

RURAL WORKS DEPARTMENT



GOVERNMENT OF BIHAR

NAME OF ROAD:- **MORBALLA TO FORBESGANJ**

DIVISION:- **R.W.D, WORKS DIVISION, FORBESGANJ**

CIRCLE:- **R.W.D, WORK CIRCLE, KISHANGANJ**

BLOCK:- **FORBESGANJ**

ESTIMATED COST

4415140.00

प्रतिवेदन

पथ का नाम :- Morbulla to Forbesganj

कार्य का नाम :- FDR/2024-25

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

संलग्न प्राक्कलन 2024 को प्रखण्ड में आयी भीषण बाढ़ से क्षतिग्रस्त मुड़बळ्ळा से फारबिसगंज पथ में बाढ़ क्षतिग्रस्त मरम्मति मद से यातायात चालू करने हेतु तैयार किया गया है जिसकी प्राक्कलित लागत ₹ 44,15,140 है। उक्त पथ का निर्माण pmjshy-III योन्तर्गत हुआ है एवं योजना अनुरक्षण अर्द्ध 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।



कमीय अभियंता,

ग्रामीण कार्य विभाग,

कार्य प्रशाखा, फारबिसगंज



सहायक अभियंता,

ग्रामीण कार्य विभाग,

कार्य अवर प्रमण्डल, फारबिसगंज



कार्यपालक अभियंता,

ग्रामीण कार्य विभाग,

कार्य प्रमण्डल, फारबिसगंज

Inspection Report for Flood Damage Work

Date:

1. Name of P.U's:- **Executive Engineer, RWD Forbeggur**

2. Name of Block:- **Forbeggur**

3. Name of Road:- **Morballa to Forbeggur**

A. For Road

1. Damage Location/Chainage:- **5.50km**

2. Damage Length :- **81.04**

3. Nature of Damage :- **Wash out**

4. Details of Restoration Works:-

(i.) Material being used in Restoration Works:-

(ii.) Equipments/Tools being used in Restoration works:-

(iii.) Procedure taken up in Restoration works:-

(iv.) Restored Length :- **81.04**

B. For Bridge

1. Damage Location/Chainage:-

2. Damage Length :-

3. Nature of Damage :-

4. Details of Restoration Works:-

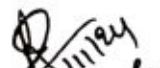
(i.) Material being used in Restoration Works:-

(ii.) Equipments/Tools being used in Restoration works:-

(iii.) Procedure taken up in Restoration works:-

(iv.) Restored Length :


Signature of JE/AE/EE


Signature


Signature

(Name of Inspector)


Signature

Abstract of Cost

ne of Work : Estimate for Repairing/Restoration/Making Motorable Roads
Damaged during flood in 2024 in ARARIA District

of Road:

MORBALLA TO FORBESGANJ

k: FORBESGANJ

District: ARARIA

son : RWD, Works Division, FORBESGANJ

Circle: RWD, Work Circle, KISHANGANJ

No.	Description	Unit	Quantity (m3)	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.				
		Cum	2710.28	1287.25	3488806.21
2	Labour for cutting 62mm 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.				
		Mtr.	568.80	72.518	41248.24
3	Labour for fitting & fixing 62mm to 75mm 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.				
		Mtr.	189.60	36.179	6859.54
5	Supplying of EC bag, filling of local sand, stitching and placing in position as per the direction of Engineer-in-charge.				

	Per Bags	6914.66	55.882	386404.99
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.				
	cum	92.16	5173.835	476820.63
9 Providing of drone service and drone surveying as per I/E				
	PER TRIP	3.00	5000.000	15000.00
	TOTAL AMOUNT =			4415139.62
	SAY TOTAL AMOUNT =			4415139.62

AM/24

RWD SUB DIVISION-FORBESGANJ

RWD SUB DIV.
FORBESGANJ

RWD WORKS DIV. FORBESGANJ

Superintending Engineer
Rural Works Department
Works Circle, Kishanganj

Detailed Estimate

of Road:

MORBALLA TO FORBESGANJ

Items of Works	Nos.	L (m)	B (m)	D (m) IN (Av.)	Quantity (m3)
Filling of local sand obtained from river bed, watering & ramming, all complete job as per specification & direction of Engineer-in-charge.					
	1	32.40	$(6.00+7.00+5.80)/3$	$(4.50+6.00+5.40)/3$	1076.11
	1	34.00	$(6.00+9.00)/2$	$(4.50+6.00+4.80)/3$	1300.50
	1	15.00	$(3.00+6.00+5.00)/3$	$(4.0+5.80+4.50)/3$	333.67
				TOTAL=	2710.28
				Total Qty =	2710.28
Labour for cutting 62mm 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	32.40	3.00	4.00	388.80
	1	15.00	3.00	4.00	180.00
				Total Qty =	568.80
3 Labour for fitting & fixing 62mm to 75mm 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.					
	1	32.40	4.00		129.60
	1	15.00	4.00		60.00
				Total Qty =	189.60

plying of EC bag, filling of local id, stitching and placing in position per the direction of Engineer-in- arge.					
	1	32.40	$(1.20+0.75)/2$	$(4.50+4.00+4.40)/3$	135.84
	1	15.00	$(1.20+0.75)/2$	$(3.0+4.80+4.50)/3$	59.96
				TOTAL=	195.80
Total No. of EC Bags = (195.80×35.315)					6914.66
				SAY NO OF BAGE=	6915
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.					
	1	32.40	4.50	0.20	29.16
	1	34.00	5.00	0.30	51.00
	1	15.00	4.00	0.20	12.00
				Total Qty. =	92.16
Providing of drone service and drone 9 surveying as per I/E					
	1	3.0			3.00
				TOTAL=	3.00


JE

RWD SUB DIV- FORBESGANJ


AE

RWD SUB DIV. FORBESGANJ


EE

RWD WORKS DIV. FORBESGANJ

FINAL RATE UNDER WORKS CIRCLE KISHANGANJ

S.No	Discription of Item	Unit	Final Rate (Excluding GST, Selgniorage & L.Cess)	Final Rate (Including GST, Selgniorage & L.Cess)
1	EARTH WORK	CUM	459.003	549.740
2	BRICK BAT	CUM	2209.576	2759.115
3	G.S.B	CUM	4328.501	5172.300
4	SAND BAG (Cement Bag)	Each	46.550	55.880
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
12	EACH N.C. BAG WITH SAND (Cement Bag)	Each E.C	967.490	1151.800
13	LOCAL SAND	CUM	721.110	1272.780

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Kishanganj-2

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Forbesganj

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Rural Works Department
Works Circle Kishanganj

SUMMARY OF CARRIGE COST

No.	Item	Unit	Amount (Rs.)
	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

(A) Labour

Sl. No.	Description of Labour	Unit	
L-01	Bhist	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	Finer, skilled	day	511
L-12	Mason (1st class)	day	503
L-13	Mason (2nd Class)	day	449
L-14	Mate, Semi skilled	day	434
L-15	Mazdoor (Unskilled)	day	410
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	503
L-23	Welder 1st Class	day	577
	Carpenter Head	day	503
	Night Guard	day	415

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

01/07/2024

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BASIC RATES (B) Material					Unit	Basic Rate as per SOR	Add Royalty	Final Rate With Royalty
Sl. No.	Description							
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.	176.00		176.00
M-005	Bamboo (1st Class) 50 mm - 100 mm dia, 6.0 m - 8.0 m long (per mtr.- 22.03 Rs.)				No.	176.00	18.00	1081.00
M-006	Bamboo (2nd Class) 75mm dia, 1.8 m - 6.0 m - 8.0 m long (per mtr.- 22.03 Rs.)				cum	1063.00	33.00	35.25
M-007	Bamboo (2nd Class) 75mm dia, 6.0 m - 8.0 m long (per mtr.- 22.03 Rs.)				cum	2.25		11.11
M-008	Bamboo (2nd Class) 75mm dia, 6.0 m - 8.0 m long (per mtr.- 22.03 Rs.)				Nos.	11.11		170.13
M-009	Brick Bats				Nos.	170.13		9.90
M-010	Selected earth (Including @ Rs. 33.00 per cum & compensation @ Rs. 2.25 Per Cum						2.59	20.59
M-011	Empty Cement Bag IS 11652:2000							167.03
M-012	Steel Drum 300 mm dia 1.2 m high / empty bitumen drum				Nos.	7.31		
M-013	Sand bags (Cost of sand and Empty cement bag)				kg	20.59	83.00	
M-014	Sutti (Brown)				cum	84.03		108.00
M-015	Granular material (Natural occurring, soil gravel mixture / quarry waste, kankar, laterite, dhandla)				kg	108.00		5787.23
M-016	Nails				m	5787.23		2310.00
M-017	RCC Pipe NP3 (1000 mm dia)				m	2310.00		144.75
M-018	RCC Pipe NP3 (600 mm dia)				cum	69.75	75.00	170.13
M-019	Sand (Fine) at source				Nos.	170.13		60.30
M-020	Empty Steel Drum 300 mm dia 1.2 m height				kl	60.30		124.00
M-021	Water				Each	124.00		144.75
M-022	Geo Bags				cum	69.75	75.00	
M-023	G.S.B.							

(Basic Rates Taken From SOR, Seventeenth Edition, Road Construction Department, Govt. of Bihar
effective from 01/07/2024.)

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**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
PM-009	P&M-012	Crane upto 40 T	Lifting of materials	cum h	260.00	per hour	15533.00
PM-010	P&M-013	Digger D-80 - A12 Digger D-50 - A15	Digging cutting	cum h	120.00	per hour	2997.00
PM-011	P&M-017	Front end-loader 1 cum bucket capacity or 45 cum hour	Loading Aggregates	cum h	45.00	per hour	4426.00
PM-017	P&M-026	Hydraulic Excavator of 1 cum bucket	Excavation	cum h	100.00	per hour	2772.00
PM-031	P&M-044	Three wheel 80-100 KN Static Roller	Compaction Rolling	cum h	80.70	per hour	1593.00
PM-032			Earth - Embankment or sub-grade	cum h	80.70	per hour	1593.00
PM-033			Sub-base G-I	cum h	10.00	per hour	1593.00
PM-034			Sub-base G-II G-III	cum h	8.00	per hour	1593.00
PM-035			WBM	cum h	16.00	per hour	1593.00
PM-036			BLDG	cum h	10.00	per hour	1593.00
PM-037			BM 50 75 mm	cum h	12.00	per hour	1593.00
PM-038			Procut 20 mm	sqm h	250.00	per hour	1593.00
PM-039			Scal Coat	sqm h	500.00	per hour	1593.00
PM-040			Surface Dressing 1st Coat	sqm h	400.00	per hour	1593.00
PM-041			Surface Dressing 2nd Coat	sqm h	500.00	per hour	1593.00
PM-042	P&M-048	Tipper 5.5 cum 10 t	Carriage	cum trip	5.50	per hour	616.00
PM-043	P&M-053	Tractor with Disc Harrows	Pulverisation of soil	cum h	80.00	per hour	675.00
PM-044	P&M-055	Tractor with ripper or 60 cum per hour	Ripping Pavements, uprooting trees	cum h	60.00	per hour	687.00
PM-045	P&M-053	Tractor with trolley with Grading equipment	Transportation of materials	trip	3 to 5	per hour	616.00
PM-046	P&M-054	Tractor with Reclaimer	Scarifier	cum h	25.00	per hour	681.00
PM-047	P&M-057	Truck 10 t capacity	Carriage	cum trip	5.50	per hour	1054.00
PM-048	P&M-059	Vibratory roller 80-100 KN	Compaction of soil WBM	cum h	100.00	per hour	2205.00
PM-049			Compaction of BM	cum h	60.00	per hour	2205.00
PM-050	P&M-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre / h	12000.00	per hour	1352.00
PM-063	P&M-060	generator 3KVA	sucking	per hour		per hour	7400.00
PM-064	P&M-060	sucking machine	sucking	day		day	3000.00

(Basic Rates Taken From SOR, Seventeenth Edition, Road Construction Department, Govt. of Bihar effective from 01/07/2024.

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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 & Lead in Km										Loading & Unloading	Carriage by Road	Total	
				Pukka / Surface					Katcha								
1	By Tractor Earth Work Via Road A	Cum	Local														
B	Brick Bat Via Road	Cum	Local														
B	Bamboo Via Road	pet mtr.	Local														
D	Local Sand Via Road	Cum	Local														
2	By Tipper GSB Via Road A	Cum	Siliguri														
3	By Truck Hume Pipe (1000 mm) Via Road A	Mtr.	purnea														
A1	Rate Per Mtr. Pipe	Mtr.	purnea														
B	Hume Pipe (600 mm) Via Road	Mtr.	purnea														
B1	Rate Per Mtr. Pipe	Mtr.	purnea														

Cost of Haulage Excluding Loading & Unloading as per SO-1 Subjected to Verification of Lead

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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 dump on ,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	434.00	13.02
		Mazdoor (Unskilled)	day	0.720	410.00	295.20
	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				493.60
		Rate per cum = (a+b+c)/2.25	cum			219.378
		Total per cum	cum			219.378
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 Kutchra 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				
	(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				
	(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 contingencies etc.		2Min		
		Total		4Min		
	b)	Machinery		20Min		
		Tipper 5.5 Tonnes Capacity				
		Front end loader 1 cum bucket 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		120.00
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
		Empty return trip	hour	0.29	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
		Empty return trip	hour	0.67	955.42
		Cost for 100t km = a+b			2381.42
		Cost for 1 t km = a+b/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			
		Truck			
		Haulage with load	hour	0.40	1054.00
		Empty return trip	hour	0.29	303.66
		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
		Empty return trip	hour	0.67	706.18
		Cost for 100t km = a+b			1760.18
		Cost for 1 t km = a+b/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			
		Mote	day	0.02	434.00
		Mazdoor (Unskilled)	day	0.50	410.00
	b)	Machinery			
		Truck	hour	0.33	1054.00
		Crane	hour	0.33	5573.00
		Cost for 9 pipes = a+b+c+d			2400.59

			Rate per pipe = (a+b+c)/9	per p		266.732
			Total per pipe =			266.732
		C.	600/450 mm dia Hume pipe			
			Unit = per pipe			
			Taking output = 21 pipe			
		a)	Labour			
			Mate	day	0.02	434.00
			Mazdoor (Unskilled)	day	0.50	410.00
		b)	Machinery			
			Tractor 3.60 Tonnes Capacity	hour	0.33	1054.00
			Crane	hour	0.33	5573.00
			Cost for 21 pipes = a+b+c+d			2400.59
			Rate per pipe = (a+b+c)/21	per p		114.314
			Total per pipe =			114.314
		(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	434.00
			Mazdoor (Unskilled)	day	0.50	410.00
		b)	Machinery			
			Truck	hour	0.20	1054.00
			Crane	hour	0.20	5573.00
			Cost for 9 pipes = a+b+c+d			1539.08
			Rate per pipe = (a+b+c)/9	per p		171.009
			Total per pipe =			171.009
		C.	600/450 mm dia Hume pipe			
			Unit = per pipe			
			Taking output = 21 pipes			
		a)	Labour			
			Mate	day	0.020	434.00
			Mazdoor (Unskilled)	day	0.50	410.00
		b)	Machinery			
			Truck	hour	0.20	1054.00
			Crane	hour	0.20	5573.00
			Cost for 21 pipes = a+b+c+d			1539.08
			Rate per pipe = (a+b+c)/21	per p		73.290
			Total per pipe =			73.290
	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
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	434.00
			Mazdoor (Unskilled)	day	0.50	410.00
		b)	Machinery			
			Doser D-50 for spreading @200 cum per hour	hour	0.50	0.00
			Motor Grader for grading @200 Cum per hour	hour	2.00	697.00
			Water tanker 6 kl capacity	hour	2.00	752.00
			Three Wheel 80-100 kN Static Roller	hour	1.25	1593.00
		c)	Material			
			Water	kl	12.00	60.30
			Cost for 100 cum = a+b+c+d+e			5826.53

			Rate per cum = (a+b+c+d)/100	cum			58.265
			Total per cum				58.265
5	3.5	301.5	Excavation in soil with Dozer with lead upto 100 m				
	(ii)	(ii)	Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 m, including trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections.				
			Unit = cum				
			Taking output = 100 cum				
		a)	Labour				
			Mate	day	0.08	434.00	31.60
			Mazdoor (Unskilled)	day	2.00	410.00	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)/100	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				58.265
			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 =				459.195
			Labour Cess @ 1%				4.590
			G.S.T. @ 18%				82.655
			Add Seigniorage Fee @ 10 % of Materials	cum	1.00	35.25	3.53
			Total Cost of 1 cum 1% Cess & 18 % GST =				549.970
7	4.5		Providing and Laying of Brick Bats				
			Placing tractor at loading point loading with front end loader dumpang, 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	410.00	889.70
		b)	Materials				
			Brick Bats	cum	3.396	1,081.00	3671.08
			Total (a+b) =				4560.78
			Total (a+b+c) =				4560.78
		d)	Carriage				
			Brick Bats	cum	3.396	521.97	1772.61
			TOTAL				6333.39
			Rate per cum = (a+b+c+d)/2.83	cum			2237.947
			Total per cum	cum			2237.947
			Labour Cess @ 1%				22.379
			G.S.T. @ 18%				402.830
			Add Seigniorage Fee @ 10 % of Materials	cum	1.20	1,081.00	129.72
			Total Cost of 1 cum 1% Cess & 18 % GST =				2,792.877
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	434.00	208.32
			Mazdoor (Skilled)	day	2.00	472.00	944.00
			Mazdoor (Unskilled)	day	10.00	410.00	4100.00

	b)	Machinery				5252.32
		Tractor mounted grader arrangement	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				
		CSB	cum	1.28	167.03	213.80
		Cost of 300 cum without Carriage = (a+b+c+d+e)				73444.12
		A) Basic Cost per cum = (a+b+c+d+e)/300	cum			244.814
		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			4329.794
		Total per cum	CUM			4329.794
		Labour Cess @ 1%				43.298
		G.S.T. @ 18%				779.363
		Add Seigniorage Fee @ 10 % of Materials	cum	1.28	167.03	21.38
		Total Cost of 1 cum 1% Cess & 18% GST =				5173.835
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	434.00	39.06
		Mason (1st class)	day	0.25	503.00	125.75
		Mazdoor (Unskilled)	day	2.00	410.00	820.00
		Cost for 7.5m = (a+b+c)				44389.04
		A) Basic Cost per m = (a+b)/7.5	m			5918.54
		Rate per m of Pipe				5918.54
		(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			6,216.909
		Total per m	m			6,216.909
		Labour Cess @ 1%				62.169
		G.S.T. @ 18%				1,119.044
		Total Cost of 1 mtr. 1% Cess & 18% GST =				7,398.121
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	434.00	17.36
		Mason (1st class)	day	0.12	503.00	60.36
		Mazdoor (Unskilled)	day	0.96	410.00	393.60
		Cost of 7.5m = (a+b+c+d)				17796.32
		A) Basic Cost per m = (a+b)/7.5	m			2372.84
		Rate per m of Pipe				2372.84
		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			2,497.193
		Total per m	m			2,497.193
		Labour Cess @ 1%				24.972
		G.S.T. @ 18%				449.495
		Total Cost of 1 mtr. 1% Cess & 18% GST =				2,971.660
3	5.7.40.1		Labour for filling empty cement bags with local sand, stitching the bags and placing including supply ofutti 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 trolley	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
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	503.00	62.88
		Unskilled Labour	No.	0.25	410.00	102.50
		Rate for 30.5 m				835.79
		TOTAL =				835.79
		Rate per mt				27.40
		(iii) Carriage cost				
		bamboo	mt	1	3.00	3
		Total Cost with Carriage				30.40
		Labour Cess @ 1%				0.304
		G.S.T. @ 18%				5.473
		Total Cost of 1 mtr. 1% Cess & 18 % GST =				36.179
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	503.00	125.75
		Unskilled Labour for piling	No.	2.50	410.00	1025.0
		Rate for 30.5 m				1767.16
		Total				1767.16
		Rate for 1 m				57.94
		Carriage Cost of Bamboo	per mtr.			3.00
		Total Cost with Carriage				60.94
		Labour Cess @ 1%				0.609
		G.S.T. @ 18%				10.969
		Total Cost of 1 mtr. 1% Cess & 18 % GST =				72.518

		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	503.00
		Mazdoor (Unskilled)	No.	4.00	410.00
		Carpenter 1st Class	No.	4.00	503.00
	b	Materials			
		Nails	kg	5.00	170.13
		Steel Drum sheet	Nos.	88.5	170.13
					21571.160
		Rate Per m = $(a+b+c)/100$			
		Labour Cess @ 1%			
		G.S.T. @ 18%			
		Total Cost of 1 mtr. 1% Cess & 18% GST			
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	410.00
	b	Materials			
		Bamboo	Mtr.	10.00	188.00
		Nails	kg	0.25	108.00
					2848.000
		Rate Per m = $(a+b+c)/9.30$			
		Labour Cess @ 1%			
		G.S.T. @ 18%			
		Total Cost of 1 mtr. 1% Cess & 18% GST			
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 Nos.			
		Labour			
		Unskilled Loading For filling stacking	nos	2	410.00
		Skilled labour for stacking	nos	0.33	472.00
		Unskilled labour for carrying and placing	nos	4.00	410.00
		Mate	nos	0.25	434.00
		Stiching Machine	day	0.33	50.00
		Tractor with trolley	day	1.00	676.00
		Generator 3KVA	hrs	20.67	74.00
		Total			4946.34
		Rate per bag (total/40) (A)			
	(ii)	charge for placing & dumping			
		unskilled labour for loading unloading & dumping	nos	16	410.00
		Mate	nos	1	434.00
		Tractor with trolley	each	4	676.00
		Total			9,443.000
		Rate per bag (Total/256) (B)			
		Materials			
		cost of Geo Bag	each	1	124.00
		Total cost (a+b+c)			

		Rate per bag				284.545
		Labour Cess @ 1%				2.845
		G.S.T. @ 18%				51.218
		Add Seigniorage Fee @ 10 % of Materials	cum	0.070	144.75	1.01
		Total Cost of 1 E.C. Bag: 1% Cess & 18% GST =				339.619
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 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/L.				
		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	434.00	160.58
		Labour (Skilled)	No.	1.00	472.00	472.00
		Labour (Unskilled)	No.	1.00	410.00	410.00
						2064.58
		Hence, Total Labour for 100 Cft.				2064.58
		Taking one E.C. Bags to contain 1.20 Cft. Of sand				
	(ii)	Hence, labour rate for placing one filed N.C.		356.49		356.49
		Hence rate for mu:pm crate on 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 =				1151.803
	(1)	B001	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			
	I.	Sand filling				
		Unit = cum				
	a)	Labour				
		Mate	day	0.01	434.00	4.34
		Mazdoor (Unskilled)	day	0.30	410.00	123.00
	b)	Material				
		Sand (assuming 20 per cent voids)	cum	1.20	144.75	173.70
		Overheads @ 6 % on (a)				18.06
						319.10
		<u>CARRIAGE COST</u>				
		sand	Cum	1.2	345.14	414.17
		Rate per cum = a+b+c				733.27
		Total Cost including 1 % LABOUR CESS				7.33
		G.S.T. @ 18%				131.99
		Add Seigniorage Fee @ 10 % of Materials				0.49
		Total Cost of 1 E.C. 1% Cess & 18% GST =				1287.25

Executive Engineer
RWD, Works Division
Kishanganj-1

Executive Engineer
RWD, Works Division
Kishanganj-2

Executive Engineer
RWD, Works Division
Forbesganj

Executive Engineer
RWD, Works Division
Forbesganj

Superintending Engineer
Rural Works Department
Works Circle Kishanganj



