

RURAL WORKS DEPARTMENT



GOVERNMENT OF BIHAR

NAME OF ROAD:- KUSHMAHA ASHURIPUL TO HARIJAN
TOLA

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

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

BLOCK:- FORBESGANJ

ESTIMATED COST

534518.00

प्रतिदिन

2024-25 - Kishoreda Assigned to Horizon Tola Begumda
 2024-25 - FDR 12024-25

FD-1204-25

1. *Chrysomelidae* (10) 2. *Curculionidae* (10) 3. *Chrysomelidae* (10) 4. *Chrysomelidae* (10) 5. *Chrysomelidae* (10) 6. *Chrysomelidae* (10) 7. *Chrysomelidae* (10) 8. *Chrysomelidae* (10) 9. *Chrysomelidae* (10) 10. *Chrysomelidae* (10)

[Faint handwritten notes at the bottom of the page]

$$534578 = 60$$

immunity

Hume Pipe Barrage

Brick Bags: 100 lb. 1000 lb. 5000 lb. 10000 lb. Home Pipe: 4" 6" 8" 10" 12" 14" 16" 18" 20" 22" 24" 26" 28" 30" 32" 34" 36" 38" 40" 42" 44" 46" 48" 50" 52" 54" 56" 58" 60" 62" 64" 66" 68" 70" 72" 74" 76" 78" 80" 82" 84" 86" 88" 90" 92" 94" 96" 98" 100"

Figure 1. Schematic diagram of the experimental setup. The subject is seated in a chair, viewing a video screen. The video screen displays a target (a red dot) and a starting point (a black dot). The subject's hand is positioned at the starting point. The video screen is connected to a computer system.

उत्तर

संज्ञा परिचयः

[Handwritten signature]

2010-2011 *perbaikan*

~~Discipline~~

2000 2001

and under Rodriguez

Inspection Report for Flood Damage Work

Date:

1. Name of PIUs:- EE Forbesganj

2. Name of Block:- Forbesganj

3. Name of Road:- Kushonaha Ashuripul to Haurigan Tola Begumbari

A. For Road

1. Damage Location/Chainage :- CH - 7.00 km, 7.20 km

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 :-

B. For Bridge

1. Damage Location/Chainage:-

2. Damage Length :-

3. Nature of Damage :-

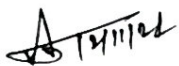
4. Details of Restoration Works:-

(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:

KUSHMAHA ASHURIPUL TO HARIJAN TOLA

Block: FORBESGANJ

District: ARARIA

Division : RWD, Works Division, FORBESGANJ

Circle: RWD, Work Circle, KISHANGANJ

Sl 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	225.13	1287.25	289792.16
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.	348.00	72.518	25236.26
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.	102.00	36.179	3690.26

5	Supplying of EC bag, filling of local sand, stitching and placing in position as per the direction of Engineer-in-charge.				
		Per Bags	1854.04	55.882	103607.32
6	Supply and Carriage of brick bats upto 8 km breach and placing in breaches and lying of bats, all complete job.				
		Cum	34.80	2792.877	97192.12
7	Providing of drone service and drone surveying as per I/E				
		PER TRIP	3.00	5000.000	15000.00
	TOTAL AMOUNT =				534518.12
	SAY TOTAL AMOUNT =				534518.12
					534518.00

A 12/11/24
JE

RWD SUB DIVISION-FORBESGANJ

P 12/11/24
AE

RWD SUB DIV.
FORBESGANJ

P 12/11/24
EE

RWD WORKS DIV. FORBESGANJ

Technically approved for ₹ 534518.00 (Five lakhs three thousand four hundred and eighteen only).

W 16/11/24
Superintending Engineer
Rural Works Department
Kishanganj
16/11/24
E.O.

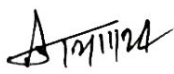
Detailed Estimate

of Road:

KUSHMAHA ASHURIPUL TO HARIJAN TOLA

Items of Works	Nos.	L (m)	B (m)	D (m) IN (Av.)	Quantity (m ³)
filling of local sand obtained from river bed, watering & ramming, all complete job as per specification & direction of Engineer-in-charge.					
CH-200 M	1	14.00	4.5	$(1.00+2.50+1.00)/3$	94.50
	1	15.00	$(5.00+4.50)/2$	$(1.00+3.50+1.00)/3$	130.63
				TOTAL=	225.13
				Total Qty =	225.13
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	14.00	3.00	4.00	168.00
	1	15.00	3.00	4.00	180.00
				Total Qty =	348.00
labour for fitting & fixing 62mm to 5mm 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	14.00	3.00		42.00
	1	15.00	4.00		60.00
				Total Qty =	102.00

plying of EC bag, filling of local d, stitching and placing in position per the direction of Engineer-in- charge.					
	1	14.00	$(1.00+2.00)/2$	$(3.00+2.00)/2$	52.50
	1	15.00	$(1.00+2.00)/2$	$(3.00+3.50)/2$	73.13
				TOTAL=	52.50
Total No. of EC Bags $= (52.50 \times 35.315)$					1854.04
SAY NO OF BAGE=					1854
ply and Carriage of brick bats upto km breach and placing in breaches and lying of bats, all complete job.					
	1	14.00	4.00	0.30	16.80
	1	15.00	4.00	0.30	18.00
	Total Qty. =				34.80
roviding of drone service and drone servicing as per I/E					
	1.00	3.00			3.00
				TOTAL=	3.00



JE



AE



EE

RWD SUB DIV- FORBESGANJ

RWD SUB DIV. FORBESGANJ RWD WORKS DIV. FORBESGANJ

KUSMAHA ASURIPUL TO HARIJAN TOLA BAGMARA



15/11/24
JE

15/11/24
DE

15/11/24
DE

JSHMAHA ASURIPUL TO HARIJAN TOLA BAGMARA



15/11/24
J-E

15/11/24
B-E

15/11/24

JSHMAHA ASURIPUL TO HARIJAN TOLA BAGMARA



15/11/24
J-2

15/11/24
BC

15/11/24

JSHMAHA ASURIPUL TO HARIJAN TOLA BAGMARA



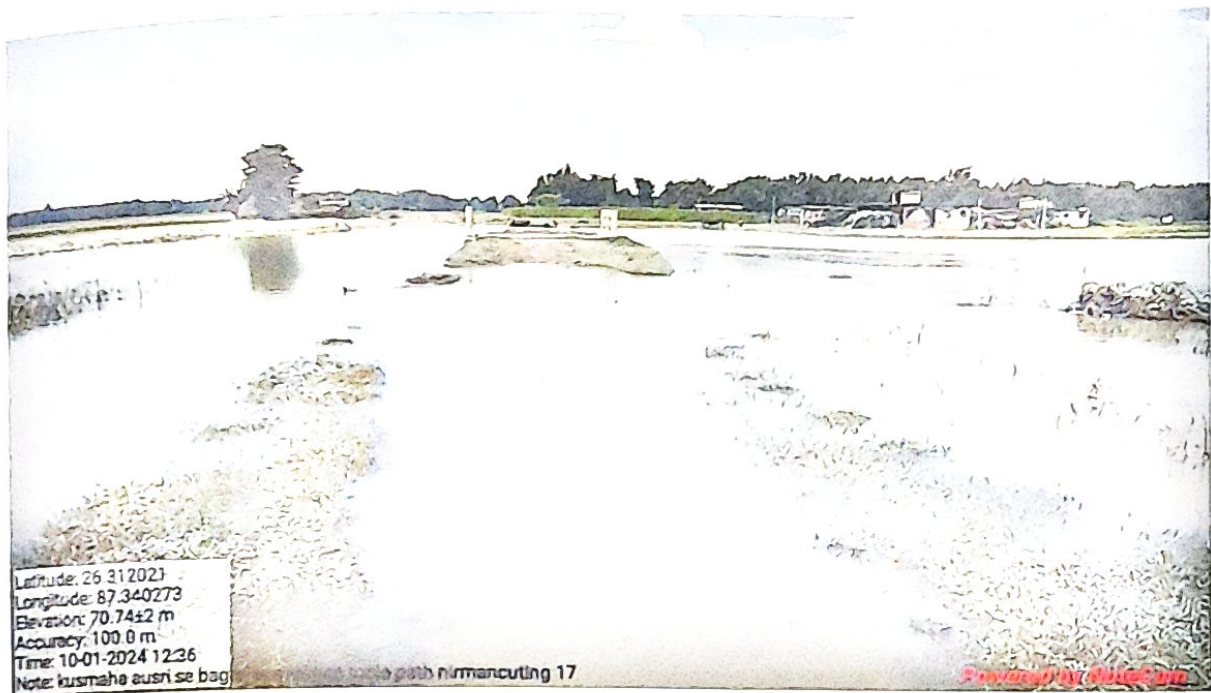


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NO
 15/11/24
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ASIRI
 13/11/24

JSHMAHA ASURIPUL TO HARIJAN TOLA BAGMARA



USHMAHA ASURIPUL TO HARIJAN TOLA BAGMARA



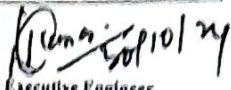
FINAL RATE UNDER WORKS CIRCLE KISHANGANJ

B. No	Description of Item	Unit	Final Rate (Excluding GST, Bagging & L. Cess)	Final Rate (Including GST, Bagging & L. Cess)
1	EARTH WORK	CUM	449.003	549.749
2	BRICK BAT	CUM	2209.670	2769.116
3	G.S.B	CUM	4320.601	5172.309
4	SAND BAG (Cement Bag)	Each	46.660	56.880
5	BAMBOO PILE	Per Mtr.	68.140	84.186
6	BAMBOO CHACHRI	Per Mtr.	302.268	369.690
7	BAMBOO RUNNER	Per Mtr.	30.210	36.950
8	HUME PIPE (1000 mm Div)	Per Mtr.	6208.698	7386.860
9	HUME PIPE (600 mm Div)	Per Mtr.	2492.260	2996.790
10	STEEL DRUM SHEET	Per Sqr.Mtr.	218.362	266.270
11	GEO BAG WITH SAND	EACH	967.490	1162.320
12	EACH N.C. BAG WITH SAND (Cement Bag)	Each E.C	967.490	1161.800
13	LOCAL SAND	CUM	721.110	1272.780


Executive Engineer
RWD, Works Division
Kishanganj-1


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.)
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

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	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


Executive Engineer
RWD, Works Division
Kishanganj-1


Executive Engineer
RWD, Works Division
Ara


Executive Engineer
RWD, Works Division
Kishanganj-2


Executive Engineer
RWD, Works Division
Forbesganj

Superintending Engineer
Rural Works Department

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.	176.00		176.00
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.)	cum	1063.00	18.00	1081.00
M-007	Brick Balls	cum	2.25	33.00	35.25
M-008	Selected earth (Including @ Rs. 33.00 per cum & compensation @ Rs. 2.25 Per Cum	Nos.	11.11		11.11
M-009	Empty Cement Bag IS 11657:2000	Nos.	170.13		170.13
M-010	Steel Drum 300 mm dia 1.2 m high / empty bitumen drum	Nos.	7.31	2.39	9.90
M-011	Sand bags (Cost of sand and Empty cement bag)	kg	20.59	83.00	167.03
M-012	Soil (Brown)	cum	84.03		108.00
M-013	Granular material (Natural occurring, soil gravel mixture / quarry waste, kankar, laterite, dhanda)	kg	108.00		5787.23
M-014	Nails	m	5787.23		2310.00
M-014	RCC Pipe NP3 (1000 mm dia)	m	2310.00		144.75
M-015	RCC Pipe NP3 (600 mm dia)	cum	69.75	75.00	170.13
M-015	Sand (Fine) at source	Nos.	170.13		60.30
M-016	Empty Steel Drum 300 mm dia 1.2 m height	kl	60.30		124.00
M-016	Water	Each	124.00		144.75
M-017	Geo Bags	cum	69.75	75.00	
M-018	G.S.B.				

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

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

[Signature]
Executive Engineer
RWD, Works Division
Khatra-1

[Signature]
Executive Engineer
RWD, Works Division
Arita

[Signature]
Executive Engineer
RWD, Works Division
Khatra-2

[Signature]
Superintending Engineer
Rural Works Department
Works Circle Khatra-2

BASIC RATES (C) USAGE RATES OF PLANT & MACHINERY

Sl. No.	Item Code	Description of Machine	Activity	Output of Machine		Usage Rates in Rs.	
				Unit	Output	Unit	Rate
PM-000	PM-012	Crane upto 20 T	Lifting of materials				
PM-010	PM-013	Dumper 10-20 - A12 Dumper 10-20 - A13	Dumping	cum/h	260.00	per hour	3,373.00
PM-011	PM-017	Front end-loader 1 cum bucket capacity (m) 45 cum hour	Loading Aggregate	cum/h	120.00	per hour	2,927.00
PM-014	PM-026	Hydraulic Excavator of 1 cum bucket	Excavation	cum/h	45.00	per hour	1,100.00
PM-017	PM-044	Three wheel 80-100 kN Static Roller	Compaction/Rolling	cum/h	100.00	per hour	2,772.00
PM-031			Earth - Embankment or sub-grade	cum/h	80.70		2,043.00
PM-032			Sub-base (I-I)	cum/h	10.00		1,593.00
PM-033			Sub-base (II-II-III)	cum/h	8.00		1,593.00
PM-034			WATER	cum/h	16.00		1,593.00
PM-035			MIXED	cum/h	10.00		1,593.00
PM-036			100-75 mm	cum/h	12.00		1,593.00
PM-037			Premix 20 mm	sqm/h	250.00		1,593.00
PM-038			Seal Coat	sqm/h	500.00		1,593.00
PM-039			Surface Dressing 1st Coat	sqm/h	400.00		1,593.00
PM-040			Surface Dressing 2nd Coat	sqm/h	500.00		1,593.00
PM-041	PM-048	Tipper 3.5 cum 10 t	Carriage	cum/trip	5.50	per hour	1,593.00
PM-042	PM-053	Tractor with Disc Harrows	Pulverisation of soil	cum/h	80.00	per hour	1,593.00
PM-043	PM-053	Tractor with ripper (m) 60 cum per hour	Ripping Pavement, uprooting trees	cum/h	60.00	per hour	1,593.00
PM-044	PM-053	Tractor with trolley with Grading equipment	Transportation of materials	trip	3 to 5	per hour	1,593.00
PM-045	PM-054	Tractor with Rotavator	Scarifier	cum/h	25.00	per hour	1,593.00
PM-046	PM-057	Truck 10 t capacity	Carriage	cum/trip	5.50	per hour	1,593.00
PM-047	PM-059	Vibratory roller 80-100 kN	Compaction of soil WMM	cum/h	100.00	per hour	1,593.00
PM-048			Compaction of BM	cum/h	60.00		1,593.00
PM-049	PM-060	Water tanker 6 kl capacity (Truck Mounted)	Carriage of water	litre/h	12000.00	per hour	1,593.00
PM-050	PM-060	generator 3KVA	stitching	per hour		per hour	1,593.00
PM-051	PM-060	stitching machine	stitching	day		day	1,593.00
PM-052							1,593.00

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

Executive Engineer
RWD, Works
Division
Kishanganj-1

Executive Engineer
RWD, Works Division
Kishanganj-2

Executive Engineer
RWD, Works Division
Araria

Executive Engineer
RWD, Works Division
Forbesganj

Superintending Engineer
Rural Works Department
Works Circle Kishanganj

Comparison of carriage cost of Material via Road from different sources																
Sl No	Item	Unit	Source	Pucka / Surface				Katcha				Loadi ng & Road	Carriage by Road	Total		
1	By Tractor															
	Earth Work			3.60				3.60								
	Via Road	Cum	Local	2.04	X	20.04		2.04	X	31.30	X	1 Km	= Rs 55.24	219.18	274.42	274.420
	Rock Bed Via Road	Cum	Local	3.60				3.60								
				2.04	X	20.04		2.04	X	31.30	X	1 Km	= Rs 55.24	219.18	521.97	521.970
	Shallow Via Road	Per mtr.	Local	3.60	X	20.04		3.60	X	31.30	X	1 Km	= Rs 0.59	0.96	3.00	3.000
				125.00				126.00								
	Local Sand Via Road	Cum	Local	3.60				3.60								
				2.04	X	20.04		2.04	X	31.30	X	1 Km	= Rs 55.24	219.18	345.14	345.140
2	By Tractor															
	SS Via Road	Cum	Shallow	8.00	X	9.55	X	8.00	X	23.81	X	0 Km	= Rs 0.00	170.70	2960.13	2960.130
				4.99				4.99								
3	By Tractor															
	Shallow Pipe (7000 mm) Via Road	Mtr.	Shallow	8.00				8.00								
				10.00	X	7.27	X	10.00	X	17.60	X	0 Km	= Rs 0.00	437.68	745.93	745.930
A1	Rate Per Mtr. Pipe	Mtr.	Shallow													
B	Shallow Pipe (500 mm) Via Road	Mtr.	Shallow	8.00				8.00								
				25.00	X	7.27	X	25.00	X	17.60	X	0 Km	= Rs 0.00	187.58	310.88	310.880
B1	Rate Per Mtr. Pipe	Mtr.	Shallow													

Cost of Handling Excavating Loading & Unloading as per SO - Subjected to Variation of Load

Executive Engineer
RWD, Works Division
Kishanganj-1

Executive Engineer
RWD, Works Division
Kishanganj-2

Executive Engineer
RWD, Works Division
Araja

Executive Engineer
RWD, Works Division
Farakka

Superintending Engineer
Rural Works Department
Kishanganj

Sl. No.	MORD Ref No.	DESCRIPTION	Unit	QTY	Rate	Amount In Rs
Carriage Of Material (By Tractor)						
6.4		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 trip				
		Unit = cum				
		Taking output = 2.25 cum				
		Time required for				
		positioning of tractor at loading point				
	i)	Loading by front end loader 1 cum bucket capacity @ 25 cum	min	1 min		
	ii)		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 Capcaity	hour	0.100	676.00	67.60
		Front end loader 1 cum buckert 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
Carriage Of Material (By Tipper)						
1.1		Loading and Unloading Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by Manual Means				
	(I)	Loading of lime, Aggregates, Stone boulder, Brick aggregate, Kankar, Building Rubbish, Crushed Slag Stone for masonry work by manual means including a lead upto 30m				
		Unit = cum				
		Taking output = 5.5 cum				
		Time required for				
	(i)	Position of tipper at loading point		1Min		
	(ii)	loading by front end loader 1 cum bucket capacity @25		13Min		
	(iii)	maneuvring, reversing, dumping and turning for return		2Min		
	(iv)	Waiting time unforeseen contingencies etc.		4Min		
		Total		20Min		
	b)	Machinery				
		Tipper 5.5 Tonnes Capcaity	hour	0.330	1,426.00	470.58
		Front end loader 1 cum buckert 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
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				
Machinery				
a)	Dipper			
	Haulage with load	hour	0.40	1426.00
	Empty return trip	hour	0.29	1426.00
	Cost for 100t km = $a+b+c$			2852.00
	Cost for 1 t km = $a+b/100$			28.52
	Total per t per km			28.52
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				
Machinery				
a)	Dipper			
	Haulage with load	hour	1.00	1426.00
	Empty return trip	hour	0.67	1426.00
	Cost for 100t km = $a+b$			2852.00
	Cost for 1 t km = $a+b/c/100$			28.52
	Total per t per km			28.52
Carriage Of Material (By Truck)				
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				
Machinery				
a)	Truck			
	Haulage with load	hour	0.40	1054.00
	Empty return trip	hour	0.29	1054.00
	Cost for 100t km = $a+b+c$			2108.00
	Cost for 1 t km = $a+b/100$			21.08
	Total per t per km			21.08
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				
Machinery				
a)	Truck			
	Haulage with load	hour	1.00	1054.00
	Empty return trip	hour	0.67	1054.00
	Cost for 100t km = $a+b$			2108.00
	Cost for 1 t km = $a+b/c/100$			21.08
	Total per t per km			21.08
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	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			246.732
Total per pipe					246.732
1000/450 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					114.314
Unloading of RCC Hume pipe by Mechanical means including a lead upto 30 m					
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					171.009
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					73.290
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
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	1394.00
Water tanker 6 kl capacity		hour	2.00	752.00	1504.00
Three Wheel 80-100 kN Static Roller		hour	1.25	1593.00	1991.25
c) Material					
Water		kl	12.00	60.30	723.60
Cost for 100 cum = $a+b+c+d+e$					5826.53

			Rate per cum = (a+b+c+d)/100			
			Total per cum =	cum		58.265
1.5	301.5		Excavation in soil with Dozer with lead upto 100 m	cum		58.265
(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
			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			15,573.60
			Rate per cum = (a+b+c+d)/180	cum		16427.20
			Total per cum =	cum		91.262
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 = 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 dumpoing, turning for return trip excludng 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) =			4360.78
	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 = 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
			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
						67978.00
	c)	Material				
		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 @ 1% Cess & 18% GST				5173.835
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			6216.909
		Total per m	m			6216.909
		Labour Cess @ 1%				62.169
		G.S.T. @ 18%				1,119.044
		Total Cost of 1 m @ 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 m @ 1% Cess & 18% GST				2,971.660
3	5.740.1	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
		cutali	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 =				55.827
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 Cr-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 job as per specification and direction E/L.				
		Unit = Per mt.				
		Taking Out Put = 30.50 m				
		Assuming				
		20 no pile sunk 1.525 m deeps				
		Total depth sunk 30.50 m				
		(i) Materials				
		Bamboo	m	30.50	20.21	616.41
		(ii) Labour				
		Carpenter Cr-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 =				72.110

		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	2012.50
	Mazdoor (Unskilled)	No.	4.00	410.00	1640.00
	Carpenter 1st Class	No.	4.00	503.00	2012.00
b	Materials				364.10
	Nails	kg	5.00	170.13	850.65
	Steel Drum sheet	No.	88.5	170.13	15056.51
					21571.160
	Rate Per m = (a+b+c)/100				215.712
	Labour Cess @ 1%				2.157
	G.S.T. @ 18%				39.828
	Total Cost of 1 mtr. 1% Cess & 18% GST =				2179.747
5.7.8	WED	Labour for fitting and and fixing split bamboo woven chaohart 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	531.00
	Mazdoor (Unskilled) for pilling	No.	1.00	410.00	410.00
b	Materials				
	Bamboo	Mtr.	10.00	188.00	1880.00
	Nails	kg	0.25	108.00	27.00
					2048.000
	Rate Per m = (a+b+c)/9.30				306.237
	Labour Cess @ 1%				3.062
	G.S.T. @ 18%				55.123
	Total Cost of 1 mtr. 1% Cess & 18% GST =				364.222
5.7.50		Providing laying & filling Geo bags of size 1m X 0.700m (Type A) 300 GSM non-woven 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	820.00
	Skilled labour for stacking	nos	0.33	472.00	155.76
	Unskilled labour for carrying and placing	nos	4.00	410.00	1640.00
	Mate	nos	0.25	434.00	108.50
	Stiching Machine	day	0.33	50.00	16.50
	Tractor with trolley	day	1.00	676.00	676.00
	Generator 3KVA	hrs	20.67	74.00	1529.50
	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	6320.00
	Mate	nos	1	434.00	419.00
	Tractor with trolley	each	4	676.00	2704.00
	Total				9443.000
	Rate per bag (Total/256) (B)				36.887
	Material				
	cost of Geo Bag	each	1	124.00	124.00
	Total cost (a+b+c)				284.543

	Rate per bag				284.545
	Labour Cess @ 1%				2.845
	G.S.T. @ 18%				51.210
	Add Seigniorage Fee @ 10 % of Materials	cum	0.070	144.75	1.01
	Total Cost of 1 Cr. Bag 1% Cess & 18% GST =				339.619
140.3	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.				
	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 per 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)	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				
	L. 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
	CARRIAGE COST				
	sand	Cum	1.2	345.14	414.17
	Rate per cum = a+b+c				733.27
	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

EE Anand

Executive Engineer
RWD, Works Division
Forbesganj

Superintending Engineer
Rural Works Department
Works Circle Kishanganj