



ग्रामीण कार्य विभाग

Rural Works Department, Govt of Bihar



BIHAR RURAL ROAD DEVELOPMENT AGENCY (BRRDA)

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

DETAILED ESTIMATE FOR F.D.R. RESTORATION WORK



DISTRICT :	Bhagalpur	BLOCK :	Navgachhiya
NAME OF ROAD :	Kadwadiyara Harizan Tola to Middle School Khairpur via Karimpur (Kasimpur)		

TOTAL LENGTH OF ROAD	:	1.850	KM
TOTAL COST OF FDR PART-A	:	2.440 2.489	LAKH
GST @ 12 %	:	0.299 0.296	LAKH
LABOUR CESS @ 1 %	:	0.025	LAKH
SEIGNIORAGE FEE @ 10 %	:	0.070	LAKH
TOTAL COST OF RESTORATION WORK	:	2.883 2.861	LAKH

Submitted By :

Executive Engineer

Rural Work Department
Works Division, Navgachhiya

GENERAL ABSTRACT OF COST

Name of Road : Kadwadiyara Harizan Tola to Middle School Khairpur via Karimpur District : Bhagalpur
 Length (Km) : 1.850 Block : Navgachhiya

Sl. No	Particulars	Details (Km)	Total Cost (in Rs.)
1	Cost of Road Restoration work	:	242000.00 -248,888.00
2	Add G.S.T. @ 12 %	:	29641.50 -29,867.00
3	Add L.C. @ 1 %	:	2440.00 -2,489.00
4	Add 10% S.F. on Basic rate of Mines material	:	7,019.00
	Total Cost of Restoration work	:	286152.50 288,263.00
		Say,	288,263.00

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E. E.

Technically sanctioned for Rs-2,86,100=00 (Rupees two lac eighty six thousand and one hundred) only.

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Superintending Engineer
Rural Works Department
Works Circle, Bhagalpur
03/01/22

ESTIMATE FOR ROAD RESTORATION WORK

Name of Road:		Kadeediya Harizan Tola to Middle School Khairpur via Karimgpur (Kasimpur)	Block: Navgachhiya		District: Bhagalpur		Length: 1.850 Km			
Sr. No.	SSR Item No.	Description	No	Length (M)	Width (M)	H/D (M)	Qty.	Unit	Rate (in Rs.)	Amount (in Rs.)
1	4.6	Providing brick bats including spreading, laying, packing and compacting with C.I. Hammer in layers not exceeding 75 mm thick including cost of light barriers, danger signals, overhead, taxes, royalty etc. all complete job as per specification and direction of E.I. excluding carriage cost of bricks.								
		As per attached "Annexure - A"					25.55		1677.91	43445.25
							25.88	Cum	1758.84	45261.00
2	5.7.7	Labour for cutting 62 mm to 75 mm dia bamboo pile to size and making shoes and driving etc. all complete job as per specification and direction of E.I.								
		2 x 40 = 80	80	2.50			200.00			
							200.00	m	50.38	10076.00
3	5.7.9	Labour for filling & fixing 62mm to 75 mm dia bamboo runners in position at every vertical piles with 150 m long stave or 38 kg G.I. wire including cost of G.I. or nails all complete job as per specification and direction of E.I.								
			4	15.00			80.00			
			8	15.00			120.00			
			170	2.00			425.00			
							665.00	m	28.43	17280.00
4	5.7.83	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"					2590	/ Bags	30.70	79613.00
5	11.1	Local Sand filling in ss per drawing and technical specification Clause 505.3.5								
		As per attached "Annexure - C"					215.00		450.22	36732.50
							215.00	Cum	450.22	96808.00
							Total Cost of Flood Protective work =			248388.00

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ANNEXURE - " A "

Brick Bat Measurement

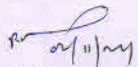
Name of Road : Kadwadiyara Harizan Tola to Middle School Khairpur via Karimpur (Kasimpur) Length (Km) : 1.850

No.	Chainage (m)	Nos.	Length (m)	Width (m)	Average Width (m)	Depth (m)	Average Depth (m)	Quantity (Cum)
1	1100 - 1113.0	1	12.60	4.60	4.60	0.45	0.45	25.98
							Total =	25.88

S. F.	25.88	Cum	Rs.	1051.00	x	10%	=	Rs.	2,720.00
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ANNEXURE - " B "

E. C. Bags Measurement

Name of Road : Kadwadiyara Harizan Tola to Middle School Khaipur via Karimpur (Kasimpur)										Length (Km) :	1.850
Sl. No.	Chainage (m)	Nos.	Length (m)	Width (m)	Average Width (m)	Depth (m)	Average Depth (m)	Quantity (Cum)	Quantity (No of bag)		
1st Phase											
1	1100 - 1113.0 LHS	1	2.00	3.00	3.00	2.00	2.00	12.00	365		
2	1100 - 1113.0 RHS	1	1.80	3.00	3.00	2.00	2.00	10.80	318		
3	1100 - 1113.0 RHS	2	10.00	3.00	3.00	0.60	0.60	40.80	1376		
4	1100 - 1113.0 RHS	1	13.00	0.80	0.80	0.60	0.60	6.24	184		
2nd Phase											
5	1100 - 1113.0 LHS	1	13.00	2.40	2.40	0.15	0.15	4.68	138		
6	1100 - 1113.0 RHS	1	12.50	3.00	3.00	0.20	0.20	7.50	221		
								Total =	2,590		
S. F.		-	2590	Nos.	@	Rs.	4.82 x 10%	=	Rs.	1,249.00	

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ANNEXURE - " C "

Local Sand filling Measurement

Name of Road :

Kadwadiyara Harizan Tola to Middle School Khairpur via
Karimpur (Kasimpur)

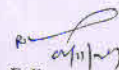
Length (Km) : 1.850

Sr. No.	Chainage (m)	Nos.	Length (m)	Width (m)			Average Width (m)	Depth (m)			Average Depth (m)	Quantity (Cum)
1	1100 - 1113.0	1	12.50	12.50	4.60		8.80	2.00			2.00	215.00
											Total =	215.00

	S. F.	=	215.00	Cum	@	Rs.	141.85	x	10%	=	Rs.	3,050.00
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Carriage Cost of Material via Road

At Work, with the following conditions:

Sl No	Name of Road	Item	Source	Carriage Cost & Load in Km		Katcha		Loading & Unloading Cost	Carriage by Road	Total
				Packing / Surface	Carriage Cost	8.00	16.00			
1	Stone Metal Gr-II/Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	2774.25	1274.93
2	Stone Metal Gr-III / GSB Via Road	Gr-III Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
3	Stone Aggregate / Chips Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
4	Stone Boulder / Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
5	Coarse Sand / Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
6	Mudum / Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
7	Bhraman Baraman / Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
8	Bhraman Emulsion / Via Road	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
9	Local Sand	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
10	Brick	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
11	Gummi	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
12	Steel	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
13	Thrust Pipe (1000 mm)	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
14	Thrust Pipe (600 mm)	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
15	Thrust Pipe (300 mm)	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
16	Ballast	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
17	Bedchairs	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52
18	Run in Bubbish	Gr-II Metal	Mirza Chaudh	8.00	8.00	8.00	8.00	193.69	1187.52	1187.52

Signature of Assistant Engineer

Signature of Assistant Engineer

Signature of Assistant Engineer

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				29246.24
	Brick Bats	cum	2.832	1051.00	2974.33
c)	Carriage				
		cum	2.832	402.80	1140.23
	Cost for 3.5 cum = a+b+c				4344.65
	Rate per cum = (a+b+c+d)/2.832				4952.62
	Rate per cum = (a+b+c+d)/2.832				4750.04
	Total per cum	cum			3,750.04
5.7.9	Labour for fitting and fixing 62 mm to 75 mm dia bamboo runners in position at every vehicle 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 I/I				1677.39
	Unit = Per mt.				
	Taking Out Put = 30.50 m				
(i)	Materials				
	Cost of 150 mm long nails	Kg	0.59	61.74	36.87
(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
	Rate for 1 m				4.81
(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 job as per specification and direction of I/I				
	Unit = Per m				
	Taking Out Put = 30.50 m				
	Assuming				
	20 no pile sunk 1.525 m deeps				
	Total depth sunk 30.50 m				
(i)	Labour				
	Carpenter Gr-II	No.	0.25	351	87.75
	Unskilled Labour for piling	No.	2.50	292	730.00
	Rate for 30.5 m				817.75
	Rate for 1 m				26.81
(ii)	Bamboo(2nd class) 75mm dia, 1.8 - 2.5m long	m	1.00	23.58	23.58
	Rate per m			Say.	50.39
5.7.8 WRD	Labour for fitting and and fixing split bamboo woven chairmat 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 I/I				
	(Assuming strip of 3.05x3.05 = 9.30 sqm				
	Unit = per sqm				
	Taking Out = 9.30 sqm				

a	Labour				
	Carpenter (Gr-II)	No.	1.00	351	351.00
	Mazdoor (Unskilled) for pilling	No.	1.00	292	292.00
b	Materials				
	75 mm to 100 mm long nails	kg	0.25	61.74	15.44
	Bamboo (2nd class) 75mm dia, 1.8 - 2.5m long	m	11	23.58	259.12
					917.85
	Rate Per Sqm = (a+b+c)/9.30				98.69
10.7.40 WARD	Labour for filling Cement Bag, swing and laying materials Unit = 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	5	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	3.10	157.83	536.62
				Total (D)	536.62
	Total cost of (A+B+C+D) =	Bag			3,070.44
	Rate per Bag				30.70
4.1	Granular Sub-base with Well Graded Material (Table 400.1) (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.				
(iii)	For Grading II Material				
	Unit = cum				
	Taking output = 300 cum				
a) Labour					
	Mule	day	0.40	304.00	121.60
	Mazdoor (Skilled)	day	2.00	370.00	740.00
b) Machinery					
	Mazdoor (Unskilled)	day	8.00	292.00	2336.00
	Tractor mounted grader arrangement for grading @ 100 cum per hour	hour	12.00	573.20	6878.40
c) Material					
	Tractor 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	186.00	930.00
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	582.00	55948.80
	2.36 mm below @ 40 per cent - Local Sand	cum	151.60	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	608.66

Rate per cum with carriage					
9.3	Providing and Laying Reinforced Cement Concrete Pipe NP3 as per design in Single Row				2336.82
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	11132.50
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	1401.50
	A) Basic Cost per m = (a+b+c)/7.5	m			43011.58
	CARRIAGE COST	m			5734.88
	NP3 Pipe	m			
	Carriage cost of 7.5 m	m	15.00	482.06	7230.90
	B) Carriage cost per m	m			7230.90
	Rate per m = (A+B)	m			964.12
B.	1000 MM DIA (Single Row)				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	m			21365.36
	CARRIAGE COST	m			2848.71
	NP3 Pipe	m			
	Carriage cost of 7.5 m	m	7.50	482.06	3615.45
	B) Carriage cost per m	m			3615.45
	Rate per m = (A+B)	m			482.06
C.	600 MM DIA (Double Row)				3130.77
a)	Material				
	RCC NP3 pipe including collar	m	15	1582.72	23740.80
b)	Labour				
	Mate				
	Mason (1st class)	day	0.04	304.00	12.16
	Mazdoor (Unskilled)	day	0.12	351.00	42.12
	Cost for 7.5m = (a+b+c)/7.5	day	0.96	292.00	280.32
	A) Basic Cost per m = (a+b)/7.5	m			24075.40
	CARRIAGE COST	m			3210.05
	NP3 Pipe	m			
	Carriage cost of 7.5 m	m	15	194.99	2924.85
	B) Carriage cost per m	m			2924.85
	Rate per m = (A+B)	m			389.98
D.	600 MM DIA (Single Row)				3600.03
a)	Material				
	RCC NP3 pipe including collar	m	7.50	1582.72	11870.40
b)	Labour				
	Mate				
	Mason (1st class)	day	0.04	304.00	12.16
	Mazdoor (Unskilled)	day	0.12	351.00	42.12
	Cost for 7.5m = (a+b+c)/7.5	day	0.96	292.00	280.32
	A) Basic Cost per m = (a+b)/7.5	m			12205.60
	CARRIAGE COST	m			1627.33
	NP3 Pipe	m			
	Carriage cost of 7.5 m	m	7.50	194.99	1462.43

	Carriage cost of 7.5 m				1462.43
	B) Carriage cost per m	m			194.99
	Rate per m = (A+B)	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	day	0.01	304.00	3.04
	Mazdoor (Unskilled)	day	0.30	292.00	87.60
b)	Material				
	Sand (assuming 20 per cent voids)	cum	1.20	141.85	170.22
	Rate per cum = (a+b)				260.86
c)	Carriage Cost				189.36
	Sand (assuming 20 per cent voids)	cum	1.20	157.60	189.40
	Rate per cum = a+b+c=	cum			450.26

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