (Brown)	kg	20.59		20.59
13	Granular material (Natural occuring. soil gravel mixture / quarry waste. kankar. laterite. dhandla	cum	84.03	83.00	167.03
14	Nails	kg	108.00		108.00
14	RCC Pipe NP3 (1000 mm dia)	m	5787.23		5787.23
15	RCC Pipe NP3 (600 mm dia)	m	2310.00		2310.00
015	Sand (Fine) at source	cum	69.75	75.00	144.75
016	Empety Steel Drum 300 mm dia 1.2 m height	Nos.	170.13		170.13
016	Water	kl	60.30		60.30
017	Geo Bags	Each	124.00		124.00
018	G.S.B.	cum	69.75	75.00	144.75

(Basic Rates Taken From SOR, Seventeenth Edition, Road Construction Department, Govt. of Bihar effective from 01/04/2023.

BASIC RATES
(C) USAGE RATES OF PLANT & MACHINERY

Item Code	Description of Machine	Activity	Output of Machine Unit	Output	Usage Rates in Rs Unit	Rate
P&M-012	Dozer D 80 - A12 Dozer D 50 - A15	Lifting of materials			per hour	5,573.00
P&M-015		Dozing cutting	cum h	260.00	per hour	2,997.00
		Loading Aggregates	cum h	120.00		4,326.00
P&M-017	Front end-loader 1 cum bucket capacity at 45 cum hour	Excavation	cum h	45.00	per hour	1,419.00
P&M-026	Hydraulic Excavator of 1cum bucket	Compaction Rolling	cum h	100.00	per hour	2,272.00
P&M-024	Three wheel 80-100 kN Static Roller	Earth - Embankment or sub- grade	cum h	80.70	per hour	1,593.00
		Sub-base G-I	cum h	10.00		1,593.00
		Sub-base G-II G-III	cum h	8.00		1,593.00
		WMM	cum h	16.00		1,593.00
		BUSG	cum h	10.00		1,593.00
		BM 50-75 mm	cum h	12.00		1,593.00
		Premix 20 mm	sqm h	250.00		1,593.00
		Seal Coat	sqm h	500.00		1,593.00
		Surface Dressing 1st Coat	sqm h	400.00		1,593.00
		Surface Dressing 2ndCoat	sqm h	500.00		1,593.00
P&M-048	Tipper 3.5 cum 10 t	Carriage	cum trip	5.50	per hour	1,426.00
P&M-053	Tractor with Disc Harrows	Pulverisation of soil	cum h	80.00	per hour	693.00
P&M-055	Tractor with ripper at 60 cum per hour	Ripping Pavements, uprooting trees	cum h	60.00	per hour	697.00
P&M-053	Tractor with trolley with Grading equipment	Transportation of materials	1 trip	3 to 5	per hour	676.00
P&M-054	Tractor with Rotavator	Scarifier	cum h	25.00	per hour	693.00
P&M-057	Truck 10 t capacity	Carriage	cum trip	5.50	per hour	1,054.00
P&M-059	Vibratory roller 80-100 kN	Compaction of soil WMM	cum h	100.00	per hour	2,053.00
		Compaction of BM	cum h	60.00		2,053.00
P&M-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre h	12000.00	per hour	752.00
P&M-060	generator 3KVA	stiching	per hour		per hour	74.00
P&M-060	stiching machine	stiching	day		day	50.00

(Basic Rates Taken From SOR, Seventeenth Edition, Road Construction Department, Govt. of Bihar effective from 01/04/2023.

SUMMARY OF CARRIGE COST

Sl. No.	Item	Unit	Amount (Rs.)
1	Earth Work	Cum	274.42
2	Brick Bats	Cum	521.97
3	Bamboo	Per Mtr.	3.00
4	G.S.B.	Cum	2960.13
5	Local Sand	Cum	345.14
6	HUME PIPE (1000 mm DIA)	Per Pipe	745.93
7	HUME PIPEP PIR METER	Per Mtr.	298.37
8	HUME PIPE (600 mm DIA)	Per Pipe	310.88
9	HUME PIPE (600 mm DIA)	Per Mtr.	124.35
10	Local Sand	Cum	345.10

Comparison of carriage cost of Material via Road from different sources

Sl No	Item	Unit	Source	Carriage Cost & Lead in Km												Loading & Unloa	Carriage by Road	Total
				Pucka / Surface						Katcha								
1	By Tractor																	
A	Earth Work Via Road	Cum	Local	3.60 / 2.04	x 20.04	x 0 Km	= Rs 0.00			3.60 / 2.04	x 31.30	x 1 Km	= Rs 55.24			219.18	274.42	274.420
B	Brick Bat Via Road	Cum	Local	3.60 / 2.04	x 20.04	x 7 Km	= Rs 247.55			3.60 / 2.04	x 31.30	x 1 Km	= Rs 55.24			219.18	521.97	521.970
B	Bamboo Via Road	pet mtr.	Local	3.60 / 126.00	x 20.04	x 2 Km	= Rs 1.15			3.60 / 126.00	x 31.30	x 1 Km	= Rs 0.89			0.96	3.00	3.000
D	Local Sand Via Road	Cum	Local	3.60 / 2.04	x 20.04	x 2 Km	= Rs 70.73			3.60 / 2.04	x 31.30	x 1 Km	= Rs 55.24			219.18	345.14	345.140
2	By Tipper																	
A	GSB Via Road	Cum	Siliguri	8.00 / 4.99	x 9.83	x 177 Km	= Rs 2789.43			8.00 / 4.99	x 23.81	x 0 Km	= Rs 0.00			170.70	2960.13	2960.130
3	By Truick																	
A	Hume Pipe (1000 mm) Via Rod	Mtr.	purnea	8.00 / 10.00	x 7.27	x 53 Km	= Rs 308.25			8.00 / 10.00	x 17.60	x 0 Km	= Rs 0.00			437.68	745.93	745.930
A1	Rate Per Mtr. Pipe	Mtr.	purnea								Rate per mtr						298.37	298.370
B	Hume Pipe (600 mm) Via Road	Mtr.	purnea	8.00 / 25.00	x 7.27	x 53 Km	= Rs 123.30			8.00 / 25.00	x 17.60	x 0 Km	= Rs 0.00			187.58	310.88	310.880
B1	Rate Per Mtr. Pipe	Mtr.	purnea								Rate per mtr						124.35	124.350

Cost of Haulage Excluding Loading & Unloading as per SO Subjected to Verification of Lead

11/11/24
Junior Engineer
R.W.D. Works Section

11/11/24
Asstt. Engineer
R.W.D. Works Sub - Division,

11/11/24
Executive Engineer
R.W.D. Works

SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	QTY	Rate	Amount in Rs
		Carriage Of Material (By Tractor)				
4.4		**Loading and unloading of stone Boulder /stone aggregates sand/ kankar/ moorum**				
		Placing tractor at loading point loading with front end loader dumpong ,turning for return trip exluding time for haulage and return tirp				
		Unit = cum				
		Taking output = 2.25 cum				
		Time required for				
	i)	positioning of tractor at loading point	min	1 min		
	ii)	Loading by front end loader 1 cum bucket capacity @ 25 cum	min	5 min		
		Total		**6 min**		
	a)	**Labour**				
		Mate	day	0.030	397.00	11.91
		Mazdoor (Unskilled)	day	0.720	373.00	268.56
	b)	**Machinery**				
		Tractor 3.60 Tonnes Capcaity	hour	0.100	676.00	67.60
		Front end loader 1 cum buckert capacity @ 25 Cum/hour	hour	0.083	1,419.00	117.78
		Cost for 2.25 cum = a+b+c				465.85
		Rate per cum = (a+b+c)/2.25	cum			207.044
		Total per cum	**cum**			**207.044**
1.10		**Haulage excluding Loading & Unloading**				
		Haulage of materials by truck excluding cost of Loading, Unloading and stacking				
		Unit = 7km				
		Taking output 3.6t load and lead 10km = 36t/km				
		Case- I : Surfaced Road				
		Speed with load : 15km per hour				
		Speed while returning empty : 25km per hour				
	a)	**Machinery**				
		Tractor 3.6 tonnes Capacity				
		Haulage with load	hour	0.667	676.00	450.89
		Empty return trip	hour	0.400	676.00	270.40
		Cost for 36t/km = a+b+c				721.29
		Cost for 1 t_km = a+b/36				20.040
		Total per t per km				**20.040**
		Case - II Kutcha Track and Track in River Bed / Nallah Bed and Choe Bed				
		Speed with load : 10km per hour				
		Speed while returning empty : 15km per hour				
	a)	**Machinery**				
		Tractor 3.6 tonnes Capacity				
		Haulage with load	hour	1.00	676.00	676.00
		Empty return trip	hour	0.667	676.00	450.89
		Cost for 36t/km = a+b+c				1126.89
		Cost for 1 t_km = a+b/36				31.300
		Total per t per km				**31.300**
		Carriage Of Material (By Tipper)				
1.1		**Loading and Unloading Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by Manual Means**				
	(I)	Loading of lime, Aggregates, Stone boulder, Brick aggregate, Kankar, Building Rubbish, Crushed Slag Stone for masonary work by manual means including a lead upto 30m				
		Unit = cum				
		Taking output = 5.5 cum				
		Time required for		1Min		
	(i)	Position of tipper at laoading point		13Min		
	(ii)	loading by front end loader 1 cum bucket capacity @25		2Min		
	(iii)	maneuvering, reversing, dumping and turning for return		4Min		
	(iv)	Waiting time unforeseen contingencies etc.		**20Min**		
		Total				
	b)	**Machinery**	hour	0.330	1,426.00	470.58
		Tipper 5 5 Tonnes Capcaity	hour	0.330	1,419.00	468.27
		Front end loader 1 cum buckert capacity @ 25 Cum/hour				938.85
		Cost for 5 5 cum = a+b+c				

		Rate per cum = (a+b+c)/5.5	cum			170.70
		Total per cum	cum			170.700
		Haulage excluding Loading & Unloading				
		Haulage of materials by truck excluding cost of Loading, Unloading and stacking				
		Unit : 1km				
		Taking output 10t load and lead 10km = 100t. km				
		Case- I : Surfaced Road				
		Speed with load : 25km per hour				
		Speed while returning empty : 35km per hour				
	a)	**Machinery**				
		Tipper				
		Haulage with load	hour	0.40	1426.00	570.40
		Empty return trip	hour	0.29	1426.00	413.54
		Cost for 100t. km a b c				983.94
		Cost for 1 t_km = a+b/100				9.830
		Total per t per km				9.830
		Case - III Kutcha Track and Track in River Bed / Nallah Bed and Choe Bed				
		Speed with load : 10km per hour				
		Speed while returning empty : 15km per hour				
	a)	**Machinery**				
		Tipper				
		Haulage with load	hour	1.00	1426.00	1426.00
		Empty return trip	hour	0.67	1426.00	955.42
		Cost for 100t. km a b				2381.42
		Cost for 1 t_km = a+b+c/100				23.81
		Total per t per km				23.810
		Carriage Of Material (By Truck)				
		Haulage excluding Loading & Unloading				
		Haulage of materials by truck excluding cost of Loading, Unloading and stacking				
		Unit : 1km				
		Taking output 10t load and lead 10km = 100t. km				
		Case- I : Surfaced Road				
		Speed with load : 25km per hour				
		Speed while returning empty : 35km per hour				
	a)	**Machinery**				
		Truck	hour	0.40	1054.00	421.60
		Haulage with load	hour	0.29	1054.00	305.66
		Empty return trip				727.26
		Cost for 100t. km a b c				7.270
		Cost for 1 t_km = a+b/100				7.270
		Total per t per km				
		Case - III Kutcha Track and Track in River Bed / Nallah Bed and Choe Bed				
		Speed with load : 10km per hour				
		Speed while returning empty : 15km per hour				
	a)	**Machinery**				
		Truck	hour	1.00	1054.00	1054.00
		Haulage with load	hour	0.67	1054.00	706.18
		Empty return trip				1760.18
		Cost for 100t. km a b				17.60
		Cost for 1 t_km = a+b+c/100				17.600
		Total per t per km				
1.9		**Loading and Unloading of Hume Pipes**				
	(I)	Loading of RCC Hume pipes by mechanical means including a lead upto 30 m				
	A.	**1000 / 1200 mm dia Hume pipe**				
		Unit = per pipe				
		Taking output = 9 pipes				
	a)	**Labour**				
		Mate	day	0.02	397.00	7.94
		Mazdoor (Unskilled)	day	0.50	373.00	186.50
	b)	**Machinery**				
		Trailer	hour	0.33	1054.00	347.82
		Crane	hour	0.33	5573.00	1839.09
		Cost for 9 pipes = a+b+c+d				2381.35

		Rate per pipe = (a+b+c)/9	per p			264.594
		Total per pipe				264.594
	C.	**600/450 mm dia Hume pipe**				
		Unit = per pipe				
		Taking output = 21 pipe				
	a)	**Labour**				
		Mate	day	0.02	397.00	7.94
		Mazdoor (Unskilled)	day	0.50	373.00	186.50
	b)	**Machinery**				
		Tractor 3.60 Tonnes Capcaity	hour	0.33	1054.00	347.82
		Crane	hour	0.33	5573.00	1839.09
		Cost for 21 pipes = a+b+c+d				2381.35
		Rate per pipe = (a+b+c)/21	per p			113.398
		Total per pipe				113.398
	(iii)	**Unloading of RCC Hume pipe by Mechanical means including a lead upto 30 m**				
	A.	**1000/1200 mm dia RCC Hume pipes**				
		Unit = per pipe				
		Taking output = 9 pipes				
	a)	**Labour**				
		Mate	day	0.02	397.00	7.94
		Mazdoor (Unskilled)	day	0.50	373.00	186.50
	b)	**Machinery**				
		Truck	hour	0.20	1054.00	210.80
		Crane	hour	0.20	5573.00	1114.60
		Cost for 9 pipes = a+b+c+d				1519.84
		Rate per pipe = (a+b+c)/9	per p			168.871
		Total per pipe				168.871
	C.	**600/450 mm dia Hume pipe**				
		Unit = per pipe				
		Taking output = 21 pipes				
	a)	**Labour**				
		Mate	day	0.020	397.00	7.94
		Mazdoor (Unskilled)	day	0.50	373.00	186.50
	b)	**Machinery**				
		Truck	hour	0.20	1054.00	210.80
		Crane	hour	0.20	5573.00	1114.60
		Cost for 21 pipes = a+b+c+d				1519.84
		Rate per pipe = (a+b+c)/21	per p			72.373
		Total per pipe				72.373
1.9		**Loading and Unloading of Bamboo**				
	(i)	Loading & unloading Bamboo				
		Unit = per metre				
		Taking output = per mtr.				
	a)	**Material**				
		Bamboo =2016/300	per pipe			6.72
		Bamboo Per Mt.	par mt			0.96
		Total per m				0.960
3.3	301.5	**Construction of Embankment with material obtained from roadway cutting**				
		Construction of Embankment with approved material deposit at site from roadway cutting and excavation from drain and foundation of other structure graded and compacted to meet requirement of Table 300.1 and 300.2 as per Technical Specification Clause 301 S.				
		Unit = cum				
		Taking output = 100 cum				
	a)	**Labour**				
		Mate	day	0.02	397.00	7.94
		Mazdoor (Unskilled)	day	0.50	373.00	186.50
	b)	**Machinery**				
		Dozer D -50 for spreading @200 cum per hour	hour	0.50	0.00	0.00
		Motor Grader for grading @200 Cum per hour	hour	2.00	697.00	1,394.00
		Water tanker 6 kl capacity	hour	2.00	752.00	1,504.00
		Three Wheel 80-100 kN Static Roller	hour	1.25	1593.00	1,991.25
	c)	**Material**				
		Water	kl	12.00	60.30	723.60
		Cost for 100 cum = a+b+c+d+e				5807.29

		Rate per cum = (a+b+c+d)/100	**cum**			58.073
		Total per cum	**cum**			**58.073**
3.5	301.5	**Excavation in soil with Dozer with lead upto 100 m**				
(ii)	(ii)	Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 m, including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections				
		Unit = cum				
		Taking output = 100 cum				
	a)	**Labour**				
		Mate	day	0.08	397.00	31.60
		Mazdoor (Unskilled)	day	2.00	373.00	822.00
	b)	**Machinery**				
		Dozer D -50 for spreading @200 cum per hour	hour	3.60	4326.00	15,573.60
		Cost for 100 cum = a+b+c+d+e				16427.20
		Rate per cum = (a+b+c+d)/180	**cum**			91.262
		Total per cum	**cum**			**91.260**
3.3	301.5	Construction of Embankment with approved material obtained from borrow pits with a lift upto 1.5 m transporting to site, spreading grading to required slope and compacting to meet requirement of Table 300.1 and 300.2 with a lead of 1000 m as per Technical				
		Unit = cum				
		Rate item no. 3.3 Clause 301.5				58.073
		Rate item no. 3.5(ii) Clause 301.5				91.260
		Royalty Compensation for earth taken from private land				35.250
		Carriage of Earth by Tractor Lead 1 K.M.				274.420
		Total Cost of 1 cum=				**459.003**
		Labour Cess @ 1%				**4.590**
		G.S.T. @ 18%				**82.621**
		Add Seigniorage Fee @ 10 % of Materials	**cum**	1.00	35.25	3.53
		Total Cost of 1 cum 1% Cess & 18 % GST =				**549.743**
4.5		**Providing and Laying of Brick Bats**				
		Placing tractor at loading point loading with front end loader dumpong ,turning for return trip exluding time for haulage and return trip				
		Unit = cum				
		Taking output = 2.83 cum				
	a)	**Labour**	day	2.170	373.00	809.41
		Mazdoor (Unskilled)				
	b)	**Materilas**	cum	3.396	1,081.00	3671.08
		Brick Bats				4480.49
		Total (a+b)=				4480.49
		Total (a+b+c) =				
	d)	**Carriage**	cum	3.396	521.97	1772.61
		Brick Bats				6253.10
		TOTAL	cum			2209.576
		Rate per cum = (a+b+c+d)/2.83	**cum**			**2209.576**
		Total per cum				**22.096**
		Labour Cess @ 1%				**397.724**
		G.S.T. @ 18%	cum	1.20	1,081.00	129.72
		Add Seigniorage Fee @ 10 % of Materials				2,759.115
		Total Cost of 1 cum 1% Cess & 18 % GST =				
4.1	401	**PAVEMENT CRUST LAYERS**				
		For Grading II Material				
		Construction of granular sub base by providing well graded material, spreading in uniform layers with tractor mounted grader arrangement on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per Technical Specification Clause 401.				
	(ii)	**For Grading II Material**				
		Unit = cum				
		Taking output = 300 cum				
	a)	**Labour**	day	0.40	397.00	190.56
		Mate	day	2.00	472.00	944.00
		Mazdoor (Skilled)	day	10.00	373.00	3730.00
		Mazdoor (Unskilled)				

b)	Machinery				4864.56
	Tractor mounted grader arrengement	hour	12.00	676.00	8112.00
	Three wheel 80-100 kN static roller @ 10 cum per hour	hour	30.00	1593.00	47790.00
	Tractor with Rotavator 25 cum per hour	hour	12.00	693.00	8316.00
	Water tanker 6 kl capacity	hour	5.00	752.00	3760.00
c)	Material				67978.00
	Well graded granular sub-base material as per Table 400.1				
	GSB	cum	1.28	167.03	213.80
	Cost of 300 cum without Carriage = (a+b+c+d+e)				73056.36
	A) Basic Cost per cum = (a+b+c+d+e)/300	cum			243.521
	CARRIAGE				
	G.S.B.	Cum	414.00	2960.13	1225493.82
	Carriage cost of 300 cum				1225493.82
	B) Carriage cost per cum				4084.98
	Rate per cum = (A+B)	CUM			4328.501
	Total per cum	CUM			4328.501
	Labour Cess @ 1%				43.285
	G.S.T. @ 18%				779.130
	Add Seigniorage Fee @ 10 % of Materials	cum	1.28	167.03	21.38
	Total Cost of 1 cum 1% Cess & 18 % GST =				5,172.296
1100	Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets Clause 1106.				
B.	1000 MM DIA (Single Row)				
a)	Material				
	RCC NP3 pipe including collar	m	7.50	5787.23	43404.23
b)	Labour				
	Mate	day	0.09	397.00	35.73
	Mason (1st class)	day	0.25	503.00	125.75
	Mazdoor (Unskilled)	day	2.00	373.00	746.00
	Cost for 7.5m = (a+b+c)				44311.71
	A) Basic Cost per m = (a+b)/7.5	m			5908.23
	Rate per m of Pipe				5908.23
(d)	CARRIAGE COST				
	NP3 Pipe	m	7.5	298.37	2237.78
	Carriage cost of 7.5 m				2237.78
	Carriage cost per m	m			298.37
	Rate per m with Carriage	m			6,206.598
	Total per m	m			6,206.598
	Labour Cess @ 1%				62.066
	G.S.T. @ 18%				1,117.188
	Total Cost of 1 mtr. 1% Cess & 18 % GST =				7,385.852
C.	600 MM DIA (Single Row)				
a)	Material				
	RCC NP3 pipe including collar	m	7.50	2310.00	17325.00
b)	Labour				
	Mate	day	0.04	397.00	15.88
	Mason (1st class)	day	0.12	503.00	60.36
	Mazdoor (Unskilled)	day	0.96	373.00	358.08
	Cost of 7.5m = (a+b+c+d)				17759.32
	A) Basic Cost per m = (a+b)/7.5	m			2367.91
	Rate per m of Pipe				2367.91
	CARRIAGE COST				
	NP3 Pipe	m	7.5	124.35	932.63
	Carriage cost of 7.5 m				932.63
	B) Carriage cost per m	m			124.35
	Rate per m with Carriage	m			2,492.260
	Total per m	m			2,492.260
	Labour Cess @ 1%				24.923
	G.S.T. @ 18%				448.607
	Total Cost of 1 mtr. 1% Cess & 18 % GST =				2,965.789
	Labour for filling empty cement bags with local sand, stitching the bags and placing including supply of satti etc. all complete as per approved design, specification and direction E/I				

	Unit = Per % Nos.				
	(A) For Filling & Stitching & Stacking				
	Labour				
	Skilled Labour for filling sand into bags and sewing	No	2.00	472.00	944.00
	netali	kg	0.50	20.59	10.30
	(B) Labour Rate For Carrying & Placing filed E.C. Bags.				
	Labour				
	Skilled Labour for Carrying filed bags and placing to work site	No	3.00	472.00	1416.00
	TOTAL =				2370.30
	Per % Nos. (B) =			Say.	2370.30
	Rate per bag (A+B)= /100				23.70
	(C) Cost of empty cement bag & cost of sand	each			11.11
	(D) Carriage cost				
	Tractor with trolly	cum	0.034	345.14	11.72
	(G)Totel =(A+B+C+D) =				46.55
	Labour Cess @ 1%				0.465
	G.S.T. @ 18%				8.379
	Add Seigniorage Fee @ 10 % of Materials	cum	0.034	144.75	0.49
	Total Cost of 1 E.C.Bag 1% Cess & 18 % GST =				55.882
	Supply Labour for fitting and fixing 62 mm to 75 mm dia bamboo runners in position at every verticle pile with 150 mm long nails or 38 swg G. I. wire including cost of G.I. or nails complete job as per specification and direction				
	Unit = Per mt.				
	Taking Out Put = 30.50 m				
(i)	Materials				
	Bamboo	m	30.50	20.21	616.41
	Nails	kg	0.50	108.00	54.00
(ii)	Labour				
	Carpenter Gr -II	No.	0.125	531.00	66.38
	Unskilled Labour	No.	0.25	373.00	93.25
	Rate for 30.5 m				830.04
	TOTAL =				830.04
	Rate per mt				27.21
(iii)	Carriage cost				
	bamboo	mt	1	3.00	3
	Total Cost with Carriage				30.21
	Labour Cess @ 1%				0.302
	G.S.T. @ 18%				5.439
	Total Cost of 1 mtr. 1% Cess & 18 % GST =				35.955
	Labour for cutting 62 mm to 75 mm dia bamboo piles in size and making shoes and driving etc. complete bob as per specification and direction E/I.				
	Unit = Per mt.				
	Taking Out Put = 30.50 m				
	Assurning				
	20 no pile sunk 1.525 m deeps				
	Total depth sunk 30.50 m				
(i)	Materials				
	Bamboo	m	30.50	20.21	616.41
(i)	Labour				
	Carpenter Gr -II	No.	0.25	531.00	132.75
	Unskilled Labour for piling	No.	2.50	373.00	932.5
	Rate for 30.5 m				1681.66
	Total				1681.66
	Rate for 1 m				55.14
	Carriage Cost of Bamboo	per mtr.			3.00
	Total Cost with Carriage				58.14
	Labour Cess @ 1%				0.581
	G.S.T. @ 18%				10.465
	Total Cost of 1 mtr. 1% Cess & 18 % GST =				69.182

		Labour for fitting and and fixing Steel Drum 300 mm dia 1.2 m high as per specification and direction				
		(Assuming Per Mtr. = 3.14x0.30= 0.942 mtr.)				
		Area of Assuming in one Drum = 0.942x1.20 = 1.130 Sqm				
		One Sqm sheet Cost = 127.80/1.130 = 113.12 Cost				
		Unit = per sqm				
		Taking Out = 100 sqm				
	a	Labour				
		Hammer man	No.	4.00	531.00	2124.00
		Mazdoor (Unskilled)	No.	4.00	373.00	1492.00
		Carpenter 1st Class	No.	4.00	503.00	2012.00
	b	Materials				5628.00
		Nails	kg	5.00	170.13	850.65
		Steel Drum sheet	Nos.	88.5	170.13	15056.51
						21535.160
		Rate Per m = (a+b+c)/100				215.352
		Labour Cess @ 1%				2.154
		G.S.T. @ 18%				38.763
		Total Cost of 1 mtr. 1% Cess & 18 % GST =				256.268
		Labour for fitting and and fixing split bamboo woven chachari in position with 20 swg G.I. wire of 75 mm to 100 mm long nails alternatively including cost of G.I. wire or nails complete job as per specification and direction of E/I.				
		(Assuming strip of 3.05x3.05 = 9.30 sqm				
		Unit = per sqm				
		Taking Out = 9.30 sqm				
	a	Labour				
		Carpenter Gr -II	No.	1.00	531.00	531.00
		Mazdoor (Unskilled) for pilling	No.	1.00	373.00	373.00
	b	Materials				
		Bamboo	Mtr.	10.00	188.00	1880.00
		Nails	kg	0.25	108.00	27.00
						2811.000
		Rate Per m = (a+b+c)/9.30				302.258
		Labour Cess @ 1%				3.023
		G.S.T. @ 18%				54.406
		Total Cost of 1 mtr. 1% Cess & 18 % GST =				359.687
		Providing laying & filling Geo bags of size 1m X 0.700m (Type A) 300 GSM nonwoven) weight 420 gm volume of filled bag 0.070 cum Weight of filled Geo bag 126 kg with local sand including stiching in four lines by approved Ntlon thread with Staching machine and generator, stacking and placing after loading, Unloading and carriage with the help of Trolly within 150 mtr. lead and all complete as per specification and direction of E/I.				
		Unit = Each Bag				
		Taking Out = 40 Nso.				
		Labour				
		Unskilled Loading For filling stacking	nos	2	373.00	746.00
		Skilled labour for stacking	nos	0.33	472.00	155.76
		Unskilld labour for carring and placing	nos	4.00	373.00	1492.00
		Mate	nos	0.25	397.00	99.25
		Stiching Machine	day	0.33	50.00	16.50
		Tractor with trolley	day	1.00	676.00	676.00
		Generator 3KVA	hrs	20.67	74.00	1529.58
		Total				4715.09
		Rate per bag (total/40) (A)				117.88
	(ii)	charge for placing & dumping				
		unskilled labour for loading unloading & dumping	nos	16	373.00	6320.00
		Mate	nos	1	397.00	419.00
		Tractor with trolley	each	4	676.00	2704.00
		Total				9,443.000
		Rate per bag (Total/256) (B)				36.887
		Matrolals				
		cost of Geo Bag	each	1	124.00	124.00
		Total cost (a+b+c)				278.764

		Rate per bag				*278.764*
		Labour Cess @ 1%				*2.788*
		G.S.T. @ 18%				*50.178*
		Add Seigniorage Fee @ 10 % of Materials	*cum*	*0.070*	*144.75*	*1.01*
		Total Cost of 1 Geo Bag 1% Cess & 18 % GST =				*332.739*
.3		*Labour for filling empty cement bags with local sand, sitching the bags and pitching in Nylon crate of size (1m x 1m x 1m) with a lead of 150 m including supply of suti etc. and placing the filed crates in water portion within a lead 30 m all complete as per approved design, specification and direction of E/I.*				
		Unit = Each N.C.				
	(i)	*(i) Labour Cost for filling bags in one Nylon crate in dry portion*	*No.*	*1*	*472.00*	*411.00*
	(ii)	*(i) Labour Cost for filling bags in one Nylon crate in dry portion*	*No.*	*1*	*472.00*	*611.00*
		(II) Placing of iled N/C with 30 m lead in water portion				
		Labour				
		Mate	*No.*	*0.37*	*397.00*	*146.89*
		Labour(Skilled)	*No.*	*1.00*	*472.00*	*472.00*
		Labour(Unskilled)	*No.*	*1.00*	*373.00*	*373.00*
						2013.89
		Hence, Total Labour for 100 Cft.				*2013.89*
		Taking one E.C. Bags to contain 1.20 Cft. Of sand				
	(ii)	*Hence, labour rate for placing one filed N.C.*		*356.49*		*356.49*
		Hence rate fer mu;pm crate om water portion (I+II)			*Say.*	*967.49*
		Labour Cess @ 1%				*9.675*
		G.S.T. @ 18%				*174.148*
		Add Seigniorage Fee @ 10 % of Materials	*cum*	*0.034*	*144.75*	*0.49*
		Total Cost of 1 E.C.1% Cess & 18 % GST =				*1,151.803*
)	800	local sand Fillling in foundation trenches as per drawing and technical specification **local sand Fillling in foundation trenches as per drawing and technical specification Clause 305.3.9**				
	I.	**Sand filling**				
		Unit = cum				
	a)	**Labour**				
		Mate	day	0.01	397.00	3.97
		Mazdoor (Unskilled)	day	0.30	373.00	111.90
	b)	**Material**				
		Sand (assuming 20 per cent voids)	cum	1.20	144.75	173.70
		Overheads @ 6 % on (a)				17.37
						306.94
		CARRIAGE COST				
		sand	Cum	1.2	345.14	414.17
		Rate per cum = a+b+c				**721.11**
		Total Cost including 1 % LABOUR CESS				**7.21**
		G.S.T. @ 18%				129.80
		Add Seigniorage Fee @ 10 % of Materials				0.49
		Total Cost of 1 E.C.1% Cess & 18 % GST =				1272.78