

RURAL WORKS DEPARTMENT



GOVERNMENT OF BIHAR

NAME OF ROAD:- **MANJHUA TO POTARI**

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

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

BLOCK:- FORBESGANJ

ESTIMATED COST

1650879.00

प्रतिवेदन

पथ का नाम :- Majhwa to potasi

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 Majhwa to potasi
..... में बाढ़ क्षतिग्रस्त मरम्मति मद से यातायात चालू करने हेतु तैयार किया गया है जिसकी
प्राक्कलित लागत 1650879-00 है। उक्त पथ
का निर्माण mmws योनान्तर्गत हुआ है एवं योजना अनुरक्षण अर्द्ध में 1।
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, Rorberga



सहायक अभियंता,

ग्रामीण कार्य विभाग,

कार्य अवर प्रमण्डल, Rorberga



कार्यपालक अभियंता,

ग्रामीण कार्य विभाग,

कार्य प्रमण्डल, Rorberga

Inspection Report for Flood Damage Work

Date:

1. Name of P.U's:-

2. Name of Block:-

3. Name of Road:-

A. For Road

1. Damage Location/Chainage :- ~~15~~ CH-1500m

2. Damage Length :- 25.00m

3. Nature of Damage :- ~~CH & H~~ damaged due to flood 2024 (washout)

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 :- 25.00m

B. For Bridge

1. Damage Location/Chainage:-

2. Damage Length :-

3. Nature of Damage :-

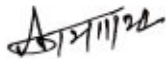
4. Details of Restoration Works:-

(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

(Name of Inspector)



Abstract of Cost

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

Name of Road:

MANJHUA TO POTARI

Block: FORBESGANJ

District: ARARIA

Division : 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	766.00	1287.25	986033.50
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.	600.00	72.518	43510.80
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.				
		Mtr.	150.00	36.179	5426.85
4	Supplying of EC bag, filling of local sand, stitching and placing in position as per the direction of Engineer-in-charge.				
		Per Bags	6430.86	55.882	359369.40



	2	15.00	$(0.75 \times 1.20) / 2$	$(3.50 \times 1.90 \times 3.20) / 3$	113.10
				TOTAL =	182.10
Total No. of EC Bags = (182.10×35.115)					6430.86
SAY NO OF BAGS =					6431
Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.					
	1	25.00	$(6.0 \times 8.70 \times 1.0) / 3$	0.30	46.75
				Total Qty. =	46.75
Supply, laying and Carriage of of hume pipe 1000 mm dia (HPC), all complete job.					
	2	3.00	2.50		15.00
Providing of drone service and drone surveying as per I/E					
	1	3.0			3.00
				TOTAL =	3.00


JE

RWD SUB DIV- FORBESGANJ


12/11/24
AE

RWD SUB DIV. FORBESGANJ


15/11/24
EE

RWD WORKS DIV. FORBESGANJ

Detailed Estimate

me of Road:

MANJHUA TO POTARI

No.	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.					
	CH-1500m	1	10.00	9.00	$(4.50+5.50+4.20)/3$	426.00
		1	15.00	$(6.0+4.0)/2$	$(4.50+4.90+4.20)/3$	340.00
					TOTAL=	766.00
					Total Qty =	766.00
	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.					
		2	25.00	3.00	4.00	600.00
					Total Qty =	600.00
	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.					
		2	25.00	3.00		150.00
					Total Qty =	150.00
	Supplying of EC bag, filling of local sand, stitching and placing in position as per the direction of Engineer-in-charge.					
		2	10.00	$(0.75+1.50)/2$	$(2.50+4.50+2.20)/3$	69.00

Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.				
	Cum	46.75	2792.877	130567.00
Supply, laying and Carriage of of hume pipe 1000 mm dia (HPC), all complete job.				
	meter	15.00	7398.121	110971.82
7 Providing of drone service and drone surveying as per I/E				
	PER TRIP	3.00	5000.000	15000.00
TOTAL AMOUNT =				1650879.37
SAY TOTAL AMOUNT =				1650879.37
				1650879.00

[Signature]

JE

ND SUB DIVISION-FORBESGANJ

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AE

RWD SUB DIV.
FORBESGANJ

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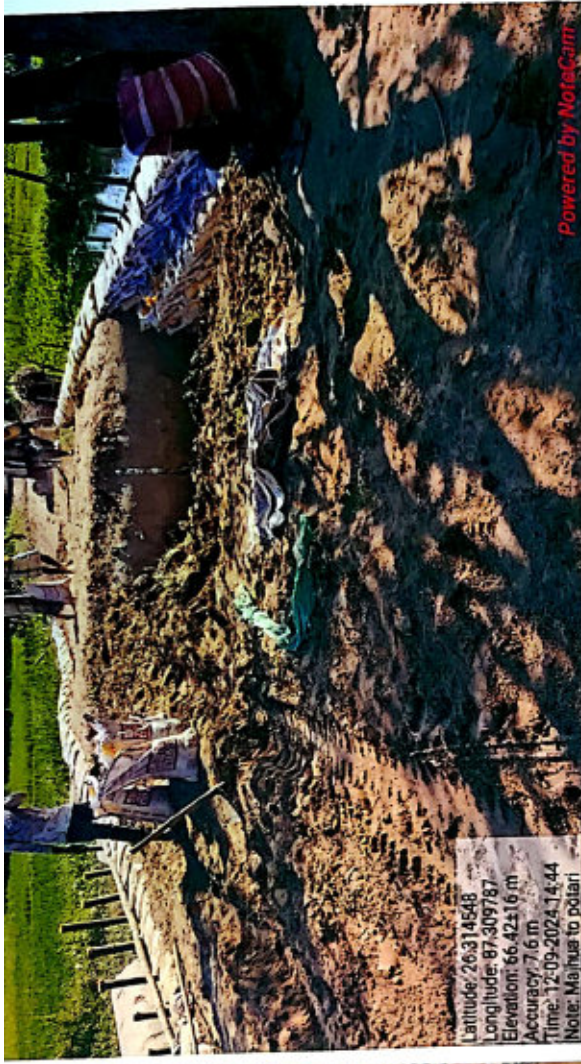
EE

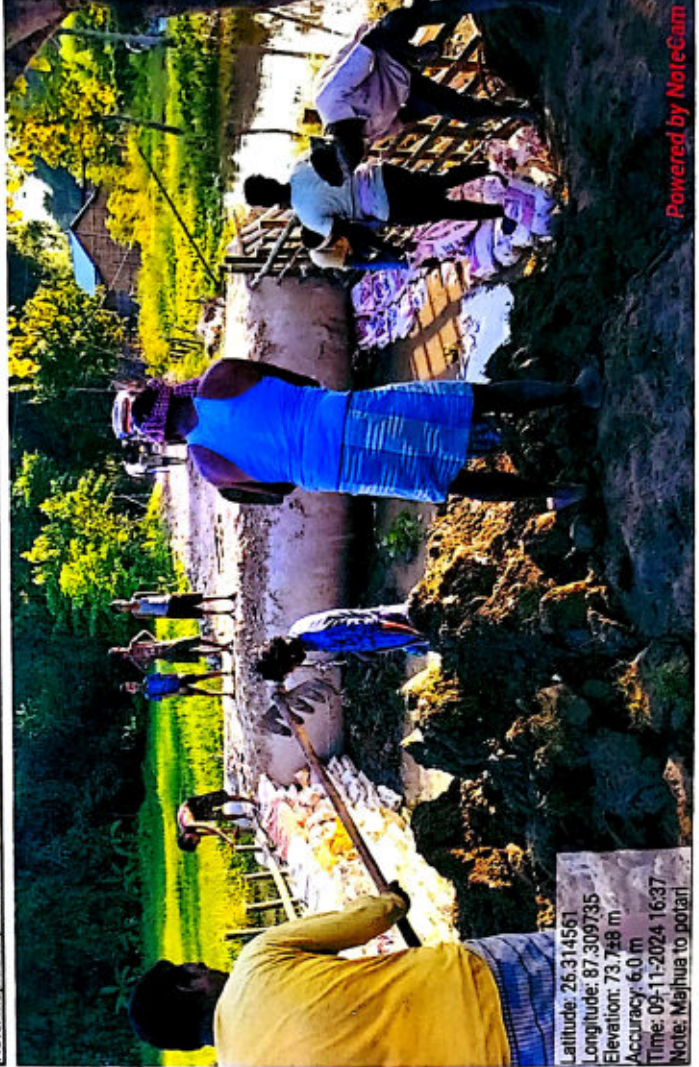
RWD WORKS DIV. FORBESGANJ

Technically approved for Rs 16,50,879.00 (Rupees sixteen lakh Fifty thousand eight hundred seventy nine) only.

[Signature]
Superintending Engineer
Rural Works Department
Kishanganj
Works Circle, Kishanganj

[Signature]
16/11/24
E.O.





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)
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

Executive Engineer
RWD, Works Division
Kishanganj-I

Executive Engineer
RWD, Works Division
Araria

Executive Engineer
RWD, Works Division
Kishanganj-2

Executive Engineer
RWD, Works Division
Forbesganj

Superintending Engineer
Rural Works Department
Works Circle Kishanganj



SUMMARY OF CARRIGE COST

No.	Item	Unit	Amount (Rs.)
	Earth Work	Cum	274.42
	Brick Bats	Cum	521.97
	Bamboo	Per Mtr.	3.00
	G.S.B.	Cum	2960.13
	Local Sand	Cum	345.14
	HUME PIPE (1000 mm DIA)	Per Pipe	745.93
	HUME PIPE PIR METER	Per Mtr.	298.37
	HUME PIPE (600 mm DIA)	Per Pipe	310.88
	HUME PIPE (600 mm DIA)	Per Mtr.	124.35
	Local Sand	Cum	345.10

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	Blasler, 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	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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RWD, Works Division
Kishanganj-1

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Arraria

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Forbesganj

Superintending Engineer
RWD, Works Division

**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 - 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	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	Sudi (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

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effective from 01/07/2024.

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Farrukhgarh

Superintending Engineer
Rural Works Department
Works Circle Kishanganj

**BASIC RATES
(C) USAGE RATES OF PLANT & MACHINERY**

Sr. No.	Mr. Code	Description of		Output of Machine		Usage Rates in Rs.	
		Machine	Activity	Unit	Output	Unit	Rate
PM-009	PM-012	Crane upto 80 T	Lifting of materials			per hour	21573.00
PM-010	PM-015	Dumper D 80 - A12 Dumper D 50 - A15	Dozing cutting	cum h	260.00	per hour	22927.00
PM-011				cum h	120.00		26126.00
PM-014	PM-017	Front end-loader 1 cum bucket capacity up to 45 cum-hour	Loading Aggregates	cum h	45.00	per hour	22419.00
PM-017	PM-026	Hydraulic Excavator of 1.1m bucket	Excavation	cum h	100.00	per hour	22722.00
PM-031	PM-043	Three wheel 80-100 kN Static Roller	Compaction/ Rolling				23153.00
PM-032			Earth - Embankment or sub-grade	cum h	80.70		23153.00
PM-033			Sub-base G-I	cum h	10.00		23153.00
PM-034			Sub-base G-II G-III	cum h	8.00		23153.00
PM-035			BLDG	cum h	16.00		23153.00
PM-036			BLDG	cum h	10.00		23153.00
PM-037			BM 50-75 mm	cum h	12.00		23153.00
PM-038			Precast 20 mm	sqm h	250.00		23153.00
PM-039			Seal Coat	sqm h	500.00		23153.00
PM-040			Surface Dressing 1st Coat	sqm h	400.00		23153.00
PM-041			Surface Dressing 2nd Coat	sqm h	500.00		23153.00
PM-042	PM-048	Tipper 5.5 cum/10 t	Carriage	cum/trip	5.50	per hour	23153.00
PM-043	PM-053	Tractor with Disc Harrows	Pulverization of soil	cum h	80.00	per hour	23153.00
PM-044	PM-055	Tractor with ripper up to 60 cum per hour	Ripping Pavements, uprooting trees	cum h	60.00	per hour	23153.00
PM-045	PM-053	Tractor with trolley with Grading equipment	Transportation of materials	trip	3 to 5	per hour	23153.00
PM-046	PM-054	Tractor with Rotavator	Scarifier	cum h	25.00	per hour	23153.00
PM-047	PM-057	Truck 10 t capacity	Carriage	cum/trip	5.50	per hour	23153.00
PM-048	PM-059	Vibratory roller 80-100 kN	Compaction of soil WBM	cum h	100.00	per hour	23153.00
PM-049			Compaction of B.M	cum h	60.00		23153.00
PM-050	PM-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre / h	12000.00	per hour	23153.00
PM-063	PM-060	generator 3KVA	slicing	per hour		per hour	23153.00
PM-064	PM-060	slicing machine	slicing	day		day	23153.00

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

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Works Circle Kishanganj

Comparison of carriage cost of Material via Road from different sources																	
Sl No	Item	Unit	Source	Pucka / Surface						Katcha					Load ing & Road	Carriage by Road	Total
				Carriage Cost & Lead in Km													
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									
B	Brick Bat Via Road	Cum	Local	3.60													
				2.04	x 20.04	x 7 Km	= Rs 247.55	3.60									
B	Bamboo Via Road	pet mtr.	Local	3.60													
				126.00	x 20.04	x 2 Km	= Rs 1.15	3.60									
D	Local Sand Via Road	Cum	Local	3.60													
				2.04	x 20.04	x 2 Km	= Rs 70.73	3.60									
2	By Tipper																
A	GSB Via Road	Cum	Silliguri	8.00													
				4.99	x 9.83	x 177 Km	= Rs 2789.43	8.00									
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									
A1	Rate Per Mtr. Pipe	Mtr.	purnea														
B	Hume Pipe (600 mm) Via Road	Mtr.	purnea	8.00													
				25.00	x 7.27	x 53 Km	= Rs 123.30	8.00									
B1	Rate Per Mtr. Pipe	Mtr.	purnea														

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

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Kishanganj-1

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Forbesganj

Superintending Engineer
Rural Works Department
Muzenda Circle, Kishanganj

Sl. No.	WORD Ref No.	DESCRIPTION	Unit	QTY	Rate	Amount in Rs
Carriage Of Material (By Tractor)						
4.4		Loading and unloading of stone Boulder /stone aggregates sand/ kankar/ moorum				
		Placing tractor at loading point loading with front end loader dumpoing ,turning for return trip exluding time for haulage and return				
		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	434.00	13.02
	b)	Machinery	day	0.720	410.00	295.20
		Tractor 3.60 Tonnes Capacity				
		Front end loader 1 cum bucket 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				493.60
		Total per cum	cum			219.378
1.10		Haulage excluding Loading & Unloading	cum			219.378
		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
		Total per t per km				31.300
2						31.300
Carriage Of Material (By Tipper)						
1.1		Loading and Unloading Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for				
		Masonry Work by Manual Means				
	(i)	Loading of lime, Aggregates, Stone boulder, Brick aggregate, Kankar, Building Rubbish, Crushed Slag Stone for masonry work by manual means including a lead upto 30m				
		Unit = cum				
		Taking output = 5.5 cum				
		Time required for				
	(i)	Position of tipper at loading point				
	(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	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 = $(a+b+c)/5.5$	cum		170.70
		Total per cum			170.70
		Haulage excluding Loading & Unloading			
1.10		Haulage of materials by truck excluding cost of Loading, Unloading and stacking			
		Unit = 1km			
		Taking output 10t load and lead 10km = 100t / km			
		Case- I : Surfaced Road			
		Speed with load : 7.5km per hour			
		Speed while returning empty : 3.5km per hour			
	a)	Machinery			
		Tipper			
		Haulage with load	hour	0.40	1426.00
		Empty return trip	hour	0.29	1426.00
		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 Kutchra Track and Track in River Bed / Nallah Bed and Choe Bed			
		Speed with load : 10km per hour			
		Speed while returning empty : 1.5km per hour			
	a)	Machinery			
		Tipper			
		Haulage with load	hour	1.00	1426.00
		Empty return trip	hour	0.67	1426.00
		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 : 3.5km per hour			
	a)	Machinery			
		Truck			
		Haulage with load	hour	0.40	1054.00
		Empty return trip	hour	0.29	1054.00
		Cost for 100t km = $a+b+c$			305.66
		Cost for 1 t km = $a+b/100$			727.26
		Total per t per km			7.270
		Case - III Kutchra Track and Track in River Bed / Nallah Bed and Choe Bed			
		Speed with load : 10km per hour			
		Speed while returning empty : 1.5km per hour			
	a)	Machinery			
		Truck			
		Haulage with load	hour	1.00	1054.00
		Empty return trip	hour	0.67	1054.00
		Cost for 100t km = $a+b$			706.18
		Cost for 1 t km = $a+b+c/100$			1760.18
		Total per t per km			17.60
1.9		Loading and Unloading of Hume Pipes			17.600
	(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			
		Mazdoor (Unskilled)	day	0.02	434.00
	b)	Machinery	day	0.50	410.00
		Truck			205.00
		Crane	hour	0.33	1054.00
		Cost for 9 pipes = $a+b+c+d$	hour	0.33	5573.00
					1839.09
					2400.59

Rate per pipe = (a+b+c)/9		per p			
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	8.68
	Mazdoor (Unskilled)	day	0.50	410.00	205.00
b)	Machinery				
	Tractor 3.60 Tonnes Capacity	hour	0.33	1054.00	347.82
	Crane	hour	0.33	5573.00	1839.09
	Cost for 21 pipes = a+b+c+d				2400.59
	Rate per pipe = (a+b+c)/21	per p			114.314
Total per pipe =					
(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	8.68
	Mazdoor (Unskilled)	day	0.50	410.00	205.00
b)	Machinery				
	Truck	hour	0.20	1054.00	210.80
	Crane	hour	0.20	5573.00	1114.60
	Cost for 9 pipes = a+b+c+d				1539.08
	Rate per pipe = (a+b+c)/9	per p			171.009
Total per pipe =					
C	600/450 mm dia Hume pipe				
	Unit = per pipe				
	Taking output = 21 pipes				
a)	Labour				
	Mate	day	0.020	434.00	8.68
	Mazdoor (Unskilled)	day	0.50	410.00	205.00
b)	Machinery				
	Truck	hour	0.20	1054.00	210.80
	Crane	hour	0.20	5573.00	1114.60
	Cost for 21 pipes = a+b+c+d				1539.08
	Rate per pipe = (a+b+c)/21	per p			73.290
Total per pipe =					
1.9	Loading and Unloading of Bamboo				
(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 pipe =		par mt			0.96
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	8.68
	Mazdoor (Unskilled)	day	0.50	410.00	205.00
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
c)	Three Wheel 80-100 kN Static Roller	hour	1.25	1593.00	1,991.25
	Material	kl	12.00	60.30	723.60
	Water				
	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	0.00	434.00
			Mazdoor (Unskilled)	day	2.00	410.00
		b)	Machinery			
			Dozer D-50 for spreading @200 cum per hour	hour	3.60	4326.00
			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			16518.46
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
			Total Cost of 1 cum including Cess & 18% GST			519.670
7	4.5		Providing and Laying of Brick Bats			
			Placing tractor at loading point loading with front end loader dumping, turning for return trip excluding time for haulage and return trip			
			Unit = cum			
			Taking output = 2.83 cum			
		a)	Labour			
			Mazdoor (Unskilled)	day	2.170	410.00
		b)	Materials			
			Brick Bats	cum	3.396	1,081.00
			Total (a+b) =			4560.78
			Total (a+b+c) =			4560.78
		d)	Carriage			
			Brick Bats	cum	3.396	521.97
			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
			Total Cost of 1 cum including Cess & 18% GST			2,792.872
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
			Mazdoor (Skilled)	day	2.00	472.00
			Mazdoor (Unskilled)	day	10.00	410.00

		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				
			GSB	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 @ 18% Cess & 18% GST				5171.835
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 @ 18% 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 @ 18% Cess & 18% GST				2,972.660
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
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 =				36.177
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
					5664.00
	b	Materials			
		Nails	kg	5.00	170.13
		Steel Drum sheet	Nos.	88.5	170.13
					21571.160
					215.712
		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/L.			
		(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
					306.237
		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/L.			
		Unit = Each Bag			
		Taking Out = 40 Nso.			
		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)			
		123.66			
	(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			9443.000
		Rate per bag (Total/256) (B)			
		36.887			
		Matrolals			
		cast of Geo Bag	each	1	124.00
		Total cost (a+b+c)			
		284.545			

		Rate per bag				
		Labour Cess @ 1%				284.545
		G.S.T. @ 18%				2.845
		Add Seigniorage Fee @ 10 % of Materials				51.218
		Total Cost of 1 E.C. 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 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.				339.619
		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				0.49
		Total Cost of 1 E.C. 1% Cess & 18% GST =	cum	0.034	144.75	0.49
	(11)	300 local sand filling in foundation trenches as per drawing and technical specification				1151.803
		local sand filling 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	434.00	4.34
	b)	Material	day	0.30	410.00	123.00
		Sand (assuming 20 per cent voids)				
		Overheads @ 6 % on (a)	cum	1.20	144.75	173.70
						18.06
		CARRIAGE COST				319.10
		sand				
		Rate per cum = a+b+c	Cum	1.2	345.14	414.17
		Total Cost including 1 % LABOUR CESS				733.27
		G.S.T. @ 18%				7.33
		Add Seigniorage Fee @ 10 % of Materials				131.99
		Total Cost of 1 E.C. 1% Cess & 18% GST =				0.49
						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