



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 :- VIDYAPATINAGAR

NAME OF ROAD :- Detailed Estimate For Repair of Flood
Damaged in Saraswati Chowk To MMGSY

TOTAL COST OF CONSTRUCTION :- Rs. 13.026 Lacs

TOTAL COST OF PROJECT :- Rs. 13.026 Lacs

Gross Check Amount - Rs 13,025,402.00

SUBMITTED BY:

EXECUTIVE ENGINEER

RWD (W) DIVISION, PATORI

SAMASTIPUR

FDR
YEAR (2020 - 2021)

GENERAL ABSTRACT OF COST

Block:--VIDYAPATINAGAR

District:--Samastipur

Name of Road:--

Detailed Estimate For Repair of Flood Damaged in Saraswati
Chowk To MMGSY

SL. No.	Item of Work	Amount
A		
	TOTAL COST OF CONSTRUCTION	13.026 Lacs
	Sub Total= (A)	13.026 Lacs
	TOTAL cost of project	13.026 Lacs

12.849 Lacs

Ravi
15-10-2020
Junior Engineer
RWD (w)Section,
VIDYAPATINAGAR

Y
15-10-2020
Asstt. Engineer
RWD (w)Sub Division, VIDYAPATINAGAR

Qm
15-10-20
Executive Engineer
RWD (w) Division, Patori

SUMMARY OF COST ESTIMATE FOR THE PROJECT

NAME OF ROAD :

Detailed Estimate For Repair of Flood Damaged in Saraswati
Chowk To MMGSY
Samastipur
VIDYAPATINAGAR

DISTRICT
BLOCK

Sl. No.	DESCRIPTION	AMOUNT (LAKHS)
1	BRICK BAT	4.554
2	GSB GRADE II	3.364 -3.476
3	WBM GRADE III	3.350
	SUB TOTAL OF PAVEMENT COST IN LACS =	11.268-11.380
	Sub Total :-	11.268-11.380
	12% GST on Total Amount :-	1.352-1.366
	1% Lab Cess :-	0.113-0.114
	Seigniorage Fee @ 10% :-	0.116-0.166
	Total Constriction Cost (including GST and Labour Cess) (A) :-	13.026
	TOTAL COST OF PROJECT IN LACS(including GST 12% & 1% Lab Cess)(A+B+C) :-	13.026

Ran
15-10-2020
Junior Engineer

87
15-10-2020
Assistant Engineer

15-10-2020
Executive Engineer
RWD (w)
Division, Patori

RWD (w)Section , VIDYAPATINAGAR

RWD (w)Sub Division , VIDYAPATINAGAR

*Techni Camy Approved Rs 12.849 Lac say Twelve
Lakh Eighty four thousand nine Hundred only.*

2/11/21
20-02-2021
बसोदय बसिपंका
बासीय कारे विचार
कारे बंधन. बसोदय

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			Brick Bats								
			Laying Brick Bats on Prepared Soil Surface as per specifications and direction of E/L								
			Damaged Strech	cum	1.00	35.0	1.250	0.300	13.13		
			Damaged Strech	cum	1.00	55.0	1.150	0.150	9.49		
			Damaged Strech	cum	1.00	84.0	1.175	0.300	29.61		
			Damaged Strech	cum	1.00	60.0	1.125	0.450	30.38		
			Damaged Strech	cum	1.00	72.0	1.650	0.600	71.28		
			Damaged Strech	cum	1.00	26.0	1.250	0.300	9.75		
			Damaged Strech	cum	1.00	32.0	1.600	0.450	23.04		
			Damaged Strech	cum	1.00	50.0	1.225	0.600	36.75		
			Damaged Strech	cum	1.00	22.0	1.500	0.300	9.90		
			Damaged Strech	cum	1.00	45.0	1.250	0.450	25.31		
			Damaged Strech	cum	1.00	18.0	1.150	0.600	12.42		
									271.05	1,680.02	4,55,369.42
									B) SUB TOTAL OF CRUST =		4,55,369.42
Sub Head : PAVEMENT LAYERS - GSB & WBM ITEMS											
2	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	Cum	1.00	140.0	1.850	0.175	45.33		
			Damaged Portion	Cum	1.00	35.0	1.450	0.175	8.88		
			Damaged Portion	Cum	1.00	120.0	1.950	0.175	40.95		
			Damaged Portion	Cum	1.00	70.0	1.500	0.175	18.38		
			Damaged Portion	Cum	1.00	60.0	2.000	0.175	21.00		
			Damaged Portion	Cum	1.00	85.0	1.700	0.175	25.29		
			Damaged Portion	Cum	1.00	50.0	1.250	0.175	10.94		
									170.76	2,035.66	3,47,609.00
			Net GSB Qty. Required form Grading II Material							1970 = 28	3,36,645 = 0

Cost Estimate for Road Work

Sl. No.	SDB SL.NO	MORD Ref.No	Description	Unit	NOS	LENGTH	WIDTH	HEIGHT	QUANTITY	RATE	AMOUNT (in Rs.)
3	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 1	Cum	1.00	160.00	1.90	0.075	22.80		
			Damaged Portion 2	Cum	1.00	51.00	1.600	0.075	6.12		
			Damaged Portion 3	Cum	1.00	135.0	2.050	0.075	20.76		
			Damaged Portion 4	Cum	1.00	83.0	1.550	0.075	9.65		
			Damaged Portion 5	Cum	1.00	70.0	2.150	0.075	11.29		
			Damaged Portion 6	Cum	1.00	96.0	1.800	0.075	12.96		
			Damaged Portion 7	Cum	1.00	38.0	1.350	0.075	3.85		
			Damaged Portion 8	Cum	1.00	25.0	1.450	0.075	2.72		
			Damaged Portion 9	Cum	1.00	54.0	1.100	0.075	4.46		
			Damaged Portion 10	Cum	1.00	60.0	1.650	0.075	7.43		
			Damaged Portion 11	Cum	1.00	28.0	1.800	0.075	3.78		
			Net WBM - 3 Qty						105.80	3,166.72	3,35,038.98
C) SUB TOTAL OF CRUST =											6,82,647.98
TOTAL COST OF PAVEMENT IN RS. (A+B+C+D+E+F+G)=											11,38,017.40

11,26,853.00

15.10.20
Assistant Engineer
RWD (w) Sub Division, VIDYAPATINAGAR

15.10.20
Executive Engineer
RWD (w) Division, Patori

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

Sl. No.	SDB SI. NO	MORD Ref.No	Description	Unit	Quantity	Rate	Amount (In Rs.)	Total Material Required	Material Amount	Add Seigniorage Fee 10%
PAVEMENT LAYERS - GSB, WBM-II & WBM-III										
1	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 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.							
			Unit = cum							
			Taking output = 300 cum							
		a)	Material							
			Well graded granular sub-base material as per Table 400.1	cum	134.00	657.85	88,151.900			
			26.5 mm to 9.5 mm @ 35%	cum	96.00	514.58	49,399.680			
			9.5 mm to 2.36 mm @ 25%	cum	153.00	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	170.76	90,647.74	9,064.77
			Total Cost =	Cum						

[illegible]

Analysis for Carriage by Road & Rail
Detailed Estimate For Repair of Flood Damaged in Saraswati Chowk To MMGSY
Block :- VIDYAPATINAGAR
Samastipur

Name of Road:--
District:-

District:- samasupui

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	$\frac{8.00}{4.59}$	x 7.60 x 46.00 Km = Rs 609.32	$\frac{8.00}{4.59}$	x 18.50 x 0.00 Km = Rs 0.00	83.64	952.23	Rs. 1645.19
2	Stone Metal Gr-III / GSB	Cum	Sheikhpura	$\frac{8.00}{4.99}$	x 7.60 x 46.00 Km = Rs 560.48	$\frac{8.00}{4.99}$	x 18.50 x 0.00 Km = Rs 0.00	83.64	896.90	Rs. 1541.03
3	Stone Aggregate / Chips	Cum	Sheikhpura	$\frac{8.00}{4.99}$	x 7.60 x 46.00 Km = Rs 560.48	$\frac{8.00}{4.99}$	x 18.50 x 0.00 Km = Rs 0.00	83.64	896.90	Rs. 1541.03
4	Stone Aggregate / Chips	Cum	Mirzachowki	$\frac{8.00}{4.99}$	x 7.60 x 46.00 Km = Rs 560.48	$\frac{8.00}{4.99}$	x 16.54 x 0.00 Km = Rs 0.00	83.64	1282.63	Rs. 1926.76
5	Stone Boulder	Cum	Sheikhpura	$\frac{8.00}{4.80}$	x 7.60 x 46.00 Km = Rs 582.67	$\frac{8.00}{4.80}$	x 18.50 x 0.00 Km = Rs 0.00	83.64	922.04	Rs. 1588.35
6	Course Sand	Cum	Kuil	$\frac{8.00}{4.99}$	x 6.83 x 129.00 Km = Rs 1412.54	$\frac{8.00}{4.99}$	x 16.54 x 0.00 Km = Rs 0.00	96.53		Rs. 1509.07
7	Local Sand	Cum	Local	$\frac{8.00}{4.99}$	x 6.83 x 2.00 Km = Rs 21.90	$\frac{8.00}{4.99}$	x 16.54 x 1.00 Km = Rs 26.52	96.53		Rs. 144.95
8	Brick	1000 Nos	Local	$\frac{8.00}{2.00}$	x 6.83 x 7.00 Km = Rs 191.24	$\frac{8.00}{2.00}$	x 16.54 x 1.00 Km = 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 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

15.10.2020
At

Ravi 15-10-2020
15-10-20

Analysis for Carriage by Road
Detailed Estimate For Repair of Flood Damaged in Saraswati Chowk To MMGSY
Block :- VIDYAPATINAGAR
District:- Samastipur

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	$\frac{8.00}{4.99} \times 6.83 \times 129.00 \text{ Km} = \text{Rs } 1412.54$	$\frac{8.00}{4.99} \times 16.54 \times 0.00 \text{ Km} = \text{Rs } 0.00$		96.53		Rs. 1509.07
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	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

Rate 15-10-2020
15-10-2020
15-10-2020

15-10-2020
15-10-2020
15-10-2020

FDR
YEAR (2020 - 2021)

Analysis for Carriage by Road & Rail

Name of Road:-

**Detailed Estimate For Repair of Flood Damaged in Saraswati Chowk To
MMGSY**

Block :-

VIDYAPATINAGAR

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 (Addopted in DPR)
1	Stone Metal Gr-I & Gr-II	Cum	2242.77	1645.19	1645.19
2	Stone Metal Gr-III / GSB	Cum	2069.69	1541.03	1541.03
3	Stone Aggregate / Chips (seikhpura)	Cum	2069.69	1541.03	1541.03
4	Stone Aggregate / Chips	Cum	2617.99	1926.76	1926.76
5	Stone Boulder	Cum	2148.31	1588.35	1588.35
6	Course Sand	Cum	1509.07	1509.07	1509.07
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

Raw
15-10-2020
Junior Engineer
RWD (w) Division, Patori

g^
15-10-2020
Asstt. Engineer
RWD (w) Division, Patori

Q/A
15-10-20
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 For 1 cum	"C"	= Rs 350.63 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	
Pukka / 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	=	6.0%	=			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 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

Sheikhpura to Karpoorigram

Material -Stone Aggregate / Chips

Quarry Site to Sheikhpura Railway Yard (By Road)

Carriage Cost & Lead in Km										Loading & Unloading		Total						
Pukka / 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)

Pucka / Surface		Carriage Cost & Lead in Km		Katcha		Loading & Unloading		Total
$\frac{8.00}{4.99} \times 7.60 \times 2.00 \text{ Km}$	=	Rs 24.37	+ $\frac{8.00}{4.99} \times 18.50 \times 0.00 \text{ Km}$	=	Rs 0.00	+ Rs 83.64	=	Rs 108.01
UnSurface		$\frac{8.00}{4.99} \times 9.20 \times 1.00 \text{ Km}$					=	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					
$\frac{8.00}{4.80}$	x 7.60	x 2.00 Km	= Rs 25.33	+	$\frac{8.00}{4.80}$	x 18.50	x 0.00 Km	= Rs 0.00	+ Rs 83.64 = Rs 108.98
UnSurface			$\frac{8.00}{4.80}$	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.						
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 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	hour	0.40	934.30	373.72
			Empty return trip	hour	0.29	934.30	270.95
		b)	Overheads @ 6 % on (a)				38.68
		c)	Contractor's profit @ 10% on (a+b)				0.00
			Cost for 100 t-km = a+b+c				683.35
			Rate per cum = (a+b+c) /100				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	hour	0.50	934.30	467.15
			Empty return trip	hour	0.33	934.30	308.32
		b)	Overheads @ 6 % on (a)				46.53
		c)	Contractor's profit @ 10% on (a+b)				0.00
			Cost for 100 t-km = a+b+c				822.00
			Rate per cum = (a+b+c) /100				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	hour	1.00	934.30	934.30
			Empty return trip	hour	0.67	934.30	625.98
		b)	Overheads @ 6 % on (a)				93.62
		c)	Contractor's profit @ 10% on (a+b)				0.00
			Cost for 100 t-km = a+b+c				1653.90
			Rate per cum = (a+b+c) /100				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	1.000 7.330 2.000 10.330 0.172 0.122	1043.00 1403.00	179.40 171.17 21.03 - 371.60 67.56
				hour hour	0.080	1043.00	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 Mazdoor for loading and unloading b) Machinery Tipper 5.5 tonne capacity c) Overheads @ 6 % on (a+b) (d) Contractor's profit @ 10% on (a+b+c) Cost for 5.5 cum = a+b+c+d Rate per cum = (a+b+c+d) / 5.5	day day hour	0.110 0.750 0.750	305.00 287.00 1043.00	33.55 215.25 782.25 61.86 0.00 1092.91 198.71
			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 Mazdoor for loading and unloading b) Machinery Truck 10 tonne capacity c) Overheads 6 % on (a+b) (d) Contractor's profit @ 10% on (a+b+c) Cost for 10 tonnes = a+b+c+d Rate per tonnes = (a+b+c+d) / 10	day day hour	0.080 2.000 2.000	305.00 287.00 934.30	24.40 574.00 1868.60 148.02 0.00 2615.02 261.50
						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 Mazdoor (Unskilled) b) Machinery Truck c) Overheads 6 % on (a+b) d) Contractor's profit @ 10% on (a+b+c) Cost for 5.5 cum = a+b+c+d Rate per cum = (a+b+c+d) / 5.5	day day hour	0.02 0.50 0.50	305.00 287.00 934.30	6.10 143.50 467.15 37.01 0.00 653.76 118.86
			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 Mazdoor (Unskilled) b) Machinery Truck c) Overheads 6 % on (a+b) d) Contractor's profit @ 10% on (a+b+c) Cost for 5.5 cum = a+b+c+d Rate per cum = (a+b+c+d) / 5.5	day day hour	0.01 0.25 0.25	305.00 287.00 934.30	3.05 71.75 233.58 18.50 0.00 326.88 59.43
			Total Cost	Cum			59.43

Sl. No.	SDB Sl. No.	MORD Ref No.	DESCRIPTION	Unit	Quantity	Rate	Amount in Rs
			PAVEMENT CRUST LAYERS				
15	4.1 (A)	401	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	hour	6.00	2796.00	16776.00
			Three wheel 80-100 kN static roller @ 10 cum per hour	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	cum	134.00	657.85	88151.90
			26.5 mm to 9.5 mm @ 35%	cum	96.00	514.58	49399.68
			9.5 mm to 2.36 mm @ 25%	cum	153.00	141.85	21703.05
			2.36 mm below @ 40% (Local sand)	kl	30.00	40.00	1200.00
			Water				21280.34
		d)	Overheads @ 6 % on (a+b+c)				0.00
		e)	Contractor's profit @ 10% on (a+b+c+d)				234083.77
			Cost of GSB for 300 cum				780.28
			A) Cost of GSB without carriage per cum	cum			680.28
		f)	CARRIAGE				
			Carriage for GSB material	Cum	0.77	1541.03	1181.46
			Carriage for material below 2.36 mm (With Local Sand)	Cum	0.51	144.95	73.92
			Rate per cum with carriage				2035.66
			Total Cost	CUM			2,035.66

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 Rate per cum = (a+b+c+d+e)/360				18996.33 335601.91 932.23
		f)	CARRIAGE				
			Stone material Grading 3 53 mm to 22.4 mm	Cum	1.21	1541.03	1864.65
			Stone Screening	Cum	0.24	1541.03	369.85
			Rate per cum with carriage				3166.72
			Total Cost	cum			3,166.72

ANALYSIS OF RATES. BRICK BAT FILLING.

1. ~~Brick bats~~ providing brick bats including spreading, laying and packing with C.I. Hammers in layers not exceeding 75MM thick including cost of eight bidders, danger signal, chowkidar, taxes, Royalty, etc, an complete job, as per specifications and directions of S/O including cost of bricks, - - - all complete job.

Unit - Cum.

Assuming 2.892 M³

Cost of Brick bats - 2.892 M³ @ 1096 = 00 - Rs 3163 = 87
~~Maxdars unskilled~~ Local Sem 0.632 M³ @ 141 = 95/M³ Rs 89 = 65

Labour (unskilled)

1. Carrying, spreading, laying and packing unskilled labour 1.5 NO @ 287 = 00 - Rs 430 = 50
 Compaction of brick bats with C.I. Hammers, 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 sand 0.220 M³ @ 97 = 00/M³ - Rs 21 = 34
 Cost of sand in Royalty Rs 141 = 85/M³ - Rs 1648 = 81
 Total 31 = 21
 Rs 1680 = 02

2. Granular sub-base, with well Graded Material, Table 400.1 by Mix and Place method for grading
 If Material an complete job.

Labels - Mate - 300.0 M³
 Maxdars unskilled - 2.0 NO @ 305.00 - Rs 146 = 40
 Maxdars unskilled - 10.0 NO @ 287 = 00 - Rs 728 = 00
 Maxdars unskilled - 10.0 NO @ 287 = 00 - Rs 2870 = 00

Machine
 Tractor Motor Grader 6.0 Hrs @ 573 = 20 - Rs 3439 = 20
 Three wheel 80-100 KN static weight 30.0 Hrs @ 803 = 00/Hrs - Rs 24090 = 00
 10 M³/Hr
 Tractor with rotavator 12.0 Hrs @ 573 = 20 - Rs 6878 = 40
 25 M³/Hr
 Water Tanker 6 Kg Capacity 5.0 Hrs @ 184 = 00 - Rs 920 = 00
 Total 39072 = 00

Material
 Course Graded Granular 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 49440 = 00
 2.36MM below Local sand 153.60 M³ @ 141 = 85/M³ - Rs 21788 = 00
 water 30 M³ @ 40 = 00/M³ - Rs 1200 = 00
 Add over head charge 6%
 Total - 1,92,155 = 00
 11,529 = 00
 Total - 2,04,084 = 00

Construction at Road embankment.
 Material obtained from borrow pits.
 All compaction on P/S
 Clause 300.1, 300.2, with lead up to 1000.0m. - Out put - 100.0m

Rate - 0.04 NO @ 305=00 - R 12=20
 Unsuitable - 1.0 NO @ 287=00 - R 287=00

Machinery

113 draught excavators 0.9m³

hourly @ 60 MB/Hrs - 1.67 H @ 1969=20 - R 3288=56

Tippers 5.5 cum with 10t capacity - 4.50 H @ 1043=00 R 4693=50

10% for carrying tippers - R 469=33

Doser D-50 for spreading 100m³/hr - 0.50 @ 3337=90 R 1668=95

Trucks loaded Grade - 1.04 H @ 573=20 - R 573=20

Water Tenders 6 K capacity 2.0 H @ 184=00 - R 368=00

Three wheel ROPS 80-100KN 1.25 H @ 803=00 R 1003=75

Static ROPS @ 80 MB/Hrs - 1.25 H @ 34=91 R 348=00

Compaction drum at 60m³ - 1.00 H @ 40=00 R 40=00

Rate 12.00 H

Total 816325=51
 R 979=53
 17306=04

Add O.H.C 6%

Rate 173=06/MB.

Item 7. Labor for cutting 62mm to 75mm dia bamboo, piling etc and making shoes and driving etc. All compaction.

Out put - 30.5M

Assuming 20 no pile shank 1.525M deep

Labor.

Carpenter Grade II - 0.25 NO @ 345=00 - 86=25

Unskilled Maxdls - 2.5 NO @ 287=00 - 717=50

Add Over Head 6%

R 48=22

851=97

Item 8. Labor for fixing and @ 28=40/meter.

Group 62mm to 75mm dia bamboo frame

in position at every vertical pile with 150MM

long nails @ 38 SWA 0.9 mm. All compaction

Out put - 30.5M

Nails 150MM long - 1.5 H @ 55=84 - 27=92

Carpenter Grade II - 0.25 NO @ 345=00 - 43=13

Unskilled Maxdls - 0.25 NO @ 287=00 - 71=75

Add Over Head Charge 6%

New Rate - 4=96/Meter.

142=80
 8=57
 151=37