



ग्रामीण कार्य विभाग

Rural Works Department, Govt of Bihar

BIHAR RURAL ROADS PROJECT

Bihar Rural Road Development Agency (BRRDA)

YEAR (2020 - 2021)

FDR

STATE :- BIHAR
DISTRICT :- Samastipur
BLOCK :- Mohanpur

NAME OF ROAD :- Detailed Estimate For Repair of Flood
Damaged in Mohanpur Gate to Khajinwa

TOTAL COST OF CONSTRUCTION :- Rs. 8.015 Lacs

TOTAL COST OF PROJECT :- Rs. 8.015 Lacs

SUBMITTED BY:
EXECUTIVE ENGINEER
RWD (W) DIVISION, PATORI
SAMASTIPUR

Gross amount - Rs. 8,01,543.00

7.944 lacs

FDR
YEAR (2020 - 2021)
GENERAL ABSTRACT OF COST

Block:--Mohanpur

District:--Samastipur

Name of Road:--

Detailed Estimate For Repair of Flood Damaged in Mohanpur
Gate to Khajinwa

SL. No.	Item of Work	Amount
A		
	TOTAL COST OF CONSTRUCTION	8.015 Lacs
	Sub Total= (A)	8.015 Lacs
	TOTAL cost of project	8.015 Lacs

Ram
15-10-2020
Junior Engineer
RWD (w)Section ,
Mohanpur

[Signature]
15/11/20
Asstt. Engineer
RWD (w)Sub Division , Mohanpur

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15.10.20
Executive Engineer
RWD (w) Division, Patori

7.944 lacs

SUMMARY OF COST ESTIMATE FOR THE PROJECT

NAME OF ROAD :

Detailed Estimate For Repair of Flood Damaged in Mohanpur Gate
to Khajinwa
Samastipur
Mohanpur

DISTRICT
BLOCK

BOM Refr — 2.640

Sl. No.	DESCRIPTION	AMOUNT (LAKHS)
1	EARTHWORK	2.336
3	GSB GRADE II	1.07 1.133
4	WBM GRADE III	0.902
	SUB TOTAL OF PAVEMENT COST IN LACS =	7.011
	Sub Total :-	6.948 7.011
	12% GST on Total Amount :-	0.834 0.841
	1% Lab Cess :-	0.069 0.070
	Seigniorage Fee @ 10% :-	0.093 0.093
	Total Constriction Cost (including GST and Labour Cess) (A) :-	8.015
	TOTAL COST OF PROJECT IN LACS(including GST 12% & 1% Lab Cess)(A+B+C) :-	7.944 8.015

Ravi
15-10-2020
Junior Engineer

RWD (w)Section , Mohanpur

Assistant Engineer

RWD (w)Sub Division , Mohanpur

MA
5-10-20
Executive Engineer
RWD (w)
Division, Patori

*Technical copy approved Rs 7.944 in say seven lakh
thirty four thousand four hundred only.*

(Signature)
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Cost Estimate for Road Work

Sl. No.	SDB SL. NO	MORD Ref.No	Description	Unit	NOS	LENGTH	WIDTH	HEIGHT	QUANTITY	RATE	AMOUNT (in Rs.)
SUB HEAD : Embankment											
1			Earthwork	cum	1.00	1,200.0	1.250	0.900	1,350.00	173.06	2,33,631.00
2			Brick Bats								
			Laying Brick Bats on Prepared Soil Surface as per specifications and direction of E/L								
			Damaged Strech	cum	1.00	22.0	1.250	0.600	16.50		
			Damaged Strech	cum	1.00	19.0	1.800	0.450	15.39		
			Damaged Strech	cum	1.00	40.0	1.200	0.300	14.40		
			Damaged Strech	cum	1.00	55.0	1.650	0.450	40.84		
			Damaged Strech	cum	1.00	30.0	1.100	0.600	19.80		
			Damaged Strech	cum	1.00	40.0	1.250	0.900	45.00		
			Damaged Strech	cum	1.00	15.0	1.150	0.300	5.18		
									157.10	1,680.02	2,63,935.34
									B) SUB TOTAL OF CRUST =		4,97,566.34
Sub Head : PAVEMENT LAYERS - GSB & WBM ITEMS											
3	4.1 (A)	401 (ii)	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 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.								
			Damaged Portion 2	Cum	1.00	50.0	1.850	0.175	16.19		
			Damaged Portion 3	Cum	1.00	24.0	1.400	0.175	5.88		
			Damaged Portion 4	Cum	1.00	30.0	1.700	0.175	8.93		
			Damaged Portion 5	Cum	1.00	14.0	1.500	0.175	3.68		
			Damaged Portion 6	Cum	1.00	45.0	1.100	0.175	8.66		
			Damaged Portion 7	Cum	1.00	37.0	1.250	0.175	8.09		
									51.42	2,203.81	1,13,320.00
			Net GSB Qty. Required form Grading II Material								1,06,930.00

2079=54
1,06,930=00

Cost Estimate for Road Work

Sl. No.	SDB SL. NO	MORD Ref.No	Description	Unit	NOS	LENGTH	WIDTH	HEIGHT	QUANTITY	RATE	AMOUNT (in Rs.)
4	4.7 (3-A)	405	WBM Grading 3 (By Mechanical Means) Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with smooth wheel roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 3 as per Technical Specification Clause 405.								
			Damaged Portion 2	Cum	1.00	53.0	1.950	0.075	7.75		
			Damaged Portion 3	Cum	1.00	25.0	1.650	0.075	3.09		
			Damaged Portion 4	Cum	1.00	32.0	1.800	0.075	4.32		
			Damaged Portion 5	Cum	1.00	15.0	1.550	0.075	1.74		
			Damaged Portion 6	Cum	1.00	49.0	1.250	0.075	4.59		
			Damaged Portion 7	Cum	1.00	39.0	1.500	0.075	4.39		
			Net WBM -3 Qty						25.89	3,484.74	90,219.92
C) SUB-TOTAL OF CRUST =											2,03,539.92
TOTAL COST OF PAVEMENT IN RS. =											7,01,106.26

[Signature]
15/10/2020
Junior Engineer
RWD (w) Section, Mohanpur

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5/10/20
Assistant Engineer
RWD (w) Sub Division, Mohanpur

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15.10.20
Executive Engineer
RWD (w) Division, Patari

[Handwritten calculations]
694716 = 81
694716 = 10

Sl. No.	SDB SI.NO	MORD Ref.No	Description	Unit	Quantity	Rate	Amount (In Rs.)	Total Material Required	Material Amount	Add Seigniorage Fee 10%
EARTHWORK										
1	3.14	303.1	Earthwork Construction of Embankment with material obtained from borrow pits with a lift upto 1.5 m , transporting to the site spreading , grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 m as per Technical Specification Clause 301.5 .							
			Unit = cum							
			Taking output = 100 cum							
		a)	Material							
			Compensation For Earth Taken From Private Land	Cum	100	34.81	3,481.00			
			Cost for 100 cum = a				3,481.00			
			Rate Per Cum = (a)/100=	Cum			34.81			
			Total Cost =	Cum			34.81	1,350.00	46,993.50	4,699.35
PAVEMENT LAYERS - GSB, WBM-II & WBM-III										
2	4.1	401	Granular Sub-base with Well Graded Material (Table 400.1)							
			(By mix in place method)							
		(i)	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.							
			For Grading II Material (Local Sand)							
			Unit = cum							
			Taking output = 300 cum							
		a)	Material							
			Well graded granular sub-base material as per Table 400.1	cum	134	657.85	88,151.900			
			26.5 mm to 9.5 mm @ 35%	cum	96	514.58	49,399.680			
			9.5 mm to 2.36 mm @ 25%	cum	153	141.85	21,703.050			
			2.36 mm below @ 40% (Local sand)				1,59,254.63			
			Cost for 300 cum = a				530.85			
			Rate Per Cum = (a)/300=	Cum			530.85	51.42	27,296.24	2,729.62
			Total Cost =	Cum						

Ravi
15-10-2020
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Analysis for Carriage by Road
Detailed Estimate For Repair of Flood Damaged in Mohanpur Gate to Khajinwa

Name of Road:--

District:--

Block :- Mohanpur

Sl No	Item with Source	Unit	Source Up to	Carriage Cost & Lead in Km			Loading & Unloading Cost	Carriage Cost by Rail Head	Total
				Pucka / Surface	Katcha				
1	Stone Metal Gr-I & Gr-II	Cum	Sheikhpura	$\frac{8.00}{4.59} \times 7.60 \times 163.00 \text{ Km} = \text{Rs } 2159.13$	$\frac{8.00}{4.59} \times 18.50 \times 0.00 \text{ Km} = \text{Rs } 0.00$		83.64		Rs. 2242.77
2	Stone Metal Gr-III / GSB	Cum	Sheikhpura	$\frac{8.00}{4.99} \times 7.60 \times 163.00 \text{ Km} = \text{Rs } 1986.05$	$\frac{8.00}{4.99} \times 18.50 \times 0.00 \text{ Km} = \text{Rs } 0.00$		83.64		Rs. 2069.69
3	Stone Aggregate / Chips	Cum	Sheikhpura	$\frac{8.00}{4.99} \times 7.60 \times 163.00 \text{ Km} = \text{Rs } 1986.05$	$\frac{8.00}{4.99} \times 18.50 \times 0.00 \text{ Km} = \text{Rs } 0.00$		83.64		Rs. 2069.69
4	Stone Aggregate / Chips	Cum	Mirzachowki	$\frac{8.00}{4.99} \times 7.60 \times 208.00 \text{ Km} = \text{Rs } 2534.35$	$\frac{8.00}{4.99} \times 18.50 \times 0.00 \text{ Km} = \text{Rs } 0.00$		83.64		Rs. 2617.99
5	Stone Boulder	Cum	Sheikhpura	$\frac{8.00}{4.80} \times 7.60 \times 163.00 \text{ Km} = \text{Rs } 2064.67$	$\frac{8.00}{4.80} \times 18.50 \times 0.00 \text{ Km} = \text{Rs } 0.00$		83.64		Rs. 2148.31
6	Course Sand	Cum	Kuil	$\frac{8.00}{4.99} \times 6.83 \times 114.00 \text{ Km} = \text{Rs } 1248.29$	$\frac{8.00}{4.99} \times 16.54 \times 0.00 \text{ Km} = \text{Rs } 0.00$		96.53		Rs. 1344.82
7	Local Sand	Cum	Local	$\frac{8.00}{4.99} \times 6.83 \times 2.00 \text{ Km} = \text{Rs } 21.90$	$\frac{8.00}{4.99} \times 16.54 \times 1.00 \text{ Km} = \text{Rs } 26.52$		96.53		Rs. 144.95
8	Brick	1000 Nos	Local	$\frac{8.00}{2.00} \times 6.83 \times 7.00 \text{ Km} = \text{Rs } 191.24$	$\frac{8.00}{2.00} \times 16.54 \times 1.00 \text{ Km} = \text{Rs } 66.16$		406.10		Rs. 663.50

* Subjected to Verification of Lead

Cost of Haulage Excluding Loading & Unloading as per SOR

Type of Road	Per Ton. Km by	
	Tinner	Truck
For Surface Road	7.60	6.83
Unsurface Gravel Road	9.20	8.22
Kachha Road	18.50	16.54

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Analysis for Carriage by Road & Rail
Detailed Estimate For Repair of Flood Damaged in Mohanpur Gate to Khajinwa
Block :- Mohanpur

Name of Road:-
 District:-

SI No	Item with Source	Unit	Source Up to	Carriage Cost & Lead in Km			Loading & Unloading Cost	Carriage Cost by Rail Head	Total
				Pucka / Surface	Katcha				
1	Stone Metal Gr-I & Gr-II	Cum	Sheikhpura	$\frac{8.00}{4.59} \times 7.60$	$\frac{8.00}{4.59} \times 18.50$	$\frac{8.00}{4.59} \times 64.00 \text{ Km} = \text{Rs } 847.76$	83.64	952.23	Rs. 1883.63
2	Stone Metal Gr-III / GSB	Cum	Sheikhpura	$\frac{8.00}{4.99} \times 7.60$	$\frac{8.00}{4.99} \times 18.50$	$\frac{8.00}{4.99} \times 64.00 \text{ Km} = \text{Rs } 779.80$	83.64	896.90	Rs. 1760.35
3	Stone Aggregate / Chips	Cum	Sheikhpura	$\frac{8.00}{4.99} \times 7.60$	$\frac{8.00}{4.99} \times 18.50$	$\frac{8.00}{4.99} \times 64.00 \text{ Km} = \text{Rs } 779.80$	83.64	896.90	Rs. 1760.35
4	Stone Aggregate / Chips	Cum	Mirzachowki	$\frac{8.00}{4.99} \times 7.60$	$\frac{8.00}{4.99} \times 16.54$	$\frac{8.00}{4.99} \times 64.00 \text{ Km} = \text{Rs } 779.80$	83.64	1282.63	Rs. 2146.08
5	Stone Boulder	Cum	Sheikhpura	$\frac{8.00}{4.80} \times 7.60$	$\frac{8.00}{4.80} \times 18.50$	$\frac{8.00}{4.80} \times 64.00 \text{ Km} = \text{Rs } 810.67$	83.64	922.04	Rs. 1816.35
6	Course Sand	Cum	Kuil	$\frac{8.00}{4.99} \times 6.83$	$\frac{8.00}{4.99} \times 16.54$	$\frac{8.00}{4.99} \times 114.00 \text{ Km} = \text{Rs } 1248.29$	96.53		Rs. 1344.82
7	Local Sand	Cum	Local	$\frac{8.00}{4.99} \times 6.83$	$\frac{8.00}{4.99} \times 16.54$	$\frac{8.00}{4.99} \times 2.00 \text{ Km} = \text{Rs } 21.90$	96.53		Rs. 144.95
8	Brick	1000 Nos	Local	$\frac{8.00}{2.00} \times 6.83$	$\frac{8.00}{2.00} \times 16.54$	$\frac{8.00}{2.00} \times 7.00 \text{ Km} = \text{Rs } 191.24$	406.10		Rs. 663.50

Cost of Haulage Excluding Loading & Unloading as per SOR

Type of Road	Per Ton. Km by Tipper	Per Ton. Km by Truck
For Surface Road	7.60	6.83
Unsurface Gravel Road	9.20	8.22
Kachha Road	18.50	16.54

* Subjected to Verification of Lead

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15.11.2020

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15.10.2020
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FDR
YEAR (2020 - 2021)

Analysis for Carriage by Road & Rail

Name of Road:--

Detailed Estimate For Repair of Flood Damaged in Mohanpur Gate to Khajinwa

Block :-

Mohanpur

District:-

Samastipur

0.190 KM.

Sl No	Item	Unit	Carriage Cost By Road (Per cum)	Carriage Cost By Road & Rail (Per cum)	Minimum Carriage Cost (Adopted in DPR)
1	Stone Metal Gr-I & Gr-II	Cum	2242.77	1883.63	1883.63
2	Stone Metal Gr-III / GSB	Cum	2069.69	1760.35	1760.35
3	Stone Aggregate / Chips (seikhpura)	Cum	2069.69	1760.35	1760.35
4	Stone Aggregate / Chips	Cum	2617.99	2146.08	2146.08
5	Stone Boulder	Cum	2148.31	1816.35	1816.35
6	Course Sand	Cum	1344.82	1344.82	1344.82
7	Local Sand	Cum	144.95	144.95	144.95
8	Brick	1000 Nos	663.50	663.50	663.50
9	Cement	MT	617.16	617.16	617.16
10	Steel	MT	617.16	617.16	617.16
11	Bitumen Emulsion (Ulberia)	MT	978.35	978.35	978.35
12	Bitumine (Barauni)	MT	848.58	848.58	848.58
13	Hume Pipe (1000 mm)	Pipe	353.75	353.75	353.75

Ravi
15-10-2021
Junior Engineer
RWD (w) Division, Patori

Asstt. Engineer
RWD (w) Division, Patori

Q.12
15-10-2021
Executive Engineer
RWD (w) Division, Patori

Analysis for Carriage Through Railway from Quarry Site to Work Site

Sheikhpura to Karpoorigram

Material -Stone Metal Gr-I & Gr-II

Quarry Site to Sheikhpura Railway Yard (By Road)

Carriage Cost & Lead in Km										Loading & Unloading		Total						
Pucka / Surface					Katcha													
$\frac{8.00}{4.59}$	x	7.60	x	2.00 Km	=	Rs 26.49	+	$\frac{8.00}{4.59}$	x	18.50	x	0.00 Km	=	Rs 0.00	+	Rs 83.64	=	Rs 110.13
UnSurface						$\frac{8.00}{4.59}$	x	9.20	x	1.00 Km			=	Rs 16.03				
														Total "A"		=	Rs 126.16	

Sheikhpura Railway Yard to Karpoorigram Railway Yard = 122.00 Km

i) Loading Cost from Railway Yard to Railway Wagon = For 1 cum = Rs 118.86 = Rs 118.86

Total = For 1 cum "B" = Rs 118.86

iii) Railway freight charge from Sheikhpura Railway = For 1 MT 122.00 Km = Rs 231.30 = Rs 231.30

Busy Season charge 12% of Railway freight charge = For 1 MT = 12% = Rs 27.76

Railway Development Charge to 5% of Railway freight Charge = For 1 MT = 5% = Rs 11.57

Terminal charge @Rs.40.00 per Terminal per MT = For 1 MT 2 x Rs 40.00 = Rs 80.00

Total = For 1 MT "C" = Rs 350.63
For 1 cum = Rs 611.11

Add 6% Overhead Charge = 6.0% = Rs 36.67

Add 10% Contractor Profit = 10% = Rs 0.00

Total Railway Freight for 1 cum "C" = Rs 647.78

Cost for Stacking the Materials from Unloading dump upto lead 30 m.

Total "D" = For 1 cum = Rs 59.43 = Rs 59.43

Carriage Cost from Quarry to Karpoorigram
Railway Yard = For 1 Cum A+B+C+D = Rs 952.23

Analysis for Carriage Through Railway from Quarry Site to Work Site

Sheikhpura to Karpoorigram

Material -Stone Metal Gr-III & GSB

Quarry Site to Sheikhpura Railway Yard (By Road)

Carriage Cost & Lead in Km										Loading & Unloading		Total						
Pucka / Surface					Katcha													
$\frac{8.00}{4.99}$	x	7.60	x	2.00 Km	=	Rs 24.37	+	$\frac{8.00}{4.99}$	x	18.50	x	0.00 Km	=	Rs 0.00	+	Rs 83.64	=	Rs 108.01
UnSurface						$\frac{8.00}{4.99}$	x	9.20	x	1.00 Km			=	Rs 14.75				
													Total "A"	=	Rs 122.76			

Sheikhpura Railway Yard to Karpoorigram Railway Yard = 122.00 Km

i) Loading Cost from Railway Yard to Railway Wagon	=	For 1 cum	=	Rs 118.86	=	Rs 118.86	
Total	=	For 1 cum		"B"	=	Rs 118.86	
iii) Railway freight charge from Sheikhpura Railway station to Karpoorigram Railway station	=	For 1 MT	122.00 Km	=	Rs 231.30	=	Rs 231.30
Busy Season charge 12% of railway freight charge	=	For 1 MT		=	12%	=	Rs 27.76
Railway Development Charge to 5% of Railway Fright Charge		For 1 MT		=	5%	=	Rs 11.57
Terminal charge @Rs.40.00 per Terminal per MT		For 1 MT	2	x	Rs 40.00	=	Rs 80.00
Total	=	For 1 MT				=	Rs 350.63
		For 1 CUM			"C"	=	Rs 562.13
		Add 6% Overhead Charge		=	6.0%	=	Rs 33.73
		Add 10% Contractor Profit		=	10%	=	Rs 0.00
		Total Railway Freight for 1 cum			"C"		Rs 595.85
Cost for Stacking the Materials from Unlodng dump upto lead 30 m.							
Total "D"	=	For 1 cum		=	Rs 59.43	=	Rs 59.43
Carriage Cost from Quarry to Karpoorigram Railway Yard	=	For 1 Cum			A+B+C+D	=	Rs 896.90

Analysis for Carriage Through Railway from Quarry Site to Work Site

Sheikhpura to Karpoorigram

Material -Stone Aggregate / Chips

Quarry Site to Sheikhpura Railway Yard (By Road)

		Carriage Cost & Lead in Km				Loading & Unloading		Total
Pucka / Surface		Katcha						
$\frac{8.00}{4.99}$	x 7.60 x 2.00 Km = Rs 24.37	+	$\frac{8.00}{4.99}$	x 18.50	x 0.00 Km = Rs 0.00	+	Rs 83.64	= Rs 108.01
UnSurface			$\frac{8.00}{4.99}$	x 9.20	x 1.00 Km			= Rs 14.75
Total "A"								= Rs 122.76

Sheikhpura Railway Yard to Karpoorigram Railway Yard = 122.00 Km

i) Loading Cost from Railway Yard to Railway Wagon	=	For 1 cum	=	Rs 118.86	=	Rs 118.86
Total	=	For 1 Cum		"B"	=	Rs 118.86
iii) Railway freight charge from Sheikhpura Railway station to Karpoorigram Railway station	=	For 1 MT 122.00 Km	=	Rs 231.30	=	Rs 231.30
Busy Season charge 12% of Railway freight charge	=	For 1 MT	=	12%	=	Rs 27.76
Railway Development Charge to 5% of Railway Freight Charge		For 1 MT	=	5%	=	Rs 11.57
Terminal charge @Rs.40.00 per Terminal per MT		For 1 MT 2 x		Rs 40.00	=	Rs 80.00
Total	=	For 1 MT	=		=	Rs 350.63
		For 1 CUM		"C"	=	Rs 562.13
		Add 6% Overhead Charge		6%		Rs 33.73
		Add 10% Contractor Profit	=	10%	=	Rs 0.00
		Total Railway Freight for 1 cum		"C"	=	Rs 595.85
Cost for Stacking the Materials from Unloading dump upto lead 30 m.						
Total "D"	=	For 1 CUM	=	Rs 59.43	=	Rs 59.43
Carriage Cost from Quarry to Karpoorigram Railway Yard	=	For 1 Cum		A+B+C+D	=	Rs 896.90

Analysis for Carriage Through Railway from Quarry Site to Work Site

Mirzachowki to Karpoorigram

Material -Stone Aggregate / Chips

Quarry Site to Mirzachowki Railway Yard (By Road)

		Carriage Cost & Lead in Km				Loading & Unloading		Total	
Pucka / Surface		Katcha							
8.00 4.99	x 7.60 x 2.00 Km	= Rs 24.37	+	8.00 4.99	x 18.50 x 0.00 Km	= Rs 0.00	+	Rs 83.64	= Rs 108.01
UnSurface		8.00 4.99	x	9.20	x 1.00 Km				= Rs 14.75
Total "A"								=	Rs 122.76

Mirzachowki Railway Yard to Karpoorigram Railway Yard = 230.00 Km

i) Loading Cost from Railway Yard to Railway Wagon	=	For 1 cum	=	Rs 118.86	=	Rs 118.86
Total	=	For 1 Cum		"B"	=	Rs 118.86
iii) Railway freight charge from Mirzachowki Railway station to Karpoorigram Railway station	=	For 1 MT	230.00 Km	=	Rs 425.30	= Rs 425.30
Busy Season charge 12% of Railway freight charge	=	For 1 MT		=	12%	= Rs 51.04
Railway Development Charge to 5% of Railway Freight Charge		For 1 MT		=	5%	= Rs 21.27
Terminal charge @Rs.40.00 per Terminal per MT		For 1 MT	2	x	Rs 40.00	= Rs 80.00
Total	=	For 1 MT				= Rs 577.61
		For 1 CUM		"C"	=	Rs 926.02
		Add 6% Overhead Charge		=	6.0%	= Rs 55.56
		Add 10% Contractor Profit		=	10%	= Rs 0.00
		Total Railway Freight for 1 cum		"C"	=	Rs 981.58
Cost for Stacking the Materials from Unloading dump upto lead 30 m.						
Total "D"	=	For 1 CUM		=	Rs 59.43	= Rs 59.43
Carriage Cost from Quarry to Karpoorigram Railway Yard	=	For 1 Cum		A+B+C+D	=	Rs 1282.63

Analysis for Carriage Through Railway from Quarry Site to Work Site

Sheikhpura to Karpoorigram

Material -Stone Boulder

Quarry Site to Sheikhpura Railway Yard (By Road)

Carriage Cost & Lead in Km										Loading & Unloading		Total		
Pucka / Surface					Katcha									
8.00 4.80	x	7.60	x	2.00 Km = Rs 25.33	+	0.00 4.80	x	18.50	x	0.00 Km = Rs 0.00	+	Rs 83.64	=	Rs 108.98
UnSurface						0.00 4.80	x	9.20	x	1.00 Km			=	Rs 15.33
										Total "A"		=	Rs 124.31	

Sheikhpura Railway Yard to Karpoorigram Railway Yard = 122.00 Km

i) Loading Cost from Railway Yard to Railway Wagon	=	For 1 cum	=	Rs 118.86	=	Rs 118.86
Total	=	For 1 CUM		"B"	=	Rs 118.86
iii) Railway freight charge from Sheikhpura Railway station to Karpoorigram Railway station	=	For 1 MT	122.00 Km	=	Rs 231.30	= Rs 231.30
Busy Season charge 12% of Railway freight charge	=	For 1 MT		=	12%	= Rs 27.76
Railway Development Charge to 5% of Railway Freight Charge		For 1 MT		=	5%	= Rs 11.57
Terminal charge @Rs.40.00 per Terminal per MT		For 1 MT	2	x	Rs 40.00	= Rs 80.00
Total	=	For 1 MT		=		Rs 350.63
		For 1 CUM		=	"C"	Rs 584.38
Add 6% Overhead Charge	=			=	6.0%	= Rs 35.06
Add 10% Contractor Profit	=			=	10.0%	= Rs 0.00
Total Railway Freight for 1 cum				=	"C"	Rs 619.44
Cost for Stacking the Materials from Unloading dump upto lead 30 m.		For 1 CUM		=	Rs 59.43	= Rs 59.43
Total "D"	=	For 1 CUM		=		Rs 59.43
Carriage Cost from Quarry to Karpoorigram Railway Yard	=	For 1 Cum		=	=A+B+C+D	Rs 922.04

Analysis of Rates (FORMAT F8)

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
Haulage BY TIPPER							
1	1.10	(i)	Haulage excluding Loading & Unloading Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 t load and lead 10 km = 100 t.km Case-I : Surfaced Road Speed with load: 25 km per hour Speed while returning empty: 35 km per hour a) Machinery Tipper 10 t capacity Haulage with load Empty return trip b) Overheads @ 6 % on (a) Contractor's profit @ 10% on (a+b) Cost for 100 t-km = a+b Rate per cum = (a+b) /100	hour hour	0.40 0.29	1043.00 1043.00	417.20 302.47 43.18 0.00 762.85 7.63
				Rate Per Km.	Cum		7.60
2	1.10	(ii)	Haulage excluding Loading & Unloading Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 t load and lead 10 km = 100 t.km Case-II: Unsurfaced Gravel Road. Speed with load: 20 km/hour Speed for empty return trip: 30 km/hour a) Machinery Tipper 10 t capacity Haulage with load Empty return trip b) Overheads @ 6 % on (a) Contractor's profit @ 10% on (a+b) Cost for 100 t-km = a+b Rate per cum = (a+b) /100	hour hour	0.50 0.33	1043.00 1043.00	521.50 344.19 51.94 0.00 917.63 9.18
				Rate Per Km.	Cum		9.20
3	1.10	(iii)	Haulage excluding Loading & Unloading Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 t load and lead 10 km = 100 t.km Case-III : Katcha Track and Track in River Bed/Nallah Bed and Choe Bed. Speed with load: 10 km per hour Speed while returning empty: 15 km per hour a) Machinery Tipper 10 t capacity Haulage with load Empty return trip b) Overheads @ 6 % on (a) (c) Contractor's profit @ 10% on (a+b) Cost for 100 t-km = a+b+c Rate per cum = (a+b+c) /100	hour hour	1.00 0.67	1043.00 1043.00	1043.00 698.81 104.51 0.00 1846.32 18.46
				Rate Per Km.	Cum		18.50

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
Haulage BY TRUCK							
4	1.10	(i)	Haulage excluding Loading & Unloading Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 t load and lead 10 km = 100 t.km Case-I : Surfaced Road Speed with load: 25 km per hour Speed while returning empty: 35 km per hour a) Machinery Truck 10 t capacity Haulage with load Empty return trip b) Overheads @ 6 % on (a) (c) Contractor's profit @ 10% on (a+b) Cost for 100 t-km = a+b+c Rate per cum = (a+b+c) /100	hour hour	0.40 0.29	934.30 934.30	373.72 270.95 38.68 0.00 683.35 6.83
				Rate Per Km.	Cum		6.83
5	1.10	(ii)	Haulage excluding Loading & Unloading Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 t load and lead 10 km = 100 t.km Case-II: Unsurfaced Gravel Road. Speed with load: 20 km/hour Speed for empty return trip: 30 km/hour a) Machinery Truck 10 t capacity Haulage with load Empty return trip b) Overheads @ 6 % on (a) (c) Contractor's profit @ 10% on (a+b) Cost for 100 t-km = a+b+c Rate per cum = (a+b+c) /100	hour hour	0.50 0.33	934.30 934.30	467.15 308.32 46.53 0.00 822.00 8.22
				Rate Per Km.	Cum		8.22
6	1.10	(iii)	Haulage excluding Loading & Unloading Haulage of materials by tipper excluding cost of loading, unloading and stacking. Unit = t.km Taking output 10 t load and lead 10 km = 100 t.km Case-III : Katcha Track and Track in River Bed/Nallah Bed and Choe Bed. Speed with load: 10 km per hour Speed while returning empty: 15 km per hour a) Machinery Truck 10 t capacity Haulage with load Empty return trip b) Overheads @ 6 % on (a) (c) Contractor's profit @ 10% on (a+b) Cost for 100 t-km = a+b+c Rate per cum = (a+b+c) /100	hour hour	1.00 0.67	934.30 934.30	934.30 625.98 93.62 0.00 1653.90 16.54
				Rate Per Km.	Cum		16.54

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
7	1.1	RCD	Loading and Unloading of Stone Boulder/Stone aggregates/Sand/Kanker/Moorum. Placing tipper at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and <i>Unit = cum</i> <i>Taking output = 5.5 cum</i> Time required for i) Positioning of tipper at loading point ii) Loading by front end loader 1 cum bucket capacity @ 25 cum per hour iii) Maneuvering, reversing, dumping and turning for return iv) Waiting time, unforeseen contingencies etc Total a) Machinery Tipper 5.5 tonnes capacity Front end-loader 1 cum bucket capacity @ 25 cum/hour (b) Overheads @ 6 % on (a) (c) Contractor's profit @ 10% on (a+b) Cost for 5.5 cum = a+b+c Rate per cum = (a+b+c)/ 5.5				
					1 Min 13 Min 2 Min 4 Min 20 Min		
				hour hour	0.330 0.330	1043.00 1403.00	344.19 462.99 48.43 0.00 855.61 155.57
			Unloading will be by tipping.			say	156.00
8	1.2		Loading and Unloading Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by Mechanical Means i Loading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by mechanical means including a lead upto 30 m Placing tipper at loading point, loading with front end loader excluding time for haulage and return trip. <i>Unit = cum</i> <i>Taking output = 5.5 cum</i> Time required for i Positioning of tipper at loading point ii Loading by front end loader 1 cum bucket capacity @ 45 cum per hour iii Waiting time, unforeseen contingencies, etc. Total a) Machinery Tipper 10 t capacity Front end-loader 1 cum bucket capacity @ 45 cum per hour b) Overheads @ 6.0 % c Contractors Profit @ 10.0 % Cost for 5.5 cum = a+b+c Rate per cum = (a+b)/5.5 Unloading of Earth, Sand, Lime, Moorum, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Manure, Crushed Slag, Flyash, Stone for Masonry Work by mechanical means. <i>Unit = cum</i> <i>Taking output = 5.5 cum</i> Placing tipper at unloading point excluding time for haulage and return trip Time required for i Positioning of tipper at loading point ii Manoeuvring, reversing, dumping and turning for return iii Waiting time, unforeseen contingencies, etc. Total a) Machinery Tipper 10 t capacity b) Overheads @ 6 % on (a) c Contractors Profit @ 10.0 % on (b) Cost for 5.5 cum = a+b Rate per cum = (a+b)/5.5				
				Min Min Min Min hour hour Min Min Min Min hour hour Min Min Min Min hour	1.000 7.330 2.000 10.330 0.172 0.122 0.080	1043.00 1403.00	179.40 171.17 21.03 - 371.60 67.56 83.44 5.01 0.00 88.45 16.08
			Total loading and unloading by mechanical means				83.64

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
8	1.2	RCD	Loading and Unloading of Boulders by Manual Means Unit = cum Taking output = 5.5 cum a) Labour Mate day 0.110 305.00 33.55 Mazdoor for loading and unloading day 0.750 287.00 215.25 b) Machinery Tipper 5.5 tonne capacity hour 0.750 1043.00 782.25 c) Overheads @ 6 % on (a+b) 61.86 (d) Contractor's profit @ 10% on (a+b+c) 0.00 Cost for 5.5 cum = a+b+c+d 1092.91 Rate per cum = (a+b+c+d)/5.5 198.71				
			Unloading will be by tipping.			say	199.00
9	1.3	RCD	Loading and Unloading of Cement or Steel by Manual Means Unit = tonne Taking output = 10 tonnes a) Labour Mate day 0.080 305.00 24.40 Mazdoor for loading and unloading day 2.000 287.00 574.00 b) Machinery Truck 10 tonne capacity hour 2.000 934.30 1868.60 c) Overheads 6 % on (a+b) 148.02 (d) Contractor's profit @ 10% on (a+b+c) 0.00 Cost for 10 tonnes = a+b+c+d 2615.02 Rate per tonnes = (a+b+c+d)/10 261.50				
						say	262.00
10	1.1	(i)	Loading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by manual means including a lead upto 30 m Unit = cum Taking output = 5.5 cum a) Labour Mate day 0.02 305.00 6.10 Mazdoor (Unskilled) day 0.50 287.00 143.50 b) Machinery Truck hour 0.50 934.30 467.15 c) Overheads 6 % on (a+b) 37.01 d) Contractor's profit @ 10% on (a+b+c) 0.00 Cost for 5.5 cum = a+b+c+d 653.76 Rate per cum = (a+b+c+d) /5.5 118.86				
			Total Cost	Cum			118.86
11		(ii)	Loading of Earth, Sand, Moorum, Manure, Flyash by manual means including a lead upto 30 m. Unit = cum Taking output = 5.5 cum a) Labour Mate day 0.01 305.00 3.05 Mazdoor (Unskilled) day 0.25 287.00 71.75 b) Machinery Truck hour 0.25 934.30 233.58 c) Overheads 6 % on (a+b) 18.50 d) Contractor's profit @ 10% on (a+b+c) 0.00 Cost for 5.5 cum = a+b+c+d 326.88 Rate per cum = (a+b+c+d) /5.5 59.43				
			Total Cost	Cum			59.43

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
12		(iii)	Unloading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by mechanical means including a lead upto 30 m Unit = cum Taking output = 5.5 cum				
		a)	Labour				
			Mate	day	0.01	305.00	3.05
			Mazdoor (Unskilled)	day	0.25	287.00	71.75
		b)	Machinery				
			Truck	hour	0.25	934.30	233.58
		c)	Overheads 6 % on (a+b)				18.50
		d)	Contractor's profit @ 10% on (a+b+c)				0.00
			Cost for 5.5 cum = a+b+c+d				326.88
			Rate per cum = (a+b+c+d) / 5.5				59.43
			Total Cost	Cum			59.43
			Total Loding & Unloading of Stone Aggregate	Cum	= 118.86 + 59.43 =		178.29
13		(iv)	Unloading of Earth, Sand, Moorum, Manure, Flyash by manual means including a lead upto 30 m. Unit = cum Taking output = 5.5 cum				
		a)	Labour				
			Mate	day	0.01	305.00	1.53
			Mazdoor (Unskilled)	day	0.13	287.00	35.88
		b)	Machinery				
			Truck	hour	0.166	934.30	155.09
		c)	Overheads 6 % on (a+b)				11.55
		d)	Contractor's profit @ 10% on (a+b+c)				0.00
			Cost for 5.5 cum = a+b+c+d				204.04
			Rate per cum = (a+b+c+d) / 5.5				37.10
			Total Cost	Cum			37.10
			Total Loding & Unloading of Sand / Moorum	Cum	= 59.43 + 37.1 =		96.53
14	1.3		Loading, Unloading and Stacking of Bricks by Manual Means				
		(i)	Loading of Bricks by manual means including a lead upto 30 m Unit = 1000 Nos. Taking output = 2000 Nos.				
		a)	Labour				
			Mate	day	0.01	305.00	3.05
			Mazdoor (Unskilled)	day	0.25	287.00	71.75
		b)	Machinery				
			Truck	hour	0.33	934.30	308.32
		c)	Overheads 6 % on (a+b)				22.99
		d)	Contractor's profit @ 10% on (a+b+c)				0.00
			Cost for 2000 Nos. = a+b+c+d				406.11
			Rate for 1000 bricks = (a+b+c+d)/2				203.05
			Total Cost	no.			203.05
15		(ii)	Unloading and Stacking of Bricks by manual means including a Unit = 1000 Nos. Taking output = 2000 Nos.				
		a)	Labour				
			Mate	day	0.01	305.00	3.05
			Mazdoor (Unskilled)	day	0.25	287.00	71.75
		b)	Machinery				
			Truck	hour	0.33	934.30	308.32
		c)	Overheads 6 % on (a+b)				22.99
		d)	Contractor's profit @ 10% on (a+b+c)				0.00
			Cost for 2000 Nos. = a+b+c+d				406.11
			Rate for 1000 bricks = (a+b+c+d)/2				203.05
			Total Cost	no.			203.05
			Total Loding & Unloading of Brick Per 1000		= 203.05 + 203.05 =		406.10

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
15	4.1 (A)	401	PAVEMENT CRUST LAYERS				
			Granular Sub-base with Well Graded Material (Table 400.1) (By mix in place method) 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	305.00	146.40
			Mazdoor (Skilled)	day	2.00	364.00	728.00
			Mazdoor (Unskilled)	day	10.00	287.00	2870.00
		b)	Machinery				
			Motor Grader 110 HP @ 50 cum per hour <i>Tractor Mahal</i>	hour	6.00	2786.00 ^{573.20}	16716.00
			Three wheel 80-100 kN static roller @ 10 cum per hour <i>Grader</i>	hour	30.00	803.00	24090.00
			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%	cum	134.00	657.85	88151.90
			9.5 mm to 2.36 mm @ 25%	cum	96.00	514.58	49399.68
			2.36 mm below @ 40% (Local sand)	cum	153.00	141.85	21703.05
			Water	kl	30.00	40.00	1200.00
		d)	Overheads @ 6 % on (a+b+c)				21280.34
			Cost of GSB for 300 cum				234083.77
			A) Cost of GSB without carriage per cum	cum			780.28
		f)	CARRIAGE				
			Carriage for GSB material	Cum	0.77	1760.35 ⁶⁸⁰⁼²⁸	1349.60
			Carriage for material below 2.36 mm (With Local Sand)	Cum	0.51	144.95 ^{49.66}	73.92
			Rate per cum with carriage			97.0	2203.81
			Total Cost	CUM			2,203.81

2079=54.

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
15	4.7 (3-A)	405	Water Bound Macadam with Stone Screening Type "B" Gr- III WBM Grading 3 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with smooth wheel roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 3 as per Technical Specification Clause 405.				
		(A)	By Mechanical Means Unit = cum Taking output = 360 cum				
		a)	Labour Mate	day	0.68	305.00	207.40
			Mazdoor (Skilled)	day	2.00	364.00	728.00
			Mazdoor (Unskilled)	day	15.00	287.00	4305.00
		b)	Machinery Tractor Mounted grader for grading @ 100 cum per hour	hour	14.40	549.10	7907.04
			Three wheel 80-100 kN static roller @ 8 cum per hour	hour	45.00	803.00	36135.00
			Water tanker 6 kl capacity	hour	24.00	184.00	4416.00
		c)	Material (Refer Tables 400.7, 8, 9 and 10) Aggregate Grading 3 53 mm to 22.4 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.60	511.44	222783.26
			Stone Screening Type B 11.2 mm for Grading 3 @ 0.18 cum per 10 sqm	cum	86.40	397.73	34363.87
			Water	kl	144	40.00	5760.00
		d)	Overheads @ 6 % on (a+b+c) Cost for 360 cum = a+b+c+d+e				18996.33
			Rate per cum = (a+b+c+d+e)/360				335601.91
		f)	CARRIAGE Stone material Grading 3 53 mm to 22.4 mm	Cum	1.21	1760.35	2130.02
			Stone Screening	Cum	0.24	1760.35	422.48
			Rate per cum with carriage				3484.74
			Total Cost	cum			3,484.74

ANALYSIS OF RATE. BRICK BAT FILLING.

1. ~~Gravel sub~~
providing brick bats including spreading,
laying and packing with C.I. Hammer
in layers not exceeding 75MM thick
including cost of eight barriers, dangle
signal, chowkidar, taxes, Royalty, etc,
an complete job, as per specifications
and directions of S/G including cost of
barrels, --- all complete job.

Unit — cum.
Assuming — 2.892 M³

Cost of Brick bats — 2.892 M³ @ 1096 = 00 — Rs 3163 = 87
Maxdarsun Skilled Local Sam 0.632 M³ @ 141 = 95/M³ Rs 89 = 65

Labour (unskilled)

1. Carrying, spreading, earning and
packing unskilled labor 1.5 NO @ 287 = 00 — Rs 430 = 50
Compaction of brick bats with
C.I. Hammer, 0.670 NO @ 287 = 00 — Rs 192 = 29.
Over head charge @ 6% on (a+b+c) — Rs 228 = 98.
Total — 4045 = 29
Rate / M³ — Rs 1428 = 42 / M³.

Carriage Cost

Carriage for Bricks (1 M³ bat) Rs 300 NO @ 663 = 50 / M³ — Rs 199 = 06
Local Sam 0.220 M³ @ 97 = 00 / M³ — Rs 21 = 34.
Cost of Sam into Royalty Rs 141 = 85 / M³ — Rs 1648 = 81.
31 = 21
Total 1680 = 02

2. Granules sub-base, with well
Graded Material, Table 400.1 B4
Mix and place method for grading
II Material an complete job.

Labels — Mate — 0.48 NO @ 305.00 — Rs 146 = 40
Maxdarsun Skilled — 2.0 NO @ 364.00 — Rs 728 = 00
Maxdarsun Skilled — 10.0 NO @ 287 = 00 — Rs 2870 = 00

Machinery

Tractor Mounted Grader 6.0 Hrs @ 573 = 20 Rs 3439 = 20
Three wheel 80-100 KM Statereolized
10 M³ / Hour 30.0 Hrs @ 803 = 00 / Hr — Rs 24090 = 00
Tractor with rotavator 12.0 Hrs @ 573 = 20 — Rs 6878 = 40
25 M³ / Hour
Water Tanker 6kg capacity 5.04 @ 184 = 00 — Rs 920 = 00
Total 39072 = 00

Material

Course Graded Granules sub base
53MM to 9.5MM, 95% — 134.40 M³ @ 604 = 91 / M³ — Rs 80695 = 00
9.5MM to 2.36MM 25% 96.00 M³ @ 514 = 58 / M³ — Rs 49400 = 00
2.36MM below Local Sam 153.60 M³ @ 141 = 85 / M³ Rs 21788 = 00
Water 30000 @ 40 = 00 / kg — Rs 1200 = 00
Total — 1,92,155 = 00
Add over head charge 6% — 11,529 = 00
Total — 2,04,084 = 00