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	:-	Patori
NAME OF ROAD	:-	Detailed Estimate For Repair of Flood Damaged in Shahpur Undi PWD Road (Railway Gumti Se Purab) To Chakarman
TOTAL COST OF CONSTRUCTION	:-	Rs. 0.923 Lacs
TOTAL COST OF PROJECT	:-	Rs. 0.923 Lacs

Gross Checking Amount — Rs. 92,269.00

SUBMITTED BY:

EXECUTIVE ENGINEER
RWD (W) DIVISION, PATORI
SAMASTIPUR

FDR

YEAR (2020 - 2021)

GENERAL ABSTRACT OF COST

Block:--Patori **District:--Samastipur**

Name of Road:-- Detailed Estimate For Repair of Flood Damaged in Shahpur Undi PWD Road (Railway Gumti Se Purab) To Chakarman

SL. No.	Item of Work	Amount
A		
	TOTAL COST OF CONSTRUCTION	0.923 Lacs
	Sub Total= (A)	0.923 Lacs
	TOTAL cost of project	**0.923 Lacs**

15/10/2020
Junior Engineer
RWD (w)Section , Patori

15/10/20
Asstt. Engineer
RWD (w)Sub Division , Patori

15.10.20
Executive Engineer
RWD (w) Division, Patori

Technically Approved for Rs 0.923 Lac Say Nine Hundred Two Thousand Three Hundred Only

02.03.2021

2/3/2021

कार्यपालक अभियंता
ग्रामीण कार्य विभाग
कार्य संभाग, समस्तीपुर

SUMMARY OF COST ESTIMATE FOR THE PROJECT

NAME OF ROAD : Detailed Estimate For Repair of Flood Damaged in Shahpur Undi PWD Road (Railway Gumti Se Purab) To Chakarman

DISTRICT Samastipur

BLOCK Patori

Sl. No.	DESCRIPTION	AMOUNT (LAKHS)
1	EARTHWORK	0.019
2	BRICK BAT	0.605
3	WBM GRADE III	0.189
	SUB TOTAL OF PAVEMENT COST IN LACS =	**0.813**
	Sub Total ` :--	**0.813**
	12% GST on Total Amount :--	**0.098**
	1% Lab Cess :--	**0.008**
	Seigniorage Fee @ 10%	**0.004**
	Total Constriction Cost (including GSt and Labour Cess) (A) :--	**0.923**
	TOTAL COST OF PROJECT IN LACS(including GST 12% & 1% Lab Cess)(A+B+C) :--	**0.923**

15/10/2020

Junior Engineer

RWD (w)Section , Patori

15/10/20

Assistant Engineer

RWD (w)Sub Division , Patori

15.10.20

Executive Engineer
RWD (w)
Division, Patori

FORMAT F6

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**								
			Damaged Strech	cum	1.00	4.0	6.000	0.450	10.80 10.80	173.06	1,869.05
2			**Brick Bats**								
			Laying Brick Bats on Prepared Soil Surface as per specifications and direction of E/L								
			Damaged Strech	cum	1.00	4.0	6.000	1.500	36.00 36.00	1,680.02	60,480.72
										B) SUB TOTAL OF CRUST =	**62,349.77**
			Sub Head : PAVEMENT LAYERS - GSB & WBM ITEMS								
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	14.00	1.30	0.075	1.37		
			Damaged Portion 2		1.00	8.00	1.65	0.075	0.99		
			Damaged Portion 3	Cum	1.00	3.00	1.800	0.075	0.41		
			Damaged Portion 4	Cum	1.00	7.0	1.000	0.075	0.53		
			Damaged Portion 5	Cum	1.00	10.0	1.450	0.075	1.09		
			Damaged Portion 6	Cum	1.00	5.0	2.050	0.075	0.77		
			Net WBM -3 Qty						5.14	3,677.14	18,900.50
										C) SUB TOTAL OF CRUST =	**18,900.50**
										TOTAL COST OF PAVEMENT IN RS. (A+B+C+D+E+F+G)=	**81,250.27**

15/10/2020

Junior Engineer
RWD (w)Section , Patori

15/10/20

Assistant Engineer
RWD (w)Sub Division , Patori

15-10-20

Executive Engineer
RWD (w) Division, Patori

Sl. No.	SDB Sl .NO	MORD Ref.No	Description	Unit	Quantity	Rate	Amount (In Rs.)	Total Material Required	Material Amount	Add Seignoirage 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**	**10.80**	**375.95**	**37.59**

Sl. No.	SDB Sl .NO	MORD Ref.No	Description	Unit	Quantity	Rate	Amount (In Rs.)	Total Material Required	Material Amount	Add Seignoirage Fee 10%
			PAVEMENT LAYERS - GSB ,WBM-II & WBM-III							
2	4.7	405	**Water Bound Macadam with Stone Screening Type "B" Gr- III**							
			WBM Grading 3 (Mechanical means)							
	(3-A)		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.							
			For WBM III Material							
			Unit = cum							
			Taking output = 360 cum							
		a)	**Material**							
			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	2,22,783.26			
			Stone Screening							
			Type B 11.2 mm for Grading 3 @ 0.18 cum per 10 sqm	Cum	86.40	397.73	34,363.872			
			Cost for 360 cum = a				**2,57,147.14**			
			Rate Per Cum = (a)/360=	**Cum**			**714.30**			
			Total Cost =	**Cum**			**714.30**	**5.14**	**3,671.49**	**367.15**
									Total Construction Cost (With 10% Seigniorage Fee) :--	**404.74**

15-12-24

FORM F8

Analysis for Carriage by Road & Rail

Name of Road:-- Detailed Estimate For Repair of Flood Damaged in Shahpur Undi PWD Road (Railway Gumti Se Purab) To Chakarman

District:- Samastipur **Block :-** Patori

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	8.00/4.59 x 7.60 x 70.00 Km = Rs 927.23	8.00/4.59 x 18.50 x 0.00 Km = Rs 0.00	83.64	1017.01	Rs. 2027.88
2	Stone Metal Gr-III / GSB	Cum	Sheikhpura	8.00/4.99 x 7.60 x 70.00 Km = Rs 852.91	8.00/4.99 x 18.50 x 0.00 Km = Rs 0.00	83.64	956.49	Rs. 1893.04
3	Stone Aggregate / Chips	Cum	Sheikhpura	8.00/4.99 x 7.60 x 70.00 Km = Rs 852.91	8.00/4.99 x 18.50 x 0.00 Km = Rs 0.00	83.64	956.49	Rs. 1893.04
4	Stone Aggregate / Chips	Cum	Mirzachowki	8.00/4.99 x 7.60 x 70.00 Km = Rs 852.91	8.00/4.99 x 16.54 x 0.00 Km = Rs 0.00	83.64	1380.79	Rs. 2317.35
5	Stone Boulder	Cum	Sheikhpura	8.00/4.80 x 7.60 x 70.00 Km = Rs 886.67	8.00/4.80 x 18.50 x 0.00 Km = Rs 0.00	83.64	983.98	Rs. 1954.30
6	Course Sand	Cum	Kuil	8.00/4.99 x 6.83 x 115.00 Km = Rs 1259.24	8.00/4.99 x 16.54 x 0.00 Km = Rs 0.00	96.53		Rs. 1355.77
7	Local Sand	Cum	Local	8.00/4.99 x 6.83 x 2.00 Km = Rs 21.90	8.00/4.99 x 16.54 x 1.00 Km = Rs 26.52	96.53		Rs. 144.95
8	Brick	1000 Nos	Local	8.00/2.00 x 6.83 x 7.00 Km = Rs 191.24	8.00/2.00 x 16.54 x 1.00 Km = Rs 66.16	406.10		Rs. 663.50

Cost of Haulage Excluding Loading & Unloading as per SOR

* **Subjected to Verification of Lead**

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

15/10/20

15/10/20 J.E

15/10/20 A.E

Analysis for Carriage by Road

Name of Road:-- Detailed Estimate For Repair of Flood Damaged in Shahpur Undi PWD Road (Railway Gumti Se Purab) To Chakarman

District:- Samastipur **Block :-** Patori

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	8.00/4.59 x 7.60 x 163.00 Km = Rs 2159.13	8.00/4.59 x 18.50 x 0.00 Km = Rs 0.00		83.64		Rs. 2242.77
2	Stone Metal Gr-III / GSB	Cum	Sheikhpura	8.00/4.99 x 7.60 x 163.00 Km = Rs 1986.05	8.00/4.99 x 18.50 x 0.00 Km = Rs 0.00		83.64		Rs. 2069.69
3	Stone Aggregate / Chips	Cum	Sheikhpura	8.00/4.99 x 7.60 x 163.00 Km = Rs 1986.05	8.00/4.99 x 18.50 x 0.00 Km = Rs 0.00		83.64		Rs. 2069.69
4	Stone Aggregate / Chips	Cum	Mirzachowki	8.00/4.99 x 7.60 x 208.00 Km = Rs 2534.35	8.00/4.99 x 18.50 x 0.00 Km = Rs 0.00		83.64		Rs. 2617.99
5	Stone Boulder	Cum	Sheikhpura	8.00/4.80 x 7.60 x 163.00 Km = Rs 2064.67	8.00/4.80 x 18.50 x 0.00 Km = Rs 0.00		83.64		Rs. 2148.31
6	Course Sand	Cum	Kuil	8.00/4.99 x 6.83 x 115.00 Km = Rs 1259.24	8.00/4.99 x 16.54 x 0.00 Km = Rs 0.00		96.53		Rs. 1355.77
7	Local Sand	Cum	Local	8.00/4.99 x 6.83 x 2.00 Km = Rs 21.90	8.00/4.99 x 16.54 x 1.00 Km = Rs 26.52		96.53		Rs. 144.95
8	Brick	1000 Nos	Local	8.00/2.00 x 6.83 x 7.00 Km = Rs 191.24	8.00/2.00 x 16.54 x 1.00 Km = Rs 66.16		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

15/10/20 J.E

15/10/20 A.E

15.10.20

FDR

YEAR (2020 - 2021)

Analysis for Carriage by Road & Rail

Name of Road:-- Detailed Estimate For Repair of Flood Damaged in Shahpur Undi PWD Road (Railway Gumti Se Purab) To Chakarman

Block :- Patori

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	2027.88	2027.88
2	Stone Metal Gr-III / GSB	Cum	2069.69	1893.04	1893.04
3	Stone Aggregate / Chips (seikhpura)	Cum	2069.69	1893.04	1893.04
4	Stone Aggregate / Chips	Cum	2617.99	2317.35	2317.35
5	Stone Boulder	Cum	2148.31	1954.30	1954.30
6	Course Sand	Cum	1355.77	1355.77	1355.77
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

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

15/10/20
Asstt. Engineer
RWD (w) Division, Patori

Executive Engineer
RWD (w) Division, Patori

Analysis for Carrige 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 Wegon	= 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 Seasion 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 611.11**
	Add 6% Overhead Charge		= 6.0%	=	**Rs 36.67**
	Add 10% Contractor Profit		= 10%	=	**Rs 64.78**
	Total Railway Freight for 1 cum		**"C"**		**Rs 712.56**
Cost for Stacking the Materials from Unloding 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 1017.01**

Analysis for Carrige 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 Wegon	=	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 Seasion 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 59.59**
		Total Railway Freight for 1 cum		**"C"**		**Rs 655.44**
Cost for Stacking the Materials from Unloding 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 956.49**

Analysis for Carrige 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 Wegon	=	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 Seasion 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%		**Rs 33.73**
		Add 10% Contractor Profit	=	10%	=	**Rs 59.59**
		Total Railway Freight for 1 cum		**"C"**	=	**Rs 655.44**
Cost for Stacking the Materials from Unloding 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 956.49**

Analysis for Carrige 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			
$\frac{8.00}{4.99}$ 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

Mirzachowki **Railway Yard to** Karpoorigram **Railway Yard** = 230.00 Km

i) Loading Cost from Railway Yard to Railway Wegon	=	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 Seasion charge 12% of Railway freight charge	=	For 1 MT		= 12%	=	Rs 51.04
Railway Development Charge to 5% of Railway Fright 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 98.16**
		Total Railway Freight for 1 cum		**"C"**	=	**Rs 1079.74**
Cost for Stacking the Materials from Unloding 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 1380.79**

Analysis for Carrige 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	+	8.00/4.80 x 18.50 x 0.00 Km	= Rs 0.00	+ Rs 83.64	=			Rs 108.98
	UnSurface		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 Wegon	=	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 Seasion 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 584.38**
		Add 6% Overhead Charge	=	6.0%	=		**Rs 35.06**
		Add 10% Contractor Profit	=	10.0%	=		**Rs 61.94**
		Total Railway Freight for 1 cum		**"C"**		**=**	**Rs 681.38**
Cost for Stacking the Materials from Unloding 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 983.98**

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				
			Unit = cum				
			Taking output = 5.5 cum				
			Time required for				
			i) Positioning of tipper at loading point		1 Min		
			ii) Loading by front end loader 1 cum bucket capacity @ 25 cum per hour		13 Min		
			iii) Maneuvering, reversing, dumping and turning for return		2 Min		
			iv) Waiting time, unforeseen contingencies etc		4 Min		
			Total		**20 Min**		
			a) Machinery				
			Tipper 5.5 tonnes capacity	hour	0.330	1043.00	344.19
			Front end-loader 1 cum bucket capacity @ 25 cum/hour	hour	0.330	1403.00	462.99
			(b) Overheads @ 6 % on (a)				48.43
			(c) Contractor's profit @ 10% on (a+b)				0.00
			Cost for 5.5 cum = a+b+c				855.61
			Rate per cum = (a+b+c)/ 5.5				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.				
			Unit = cum				
			Taking output = 5.5 cum				
			Time required for				
		i	Positioning of tipper at loading point	Min	1.000		
		ii	Loading by front end loader 1 cum bucket capacity @ 45 cum per hour	Min	7.330		
		iii	Waiting time, unforeseen contingencies, etc.	Min	2.000		
			Total	Min	10.330		
		a)	**Machinery**				
			Tipper 10 t capacity	hour	0.172	1043.00	179.40
			Front end-loader 1 cum bucket capacity @ 45 cum per hour	hour	0.122	1403.00	171.17
		b)	Overheads @ 6.0 %				21.03
		C	Contractors Profit @ 10.0 %				-
			Cost for 5.5 cum = a+b+C				371.60
			Rate per cum = (a+b)/5.5				67.56
			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.				
			Unit = cum				
			Taking output = 5.5 cum				
			Placing tipper at unloading point excluding time for haulage and return trip				
			Time required for				
		i	Positioning of tipper at loading point	Min	1.000		
		ii	Manoeuvering, reversing, dumping and turning for return	Min	2.000		
		iii	Waiting time, unforeseen contingencies, etc.	Min	2.000		
			Total	Min	5.000		
		a)	**Machinery**				
			Tipper 10 t capacity	hour	0.080	1043.00	83.44
		b)	Overheads @ 6 % on (a)				5.01
		C	Contractors Profit @ 10.0 % on (b)				0.00
			Cost for 5.5 cum = a+b				88.45
			Rate per cum = (a+b)/5.5				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 for5.5 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 for10 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
			PAVEMENT CRUST LAYERS				
14	4.1	401	**Granular Sub-base with Well Graded Material (Table 400.1)**				
		(A)	**By Mix in Place Method**				
			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 I 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	2,870.00
		b)	**Machinery**				
			Tractor Mounted Motor Grader 110 HP @ 50 cum per hour	hour	6.00	549.10	3,294.60
			Three wheel 80-100 kN Static Roller	hour	30.00	803.00	24090
			Tractor with Rotavator 25 cum per hour	hour	12.00	573.20	6,878.40
			Water tanker 6 kl capacity	hour	5.00	184.00	920.00
		c)	**Material**				
			Coarse graded granular sub-base material as per Table 400.2				
			53 mm to 9.5 mm @ 50 per cent	cum	180.00	620.62	111,711.60
			9.5 mm to 2.36 mm @ 20 per cent	cum	72.00	514.58	37,049.76
			2.36 mm below @ 30 per cent (Coarse Sand Screening)	cum	108.00	236.71	25,564.68
			Water	kl	18.00	40.00	720.00
		d)	Overheads @ 6 % on (a+b+c)				12838.41
		e)	Contractor's profit @ 10% on (a+b+c+d)				0.00
			Cost for 300 cum = a+b+c+d+e				226,811.85
			Rate per cum = (a+b+c+d+e)/300				**756.04**
			Add for Carriage Cost				
			53 mm to 9.5 mm @ 50 per cent		0.60	1893.04	1135.824
			9.5 mm to 2.36 mm @ 20 per cent		0.24	1893.04	454.3296
			2.36 mm below @ 30 per cent (Coarse Sand Screening)		0.36	1355.77	488.0772
			Total Cost per Cum				**2834.27**
			Total Cost	**CUM**			**2,834.27**

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)				18996.33
			Cost for 360 cum = a+b+c+d+e				**335601.91**
			Rate per cum = (a+b+c+d+e)/360				932.23
		f)	***CARRIAGE***				
			Stone material Grading 3 53 mm to 22.4 mm	Cum	1.21	1893.04	2290.58
			Stone Screening	Cum	0.24	1893.04	**454.33**
			Rate per cum with carriage				**3677.14**
			Total Cost	**cum**			**3,677.14**

ANALYSIS OF RATES.

BRICK BAT FILLING.

1. ~~Consolidated sub~~
Providing brick bats including, spreading, laying, hand packing with C.I Hammers in layers not exceeding 75MM thick including cost of eight borrers, danger signal, chowkidar, taxes, Royalty, etc, all complete job, as per specifications and directions of S/E including cost of bricks, - - - all complete job.

Unit — Cum.

Assuming — 2.892 M^3

Cost of Brick bats — 2.892 M^3 @ 1096=00 — Rs 3163=87

~~Mazdoor unskilled~~ Local Sand 0.632 M^3 @ 141=95/M^3 Rs 89=65

Labour (Unskilled)

1. Carrying, spreading, earning and packing on skilled 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/M^3 — Rs 1428=42/M3.

Carriage Cost

Carriage for Bricks (1 M^3 bat) for 300 NO @ 663=50/M^3 — Rs 199=06

Local Sand 0.220 M3 @ 97=00/M3 — Rs 21=34.

Cost of Sand with Royalty @ Rs 141=95/M3 — Total Rs 1648=81.

3% = 21

Total 1680=02

2. Granular Sub-base, with well Graded Material, Table 400.1 & 4

Mix and place Method for Grading II Material all complete job.

Rs — 300.00 M3

Labour — Mate — 0.48 NO @ 305.00 — Rs 146=40

Mazdoor Skilled — 2.0 NO @ 364.00 — Rs 728=00

Mazdoor Unskilled — 10.0 NO @ 287=00 — Rs 2870=00

Machinery

Tractor Mounted Grader 6.0 Hour @ 573=20 Rs 3439=20

Three wheel 80-100 KN static rolled 10 M3/Hour 30.0 Hour - @ 803=00/Hr - Rs 24090=00

Tractor with rotavator 25 M3/Hour 12.0 Hour @ 573=20 — Rs 6878=40

Water Tanker 6 KL capacity 5.0 H @ 184=00 — Rs 920=00

Total 39072=00

Material

Coarse Graded Granular sub base

53 MM to 9.5 MM, 35% — 134.40 M^3 @ 604=91/M^3 — Rs 80695=00

9.5 MM to 2.36 MM 25% 96.00 M^3 @ 514=58/M^3 — Rs 49400=00

2.36 MM below Local Sand 153.60 MC @ 141=85/M^3 Rs 21788=00

water 30 KL @ 40=00/KL — Rs 1200=00

Total — 1,92,155=00

Add over Head Charge 6% — 11,529=00

Total — 2,04,084=00

Construction of Road Embankment. Material obtain from borrow pits . . . all comp as per
. . . all complete as per
Clause, 300.1, 300.2, with lead up to 1000.0m. — Out Put — 100.0M³

Mate — 0.04 No @ 305=00 — Rs 12=20
Unskilled — 1.0 No @ 287=00 — Rs 287=00

Machinery

Hydraulic excavator 0.9 M³ bucket @ 60 M³/Hrs — 1.67 H @ 1969=20 — Rs 3288=56
Tipper 5.5 cum with 10t capacity — 4.50 H @ 1043=00 Rs 4693=50
10% for carriage by Tipper — Rs 469=35

Dozer D-50 for spread @ 100 M³/Hrs — 0.50 @ 3337=90 Rs 1668=95

Tractor Mounted Grader — 1.0 Hr @ 573=20 — Rs 573=20
Water Tanker 6 KG Capacity 2.0 Hrs @ 184=00 — Rs 368=00
Three wheel Roller 80-100 KN static Roller @ 80 M³/Hrs — 1.25 H — 803=00 Rs 1003=75
Compensation of Earth — 100.0 M³ @ 34=81 Rs 3481=00
Water 12.0 KL — @ 40=00 Rs 480=00
Total Rs 16325=51
Add O.H.C 6%. — Rs 979=53
17306=04

Rate 173=06/M³.

Item No 7. Labour for Cutting 62 mm to 75 mm dia Bamboo, piles to size and making shoes and driving etc . . . all complete etc.
Out Put — 30.5 M
Assuming 20 No pile shunk 1.525 M deep

Labour.

Carpenter Grade II — 0.25 No @ 345=00 — 86=25
Unskilled Mazdoor — 2.5 No @ 287=00 — 717=50
803=75
Add Over Head 6% — Rs 48=22
851=97

Item No 8. Labour for fitting and @ 28=40/metre. fixing 62 mm to 75 mm dia Bamboo runner in position at every vertical pile with 150 MM long Nails & 38 swg G.I. wire . . . all complete
Out Put — 30.5 M —
Nails 150 MM long — 0.5 Kg @ 55=84 — 27=92
Carpenter Grade II — 0.125 No @ 345=00 — 43=13
Unskilled Mazdoor — 0.25 No @ 287=00 — 71=75
142=80
Add Over Head Charge 6% — 8=57
151=37
Here Rate — 4=96 / Metre.