

RURAL WORKS DEPARTMENT GOVT OF BIHAR



NAME OF WORKS :- L055-FARBISGANJ TO SINWARI

BLOCK :- Kursakatta

FDR
Phase-I
27,21,547

YEAR(2024-25)

R.W.D., WORKS CIRCLE, KISHANGANJ

R.W.D., WORKS DIVISION, ARARIA

प्रतिवेदन

L055-FARBISGANJ TO SINWARI

पथ का नाम :-

कार्य का नाम :- L055-FARBISGANJ TO SINWARI

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 मरम्मति मद से यातायात चालू करने हेतु तैयार किया गया है जिसकी

प्राक्कलित लागत Twenty seven lakh twenty one thousand five hundred and

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।

कनीय अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रशाखा,

सहायक अभियंता,
ग्रामीण कार्य विभाग,
कार्य अवर प्रमण्डल,

कार्यपालक अभियंता,
ग्रामीण कार्य विभाग,
कार्य प्रमण्डल,

SUMMARY OF COST ESTIMATE FOR THE PROJECT		
NAME OF ROAD :-	L055-FARBISGANJ TO SINWARI	
DISTRICT :-	ARARIA	
BLOCK :-	Kursakatta	
Length of Road:-	0.00KM	
Length of Cutting in mtr :-	95.500	
Sl. No.	DESCRIPTION	AMOUNT (LAKHS)
1	Filling of local sand	1286377.53
2	Labour for cutting 62mm to 75mm dia bamboo	166646.01
3	Labour for fitting 62mm to 75mm dia bamboo	26872.63
4	Labour for filling empty cement bags with local sand Nylon crate	0.00
5	Supplying of EC bag, of local sand	616300.52
6	Supply and Carriage of brick bats	610350.73
7	Supply, laying and carriage of 1000 mm HPC	0.00
8	Drone Videography Charj Three times	15000.00
	SUB TOTAL COST =	2721547.42
	TOTAL (RS.) =	27,21,547

J.E

A.E

E.E

S.E

Technically ^{Approved} ~~Sanctioned~~ for ₹ 27,21,547 = 00
(Rupees Twenty-seven Lakh Twenty-one
thousand Five hundred Forty-seven) only

Superintending Engineer
RWD Work Circle
Kishanganj

Bill of Quantity

NAME OF ROAD :-		L055-FARBISGANJ TO SINWARI			
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-charge	1010.68	CUM	1272.78	1286377.53
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.	2408.67	MTR	69.19	166646.01
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.	747.50	MTR	35.95	26872.63
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.	11029.00	Each	55.88	616300.52
7	Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.	221.21	CUM	2759.12	610350.73
8	Supplying and carriage of hume pipe 1000 mm dia , all complete job.	0.00	RM	7385.85	0.00
A) SUB TOTAL =					2706547.42
TOTAL COST =					2706547

J.E

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E.E

NAME OF ROAD :- L055-FARBISGANJ TO SINWARI							
DISTRICT :- ARARIA							
BLOCK :- Kursakatta							
Length of Cutting:- 95.50 mtr							
Sl. No.	DESCRIPTION OF ITEMS	Unit	Nos.	L(m)	B(m)	D(m)	
					QUANTITY	RATE (Rs.)	AMOUNT (Rs.)
Filling of local sand obtained from river bed, watering & ramming, all complete job as per specification & direction of Engineer-in-charge							
	At ch:-0.600 km	cum	1	41.00	(5.75+4.5+4)/3	(2.5+3.85+2.25)/3	558.28
	At ch:-1.000 km	cum	1	16.50	(5.5+5.25+5.25)/3	(3.05+3.5+3.05)/3	281.50
	At ch:-1.400 km	cum	1	21.00	(3.5+4.5)/2	(2.5+1.85+1.75)/3	170.80
	Deductionfor H.P 1000MM dia (1.23 x 1.23)=1.52	cum	0	0.79	1.52	7.50	0.00
		cum			total qty :-		
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.					1,272.78	1286377.53
	At ch:-0.600 km		2	41/0.25	4.00		1312.00
	At ch:-1.000 km		2	16.5/0.3	4.00		506.67
	At ch:-1.400 km		1	21/0.2	4.00		590.00
	Mtr.				total qty:-		
						69.19	1,66,646.01

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:-0.600 km		2	41.00	2.5/0.5			410.00			
	At ch:-1.000 km		2	16.50	2.5/0.5			190.00			
	At ch:-1.400 km		1	21.00	2.5/0.5			147.50			
	Mtr.		total qty :-					747.50	35.95	26872.63	
3	Supplying of EC bag, filling of local sand stitching and placing in position as the direction of Engineer-in-charge.										
	At ch:-0.600 km	cum	2	41.00	0.90		(2.5+3.85+2.25)/3	211.56			
	At ch:-1.000 km	cum	2	16.50	0.90		(3.05+3.5+3.05)/3	109.44			
	At ch:-1.400 km	cum	1	21.00	0.90		(2.5+1.85+1.75)/3	53.99			
	Total No of E C Bags(0.034cum=100Bags)			374.99	/		0.034	11029.00			
	Each		Say No of Bage :-					11029.00	55.88	616300.520	
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 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:-23500 m	cum	0	41.00	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	

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 1st 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 Royalty	Final Rate With Royalty
M-001	Bamboo (1st Class) 100 mm x 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 x 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 x 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 x 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	Empty 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 occurring, 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	Empty 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

Sl. No.	Job Code	Description of		Output of Machine		Usage Rates in Rs.	
		Machine	Activity	Unit	Output	Unit	Rate
PAI-009	PAAI-012	Crane upto 80 T	Lifting of materials				
PAI-010	PAAI-013	Tracer D 80 - A12 Tracer D 30 - A13	Draining, cutting	cum h	260.00	per hour	3,573.00
PAI-011				cum h	130.00	per hour	3,997.00
PAI-014	PAAI-015	Front end-loader 4 cum bucket capacity at 43 cum hour	Loading Aggregates	cum h	43.00	per hour	4,326.00
PAI-017	PAAI-026	Hydraulic Excavator of 4 cum bucket	Excavation	cum h	100.00	per hour	1,419.00
PAI-031	PAAI-044	Three wheel 80-100 kN Static Roller	Compaction Rolling				
PAI-032			Earth - Embankment or sub-grade	cum h	80.70	per hour	1,593.00
PAI-033			Sub-base (I-I)	cum h	10.00		1,593.00
PAI-034			Sub-base (I-II) (I-III)	cum h	8.00		1,593.00
PAI-035			WAM	cum h	16.00		1,593.00
PAI-036			BUSG	cum h	10.00		1,593.00
PAI-037			BM 50-75 mm	cum h	12.00		1,593.00
PAI-038			Premix 20 mm	sqm h	250.00		1,593.00
PAI-039			Seal Coat	sqm h	500.00		1,593.00
PAI-040			Surface Dressing 1st Coat	sqm h	400.00		1,593.00
PAI-041			Surface Dressing 2nd Coat	sqm h	500.00		1,593.00
PAI-042	PAAM-048	Tipper 3.5 cum 10 t	Carriage	cum trip	5.50	per hour	1,426.00
PAI-043	PAAM-053	Tractor with Disc Harrows	Pulverisation of soil	cum h	80.00	per hour	693.00
PAI-044	PAAM-055	Tractor with ripper at 60 cum per hour	Ripping Pavements, uprooting trees	cum h	60.00	per hour	697.00
PAI-045	PAAM-055	Tractor with trolley with Grading equipment	Transportation of materials	t trip	3 to 5	per hour	676.00
PAI-046	PAAM-054	Tractor with Rotavator	Scarifier	cum h	25.00	per hour	693.00
PAI-047	PAAM-057	Truck 10 t capacity	Carriage	cum trip	5.50	per hour	1,054.00
PAI-048	PAAM-059	Vibratory roller 80-100 kN	Compaction of soil WMM	cum h	100.00	per hour	2,053.00
PAI-049			Compaction of BM	cum h	60.00		2,053.00
PAI-050	PAAM-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre h	12000.00	per hour	752.00
PAI-063	PAAM-060	generator 5KVA	stiching	per hour		per hour	74.00
PAI-064	PAAM-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 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												
Sl No	Item	Unit	Source	Pucka / Surface				Katcha				Total
1	By Tractor											
A	Earth Work Via Road	Cum	Local	3.60	x 20.04	x	0 Km					
				2.04				x 31.30	x	1 Km	= Rs 55.24	274.420
B	Brick Bat Via Road	Cum	Local	3.60	x 20.04	x	7 Km					
				2.04				x 31.30	x	1 Km	= Rs 55.24	521.970
B	Bamboo Via Road	pet mtr.	Local	3.60	x 20.04	x	2 Km					
				126.00				x 31.30	x	1 Km	= Rs 0.89	3.000
D	Local Sand Via Road	Cum	Local	3.60	x 20.04	x	2 Km					
				2.04				x 31.30	x	1 Km	= Rs 55.24	345.140
2	By Tipper											
A	GSB Via Road	Cum	Siliguri	8.00	x 9.83	x	177 Km					
				4.99				x 23.81	x	0 Km	= Rs 0.00	2960.130
3	By Truck											
A	Hume Pipe (1000 mm) Via Rod	Mtr.	purnea	8.00								
				10.00	x 7.27	x	53 Km					
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					
B1	Rate Per Mtr. Pipe	Mtr.	purnea									

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

24/11/24

Junior Engineer
R.W.D. Works Section

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

24/11/24

Executive Engineer
R.W.D. Works

SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	QTY	Rate	Amount in Rs
2		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 dumping, turning for return trip excluding time for haulage and return trip				
		Unit = cum				
		Taking output = 2.25 cum				
		Time required for				
	i)	positioning of tractor at loading point	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
	b)	Machinery	day	0.720	373.00	268.56
		Tractor 3.60 Tonnes Capacity	hour	0.100	676.00	67.60
		Front end loader 1 cum bucket capacity @ 25 Cum/hour	hour	0.003	1,419.00	117.78
		Cost for 2.25 cum = a+b+c				465.85
		Rate per cum = (a+b+c)/2.25				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
2		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				
	(1)	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 contingencies 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
1.70		Haulage excluding Loading & Unloading	cum			170.700
		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)				
1.70		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 = (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 Capacity				
			Crane	hour	0.33	1054.00	347.82
			Cost for 21 pipes = a+b+c+d	hour	0.33	5573.00	1849.09
			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
			Truck				
			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
			Truck				
			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	per pipe			6.72
			Bamboo Per Mt.	par mt			0.96
			Total per m				0.960
4	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	cum			
			Total per cum	cum			58.073
5	3.5	301.5	Excavation in soil with Dozer with lead upto 100 m				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	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
6	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				
			Rate item no. 3.5(ii) Clause 301.5				58.073
			Royalty 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 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
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				
			Tractor mounted grader arrangement	hour	12.00	676.00	4864.56
			Three wheel 80-100 kN static roller @ 10 cum per hour	hour	30.00	1593.00	8112.00
			Tractor with Rotavator 25 cum per hour	hour	12.00	693.00	47790.00
			Water tanker 6 kl capacity	hour	5.00	752.00	8316.00
		c)	Material				3760.00
			Well graded granular sub-base material as per Table 400.1				67978.00
			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				4004.98
			Rate per cum = (A+B)	CUM			4320.501
			Total per cum	CUM			4320.501
			Labour Cess @ 1%				43.205
			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				
			Note				
			Mason (1st class)	day	0.09	397.00	35.73
			Mazdoor (Unskilled)	day	0.25	503.00	125.75
			Cost for 7.5m = (a+b+c)	day	2.00	373.00	746.00
			A) Basic Cost per m = (a+b)/7.5				44311.71
			Rate per m of Pipe	m			5908.23
		(d)	CARRIAGE COST				5908.23
			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				
			Note				
			Mason (1st class)	day	0.04	397.00	15.88
			Mazdoor (Unskilled)	day	0.12	503.00	60.36
			Cost of 7.5m = (a+b+c+d)	day	0.96	373.00	358.08
			A) Basic Cost per m = (a+b)/7.5	m			17759.32
			Rate per m of Pipe				2367.91
			CARRIAGE COST				2367.91
			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, stitching the bags and placing including supply of sutti 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
		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	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	cum	0.034	144.75	0.49
		Total Cost of 1 E.C.Bag 1% Cess & 18 % GST =				55.882
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
5.7.7		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			
		Hammer man	No.	4.00	531.00
		Mazdoor (Unskilled)	No.	4.00	373.00
		Carpenter 1st Class	No.	4.00	503.00
	b	Materials			
		Nails	kg	5.00	170.13
		Steel Drum sheet	Nos.	88.5	170.13
					15056.51
					21535.160
		Rate Per m = $(a+b+c)/100$			
		Labour Cess @ 1%			
		G.S.T. @ 18%			
		Total Cost of 1 mtr. 1% Cess & 18 % GST =			
					256.268
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.			
		(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
		Mazdoor (Unskilled) for piling	No.	1.00	373.00
	b	Materials			
		Bamboo	Mtr.	10.00	188.00
		Nails	kg	0.25	108.00
					27.00
					2811.000
		Rate Per m = $(a+b+c)/9.30$			
		Labour Cess @ 1%			
		G.S.T. @ 18%			
		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
		Skilled labour for stacking	nos	0.33	472.00
		Unskilled labour for carring and placing	nos	4.00	373.00
		Mate	nos	0.25	397.00
		Stiching Machine	day	0.33	50.00
		Tractor with trolley	day	1.00	676.00
		Generator 3KVA	hrs	20.67	74.00
		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
		Mate	nos	1	397.00
		Tractor with trolley	each	4	676.00
		Total			2704.00
		9,443.000			
		Rate per bag (Total/256) (B)			
		36.887			
		Matroials			
		cost of Geo Bag	each	1	124.00
		Total cost (a+b+c)			124.00
					278.764

		Rate per bag				
		Labour Cess @ 1%				270.764
		G.S.T. @ 18%				2.700
		Add Seigniorage Fee @ 10 % of Materials				50.170
		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, stitching the bags and pitching in Nylon crate of size (1m x 1m x 1m) with a lead of 150 m including supply of sati 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	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				
		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
		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.		356.49		356.49
		Hence rate for 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
(1)	800	local sand Filling in foundation trenches as per drawing and technical specification				
		local sand Filling in foundation trenches as per drawing and technical specification Clause 305.3.9				
	1.	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
		<u>CARRIAGE COST</u>				
		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