

RURAL WORKS DEPARTMENT

GOVT OF BIHAR



NAME OF WORKS :- kamat to Chan Bhag Balwa tola

BLOCK :- Araria

FDR

Phase-I

9,05,958

YEAR(2024-25)

R.W.D., WORKS CIRCLE, KISHANGANJ

R.W.D., WORKS DIVISION, ARARIA

प्रतिवेदन

kamat to Chan Bhag Balwa tola

पथ का नाम :-

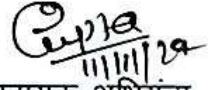
कार्य का नाम :-

kamat to Chan Bhag Balwa tola

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

संलग्न प्राक्कलन 2024 को प्रखण्ड में आयी भीषण बाढ़ से क्षतिग्रस्त पथ में बाढ़ क्षतिग्रस्त मरम्मत मद से यातायात चालू करने हेतु तैयार किया गया है जिसकी प्राक्कलित लागत Five lakh five thousand Nine hundred and fifty eight का निर्माण योनान्तर्गत हुआ है एवं योजना अनुसंधान 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 मदों का दर वर्तमान अनुसूचित दर के अनुरूप है।


नीय अभियंता,
ग्रामीण कार्य विभाग,
ग्राम प्रशाखा, Araria।


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


कार्यपालक अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रमण्डल, Araria

SUMMARY OF COST ESTIMATE FOR THE PROJECT		
NAME OF ROAD :-	kamat to Chan Bhag Balwa tola	
DISTRICT :-	ARARIA	
BLOCK :-	Araria	
Length of Road:-	0.00KM	
Length of Cutting in mtr :-	42.000	
Sl. No.	DESCRIPTION	AMOUNT (LAKHS)
1	Filling of local sand	127521.95
2	Labour for cutting 62mm to 75mm dia bamboo	37268.19
3	Labour for fitting 62mm to 75mm dia bamboo	6471.00
4	Labour for filling empty cement bags with local sand Nylon crate	0.00
5	Supplying of EC bag, of local sand	627644.16
6	Supply and Carriage of brick bats	92052.35
7	Supply, laying and carriage of 1000 mm HPC	0.00
8	Drone Videography Charj Three times	15000.00
	SUB TOTAL COST =	905957.66
	TOTAL (RS.) =	9,05,958

[Signature]
J.E

[Signature]
A.E

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E.E

Technically ^{S.E} Approved ~~Sanctioned~~ for Rs 9,05,958 = 00
(Rupees Nine lakh five thousand nine hundred and fifty eight only)

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Superintending Engineer
RWD Work Circle
Kishanganj

Bill of Quantity

NAME OF ROAD :-

kamat to Chan Bhag Balwa tola

DISTRICT :-

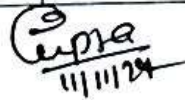
ARARIA

LOCK :-

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-charge	100.19	CUM	1272.78	127521.95
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 specification & direction of Engineer- in -charge.	538.67	MTR	69.19	37268.19
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.	180.00	MTR	35.95	6471.00
5	Labour for fitting empty cement bags with local 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.	11232.00	Each	55.88	627644.16
7	Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.	33.36	CUM	2759.12	92052.35
8	Supplying and carriage of hume pipe 1000 mm dia , all complete job.	0.00	RM	7385.85	0.00
A) SUB TOTAL =					890957.66
TOTAL COST =					890958


J.E


A.E


E.E

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

NAME OF ROAD :-		kamat to Chan Bhag Balwa tola									
DISTRICT :-		ARARIA									
BLOCK :-		Araria									
Length of Cutting:-		42.00	mtr								
Sl. No.	DESCRIPTION OF ITEMS	Unit	Nos.	L(m)	B(m)	D(m)	QUANTITY	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-charge										
	At ch:0.490 km	cum	1	22.00	(1.25+1.5)/2	(1.35+1.85+2.95)/3	62.01				
	At ch:0.490 km	cum	1	14.00	(1.25+1.5)/2	(1.35+1.85+2.75)/3	38.18				
	Deduction for H.P 1000MM dia (1.23 x 1.23)=1.52	cum	0	0.79	1.52	7.50	0.00				
		cum	total qty :-				100.192	1,272.78	127521.95		
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 specification & direction of Engineer- in -charge.										
	At ch:0.490 km		1	22/0.25	4.00		352.00				
	At ch:0.490 km		1	14/0.3	4.00		186.67				
		Mtr.	total qty:-				538.67	69.19	37,268.19		

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:0.490 km		1	22.00	2.5/0.5			110.00		
	At ch:0.490 km		1	14.00	2.5/0.5			70.00		
		Mtr.		total qty :-				180.00	35.95	6471.00
3	Supplying of EC bag, filling of local sand stitching and placing in position as the direction of Engineer-in-charge.									
	At ch:0.490 km	cum	1	22.00	(0.3+0.6)/2	(1.85+2.85+1.25)/3		369.60		
	At ch:0.490 km	cum	1	14.00	(0.3+0.6)/2	(1.85+2.75+1.25)/3		12.29		
	Total No of E C Bags(0.034cum=100Bags)	0		381.89	/	0.034		11232.00		
4		Each		Say No of Bage :-				11232.00	55.88	627644.160
	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 stitching in four lines by approved Nylon thread with Staching machine and generator, stacking and placing after loading, Unloading and carriage with the help of Trolley within 150 mtr. lead and all complete as per specification and direction of E/I.									
	At ch:-0.820 km	cum	0	22.00	4.50	2.73		0.00		
	(0.07m ³ =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:0.490 km	cum	1	22.00	(1.25+1.5)/2	(0.45+0.35+0.25)/3	10.59						
	At ch:0.490 km	cum	1	11.00	(1.25+1.5)/2	(0.35+0.25+0.3)/3	4.54						
	At ch:0.490 km	cum	1	12.60	(4.5+4.8+4.5)/3	(0.35+0.25+0.3)/3	17.39						
	At ch:0.490 km	cum	1	3.00	(1+1)/2	(0.25+0.35+0.25)/3	0.85						
		cum	total qty :-				33.36	2,759.12	92052.35				
6	Supplaying and carriage of hume pipe 1000 mm dia , all complete job.												
	At ch:-0.820 km	RM	0	2	2.5		0.00						
		RM	total qty :-				0.00	7,385.85	0.00				
							A) SUB TOTAL =				890957.66		
							TOTAL COST =				890957.66		

[Signature]
11/11/24

Junior Engineer

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11/11/24

Asstt. Engineer

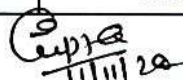
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Executive Engineer

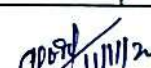
S.E
KISHANGANJ

FINAL RATE UNDER WORKS CIRCLE KISHANGANJ

S.No	Discription of Item	Unit	Final Rate (Excluding GST, Selgnlorage & L.Cess)	Final Rate (Including GST, Selgnlorage & 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	2769.115	129.720
3	G.S,B	CUM	4328.601	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


Junior Engineer


Assistant Engineer


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

No.	Description	Unit	Basic Rate as per SOR	Add Royalty	Final Rate With Royalty
001	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
002	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
003	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
004	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
005	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
006	Bamboo (2nd Class) 75mm dia. 6.0 m -8.0 m long (per mtr.- 22.03 Rs.)	No.	176.00		176.00
007	Brick Bats	cum	1063.00	18.00	1081.00
008	Selected earth (Including @ Rs. 33.00 per cum & compensation @ Rs. 2.25 Per Cum	cum	2.25	33.00	35.25
009	Empty Cement Bag IS 11652:2000	Nos.	11.11		11.11
010	Steel Drum 300 mm dia 1.2 m high empty bitumen drum	Nos.	170.13		170.13
011	Sand bags (Cost of sand and Empty cement bag)	Nos.	7.31	2.59	9.90
012	Sutli (Brown)	kg	20.59		20.59
013	Granular material (Natural occuring, soil gravel mixture / quarry waste, kankar, laterite, dhandla	cum	84.03	83.00	167.03
014	Nails	kg	108.00		108.00
014	RCC Pipe NP3 (1000 mm dia)	m	5787.23		5787.23
015	RCC Pipe NP3 (600 mm dia)	m	2310.00		2310.00
015	Sand (Fine) at source	cum	69.75	75.00	144.75
016	Empty 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

No.	sor Code	Description of		Output of Machine		Usage Rates in Rs.	
		Machine	Activity	Unit	Output	Unit	Rate
009	P&M-012	Crane upto 80 T	Lifting of materials			per hour	5,573.00
010	P&M-015	Dozer D 80 - A12 Dozer D 50 - A15	Dozing cutting	cum h	260.00	per hour	2,997.00
011				cum h	120.00		4,326.00
014	P&M-017	Front end-loader 1 cum bucket capacity at 45 cum hour	Loading Aggregates	cum h	45.00	per hour	1,419.00
017	P&M-026	Hydraulic Excavator of 1 cum bucket	Excavation	cum h	100.00	per hour	2,272.00
031	P&M-044	Three wheel 80-100 kN Static Roller	Compaction Rolling			per hour	1,593.00
032			Earth:- Embankment or sub-grade	cum h	80.70		1,593.00
033			Sub-base G-I	cum h	10.00		1,593.00
034			Sub-base G-II G-III	cum h	8.00		1,593.00
035			WMM	cum h	16.00		1,593.00
036			BUSG	cum h	10.00		1,593.00
037			BM 50-75 mm	cum h	12.00		1,593.00
038			Premix 20 mm	sqm h	250.00		1,593.00
039			Seal Coat	sqm h	500.00		1,593.00
040			Surface Dressing 1st Coat	sqm/h	400.00		1,593.00
041			Surface Dressing 2nd Coat	sqm/h	500.00		1,593.00
042	P&M-048	Tipper 5.5 cum/10 t	Carriage	cum/trip	5.50	per hour	1,426.00
043	P&M-053	Tractor with Disc Harrows	Pulverisation of soil	cum h	80.00	per hour	693.00
044	P&M-055	Tractor with ripper @ 60 cum per hour	Ripping Pavements, uprooting trees	cum h	60.00	per hour	697.00
045	P&M-053	Tractor with trolley with Grading equipment	Transportation of materials	t trip	3 to 5	per hour	676.00
046	P&M-054	Tractor with Rotavator	Scarifier	cum/h	25.00	per hour	693.00
047	P&M-057	Truck 10 t capacity	Carriage	cum/trip	5.50	per hour	1,054.00
048	P&M-059	Vibratory roller 80-100 kN	Compaction of soil WMM	cum h	100.00	per hour	2,053.00
049			Compaction of BM	cum h	60.00		2,053.00
050	P&M-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre h	12000.00	per hour	752.00
063	P&M-060	generator 3KVA	stitching	per hour		per hour	74.00
064	P&M-060	stitching machine	stitching	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 PIPE 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

Comparison of carriage cost of Material via Road from different sources																
Sl No		Item	Unit	Source	Carriage Cost & Load in Km										Carriage by Road	Total
					Pucks / Surface					Katcha						
1	2	By Tractor														
A		Earth Work Via Road	Cum	Local	3.60											
					2.04	x 20.04	x	0 Km	= Rs 0.00				x 31.30	x	1 Km	= Rs 55.24
B		Brick Bat Via Road	Cum	Local	3.60											
					2.04	x 20.04	x	7 Km	= Rs 247.55				x 31.30	x	1 Km	= Rs 55.24
B		Bamboo Via Road	pot mtr.	Local	3.60											
					126.00	x 20.04	x	2 Km	= Rs 1.15				x 31.30	x	1 Km	= Rs 0.89
D		Local Sand Via Road	Cum	Local	3.60											
					2.04	x 20.04	x	2 Km	= Rs 70.73				x 31.30	x	1 Km	= Rs 55.24
2		By Tipper														
A		GSB Via Road	Cum	Siliguri	8.00											
					4.99	x 9.83	x	177 Km	= Rs 2789.43				x 23.81	x	0 Km	= Rs 0.00
3		By Truck														
A		Hume Pipe (1000 mm) Via Rod	Mtr.	purnea	8.00											
					10.00	x 7.27	x	53 Km	= Rs 308.25				x 17.60	x	0 Km	= Rs 0.00
A1		Rate Per Mtr. Pipe	Mtr.	purnea												
B		Hume Pipe (600 mm) Via Road	Mtr.	purnea	8.00											
					25.00	x 7.27	x	53 Km	= Rs 123.30				x 17.60	x	0 Km	= Rs 0.00
B1		Rate Per Mtr. Pipe	Mtr.	purnea												

Cost of Haulage Excluding Loading & Unloading as per SO² Subjected in Verification of Land

Asstt. Engineer
11/11/24

Asstt. Engineer

R.W.D. Works Sub - Division,

Executive Director

Executive Engineer
R.W.D. Works

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 dumpoing ,turning for return trip excludng time for haulage and return trip				
		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 Capacity	hour	0.100	676.00	67.60
		Front end loader 1 cum bucket 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 masonry work by manual means including a lead upto 30m				
		Unit = cum				
		Taking output = 5.5 cum				
		Time required for				
	(I)	Position of tipper at loading point		1Min		
	(II)	loading by front end loader 1 cum bucket capacity @25		13Min		
	(III)	maneuvering, reversing, dumping and turning for return		2Min		
	(iv)	Waiting time unforeseen contingnencies etc.		4Min		
		Total		20Min		
	b)	Machinery				
		Tipper 5.5 Tonnes Capacity	hour	0.330	1,426.00	470.58
		Front end loader 1 cum bucket capacity @ 25 Cum/hour	hour	0.330	1,419.00	468.27
		Cost for 5.5 cum = a+b+c				938.85

					Rate per cum = $(a+b+c)/5.5$				
					Total per cum	cum			170.70
					Haulage excluding Loading & Unloading	cum			170.70
1.10					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)				
1.10					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				
					Haulage with load	hour	0.40	1054.00	421.60
					Empty return trip	hour	0.29	1054.00	305.66
					Cost for 100t km = $a+b+c$				727.26
					Cost for 1 t km = $a+b/100$				7.270
					Total per t per km				7.270
					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				
					Haulage with load	hour	1.00	1054.00	1054.00
					Empty return trip	hour	0.67	1054.00	706.18
					Cost for 100t km = $a+b$				1760.18
					Cost for 1 t km = $a+b+c/100$				17.60
					Total per t per km				17.600
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				
					Truck	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 = $(n+b+c)/9$							
		Total per pipe	per p						264.594
	C	600/450 mm dia Hume pipe							264.594
		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 Capacity	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.	per 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 301.5.							
		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						
		Total per cum	cum					58.073
		Excavation in soil with Dozer with lead upto 100 m	cum					58.073
3.5	301.5	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				
		Mazdoor (Unskilled)	day	2.00	397.00			31.60
	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 dumping, turning for return trip excluding time for haulage and return trip						
		Unit = cum						
		Taking output = 2.83 cum						
	a)	Labour						
		Mazdoor (Unskilled)	day	2.170	373.00			809.41
	b)	Materials						
		Brick Bats	cum	3.396	1,081.00			3671.08
		Total (a+b)=						4480.49
		Total (a+b+c) =						4480.49
	d)	Carriage						
		Brick Bats	cum	3.396	521.97			1772.61
		TOTAL						6253.10
		Rate per cum = (a+b+c+d)/2.83	cum					2209.576
		Total per cum	cum					2209.576
		Labour Cess @ 1%						22.096
		G.S.T. @ 18%						397.724
		Add Seigniorage Fee @ 10 % of Materials	cum	1.20	1,081.00			129.72
		Total Cost of 1 cum 1% Cess & 18 % GST =						2,759.115
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						
		Mate	day	0.48	397.00			190.56
		Mazdoor (Skilled)	day	2.00	472.00			944.00
		Mazdoor (Unskilled)	day	10.00	373.00			3730.00

b)	Machinery			
	Tractor mounted grader arrangement			
	Three wheel 80-100 kN static roller @ 10 cum per hour	hour	12.00	4864.56
	Tractor with Rotavator 25 cum per hour	hour	30.00	8112.00
	Water tanker 6 kl capacity	hour	12.00	47790.00
c)	Material			
	Well graded granular sub-base material as per Table 400.1		5.00	8316.00
	GSB			3760.00
	Cost of 300 cum without Carriage = (a+b+c+d+e)	cum	1.28	67978.00
	A) Basic Cost per cum = (a+b+c+d+e)/300			167.03
	CARRIAGE	cum		213.80
	G.S.B.			73056.36
	Carriage cost of 300 cum	Cum	414.00	243.521
	B) Carriage cost per cum			2960.13
	Rate per cum = (A+B)			1225493.82
	Total per cum	CUM		4084.98
	Labour Cess @ 1%	CUM		4328.501
	G.S.T. @ 18%			4328.501
	Add Selgnorage Fee @ 10 % of Materials			43.285
	Total Cost of 1 cum 1% Cess & 18 % GST =	cum	1.28	779.130
				21.38
93	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.		
				5,172.296
	B.	1000 MM DIA (Single Row)		
	a)	Material		
		RCC NP3 pipe Including collar	m	7.50
	b)	Labour		5787.23
		Mate	day	0.09
		Mason (1st class)	day	397.00
		Mazdoor (Unskilled)	day	35.73
		Cost for 7.5m = (a+b+c)		125.75
		A) Basic Cost per m = (a+b)/7.5		503.00
		Rate per m of Pipe	m	373.00
	(d)	CARRIAGE COST		746.00
		NP3 Pipe	m	44311.71
		Carriage cost of 7.5 m		5908.23
		Carriage cost per m	m	5908.23
		Rate per m with Carriage	m	
		Total per m	m	6,206.598
		Labour Cess @ 1%		6,206.598
		G.S.T. @ 18%		62.066
		Total Cost of 1 mtr. 1% Cess & 18 % GST =		1,117.188
				7,385.852
	C.	600 MM DIA (Single Row)		
	a)	Material		
		RCC NP3 pipe Including collar	m	7.50
	b)	Labour		2310.00
		Mate	day	0.04
		Mason (1st class)	day	397.00
		Mazdoor (Unskilled)	day	15.88
		Cost of 7.5m = (a+b+c+d)		60.36
		A) Basic Cost per m = (a+b)/7.5		503.00
		Rate per m of Pipe	m	373.00
		CARRIAGE COST		358.08
		NP3 Pipe	m	17759.32
		Carriage cost of 7.5 m		2367.91
		Carriage cost per m	m	2367.91
		Rate per m with Carriage	m	
		Total per m	m	932.63
		Labour Cess @ 1%		932.63
		G.S.T. @ 18%		124.35
		Total Cost of 1 mtr. 1% Cess & 18 % GST =		2,492.260
				2,492.260
				24.923
				448.607
				2,965.789
5.740.1		Labour for filling empty cement bags with local sand, stitching the bags and placing including supply of sutli 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				
		cutali	No.	2.00	472.00	944.00
			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	11.73
		(G) Total = (A+B+C+D) =				46.55
		Labour Cess @ 1%				0.465
		G.S.T. @ 18%				8.379
		Add Seigniorage Fee @ 10 % of Materials				
		Total Cost of 1 E.C. Bag 1% Cess & 18 % GST =	cum	0.034	144.75	0.49
5.7.9		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				55.882
		Unit = Per mt.				
		Taking Out Put = 30.50 m				
	(I)	Materials				
		Bamboo				
		Nails	m	30.50	20.21	616.41
	(II)	Labour	kg	0.50	108.00	54.00
		Carpenter Gr -II				
		Unskilled Labour	No.	0.125	531.00	66.38
		Rate for 30.5 m	No.	0.25	373.00	93.25
		TOTAL =				830.04
		Rate per mt				830.04
	(III)	Carriage cost				27.21
		bamboo				
		Total Cost with Carriage	mt	1	3.00	3
		Labour Cess @ 1%				30.21
		G.S.T. @ 18%				0.302
		Total Cost of 1 mtr. 1% Cess & 18 % GST =				5.439
						35.955
5.7.7		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. = $3.14 \times 0.30 = 0.942$ mtr.)					
Area of Assuming in one Drum = $0.942 \times 1.20 = 1.130$ Sqm					
One Sqm sheet Cost = $127.80 / 1.130 = 113.12$ Cost					
Unit = per sqm					
Taking Out = 100 sqm					
a	Labour	No.	4.00	531.00	2124.00
	Hammer man	No.	4.00	373.00	1492.00
	Mazdoor (Unskilled)	No.	4.00	503.00	2012.00
	Carpenter 1st Class				5628.00
b	Materials				850.65
	Nails	kg	5.00	170.13	15056.51
	Steel Drum sheet	Nos.	88.5	170.13	21535.160
					215.352
	Rate Per m = $(a+b+c)/100$				2.154
	Labour Cess @ 1%				38.763
	G.S.T. @ 18%				256.268
	Total Cost of 1 mtr. 1% Cess & 18 % GST =				
5.7.8	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.				
WRD					
	(Assuming strip of $3.05 \times 3.05 = 9.30$ sqm				
	Unit = per sqm				
	Taking Out = 9.30 sqm				
a	Labour				
	Carpenter Gr -II	No.	1.00	531.00	531.00
	Mazdoor (Unskilled) for piling	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
5.7.50	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 stitching in four lines by approved Nylon thread with Staching machine and generator, stacking and placing after loading, Unloading and carriage with the help of Trolley 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
	Unskilled labour for carrying 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
	Materials				
	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 Selgnorage Fee @ 10 % of Materials	cum	0.070	144.75	1.01
		Total Cost of 1 Geo Bag 1% Cess & 18 % GST =				332.739
5.7.40.3		Labour for filling empty cement bags with local sand, stitching the bags and pitching in Nylon crate of size (1m x 1m x 1m) with a lead of 1.50 m including supply of sut 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 filed N/C with 30 m lead in water portion				
		Labour	No.	0.37	397.00	146.89
		Mate	No.	1.00	472.00	472.00
		Labour(Skilled)	No.	1.00	373.00	373.00
		Labour(Unskilled)				2013.89
						2013.89
		Hence, Total Labour for 100 Cft.				
		Taking one E.C. Bags to contain 1.20 Cft. Of sand				356.49
	(II)	Hence, labour rate for placing one filed N.C.		356.49		967.49
		Hence rate per mu:pm crate on water portion (I+II)			Say.	9.675
		Labour Cess @ 1%				174.148
		G.S.T. @ 18%				0.49
		Add Selgnorage Fee @ 10 % of Materials	cum	0.034	144.75	1,151.803
		Total Cost of 1 E.C.1% Cess & 18 % GST =				
(I)	800	local sand Filling in foundation trenches as per drawing and technical specification Clause 305.3.9				
		local sand Filling 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 Selgnorage Fee @ 10 % of Materials				0.49
		Total Cost of 1 E.C.1% Cess & 18 % GST =				1272.78