RURAL WORKS DEPARTMENT

GOVT OF BIHAR

NAME OF WORKS :- L053-LAKSHIMPUR TO BHORHA

BLOCK :- Kursakatta

FDR

Phase-I

12,28,371

YEAR(2024-25)

R.W.D., WORKS CIRCLE, KISHANGANJ

R.W.D., WORKS DIVISION, ARARIA

प्रतिवेदन

थ का नाम :– L053-LAKSHIMPUR TO BHORHA

ार्य का नाम :– L053-LAKSHIMPUR TO BHORHA

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

ंलग्न 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
ाक्कलित लागत Twelve lakh Twenty Eight thousand Three hundred and seventy one है। उक्त पथ
ा निर्माण .... योनान्तर्गत हुआ है एवं योजना अनुरक्षण अवधि में ....।
थ के कटे (क्षतिग्रस्त) भाग में आवश्यकता अनुसार Hume Pipe, Bamboo, लोकल बालू एवं
3rick Bats देने के बाद यातायात चालू कराया गया है। पथ के विभिन्न हिस्से में कराये गये कार्य
ा विवरणी स्पष्ट रूप से प्राक्कलन में दर्शाया गया है।
ाक्कलन मदो का दर वर्त्तमान अनुसुचित दर के अनुरूप है।

11/11/24

कनीय अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रशाखा, ...।

11/11/24

सहायक अभियंता,
ग्रामीण कार्य विभाग,
कार्य अवर प्रमण्डल, ...।

11/11/24

कार्यपालक अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रमण्डल, ...

SUMMARY OF COST ESTIMATE FOR THE PROJECT

NAME OF ROAD :-	L053-LAKSHIMPUR TO BHORHA	
DISTRICT :-	ARARIA	
BLOCK :-	Kursakatta	
Length of Road:-	0.00KM	
Length of Cutting in mtr :-	69.500	
Sl. No.	**DESCRIPTION**	**AMOUNT (LAKHS)**
1	Filling of local sand	337310.32
2	Labour for cutting 62mm to 75mm dia bamboo	42249.58
3	Labour for fitting 62mm to 75mm dia bamboo	7190.00
4	Labour for filling empty cement bags with local sand Nylon crate	0.00
5	Supplying of EC bag,of local sand	450057.52
6	Supply and Carriage of brick bats	302705.57
7	Supply,laying and carriage of 1000 mm HPC	73858.50
8	Drone Videography Charj Three times	15000.00
	SUB TOTAL COST =	1228371.49
	TOTAL (RS.) =	**12,28,371**

J.E 11/11/24 A.E 11/11/24 E.E 11/11/24

S.E

Technically ~~Sanctioned~~ Approved for ₹ 12,28,371=00 (Twelve Lakh Twenty-eight thousand three hundred seventy-one) only

11/11/24

Superintending Engineer
RWD Work Circle
Kishanganj

Bill of Quantity

NAME OF ROAD :-	L053-LAKSHIMPUR TO BHORHA
DISTRICT :-	ARARIA
BLOCK :-	Kursakatta

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	265.02	CUM	1272.78	337310.32
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	610.67	MTR	69.19	42249.58
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.	200.00	MTR	35.95	7190.00
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.	8054.00	Each	55.88	450057.52
7	Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.	109.71	CUM	2759.12	302705.57
8	Supplaying and carriage of hume pipe 1000 mm dia , all complete job.	10.00	RM	7385.85	73858.50
			A) SUB TOTAL =		1213371.49
			TOTAL COST =		1213371

11/11/24 J.E

11/11/24 A.E

11/11/24 E.E

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

NAME OF ROAD :-	L053-LAKSHIMPUR TO BHORHA
DISTRICT :-	ARARIA
BLOCK :-	Kursakatta
Length of Cutting:-	69.50 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-incharge								
	At ch:-0.950km	cum	1	10.00	(6.75+5.5+5.25)/3	(3.5+4.85+3.25)/3	225.56		
	At ch:-2.500km	cum	1	16.50	(1.75+1.5+1.5)/3	(2.05+2.5+2.05)/3	57.48		
	Deductionfor H.P 1000MM dia (1.23 x 1.23)=1.52	cum	2	0.79	1.52	7.50	18.01		
		cum			total qty :-		265.019	1,272.78	337310.32
2	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:-0.950km		1	29/0.25	4.00		464.00		
	At ch:-2.500km		1	11/0.3	4.00		146.67		
		Mtr.			toal qty:-		610.67	69.19	42,249.58

3	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:-0.950km		1	29.00	2.5/0.5		145.00		
	At ch:-2.500km		1	11.00	2.5/0.5		55.00		
		Mtr.			total qty :-		200.00	35.95	7190.00
4	Supplying of EC bag, filling of local sand stitching and placing in position as the direction of Engineer-in-charge.								
	At ch:-0.950km	cum	1	29.00	(1.85+2.25)/2	(2.5+3.85+3.25)/3	190.24		
	At ch:-2.500km	cum	1	11.00	(2.5+2.25)/2	(3.05+3.5+3.05)/3	83.60		
	Total No of E C Bags(0.034cum=100Bags)			273.84	/	0.034	8054.00		
		Each			Say No of Bage :-		8054.00	55.88	450057.520
5	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:-0.820 km	cum	0	29.00	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:-0.950km	cum	1	29.00	(6.75+5.5+5.25)/3	(0.45+0.65+0.65)/3	98.68		
	At ch:-2.500km	cum	1	11.00	(1.75+1.5+1.5)/3	(0.75+0.65+0.5)/3	11.03		
		cum					109.71	2,759.12	302705.57
7	Supplaying and carriage of hume pipe 1000 mm dia , all complete job.								
	At ch:-0.950km	RM	2	2	2.5		10.00		
		RM					10.00	7,385.85	73858.50
							A) SUB TOTAL =		1213371.49
							TOTAL COST =		1213371.49

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
Excutive 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 (Ist 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

Sl. No.	Description	Unit	Basic Rate as per SOR	Add Royality	Final Rate With Royality
M-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
M-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
M-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
M-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
M-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
M-006	Bamboo (2nd Class) 75mm dia, 6.0 m -8.0 m long (per mtr.- 22.03 Rs.)	No.	176.00		176.00
M-007	Brick Bats	cum	1063.00	18.00	1081.00
M-008	Selected earth (Including @ Rs. 33.00 per cum & compensation @ Rs. 2.25 Per Cum	cum	2.25	33.00	35.25
M-009	Empety Cement Bag IS 11652:2000	Nos.	11.11		11.11
M-010	Steel Drum 300 mm dia 1.2 m high / empty bitumen drum	Nos.	170.13		170.13
M-011	Sand bags (Cost of sand and Empty cement bag)	Nos.	7.31	2.59	9.90
M-012	Sutli (Brown)	kg	20.59		20.59
M-013	Granular material (Natural occuring, soil gravel mixture / quarry waste, kankar, laterite, dhandla	cum	84.03	83.00	167.03
M-014	Nails	kg	108.00		108.00
M-014	RCC Pipe NP3 (1000 mm dia)	m	5787.23		5787.23
M-015	RCC Pipe NP3 (600 mm dia)	m	2310.00		2310.00
M-015	Sand (Fine) at source	cum	69.75	75.00	144.75
M-016	Empety Steel Drum 300 mm dia 1.2 m height	Nos.	170.13		170.13
M-016	Water	kl	60.30		60.30
M-017	Geo Bags	Each	124.00		124.00
M-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

Sr. No.	sor Code	Description of Machine	Description of Activity	Output of Machine Unit	Output of Machine Output	Usage Rates in Rs. Unit	Usage Rates in Rs. Rate
PM-009	P&M-012	Crane upto 80 T	Lifting of materials			per hour	5,573.00
PM-010	P&M-015	Dozer D 80 - A12 Dozer D 50 - A15	Dozing cutting	cum/h	260.00	per hour	2,997.00
PM-011				cum/h	120.00		4,326.00
PM-014	P&M-017	Front end-loader 1 cum bucket capacity @ 45 cum/hour	Loading Aggregates	cum/h	45.00	per hour	1,419.00
PM-017	P&M-026	Hydraulic Excavator of 1cum bucket	Excavation	cum/h	100.00	per hour	2,272.00
PM-031	P&M-044	Three wheel 80-100 kN Static Roller	Compaction/ Rolling			per hour	1,593.00
PM-032			Earth:- Embankment or sub- grade	cum/h	80/70		1,593.00
PM-033			Sub-base G-I	cum/h	10.00		1,593.00
PM-034			Sub-base G-II G-III	cum/h	8.00		1,593.00
PM-035			WMM	cum/h	16.00		1,593.00
PM-036			BUSG	cum/h	10.00		1,593.00
PM-037			BM 50/75 mm	cum/h	12.00		1,593.00
PM-038			Premix 20 mm	sqm/h	250.00		1,593.00
PM-039			Seal Coat	sqm/h	500.00		1,593.00
PM-040			Surface Dressing 1st Coat	sqm/h	400.00		1,593.00
PM-041			Surface Dressing 2ndCoat	sqm/h	500.00		1,593.00
PM-042	P&M-048	Tipper 5.5 cum/10 t	Carriage	cum/trip	5.50	per hour	1,426.00
PM-043	P&M-053	Tractor with Disc Harrows	Pulverisation of soil	cum/h	80.00	per hour	693.00
PM-044	P&M-055	Tractor with ripper @ 60 cum per hour	Ripping Pavements, uprooting trees	cum/h	60.00	per hour	697.00
PM-045	P&M-053	Tractor with trolley with Grading equipment	Transportation of materials	t/trip	3 to 5	per hour	676.00
PM-046	P&M-054	Tractor with Rotavator	Scarifier	cum/h	25.00	per hour	693.00
PM-047	P&M-057	Truck 10 t capacity	Carriage	cum/trip	5.50	per hour	1,054.00
PM-048	P&M-059	Vibratory roller 80-100 kN	Compaction of soil WMM	cum/h	100.00	per hour	2,053.00
PM-049			Compaction of BM	cum/h	60.00		2,053.00
PM-050	P&M-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre/h	12000.00	per hour	752.00
PM-063	P&M-060	generator 3KVA	stiching	per hour		per hour	74.00
PM-064	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: Pucka / Surface								Katcha								Loading & Unloa	Carriage by Road	Total
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

7/11/24

Junior Engineer
R.W.D. Works Section

Asstt. Engineer
R.W.D. Works Sub - Division,

Executive Engineer
R.W.D. Works

	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	QTY	Rate	Amount in Rs
1							
	4.4		**Carriage Of Material (By Tractor)**				
			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				
		ii)	Loading by front end loader 1 cum bucket capacity @ 25 cum	min	1 min		
			Total	min	5 min		
					6 min		
		a)	**Labour**				
			Mate				
			Mazdoor (Unskilled)	day	0.030	397.00	11.91
		b)	**Machinery**	day	0.720	373.00	268.56
			Tractor 3.60 Tonnes Capcaity				
			Front end loader 1 cum buckert capacity @ 25 Cum/hour	hour	0.100	676.00	67.60
			Cost for 2.25 cum = a+b+c	hour	0.083	1,419.00	117.78
			Rate per cum = (a+b+c)/2.25				465.85
			Total per cum	cum			207.044
	1.10		**Haulage excluding Loading & Unloading**	**cum**			**207.044**
			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				
			Empty return trip	hour	0.667	676.00	450.89
			Cost for 36t/km = a+b+c	hour	0.400	676.00	270.40
			Cost for 1 t_km = a+b/36				721.29
			Total per t per km				20.040
			Case - II Kutcha Track and Track in River Bed / Nallah Bed and Choe Bed				**20.040**
			Speed with load : 10km per hour				
			Speed while returning empty : 15km per hour				
		a)	**Machinery**				
			Tractor 3.6 tonnes Capacity				
			Haulage with load				
			Empty return trip	hour	1.00	676.00	676.00
			Cost for 36t/km = a+b+c	hour	0.667	676.00	450.89
			Cost for 1 t_km = a+b/36				1126.89
2			**Total per t per km**				31.300
	1.1		**Carriage Of Material (By Tipper)**				**31.300**
			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 laoading point				
		(ii)	loading by front end loader 1 cum bucket capacity @25		1Min		
		(iii)	maneuvering, reversing, dumping and turning for return		13Min		
		(iv)	Waiting time unforeseen contingnencies etc.		2Min		
			Total		4Min		
		b)	**Machinery**		**20Min**		
			Tipper 5.5 Tonnes Capcaity				
			Front end loader 1 cum buckert capacity @ 25 Cum/hour	hour	0.330	1,426.00	470.58
			Cost for 5.5 cum = a+b+c	hour	0.330	1,419.00	468.27
							938.85

			Rate per cum = (a+b+c)/5.5	cum			170.70
			Total per cum	cum			170.700
	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				
			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
3			**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				
			Truick				
			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				
			Truick				
			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				
			Truick	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				
			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				
			Mazdoor (Unskilled)	day	0.02	397.00	7.94
		b)	**Machinery**	day	0.50	373.00	186.50
			Tractor 3.60 Tonnes Capcaity				
			Crane	hour	0.33	1054.00	347.82
			Cost for 21 pipes = a+b+c+d	hour	0.33	5573.00	1839.09
			Rate per pipe = (a+b+c)/21				2381.35
			Total per pipe	per p			113.398
		(iii)	**Unloading of RCC Hume pipe by Mechanical means including a lead upto 30 m**				**113.398**
		A.	**1000/1200 mm dia RCC Hume pipes**				
			Unit = per pipe				
			Taking output = 9 pipes				
		a)	Labour				
			Mate				
			Mazdoor (Unskilled)	day	0.02	397.00	7.94
		b)	Machinery	day	0.50	373.00	186.50
			Truick				
			Crane	hour	0.20	1054.00	210.80
			Cost for 9 pipes = a+b+c+d	hour	0.20	5573.00	1114.60
			Rate per pipe = (a+b+c)/9				1519.84
			Total per pipe	**per p**			168.871
		C.	**600/450 mm dia Hume pipe**				**168.871**
			Unit = per pipe				
			Taking output = 21 pipes				
		a)	**Labour**				
			Mate				
			Mazdoor (Unskilled)	day	0.020	397.00	7.94
		b)	**Machinery**	day	0.50	373.00	186.50
			Truick				
			Crane	hour	0.20	1054.00	210.80
			Cost for 21 pipes = a+b+c+d	hour	0.20	5573.00	1114.60
			Rate per pipe = (a+b+c)/21				1519.84
			Total per pipe	per p			72.373
	1.9		**Loading and Unloading of Bamboo**				**72.373**
		(i)	Loading & unloading Bamboo				
			Unit = per metre				
			Taking output = per mtr.				
		a)	**Material**				
			Bamboo =2016/300				
			Bamboo Per Mt.	per pipe			6.72
			Total per m	par mt			0.96
4	3.3	301.5	**Construction of Embankment with material obtained from roadway cutting**				**0.960**
			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				
			Mazdoor (Unskilled)	day	0.02	397.00	7.94
		b)	**Machinery**	day	0.50	373.00	186.50
			Dozer D -50 for spreading @200 cum per hour				
			Motor Grader for grading @200 Cum per hour	hour	0.50	0.00	0.00
			Water tanker 6 kl capacity	hour	2.00	697.00	1,394.00
			Three Wheel 80-100 kN Static Roller	hour	2.00	752.00	1,504.00
		c)	**Material**	hour	1.25	1593.00	1,991.25
			Water				
			Cost for 100 cum = a+b+c+d+e	kl	12.00	60.30	723.60
							5807.29

			Rate per cum = (a+b+c+d)/100				
			Total per cum	cum			58.073
5	3.5	301.5	Excavation in soil with Dozer with lead upto 100 m	cum			58.073
	(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				
			Mazdoor (Unskilled)	day	0.08	397.00	31.60
		b)	Machinery	day	2.00	373.00	822.00
			Dozer D -50 for spreading @200 cum per hour				
			Cost for 100 cum = a+b+c+d+e	hour	3.60	4326.00	15,573.60
			Rate per cum = (a+b+c+d)/180				16427.20
			Total per cum	cum			91.262
6	3.3	301.5	Construction of Embankment with approved material obtained from borrw pits with a lift upto 1.5 m transporting to site, spreding 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	cum			91.260
			Unit = cum				
			Rate item no. 3.3 Clause 301.5				
			Rate item no. 3.5(ii) Clause 301.5				58.073
			Royality Compensation for earth taken from private land				91.260
			Carriage of Earth by Tractor Lead 1 K.M.				35.250
			Total Cost of 1 cum=				274.420
			Labour Cess @ 1%				459.003
			G.S.T. @ 18%				4.590
			Add Seigniorage Fee @ 10 % of Materials				82.621
			Total Cost of 1 cum 1% Cess & 18 % GST =	cum	1.00	35.25	3.53
7	4.5		Providing and Laying of Brick Bats				549.743
			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 = 2.83 cum				
		a)	Labour				
			Mazdoor (Unskilled)				
		b)	Materilas	day	2.170	373.00	809.41
			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
8	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**				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**
9	9.3	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**
2		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**
3	5.7.40.1		Labour for filling empty cement bags with local sand, sitching the bags and placing including supply of sutti etc. all complete as per approved design, specificaiton 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
			sutali	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				11.11
			(D) Carriage cost	each			
			Tractor with trolly	cum	0.034	345.14	11.73
			(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
4	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				
			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
5	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

6			**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				
			Mazdoor (Unskilled)	No.	4.00	531.00	2124.00
			Carpenter 1st Class	No.	4.00	373.00	1492.00
		b	**Materials**	No.	4.00	503.00	2012.00
			Nails				5628.00
			Steel Drum sheet	kg	5.00	170.13	850.65
				Nos.	88.5	170.13	15056.51
			Rate Per m = (a+b+c)/100				**21535.160**
			Labour Cess @ 1%				**215.352**
			G.S.T. @ 18%				**2.154**
			Total Cost of 1 mtr. 1% Cess & 18 % GST =				**38.763**
	5.7.8 WRD		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.				**256.268**
			(Assuming strip of 3.05x3.05 = 9.30 sqm				
			Unit = per sqm				
			Taking Out = 9.30 sqm				
		a	**Labour**				
			Carpenter Gr -II				
			Mazdoor (Unskilled) for pilling	No.	1.00	531.00	531.00
		b	**Materials**	No.	1.00	373.00	373.00
			Bamboo				
			Nails	Mtr.	10.00	188.00	1880.00
				kg	0.25	108.00	27.00
			Rate Per m = (a+b+c)/9.30				**2811.000**
			Labour Cess @ 1%				**302.258**
			G.S.T. @ 18%				**3.023**
			Total Cost of 1 mtr. 1% Cess & 18 % GST =				**54.406**
	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 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.				**359.687**
			Unit = Each Bag				
			Taking Out = 40 Nso.				
			Labour				
			Unskilled Loading For filling stacking				
			Skilled labour for stacking	nos	2	373.00	746.00
			Unskilid labour for carring and placing	nos	0.33	472.00	155.76
			Mate	nos	4.00	373.00	1492.00
			Stiching Machine	nos	0.25	397.00	99.25
			Tractor with trolley	day	0.33	50.00	16.50
			Generator 3KVA	day	1.00	676.00	676.00
			Total	hrs	20.67	74.00	1529.58
			Rate per bag (total/40) (A)				**4715.09**
		(ii)	charge for placing & dumping				117.88
			unskilled labour for loading unloading & dumping				
			Mate	nos	16	373.00	6320.00
			Tractor with trolley	nos	1	397.00	419.00
			Total	each	4	676.00	2704.00
			Rate per bag (Total/256) (B)				**9,443.000**
			Matroials				**36.887**
			cost of Geo Bag				
			Total cost (a+b+c)	each	1	124.00	124.00
							278.764

			Rate per bag				
			Labour Cess @ 1%				*270.764*
			G.S.T. @ 18%				*2.708*
			Add Seigniorage Fee @ 10 % of Materials				*50.178*
			Total Cost of 1 Geo Bag 1% Cess & 18 % GST =	*cum*	*0.070*	*144.75*	*1.01*
	5.7.40.3		*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.*				*332.739*
			Unit = Each N.C.				
		(i)	*(i) Labour Cost for filling bags in one Nylon crate in dry portion*				
		(ii)	*(i) Labour Cost for filling bags in one Nylon crate in dry portion*	*No.*	*1*	*472.00*	*411.00*
			(II) Placing of iled N/C with 30 m lead in water portion	*No.*	*1*	*472.00*	*611.00*
			Labour				
			Mate				
			Labour(Skilled)	*No.*	*0.37*	*397.00*	*146.89*
			Labour(Unskilled)	*No.*	*1.00*	*472.00*	*472.00*
				No.	*1.00*	*373.00*	*373.00*
			Hence, Total Labour for 100 Cft.				*2013.89*
			Taking one E.C. Bags to contain 1.20 Cft. Of sand				*2013.89*
		(ii)	*Hence, labour rate for placing one filed N.C.*				
			Hence rate [er mu;pm crate om water portion (I+II)		*356.49*		*356.49*
			Labour Cess @ 1%			*Say.*	*967.49*
			G.S.T. @ 18%				*9.675*
			Add Seigniorage Fee @ 10 % of Materials				*174.148*
			Total Cost of 1 E.C.1% Cess & 18 % GST =	*cum*	*0.034*	*144.75*	*0.49*
	(1)	800	local sand Fillling in foundation trenches as per drawing and technical specification				*1,151.803*
			local sand Fillling in foundation trenches as per drawing and technical specification Clause 305.3.9				
		I.	Sand filling				
			Unit = cum				
		a)	**Labour**				
			Mate				
			Mazdoor (Unskilled)	day	0.01	397.00	3.97
		b)	**Material**	day	0.30	373.00	111.90
			Sand (assuming 20 per cent voids)				
			Overheads @ 6 % on (a)	cum	1.20	144.75	173.70
							17.37
			CARRIAGE COST				306.94
			sand				
			Rate per cum = a+b+c	Cum	1.2	345.14	414.17
			Total Cost including 1 % LABOUR CESS				**721.11**
			G.S.T. @ 18%				**7.21**
			Add Seigniorage Fee @ 10 % of Materials				129.80
			Total Cost of 1 E.C.1% Cess & 18 % GST =				0.49
							1272.78