



Bihar Rural Road
Development Agency



ग्रामीण कार्य विभाग

Rural Works Department, Govt of Bihar



मुख्यमंत्री ग्राम सड़क योजना

BIHAR RURAL ROAD DEVELOPMENT AGENCY (BRRDA)

F.D.R. PART - A (2021 - 22)

DETAILED ESTIMATE FOR F.D.R. RESTORATION WORK



DISTRICT :	Bhagalpur	BLOCK :	Rangra
NAME OF ROAD :	NH-31 Madrauni Chowk to Sahura via Nasi tola		

TOTAL LENGTH OF ROAD	:	3.345	KM
TOTAL COST OF FDR PART-A	:	3.939	LAKH
GST @ 12 %	:	0.473	LAKH
LABOUR CESS @ 1 %	:	0.039	LAKH
SEIGNIORAGE FEE @ 10 %	:	0.069	LAKH
TOTALCOST OF RESTORATION WORK	:	4.520	LAKH

Submitted By :-

Executive Engineer

Rural Work Department
Works Division, Navgachhiya

GENERAL ABSTRACT OF COST

Name of Road : NH-31 Madrauni Chowk to Sahura via
Nasi tola

District : Bhagalpur

Length (Km) : 3.345

Block : Rangra

Sl. No	Particulars		Details (Km)	Total Cost (in Rs.)
1	Cost of Road Restoration work	:	3.35	393,895.00
2	Add G.S.T @ 12 %	:		47,267.00
3	Add L.C. @ 1 %	:		3,939.00
4	Add 10% S.F. on Basic rate of Mines material	:		6881 6,885.00
	Total Cost of Restoration work	:		4,52,000.00
			Say,	451,986.00

4,52,000.00

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Qm
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A. E.

12/11/2021
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Technically Sanctioned for Rs 4,52,000.00 (Rupees four lac fifty two thousand only).

13/11/22
Superintending Engineer
Rural Works Department
Works Circle, Bhagalpur
12/11/22

ESTIMATE FOR ROAD RESTORATION WORK

Name of Road: NH-31 Madrauni Chowk to Sahura via Nasi tola Block: Rangra District: Bhagalpur Length: 3.345 Km

Sl. No.	SSR Item No.	Description	No	Length (M)	Width (M)	H/D (M)	Qty.	Unit	Rates (in Rs.)	Amount (in Rs.)
1	5.7.53	Providing sand bag with sand and labour including carriage laying, filling etc all complete job as per specification and direction of E/I								
		As per attached " Annexure - B "					11393	/ bags	30.70	349,765.00
2	11.1	Local Sand filling in as per drawing and technical specification Clause 305.3.9								
		As per attached " Annexure - C "					98.01		450.25	44126
							98.01	Cum	450.25	44130.00
Total Cost of Flood Protective work =										893,895.00

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ANNEXURE - " B "

E. C. Bags Measurement

Name of Road : NH-31 Madrauni Chowk to Sahura via Nasi tola

Length (Km) : 3.345

Sr. No.	Chainage (m)	Nos.	Length (m)	Width (m)	Average Width (m)	Depth (m)	Average Depth (m)	Quantity (Cum)	Quantity (No of bag)
1	95 - 110 RHS	1	15.00	0.60	0.60	0.50	0.50	4.50	132
2	110 - 120 RHS	1	10.00	0.50	0.55	0.60	0.60	3.30	97
3	120 - 239 RHS	1	119.00	2.00	2.00	1.20	1.20	285.60	8400
4	263 - 303 RHS	1	40.00	0.60	0.60	0.60	0.60	14.40	424
5	342 - 361 RHS	1	19.00	0.50	0.55	0.30	0.30	3.14	92
6	541 - 740 RHS	1	199.00	0.50	0.55	0.60	0.60	65.67	1931
7	791 - 810 RHS	1	19.00	0.30	0.45	0.30	0.30	2.57	76
8	921 - 942 RHS	1	21.00	0.60	0.65	0.60	0.60	8.19	241
								Total =	11,393

S. F.	-	11393	Nos.	@	Rs.	4.82	x	10%	=	Rs.	5,495.00
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ANNEXURE - " C "

Local Sand Measurement

Name of Road :

NH-31 Madrauni Chowk to Sathura via Nasir toll

Length (Km) : 3.345

Sr. No.	Chainage (m)	No.	Length (m)	Width (m)			Average Width (m)	Depth (m)			Average Depth (m)	Quantity (Cum)
1	129 - 133	1	4.00	3.00			3.00	0.30	0.60		0.45	5.40
2	150 - 159	1	9.00	2.30			2.30	0.30	1.10		0.70	14.49
3	250 - 271	1	11.00	2.50	2.60		2.55	0.30	1.10		0.70	19.64
4	467 - 503	1	6.00	2.30	2.40		2.35	0.30	1.30		0.80	11.28
5	536 - 541	1	5.00	3.00	3.50		3.25	0.30	1.20		0.75	12.19
6	622 - 625	1	3.00	2.40	2.50		2.45	0.30	1.20		0.75	5.51
7	809 - 816	1	6.00	2.00			2.00	0.30	1.00		0.65	7.80
8	820 - 827	1	7.00	2.00			2.00	0.30	1.00		0.65	9.10
9	831 - 840	1	9.00	2.00			2.00	0.30	1.10		0.70	12.60
											Total =	98.01

S. F.	-	98.01	Cum	@	Rs.	141.85	x	10%	=	Rs.	1,390.00
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Carriage Cost of Material via Road

RWD, works Division, Bhagalpur

Name of Road :		NH-31 Madrauni Chowk to Sahura via Nasl tola										Block : Rangra			
Sl No	Item	Unit	Source	Carriage Cost & Lead in Km				Katcha				Loading & Unloading Cost	Carriage By Road	Total	
			Pukka / Surface												
1	Stone Metal Gr-II/Via Road	Cum	Mirza Cheuki	8.00	x 7.47	x 83 Km	=	Rs 1080.63	8.00	x 18.09	x 10 Km	=	Rs 0.00	193.62	1274.25
2	Stone Metal Gr-III / GSB Via Road	Cum	Mirza Cheuki	4.59	x 7.47	x 83 Km	=	Rs 994.00	4.59	x 18.09	x 10 Km	=	Rs 0.00	193.62	1187.62
3	Stone Aggregate / Chips Via Road	Cum	Mirza Cheuki	8.00	x 7.47	x 83 Km	=	Rs 994.00	8.00	x 18.09	x 10 Km	=	Rs 0.00	193.62	1187.62
4	Stone Boulder /Via Road	Cum	Mirza Cheuki	4.99	x 7.47	x 83 Km	=	Rs 1033.35	4.99	x 18.09	x 10 Km	=	Rs 0.00	193.62	1187.62
5	Coarse Sand/Via Road	Cum	Hamnara	8.00	x 7.47	x 36 Km	=	Rs 431.13	8.00	x 18.09	x 10 Km	=	Rs 0.00	193.62	1226.97
6	Mooram/Via Road	Cum	Mirza Cheuki	4.99	x 7.47	x 83 Km	=	Rs 826.68	4.99	x 18.09	x 10 Km	=	Rs 0.00	104.88	931.56
7	Bitumen Barauni/ Via Road	MT	Barauni	8.00	x 7.47	x 125 Km	=	Rs 933.75	8.00	x 18.09	x 10 Km	=	Rs 0.00	365.00	1298.75
8	Bitumen Emulsion /Via Road	MT	Fatuha	8.00	x 7.47	x 212 Km	=	Rs 1583.64	8.00	x 18.09	x 10 Km	=	Rs 0.00	365.00	1948.64
9	Local Sand	Cum	Local	4.99	x 7.47	x 2 Km	=	Rs 23.95	4.99	x 18.09	x 1 Km	=	Rs 29.00	104.88	157.83
10	Brick	1000 No	Local	2.00	x 7.47	x 7 Km	=	Rs 209.16	2.00	x 18.09	x 1 Km	=	Rs 72.36	441.62	723.14
11	Cement	MT	Local	8.00	x 7.47	x 7 Km	=	Rs 52.29	8.00	x 18.09	x 10 Km	=	Rs 0.00	317.64	369.93
12	Steel	MT	Local	8.00	x 7.47	x 7 Km	=	Rs 52.29	8.00	x 18.09	x 10 Km	=	Rs 0.00	317.64	369.93
13	Hume Pipe (1000 mm)	M	Godda	10.00	x 7.47	x 68 Km	=	Rs 406.37	10.00	x 18.09	x 10 Km	=	Rs 0.00	75.69	482.06
14	Hume Pipe (600 mm)	M	Godda	25.00	x 7.47	x 68 Km	=	Rs 162.55	25.00	x 18.09	x 10 Km	=	Rs 0.00	32.44	194.99
15	Hume Pipe (300 mm)	M	Godda	60.00	x 7.47	x 68 Km	=	Rs 67.73	60.00	x 19.82	x 10 Km	=	Rs 0.00	32.44	100.17
16	Bamboo	Nos	Kursela	8.00	x 7.47	x 42 Km	=	Rs 313.74	8.00	x 19.82	x 10 Km	=	Rs 0.00	317.64	369.93
17	Brick bats	Cum	Local	2.00	x 7.47	x 7 Km	=	Rs 209.16	2.00	x 18.09	x 1 Km	=	Rs 72.36	193.62	475.14
18	Kln Rubbish	Cum	Local	2.00	x 7.47	x 7 Km	=	Rs 209.16	2.00	x 18.09	x 1 Km	=	Rs 72.36	104.88	157.83

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Rate Analysis

SDB Sl. No.	DESCRIPTION	Unit	QTY	Rate	Amount in Rs
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 = 2.832 cum				
a)	Labour				
	Mazdoor (Unskilled)	day	2.17	292	633.64 ✓
b)	Materials				
	Brick Bats	cum	2.832	1,051.00	2976.993
c)	Carriage				
		cum	2.832	402.4514	1140.7
	Cost for 5.5 cum = a+b+c				4952.62 ✓
	Rate per cum = (a+b+c+d)/2.83	cum			1750.04 ✓
	Total per cum	cum			4750.04
5.7.9	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 of E/I				1677.54
	Unit = Per mt.				
	Taking Out Put = 30.50 m				
(i)	Materials				
	Cost of 150 mm long nails	Kg	0.50	61.74	30.87
(ii)	Labour				
	Carpenter Gr -II	No.	0.125	351	43.88
	Unskilled Labour	No.	0.25	292	73.00
	Rate for 30.5 m				147.75
					147.75
					4.84
	Rate for 1 m				23.58
(iii)	Bamboo(2nd class) 75mm dia, 1.8 - 2.5m long	m	1.00	23.58	23.58
	Rate per m			Say.	28.43
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 m				
	Taking Out Put = 30.50 m				
	Assurning				
	20 no pile sunk 1.525 m deeps				
	Total depth sunk 30.50 m				
(i)	Labour	No.	0.25	351	87.75
	Carpenter Gr -II	No.	2.50	292	730.00
	Unskilled Labour for piling				817.75
					817.75
	Rate for 30.5 m				26.81
	Rate for 1 m	m	1.00	23.58	23.58
(ii)	Bamboo(2nd class) 75mm dia, 1.8 - 2.5m long			Say.	50.39
	Rate per m				
5.7.8	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.				
WRD	(Assuming strip of 3.05x3.05 = 9.30 sqm				
	Unit = per sqm				
	Taking Out = 9.30 sqm				

a	Labour				
	Carpenter Gr -II				
b	Mazdoor (Unskilled) for piling	No.	1.00	351	351.00
	75 mm to 100 mm long nails	No.	1.00	292	292.00
c	Bamboo(2nd class) 75mm dia, 1.8 - 2.5m long	kg	0.25	61.74	15.44
		m	11	23.58	259.42
	Rate Per Sqm = (a+b+c)9.30				917.85
10.7.40	Labour for filling Cement Bag, swing and laying materials Unit				98.69
WRD	= Per Bag				
A	Supply Empty cement Bag with Sand (2.92+4.82)	No	100	7.74	774.00
	Stitching Roll (Nylon)	No	2	30.00	60.00
				Total (A)	834.00
B	Unskilled Labour for filling stitching and staking	No	1.67	292	487.64
	Unskilled Labour for carrying and Placing at work site	No	3	292	876.00
	Skilled Labour for stitching	No	0.33	370	122.10
	Total per bag			Total (B)	1,485.74
C	Hire charge of Machine				
	Hire charge of Stitching Machine	No	0.33	50	16.50
	Hire charge of Generator 3 K.V.A	No	2.67	74	197.58
	Total per bag			Total (C)	214.08
D	Carriage Cost of Local Sand				
	1.2 Cft = 0.034 m ³	cum	3.40	157.83	536.62
	Total cost of (A+B+C+D) =	Bag		Total (D)	536.62
	Rate per Bag				3,070.44
4.1	Granular Sub-base with Well Graded Material (Table 400.1)				30.70
	(By mix in place method) For Grading II Material				
	Construction of granular sub-base by providing well graded material, spreading in uniform layers with motor grader 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	0.40	304.00	121.60
	Mazdoor (Skilled)	day	2.00	370.00	740.00
	Mazdoor (Unskilled)	day	8.00	292.00	2336.00
b)	Machinery				
	Tractor mounted grader arrangement for grading @ 100 cum per	hour	12.00	573.20	6878.40
	Three wheel 80-100 kN static roller @ 10 cum per hour	hour	12.00	803.00	9636.00
	Tractor with Rotavator 25 cum per hour	hour	12.00	573.20	6878.40
	Water tanker 6 kl capacity	hour	5.00	184.00	920.00
c)	Material				
	Well graded granular sub-base material as per Table 400.1				
	26.5 mm to 9.5 mm @ 35 per cent	cum	134.40	604.91	81299.90
	9.5 mm to 2.36 mm @ 25 per cent	cum	96.00	582.80	55948.80
	2.36 mm below @ 40 per cent - Local Sand	cum	153.60	514.58	79039.49
	Water	kl	30.00	40.00	1200.00
	Cost of GSB for 300 cum				244998.59
	A) Cost of GSB without carriage per cum	cum			816.66
e)	CARRIAGE				
	Carriage for GSB material	Cum	0.768	1187.62	912.09
	Carriage for material below 2.36 mm (Local Sand)	Cum	0.512	1187.62	608.06

	Rate per cum with carriage				2336.82
9.3	Providing and Laying Reinforced Cement Concrete Pipe NP3 as per design in Single Row				
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.				
A.	1000 MM DIA (Double Row)				
a)	Material				
	RCC NP3 pipe including collar	m	15.00	2755.50	41332.50
b)	Labour				
	Mate				
	Mason (1st class)	day	0.22	304.00	66.88
	Mazdoor (Unskilled)	day	0.60	351.00	210.60
	Cost for 7.5m = (a+b+c)	day	4.80	292.00	1401.60
	A) Basic Cost per m = (a+b+c+d)/7.5				43011.58
	CARRIAGE COST	m			5734.88
	NP3 Pipe				
	Carriage cost of 7.5 m	m	15.00	482.06	7230.90
	B) Carriage cost per m				7230.90
	Rate per m = (A+B)	m			964.12
B.	1000 MM DIA (Single Row)	m			6699.00
a)	Material				
	RCC NP3 pipe including collar	m	7.50	2755.50	20666.25
b)	Labour				
	Mate				
	Mason (1st class)	day	0.09	304.00	27.36
	Mazdoor (Unskilled)	day	0.25	351.00	87.75
	Cost for 7.5m = (a+b+c)	day	2.00	292.00	584.00
	A) Basic Cost per m = (a+b)/7.5				21365.36
	CARRIAGE COST	m			2848.71
	NP3 Pipe				
	Carriage cost of 7.5 m	m	7.50	482.06	3615.45
	B) Carriage cost per m				3615.45
	Rate per m = (A+B)	m			482.06
C.	600 MM DIA (Double Row)	m			3330.77
a)	Material				
	RCC NP3 pipe including collar	m	15	1582.72	23740.80
b)	Labour				
	Mate	day	0.04	304.00	12.16
	Mason (1st class)	day	0.12	351.00	42.12
	Mazdoor (Unskilled)	day	0.96	292.00	280.32
	Cost of 7.5m = (a+b+c+d)				24075.40
	A) Basic Cost per m = (a+b)/7.5	m			3210.05
	CARRIAGE COST				
	NP3 Pipe	m	15	194.99	2924.85
	Carriage cost of 7.5 m				2924.85
	B) Carriage cost per m	m			389.98
	Rate per m = (A+B)	m			3600.03
D.	600 MM DIA (Single Row)				
a)	Material				
	RCC NP3 pipe including collar	m	7.50	1582.72	11870.40
b)	Labour				
	Mate	day	0.04	304.00	12.16
	Mason (1st class)	day	0.12	351.00	42.12
	Mazdoor (Unskilled)	day	0.96	292.00	280.32
	Cost of 7.5m = (a+b+c+d)				12205.00
	A) Basic Cost per m = (a+b)/7.5	m			1627.33
	CARRIAGE COST				
	NP3 Pipe	m	7.5	194.99	1462.43

Carriage cost of 7.5 m				
B) Carriage cost per m				1462.43
Rate per m = (A+B)				194.99
m				1822.32
11.1	Local Sand filling in as per drawing and technical specification Clause 305.3.9			
	Sand filling			
	Unit = cum			
a)	Labour			
	Mate			
	Mazdoor (Unskilled)	day	0.01	304.00
b)	Material			
	Sand (assuming 20 per cent voids)	day	0.30	292.00
	Rate per cum = (a+b)	cum	1.20	141.85
c)	Carriage Cost			
	Sand (assuming 20 per cent voids)	cum	1.20	157.83
	Rate per cum = a+b+c=	cum		450.26

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